Economic Study of Recreational Fishing in Victoria

Victorian Recreational Fishing Peak Body

9 November 2015

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9 November 2015

Reliance Restricted

Economic Study of Recreational Fishing in Victoria

Dear Dallas

Thank you for the opportunity to prepare the Economic Study of Recreational Fishing in Victoria ("Study" or "Report") for the Victorian Recreational Fishing Peak Body ("VRFish" or "client"). In accordance with our engagement agreement dated 10 October 2014, we are pleased to present you with the findings from this Study.

The report has been constructed based on information current as of 6 March 2015 (being the date of completion of the economic modelling), and which has been provided by the Client and other industry stakeholders. Since this date, material events may have occurred since completion which is not reflected in the report.

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It should also be noted that the contribution assessment does not constitute a Cost Benefit Analysis. Further, it is important to note that the identification of economic contribution is not a precise science.

If you would like to clarify any aspect of this study or discuss other related matters then please do not hesitate to contact me on (03) 9288 8830 or David Cochrane on (03) 9655 2551.

Yours sincerely

John Matthews
Partner

Dr David A Cochrane
Executive Consultant

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The results of Ernst & Young's work, including the assumptions and qualifications made in preparing the report, are set out in the enclosed Report ("Report"). You should read the Report in its entirety including the applicable scope of our work and any limitations. A reference to the Report includes any part of the Report. No further work has been undertaken by Ernst & Young since the date of the Report to update it.

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Executive summary

Recreational fishing[1] is one of the most popular recreational pursuits in Victoria, with approximately 830,000 Victorian adult residents participating in recreational fishing each year (compared to 721,000 adult fishers in 2009). In 2013/14, these fishers made 6.1 million fishing trips across Victoria, with over half of these trips occurring in regional areas.

This study highlights the importance of the recreational fishing industry to Victoria by estimating the economic contribution and net benefit of recreational fishing in Victoria. It also estimates other key measures, such as the number of participants, number of fishing trip and average catch size. The study relies on extensive primary market research (i.e. over 1,000 surveys of the Victorian population) and existing studies.

Economic contribution to Victoria

In 2013/14, recreational fishing in Victoria generated:

- $7.1 billion combined direct and indirect output, including $2.6 billion direct output
- $3.9 billion combined direct and indirect value added, including $1.6 million direct value added
- 33,967 combined direct and indirect full-time equivalent (FTE) jobs, including 16,257 direct jobs.

Between 2013/14 and 2033/34, recreational fishing in Victoria is expected to generate the following:

- Output contribution (direct and indirect) from $7.1 billion (in 2013/14) to $9.6 billion (in 2032/33)
- Value added contribution (direct and indirect) from $3.9 billion (in 2013/14) to $5.3 billion (in 2032/33)
- Employment contribution (direct and indirect) from 33,967 (in 2013/14) to 45,992 (in 2032/33).

The net present value (NPV) of the recreational fishing industry over the 20 year model period is $91.2 billion output, $50.8 billion value added. Average annual employment over the period is 39,994 FTE jobs.

Net benefit to Victorian fishers

In 2013/14, the Victorian fisher population generated a combined net benefit of $622 million. For every dollar spent on fishing, the average fisher generated $1.22 in benefits, or a net gain of $0.22. This is based on the Victorian fisher population:

- Incurring financial costs of $2.9 billion on general fishing expenditure and boat related costs
- Generating $3.5 billion in economic benefit, based on the market value of fish caught and additional consumer surplus.

The benefits presented above do not fully capture the value that recreational fishers receive from fishing. Numerous studies have investigated the health benefits from fishing and exposure to the natural environment / greenspace. For example, research undertaken for the Fisheries Research and Development Corporation found that participation in recreational fishing generates a number of psychological, physiological and social benefits, including promoting general health and well-being, reducing stress, improving mental health[2].

[1] Recreational fishing is defined as fishing for pleasure or competition (excluding commercial fishing (i.e. fishing for profit))
[2] McManus, Hunt, Storey, Fisheries Research and Development Corporation, Identifying the health and wellbeing benefits of recreational fishing F White, 2013, p. 7, 12

Participation, expenditure and other measures

Results from the Victorian Recreational Fishing Survey 2014 indicate that the average adult fisher:

- Spends $326 per trip (excluding boat purchase), with the majority of this expenditure going to food, accommodation and transport to and from the fishing location.
- Would spend more time fishing if access to facilities (19%), stocking (15%), port facilities (13%) and habitat (12%) were improved.

The figures below present key participation and fishing incidence measures.

Figure ES1 – Age profile or recreational fishers

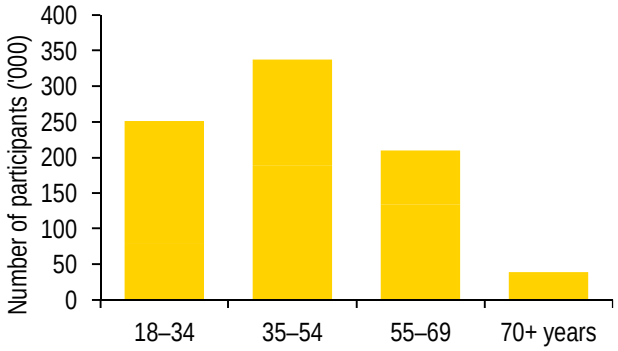


Figure ES2 – Distribution of fishing trips: Regions

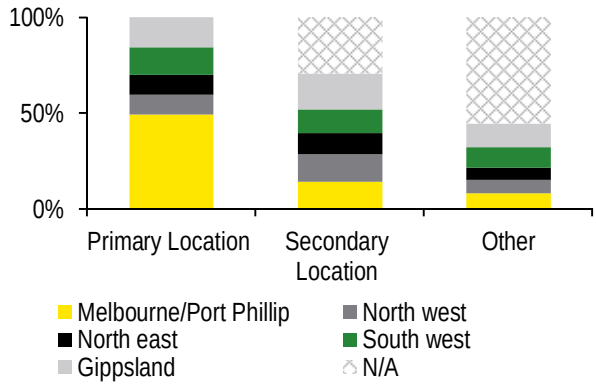


Figure ES3 – Distribution of fishing trips: Waterways

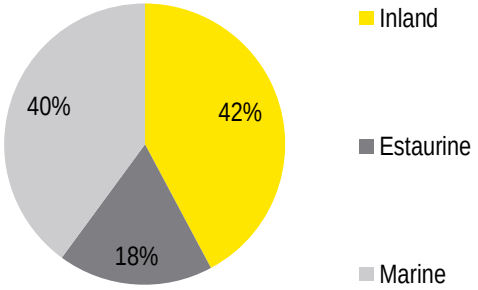
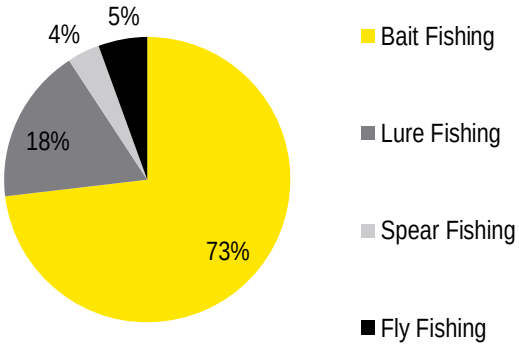


Figure ES4 – Type of fishing



1. Introduction

1.1 Recreational fishing in Victoria

Recreational fishing[3] is one of the most popular recreational pursuits in Victoria, with 838,119 Victorian resident adults participating in recreational fishing each year. In 2013/14, these fishers made 6.1 million recreational fishing trips across Victoria, with over half of these trips occurring in regional areas. Recognising the important economic and social benefits of recreational fishing, the Victorian Government is committed to growing recreational fishing in Victoria[4].

The Victorian Recreational Fishing Peak Body (VRFish) is the peak body responsible for advocating the interests of the Victorian recreational fishing community to the government, the community and other interest groups[5].

1.2 This study

This study highlights the importance of the recreational fishing industry to Victoria by estimating the economic contribution[6] and net benefit[7] of recreational fishing in Victoria[8]. It also estimates other key measures, such as the number of participants, number of fishing trip and average catch size.

The study relies on extensive primary market research (i.e. over 1,000 surveys of the Victorian population) and existing studies (see Appendix E).

The study proceeds as follows:

- The **economic contribution** (direct and indirect) of recreational fishing in Victoria (Chapter 2)
- The **net benefit** of recreational fishing to Victorian fishers (Chapter 3)
- **Participation** and other measures (Chapter 4).

The intent of this project is to replicate the outputs and approach of the original 2009 study (completed by EY), with only minor refinements and revisions to the original scope.

[3] Recreational fishing is defined as fishing for pleasure or competition (excluding commercial fishing (i.e. fishing for profit))
[4] Australian Labor Party Victorian Branch, 'Target One Million: Labor's plan to get more people fishing, more often', 17 November 2014
[5] VRFish is the peak representative body for Victorian recreational fishers. VRFish advocates for accessible, sustainable recreational fisheries and quality fishing opportunities through education, extension and advocating for increased investment in a number of initiatives including upgrading boat launching facilities, installing fish cleaning tables, building reefs in marine and estuarine waters, expanding access for boat and shore based anglers, improving fish passage in key rivers, stocking more fish to develop new fisheries
[6] This is an economic accounting exercise that captures all of the market-related expenditure for a specified industry or activity. The numbers generated by economic contribution studies would typically include all expenditures generated by an industry/project ("in-scope expenditures"), and can be expressed as both output (turnover) and value add. (The 2009 study identified industry value add only)
[7] Measuring economic value is a tool used to determine whether the existence or investment in an asset or program generates a net benefit to the community. Economic value differs from a financial value in that it is performed from the view point of society, whereas financial value looks at only the financial impacts (that is, whether the revenue generated exceeds the financial costs of the project). As such, non-market impacts are counted if they can be measured.
[8] The following activities are not included in the study: Recreation fishing by interstate and overseas fishers in Victoria, recreation fishing by Victorians that occurs outside Victoria and commercial fishing

2. Economic contribution

In 2013/14, recreational fishing in Victoria generated:

- $7.1 billion combined direct and indirect output, including $2.6 billion direct output
- $3.9 billion combined direct and indirect value added, including $1.6 billion direct value added
- 33,967 combined direct and indirect full-time equivalent (FTE) jobs, including 16,257 direct jobs.

An economic contribution is defined as the gross changes in a region's existing economy that can be attributed to a given industry, event, or policy[9]; in this case the Victorian recreational fishing industry.

This chapter presents the results of the economic contribution analysis and proceeds as follows:

- Direct industry output, value add and employment (Chapter 2.1)
- Combined direct and indirect contribution (Chapter 2.2)
- Taxation impacts (Chapter 2.3)
- Future contribution (Chapter 2.4).

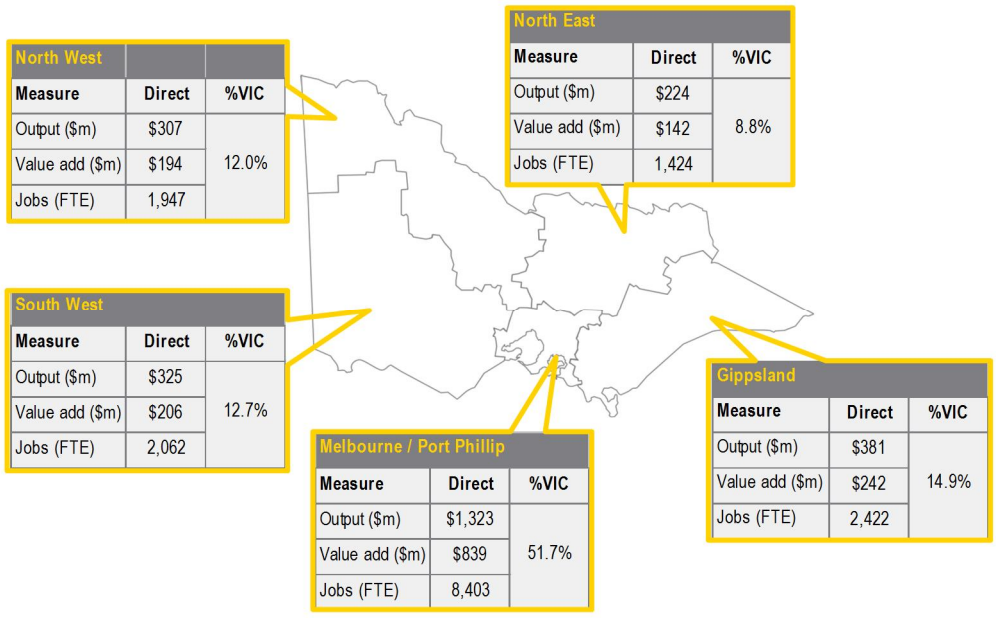
The detailed assumptions underpinning this analysis are presented in Appendix B and Appendix C.

2.1 Direct industry output, value add and employment

In 2013/14, recreational fishing in Victoria directly generated:

- $2.6 billion direct industry **output**
- $1.6 billion direct **value added**, representing around 0.5% of Victoria's Gross State Product
- 16,257 direct FTE **jobs**.

Figure 2.1 – Direct economic output, value add and employment, by region



[9] Watson, P; Wilson, J; Thilmany, D, 'Determining economic contribution and impact: What is the difference and why do we care', 2007

2.2 Indirect and total contribution

In 2013/14, recreational fishing in Victoria generated a combined direct and indirect[10] contribution of:

- $7.1 billion combined direct and indirect **output**, including $4.5 billion indirect output
- $3.9 billion **value added**, including $2,318 indirect value added
- 33,967 FTE **jobs**, including 17,710 indirect jobs.

Table 2.1 – Economic contribution of recreational fishing in Victoria (direct and indirect contribution)

Measure	Direct contribution	Indirect contribution		Total Effect	*Type 1 Multiplier**	*Type 2 Multiplier**
		Industrial Effect	Consumption Effect			
Output ($M)	$2,560	$1,976	$2,541	$7,077	*1.77*	*2.77*
Value-added ($M)	$1,623	$925	$1,393	$3,941	*1.59*	*2.46*
Household income ($M)	$918	$501	$770	$2,189	*1.65*	*2.62*
Jobs	16,257	6,946	10,764	33,967	*1.49*	*2.21*

Source: EY

2.3 Taxation impacts

The economic activity generated by recreational fishing generates revenues to government (in the form of higher taxation). However, the extent to which taxation revenue will flow back to Victoria is uncertain due to, for example, the complex Commonwealth-State arrangements around the distribution of GST revenues.

To estimate the taxation impacts to the Victoria Government, EY compared the total Gross State Product (GSP) for Victoria ($334 billion in 2013/14[11]) to state tax receipts ($16.3 billion in 2013/14[12]) to determine the percentage of state taxation revenue to GSP (4.8% of GSP).

Based on the Victorian recreational fishing industry generating $3.9 billion in GSP (direct and indirect) and the percentage of state taxation revenue to GSP ratio of 4.8%, EY estimates that the in-scope developments will generate an additional **$185 million per year in state taxes**, in 2013/14.

2.4 Future contribution

Between 2013/14 and 2033/34, recreational fishing in Victoria is expected to generate the following:

- **Output** contribution (direct and indirect) of $7.1 billion (in 2013/14) to $9.6 billion (in 2032/33) (see Figure 2.1)
- **Value added** contribution (direct and indirect) of $3.9 billion (in 2013/14) to $5.3 billion (in 2032/33) (see Figure 2.2)
- **Employment** contribution (direct and indirect) of 33,967 (in 2013/14) to 45,992 (in 2032/33) (see Figure 2.3).

The net present value (NPV) of the recreational fishing industry over the 20 year evaluation period is $91.2 billion output, $50.8 billion value added. Average annual employment over the period is 39,994 FTE jobs.

[10] Although many studies apply multipliers to direct industry expenditure to capture the flow on or 'indirect' impacts of industries, the Victorian Department of Treasury and Finance (DTF) is critical of this approach. Generally, when comparing the contribution of industries, it is standard practice (by statistical agencies such as the ABS) to focus solely on direct industry value add (i.e. without multipliers). The direct value add measure enables meaningful comparisons of industry size to be made between industries. While the use of multipliers will provide a wider contribution estimate of an industry it will not take into account substitution effects (i.e. impacts). As such, indirect contribution should be read and interpreted with caution.

[11] Australian Bureau of Statistics (2014) Australian National Accounts: State Accounts 5220.0, 2013-14

[12] Victorian Government, Financial Report for the State of Victoria 2013-14

Figure 2.2: Forecast output ($ billion)

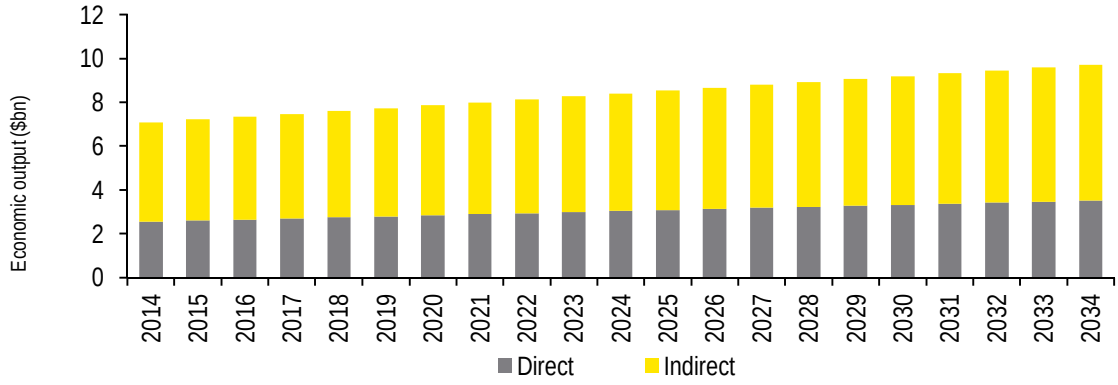


Figure 2.3: Forecast value added ($ billion)

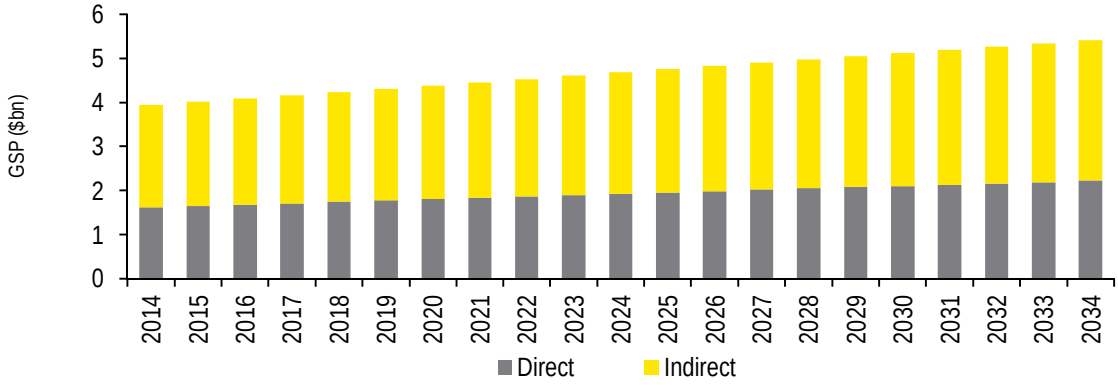
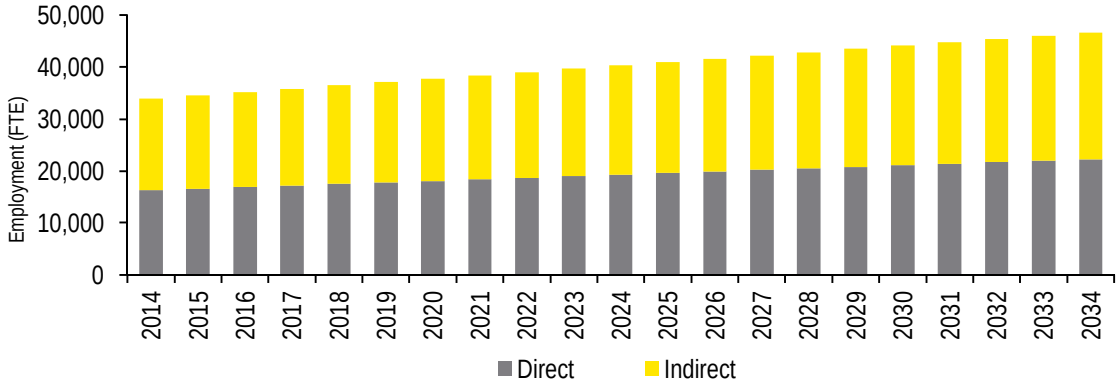


Figure 2.4: Employment (FTE)



3. Net benefit

In 2013/14, the Victorian fisher population generated a combined net benefit of $622 million. This is based on the Victorian fisher population:

- Incurring financial costs of $2.9 billion
- Generating $3.5 billion in economic benefit

Based on the above, for every dollar spent on fishing, the average fisher generated $1.22 in benefits, or a net gain of $0.22.

Economic benefit represents the net increase in total social/individual welfare and includes both market and nonmarket values. The net benefit analysis undertaken in this study captures the net benefits to individual recreational fishers and does not directly consider the effect on Government or the wider Victorian community. This chapter presents the results of the net benefit analysis and proceeds as follows:

- Net benefit (Chapter 3.1)
- Additional health benefits not quantified in this study (Chapter 3.2).

The detailed assumptions underpinning this analysis are presented in Appendix A and Appendix C.

3.1 Net benefit

In 2013/14, the Victorian fisher population generated a combined net benefit of $622 million. This is based on the Victorian fisher population:

- Incurring financial costs of $2.9 billion on general fishing expenditure and boat related costs
- Generating $3.5 billion in economic benefit, based on the market value of fish caught[13] and additional consumer surplus[14].

Based on the above, for every dollar spent on fishing, the average fisher generated $1.22 in benefits, or a net gain of $0.22.

The combined net benefit over the 20 year evaluation period is presented below for a selection of discount rates. The discount rate does not impact the BCR, given future costs and benefits are modelled based on the same population growth rate.

[13] The market value of the fish caught by recreational fishers provides a quantifiable and measurable means of valuing the benefits of recreational fishing to the participant. For example, the catching of a fish for consumption means that the individual does not have to purchase that fish. Even if the fisher is practicing catch and release, the value of that catch remains quantifiable. The value of the catch remains quantifiable because it is the intrinsic market value of the catch and represents a component of the consumer surplus that the fisher gains from participating in recreation fishing

[14] Consumer surplus measures the additional value that is derived from undertaking fishing activities, over and above what has to be paid for that fishing activity. It is the difference between what users are willing to pay to undertake an activity and what they are actually required to pay. The non market benefits calculated through the consumer surplus approach include the market value of fish caught. As such, the market value of fish caught is subtracted from the willingness to pay estimates to avoid double counting

Table 3.1: Net benefit over 20 year model period (2013/14 to 2032/33)

	Real discount rate (%)		
	4%	**7%**	**10%**
Benefits (NPV, $bn)	$56.9	$45.0	$36.7
Costs (NPV, $bn)	$46.8	$37.0	$30.1
Net benefit (NPV, $bn)	$10.1	$8.0	$6.6
Benefit-Cost Ratio (BCR)	1.22	1.22	1.22

Source: EY

The benefit-cost ratio (BCR) outcome may seem low compared to some other economic studies. The reason for the comparatively low BCR is a result of the analysis being a non-traditional net benefits assessment rather than a traditional benefit-cost study. The analysis undertaken in this study captures the net benefits to recreational fishers. In this context the result is considered to be very positive.

3.2 Additional health benefits not quantified in this study

Numerous studies have investigated the health benefits from fishing and exposure to the natural environment / greenspace.

Studies specifically relating to the health benefits of recreational fishing include:

- Research undertaken for the Fisheries Research and Development Corporation found that participation in recreational fishing generates a number of psychological, physiological and social benefits. Fishing also promotes general health and well-being, reduces stress and improves mental health[15]. The study also found significant health and wellbeing benefits related to youth development, breast cancer recovery and mental health while also being a viable option for people with disabilities.

- A survey undertaken by the Centre for Research and Action in Public Health acknowledged a direct link between recreational fishing and wellbeing. The study concluded that happiness/enjoyment of fishing and people's sense of wellbeing are intrinsically linked[16]

- In 2011, the Recreational Fishing Advisory Committee developed a national industry development strategy for recreational fishing in Australia. The Committee acknowledged that recreational fishing is as an important activity that contributes to the health and wellbeing of Australian society.

Interacting with animals has been demonstrated to have multiple positive physiological effects on human health. These include[17]:

- Observing native animals, having them nearby, or interacting with them improves quality of life

- Interacting with animals can decrease blood pressure, heart rate and cholesterol

- Interacting with animals reduces anxiety and stress and provides protection against stress-related diseases.

Additional health benefits associated with being exposed to the natural environment include:

- Improved sense of wellbeing and positive influence on immunity and cardiovascular function. For example, a study in the UK investigated the relationship between greenspace and mortality in

[15] McManus, Hunt, Storey,Fisheries Research and Development Corporation, Identifying the health and wellbeing benefits of recreational fishing F White, 2013, p. 7, 12

[16] Schirmer, J, Centre for Research and Action in Public Health, University of Canberra, Understanding the social dimensions of recreational fishing in South Australia, 2012

[17] Deakin University, School of Health and Social Development and Faculty of health, Medicine, Nursing and Behavioural Sciences, Healthy parks, healthy people, 2008, p. 54

England. It found that greener lower super output areas (similar to census areas) showed lower rates of mortality overall and in particular, lower rates of mortality due to circulatory disease[18]

- Reduction in magnitude of physiological response to stress. For example, field experiments in Japan have shown that 15 minutes of walking in a forest environment reduces stress more than the walking in a city environment and a study in rural upstate New York showed that children living in relatively green environments were found to be more resilient to stressful life events[19]

- Improved psychological health, particularly emotional and cognitive[20]

- Alleviate symptoms of anxiety and depression[21].

[18] Kuo, F.E, Parks and Other Green Environments: Essential Components of a Healthy Human Habitat, 2010, p. 28
[19] Kuo, F.E, Parks and Other Green Environments: Essential Components of a Healthy Human Habitat, 2010, p. 20
[20] Deakin University, School of Health and Social Development and Faculty of health, Medicine, Nursing and Behavioural Sciences, Healthy parks, healthy people, 2008, p. 40
[21] Deakin University, School of Health and Social Development and Faculty of health, Medicine, Nursing and Behavioural Sciences, Healthy parks, healthy people, 2008, p. 40

4. Participation and other measures

- In 2013/2014, 838,119 adults participated in recreational fishing in Victoria. These fishers made a total of 6.1 million fishing trips in Victoria, with over half of these trips occurring in regional areas
- The average adult fisher spends $326 per trip (excluding boat purchase), with the majority of this expenditure going to food, accommodation and transport to and from the fishing location
- Boat owners spend $15,100 on average on recreational fishing boats, which equates to approximately $2,200 per annum
- Fishers would spend more time fishing if access to facilities (28%), stocking (22%), habitat (18%) and port facilities (18%) were improved.

4.1 Participation and fishing incidence

In 2013/14, 838,119 adults Victorian residents participated in recreational fishing across Victoria (compared to 721,000 adult fishers in 2009). The results reveal that:

- These fishers made 6.1 million fishing trips in Victoria, in 2013/14 (i.e. 7.3 trips per fisher on average), with over half of these trips occurring in regional areas (see Figure 4.1).
- The proportion of the Victorian adult population that participate in recreational fishing has remained relatively stable since 2009 (18% of the adult population in 2014, compared to 19% of the adult population in 2009). The increase in the number of fishers since 2009 is primarily driven by Victoria's increasing population.

The figures and table below present key participation and fishing incidence measures.

Figure 4.1 – Number of fishing trips and fishers (2014), by region (thousands)

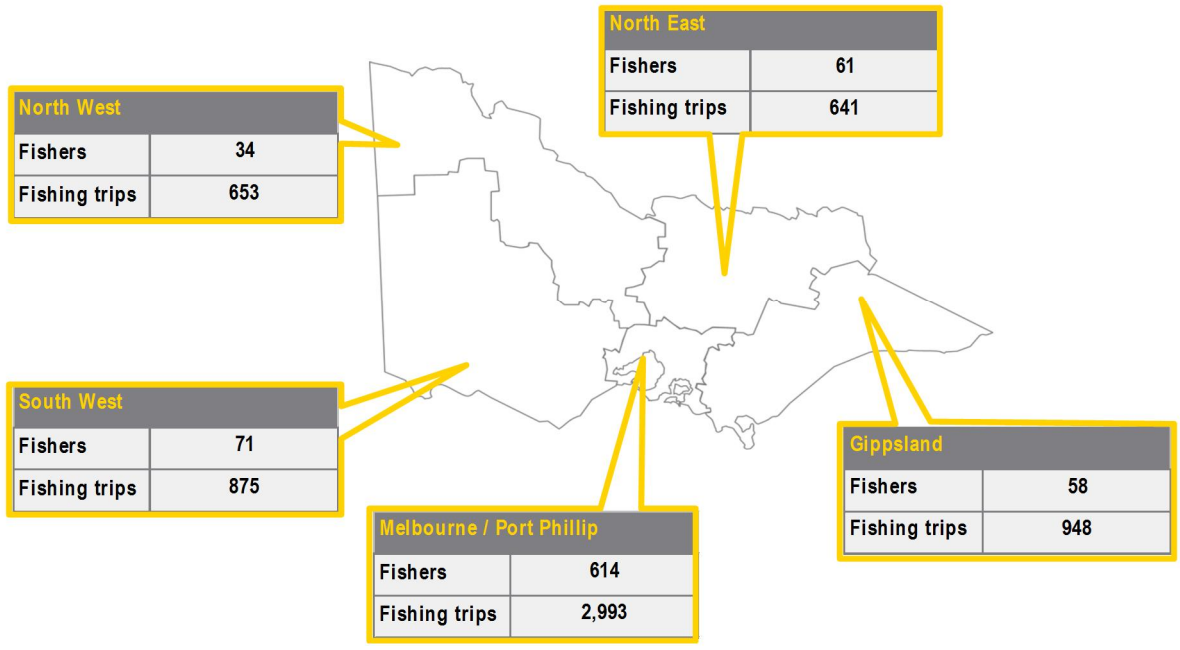


Figure 4.2 – Age profile or recreational fishers

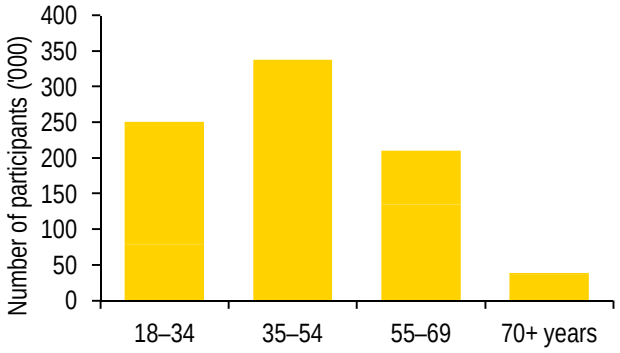


Figure 4.3 – Distribution of fishing trips: Regions

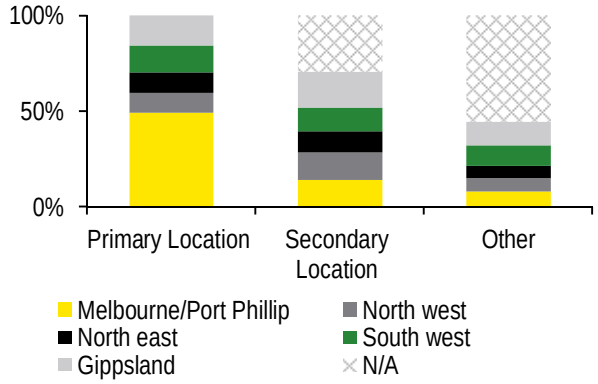


Figure 4.4 – Distribution of fishing trips: Waterways

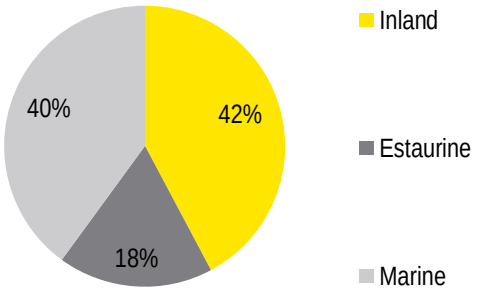


Figure 4.5 – Fish targeted: Inland

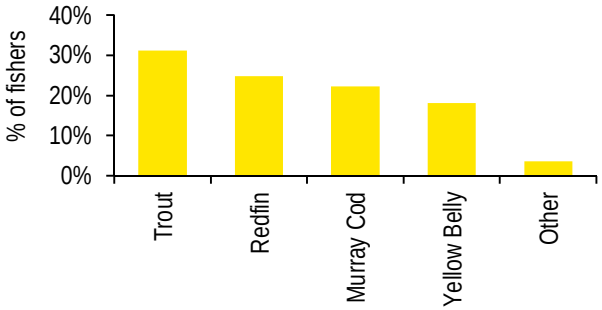


Figure 4.6 – Fish targeted: Estuarine

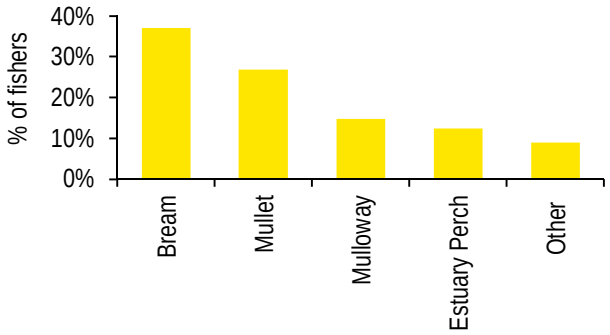


Figure 4.7 – Fish targeted: Marine

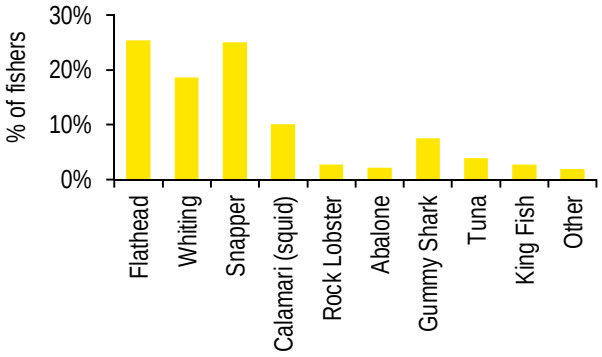


Figure 4.8 – Type of fishing

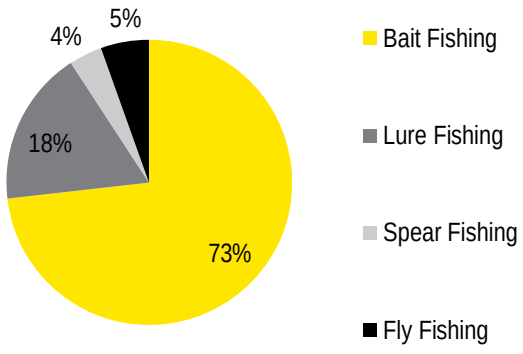


Figure 4.9 – Fishing club membership

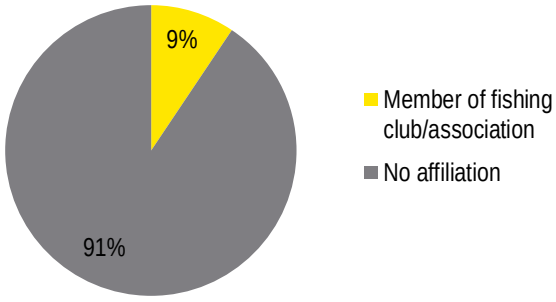


Table 4.2 –Recreational fishing trips, by season

Measure	Victoria		Interstate	
	Avg number of trips	Avg duration per trip (days)	Avg number of trips	Avg duration per trip (days)
Spring	2.04	1.86	1.47	2.46
Summer	3.02	2.42	1.47	2.11
Autumn	1.47	1.56	2.66	3.30
Winter	0.75	0.91	2.34	2.59

A breakdown of the frequency of the use of facilities for wharves, jetties and slipstreams at key fishing locations is outlined in Appendix D.

4.2 Expenditure

On average, adult fishers:

- Spend $326 per fishing trip (excluding boat purchase), with 87% of this incurred in Victoria.
- Own 0.5 boats that are used for recreational fishing (including multi-use boats). Boat owners spend $15,100 on average on recreational fishing boats[22], which equates to approximately $2,200 per annum[23]

The figures below present key expenditure and boat ownership measures.

Figure 4.10 – Spend profile (excl. boat purchase)

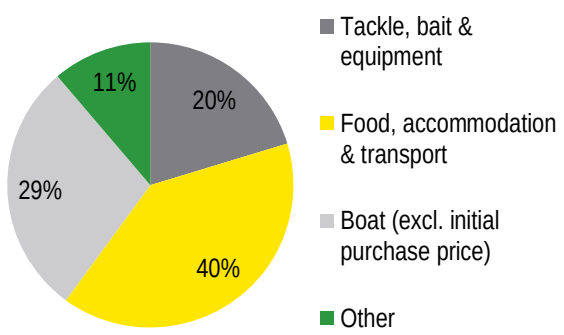


Figure 4.11 – Average spend per trip

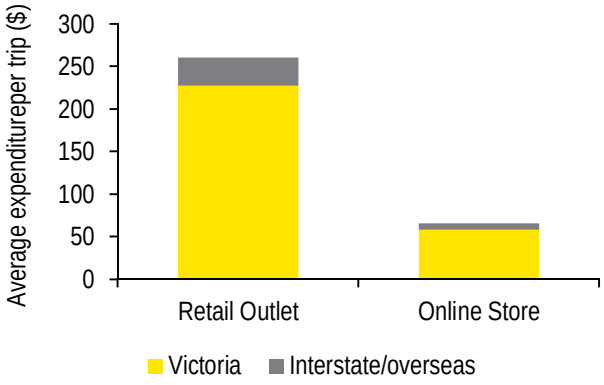


Figure 4.12 – Boat purchase

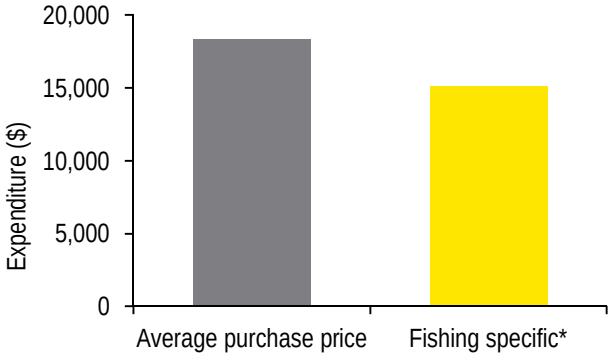
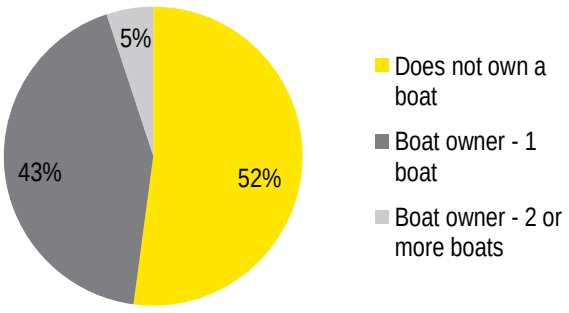


Figure 4.13 – Boat ownership



** Based on the results of the Victorian Recreational Fishing Survey 2014, 38% of boats owned by recreational fishers are not solely used for fishing (i.e. multi-use boats). Multi-purpose boats are used for fishing 54% of the time.*

[22] Based on the results of the Victorian Recreational Fishing Survey 2014, 38% of boats owned by recreational fishers are not solely used for fishing (i.e. multi-use boats). Multi-purpose boats are used for fishing 54% of the time

[23] The annual estimate represents the boat purchase costs amortised over the average life of a boat (7.5 years, based on the results of the Victorian Recreational Fishing Survey 2014)

4.3 Other measures

Results from the Victorian Recreational Fishing Survey 2014 indicate that:

- The majority (73%) of fishers live in Melbourne/Port Phillip
- Fishers would spend more time recreational fishing if access to facilities (19 %), stocking (15%), port facilities (13%) and habitat (12%) were improved.
- Fishers' main reasons for fishing are to relax (35%) and to be outdoors (31%).

The figures below present summary results from the Victorian Recreational Fishing Survey 2014,

Figure 4.14 – Primary place of residence

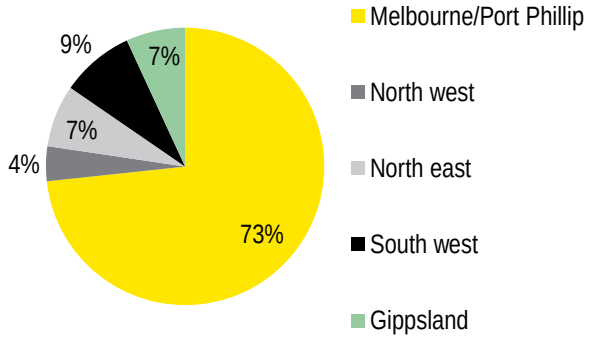


Figure 4.15 – Pre-tax household income

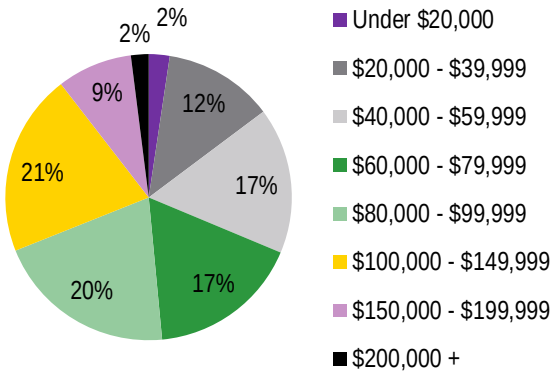


Figure 4.16 – Factors that would increase participation

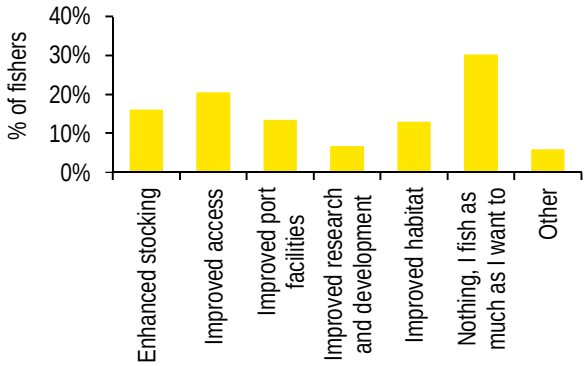


Figure 4.17 – Gender profile

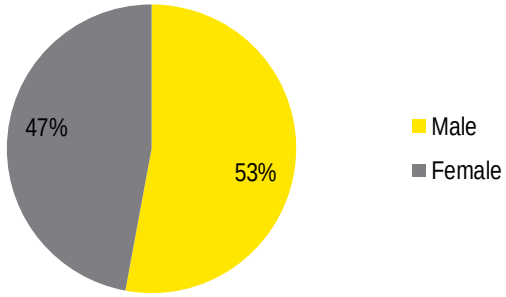


Figure 4.18 – Drivers of fishing participation

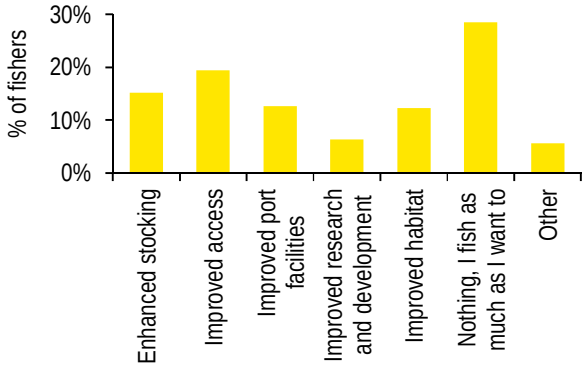


Figure 4.19 – Fishing frequency

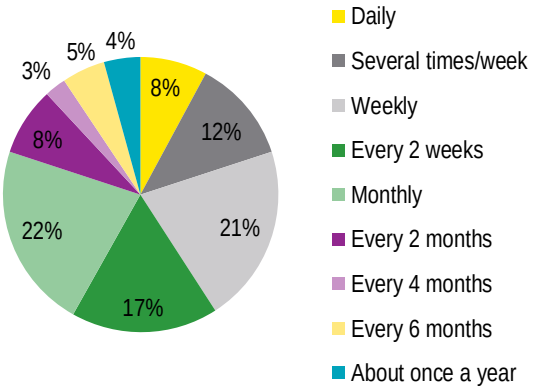


Figure 4.20 – Boat ownership

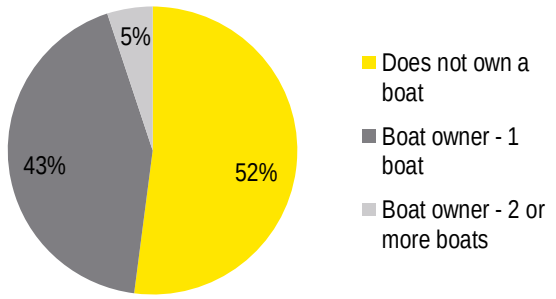


Figure 4.21 – Boat length

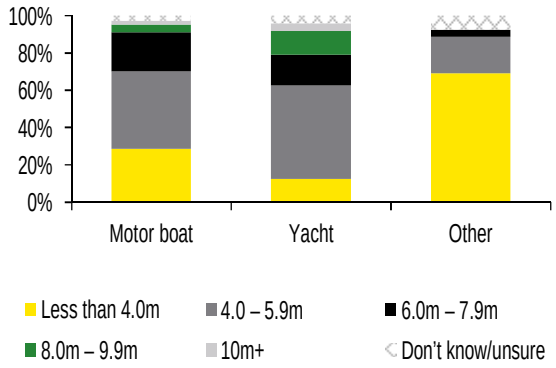
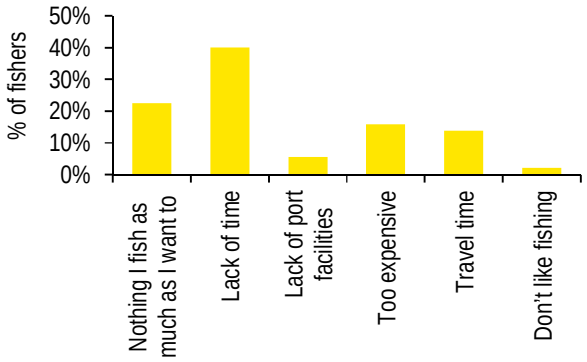


Figure 4.22 – Factors preventing increased participation



As noted in Figure 4.17 (above) and according to the results of the Victorian Recreational Fishing Survey 2014, around half (47%) of all adult fishers are female. EY regards this as an unexplained statistical anomaly as this profile is inconsistent with other research in this area (see Appendix E). Importantly, there is no material difference between responses provided by male and female respondees to the survey questions that underpin the economic analysis (e.g. expenditure and fishing incidence).

5. Comparison to previous study

In 2009 EY completed an economic study of recreational fishing in Victoria, with the approach used for this 2009 study (along with the base data) since having been replicated for other recreational fishing studies. Given the 2009 study results are now 'dated', VRFish commissioned EY to update this study. The table below compares the key outputs of the 2009 and 2015 study.

Table 5.1 – Comparison to previous study

Measure	2009 study*		2015 study	
	2014	2029	2014	2029
Economic contribution: Direct				
Output ($bn)	$2.4	$2.9	$2.6	$3.3
Gross State Product ($bn)	$1.5	$1.8	$1.6	$2.1
Employment	15,295	18,512	16,257	20,821
Economic contribution: Indirect				
Output ($bn)	$4.2	$5.1	$4.5	$5.8
Gross State Product ($bn)	$2.2	$2.6	$2.3	$3.0
Employment	16,662	20,167	17,710	22,682
Economic contribution: Total				
Output ($bn)	$6.6	$8.0	$7.1	$9.1
Gross State Product ($bn)	$3.7	$4.4	$3.9	$5.1
Employment	31,957	36,679	33,967	43,503
Net benefit				
Net benefit ($bn)	0.7	0.8	0.6	0.8
Net present value (20 year model period)	$8.0bn over 20 year model period		$8.0bn over 20 model period	
Benefit cost ratio	1.27	1.27	1.22	1.22
Other measures				
Number of adult fishers ('000)	771	933	838	1,073
Number of fishing trips: Adult fishers ('000)	9,289	11,243	6,110	7,825

**To allow for a meaningful comparison of results between the 2009 and 2015 study, results from the 2009 study have been updated to reflect current leading practice and recent improvements in the sophistication of I-O multipliers.*
Source: EY

While it is important to keep the approach consistent as far as possible (to enable us to commence to produce a time series of information that will start to demonstrate trends over time etc.), EY has made a number of refinements to the previous methodology. The methodology and detailed assumptions are presented in Appendix A, Appendix B and Appendix C.

Appendix A Methodology

The methodology applied in this study is summarised in Figure B1 and outlined below.

Figure B1: Methodology

Stage 1: Define scope and key measures

In Stage 1, the following were discussed and agreed:

- Scope – The scope of the economic analysis
- Key measures – Common indicators of an industry or economic size or value.

These are discussed below.

Scope of study

This economic study incorporates two key economic principles:

- Economic contribution to Victoria - This study provides an estimate of the economic contribution (not impact) of recreational fishing in Victoria. This is an economic accounting exercise that captures all of the market-related expenditure for a specified industry or activity. The numbers generated by economic contribution studies would typically include all expenditures generated by an industry/project ("in-scope expenditures"), and can be expressed as both output (turnover) and value add. (The 2009 study identified industry value add only). These are generally descriptive studies to measure the size and/or "importance" of an industry in terms of their output, value add and employment.
- Economic value or benefit to Victoria: Measuring economic value is a tool used to determine whether the existence or investment in an asset or program generates a net benefit to the community. The key principle involved in measuring the economic value of an asset is to convert the costs and benefits into dollar terms where possible. Any future decisions over whether the asset or program is desirable can then be informed by whether the project delivers benefits that are over and above its costs. Cost benefit studies have become increasingly popular in project evaluation as they give an indication of economic efficiency. Economic value differs from a financial value in that it is performed from the view point of society, whereas financial value looks at only the financial impacts (that is, whether the revenue generated exceeds the financial costs of the project). As such, non-market impacts are counted if they can be measured.

Scope exclusions

This study does not measure the economic impact of recreation fishing. It is important to distinguish economic contribution and economic benefit studies from economic impacts. Economic impact requires the consideration of a counter factual scenario (that is, what would people spend their money on in the absence of a recreational fishing sector?).

Key measures of economic contribution

Three common indicators of an industry or economic size or value are:

- Gross output – Market value of goods and services produced, often measured by turnover/revenue. Gross output is also referred to as 'gross economic contribution'
- Value added – Market value of goods and services produced, after deducting the cost of goods and services used

- Employment – Number of FTE jobs generated by an industry or attraction.

All three measures are valuable in their own right. Industry output is a measure of production, value add is a measure of wealth generation, and arguably, employment is a measure of the distribution of income.

In comparing an industry's size against others, it is generally accepted to discuss this in terms of its industry value add. Industry value add measures net of the costs of production (that is, inputs sourced from other sectors) from the industry's outputs. This avoids the inclusion of revenues to other industries and any associated double counting. In practice, industry value add largely comprises wages, salaries and the operating surplus of an industry (i.e. the industry's income). The Study looks at all three measures, but attention should be placed on industry value add measures when making comparisons to other industries. The value add measure is commonly put forward as the most appropriate measure of an industry's contribution to the national economy.

In addition to gross output, value add and employment, this study also estimates state-based taxation revenue generated by recreational fishing in Victoria.

Key measures of net benefit

Common indicators of economic benefits are:

- Net benefit - A net increase in total social welfare. Economic benefits include both market and nonmarket values

- Benefit cost ratio - Ratio of the financial and economic benefits generated an initiative (e.g. recreational fishing) relative to the financial and economic costs incurred, expressed in monetary terms. All benefits and costs should be expressed in discounted present values.

Stage 2: Industry definition

This study highlights the importance of the recreational fishing industry to Victoria. The Victorian recreational fishing industry is defined as fishing by Victorian residents for pleasure or competition.

The following activities are not included in the study:

- Recreation fishing by interstate and overseas fishers in Victoria

- Recreation fishing and/or expenditure by Victorians that occurs outside Victoria (e.g. some online purchases)

- Commercial fishing.

VRFish recognises the following regions (see Figure B2):

- Melbourne/Port Phillip Bay[24]

- South West[25]

- North East[26]

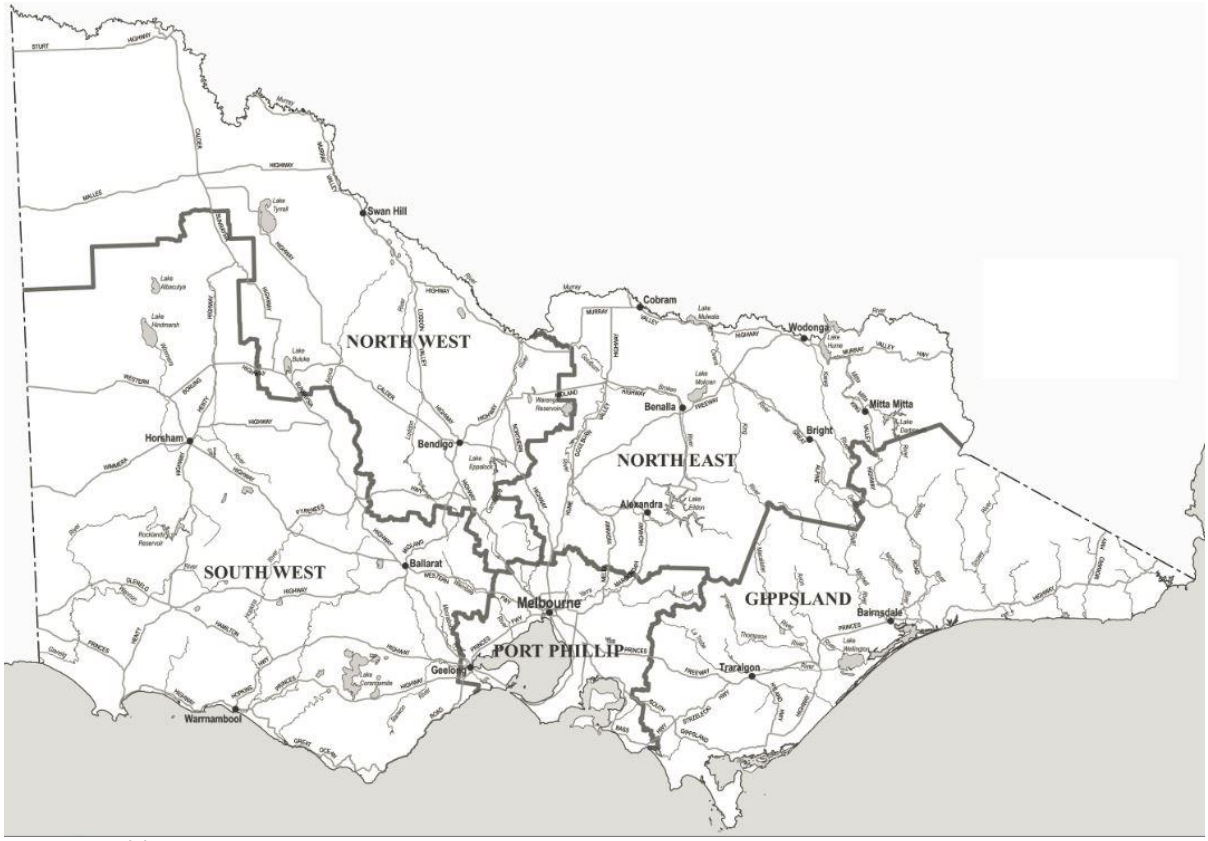
[24] Melbourne/Port Phillip Bay is made up of the following LGAs: Greater Geelong, Wyndham, Melton, Hume, Whittlesea, Nilliubik, Cardinia, Casey, Mornington Peninsular, Frankston, Greater Dandenong, Dandenong, Bayside, Glen Ira, Monash, Knox, Whitehorse, Maroondah, Manningham, Banule, Darebin, Moreland, Mooney Valley, Brimbank, Boroondara, Stonnington, Port Phillip, Yarra, Melbourne, Maribyrnong and Hobson's Bay

[25] South West region is made up of the following LGAs: Yarriambiack, Hindmarsh, West Wimmera,Horsham, Northern Grampians, Central Goldfields, Mount Alexander, Hepburn, Moorabool, Ballarat, Pyrenees, Glenelg, Southern Grampians, Ararat, Moyne Corangamite, Golden Plains, Colac-Otway, Surf Coast

[26] North East region is made up of the following LGAs: Mansfield, Murrindindi, Strathbogie, Greater Shepparton, Benalla, Wangaratta, Alpine, Towong, Indigo

- North West[27]
- Gippsland[28]

Figure B2: VRFish regions



Source: VRFish

Stage 3: Data gathering

This stage of the study involved collecting the data required to undertake the economic modelling. Data used in this study was obtained from the following:

- Desktop research, including relevant benchmark studies
- Market research
- Consultation

These are outlined below.

Desktop research

The desktop research captured existing available data on:

- Relevant benchmark studies, including the URS study comparing economic analysis methodologies applied in a sample of existing studies (see Appendix E)
- Wider benefits of recreational fishing, including health benefits
- Other supporting information (e.g. ABS's historical consumer price index and catch and bag limits imposed through Victorian fisheries regulations).

[27] North West region is made up of the following LGAs: Mildura, Swan Hill, Buloke, Gannawarra, Loddon, Greater Bendigo
[28] Gippsland region is made up of the following LGAs: East Gippsland, Wellington, La Trobe, South Gippsland, Baw Baw

Findings from the desktop research informed the market research (i.e. survey design (see below)) and economic analysis/modelling (Stage 4).

Market research

To gain a detailed understanding of the nature of recreational fishing in Victoria, we undertook detailed market research using an Internet based response approach (facilitated by EY Sweeney).

Survey design

The survey design was broadly consistent with the 2009 study, however minor refinements and enhancements were made. The survey included questions relating to:

- Demographics, including age, gender, pre-tax income, usual place of residence
- Activity profile of recreational fishers (for the previous 12 months), including number of fishing trips/days, type of fish targeted, quantity and type of fish caught, primary fishing location, motivations for recreational fishing and boat ownership
- The expenditure profile of recreational fishers (for the previous 12 months) measures, including average expenditure per trip (e.g. bait, food and accommodation, boat hire), annual average expenditure (e.g. fishing club fees, boat registration) and boat related expenditure (e.g. purchase price and maintenance)

The survey is presented in Appendix F.

Sample size and confidence interval

A total of 1,000 surveys were completed by the Victorian adult population, including 511 people who had gone recreational fishing in the previous 12 months (see Table B1). The sample size is large enough to provide an appropriate understanding of total population responses (incidence) in relation to the recreational fishing responses.

The number of surveys completed provides a statistically significant result which means that the outcomes can be transposed to the general Victorian population. The sample size gives a confidence level of ± 3.08% at the 95% confidence level. The estimated proportion based on this sample for individuals is p%. The 95% confidence interval for this estimate is p% ± 3.08%. This means that if this survey were completed 100 times, for 95 of these times the results would be within (p% + 3.08%, p% - 3.08%).

Table B1 – Survey response profile

	Males	Females	Total responses	Number of fishers
General population panel (applied to determine the rate of recreational fishing in Victoria)	291	308	599	110
Recreational fisher panel ('booster' sample of recreational fishers collected to increase the confidence level of data collected on fisher expenditure etc.	208	193	401	401
Total	499	501	1,000	511

**Totals may not equate exactly due to rounding*

Table B2 provides an overview of the demographic profile of the 1,000 survey respondents (i.e. includes fishers and non fishers. Note that the discussion in Section 4 focusses on fishers only).

Table B2 – Demographic characteristics of survey respondents (fishers and non-fishers)*

Fish Type	Number	%*
Gender		
Male	499	50%
Female	501	50%
Total	1,000	100%
Age		
18 to 24 years	45	5%
25 to 34 years	262	26%
35 to 44 years	188	19%
45 to 54 years	183	18%
55 to 64 years	178	18%
65 to 69 years	75	8%
70+ years	69	7%
Total	1,000	100%
Household income		
Rather not say	109	11%
Under $20,000	50	5%
$20,000 - $39,999	130	13%
$40,000 - $59,999	156	16%
$60,000 - $79,999	148	15%
$80,000 - $99,999	152	15%
$100,000 - $149,999	163	16%
$150,000 - $199,999	69	7%
$200,000 - $299,999	21	2%
$300,000+	2	0%
Total	1,000	100%
Primary place of residence		
Melbourne/Port Phillip	742	74%
Melbourne	31	3%
South West	74	7%
North West	42	4%
North East	53	5%
Gippsland	48	5%
Interstate	8	1%
Unknown/Not stated	2	0%
Total	1,000	100%

**Totals may not add due to rounding*

Consultation

EY consulted with, and received input from, the following:

- Dallas D'Silva (General Manager, Victorian Recreational Fishing Peak Body)
- Michelle Wenner (Senior Program and Partnership Manager, Victorian Recreational Fishing Peak Body)
- Ross McGowan (Executive Director, Fisheries Victoria

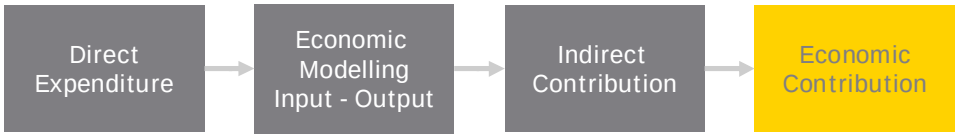
Stage 5: Economic modelling

In this stage, EY developed an economic model to analyse the data collected in Stage 3. The calculation and estimation methods applied in this study are outlined below.

Economic contribution

Economic contribution is a measure comprising all market-related expenditure generated by a specified industry or an activity. An illustration of the methodology used in this assessment to capture the economic contribution of the recreational fishing industry is presented in the figure below.

FigureB3: Economic contribution methodology



Direct expenditure represents the transaction levels within the Victorian economy (i.e. excluding expenditure that is not incurred in Victoria, such as some online purchases). The detailed direct expenditure assumptions applied in the economic modelling are presented in Appendix B.

This direct expenditure is placed in an input – output model to determine the flow on impacts that the expenditure on recreational fishing activities has on the broader Victorian economy. This process then allows for the calculation of the total economic contribution of recreational fishing on the Victorian economy.

To estimate the economic contribution of recreational fishing in Victoria to the Victorian economy, an input-output (I-O) methodology has been chosen as the appropriate method for calculating flow-on impacts of users on the economy (see Box B1).

Box B1: Input-output (I-O) methodology

To estimate the economic contribution of recreational fishing in Victoria to the Victorian economy, an input-output (I-O) methodology is applied to calculate flow-on impacts of users on the economy.

The operation of Victorian recreational fishing participants and the range of activities associated with these operations highlight the complex way the modern economy operates. It involves the use and hence provision of infrastructure, a variety of administrative and regulatory functions of government and a variety of services provided by operators that are supported by a vast array of specialist support services.

Impact studies of particular industries or user groups are normally best carried out through the construction of specific sectors to be included in the I-O table. This is because the sector specification used in the tables involves the aggregation of a number of related activities to make them manageable. Thus, the industry may not be appropriately represented by the aggregated sector as not all of the industries in a sector are homogeneous in terms of products produced, markets served, technologies used or source of inputs used.

The compilation of specific sectors that are superior to the sector in the I-O table is a considerable task and requires access to detailed information on the cost structure of the industries. Further, if the industry to be studied comprises a dominant part of the relevant sector in the input output table, then that sector will tend to reflect the characteristics of the dominant sector. For some sectors, there is likely to be little variation in its characteristics from region to region, such as the retail sector. For this study, the recreational fishing industry has been constructed from the following industry segments:

- Fishing, hunting and trapping
- Accommodation and food services
- Transport equipment and parts manufacturing
- Transport
- Retail trade
- Public administration.

The multipliers used for this study have been developed by EY and are derived from EY's general equilibrium model, based on the relative significant (i.e. expenditure split) of the above industry segments. The table below presents the direct value added and employment, and indirect output, value added and employment generated by every $1 million of direct output generated by recreational fishing.

Recreational fishing industry multipliers

	Direct Effect	Industrial Effect	Consumption Effect	Total Effect	Type 1 Multiplier	Type 2 Multiplier
Output ($m)	1.00	0.77	0.99	2.77	1.77	2.77
Employment (FTE)	6.35	2.71	4.21	13.27	1.49	2.21

Wages and Salaries ($m)	0.36	0.20	0.30	0.86	1.65	2.62
Value-add ($m)	0.63	0.36	0.54	1.54	1.59	2.46

Given that the multipliers are derived from a general equilibrium model, the outcomes should not be overstated and will be more defensible than standard I-O multipliers. The I-O multipliers are developed with price and labour constraints inbuilt and provide a more realistic output when calculating economic contribution.

As in the case of the net benefits study, the economic contribution analysis has been undertaken for two periods of time:

- For a single point in time, being 2013/14;
- Over a 20 year evaluation from 2013/14 to 2032/33.

Net benefit

The net benefit analysis undertaken in this study captures the net benefits to recreational fishers and does not directly consider the effect on Government or the wider Victorian community. The net benefit assessment includes the market and non-market costs and benefits presented in Table B1. The detailed assumptions relating to each element are presented in Appendix C.

Table B1: In-scope costs and benefits

Costs	• Per trip expenditure (e.g. bait and accommodation) • Annual/other expenditure items (e.g. licence fees, registration and clothing) • Boat ownership related expenditure
Benefits	• The market value of any fish captured and released – even though recreational anglers do not typically sell their catch there is an opportunity cost/benefit associated with the market value of fish caught • The willingness of anglers to pay for a day of fishing, less the market value of fish caught
Not quantified	• *Environmental costs (e.g., pollution, destruction of marine habitats)* • *Other social benefits (e.g. mental and physical health benefits).*

Stage 5: Finalisation

In this stage, EY distributed the draft economic modelling outputs to, and received feedback from, a selection of senior industry representatives. Feedback was received from the stakeholders outlined below.

- Dallas D'Silva (General Manager, Victorian Recreational Fishing Peak Body)
- Michelle Wenner (Senior Program and Partnership Manager, Victorian Recreational Fishing Peak Body)
- Ross McGowan (Executive Director, Fisheries Victoria).

Appendix B Direct economic contribution assumptions

This appendix presents the detailed assumptions and estimate methodology that is used to generate the direct economic contribution. This section presents to detailed assumptions used to generate the following:

- Fishing incidence (i.e. the number of Victorian residents who have gone fishing in Victoria in the last 12 months) and number of trips
- Expenditure per adult fisher (excluding boat purchase and maintenance), including an estimate of the expenditure incurred in Victoria (i.e. accounting for online purchases)
- Boat ownership and purchase price.

Fishing incidence and number of trips

To determine the total participation of the Victorian population, the following information was sourced:

- Victorian adult population - The size (current and forecast) of the Victorian adult population (from Victoria In Future 2014)
- Fishing incidence (adults) - The proportion of the Victorian adult population that has gone recreational fishing in the last 12 months (from the Victorian Recreational Fishing Survey 2014)
- Number of fishing trips - The average number of trips survey respondents undertook for purposes of recreationally fishing per annum (from the Victorian Recreational Fishing Survey 2014).

These are discussed below.

Victorian adult population

The Victorian adult population is estimated to be 4.6 million, in 2014 (increasing to 6.2 million in 2033). This is based on the following information extracted from Victoria In Future 2014:

- The Estimated Resident Population (ERP) of Victoria - In 2014, the ERP of Victoria was 5.8 million people, with the ERP expected to increase to 7.9 million people by 2041
- Age profile – In 2014, 78% of the ERP are adults (i.e. 18 years old or older).

Fishing incidence

- An estimated 838,119 adults Victorian residents participating in recreational fishing across Victoria in 2013/14.

The assumptions supporting these numbers are presented below.

- Based on the results of the Victorian Recreational Fishing Survey 2014, 18% of respondents (i.e. adults only) had recreationally fished within the last 12 months in Victoria. As noted in Appendix B, the sample size for this survey is considered statistically significant and, as such, the outcomes of the survey can be applied to the population of Victoria to determine total levels of participation.
- Based on the estimated Victorian adult population and fishing incidence outlined above, EY estimates that there were 838,119 adult fishers in Victoria in 2014, increasing to 1,134,808 by 2033.
- EY estimates that adult fishers made 6.1 million fishing trips in Victoria, in 2013/14 (increasing to 8.3 million trips in 2032/33). The above estimates are based on the results of the Victorian Recreational Fishing Survey 2014, which indicate that the average fisher embarks on 7.3 fishing trips per year.

Direct recreational fishing expenditure and contribution

The expenditure estimates applied in the economic modelling are based on the results from the Victorian Recreational Fishing Survey 2014. The Victorian Recreational Fishing Survey 2014 defined three broad categorised of expenditure:

- Per trip – Expenditure items that are typically incurred every trip (e.g. bait, food, accommodation and transport related costs)
- Annual – Expenditure items that are typically used for a longer period of time (i.e. multiple trips) (e.g. clothing, licensing costs and camping gear). Average annual expenditure on these items are converted to a per trip estimates (based on the average fisher embarking on 7.3 fishing trips per year)
- Boat purchase – Expenditure of boats that are either exclusively or partially used for fishing. For multi-purpose boats, only a portion of the expenditure is captured.

Average expenditure per trip (excluding boat purchase)

Based on the results of the Victorian Recreational Fishing Survey 2014, the average adult fisher spends $326 per fishing trip. Of this, $284 (i.e. 87%) is incurred in Victoria (see Table C1). For the economic contribution assessment, only expenditure that is incurred in Victoria is modelled (i.e. expenditure incurred interstate/overseas is not modelled, such as some online purchases)[29]. Conversely, the net benefit assessment includes all expenditure, including expenditure that does not enter the Victorian economy.

Table C1: Average expenditure per fisher per trip, by expenditure type and primary purchase location

	Primary purchase location		Total expenditure per trip (average)
	Victoria	Other	
Tackle and equipment	$22.90	$5.36	$28.26
Bait	$16.71	$3.81	$20.52
Food & accommodation	$74.90	$7.30	$82.20
Boat hire	$25.02	$3.97	$28.99
Fuel for boat	$27.36	$5.25	$32.61
Transport to & from fishing venue	$42.65	$4.81	$47.46
Clothing for fishing	$6.16	$0.72	$6.88
Fishing club fees	$5.24	$1.42	$6.66
Licensing costs	$6.03	$1.60	$7.63
Boating registration	$9.83	$0.97	$10.80
Boat maintenance	$19.24	$2.13	$21.37
Camping gear	$9.59	$0.99	$10.58
Other	$18.18	$4.29	$22.47
Total	$283.81	$42.62	$326.43

Source: EYSweeney

Boat ownership and purchase price

Based on the results of the Victorian Recreational Fishing Survey 2014, the average adult fisher owns 0.5 boats (purchased in Victoria) that are used for recreational fishing purposes (i.e. one in every two adult fishers owns a boat that is either exclusively or partially used for recreational fishing. Note that some fishers own more than 1 boat). Based on the total number of adult fishers, the estimated total

[29] For both traditional retail and online fishing related purchases, survey respondents were asked to identify their primary location of fishing related purchases (i.e. withing my region, rest of state, interstate or overseas)

number of boats owned by Victorian fishers that are used for recreational fishing purposes is 433,000 boats, in 2013/14. These boats are either:

- Primarily used for recreational fishing – 62% of all boats that are used for recreational fishing are primarily used for recreational fishing, compared to other uses such as water sports and general usage. Given the primary purpose of these boats are for recreational fishing, all (i.e. 100%) of the purchase price is captured in this study.

- General use boats, including some recreational fishing related usage - The remaining 38% of all boats that are used for recreational fishing are general use boats. Based on the results of the Victorian Recreational Fishing Survey 2014, these boats are used for recreational fishing 54% of the time

Based on the above, the average boat is used for recreational fishing 82% of the time (i.e. (62% x 100%) + (38% x 54%)).

Based on the results of the Victorian Recreational Fishing Survey 2014, the average purchase price of recreational fishing boats (including general use boats) is $18,346. Given the average boat is used for recreational fishing 82% of the time, the average boat purchase price attributable to the recreational fishing industry is $15,106 over the life of the boat (i.e. $18,346 x 82%) or $2021 per annum (i.e. amortised based on an average boat life of 7.5 years as indicated in the Victorian Recreational Fishing Survey 2014).

Appendix C Net benefit assumptions

As noted in Appendix B, the net benefit analysis undertaken in this study captures the net benefits to recreational fishers. The net benefit assessment includes the following market and non-market costs and benefits:

- Benefits – The benefits captured in this study are:
    - Market value of any fish captured and released
    - The willingness of anglers to pay for a day of fishing, less the market value of fish caught
- Costs - The costs captured in this study relate to the financial costs incurred by fishers to participate in recreational fishing. Broader community costs, such as the potential for pollution and the destruction of marine habits, are not captured.

Benefits

The benefits captured in this study are:

- Market value of any fish captured and released
- The willingness of anglers to pay for a day of fishing, less the market value of fish caught

These are presented below.

Market value of fish caught

The market value of the fish caught by recreational fishers provides a quantifiable and measurable means of valuing the benefits of recreational fishing to the participant. For example, the catching of a fish for consumption means that the individual does not have to purchase that fish. Even if the fisher is practicing catch and release, the value of that catch remains quantifiable. The value of the catch remains quantifiable because it is the intrinsic market value of the catch and represents a component of the consumer surplus that the fisher gains from participating in recreation fishing.

The market value of the catch to recreational fishers in Victoria is captured using two pieces of information:

- Average catch per trip information (from the Victorian Recreational Fishing Survey 2014)
- Market price and average weight of fish caught (from publicly available information).

The average catch information, fish weights and wholesale fish prices are presented in the table below. The results are produced across an average of participants, fishing type and fish type.

Table D1: Average catch per fisher, fish weights and prices

Fish Type	Average catch per trip per fisher	Average price per kg ($)	Average fish size (kg)	Average price per fish ($2015)
Inland	0.5			
Trout	0.6	$7.88	1.0	$7.88
Redfin	0.4	$8.00	1.5	$12.00
Murray cod	0.5	$23.38	5.0	$116.92
Yellow belly	0.7	$7.38	2.5	$18.46
Other		$11.66	2.5	$38.8
Estuarine	0.3			
Bream	0.2	$8.00	1.3	$10.00
Mullet	0.2	$3.69	0.5	$1.85
Mulloway	0.2	$5.54	1.5	$8.31
Estuary Perch	0.2	$13.54	0.8	$10.83
Other		$7.69	1.0	$7.7
Marine	0.8			
Flathead	0.5	$3.45	2.5	$8.62
Whiting	0.4	$13.54	0.5	$6.77
Snapper	0.4	$8.00	4.0	$32.00
Calamari (squid)	0.4	$5.54	0.5	$2.77
Rock lobster	0.7	$32.00	0.5	$16.00
Abalone	0.2	$18.46	0.2	$3.69
Gummy shark	0.3	$11.69	5.0	$58.46
Tuna	0.2	$10.46	14.0	$146.46
King Fish	0.7	$15.38	1.60	$22.53
Other	0.5	$13.17	3.2	$33.0

Source: Victorian Recreational Fishing Survey 2014 and various third party websites

Willingness to pay (consumer surplus)

In addition to capturing the market value of recreational fishing, an assessment of the non market values that fishers place on the opportunity to fish was undertaken. Non market benefits attempt to identify external benefits that arise from undertaking an activity which are not actually captured through the pricing mechanism. Non market benefit valuation attempts to capture the user's consumer surplus.

Consumer surplus measures the additional value that is derived from undertaking fishing activities, over and above what has to be paid for that fishing activity. It is the difference between what users are willing to pay to undertake an activity and what they are actually required to pay.

No new research on willingness to pay for recreational fishing activities has been undertaken for this study, rather a benefit transfer[30] approach is adopted. The table below presents the existing studies that informed the consumer surplus estimate applied in this study. Based on the analysis of previous

[30] A benefit transfer approach is used to estimate economic values by transferring available information from studies already completed in another location and/or context. For example, values for recreational fishing in a particular state may be estimated by applying measures of recreational fishing values from a study conducted in another state. The basic goal of benefit transfer is to estimate benefits for one context by adapting an estimate of benefits from some other context. Benefit transfer is often used when it is too expensive and/or there is too little time available to conduct an original valuation study, yet some measure of benefits is needed. It is important to note that benefit transfers can only be as accurate as the initial study. For these reasons it is necessary to be aware of the limitations of the benefit transfer approach including the potential for margins of error in valuation and around the suitability of benefits captured in one location to a separate location.

studies, this study applies a consumer surplus per trip of $444 per trip (in 2015 dollars), which represents the average value of the Australian based studies.

Table D2: Range of benefit values per trip to recreational fishers

Study	Valuation method	Value per trip ($)	
		Reported value	Inflated to 2015 dollars
Estimating values for recreational fishing at freshwater dams in Queensland, John Rolfe and Prabha Prayaga (2005)	Contingent valuation	$220	$287
Estimating values for recreational fishing at freshwater dams in Queensland, John Rolfe and Prabha Prayaga (2005)		$359	$469
Estimating values for recreational fishing at freshwater dams in Queensland, John Rolfe and Prabha Prayaga (2005)		$440	$575
The economic value of marine recreational fishing, Haab, Hicks and Whitehead (2006)	Willingness to pay	$235	$315
The economic value of marine recreational fishing, Haab, Hicks and Whitehead (2006)		$355	$475
The economic value of marine recreational fishing, Haab and Jeong (2004)		$193	$258
The economic value of marine recreational fishing, Haab and Jeong (2004)		$383	$513

Source: Various

The non market benefits calculated through the consumer surplus approach include the market value of fish caught. As such, the market value of fish caught is subtracted from the willingness to pay estimates to avoid double counting.

Costs

The expenditure estimates applied in the economic modelling are based on the results from the Victorian Recreational Fishing Survey 2014. Appendix B presents the expenditure estimates applied in the economic modelling. In contrast to the economic contribution assessment, all expenditure (including expenditure not incurred in Victoria) is applied to the net benefit modelled.

Appendix D Frequency of use of wharves, jetties and slipways, by location

	Port of Port Fairy	Port of Warrnam-bool	Port of Port Campbell	Port of Apollo Bay	Port of Lorne	Port of Barwon Heads	Port of Port Phillip Bay, including Queenscliff	Port of Western Port	Port of Anderson Inlet	Port of Corner Inlet and Port Albert	Port of Gippsland Lakes	Port of Snowy River	Port of Mallacoota	Proposed Port of Portland
Wharves														
More than once a week	1.6%	1.2%	0.8%	1.6%	1.2%	1.0%	0.8%	0.4%	0.2%	0.2%	0.6%	0.2%	0.0%	0.4%
Weekly	0.4%	0.8%	0.6%	1.2%	0.6%	0.6%	1.8%	0.6%	0.8%	0.2%	0.8%	0.6%	0.4%	0.2%
Every 2 weeks	0.6%	0.8%	0.4%	1.0%	0.8%	0.4%	1.6%	1.2%	0.0%	0.0%	0.2%	0.0%	0.2%	0.0%
Monthly	1.0%	1.4%	0.8%	1.0%	1.2%	1.4%	4.1%	1.4%	0.4%	0.2%	1.6%	0.2%	0.2%	0.4%
Every 2 months	0.6%	0.8%	0.6%	1.8%	0.8%	0.4%	3.5%	1.4%	0.6%	0.4%	1.6%	0.0%	0.2%	0.0%
Every 4 months	1.0%	1.4%	0.2%	0.4%	0.6%	1.0%	4.5%	1.4%	0.4%	0.4%	2.5%	0.6%	0.4%	0.0%
Every 6 months	0.4%	1.0%	0.2%	0.6%	1.4%	0.6%	2.9%	1.8%	0.4%	0.8%	2.9%	0.2%	0.4%	0.6%
About once a year	2.0%	2.0%	0.4%	1.2%	1.8%	2.2%	5.5%	2.3%	0.2%	1.2%	4.7%	0.2%	2.2%	1.2%
Do not use	92.6%	90.8%	96.1%	91.4%	91.8%	92.6%	75.3%	89.6%	97.1%	96.7%	85.1%	98.0%	96.1%	97.3%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Jetties														
More than once a week	1.4%	1.2%	0.8%	1.4%	1.0%	0.6%	0.8%	0.4%	0.2%	0.0%	0.6%	0.0%	0.2%	0.4%
Weekly	0.6%	1.0%	0.6%	1.0%	0.2%	0.6%	1.4%	1.2%	0.4%	0.4%	0.4%	0.2%	0.4%	0.2%
Every 2 weeks	0.8%	0.8%	0.4%	1.6%	1.2%	0.8%	1.2%	0.6%	0.2%	0.4%	0.6%	0.2%	0.2%	0.4%
Monthly	0.6%	2.0%	0.8%	1.0%	1.4%	0.8%	3.3%	1.6%	0.4%	0.2%	1.4%	0.4%	0.2%	0.0%
Every 2 months	0.8%	0.6%	0.8%	1.6%	0.2%	1.2%	3.9%	1.4%	0.2%	0.4%	2.5%	0.2%	0.0%	0.0%
Every 4 months	0.6%	0.2%	0.0%	0.2%	1.0%	0.6%	4.7%	0.8%	0.4%	0.6%	1.6%	0.2%	0.2%	0.2%
Every 6 months	1.0%	0.8%	0.2%	1.2%	1.6%	0.8%	3.5%	1.0%	0.4%	0.6%	2.5%	0.2%	0.8%	0.8%
About once a year	1.6%	2.3%	0.4%	1.2%	1.2%	2.3%	5.9%	2.3%	0.8%	0.8%	5.5%	0.6%	2.0%	1.0%
Do not use	92.8%	91.2%	96.1%	91.0%	92.4%	92.4%	75.3%	90.8%	97.1%	96.7%	84.9%	98.0%	96.1%	97.1%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

	Port of Port Fairy	Port of Warrnam-bool	Port of Port Campbell	Port of Apollo Bay	Port of Lorne	Port of Barwon Heads	Port of Port Phillip Bay, including Queenscliff	Port of Western Port	Port of Anderson Inlet	Port of Corner Inlet and Port Albert	Port of Gippsland Lakes	Port of Snowy River	Port of Mallacoota	Proposed Port of Portland
Slipway														
More than once a week	0.6%	0.6%	0.6%	0.6%	0.8%	0.4%	0.4%	0.4%	0.4%	0.2%	1.0%	0.2%	0.2%	0.4%
Weekly	0.6%	0.4%	0.2%	1.0%	0.2%	0.2%	1.6%	0.6%	0.4%	0.4%	0.6%	0.2%	0.6%	0.0%
Every 2 weeks	0.6%	0.8%	0.6%	0.8%	0.4%	0.4%	1.0%	0.8%	0.0%	0.0%	0.4%	0.4%	0.0%	0.0%
Monthly	0.8%	1.6%	0.6%	1.4%	1.8%	1.0%	3.9%	0.6%	0.2%	0.2%	1.6%	0.2%	0.2%	0.2%
Every 2 months	0.8%	0.6%	1.0%	1.0%	0.4%	0.6%	2.5%	1.0%	0.6%	0.2%	1.4%	0.4%	0.0%	0.4%
Every 4 months	0.6%	0.6%	0.2%	1.4%	0.6%	0.6%	3.3%	0.8%	0.4%	0.4%	0.6%	0.2%	0.2%	0.4%
Every 6 months	0.4%	1.0%	0.4%	0.4%	0.2%	0.6%	2.3%	1.2%	0.2%	0.2%	1.4%	0.4%	0.4%	0.2%
About once a year	1.0%	0.8%	0.0%	0.6%	1.2%	1.2%	2.2%	0.8%	0.2%	0.4%	2.7%	0.0%	0.8%	0.6%
Do not use	94.7%	93.7%	96.5%	93.0%	94.5%	95.1%	82.8%	93.9%	97.7%	98.0%	90.4%	98.0%	97.7%	97.8%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Appendix E Literature review

Report	Methodology	Key findings	Relevance to this study
Economic impact/contribution: Victoria			
National Institute of Economic and Industry Research, 'The Economic Significance of Recreational Fishing in Victoria', June 1997	• 790 field surveys of persons fishing, conducted through on-site interviews of fishers from mid-January 1997 to the end of April 1997 • Expenditure data allocated by their relationship to the given activity of fishing[31] • Total economic value determined using an input-output methodology.	• Estimated contribution of the recreational fishing industry to Victoria's GSP in 1996 was $1,265 million, and created approximately 27,000 jobs • Total value of expenditure on recreational fishing in Victoria in 2007 was estimated at $1,037.1 million • 2007 current expenditure was valued at $277.5 million • 2007 expenditures on annual and capital items were estimated to total $759.5 million	• Approach consistent with EY approach
EY, 'Economic Study of Recreational Fishing in Victoria', November 2009	• Sample size of 1,000 web-based surveys (500 general population responses and 500 fishers responses) • To verify the expenditure levels determined through the survey, the survey was compared to responses provided by 207 members of VRFish • Total economic value determined using an input-output methodology.	• Average expenditure per trip per fisher is estimated to be $250 inclusive of variable costs (such as accommodation, bait, fuel etc.) and fixed costs (such as equipment and capital) • Total direct expenditure was valued at $2.3 billion in 2008-09 • The industry produced an estimated total Gross State Product (GSP) of $825 million in 2008-09 • The recreational fishing industry contributed 5,200 jobs in Victoria in 2008-09 (including flow on jobs)	• Approach consistent with EY approach of the current study
EY, 'Economic Study of Recreational Fishing in Victoria: Murray Cod Assessment', February 2010	• Consistent with approach applied in EY's 2009 study (see above)		
EY, 'Economic contribution of recreational fishing in the Murray Darling Basin', August 2011	• Consistent with approach applied in EY's 2009 study (see above)		
Department of Primary Industries (now DEPI), 'Goulburn River Trout Fishery: Estimates of Catch, Effort, Angler-Satisfaction and Expenditure', July 2007	338 people interviewed for the 2003/04 fishing season. Data from questions on angler expenditure were summed and a mean and variance calculated for all interviews in each level of stratification. Total expenditure for each stratum was estimated by multiplying the mean expenditure by weighting factors. Estimates of the number of accommodation nights away from home were also made by calculating the average for each stratum and multiplying by the appropriate weighting factor.	The individual expenditure varied widely (from $0 to $2,660), resulting in total expenditure of anglers fishing of $418,320 (+/- $496), or an average of $1,390 per person.	• Approach consistent with EY approach
Ezzy, E and Scarborough, H	• Travel cost study was undertaken to estimate the recreational use	The on-site recreational use value (consumer surplus) per person per	• Approach consistent

[31] All purchases of fishing equipment and related clothing, bait and tackle were allocated 100% to fishing expenditure. Expenditure which were made by persons fishing but not incurred solely for fishing, such as travel costs, boat fuel, food and drink, were allocated to fishing at a rate of 50%

(Deakin University), 'Estimation of the recreational use value gained from recreational fishing of Southern Bluefin tuna at Portland', February 2011	value of the fishery • 257 surveys were completed, with 200 of these used in the travel cost analysis (included average car costs, boat fuel costs, gear costs and opportunity cost of time). Data collected during four randomly selected weeks (23 survey days) between April and June 2010 • An estimate of the total economic value was not included in this study (i.e. direct expenditure only)	visit is estimated to be between $33 and $132 and the on-site annual recreational use value of the fishery for this one season is estimated to be between $449,533 and $1,325,124.	with EY approach (non-market value based on benefit transfer approach)
Deloitte Access Economics, 'Assessing the Economic Value of the 2012 Victorian Recreational Southern Bluefin Tuna Fishery in Portland', May 2013	• Travel cost approach, supplemented by contingent valuation (for non-market value), used to assess the direct value of the recreational SBT fishery in Portland • 497 surveys, delivered through face-to-face interviews, collected from recreational anglers (330 surveys) and anglers on charter boats (167 surveys) • Interviews were conducted in four blocks of five days across May and the first half of June 2012	• The total observed expenditure associated with the 2012 SBT season in Portland is on average $381 per angler fishing day. However, total willingness to pay, consisting of the travel cost expenditure and additional stated willingness to pay, adds to a total value per angler fishing day of about $454. This represents the average valuation of the experience per angler fishing day, of which $73 represents surplus value • Industry value of the 2012 recreational SBT fishery in Portland of between $5.64 million and $7.58 million. After accounting for the anglers' additional willingness to pay, the industry estimate could increase to between $6.72 million and $9.03 million in 2012.	• Approach consistent with EY approach
Economic impact/contribution: Other Australian jurisdiction			
Department of Agriculture, Fisheries and Forestry, 'National recreational and indigenous fishing survey: Economic Report', 2005	• General population screening survey[32]: Telephone survey of 9,055 Victorian households (44,000 surveys across Australia) • Diary survey[33]: All respondents with an intention to go recreational fishing in the 12 months following the screening interview were invited to participate in the diary survey. The diary survey was conducted between May 2000 and April 2001 • Attitudinal survey: An attitudinal telephone survey was conducted with diarists at the completion of the diary survey, in May/ June 2001 • An estimate of the total economic value was not included in this study	The results indicated that from May 2000 to April 2001 Victoria: • Had the second highest total expenditure on recreational fishing in Australia ($396 million) • Realised the highest level of per fisher expenditure on travel of any state or territory ($177) • Had an average expenditure of $721 per fisher, the highest of any state or territory in Australia • Had 549,803 fishers, accounting for 16% of fishing participants in Australia, whilst having 25% of Australia's population.	• Survey: Approach consistent with EY approach • Fishing diary: Outside EY's agreed scope of work. Recall bias to be addressed by applying an adjustment factor to survey results (based on existing studies)
URS, 'Final Report: Review of techniques for the valuation of recreational fishing', 2011	This study examines a range of techniques used to estimate the value of recreational fishing, including: Revealed preference techniques • Travel Cost Method uses actual direct and indirect expenditure including transport to the activity site, access fees, equipment and the opportunity cost of time as a guide to the value of the activity. Expenditure data is collected through surveys of a sample of visitors. • Random Utility Modelling is commonly used as an extension to the Travel Cost Method. Travel costs and site attribute data are collected	• The most important determinant of the right valuation technique to use is the reason why a value of recreational fishing is being sought. • Revealed preference methods such as the Travel Cost Method and Random Utility Modelling are the most cost effective and have the lowest potential for respondent bias, however, as they are based on expenditure data they do not capture consumer surplus or non-use value. • Stated preference methods such as Contingent Valuation and Choice Modelling are best for capturing the total use and non-use	• Report findings reflected in the net benefit assessment, particularly in relation to stated preference (see Appendix D). To mitigate the risk of response bias from poorly constructed studies, EY applied the

[32] Data quality issues were addressed through a series of calibration surveys designed to provide adjustments for non-response and to assess the extent of behavioural change (unexpected fishing) during the diary period. Australian Bureau of Statistics (ABS) resident population information was used to benchmark survey data for coverage and representation and to provide the basis for expansion of data to 'population' estimates

[33] On-site (creel) surveys were also conducted in each State and Territory to assess fish identification skills of recreational fishers, determine the size distribution of common species and provide independent verification of certain recreational fishing activities

	through surveys for a number of substitute sites, mathematical relationships are then developed to capture the considerations of a respondent for a range of alternative sites as single decision events. This method enables the estimation of the probability that a respondent will visit a particular site and the value they will derive based on the site's attributes. Stated preference techniques • Contingent Valuation requires a survey asking respondents a series of questions with the intention of creating a 'hypothetical' market for a non-priced good or service in their mind. Respondents express their willingness to pay for, or accept compensation for, a change in the good or service being valued. • Choice Modelling uses a survey presenting a number of 'choice sets' associated with changes to the good or service being valued. Random Utility Modelling is used to analyse the responses to the choice sets with the aim being to assign a value to the individual attributes of the good or service.	value to recreational fishers, however, they have the potential for respondent bias so it is important to minimise this through survey and questionnaire design. • If all that is required is the value that recreational fishers derive from the use of a particular site to inform management, the Travel Cost Method may be most appropriate. Random Utility Modelling can be introduced if assessing multiple sites. • If a change in value arising from a change in the overall state of the site is sought, i.e. marginal value, Contingent Valuation may be most appropriate. • If the valuation is sought in order to evaluate the effects of a variety of potential changes to the site that may affect individual attributes differently, Choice Modelling will be most effective. An example of when this may be appropriate is the assessment of a variety of proposed policy changes.	average of three relevant studies. (see Appendix D).
Fisheries Research and Development Corporation, 'Part 2: Final Submission: A coordinated and participatory solution to the rezoning of the Moreton Bay Marine Park', 2007	• Expenditure estimates from the *National recreational and Indigenous fishing survey: Economic Report (2005)* were used, with assumptions being made about the proportion of expenditure that could be attributed to fishing within the Moreton Bay Marine Park.	An estimated $48 million of recreational fishing expenditure can be attributed to areas proposed as green zones by the Queensland Environmental Protection Agency compared to an estimate of approximately $6 million of recreational fishing expenditure attributable to the areas proposed as green zones by the Moreton Bay Access Alliance.	• Approach consistent with EY approach
Various other studies that estimate the benefit values per recreational fishing trip	• See Appendix D for commentary and references		
Other benefits			
McManus, A; Hunt, W; Storey, J, and White, J (Curtin University), 'Identifying the health and well-being benefits of recreational fishing', December 2011	• Literature review: A search of 156,776 references identified 705 references relating to 'health and well-being' and 147 references relating to 'recreational fishing' (3 of the references focussed on the health and well-being benefits of recreational fishing). • Consultation: 48 organisations and contacts • Pilot survey: Survey provided to a random sample of 40 participants (29 valid surveys completed)	• There is little published research looking at the link between recreational fishing and health and well-being, both within Australia and internationally • Emergent areas of health benefit identified in: mental health, recreation for the disabled, outdoor recreation for youth, antisocial behaviour deterrents, outdoor recreation for seniors and intergenerational transfer of knowledge and skills.	See Chapter 3.2
Various other studies investigating the health benefits of recreational fishing and exposure to the natural environment.	• See Chapter 3.2 for commentary and references		

Appendix F Victorian Recreational Fishing Survey 2014

EY Sweeney

INTRODUCTION

The purpose of this survey is to collect data to establish the nature and scale of recreational fishing in Victoria, and the contribution it makes to Victoria's economy. For the purpose of this study, we define recreational fishing as any fishing which is not undertaken for commercial purposes.

Thank you for your time, this survey will take less than 10 minutes to complete.

How To Complete The Survey...

Use your mouse to "Click" the relevant circles or boxes to mark your selection with a black dot or a cross. Some questions require you to type in your answers.

You may close the survey down and re-enter at the point you left off using the link emailed to you.
Once you have completed all questions on a page you will need to click the "Next" Button to proceed to the next screen.
In order for your answers to be sent you must click the "Submit" button at the end of the survey.

We hope you enjoy the survey!

Please press **NEXT** to continue

SECTION 1. SCREENING/DEMOGRAPHICS

PROGRAMMER: DO NOT TERMINATE RESPONDENTS UNLESS SPECIFIED

Q1.	What is your gender…? **SINGLE RESPONSE**	Male	O1
		Female	O2

Q1a.	Do you or anyone of your family work in the market research industry?	Yes	**Terminate**	O1
		No	**Continue**	O2

Q2.	Which of the following age groups do you fit into? **(PLEASE CLICK ONE RESPONSE ONLY)**	Under 18 years **(Terminate)**	O 01
		18 to 24 years	O 02
		25 to 34 years	O 03
		35 to 44 years	O 04
		45 to 54 years	O 05
		55 to 64 years	O 06
		65 to 69 years	O 07
		70+ years	O 08

Q3.	Which of these household income groups do you fall into? Household income is the total income earned by all household occupants (before tax).	Under $20,000	O01
		$20,000 - $39,999	O02
		$40,000 - $59,999	O03
		$60,000 - $79,999	O04
		$80,000 - $99,999	O05
		$100,000 - $149,999	O06
		$150,000 - $199,999	O07
		$200,000 - $299,999	O08
		$300,000+	O09
		Rather not say	O10

Q4. What is your household disposable income as a percentage of your total household income? Household disposable income is what is left after all required household expenditure including food, rent/mortgage, transport costs and other necessary purchases. (Your best guess is all we are after)	0 - 10% O01 11 – 20% O02 21 – 30% O03 31 – 40% O04 41 – 50% O05 51 – 60% O06 61 – 70% O07 71 – 80% O08 81 – 90% O09 91 – 100% O10 Rather not say O11 Don't know O12

Q5. What is your residential postcode?	Record postcode

SECTION 2. BOAT OWNERSHIP AND DETAILS

Thank you. Welcome to the main survey.

Q6. Do you own a boat which you use for recreational fishing purposes?	Yes O1 No **[GO TO Q12]** O2

ASK IF Q6=1 (YES – OWN A BOAT FOR RECREATIONAL FISHING)

Q6a. For each of the following types of boats, please type in the number you currently own that you use for recreational fishing (in each box). If you do not own a particular boat type, please type in '0'. **(ALLOW RESPONDENT TO ENTER UP TO A MAXIMUM OF 5 PER BOAT TYPE)**	Motor boat Yacht Other boat type

FOR Q7 TO Q11 – PIPE THROUGH ALL THE BOATS SELECTED AT Q7

Q7. Please provide details of each of the following aspects for all the boats that you currently own.

PIPE THROUGH TOTAL NUMBER OF BOATS INDICATED AT Q6A AND NAME AS E.G. MOTOR BOAT 1, MOTOR BOAT 2 AND YACHT 1 ETC.

Details	**UP TO 15 BOATS**							
Size								
Less than 4.0m	○ 1	○ 1	○ 1	○ 1	○ 1	○ 1	○ 1	○ 1
4.0 – 5.9m	○ 2	○ 2	○ 2	○ 2	○ 2	○ 2	○ 2	○ 2
6.0m – 7.9m	○ 3	○ 3	○ 3	○ 3	○ 3	○ 3	○ 3	○ 3
8.0m – 9.9m	○ 4	○ 4	○ 4	○ 4	○ 4	○ 4	○ 4	○ 4
10m+	○ 5	○ 5	○ 5	○ 5	○ 5	○ 5	○ 5	○ 5
Don't know/unsure	○ 6	○ 6	○ 6	○ 6	○ 6	○ 6	○ 6	○ 6
Bought in Victoria								
Yes	○ 7	○ 7	○ 7	○ 7	○ 7	○ 7	○ 7	○ 7
No	○ 8	○ 8	○ 8	○ 8	○ 8	○ 8	○ 8	○ 8

Q7a. Please provide the cost (incl. modifications) for each boat type. Your best guess is all we are after.

PIPE THROUGH TOTAL NUMBER OF BOATS INDICATED AT Q6A AND NAME AS E.G. MOTOR BOAT 1, MOTOR BOAT 2 AND YACHT 1 ETC.

Details	**UP TO 15 BOATS**							
Cost of Boat (Including any modifications) [SEPARATE SCREEN]								
$_____	○ 9	○ 9	○ 9	○ 9	○ 9	○ 9	○ 9	○ 9
Don't know/can't remember	○ 10	○ 10	○ 10	○ 10	○ 10	○ 10	○ 10	○ 10

Q8 On average, how often do you replace each of the following types of boats that you use for recreational fishing?

Motor boats **ASK IF Q6a=1 (OWN A MOTOR BOAT)**	Every ____ years ○ 1	Have not replaced any motor boat	Don't know/can't remember
Yachts **ASK IF Q6a=2 (YES – OWN A YACHT)**	Every ____ years ○ 2	Have not replaced any yacht	Don't know/can't remember
Other boat types **ASK IF Q6a=3 (YES – OWN ANOTHER BOAT TYPE)**	Every ____ years ○ 3	Have not replaced any other boat type	Don't know/can't remember

Q9.	How many times in the last 12 months have you used each boat for the purposes of recreational fishing?	**SHOW OPTIONS FOR EACH OF THE BOATS OWNED. E.G. MOTOR BOAT 1, MOTOR BOAT 2 AND YACHT 1** _____ times a year

Q10.	What is the primary purpose of each of the boats that you own? **PLEASE SELECT ONE RESPONSE ONLY**	**SHOW OPTIONS FOR EACH OF THE BOATS OWNED. E.G. MOTOR BOAT 1, MOTOR BOAT 2 AND YACHT 1** Recreational fishing O1 General use, including recreational fishing O2

ASK Q11 IF Q10 = 2 (GENERAL USE - FOR ANY OF THE BOATS SELECTED)

Q11.	What percentage of your usage for each general use boat is for recreational fishing? (Your best guess is all we are after)	**SHOW OPTIONS FOR EACH OF THE BOATS OWNED. E.G. MOTOR BOAT 1, MOTOR BOAT 2 AND YACHT 1** _____ % Don't know O1

Q12.	Have you gone fishing for recreational purposes in the past 12 months in Victoria?	Yes [ALLOCATE TO 'FISHERS' QUOTA] O1 No [ALLOCATE TO 'NON FISHERS' QUOTA] GO TO Q34 O2

SECTION 3. FISHING ACTIVITY

Please note that the following questions relate to fishing in Victoria Only.

Q13. In which seasons have you participated in recreational fishing in Victoria, over the past 12 months (i.e. December 2013 – November 2014)? Please estimate the number of fishing trips and fishing days (for each trip).

Season	Number of fishing trips	Number of fishing days (average per trip)
1. Spring (Sep/Oct/Nov)		
2. Summer (Dec/Jan/Feb)		
3. Autumn (Mar/Apr/May)		
4. Winter (Jun/Jul/Aug)		

Q14.	How many people, on average, accompany you on each fishing trip in Victoria?	None O1 1 O2 2 O3 3 O4 4 O5 5 O6 6 O7 7 O8 8+ O9

IF Q14 = 1 (NONE) – SKIP Q15

Q15. What is the age of each accompanying person, and do they participate in recreational fishing?
PIPE THROUGH NUMBER INDICATED AT Q14 (MAXIMUM OF 8)

First Name	Person 1	Person 2	Person 3	Person 4	Person 5	Person 6	Person 7	Person 8
Age								
< 13 years	O 1	O 1	O 1	O 1	O 1	O 1	O 1	O 1
13 - 18 years	O 2	O 2	O 2	O 2	O 2	O 2	O 2	O 2
18 - 24 years	O 3	O 3	O 3	O 3	O 3	O 3	O 3	O 3
25 - 34 years	O 4	O 4	O 4	O 4	O 4	O 4	O 4	O 4
35 – 44 years	O 5	O 5	O 5	O 5	O 5	O 5	O 5	O 5
45 – 54 years	O 6	O 6	O 6	O 6	O 6	O 6	O 6	O 6
55 - 64 years	O 7	O 7	O 7	O 7	O 7	O 7	O 7	O 7
65 – 70 years	O 8	O 8	O 8	O 8	O 8	O 8	O 8	O 8
70+ years	O 9	O 9	O 9	O 9	O 9	O 9	O 9	O 9
Activity Undertaken								
Fishing	O 10	O 10	O 10	O 10	O 10	O 10	O 10	O 10
Accompanying only (i.e. did not fish)	O 11	O 11	O 12	O 12	O 12	O 12	O 12	O 12
Relation to you								
Immediate family	O 13	O 13	O 13	O 13	O 13	O 13	O 13	O 13
Extended family	O 14	O 14	O 14	O 14	O 14	O 14	O 14	O 14
Other (e.g. friend)	O 15	O 15	O 15	O 15	O 15	O 15	O 15	O 15

Q16. What percentage of your time (based on number of fishing days) do you spend fishing in each of the following waters?

PROGRAMMING NOTE: SET THE TALLY TO CHECK THAT THE TOTAL IS 100%

[Please add a header on top of the response fields (i.e. "%")]

Inland **IF '0%' SKIP TO Q17**	%
Estuarine **IF '0%' SKIP TO Q18**	%
Marine **IF '0%' SKIP TO Q19**	%

Q17. What type/s of fish does your fishing group normally target when fishing in **inland** waters?			
		Quantity caught per trip (average)	**Quantity released per trip (average)**
1. Trout	○ 1		
2. Redfin	○ 2		
3. Murray Cod	○ 3		
4. Yellow Belly	○ 4		
5. Other **Please specify**	○ 5		
6. Don't target any specific fish	○ 6		

Q18. What type/s of fish does your fishing group normally target when fishing in **estuarine** waters?			
		Quantity caught per trip (average)	**Quantity released per trip (average)**
1. Bream	○ 1		
2. Mullet	○ 2		
3. Mulloway	○ 3		
4. Estuary Perch	○ 4		
5. Other **Please specify**	○ 5		
6. Don't target any specific fish	○ 6		

Q19. What type/s of fish does your fishing group normally target when fishing in **marine** waters?			
		Quantity caught per trip (average)	**Quantity released per trip (average)**
1. Flathead	○ 01		
2. Whiting	○ 02		
3. Snapper	○ 03		
4. Calamari (squid)	○ 04		
5. Rock Lobster	○ 05		
6. Abalone	○ 06		
7. Gummy Shark	○ 07		
8. Tuna	○ 08		
9. King Fish	○ 09		
10. Other **Please specify**	○ 10		
11. Don't target any specific fish	○ 11		

Q20. Where do you usually fish in Victoria?

(PLEASE SELECT ONE RESPONSE PER STATEMENT IN COLUMN)

PROGRAMMER NOTE: SHOW MAP AT THIS QUESTION. LOCATIONS ON Y AXIS – WITH A DROP DOWN FOR EACH LOCATIONS

		Primary Location	Secondary Location	Other Location
1.	Melbourne/Port Phillip Bay	O 1	O 2	O 3
2.	North west	O 1	O 2	O 3
3.	North east	O 1	O 2	O 3
4.	South west	O 1	O 2	O 3
5.	Gippsland	O 1	O 2	O 3
6.	None/Not applicable	O 1	O 2	O 3

IF Q20=6 (NONE), THEN SELECTED AREA (PRI/SEC/OTHER) WILL BE SKIPPED

Q21 AND Q21B TO APPEAR ON THE SAME SCREEN

Q21. Approximately how far are these locations from your home?

PROGRAMMER NOTE: PIPE THROUGH LOCATIONS SELECTED AT Q20. LOCATIONS ON Y AXIS – WITH A DROP DOWN FOR THE KMS

		Primary Location	Secondary Location	Other Location
1.	0 to 10 km	O 1	O 2	O 3
2.	11 to 20 km	O 1	O 2	O 3
3.	21 to 30 km	O 1	O 2	O 3
4.	31 to 40 km	O 1	O 2	O 3
5.	41 to 50 km	O 1	O 2	O 3
6.	51 to 60 km	O 1	O 2	O 3
7.	61 to 70 km	O 1	O 2	O 3
8.	71 to 80 km	O 1	O 2	O 3
9.	81 to 90 km	O 1	O 2	O 3
10.	91 to 100 km	O 1	O 2	O 3
11.	101 to 200 km	O 1	O 2	O 3
12.	201 to 300 km	O 1	O 2	O 3
13.	Over 300 km	O 1	O 2	O 3
14.	Don't know/unsure	O 1	O 2	O 3

Q21b. Approximately how long does it take you to reach each location?

PROGRAMMER NOTE: PIPE THROUGH LOCATIONS SELECTED AT Q20. LOCATIONS ON Y AXIS – WITH A DROP DOWN FOR THE TIME

		Primary Location	Secondary Location	Other Location
1.	0 to <10 mins	O 1	O 2	O 3
2.	10 to 20 mins	O 1	O 2	O 3
3.	21 to 30 mins	O 1	O 2	O 3
4.	31 to 40 mins	O 1	O 2	O 3
5.	41 to 50 mins	O 1	O 2	O 3
6.	51 to 60 mins	O 1	O 2	O 3
7.	61 to 120 mins	O 1	O 2	O 3
8.	121 to 180 mins	O 1	O 2	O 3
9.	Over 180 mins	O 1	O 2	O 3
10.	Don't know/unsure	O 1	O 2	O 3

[can you ask q 21 and 21b on the same page?]

Q22. What percentage of your total fishing time do you spend on each of the following types of fishing?		
PROGRAMMING NOTE: CHECK TO ENSURE THAT %'S ADD TO 100%	Bait fishing	%
	Soft plastics/hard bodied lures	%
	Spear fishing	%
	Fly fishing	%
	Other	%

ASK IF Q22 = OTHER

Q22a. What other types of fishing do you engage in?	_____

Q23.	What sort of fishing licence(s) did you hold in the past 12 months? **PLEASE SELECT ALL THAT APPLY** **Allow multiple responses (i.e. someone may purchase a 2 day and a 28 day licence over a 12 month period)** IF EXEMPT SELECTED DO NOT ALLOW ANY OTHER RESPONSES	2 day licence ○ 1 28 day licence ○ 2 1 year licence ○ 3 3 year licence ○ 4 Exempt* ○ 5 Unlicensed ○ 6 Don't know/can't remember ○ 7 *You are exempt from holding a Recreational Fishing Licence if you: are under 18 years of age, are 70 years of age or over, hold a Victorian Seniors Card (or interstate equivalent), hold a Veterans' Affairs Pensioner Card, hold a Veterans' Affairs Repatriation Health Card (coded TPI) or hold a Commonwealth Pensioner Concession Card (coded either DSP, DSP Blind, AGE, AGE Blind or CAR).

ASK IF Q15 = 10 (ACCOMPANYING PERSON IS FISHING). DO NOT ASK FOR ACCOMPANYING PERSON IF Q15=CODE 1 OR 2 (PERSON YOUNGER THAN 18) – ASSUME EXEMPT.

Q24. What sort of licence did your accompanying person(s) typically hold in the last 12 months

PROGRAMMER NOTE – PIPE THROUGH ACCOMPANYING PERSONS COUNT FROM Q15

(PLEASE SELECT ALL THAT APPLY PER PERSON IN EACH COLUMN)

Allow multiple responses (i.e. someone may purchase a 2 day and a 28 day licence over a 12 month period)

		Person 1	Person 2
1.	2 day licence	○ 1	○ 1
2.	28 day licence	○ 2	○ 2
3.	1 year licence	○ 3	○ 3
4.	3 year licence	○ 4	○ 4
5.	Exempt	○ 5	○ 5
6.	Unlicensed	○ 6	○ 6
7.	Don't know/can't remember	○ 7	○ 7

Q25.	Are you aware of what your fishing licence fees are used for? **(PLEASE SELECT ONE RESPONSE ONLY)**	Yes ○ 1 No ○ 2

Q26.	Do you belong to a fishing club / association? **(PLEASE SELECT ONE RESPONSE ONLY)**	Yes **GO TO Q27** ○ 1 No **GO TO Q28** ○ 2

Q27. Please provide details of all the fishing clubs/associations you belong to.

(OPEN ENDED RESPONSE)

Q27a. Which of the following ports have you used for recreational fishing in the past 12 months? **(PLEASE SELECT ALL THAT APPLY)**	
	Port of Port Fairy O 01
	Port of Warrnambool O 02
	Port of Port Campbell O 03
	Port of Apollo Bay O 04
	Port of Lorne O 05
	Port of Barwon Heads O 06
	Port of Port Phillip Bay, including Queenscliff O 07
	Port of Western Port O 08
	Port of Anderson Inlet O 09
	Port of Corner Inlet and Port Albert O 10
	Port of Gippsland Lakes O 11
	Port of Snowy River O 12
	Port of Mallacoota O 13
	Proposed Port of Portland O 14
	None of the above O 15

ONLY DISPLAY PORTS SELECTED AT Q27a

Q28. How often do you use **wharves** for recreational fishing at each location?

	Daily	Several times a week	Weekly	Every 2 weeks	Monthly	Every 2 months	Every 4 months	Every 6 months	About once a year	Do not use
Wharves										
1. Port of Port Fairy	O 1	O 2	O 3	O 4	O 5	O 6	O 7	O 8	O 9	O 10
2. Port of Warrnambool	O 1	O 2	O 3	O 4	O 5	O 6	O 7	O 8	O 9	O 10
3. Port of Port Campbell	O 1	O 2	O 3	O 4	O 5	O 6	O 7	O 8	O 9	O 10
4. Port of Apollo Bay	O 1	O 2	O 3	O 4	O 5	O 6	O 7	O 8	O 9	O 10
5. Port of Lorne	O 1	O 2	O 3	O 4	O 5	O 6	O 7	O 8	O 9	O 10
6. Port of Barwon Heads	O 1	O 2	O 3	O 4	O 5	O 6	O 7	O 8	O 9	O 10
7. Port of Port Phillip Bay, including Queenscliff	O 1	O 2	O 3	O 4	O 5	O 6	O 7	O 8	O 9	O 10
8. Port of Western Port	O 1	O 2	O 3	O 4	O 5	O 6	O 7	O 8	O 9	O 10
9. Port of Anderson Inlet	O 1	O 2	O 3	O 4	O 5	O 6	O 7	O 8	O 9	O 10
10. Port of Corner Inlet and Port Albert	O 1	O 2	O 3	O 4	O 5	O 6	O 7	O 8	O 9	O 10
11. Port of Gippsland Lakes	O 1	O 2	O 3	O 4	O 5	O 6	O 7	O 8	O 9	O 10
12. Port of Snowy River	O 1	O 2	O 3	O 4	O 5	O 6	O 7	O 8	O 9	O 10
13. Port of Mallacoota	O 1	O 2	O 3	O 4	O 5	O 6	O 7	O 8	O 9	O 10
14. Proposed Port of Portland	O 1	O 2	O 3	O 4	O 5	O 6	O 7	O 8	O 9	O 10

ONLY DISPLAY PORTS SELECTED AT Q27a

Q28a. How often do you use **jetties** for recreational fishing at each location?

	Daily	Several times a week	Weekly	Every 2 weeks	Monthly	Every 2 months	Every 4 months	Every 6 months	About once a year	Do not use
Jetties										
1. Port of Port Fairy	O 1	O 2	O 3	O 4	O 5	O 6	O 7	O 8	O 9	O 10
2. Port of Warrnambool	O 1	O 2	O 3	O 4	O 5	O 6	O 7	O 8	O 9	O 10
3. Port of Port Campbell	O 1	O 2	O 3	O 4	O 5	O 6	O 7	O 8	O 9	O 10
4. Port of Apollo Bay	O 1	O 2	O 3	O 4	O 5	O 6	O 7	O 8	O 9	O 10
5. Port of Lorne	O 1	O 2	O 3	O 4	O 5	O 6	O 7	O 8	O 9	O 10
6. Port of Barwon Heads	O 1	O 2	O 3	O 4	O 5	O 6	O 7	O 8	O 9	O 10
7. Port of Port Phillip Bay, including Queenscliff	O 1	O 2	O 3	O 4	O 5	O 6	O 7	O 8	O 9	O 10
8. Port of Western Port	O 1	O 2	O 3	O 4	O 5	O 6	O 7	O 8	O 9	O 10
9. Port of Anderson Inlet	O 1	O 2	O 3	O 4	O 5	O 6	O 7	O 8	O 9	O 10
10. Port of Corner Inlet and Port Albert	O 1	O 2	O 3	O 4	O 5	O 6	O 7	O 8	O 9	O 10
11. Port of Gippsland Lakes	O 1	O 2	O 3	O 4	O 5	O 6	O 7	O 8	O 9	O 10
12. Port of Snowy River	O 1	O 2	O 3	O 4	O 5	O 6	O 7	O 8	O 9	O 10
13. Port of Mallacoota	O 1	O 2	O 3	O 4	O 5	O 6	O 7	O 8	O 9	O 10
14. Proposed Port of Portland	O 1	O 2	O 3	O 4	O 5	O 6	O 7	O 8	O 9	O 10

Q28b. How often do you use **slipways** for recreational fishing at each location?

	Daily	Several times a week	Weekly	Every 2 weeks	Monthly	Every 2 months	Every 4 months	Every 6 months	About once a year	Do not use
Slipways										
1. Port of Port Fairy	O 1	O 2	O 3	O 4	O 5	O 6	O 7	O 8	O 9	O 10
2. Port of Warrnambool	O 1	O 2	O 3	O 4	O 5	O 6	O 7	O 8	O 9	O 10
3. Port of Port Campbell	O 1	O 2	O 3	O 4	O 5	O 6	O 7	O 8	O 9	O 10
4. Port of Apollo Bay	O 1	O 2	O 3	O 4	O 5	O 6	O 7	O 8	O 9	O 10
5. Port of Lorne	O 1	O 2	O 3	O 4	O 5	O 6	O 7	O 8	O 9	O 10
6. Port of Barwon Heads	O 1	O 2	O 3	O 4	O 5	O 6	O 7	O 8	O 9	O 10
7. Port of Port Phillip Bay, including Queenscliff	O 1	O 2	O 3	O 4	O 5	O 6	O 7	O 8	O 9	O 10
8. Port of Western Port	O 1	O 2	O 3	O 4	O 5	O 6	O 7	O 8	O 9	O 10
9. Port of Anderson Inlet	O 1	O 2	O 3	O 4	O 5	O 6	O 7	O 8	O 9	O 10
10. Port of Corner Inlet and Port Albert	O 1	O 2	O 3	O 4	O 5	O 6	O 7	O 8	O 9	O 10
11. Port of Gippsland Lakes	O 1	O 2	O 3	O 4	O 5	O 6	O 7	O 8	O 9	O 10
12. Port of Snowy River	O 1	O 2	O 3	O 4	O 5	O 6	O 7	O 8	O 9	O 10
13. Port of Mallacoota	O 1	O 2	O 3	O 4	O 5	O 6	O 7	O 8	O 9	O 10
14. Proposed Port of Portland	O 1	O 2	O 3	O 4	O 5	O 6	O 7	O 8	O 9	O 10

SECTION 4. EXPENDITURE OF RECREATIONAL FISHING IN VICTORIA

Please note the following questions relate to expenditure IN VICTORIA ONLY.

Q29. Approximately how much do you spend on recreation per week? This includes all expenditure on items such as movies, theatre, restaurants, hobbies, holidays and any other expenditure that is directly related to recreation.	$_____per week

Q30.	Approximately, what would be your **per trip** spend on the following items for recreational fishing? (Please enter zero if you have no spend on each item) **[SPLIT INTO TWO SCREENS]**

Item	**Per Trip Expenditure ($)**
Tackle and Equipment	$
Bait	$
Food and accommodation	$
Boat hire	$
Fuel for boat	$
Transport to and from fishing venue (either fuel costs or public transport costs)	$
Other	$

IF PER TRIP SPEND FOR ANY OF THE ITEMS AT Q30 = 0, THEN DO NOT SHOW AT Q30A

Q30a.	What is the primary location where you purchase each of these items? **PLEASE SELECT ONE RESPONSE PER ROW ONLY**

Primary Location of Purchase(s) – Please select only 1 response per row								
Traditional Retail Outlet				**Online Store**				
Within my region	**Rest of the state**	**Interstate**	**Overseas**	**Unknown ware-house location**	**Within my region**	**Rest of the state**	**Interstate**	**Overseas**
O 1	O 2	O 3	O 4	O 5	O 6	O 7	O 8	O 9
O 1	O 2	O 3	O 4	O 5	O 6	O 7	O 8	O 9
O 1	O 2	O 3	O 4	O 5	O 6	O 7	O 8	O 9
O 1	O 2	O 3	O 4	O 5	O 6	O 7	O 8	O 9
O 1	O 2	O 3	O 4	O 5	O 6	O 7	O 8	O 9
O 1	O 2	O 3	O 4	O 5	O 6	O 7	O 8	O 9
O 1	O 2	O 3	O 4	O 5	O 6	O 7	O 8	O 9

Q31. Approximately, what would be your **per year** spend on the following items for recreational fishing? What is the primary location where you purchase each of these items?

(PLEASE SELECT ONE RESPONSE PER STATEMENT IN COLUMN)

[SPLIT INTO TWO SCREENS]

Item	Per Year Expenditure ($)	Primary Location of Purchase(s) – Please select only 1 response per row								
		Traditional Retail Outlet				Online Store				
		Within my region	Rest of the state	Interstate	Overseas	Unknown warehouse location	Within my region	Rest of the state	Interstate	Overseas
Clothing for fishing	$	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ 8	○ 9
Fishing club fees	$	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ 8	○ 9
Licensing costs	$	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ 8	○ 9
Boating registration	$	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ 8	○ 9
Boat maintenance	$	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ 8	○ 9
Camping gear	$	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ 8	○ 9
Other	$	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ 8	○ 9

Q32. If you have purchased the following products in the past 12 months, please indicate which brand/s you have purchased? **(PLEASE TYPE IN YOUR ANSWER)**

Item	Brands	Cannot recall any brands	Did not purchase this product in the past 12 months
Boat (ASK IF Q6=1 – OWN A BOAT)	_____	○ 1	○ 1
Tackle & equipment (ASK IF Q30 SPEND IS NOT EQUAL TO 'O')	_____	○ 2	○ 2
Bait (ASK IF Q30 SPEND IS NOT EQUAL TO 'O')	_____	○ 3	○ 3
Clothing for fishing (ASK IF Q31 SPEND IS NOT EQUAL TO 'O')	_____	○ 4	○ 4
Camping gear (ASK IF Q31 SPEND IS NOT EQUAL TO 'O')	_____	○ 5	○ 5

Q33. What percentage of your total recreational fishing expenditure would you spend on fishing which utilises port facilities? Port facilities include wharves, jetties and slipways? **(PLEASE SELECT ONE RESPONSE ONLY)**	1 to 10%	○ 01
	11 to 20%	○ 02
	21 to 30%	○ 03
	31 to 40%	○ 05
	41 to 50%	○ 06
	51 to 60%	○ 07
	61 to 70%	○ 08
	71 to 80%	○ 09
	81 to 90%	○ 10
	91 to 100%	○ 11
	I don't use port facilities for fishing	○ 12
	Don't know/can't remember	○ 13

Q34. Did you go fishing for recreational purposes **outside Victoria** in the past 12 months? **Please note that for the purpose of determining whether fishing is taking place within Victoria, your fishing location refers to where you are staying. For example, if you are fishing on the NSW side of the Murray River but are staying in Victoria this is NOT considered to be fishing outside Victoria.** **(PLEASE SELECT ONE RESPONSE ONLY)**	Yes	**CONTINUE**	○ 1
	No	**GO TO Q42**	○ 2

Please note that the following questions relate to interstate and/or international fishing trips

Q35. Where outside Victoria did you go fishing in the past 12 months? **(PLEASE SELECT AS MANY AS APPLY)**	NSW	☐ 1
	Queensland	☐ 2
	WA	☐ 3
	SA	☐ 4
	ACT	☐ 5
	Northern Territory	☐ 6
	Tasmania	☐ 7
	New Zealand	☐ 8
	Overseas (other than NZ)	☐ 9

ASK Q36 IF Q35 = CODES (1 to 7)

Q36. How often (number of fishing trips and fishing days) did you participate in recreational fishing interstate in the past 12 months?

	No. of Trips	**No. of Days (average per trip)**
Interstate		
Spring	☐	☐
Summer	☐	☐
Autumn	☐	☐
Winter	☐	☐

ASK Q37 IF Q35 = CODES (1 to 7)

Q37. How many people, on average, accompany you on each interstate trip?	

ASK Q38 IF Q35 = CODES (1 to 7)

Q38. Approximately how much would your group spend on each of these interstate trips, including accommodation, travel etc.?	$

ONLY ASK Q39a TO Q41 IF Q35 = 8 OR 9 (I.E. NEW ZEALAND OR OVERSEAS)

Q39a. How often (number of fishing trips and fishing days) did you participate in recreational fishing overseas in the past 12 months?

	No. of Trips	No. of Days (average per trip)
Overseas		
Spring		
Summer		
Autumn		
Winter		

Q39. How many people, on average, accompany you on each overseas trip?	
Q40. Approximately how much would your group spend on each of these overseas trips, including accommodation, travel etc.?	$

Q41. Where do you typically book your international trips?

(PLEASE SELECT ONE RESPONSE ONLY)

Traditional retail outlets

- Traditional retail outlet – within my region ○ 1
- Traditional retail outlet – rest of the state ○ 2
- Traditional retail outlet - interstate ○ 3
- Traditional retail outlet - overseas ○ 4

Online Stores

- Online store – unknown location ○ 5
- Online store – within my region ○ 6
- Online store – rest of the state ○ 7
- Online store - interstate ○ 8
- Online store - overseas ○ 9

SECTION 5. UNMET DEMAND FOR FISHING

Q42. What prevents you from going recreational fishing in Victoria more often?

(PLEASE SELECT AS MANY AS APPLY)

- Nothing, I fish as much as I want to ☐ 1
- Lack of time ☐ 2
- Lack of port facilities e.g. wharves, jetties and slipways ☐ 3
- Too expensive ☐ 4

	Too far form a suitable fishing location ☐ 5 Don't like fishing ☐ 6 Other **(PLEASE TYPE IN YOUR ANSWER)** _____ ○ 7
Q43. What would motivate you to spend more on recreational fishing? **(PLEASE SELECT AS MANY AS APPLY)**	Enhanced stocking ☐ 1 Improved access ☐ 2 Improved port facilities e.g. wharves, jetties and slipways ☐ 3 Improved research and development ☐ 4 Improved habitat ☐ 5 Nothing, I fish as much as I want to ☐ 6 Other **(PLEASE TYPE IN YOUR ANSWER)** _____ ○ 7
Q44. If there were no constraints, such as time, cost or distance from fishing spots, how often would you go fishing? **(PLEASE SELECT ONE RESPONSE ONLY)**	Daily ○ 1 Several times a week ○ 2 Weekly ○ 3 About every 2 weeks ○ 4 Monthly ○ 5 Every 2 months ○ 6 Every 4 months ○ 7 Every 6 months ○ 8 About once a year ○ 9
Q45. Of the following, please rank from 1 to 8 what drives you to participate in recreational fishing? (Please drag and drop each of the items to the right in the order you wish to rank them). **PLEASE RANK 1 – 8**	To be outdoors ☐ To participate in a sport ☐ To relax ☐ To be with friends/family ☐ For solitude ☐ For competition ☐ For food ☐ Other ☐
Q45a. What other aspects (if any) drive you to participate in recreational fishing?	_____

SECTION 6. OTHER
Q46. What issues do you see facing the recreational fishing industry **(PLEASE TYPE IN YOUR ANSWER AND PROVIDE AS MUCH DETAIL AS POSSIBLE)**

Q47. Any other comments? **(PLEASE TYPE IN YOUR ANSWER)**

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