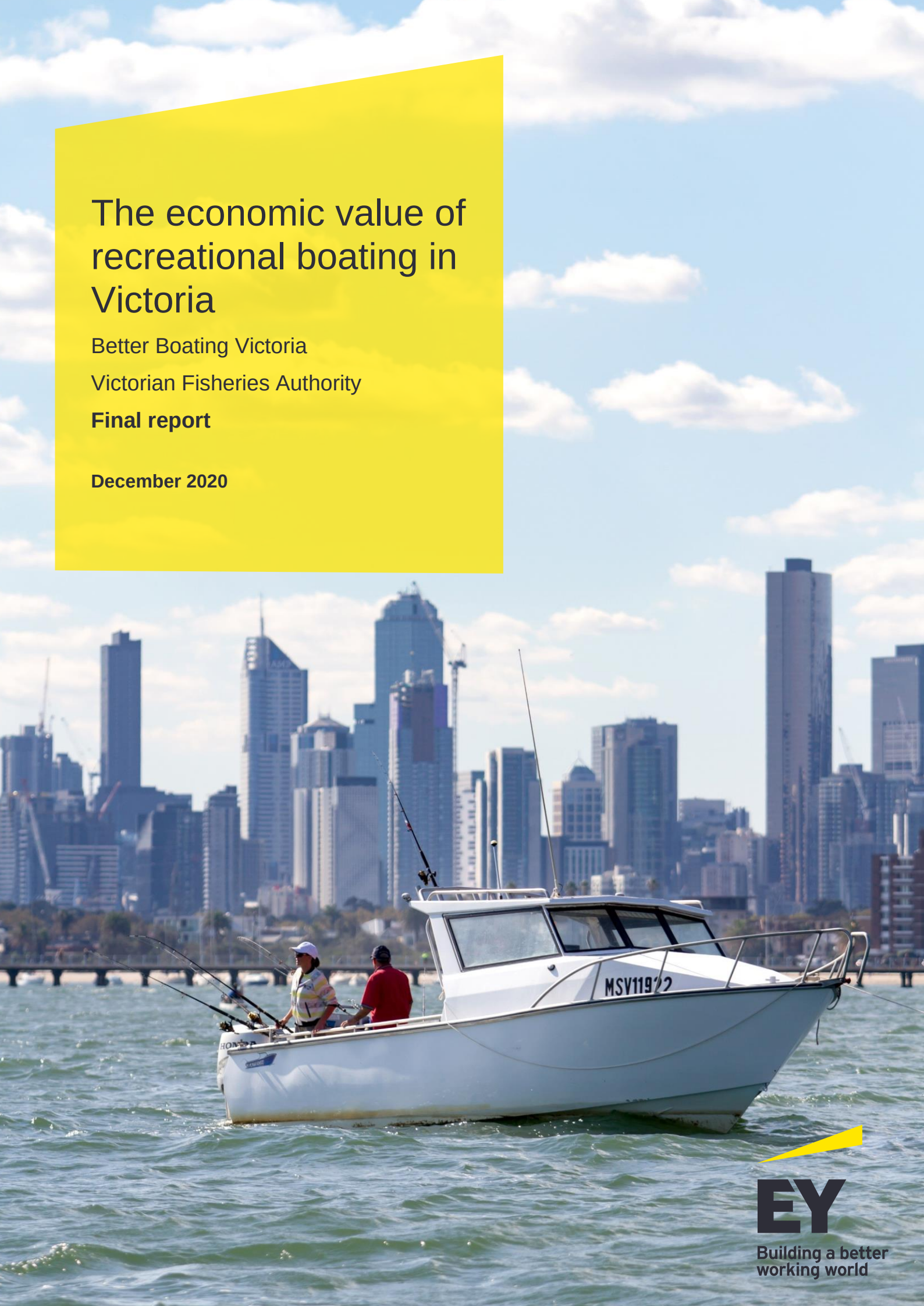
The economic value of recreational boating in Victoria

Better Boating Victoria

Victorian Fisheries Authority

Final report

December 2020



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Ernst & Young was engaged on the instructions of the Victorian Fisheries Authority ("the VFA" or the "Client"), with an equal funding contribution by Better Boating Victoria, to provide estimates regarding the economic value generated from recreational fishing and boating across Victoria in accordance with the engagement agreement dated 5 May 2019.

The results of Ernst & Young's work, including the assumptions and qualifications made in preparing the report, are set out in Ernst & Young's report dated December 2020 ("Report"). The Report should be read in its entirety including this notice, the applicable scope of the 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. The Report will be used for the purpose of supporting policy implementation, management planning, decision making and advocacy in the recreational fishing and boating sectors by the VFA and Better Boating Victoria (the "Purpose").

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The images displayed throughout in this report have been provided and approved by Better Boating Victoria and the Victorian Fisheries Authority.

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1. Executive summary

1.1 Introduction

Recreational fishing and boating are popular activities in Victoria and since 2015 the Victorian State Government has invested heavily in both the recreational fishing and boating industries through the Target One Million Plan. Furthermore, the Victorian Government has recognised the importance of recreational boating and the boating industry in Victoria and established Better Boating Victoria in March 2019 to make recreational boating cheaper and easier for Victorians.

In 2019, the Victorian Fisheries Authority (VFA), with an equal funding contribution by Better Boating Victoria, commissioned Ernst & Young (EY) to undertake a study to estimate the economic value generated by recreational fishing and boating across Victoria and the community participation in these sectors.

This study was commissioned in order to continue to support policy implementation, conduct management planning, support advocacy, and enable decision making in the recreational fishing and boating sectors.

1.2 Approach

The approach used to estimate the economic contribution of recreational boating was developed in consideration of the previous 2015 EY economic study of recreational fishing in Victoria.

An online internet survey (totalling 1,000 people surveyed) was used to estimate the number of recreational boaters in Victoria, as well as behaviour patterns related to recreational boating (e.g. where people go boating) and their expenditure patterns (e.g. per trip expenditure and annual expenditure).

Using the survey data and the estimation of total annual recreational boating participation in Victoria, EY developed a model to estimate the direct expenditure related to recreational boating. This direct expenditure was placed in an input – output model to determine the indirect, or flow-on, impact that the expenditure on recreational boating has on the broader Victorian economy. This process then allowed for the calculation of the total economic contribution of recreational boating on the Victorian economy.

1.3 Key findings

Key findings from the study include:

- In 2018/19, 696,072 Victorian adult residents participated in recreational boating across Victoria. These individuals made 6.4 million recreational boating trips across Victoria, with over half of these trips occurring in regional areas
- An estimated $531 was spent per recreational boater on each trip. The majority of spend on each trip was on vessel hire, berth fees, food and accommodation in Victoria.
- Recreational boating in Victoria in 2018/19 generated $7.91 billion combined direct and indirect output, and $2.92 billion combined direct and indirect value added
- Recreational boating in Victoria in 2018/19 generated 22,055 combined direct and indirect full-time equivalent (FTE) jobs, including 10,330 direct FTE
- Over the next 20 years recreational boating in Victoria is projected to generate $102.54 billion combined direct and indirect output, $37.85 billion combined direct and indirect value added and an annual average of 26,133 combined direct and indirect full-time equivalent (FTE) jobs.

The report also includes findings relating to recreational boating expenditure and location preferences.

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1.4 Limitations

The methodology used to estimate the economic contribution of recreational boating was developed under best practice principles. However, the limitations should be considered when interpreting the results of this study. The limitations are outlined in Section 5 of the report.

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2. Introduction

In May 2019 EY was commissioned by the Victorian Fisheries Authority ("the VFA" or the "Client"), with an equal funding contribution by Better Boating Victoria, to estimate the economic value generated by recreational fishing and boating across Victoria. This report details the findings related to the economic contribution of recreationally boating to Victoria.

This is the first time a study on the economic contribution of recreational boating for the State of Victoria has been commissioned by a government body.[1]

Specifically, the report outlines that the recreational boating industry generated an estimated $7.91 billion combined direct and indirect output and $2.92 billion in combined direct and indirect value added[2] to Victoria in 2018/19.

The findings of the economic value generated by recreational fishing across Victoria are detailed in a separate report.

2.1 Recreational boating in Victoria

With 197,000 registered vessels in Victoria and 417,000 licence holders, according to the VFA recreational boating is growing in popularity as more Victorians get out on the water to discover the state's coastline, rivers, lakes and estuaries.[3] Recreational vessel registrations have grown at 2.5 per cent per annum over the past eight years.[4] In addition to licence holders, there are 256,000 licence endorsements for personal watercraft or jet skis.[5]

This study found that in 2018/19, there were approximately 696,000 people who participated in recreational boating across Victoria, with 48% of these also recreationally fishing.

2.2 Better Boating Victoria

Better Boating Victoria was created on Monday 25 March 2019 and is tasked with progressing the 2018 boating election commitments made by the Victorian State Government to make it cheaper and easier for boaters and anglers to get out on the water.[6]

Better Boating Fund

The Victorian Government has committed to returning all funds from marine licensing and boat registration fees to improving boating safety and facilities through the establishment of a Better Boating Fund. The fund will collect money from boat registration and marine licensing fees and use it exclusively to improve boating facilities and safety.[7] Measures to establish the fund are being investigated by the Department of Transport.[8]

[1] In 2008, Parks Victoria commissioned a report on the Economic Value of Boating in the Port Phillip and Westernport Bays
[2] Value added is the difference between the price of product or service and the cost of producing it. The price is determined by what customers are willing to pay based on their perceived value.
[3] Department of Transport (Victoria), Fishing and boating, available at: https://transport.vic.gov.au/fishing-and-boating, accessed 21.02.2020
[4] Department of Transport (Victoria), Fishing and boating, available at: https://transport.vic.gov.au/fishing-and-boating, accessed 21.02.2020
[5] Fishing and boating, available at: https://transport.vic.gov.au/fishing-and-boating
[6] Department of Transport (Victoria), Better Boating Victoria, available at: https://transport.vic.gov.au/fishing-and-boating, accessed 21.02.2020
[7] Better Boating Victoria, available at: https://transport.vic.gov.au/fishing-and-boating/better-boating-victoria, accessed: 04.10.2019
[8] Better Boating Victoria, available at: https://transport.vic.gov.au/fishing-and-boating/better-boating-victoria, accessed: 04.10.2019

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Target One Million

The Victorian Government initiated the Target One Million (TOM) in 2015.[9] The headline message of the TOM program was 'to get more people fishing, more often'. The program aimed to increase participation in recreational fishing in Victoria to one million anglers by 2020.

The Victorian Government that committed to TOM Phase 1 was re-elected in the 2018 State election and committed a further $35 million to extend the TOM phase one plan into phase two.

The following recreational boating initiatives are being delivered by Better Boating Victoria: [10]

- Abolish all boat ramp parking and launching fees at Victorian boat ramps
- Ensure every cent of licencing and registration fees is spent on improving boat ramps, boating safety and facilities
- Establish a Better Boating Fund to get to work immediately on urgent boat ramp upgrades across the state including Mordialloc, Queenscliff, Point Richards, Hastings and Rhyll
- Undertake critical maintenance at Cowes Jetty
- Provide eight new casual berths across Port Phillip that are accessible to the public
- Review management of boating infrastructure in Port Phillip and Western Port
- Establish a dedicated boating infrastructure authority.

2.3 This study

In order to continue to support policy implementation, conduct management planning, support advocacy, and enable decision making in the industry, the VFA commissioned EY in May 2019, with an equal funding contribution by Better Boating Victoria, to undertake a revised study on the economic contribution of recreational fishing, together with an additional study to estimate the economic contribution of boating to Victoria.

In May 2019 EY was commissioned by the Victorian Fisheries Authority, with an equal funding contribution by Better Boating Victoria, to estimate the economic value generated by recreational fishing and boating across Victoria. This report details the findings related to the economic contribution of recreationally boating to Victoria.

This study was commissioned by the VFA to estimate the economic contribution[11] of recreational boating in Victoria[12]. It also estimates other key measures such as the number of participants and the location of boating trips.

This report focuses on the economic contribution of recreational boating. The economic contribution of recreational fishing to Victoria is provided in a separate report.

The report proceeds as follows:

- The **economic contribution** (direct and indirect) of recreational boating in Victoria (Chapter 3)
- **Participation** and **other measures** (Chapter 4)

[9] Victorian Fisheries Authority, Target One Million Budget 2015-2019, available at: https://vfa.vic.gov.au/recreational-fishing/targetonemillion2/target-one-million/budget# accessed: 22.01.2010
[10] Victorian Fisheries Authority, Target One Million Budget 2015-2019, available at: https://vfa.vic.gov.au/recreational-fishing/targetonemillion2/target-one-million/budget# accessed: 22.01.2010
[11] 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 added only)
[12] 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

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► **Limitations** (Chapter 5).

2.4 Approach

The approach used to estimate the economic contribution of recreational boating was adapted from the 2015 Economic Study of Recreational Fishing in Victoria ('2015 Economic Study'). An overview of the approach is outlined below.

The 2015 survey included questions on recreational boating. As the economic contribution of recreational boating is being examined separately as part of this study, the 2015 survey was re-developed by EY in order to differentiate between fishing and boating related questions.

Survey design

A survey was administered by EY to a random sample of the Victorian population in order to obtain data on the number of people who recreationally boat, behaviour patterns related to recreational boating (e.g. where people boat, preferred boating activity and their expenditure pattern (e.g. per trip expenditure and annual expenditure)).

Survey implementation

The survey panel was selected by EY to best represent the Victorian population (individuals who both recreationally fish / boat and who do not recreationally fish / boat). A total of 2,991 individuals started the survey with 1,000 individuals completing the survey. The survey panel administered by EY included soft quotas for gender and age. The survey consisted of online questionnaires of fishers and non-fishers. The survey included 563 individuals who fished and 321 individuals who boat and 116 people who neither recreationally boat nor fish.

Participation

EY estimated the total annual recreational boating participation by applying the proportion of survey respondents that recreationally boated to the Victorian population.[13]

Estimated economic contribution

Utilising the survey data and other relevant inputs, EY developed a model to estimate the direct expenditure related to recreational boating, including:

► Average expenditure per trip (e.g. bait, food and accommodation etc.)

► Annual average expenditure (e.g. fish clothing, club administration fees etc.).

The methodology enabled clear separation between expenditure and activity generated from recreational fishing and recreational boating.

This direct expenditure was placed in an input – output model to determine the indirect, or flow-on, impacts that the expenditure on recreational boating activities has on the broader Victorian economy. This process then facilitated the calculation of the total estimated economic contribution of recreational boating on the Victorian economy.

[13] Victoria in Future – Planning, available at: https://www.planning.vic.gov.au/land-use-and-population-research/victoria-in-future, accessed: 03.10.2019

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3. Estimated economic contribution

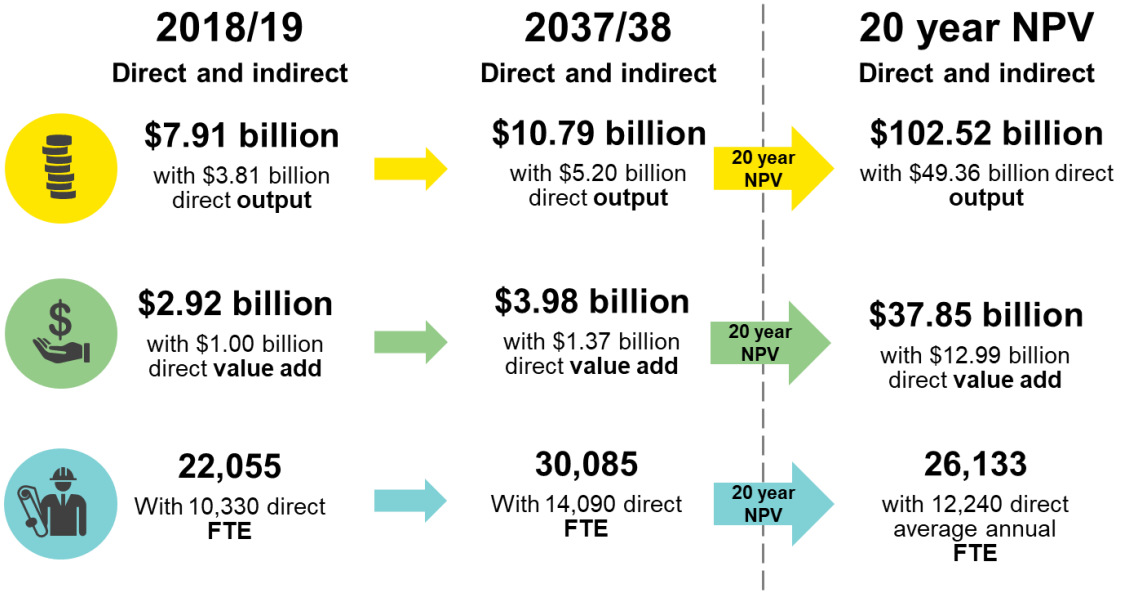
Economic contribution is defined as the gross changes in a region's existing economy that can be attributed to a given industry, event, or policy[14], in this case the Victorian recreational boating industry.

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

- Direct industry output, value added and employment (Chapter 3.1)
- Combined direct and indirect contribution (Chapter 3.2)
- Future contribution (Chapter 3.3).

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

Figure 1: Summary of estimated outputs



3.1 Direct industry output, value added and employment

In 2018/19, recreational boating in Victoria directly generated an estimated:

- $3.81 billion direct industry **output**
- $1.00 billion direct **value added**
- 10,330 direct FTE **jobs**.

The estimated direct contribution generated per region is outlined in Figure 2 below. This has been shown excluding expenditure related to boat purchase. The distribution across regions has been generated based on the estimated spend from each region, on the basis of the survey responses.

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

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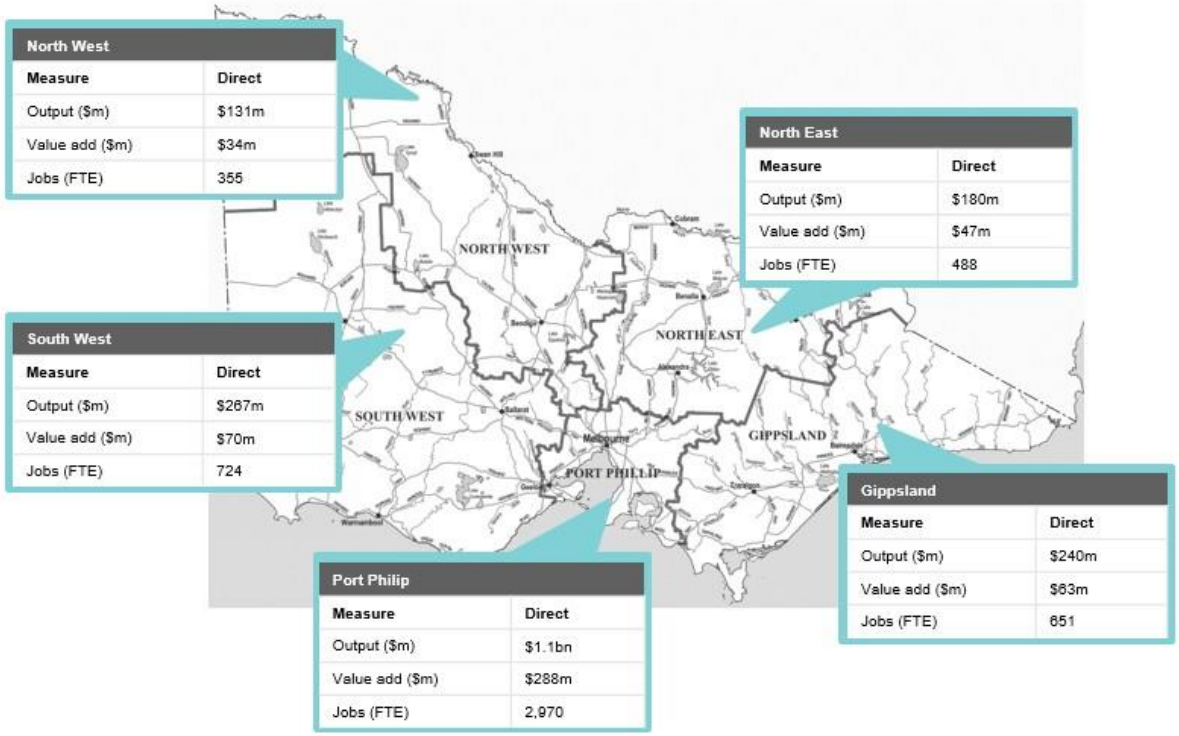
Figure 2: Direct economic output, value added and employment, by region



3.2 Indirect and total contribution

In 2018/19, recreational fishing in Victoria generated an estimated indirect[15] contribution of:

- $4.10 billion indirect **output** (out of a total $7.91 billion combined direct and indirect output).
- $1.92 billion indirect **value added** (out of a total $2.92 billion combined direct and indirect output).
- 11,726 indirect FTE **jobs** (out of a total 22,055 combined direct and indirect FTE jobs).

3.3 Future estimated contribution

Between 2018/19 and 2037/38, recreational boating in Victoria is estimated to generate the following:

- **Output contribution** (direct and indirect) from $7.91 billion (in 2018/19) to $10.79 billion (in 2037/38)
- **Value added contribution** (direct and indirect) from $2.92 billion (in 2018/19) to $3.98 billion (in 2037/38)
- **Employment contribution** (direct and indirect) from 22,055 (in 2018/19) to 30,085 (in 2037/38).

[15] 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 added (i.e. without multipliers). The direct value added 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.

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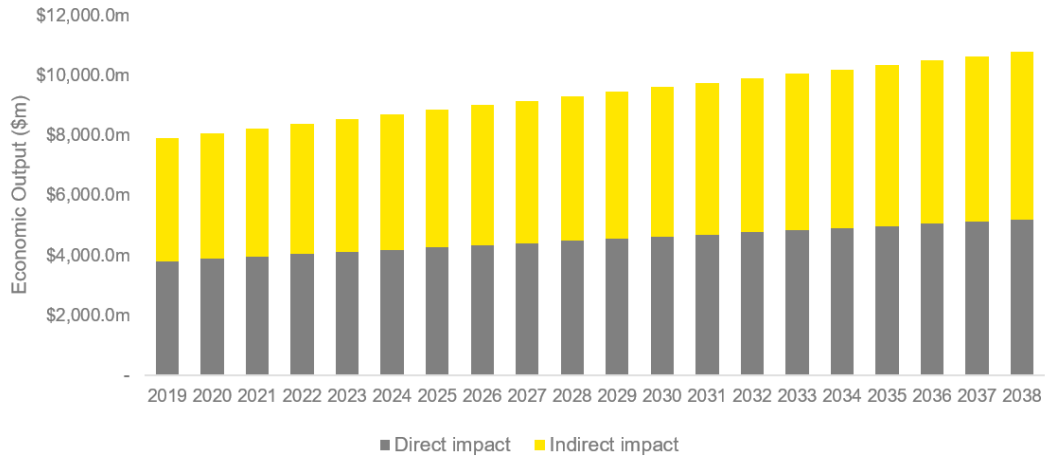
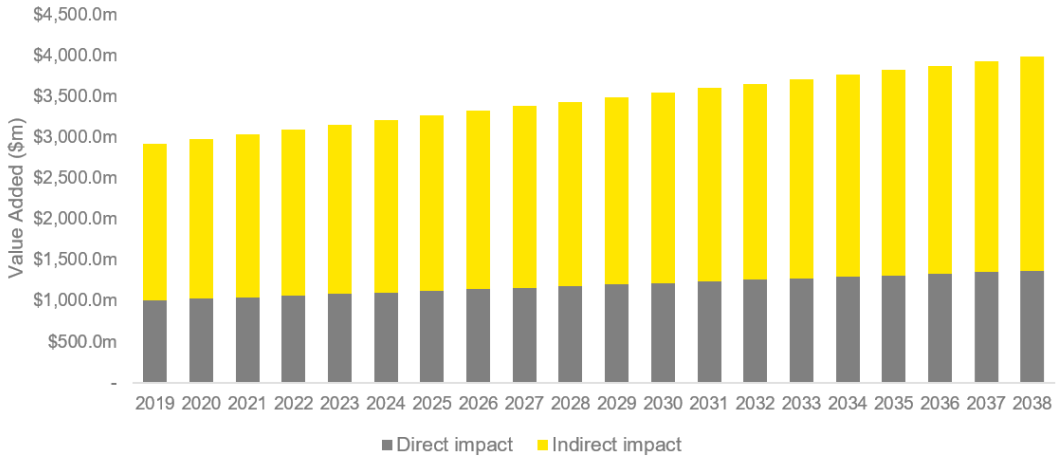
The estimated net present value (NPV) of the recreational fishing industry over the 20-year evaluation period is $102.5 billion output and $37.9 billion value added. Average estimated annual employment over the period is 26,133 FTE jobs.

Figure 3: Forecast output ($ billion)



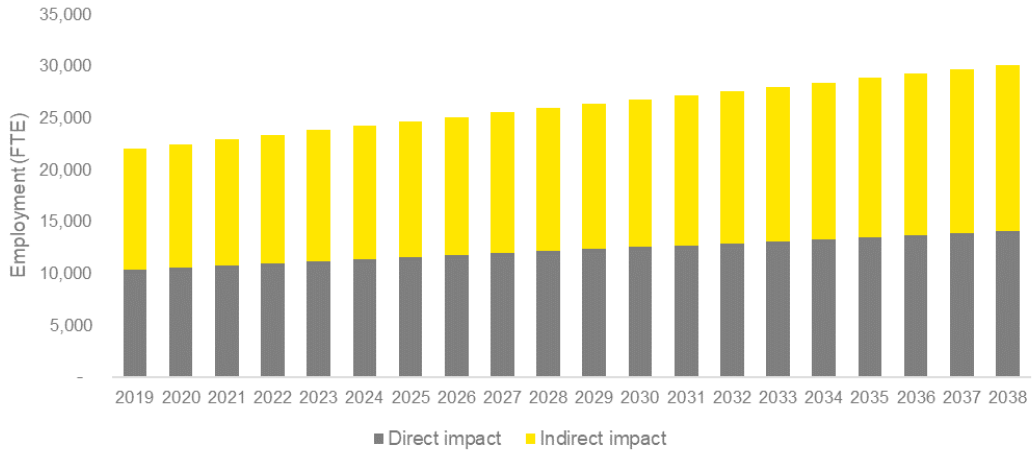
Source: EY analysis of survey data

Figure 4: Forecast value added ($ billion)



Source: EY analysis of survey data

Figure 5: Forecast employment (FTE)



Source: EY analysis of survey data

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4. Participation and other measures

This section outlines participation estimates and other key metrics that were determined and estimated as part of the study, including:

- Participation in recreational boating
- Expenditure on boating trips
- Other measures on boating demographics and preferences.

4.1 Participation and boating incidence

Participation metrics

As outlined in Section 2.4, the total number of Victorians participating in recreational boating was estimated by applying the proportion of survey respondents that recreationally boat to the Victorian population.[16] Some of the key participation stats for 2018/19 are as follows:

- In 2018/19, approximately 696,000 adult Victorian residents participated in recreational boating trips across Victoria
- These individuals approximately made 6.4 million recreational boating trips across Victoria
- An estimated 48% of people who recreationally boat use their vessel for recreational fishing (36% use vessels for fishing only and 12% use vessels for a mix of general use and recreational fishing).

Figure 6 below shows for each region:

- **Boaters:** The estimated number of recreational boaters who reside in that region
- **Primary region:** The estimated number of people who note that region as their primary recreational boating destination.

[16] Victoria in Future – Planning, available at: https://www.planning.vic.gov.au/land-use-and-population-research/victoria-in-future, accessed: 03.10.2019

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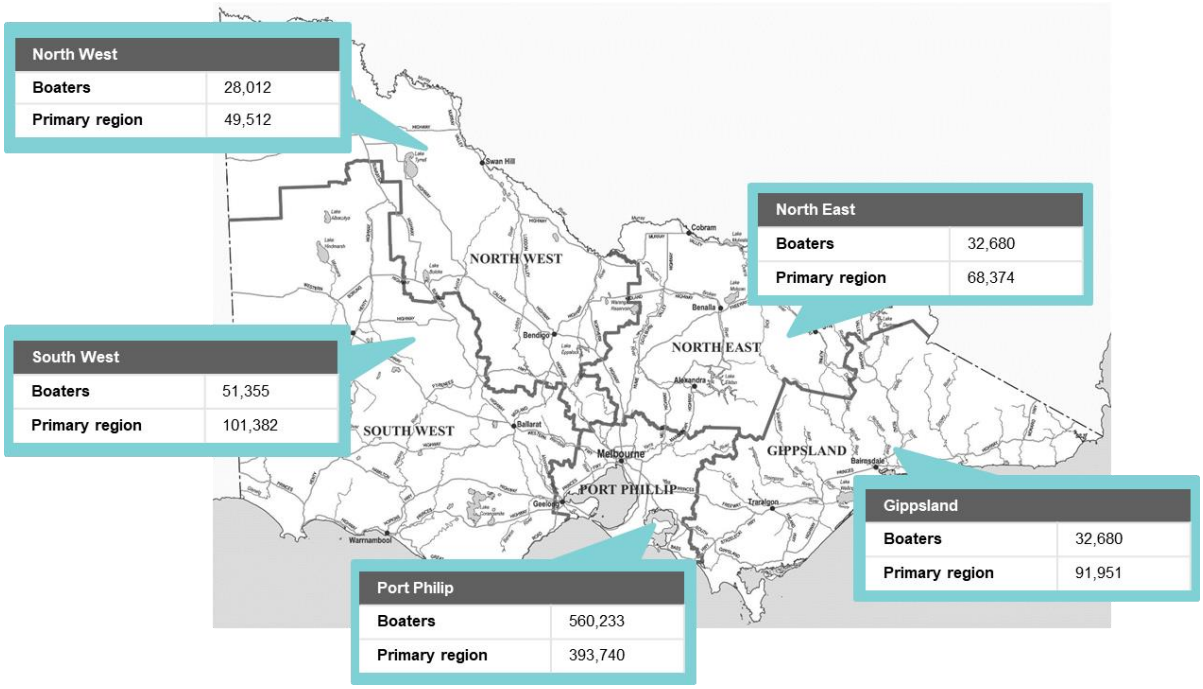
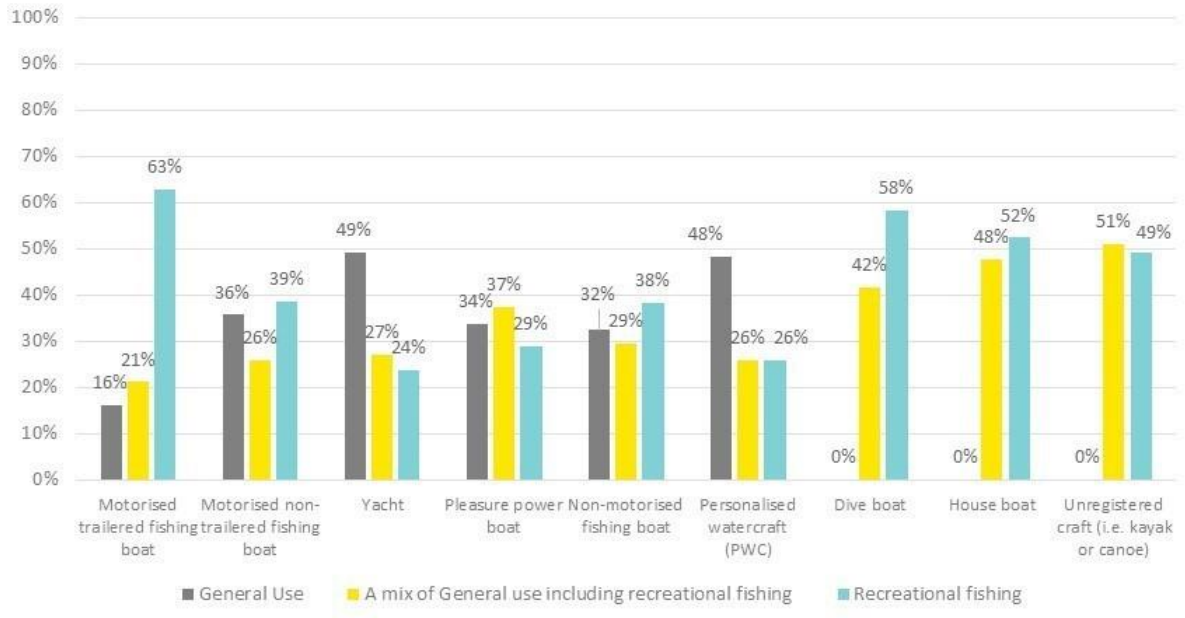
Figure 6: Recreational boating residencies and primary region for boating trips (2019), by region



Boating incidence

The figures below present key participation and boating incidence measures.

Figure 7: Usage of each boat



Source: EY analysis of survey data

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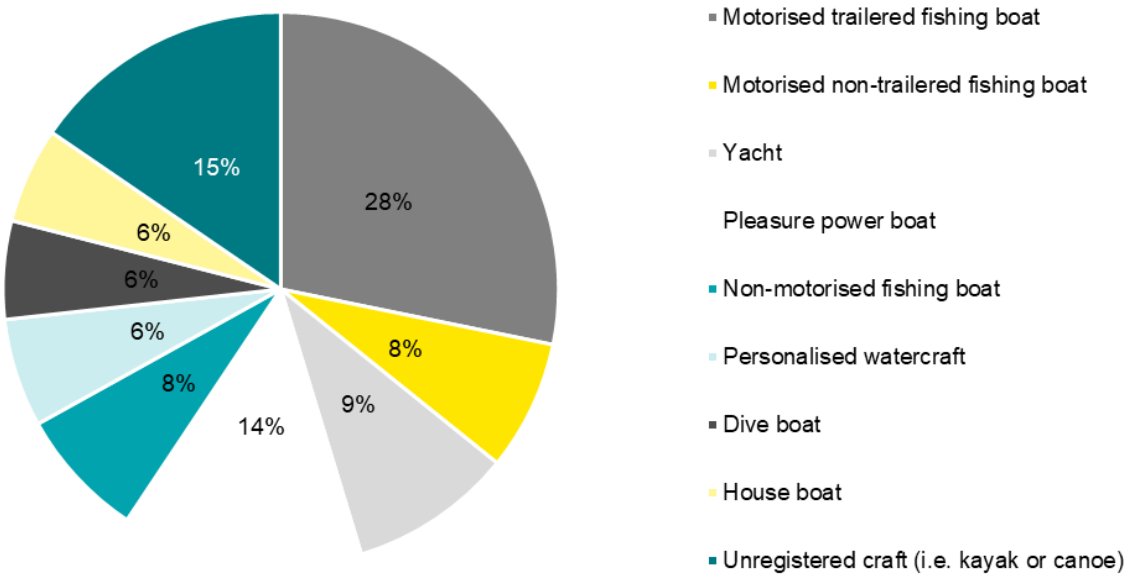
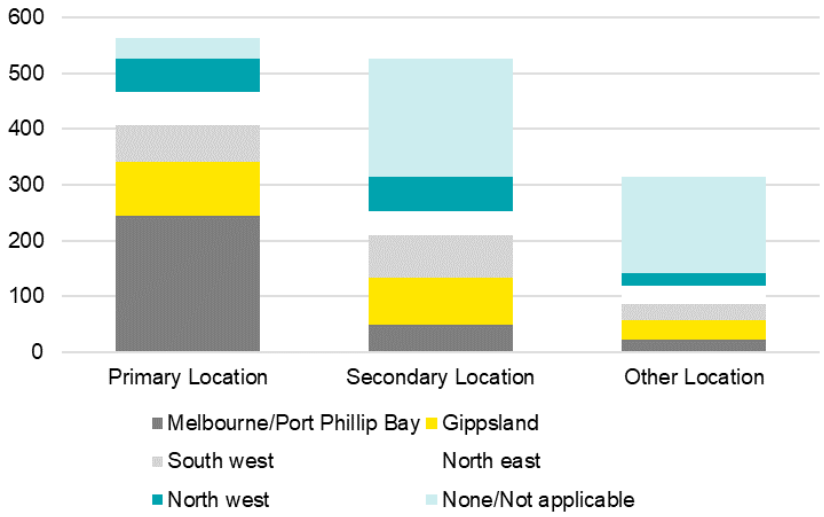
Figure 8: Percentage of usage time of each boat type over the past 12 months



Source: EY analysis of survey data

Figure 10: Distribution of boating trips: Regions



Source: EY analysis of survey data

4.2 Expenditure

Expenditure was calculated across three categories:

- **Per trip** - Expenditure items that are typically incurred every trip (e.g. 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 boater embarking on 9.2 fishing trips per year)
- **Boat purchase** - Expenditure of boats that are either exclusively used for fishing or used for multi-use purposes.

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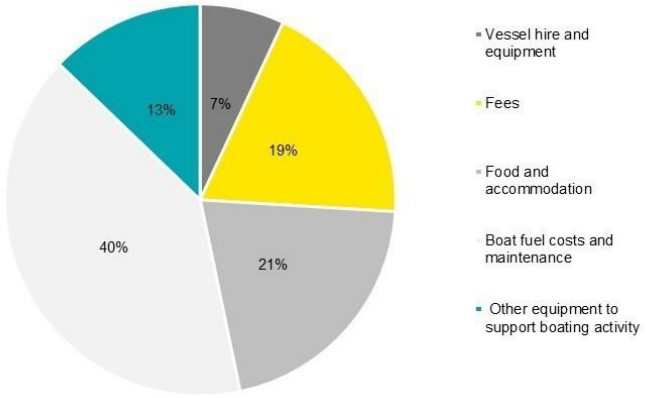
The results found that in 2018/19, on average, a recreational boater:

- Spent an estimated $338 per boating trip on trip related expenses with 83% of this incurring in Victoria ($281 per fishing trip in Victoria)
- Spent an estimated $1,781 per year on annual ad-hoc expenses with 84% of this incurring in Victoria ($1,496 annually in Victoria). For comparative purposes, this equates to $194 on a per trip basis ($162 of which is spent in Victoria)
- Spent an estimated average of $2,742 in Victoria on boats.

In summary in 2018/19, on a per trip basis, an estimated $443 was spent in Victoria per boater on each trip (including per trip and annual expenditure). In addition, on an average basis, an estimated $2,742 was spent on boats.

Figure 9 below presents key expenditure measures.

Figure 9: Spend profile (excl. fishing)



Calculation of average expenditure for boat user

Average expenditure was calculated based on survey results on the expenditure of boat users across all spend categories (e.g. vessel hire, berth fees, food and accommodation etc.). The total spend of each category was divided by the total number of boat users to provide an average spend per boat user per category. This total was then divided by the total number of trips per boat user to provide an average per trip spend.

As the expenditure of boat users vary greatly depending on their choice of recreational activity (e.g. boat owners, boat hirers, mooring boats etc.), the average expenditure per trip (i.e. $443 per trip) is not an accurate estimation of expenditure for each boat user group.

For further detail on the spend per category, refer to Appendix B.

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5. Limitations

The methodology used to estimate the economic contribution of recreational boating was developed under best practice principles. However, the following limitations should be considered when interpreting the results of this study:

- The outputs of this study are based on the results of a survey conducted by EY on the Victorian population. The results of the survey are extrapolated against Victorian Government population estimates in 2018/19 in order to estimate the impact on the State.[17] This method assumes that the survey panel selected was a representation of the Victorian population.

- In order to calculate the estimated future contribution of recreational boating to Victoria from 2018/19 to 2037/38, the survey results were extrapolated against Victorian Government future population projections over the 2018/19 to 2037/38 period. It is to be noted that projections are not exact approximations.

- To estimate the estimated economic contribution of recreational boating 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 boating participants and the range of activities associated with these operations highlight the complex way the modern economy operates. It involves the use and 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 industry segments used in this study are outlined in Appendix A.

- 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 estimated economic contribution.

- This study does not measure the economic impact of recreation boating. 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 boating sector?).

[17] https://www.planning.vic.gov.au/land-use-and-population-research/victoria-in-future

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Appendix A Methodology

The methodology applied in this study is summarised in Figure 10 and outlined below.

Figure 10: Methodology

Stage 1: Define scope and key measures

In Stage 1, the following were discussed and agreed by EY and VFA:

- 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 study provides an estimate of the economic contribution (not impact) of recreational boating 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. These are generally descriptive studies to measure the size and/or "importance" of an industry in terms of their output, value added and employment

Scope exclusions

This study does not measure the economic impact of recreation boating. 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 boating 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 added 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 added 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 added 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 added measures when making

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comparisons to other industries. The value added 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 added and employment, this study also estimates state-based taxation revenue generated by recreational boating in Victoria.

Stage 2: Industry definition

The Victorian recreational fishing boating industry is defined as boating by Victorian residents for pleasure or competition.[18]

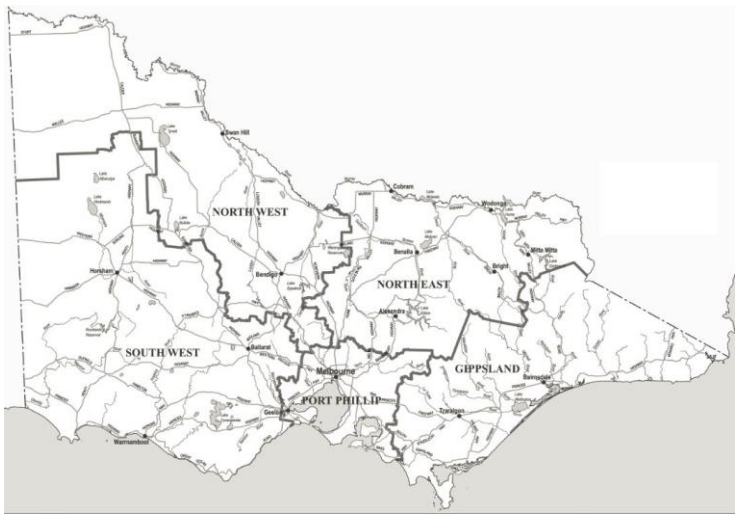
The following activities are not included in the study:

- Recreational boating by interstate and overseas fishers in Victoria
- Recreational boating and/or expenditure by Victorians that occurs outside Victoria (e.g. some online purchases)
- Commercial boating.

The Victorian Fisheries Authority recognises the following regions which were used in this analysis (see Figure 11):

- Port Phillip[19]
- South West[20]
- North East[21]
- North West[22]
- Gippsland[23].

Figure 11: Victorian Fisheries Authority regions



Source: Victorian Fisheries Authority

[18] Victorian Fisheries Authority, 2015
[19] Port Phillip / Western Port 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
[20] 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
[21] North East region is made up of the following LGAs: Mansfield, Murrindindi, Strathbogie, Greater Shepparton, Benalla, Wangaratta, Alpine, Towong, Indigo
[22] North West region is made up of the following LGAs: Mildura, Swan Hill, Buloke, Gannawarra, Loddon, Greater Bendigo
[23] Gippsland region is made up of the following LGAs: East Gippsland, Wellington, La Trobe, South Gippsland, Baw Baw

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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 through surveying
- 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
- Other supporting information (e.g. ABS's historical consumer price index)

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

Survey design

The survey, designed by EY, was broadly consistent with the 2015 Economic Study of Recreational Fishing in Victoria[24], however refinements and enhancements were made in order to accurately capture the recreational boating component.

The 2015 survey included questions on recreational boating. As the economic contribution of recreational boating is being examined separately as part of this study, the 2015 survey was re-developed in order to differentiate between fishing and boating related questions.

The survey included questions relating to:

- Demographics, including age, gender and usual place of residence
- Activity profile of recreational boaters (for the previous 12 months), including number of boating trips/days, type of vessel used and primary boating location
- The expenditure profile of recreational boaters (for the previous 12 months) measures, including average expenditure per trip (e.g. food and accommodation and boat hire), annual average expenditure (e.g. club fees, boat registration) and boat related expenditure (e.g. purchase price and maintenance).

The survey is presented in Appendix D.

The survey was administered by EY to a random sample of the Victorian population in order to obtain data on the number of people who recreationally boat, behaviour patterns related to recreational boating (e.g. where people boat) and their expenditure pattern (e.g. per trip expenditure and annual expenditure).

The survey administered by EY for the 2015 study was examined to determine if certain questions remained relevant or outdated for the 2019 study.

[24] Victorian Recreational Fishing Peak Body, Economic Study of Recreational Fishing in Victoria, 2015

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Survey implementation

The survey panel was selected by EY to best represent the Victorian population (individuals who both recreationally fish / boat and who do not recreationally fish / boat). A total of 2,991 individuals started the survey with 1,000 individuals completing the survey. The survey panel included soft quotas set by EY for gender and age. The survey consisted of on online questionnaire of people who recreational fish and /or recreational boat and / or neither. The survey included 563 individuals who fished and 321 individuals who boat and 116 people who neither recreationally boat nor fish.

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 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 1 provides an overview of the demographic profile of the 321 recreational boaters who responded to the survey.

Table 1: Demographic characteristics of survey respondents (recreational boating)*

	Number	%*
Gender		
Male	167	52.02%
Female	154	47.98%
Total	**321**	**100.00%**
Age		
18 to 34 years	133	41.43%
35 to 54 years	127	39.56%
55+ years	61	19.00%
Total	**321**	**100.00%**
Primary place of residence		
Melbourne/Port Phillip	243	75.70%
South West	14	4.36%
North West	22	6.85%
North East	12	3.74%
Gippsland	14	4.36%
Interstate	7	2.18%
Unknown/Not stated	9	2.80%
Total	**321**	**100%**

**Totals may not add due to rounding*

Consultation

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

- Dallas D'Silva (Director, Fisheries Policy, Management, Science and Licensing - Victorian Fisheries Authority)
- Katherine Grech (Director, Better Boating Victoria).

Stage 4: 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.

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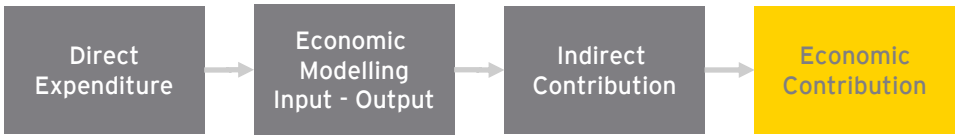
Figure 12: Economic contribution methodology



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 boating on the Victorian economy.

To estimate the economic contribution of recreational boating 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 A1).

The economic contribution analysis has been undertaken for two periods of time:

- For a single period in time, being 2018/19 (financial year)
- Over a 20-year evaluation from 2018/19 to 2037/38 (financial year).

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Box A1: Input-output (I-O) methodology

To estimate the potential economic contribution of recreational boating 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 number of Victorian recreational boating participants and the range of activities associated with these participants highlights the complex way the modern economy operates. It involves the use and 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:

- Transport
- Public Administration, Regulatory Services, Order & Safety
- Accommodation and food services
- Transport Equipment & Parts Manufacturing
- Retail trade
- Sports, Recreation & Gambling.

The multipliers used for this study have been derived from REMPLAN[25] I-O modelling software, 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 boating.

Recreational boating industry multipliers

	Direct Effect	Industrial Effect	Consumption Effect	Total Effect	Type 1 Multiplier	Type 2 Multiplier
Output ($m)	$3,809	$1,903	$2,199	$7,912	1.500	2.077
Employment (FTE)	10,330	4,991	6,735	22,056	1.483	2.135
Wages and Salaries ($m)	$706	$441	$488	$1,636	1.625	2.317
Value-add ($m)	$1,002	$798	$1,121	$2,921	1.796	2.914

Stage 5: Finalisation

In this stage, EY distributed the draft economic modelling outputs to, and received feedback from the following:

- Dallas D'Silva (Director, Fisheries Policy, Management, Science and Licensing - Victorian Fisheries Authority)
- Katherine Grech (Director, Better Boating Victoria).

[25] REMPLAN Economy provides insights into the performance of key sectors in a region's economy. It is underpinned by the latest data from the Australian Bureau of Statistics. REMPLAN Economy delivers estimates of employment, output, wages & salaries, imports, exports and gross regional product for 114 industries. Information available at: https://www.remplan.com.au/, accessed 15.04.2020

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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 the detailed assumptions used to generate the following:

- Total number of boating trips (i.e. the number of Victorian residents who have gone recreational boating in Victoria in the last 12 months, multiplied by average number of trips taken by each participant)
- Expenditure per adult boater including an estimate of the expenditure incurred in Victoria (i.e. accounting for online purchases)
- Boat ownership and purchase price.

Total number of boating 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 2018)
- **Boating participation and number of trips (adults)** - The proportion of the Victorian adult population that has gone recreational boating in the last 12 months, and the average number of trips per participant per year (from the 2019 Survey).

These are discussed below.

Victorian adult population

- The Victorian population is estimated to be 6,460,675, at the beginning of the period of 2019 (increasing to 8,844,131 million in 2038). In 2019, 78% of the Estimated Residential Population are adults (i.e. 18 years old or older). This is based on information extracted from Victoria In Future 2019.

Boating incidence

- An estimated 696,072 adult Victorian residents participating in recreational boating across Victoria in 2018/19.
- Based on the results of the survey, 14% of respondents (i.e. adults only) had participated in recreational boating within the last 12 months in Victoria. 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 boating incidence outlined above, EY estimates that there were 696,072 adult boaters in Victoria in 2018/19, increasing to 949,503 by 2037/38
- EY estimates that adult boaters made 6.4 million trips in Victoria, in 2018/19 (increasing to 8.7 million trips in 2037/38). The above estimates are based on the results of the 2019 survey, which indicate that the average participator in recreational boating embarks on 9.2 boating trips per year.

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Direct recreational boating expenditure and contribution

The expenditure estimates applied in the economic modelling are based on the results from the survey. The survey defined three broad categories of expenditure:

- **Per trip** - Expenditure items that are typically incurred every trip (e.g. 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 boater embarking on 9.2 fishing trips per year)
- **Boat purchase** - Expenditure of boats that are either exclusively used for fishing or used for multi-use purposes.

Average expenditure per trip (excluding boat purchase)

Based on the results of the survey, the average adult boater spends $338 per fishing trip. Of this, $281 (i.e. 83%) is incurred in Victoria. 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)[26].

Table 2: Average expenditure per boater per trip, by expenditure type and primary purchase location

	Primary purchase location		Total expenditure per trip (average)
	Victoria	Other	
Vessel hire and equipment	$19.36	$2.19	$21.56
Trailers and trailer maintenance	$17.86	$2.32	$20.18
Berth fees	$20.75	$10.41	$31.17
Launching or parking fees	$22.52	$4.91	$27.44
Food and accommodation on trips in Victoria	$53.94	$10.19	$64.13
Boat fuel costs	$49.37	$4.74	$54.11
Boat maintenance	$42.59	$8.05	$50.64
Equipment to support boating activity (e.g. safety gear, tow sport equipment, fishing gear etc)	$32.68	$6.89	$39.58
Other	$22.26	$7.00	$29.25
Total	**$281.32**	**$56.74**	**$338.06**

Source: Based on EY Analysis

Table 3: Average annual expenditure per boater (per trip), by expenditure type and primary purchase location

Average expenditure annual - Boating	Primary purchase location		Total expenditure per trip (average)
	Victoria	Other	
Clothing (e.g. wetsuit, wet weather gear, jackets etc)	$28.67	$14.63	$43.30
Vessel club fees	$16.20	$4.00	$20.20
Licencing costs	$26.15	$3.16	$29.30
Vessel registration	$34.04	$4.79	$38.84
Vessel maintenance	$25.02	$2.04	$27.05
Trailer maintenance	$14.83	$1.89	$16.72
Other	$17.26	$1.19	$18.45
Total	**$162.17**	**$31.70**	**$193.87**

Source: Based on EY Analysis

Calculation of average expenditure for boat user

Average expenditure was calculated based on survey results on the expenditure of boat users across all spend categories (e.g. vessel hire, berth fees, food and accommodation etc.). The total spend of each category was divided by the total number of boat users to provide an average spend per boat

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

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user per category. This total was then divided by the total number of trips per boat users to provide an average per trip spend.

As the expenditure of boat users vary greatly depending on their choice of recreational activity (e.g. boat owners, boat hirers, mooring boats etc.), the average expenditure per trip (i.e. $443 per trip in Victoria) is not an accurate estimation of expenditure for each boat user group.

Boat ownership and purchase price

Based on the results of the Victorian Recreational Fishing and Boating Survey 2019, the average adult boater owns 0.27 boats (purchased in Victoria).

Based on the results of the Victorian Recreational Fishing Survey 2019, the average purchase price of recreational fishing boats (including general use boats) in Victoria is $15,849. Given the average boat replacement time of 5.82 years, the annual / amortised value of spend on boats in Victoria is $2,724 per annum.

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Appendix C Victorian Recreational Fishing and Boating Survey 2019

EY Sweeney

Victorian Recreational Fishing and Boating Survey

INTRODUCTION

The purpose of this survey is to collect data to establish the nature and scale of vessel ownership and 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 7-15 minutes to complete, depending on your answers.

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

PROGRAMMER: DO NOT TERMINATE RESPONDENTS UNLESS SPECIFIED

We would like to ask you a few short questions to make sure we are talking to the right people.

Q1. Are you… **SINGLE RESPONSE**	Male O1 Female 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

SECTION 2. VESSEL OWNERSHIP

Thank you. Welcome to the main survey.

Q6.	Do you own a boat (e.g. motor boat or yacht) which you use for recreational fishing purposes?	Yes ○1 No **[GO TO Q12]** ○2

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

Q6a.	For each of the following types of vessels, please type in the number you currently own. **PROGRAMMER NOTE: ALLOW RESPONDENT TO ENTER UP TO A MAXIMUM OF 5 PER BOAT TYPE** **PROGRAMMER NOTE: ALLOCATE TO 'BOATING' QUOTA IF THEY TYPE IN ANY ANSWER OTHER THAN CODE 99**	Motorised trailered fishing boat Motorised non-trailered fishing boat Yacht Pleasure power boat Fishing boat Personalised watercraft (PWC) Dive boat House boat Unregistered craft (i.e. kayak or canoe) Other (please specify) None **[GO TO Q12]** ○99

Q48.	How many people, on average, accompany you on each boating trip in Victoria?	None ○99 1 ○1 2 ○2 3 ○3 4 ○4 5 ○5 6 ○6 7 ○7 8+ ○8

IF Q48 = 99 (NONE) – SKIP Q49

Q49. What is the age of each accompanying person?
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	○ 1	○ 1	○ 1	○ 1	○ 1	○ 1	○ 1	○ 1
13 - 18 years	○ 2	○ 2	○ 2	○ 2	○ 2	○ 2	○ 2	○ 2
18 - 24 years	○ 3	○ 3	○ 3	○ 3	○ 3	○ 3	○ 3	○ 3
25 - 34 years	○ 4	○ 4	○ 4	○ 4	○ 4	○ 4	○ 4	○ 4
35 – 44 years	○ 5	○ 5	○ 5	○ 5	○ 5	○ 5	○ 5	○ 5
45 – 54 years	○ 6	○ 6	○ 6	○ 6	○ 6	○ 6	○ 6	○ 6
55 - 64 years	○ 7	○ 7	○ 7	○ 7	○ 7	○ 7	○ 7	○ 7
65 – 70 years	○ 8	○ 8	○ 8	○ 8	○ 8	○ 8	○ 8	○ 8

70+ years	○ 9	○ 9	○ 9	○ 9	○ 9	○ 9	○ 9	○ 9
Relation to you								
Immediate family	○ 13	○ 13	○ 13	○ 13	○ 13	○ 13	○ 13	○ 13
Extended family	○ 14	○ 14	○ 14	○ 14	○ 14	○ 14	○ 14	○ 14
Other (e.g. friend)	○ 15	○ 15	○ 15	○ 15	○ 15	○ 15	○ 15	○ 15

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

PIPE THROUGH TOTAL NUMBER OF VESSELS 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 Vessel (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

\Q8a On average, how often do you replace each of the following types of Vessels?

PROGRAMMER NOTE: PIPE THROUGH ANSWERS FROM Q6A

XXX **ASK IF Q6a=1 (OWN A MOTOR BOAT)**	Every ____ years ○ 1	Have not replaced any motor boat ○ 2	Don't know/can't remember ○ 3

\Q8a Did you replace the following vessels with new or old vessels?

PROGRAMMER NOTE: PIPE THROUGH CODES FROM ABOVE – ONLY CODE 1

Motor boats **ASK IF Q6a=1 (OWN A MOTOR BOAT)**	New ○ 1	Second had ○ 2	Both new and second hand ○ 2

Q9. How many times in the last 12 months have you used each vessel?	**SHOW OPTIONS FOR EACH OF THE VESSELS 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 vessel? **PLEASE SELECT ONE RESPONSE ONLY**	**SHOW OPTIONS FOR EACH OF THE VESSEL OWNED. E.G. MOTOR BOAT 1, MOTOR BOAT 2 AND YACHT 1** Recreational fishing ○1 General Use ○3 A mix of General use including recreational fishing ○2

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

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

Q50. Where do you usually use your vessel 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 LOCATION

		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

SECTION 3. EXPENDITURE OF REGISTERED VESSELS IN VICTORIA

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

Q51. 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

Q52. Approximately, what would be spend on the following items over the last 12 months (in Victoria)? (Please enter zero if you have no spend on each item)

[SPLIT INTO TWO SCREENS]

Item	**Per Trip Expenditure ($)**
Vessel hire and equipment	$
Trailers and trailer maintenance	$
Berth fees	$
Launching or parking fees	$
Food and accommodation on trips in Victoria	$
Transport to and from boating venue (either fuel costs or public transport costs)	$
Boat fuel costs	$
Boat maintenance	$
Equipment to support boating activity (e.g. safety gear, tow sport equipment, fishing gear etc)	$
Other	$

F PER TRIP SPEND FOR ANY OF THE ITEMS AT Q52 = 0, THEN DO NOT SHOW AT Q52A

Q52a. 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**

○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ 8	○ 9
○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ 8	○ 9
○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ 8	○ 9
○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ 8	○ 9
○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ 8	○ 9
○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ 8	○ 9
○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ 8	○ 9

Q53. Approximately, what would be your **per year** spend on the following items for vessels? 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 (e.g. wetsuit, wet weather gear, jackets etc)	$	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ 8	○ 9
Vessel club fees	$	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ 8	○ 9
Licensing costs	$	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ 8	○ 9
Vessel registration	$	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ 8	○ 9
Vessel maintenance	$	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ 8	○ 9
Trailer maintenance	$	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ 8	○ 9
Other	$	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ 8	○ 9

Q12.	Have you gone fishing (without a vessel) for recreational purposes in the past 12 months in Victoria?	Yes [ALLOCATE TO 'FISHERS' QUOTA] O1 GO TO Q42 O2

SECTION 4. FISHING ACTIVITY (WITHOUT A VESSEL)

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

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)	○ 15	○ 15	○ 15	○ 15	○ 15	○ 15	○ 15	○ 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 / Marine **IF '0%' SKIP TO Q18** ☐ %

ASK Q17 IF Q16 CODE 1 = >0%

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.	Brown Trout	○ 1	☐	☐
7.	Rainbow Trout	○ 7	☐	☐
2.	Redfin	○ 2	☐	☐
3.	Murray Cod	○ 3	☐	☐
4.	Golden Perch (Yellow Belly)	○ 4	☐	☐
5.	Other **Please specify**	○ 5	☐	☐
6.	Don't target any specific fish	○ 6		

ASK Q18 IF Q16 CODE 2 = >0%

Q18.	What type/s of fish does your fishing group normally target when fishing in estuarine or **marine** waters?		**Quantity caught per trip (average)**	**Quantity released per trip (average)**
1.	Snapper	○ 01	☐	☐
2.	King George Whiting	○ 02	☐	☐
3.	Flathead (other than Dusky)	○ 03	☐	☐
4.	Calamari (squid)	○ 04	☐	☐
5.	Dusky flathead	○ 05	☐	☐
6.	Bream	○ 06	☐	☐
7.	Australian Salmon	○ 07	☐	☐
8.	Abalone	○ 08	☐	☐
9.	Rock Lobster	○ 09	☐	☐

10.	Southern Bluefin Tuna	○ 10		
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 LOCATION

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

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

SECTION 5. 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	$
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
○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ 8	○ 9
○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ 8	○ 9
○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ 8	○ 9
○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ 8	○ 9
○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ 8	○ 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
Camping gear	$	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ 8	○ 9
Other	$	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ 8	○ 9

SECTION 6. 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?	_____

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)**

SECTION 7. DEMOGRAPHICS

Q5. What is your residential postcode?	Record postcode

Q5a. In which country were you born? Please select one response only.	Australia **Go to Q5c** ○ 01 Canada ○ 02 China ○ 03 Croatia ○ 04 England ○ 05 Greece ○ 06 India ○ 07 Italy ○ 08 Macedonia ○ 09 Malaysia ○ 10 New Zealand ○ 11 Pakistan ○ 12 Serbia ○ 13 Somalia ○ 14 Spain ○ 15 Sri Lanka ○ 16 Turkey ○ 17 United States of America ○ 18 Vietnam ○ 19 Other (please specify) ○ 97 Prefer not to say ○ 99

ASK IF OUTSIDE AUSTRALIA (Q5a NOT CODE 1)

Q5b. For how many years have you been living in Australia? **Please select one response only.**	Less than 2 years ○ 1 2 to 4 years ○ 2 5 to 9 years ○ 3 10 to 14 years ○ 4 15 or longer ○ 5 Prefer not to say ○ 99

Q5c. What is the main language you speak at home? **Please select one response only.** ***[PROGRAMMER NOTE: SHOW IN ALPHABETICAL ORDER. ANCHOR 'OTHER' TO BOTTOM]***	English □ 01 Arabic □ 02 Cantonese □ 03 Greek □ 04 Hindi □ 14 Italian □ 05

	Khmer □ 06 Malay □ 16 Mandarin □ 07 Maori □ 12 Pasifika language □ 13 Serbian □ 08 Spanish □ 09 Tamil □ 15 Vietnamese □ 10 Other (please specify) □ 11

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

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