

# Bibbulmun Track User Survey Report 2014-15

A report for the Bibbulmun Track Foundation and  
Department of Parks and Wildlife, Western Australia

by

Dr Michael Hughes – Murdoch University  
Dr Amanda Smith - Department of Parks and Wildlife  
Mr Michael Tuffin - Department of Parks and Wildlife



Department of  
Parks and Wildlife



Funding support for this research was provided by the  
Trails Grant Program administered by the Department  
of Sport and Recreation and supported by Lotterywest



Department of  
Sport and Recreation



Produced by Murdoch University, South Street, Murdoch, Western Australia and Visitor Research Unit, Parks and Visitor Services Division, Department of Parks and Wildlife, Western Australia, Locked Bag 104, Bentley Delivery Centre, WA 6983.

**Disclaimer** The State believes this information to be reliable and accurate at the time of publication. However, the reader is responsible for making their own assessment of the information and its veracity and usefulness. This State shall in no way be liable, in negligence or howsoever, for any loss incurred by anyone relying on the information, even if such information is or turns out to be wrong, incomplete, out of date or misleading.

**Copyright** All material is the copyright of Murdoch University and the Department of Parks and Wildlife. No part of the contents of the publication may be reproduced without the consent of these parties.

This publication is available in alternative formats on request.

Image courtesy of Michael Tuffin, Department of Parks and Wildlife

Information current at November 2015

# Executive Summary

## Background

This project follows on from survey studies conducted by consultant Colmar Brunton Social Research on the Bibbulmun Track during 2003 and 2008. This project was required to provide up-to-date information about frequency/patterns of use, satisfaction levels, user expenditure and visitor profile for the Bibbulmun Track. This survey provided essential data to inform the Bibbulmun Track Use Survey to calculate visitation estimates and improved understanding of the Track users to assist both the Department of Parks and Wildlife and the Bibbulmun Track Foundation in seeking funding for the Track. It provided data to be used in the future planning and improved management of the Track. It also provides a coordinated monitoring program for the Bibbulmun Track to obtain accurate and useful visitor information that is comparable to other monitored long trails and to set a baseline for future monitoring programs.

## Objectives

The main objective of the survey was to obtain an indication of levels of Track use, types of Track users, their frequency and patterns of use, satisfaction levels and expenditure levels and patterns for future planning, management, maintenance, sponsorship and marketing purposes.

## Summary Results

### User Characteristics

A total of 714 Bibbulmun Track users completed the online questionnaire. There was a higher proportion of survey respondents collected through social media and website sources that have a focus on walking and pre-existing knowledge of the Bibbulmun Track. The resulting data set therefore has a focus on regular and interested respondents of the Track and walking.

- Most respondents were Western Australian residents aged between 35 and 54 years. A small proportion lived interstate (4%) or were international visitors (3%). There were approximately equal proportions of male and female survey respondents. These results are similar to previous Bibbulmun Track surveys where most of the respondents were Western Australian and had a slightly higher proportion of male respondents.
- The majority of respondents were walking with friends (31%) or family (21%) while a significant proportion indicated they were walking by themselves (23%).
- Most respondents indicated they were aware of the Bibbulmun Track organisations (93%) of which just under half of respondents (43%) were current or past members of the organisations.

### Track Use

Respondents indicated the prompts to walk on the Track were mainly through word of mouth and friends (42%) or based on local knowledge (35%).

Survey respondents had walked on the Bibbulmun Track an average of 4 times in the past 12 months. About half of respondents indicated they had used the Track 2 to 5 times while 30% indicated only using the Track once in the past 12 months. Just under half (45%) indicated undertaking half day walks while 70% of respondents indicate taking full day walks (including overnight walks) in the past 12 months.

The majority of respondents travel to the Track by car with most using their own car (57%) or being dropped off by car (22%).

More than half of respondents were on overnight walks (53.4%) of varying distances and time. The average distance walked for overnight users was 110km with an average duration of 5.6 days. The length of walk for day users varied according to duration where those walking for less than 2 hours averaged 4km while 4 hours to full day walkers averaged 18km.

In the survey period, there were an estimated 87,652 walks on the Track, equating to 302,960 visit days per year.

97.5% of respondents indicated they were extremely satisfied or satisfied with their most recent walk on the Bibbulmun Track, with an overall average of 92%. 98% indicated they would recommend the Bibbulmun Track to friends.

Mean daily direct expenditure per person for overnight walkers was higher due to accommodation costs and significantly greater expenditure on equipment and food supplies.

#### Mean daily direct expenditure per person

Trip type	n	Mean total direct expenditure per person per day
Day walk mean	232	\$30.95
Overnight walk mean	282	\$45.09
Total sample mean	514	\$38.71

Average total annual direct expenditure of Bibbulmun Track users was estimated at AU\$13.1 million, based on the mean daily direct expenditure per person per day, estimated number of annual overnight and day walks and average length of overnight walk in days.

When asked about the social benefits and opportunities associated with the Bibbulmun Track respondents strongly agreed that the Track promoted personal benefits through opportunities for:

- access to scenic natural areas,
- walking as a physically and mentally healthy activity
- escaping the urban environment
- connection with, and increased appreciation of nature

Respondents strongly agreed that the Bibbulmun Track promotes broader community benefits including:

- contributing to healthy lifestyles
- provision of access to green spaces/corridors
- increased community wellbeing and pride
- increased tourism in regional WA

## Implications

This survey report provides a snap shot of Bibbulmun Track users in 2014-2015. Repeating the survey at regular intervals (e.g. 5 to 7 year intervals) would provide important longitudinal information regarding Track use, types of users, their frequency and patterns of use, satisfaction levels and expenditure levels and patterns for future planning, management, maintenance, sponsorship and marketing purposes.

Surveyed Track users are highly satisfied with their experience. They highly rate a range of personal and social benefits and opportunities associated with use of the Track. This may be the foundation for expansion of support for the Track to other sponsors such as private health providers and insurers.

Based on the survey results, the Bibbulmun Track appears to be mainly used by Western Australian residents. This indicates a potential to implement marketing strategies and broaden the user profile to include interstate and international users, increasing the total annual direct expenditure by Track users and providing access to the associated health benefits to a larger portion of the community.

The expenditure figures provide an approximate estimate of mean daily direct expenditure per person based on a sample snap shot. In order to estimate a total annual direct expenditure figure, accurate estimates for numbers of Track users per year are required. This would ideally include separate estimates for day walk numbers and overnight walk numbers per year. Repeating the expenditure survey over time will enhance the reliability of expenditure estimates through accumulated data. This type of survey will provide an indication of what Bibbulmun Track users spend in relation to use of the Track.

# Contents

<b>Introduction .....</b>	<b>2</b>
Objectives .....	2
Method .....	3
Survey Design and Distribution .....	3
Direct expenditure calculation method .....	3
Use calculation method .....	5
<b>Results .....</b>	<b>3</b>
Survey Respondent Characteristics .....	3
Travel group type .....	3
Awareness of Bibbulmun Track Foundation or Friends of the Bibbulmun Track .....	5
Bibbulmun Track use in the last 12 months .....	6
Log book use .....	7
Number of half days and full days in past 12 months .....	7
<b>Most Recent Bibbulmun Track Experience .....</b>	<b>9</b>
Main reason for visit to area .....	9
Transport to Track .....	10
Duration, length and type of walk .....	10
Accommodation used and length of stay .....	13
<b>Satisfaction, opportunities and benefits .....</b>	<b>15</b>
Overall satisfaction rating of most recent trip on Bibbulmun Track .....	15
Recommend the Track to others .....	15
Intent to walk the Track again .....	15
Bibbulmun Track Opportunities and Benefits .....	15
Personal opportunities and benefits .....	16
Societal opportunities and benefits .....	17
<b>Bibbulmun Track User Direct expenditure .....</b>	<b>18</b>
Itemised direct expenditure and patterns .....	18
Average total daily direct expenditure per person .....	21
<b>Implications .....</b>	<b>24</b>
<b>References .....</b>	<b>25</b>
Appendix 1: Survey Questionnaire .....	26

## List of Figures

Figure 1: Map of Bibbulmun Track .....	2
Figure 2: response to 'Which best describes the travel group you visited the Bibbulmun Track with during your most recent trip?' (n=547) .....	3
Figure 3: Response to 'How many people in your personal group were adults and how many were children during your last trip to the Bibbulmun Track?' (n = 531) .....	4
Figure 4: Age groups of children travelling with adults (n = 86). .....	4
Figure 5: Response to: "Have you heard of the Bibbulmun Track Foundation or Friends of the Bibbulmun Track previously?" (n=663) .....	5
Figure 6: Response to "What first prompted you to walk the Bibbulmun Track?" (n= 665) .....	6
Figure 7: Number of visits to the Bibbulmun Track in the past 12 months (n= 534) .....	6
Figure 8 Percentage of respondents that recorded their walk in the green log-book at a Bibbulmun Track campsite (n=354). .....	7
Figure 9: Number of visits to the Bibbulmun Track in the past 12 months by length of walk (n=534) .....	8
Figure 10: Proportion of respondents indicating whether the Bibbulmun Track was the main reason for their visit according to duration of walk (n= 545) .....	9
Figure 11: Proportion of respondents using various forms of transport to access the Bibbulmun Track (n= 666) .....	10
Figure 12: Duration of most recent Bibbulmun Track walk (n= 663) .....	11
Figure 13: Length (km) of most recent walk along the Bibbulmun Track (n= 561) .....	11
Figure 14: Proportion of out and back vs. one way walks by duration of walk and length of walk in km. ....	12
Figure 15: Types of accommodation used by Bibbulmun Track overnight users (n=344). ....	13
Figure 16: Accommodation used in combination with on-Track shelters during overnight trips (n=260).....	13
Figure 17: Mean ratings in response to statements regarding personal benefits and opportunities associated with walking on the Bibbulmun Track (n=549). ....	16
Figure 18: Mean ratings in response to statements regarding benefits and opportunities to society associated with the Bibbulmun Track (n=549). ....	17
Figure 19: Itemised mean direct expenditure as a proportion of mean total direct expenditure per person per day (PPD) for day users and overnight walkers. ....	19
Figure 20: Itemised mean direct expenditure as a proportion of mean total expenditure per person per day for <2 up to 4 hours walkers (n= 111, mean total expenditure PPD = \$21.57) .....	20
Figure 21: Itemised mean direct expenditure as a proportion of mean total expenditure per person per day for 4hrs - 1 day walkers (n= 121, mean total expenditure PPD = \$39.46) .....	21
Figure 22: Mean total Bibbulmun Track direct expenditure per person per day by walk length and type. ....	22

## List of Tables

Table 1: Bibbulmun Track survey respondent demographic characteristics.....	3
Table 2: Average length of walk in km by duration of walk in time (n=553).....	12
Table 3: Type of walk in terms of one way versus out and back (n=663) .....	12
Table 4: Average number of nights for each type of accommodation used on the most recent Bibbulmun Track overnight visit (n=344). ....	14
Table 5: Itemised mean direct expenditure per person per day for most recent trip for all respondents (N=514). ....	18
Table 6: Itemised mean direct expenditure per person per day for most recent trip for day users and overnight walkers. ....	19
Table 7: Itemised mean direct expenditure per person per day for most recent trip for day user subgroups.....	20
Table 8: Total Mean Trip Direct expenditure Per Person Per Day: Day trip vs. Overnight.....	22
Table 9: Total Mean Trip Direct expenditure Per Person Per Day (AU\$) by walk type .....	22

# Introduction

This report presents the results of a survey of Bibbulmun Track users conducted over the course of 2014 and 2015. The Bibbulmun Track is a long distance walk track, stretching 1000km from Kalamunda, a suburb in the hills on the outskirts of Perth, to the town of Albany on the south coast. The Track passes through the towns Dwellingup, Collie, Balingup, Donnelly River Village, Pemberton, Northcliffe, Walpole, Peaceful Bay and Denmark (Figure 1).

The Bibbulmun Track is a linear track that offers a wide range of experiences, from a gentle stroll to enjoy the peace and beauty of the natural environment, to an epic eight week adventure.



**Figure 1: Map of Bibbulmun Track**

This project follows on from survey studies conducted by consultant Colmar Brunton Social Research on the Bibbulmun Track during 2003 and 2008. This project was required to provide information about frequency/patterns of use, satisfaction levels, user direct expenditure and visitor profile for the Bibbulmun Track. The 2008 survey provided essential data to inform the Bibbulmun Track Use Survey to calculate visitation estimates and improved understanding of the Track users to assist both the Department of Parks and Wildlife and the Bibbulmun Track Foundation in seeking funding for the Track. It provides data to be used in the future planning and improved management of the Track. It also provides a coordinated monitoring program for the Bibbulmun Track to obtain accurate and useful visitor information that is comparable to other monitored long trails and to set a baseline for future monitoring programs.

## Objectives

This project is a collaborative project between the Bibbulmun Track Foundation and the Department of Parks and Wildlife in Western Australia. The purpose of this project is to obtain data for the Bibbulmun Track to provide accurate information about frequency/patterns of use, satisfaction levels, user direct expenditure and visitor profile for future planning, management, maintenance, sponsorship and marketing purposes.

## Method

The method used for this project was adapted from that used for the Bibbulmun Track in 2008 (Colmar Brunton, 2008). This report presents the findings from a user survey distributed as an online questionnaire.

Long trail user survey methodology was reviewed and applied in 2011 for the Munda Biddi Trail (Hughes and Smith, 2011). Refinements to the survey tool and distribution methodology were made for the Bibbulmun Track User Survey 2014 with guidance from the Bibbulmun Track User Survey 2008 (Colmar Brunton, 2008) to ensure some comparability.

The methodology for this project included both online and in-field data collection. The online survey was designed and published by the Social Science Coordinator in the Department of Parks and Wildlife using the provider SurveyMonkey.com. The online survey was promoted via social media and websites relevant to walkers.

Bibbulmun Track users who had visited the Track no more than four weeks previously were compatible to complete the online questionnaire. The survey remained open for a 12-month period.

Bibbulmun Track Foundation volunteers were utilised for in-field data collection. Bibbulmun Track users were approached while on-track at a series of pre-defined survey sites along the Track during two peak periods in autumn and spring. Potential respondents were asked if they would like to participate in the survey. The name and email address of those willing to participate were recorded and the potential respondent were sent a link to the online survey via email. The Bibbulmun Track Foundation arranged for the promotion of the survey on the websites and organisation and deployment of volunteers.

There was a higher proportion of survey respondents collected through social media and website sources that have a focus on walking and pre-existing knowledge of the Bibbulmun Track. The resulting data set therefore has a focus on regular and interested respondents of the Track and walking.

Once the survey collection was completed, expenditure data analysis and reporting was conducted by staff at Murdoch University, who specialises in valuation of natural areas.

## Survey Design and Distribution

The principal form of data collection for the Bibbulmun Track User Survey was via on-line survey (63% of respondents). The online survey tool used was SurveyMonkey.com, which is a professional on-line survey tool based in the USA. The online survey was promoted via social media and websites at Department of Parks and Wildlife, Bibbulmun Track Foundation, Department of Sport and Recreation, Outdoors WA list server, Tourism Western Australia, Trails WA, and Perth bushwalking clubs.

Additionally, on-site participation was sought to access individuals walking on the Bibbulmun Track that may not visit one of the above-mentioned websites or that are using the Track on a more incidental or casual basis. The Track sections selected for on-site surveys are a mixture of those at highly visited destinations where there is a larger proportion of incidental use of the Track and sites where a range of different users will be captured e.g. end-to-enders, overnight walkers or short day trip walkers. The study population included people 18 years and over who had recently walked on the Bibbulmun Track. The data was collected over a 12-month period from June 2014 to July 2015.

Bibbulmun Track walkers were approached by Bibbulmun Track Foundation volunteers while on-track at a series of pre-defined survey sites along the Track mostly during winter, spring and autumn months in 2014 and 2015. On-site participation was sought at five sites along the Track as detailed below:

1. Kalamunda/Mundaring Weir
2. Sullivan Rock
3. Karri Gully
4. Tree Top Walk
5. Sandpatch

Surveyors collected walkers contact details. Potential respondents were then contacted via email with a survey link to the on-line survey. A 35% response rate was obtained for this proportion of respondents.

Handouts with the survey link were also left in Bibbulmun Track camp sites and visitor centres. Three percent of responses were obtained using this method.

## Direct expenditure calculation method

The Bibbulmun Track visitor direct expenditure valuation was adapted from WA Treasury approved methods used in previous studies on the value of parks and protected areas for tourism in Western Australia (for example see: Carlsen & Wood, 2004; Hughes, Carlsen & Wood, 2005; Hughes et al, 2009; Jones et al 2010; Hughes & Smith, 2011).

Survey respondents were asked to record their amounts of expenditure on different items for their most recently completed walk along the Bibbulmun Track. Respondents also indicated how many individuals the expenditure covered and how many days they walked along the Bibbulmun Track for their most recent completed trip. Not all respondents indicated expenditure on all items. Total trip expenditure was then calculated for each respondent by summing their itemised expenditure.

A standardised measure of direct expenditure on each item per person per day for each respondent could then be calculated as follows:

$$\text{Item expenditure per person per day} = \frac{\text{[Item expenditure]}}{(\text{[Number of people expenditure covers]} \times \text{[number of days on Track]})}$$

The mean direct expenditure per person per day for each item was then calculated for the total survey sample.

Total direct expenditure per person per day for each respondent for the most recent trip was calculated using the same method as for the item expenditure person per day calculation where

$$\text{[Total expenditure for each respondent]} = \text{[sum of the item expenditures for each respondent]}$$

$$\text{Total expenditure per person per day for each respondent} = \frac{\text{[total expenditure for each respondent]}}{(\text{[Number of people expenditure covers]} \times \text{[number of days on Track]})}$$

The mean total direct expenditure per person per day was then calculated for the total survey sample.

An estimate for the total annual direct expenditure was calculated separately for day walkers and overnight walkers owing to different expenditure patterns.

Day walk total annual direct expenditure was calculated by multiplying the average total expenditure per person per day for day walkers by the total annual number of day trips to the Bibbulmun Track.

The overnight walker total annual direct expenditure was calculated by multiplying the average total expenditure per person per day for overnight walkers by the total annual number of overnight trips to the Bibbulmun Track multiplied by the average length in days for overnight walks.

The overall total annual direct expenditure for the Bibbulmun Track was then calculated by adding the day walk and overnight walk total annual direct expenditure figures.

This method is a standard method applied across WA natural areas. It differs from 2008 survey in that the Colmar Brunton approach included a total trip focus that may include activities other than the Bibbulmun Track walk. The Colmar Brunton survey requested:

- itemised expenditure for the *current trip*
- possible future expenditure for the remainder of the trip
- that respondents estimate what portion of the expenditure was for them individually

Rather than standardising expenditure to a per person per day the survey divided the sample in arbitrary trip lengths in days then calculated

- Mean total trip expenditure per item for each trip length category
- Summed the mean item expenditure for each trip length category to obtain a total expenditure figure
- Summed the total expenditure figures for each trip length category to obtain a total expenditure figure overall

This approach is subject to significant margins of error and would tend to inflate values. The expenditure values based on arbitrary trip length groupings could be altered by adjusting the categories to include more or less days.

## Use calculation method

Visitation was monitored using pedestrian counters at a broad mixture of sites across the Bibbulmun Track that were believed to be representative of overall track use. Some monitoring issues were encountered, resulting in some sites having to be excluded from the analysis. The final selection of sites used for determining usage were as follows:

- Sandpatch
- Mundaring Weir
- Sullivan Rock
- Wawa Block
- Golden Valley Tree Park Circuit
- One Tree Bridge
- Shelley Beach Road Crossing
- Ficifolia Road
- Guy Road
- Driver Road
- Lease Road

During the monitoring period, Track users were surveyed to determine their Track usage. This included details about their most recent visit to the Bibbulmun Track, including:

- Start point of their walk
- End point of their walk
- If they were going in one direction, or on an out-and-back walk (returning to the start point)
- The number of days on Track

The monitoring data was used to determine an index of total Track activity by summing together the figures from the counters at the monitoring sites.

From the survey data, an index of average counter incidence was calculated by determining the likelihood that a survey respondent would pass any given counter. This was determined by comparing the start and end points of a visit to see how many counters would have been passed by the respondent. As such, this figure would then be doubled if the respondent was on an out-and-back (return) trip. This figure was then averaged across all survey respondents to determine the index.

If the user survey were to be considered completely random and representative of all users of the Track, the counter incidence figure could then be used to determine total Track visits. It is believed that survey responses were somewhat biased toward overnight users more than people engaged in day visits due to the collection method (as previously explained in the method section).

For the purposes of this report, a visit is a measurement unit represented by a visitor using the Track for the purpose of recreation, culture, exercise, education, experience or other general wellbeing. Each visitor that walks the Track would represent a visit. By this definition if a visitor walks the Track, exits, then later walks again at a later time a second visit has occurred.

Track visits was determined as follows:

$$[\text{Track visits}] = \frac{[\text{total counter activity}]}{[\text{counter incidence}]}$$

The user survey results were then used to split this into day users and overnight users using the user survey responses. The average number of days on Track from the overnight users were then determined. From these figures, the number of visit days was determined to be 87,652.

A visit day is a day, or part there-of, that a visitor is using the Track. Someone walking for an hour would be accounted for as having their visit last for one visit day. Similarly, someone staying overnight would have theirs count for two. Finally, someone walking the Track from end-to-end may have their visit lasting for 60 visit-days.

As such, this was calculated as follows:

$$[\text{total visit days}] = ([\text{overnight visits}] \times [\text{average overnight visit days}]) + ([\text{day visits}] \times 1)$$

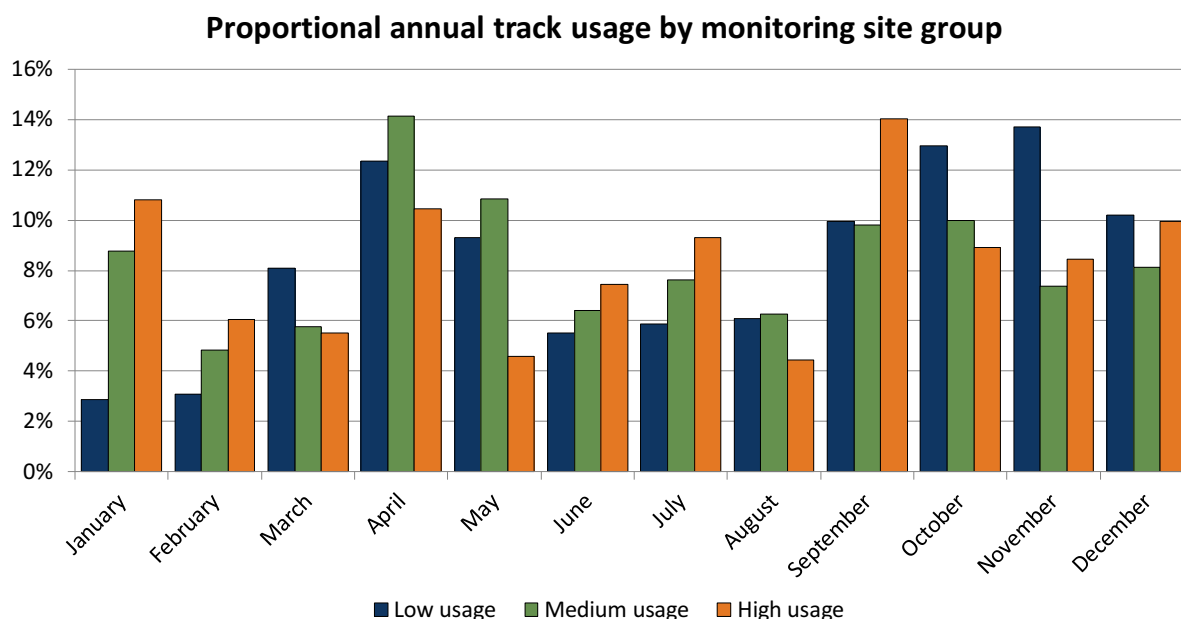
If the proportions of overnight visits were in-line with the two previous Bibbulmun Track User Surveys (both approximately 30%), the 87,652 visits would equate to 208,611 visit days. The proportion of overnight visits in the current survey came out to be much higher at 53.4%. The new figure is unusually high and may be an artefact of

sample selection bias. However, efforts have been made by the Bibbulmun Track Foundation over the last few years to try to increase overnight usage.

On this basis, using the survey proportion of overnight visits of 53.4%, this would represent an estimate of 40,846 day visits and 46,806 overnight visits resulting in 302,960 visit days across the survey period. This report uses the current survey proportion of visits to estimate total use.

The chart below shows that Track usage seasonality varied by how remote monitoring locations were. Remote monitoring sites were more commonly used on overnight visits and include locations such as Driver Road and Ficifolia Road. These sites had higher usage April and October-November, aligning with fair weather.

Track segments that experienced higher use were near population centres and access points (see chart below). These include locations such as Mundaring Weir, Sullivan Rock and Sandpatch. These easily accessible sites were more popular for day visits and had much of their usage aligned with school holiday periods.



As demonstrated in the above chart, the more remote usage sites have very different visitation when compared to the more accessible, higher usage sites.

# Results

A total of 714 questionnaires were completed by Bibbulmun Track users. There was a higher proportion of survey respondents collected through social media and website sources that have a focus on walking and pre-existing knowledge of the Bibbulmun Track. The resulting data set therefore has a focus on regular and interested respondents of the Track and walking. The 714 returned questionnaires commonly included unanswered questions where respondents either were unwilling to, or simply did not, provide information. As a result, the response rate varies from question to question in the survey. This is a common phenomenon as these types of voluntary surveys rely on the willingness of participants to supply information for each question in turn. Consequently, the results are presented in terms of the number of responses to each particular question (referred to as 'Total Responses') rather than the total sample size of 714.

## Survey Respondent Characteristics

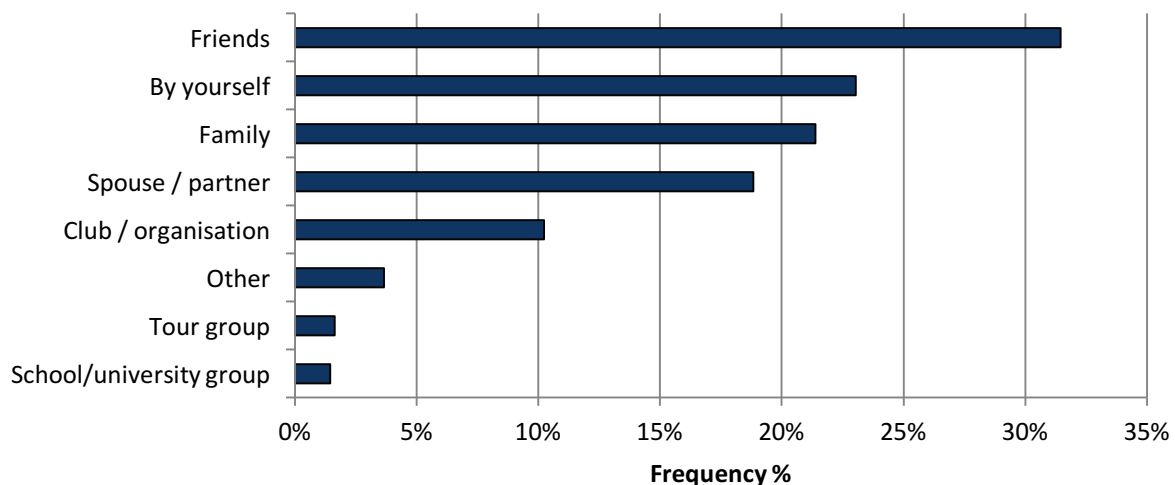
Table 1 demonstrates that most of the respondents lived in Western Australia and about half were aged between 35 and 54 years. Interstate and international visitors were of equally small proportions based on the survey response. Walkers below the age of 25 or 65 years or older were also a minority Table 1. These results are similar to previous Bibbulmun Track surveys where most of the respondents were Western Australian though had a slightly higher proportion of male respondents. Age categories differed to the previous surveys so are not comparable (Colmar Brunton 2008). This indicates that the visitor profile of walkers on the Track has not greatly altered over the years.

**Table 1: Bibbulmun Track survey respondent demographic characteristics**

Gender	n	%	Age group	n	%
Male	283	52.3%	18-24	17	3.1%
Female	258	47.7%	25-34	72	13.2%
Total responses	545	100%	35-44	107	19.6%
Place of residence			45-54	171	31.3%
WA	510	93.4%	55-64	119	21.8%
Interstate	20	3.7%	65 or older	60	11.0%
Overseas	16	2.9%	Total responses	546	100%
Total responses	546	100%			

## Travel group type

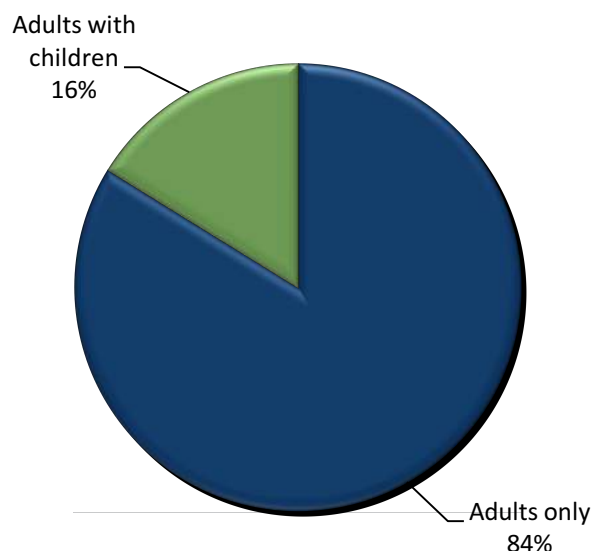
The majority of respondents were walking with friends (31%) or family (21%) while a significant proportion indicated they were walking by themselves (23%). A number of respondents (14%) indicated more than one category in their response to this question (Figure 2). The most common combinations were friends and family (4% of respondents) or friends and spouse / partner (3% of respondents). The wording of the question means that most respondents may have selected the single response that best described their group even though other categories may have been relevant.



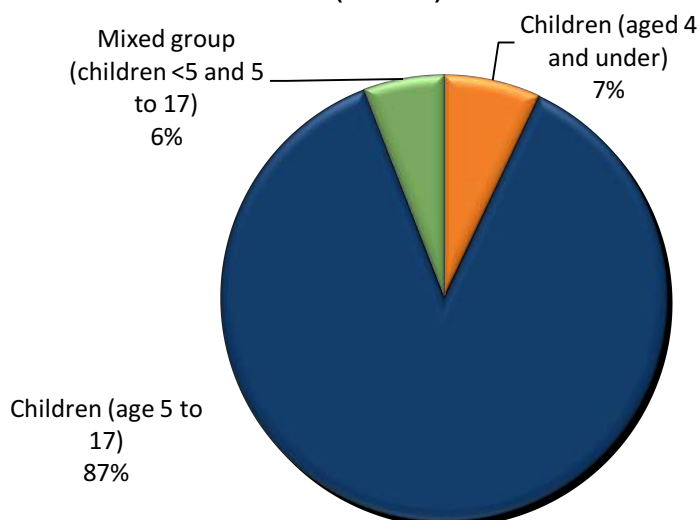
**Figure 2: response to 'Which best describes the travel group you visited the Bibulmun Track with during your most recent trip?' (n=547)**

When asked about the numbers of adults and children in their travel group 531 respondents completed the question. The average group size was 3.39; with groups ranging from 1 to 28 walkers. The majority of walking groups were made up of adults only (83.8%) with 16.2% including children (Figure 3).

For those travelling with children (n=86), the average make-up of a group (based on all responses) included 3 adults and 2 children. Children were most often with families that most commonly included either one or two children aged 5 to 17 (87%). Groups with children aged 4 and under (7%) generally included a single child in this age group. Groups with mixed ages of children were 7% of the sample (Figure 4). The data suggests there is potential to promote sections of the Track to families with school children.



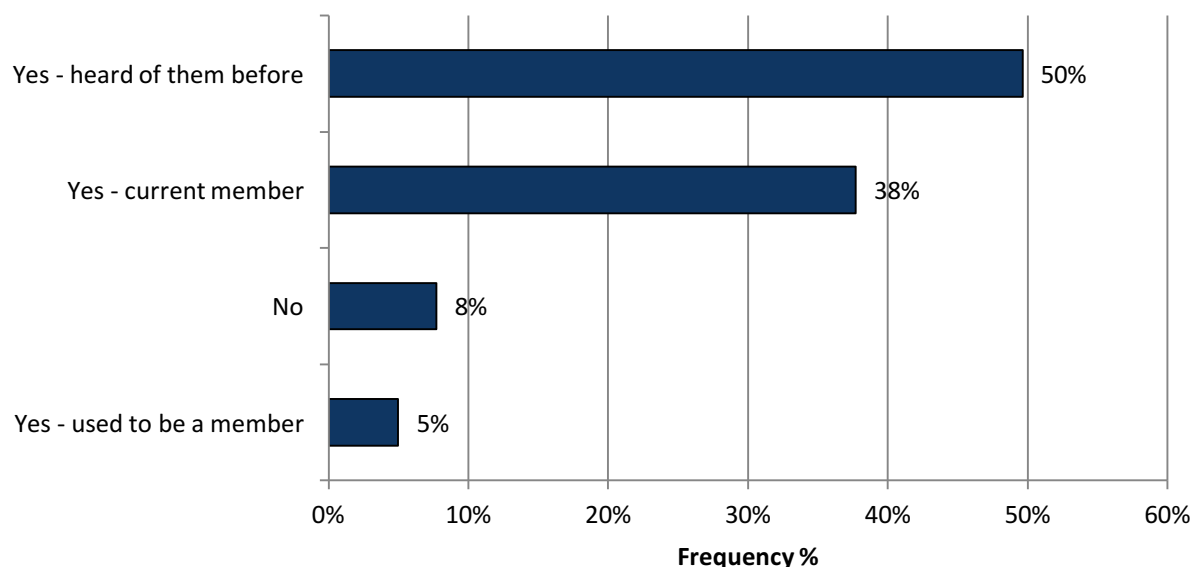
**Figure 3: Response to 'How many people in your personal group were adults and how many were children during your last trip to the Bibbulmun Track?' (n = 531)**



**Figure 4: Age groups of children travelling with adults (n = 86).**

## Awareness of Bibbulmun Track Foundation or Friends of the Bibbulmun Track

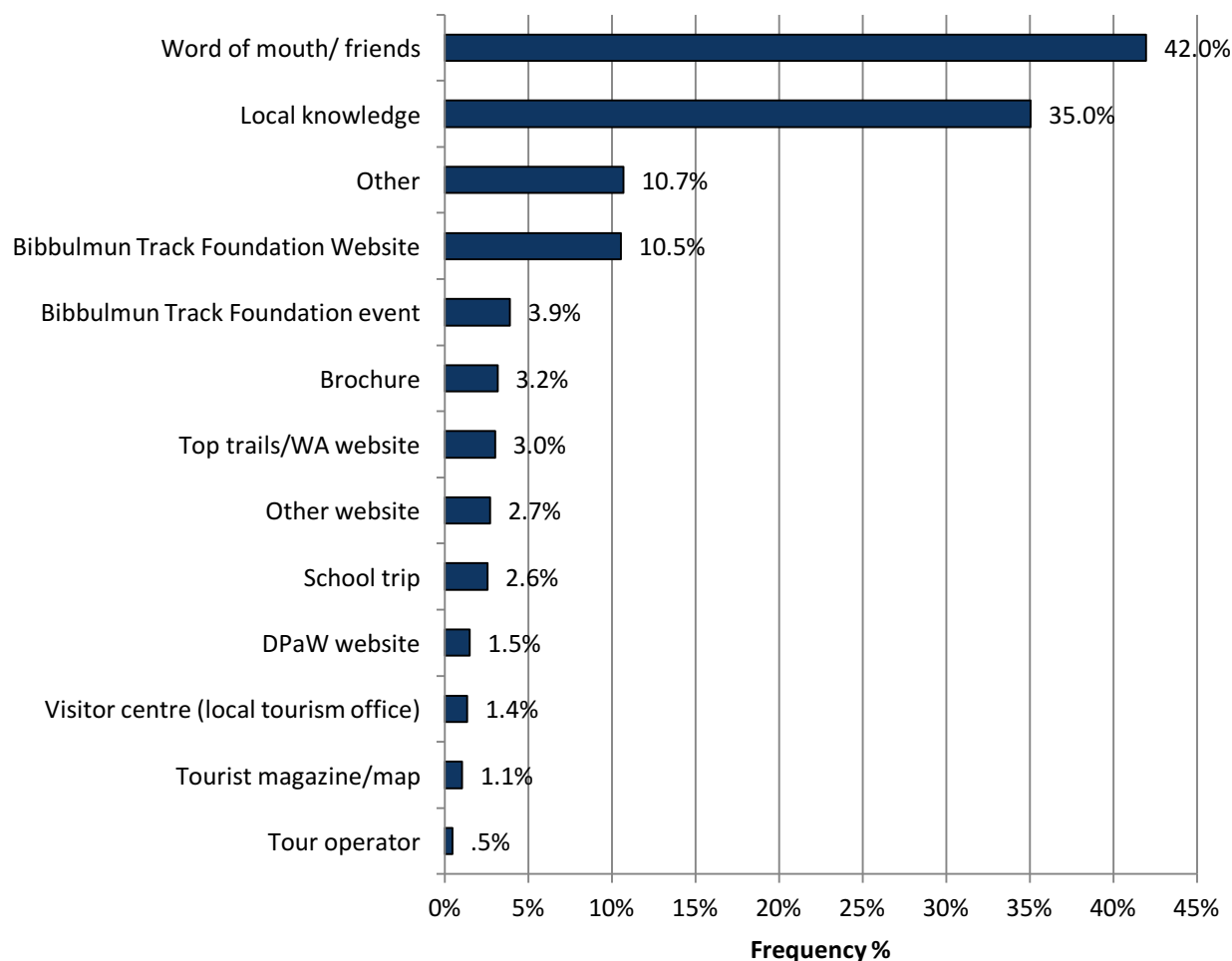
Most respondents indicated they were aware of the Bibbulmun Track organisations (92%) while just under half of respondents (43%) were current or past members of the organisations (Figure 5). These proportions are similar to past Bibbulmun Track surveys (Colmar Brunton 2008), however there was a larger proportion of current members in this 2014/15 survey. This could be due in part to the method of distribution of the survey where a large proportion of the surveys (63%) were completed by on-line participants through social media networks and affiliated websites.



**Figure 5: Response to: “Have you heard of the Bibbulmun Track Foundation or Friends of the Bibbulmun Track previously?” (n=663)**

Overseas and interstate track users were asked to indicate when they decided to walk on the Bibbulmun Track. Of the few respondents to this question (n=36), 72% indicated that they had decided to walk the track before arriving in Western Australia.

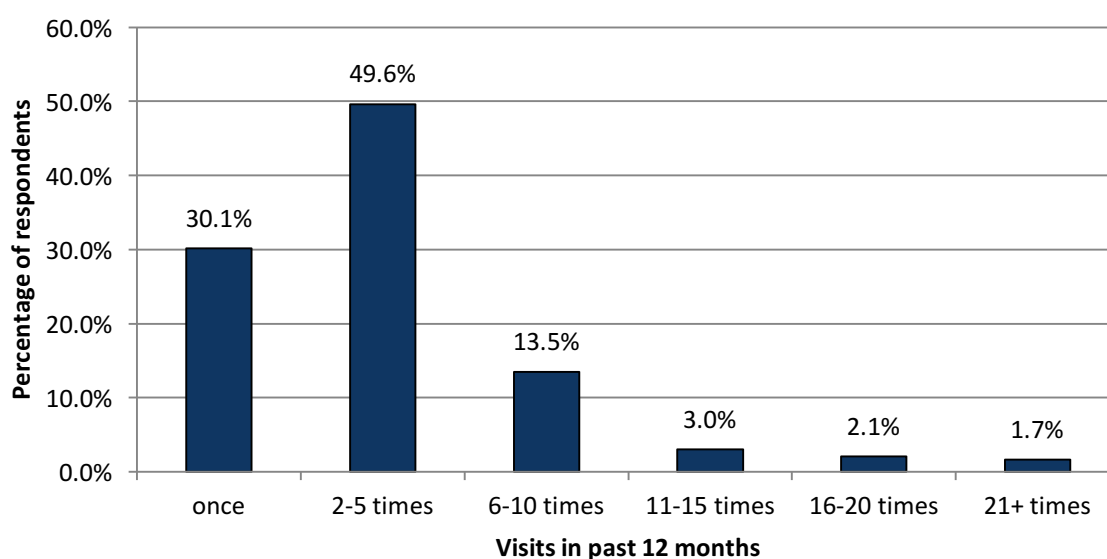
Figure 6 shows that respondents most commonly indicated that ‘word of mouth / friends’ (42%) or ‘local knowledge’ (35%) first prompted them to walk the Bibbulmun Track. Websites accounted for about 15% of the response with the most common of these being the Bibbulmun Track Foundation website. Some respondents indicated two or more prompts based on the options provided in the questionnaire. The most common combination was ‘word of mouth / friends’ and ‘local knowledge’ or the ‘Bibbulmun Track website’. Of the 279 respondents who indicated ‘word of mouth/friends’, 37 also indicated local knowledge and 14 indicated the Bibbulmun Track website. Small numbers of respondents indicated three or more items that first prompted them to walk the Bibbulmun Track. It appears that the Bibbulmun Track website is more often associated with a range of other prompts than the other items in the list provided, suggesting that once prompted, users may also access the Bibbulmun Track website for information. Similar results were found in previous Bibbulmun Track surveys where word of mouth (56%) was what prompted more than half of the respondents to walk on the Track (Colmar Brunton 2008).



**Figure 6: Response to "What first prompted you to walk the Bibbulmun Track?" (n= 665)**

## Bibbulmun Track use in the last 12 months

Respondents were requested to indicate the number of times they had used the Bibbulmun Track in the last 12 months, including their most recent walk (Figure 7). The average response was 4 visits in the past 12 months including the most recent walk (n=534). Thirty per cent of respondents indicated their most recent Bibbulmun Track walk was the only use of the Track in the past 12 months while about 50% indicated they had used the Track two to five times in the past 12 months. Most respondents (93%) indicated they had used the Track 10 times or less in the past 12 months.

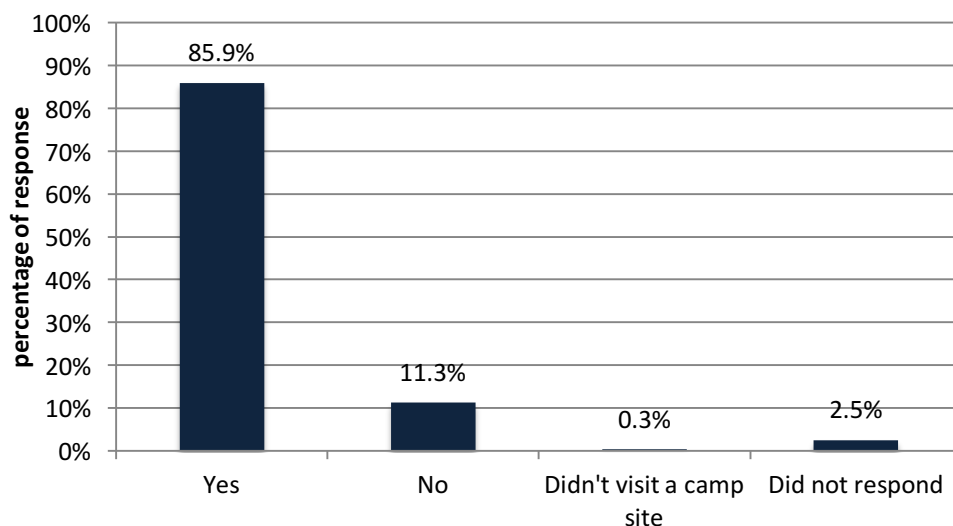


**Figure 7: Number of visits to the Bibbulmun Track in the past 12 months (n= 534)**

These results are similar to those in the 2008 report where most (89%) of the respondents had used the Track 10 times or less in the past 12 months. In 2008, 35% indicated just one visit in the past 12 months while about 41% indicated they had used the Track 2-5 times. The 2008 survey indicated a slightly higher proportion of respondents had used the Track 21+ times in the past 12 months, 6% of responses compared with 1.7% for the 2014-15 survey. This may be a function of different approaches to sampling in the 2008 and 2014-15 surveys.

## Log book use

Overnight walkers were asked if they had recorded their walk in the green log-book at the campsites. A very high percentage provided a response to this question (345 respondents), with 86% of overnight walkers indicating that they had signed the log book (Figure 8). Of respondents that were overnight walkers and had visited a campsite (n=344), this was equivalent to 88% stating that they had signed the logbook.

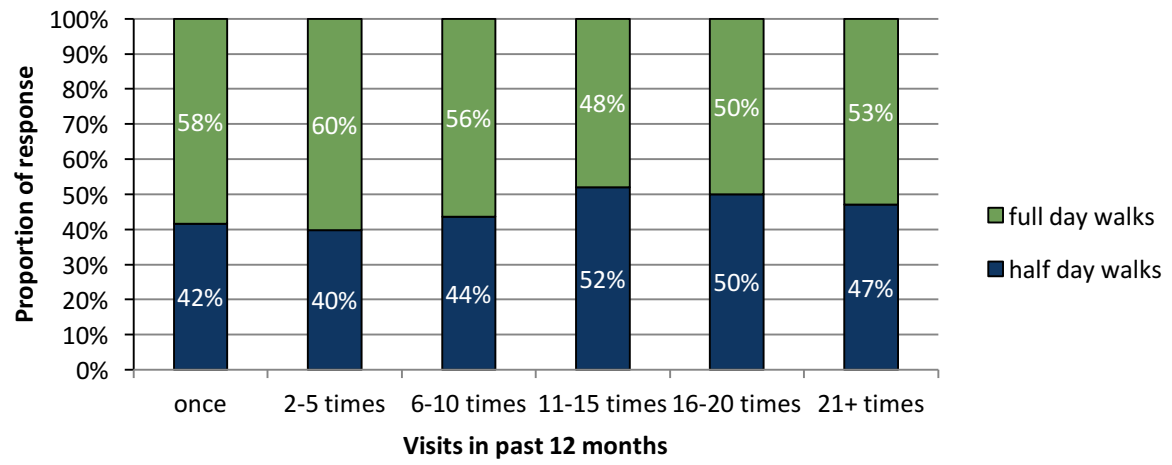


**Figure 8: Percentage of respondents that recorded their walk in the green log-book at a Bibbulmun Track campsite (n=354).**

## Number of half days and full days in past 12 months

When asked about the number of half day walks and full day walks in the past 12 months, 324 respondents indicated they had undertaken half day walks while 504 indicated they had taken full day walks. For each respondent, the average number of half day walks in the past 12 months was about 4 while the average number of full day walks was about 9. This data was not collected in the 2008 survey.

It appears that the more frequent visitors are more likely to be undertaking half day walks when compared with less frequent visitors (Figure 9). For example, about 60% of the respondents indicating one visit in the past 12 months undertook full day walks (n = 154). Similarly 60% of the walks for those visiting 2 to 5 times in the past 12 months were full day walks (n=369). In comparison, about 50% of the respondents who visited 11 to 15 times or more undertook full day walks (Figure 9).



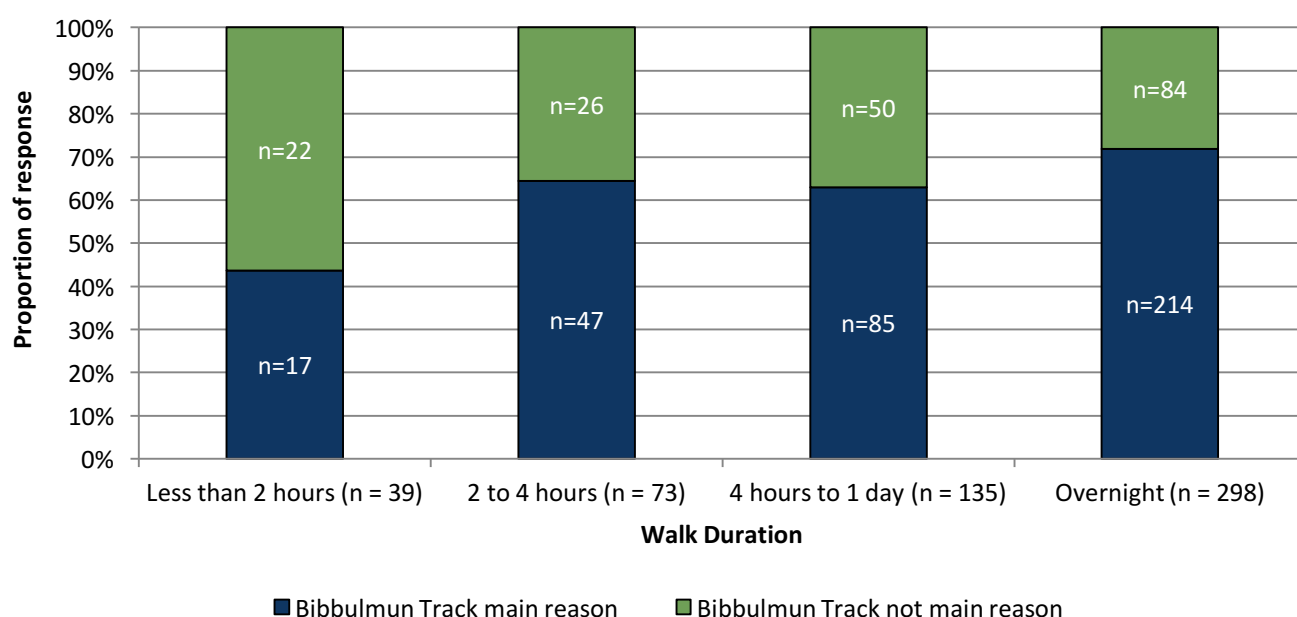
**Figure 9: Number of visits to the Bibbulmun Track in the past 12 months by length of walk (n=534)**

# Most Recent Bibbulmun Track Experience

Respondents were asked to complete a series of questions about their most recently completed Bibbulmun Track experience on the condition that it was within the last four weeks of the user survey date.

## Main reason for visit to area

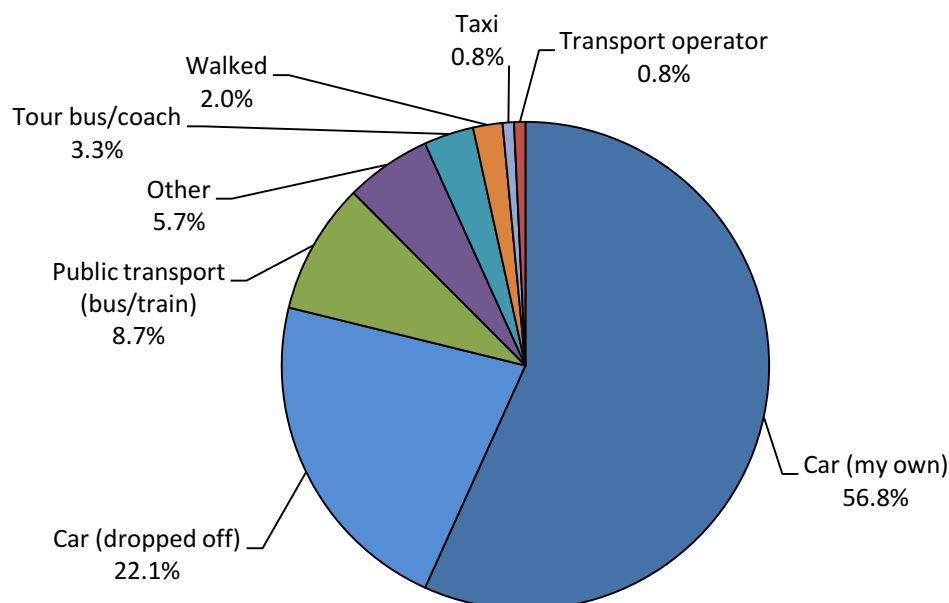
Respondents were asked whether the Bibbulmun Track was their main reason for the visit to the area in which they were asked to participate in the Bibbulmun Track survey. Overall, 67% of respondents indicated that the Bibbulmun Track was the main reason for their visit (n=714) while 33% indicated it was not. This differs slightly from the 2008 results where a slightly higher proportion (79%) of respondents indicated the Track was their main reason for visiting the area. Figure 10 illustrates that respondents walking for a longer duration tended to indicate the Track was their main reason for visiting the area, especially overnight walkers.



**Figure 10: Proportion of respondents indicating whether the Bibbulmun Track was the main reason for their visit according to duration of walk (n= 545)**

## Transport to Track

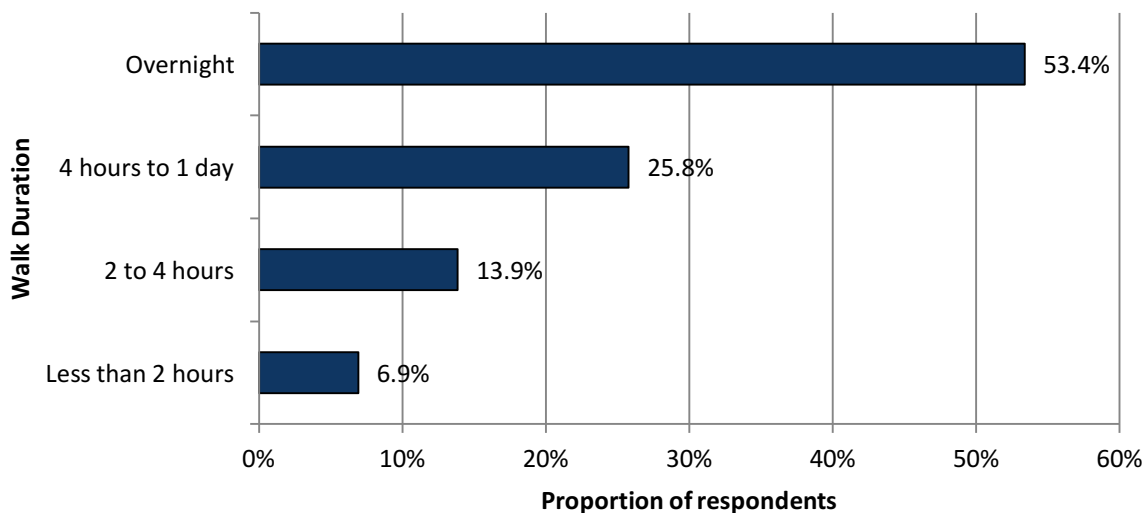
Most respondents indicated they travelled to the Track using a private car (79%); either their own or being dropped off by someone else (Figure 11). A small proportion indicated transport by a tour operator (0.8%) or tour bus/coach (3.3%). These results are approximately similar to the 2008 and 2003 survey results where most respondents drove their own car or were dropped off by car to access the Track.



**Figure 11: Proportion of respondents using various forms of transport to access the Bibbulmun Track (n= 666)**

## Duration, length and type of walk

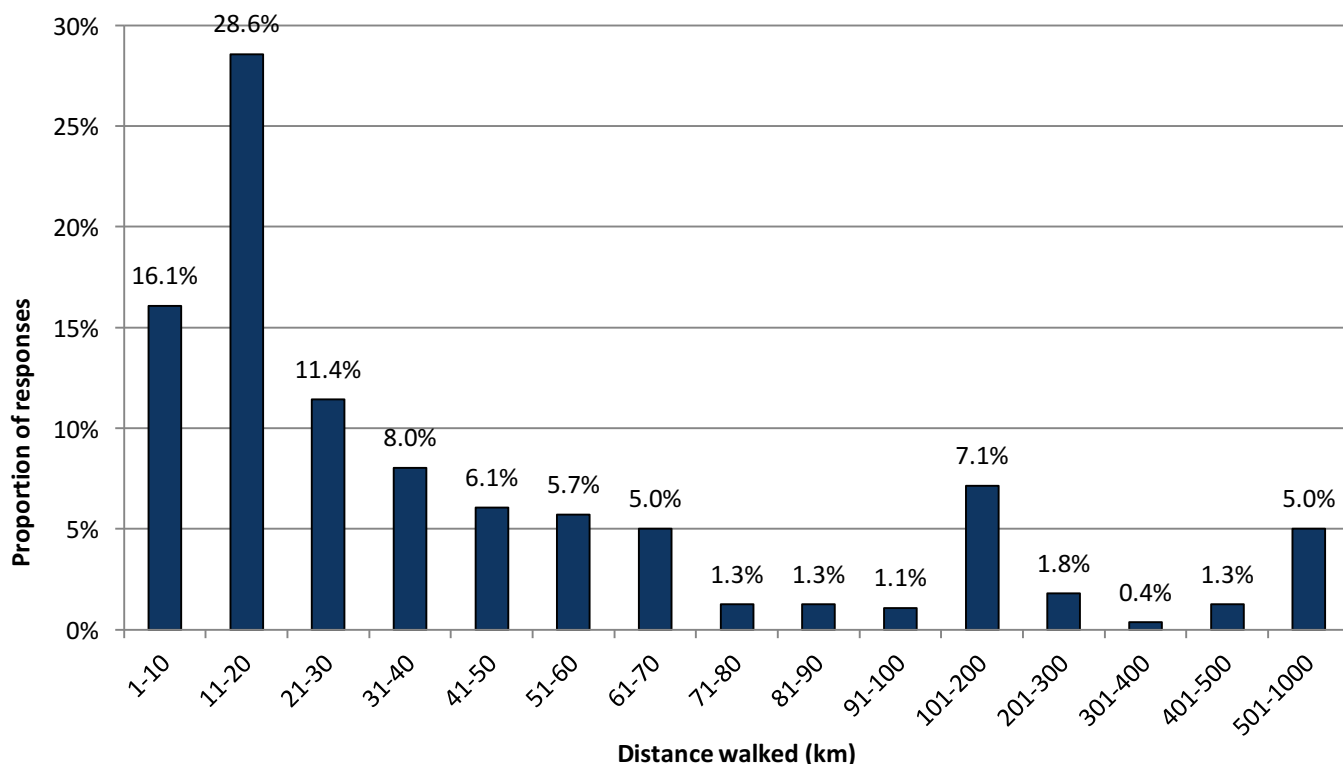
Figure 12 illustrates that more than half of survey respondents were on overnight walks along the Bibbulmun Track (53%) while about a quarter were on walks of 4 hours to 1 day (26%). When compared with the 2008 survey results, the portion of respondents walking for 4 hours to 1 day for this survey (25.8%) remains about the same (reported as 29% of responses in the 2008 report), the proportion of walkers in the other categories vary considerably from previous surveys. While the 2008 report indicated 40% of respondents were walking for less than 4 hours, this contrasts with the current sample where 20.8% of respondents were walking for less than 4 hours (combined < 2 hours and 2 to 4 hours groups). The 2008 survey included a considerably lower proportion of overnight walkers in the response (about 31% of respondents). This contrasts with the current 2014-15 survey where more than half of respondents (53.4%) indicated they were walking overnight. The average duration of stay for overnight walkers with the current 2014-15 survey as 5.6 days. The main difference between the two samples (2008 and 2014-15) is the difference in proportions of overnight walkers and those walking for less than 4 hours. This is most probably a direct consequence of the sampling methods used where the 2008 survey relied mostly on an on-site intercept survey across a variety of sites on the Track and the 2014-15 had a higher proportion of on-line surveys from regular and interested users.



**Figure 12: Duration of most recent Bibbulmun Track walk (n= 663)**

The average distance walked along the Track for the total sample was 89.6km (n = 553). However, this average distance includes a number of long overnight walks including several up to 1000km in length. The reported mean distance of walk from previous surveys was 70km in 2003 and 105km in 2008. The previous reports also note the wide variation in walk distances such that a mean length is a very approximate figure based on the variation in walk duration. This suggests a better understanding can be gained from examining walk length according to walk duration. Two-thirds of respondents that walked greater than 500km completed an end-to-end walk.

As an indication of the most common walk lengths, Figure 13 indicates that almost half of respondents walked for 20km or less (45%) while 80% walked for 70km or less. This differs from previous surveys where 72% of respondents indicated they were walking for 20km or less in 2008 while in the 2003 survey indicated 68% of respondents were walking for 20km or less. This is no doubt a direct consequence of the relative proportion of overnight walkers included in the surveys relative to the shorter duration groups due to the variation in survey distribution method as mentioned previously.



**Figure 13: Length (km) of most recent walk along the Bibbulmun Track (n= 561)**

Table 2 categorises the average distance walked by duration of the walk in time. The average length of overnight walks was about 110km while 4 hours to 1 day walks were about 18km in length.

**Table 2: Average length of walk in km by duration of walk in time (n=553)**

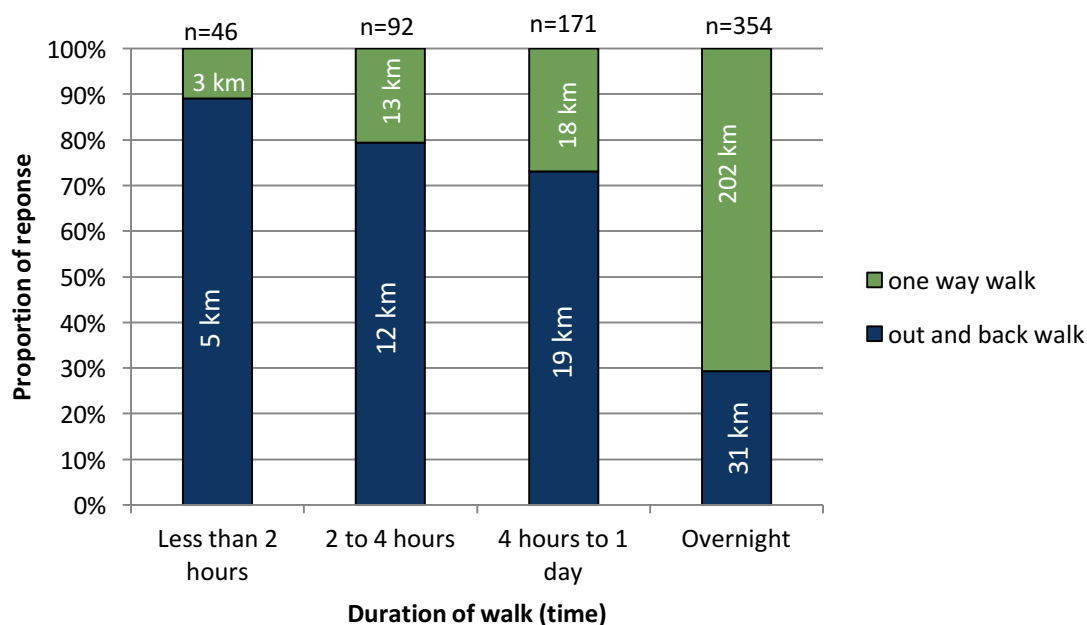
Length of walk	n	Average km walked
Less than 2 hours	38	4.4km
2 to 4 hours	77	11.9km
4 hours to 1 day	131	18.3km
Overnight	307	110.2km
<i>Total response</i>	<i>553</i>	<i>89.6km</i>

The type of walk refers to whether users travelled one way along the Track or walked out and then back, returning the way they had come. Table 3 indicates about half of respondents were in each category. This differs from the 2008 survey where 74% of respondents indicated an out and back walk. The 2008 survey differed in that it included walks that had been done or were intended (i.e. possible future walks). The results of this current survey are comparable to the earlier 2003 results where about half of respondents were out and back walkers.

**Table 3: Type of walk in terms of one way versus out and back (n=663)**

Type of walk	n	%
Out and Back	343	51.7%
One way	320	48.3%
Total	663	100%

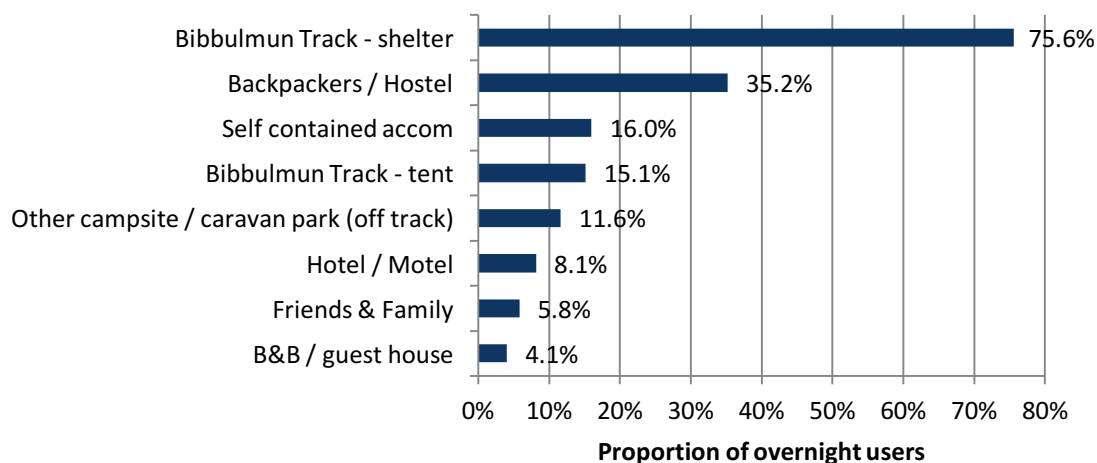
Combining the duration of walk by type and length indicates that most overnight users walked one way while most users on day walks or less walked out and back (Figure 14). The length of walk is indicated by the numbers in kilometres for each category of walk in duration and type. For example, overnight users walking one way tended on average to walk significantly further (202 km) than overnight users walking out and back (31 km). Those walking one way or out and back for one day or less tended to walk a similar average distance within each walk duration category.



**Figure 14: Proportion of out and back vs. one way walks by duration of walk and length of walk in km.**

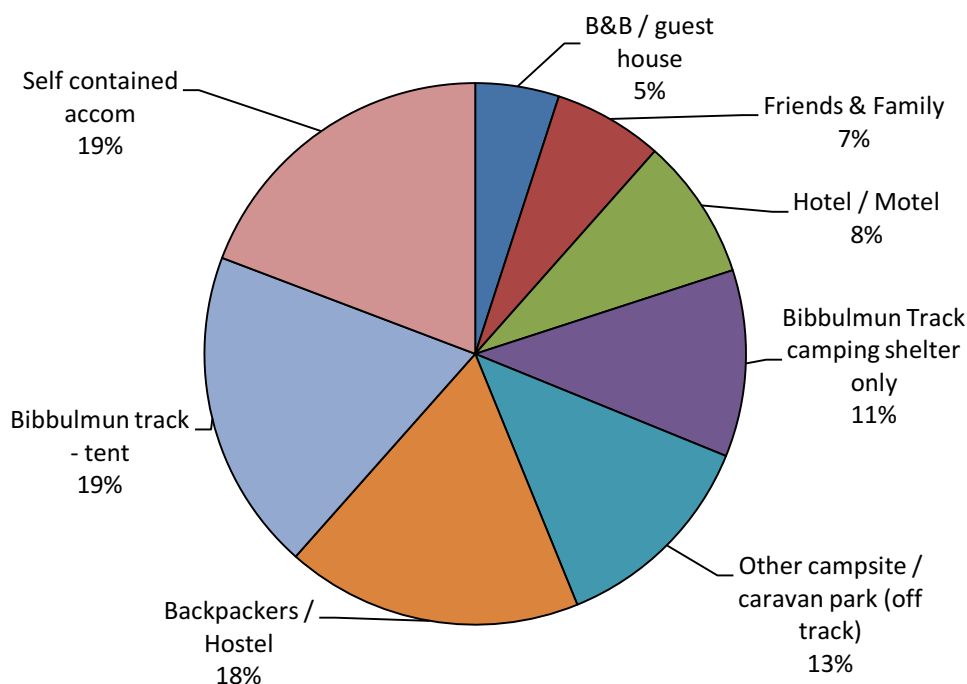
## Accommodation used and length of stay

Accommodation directly associated with Track use relates to overnight walkers on the Bibbulmun Track. Most overnight walkers used the Bibbulmun Track shelters (76%) while 35% indicated use of a backpackers / hostel type accommodation (Figure 15). Many respondents indicated use of more than one type of accommodation during their most recent walk. This was usually a Bibbulmun Track shelter in combination with some other accommodation type. Twenty four percent of the respondents walking overnight did not use a Bibbulmun Track shelter. Most of those who did not use a shelter stayed in backpackers / hostel accommodation (90%) or an off-Track campsite / caravan park (9%). These results are similar to earlier surveys where the most common accommodation used was the on Track campsites and shelters (80% of respondents in 2008). The current 2014-15 survey differs somewhat in that the use of the backpackers / visitor hostel seems to have increased since 2008. This may be a function of greater availability of this type of accommodation.



**Figure 15: Types of accommodation used by Bibbulmun Track overnight users (n=344).**

Figure 16 illustrates additional accommodation used by overnight walkers staying in Bibbulmun Track shelters. Those using Bibbulmun Track shelters during their walk also tended to stay in a tent on Track (19%), and/or self-contained accommodation (19%) and/or at backpacker / hostel type accommodation (18%).



**Figure 16: Accommodation used in combination with on-Track shelters during overnight trips (n=260).**

Table 4 summarises the average number of nights overnight walkers used each type of accommodation on their most recent Bibbulmun Track visit. Most nights were spent in Bibbulmun Track shelters during the most recent overnight walk. This is comparable to the results of earlier surveys reported in 2003 and 2008.

**Table 4: Average number of nights for each type of accommodation used on the most recent Bibbulmun Track overnight visit (n=344).**

Accommodation type	n	Average number of nights
Bibbulmun Track - shelter	263	8
Backpackers / visitor hostel	62	3
Hotel / motel	59	2
Self-contained accommodation	39	2
Bibbulmun Track - tent	130	2
Other camp site / caravan park off the Track	52	1
Family and friends	32	1
Bed and breakfast / guest house	26	1

# **Satisfaction, opportunities and benefits**

## **Overall satisfaction rating of most recent trip on Bibbulmun Track**

Respondents indicated a high level of satisfaction with their most recent trip with 95% indicating they were either satisfied or extremely satisfied. The average satisfaction rating for all respondents (n=649) was 4.6 (92%) on a scale from 1 to 5 (where 1 = 'not at all satisfied' and 5 = 'extremely satisfied'). There was no difference in overall satisfaction rating between the overnight walkers and day walkers with all groups indicating the same average (4.6) extremely satisfied rating. These results are not directly comparable to earlier surveys due to differences in the questions and rating scales used. However the 2008 results indicate that on average, 92% of respondents were either satisfied or very satisfied with the Track with an average rating of 6.1 out of 7. This indicates that satisfaction ratings remain consistently high since the 2008 survey.

## **Recommend the Track to others**

Recommendation is another indication of level of satisfaction. Satisfied users are more likely to recommend the experience to others. When asked how strongly respondents would recommend a walk on the Bibbulmun Track to friends with shared interests, the average response was a highly positive rating of 4.8 on a scale from 1 to 5 (where 1 = 'not at all' and 5 = 'very strongly'). As with overall satisfaction, all groups indicated a similar strongly positive response to this question.

## **Intent to walk the Track again**

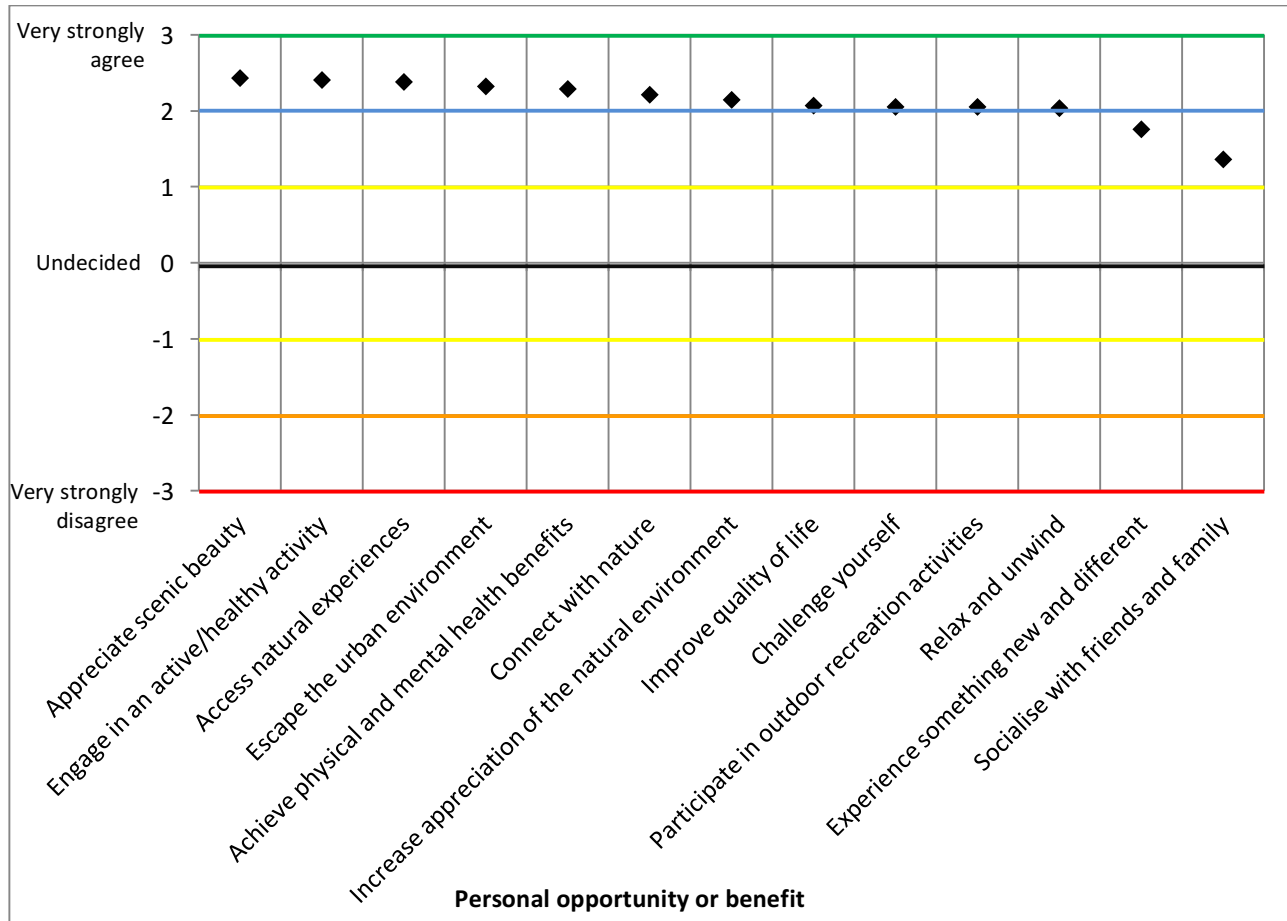
As with recommendations, intent to revisit an experience is also an approximate indicator of satisfaction. The more satisfied the user is, the more likely they will indicate a willingness to repeat the experience. However, the intent to repeat the experience may be influenced by factors such as available time and money that have a bearing on whether an individual can repeat the experience. When asked if they intended to walk on the Bibbulmun Track again, 97% of respondents indicated "yes". The small proportion who indicated "no" were more likely to be interstate or international visitors.

## **Bibbulmun Track Opportunities and Benefits**

Respondents were asked to rate their level of agreement in response to a series of statements referring to personal opportunities and benefits provided by the Bibbulmun Track experience and broader benefits to society. It should be noted that the sample size (n) values varied for each aspect, as some respondents did not provide a response for every aspect or indicated that they had 'no experience' with the aspect.

## Personal opportunities and benefits

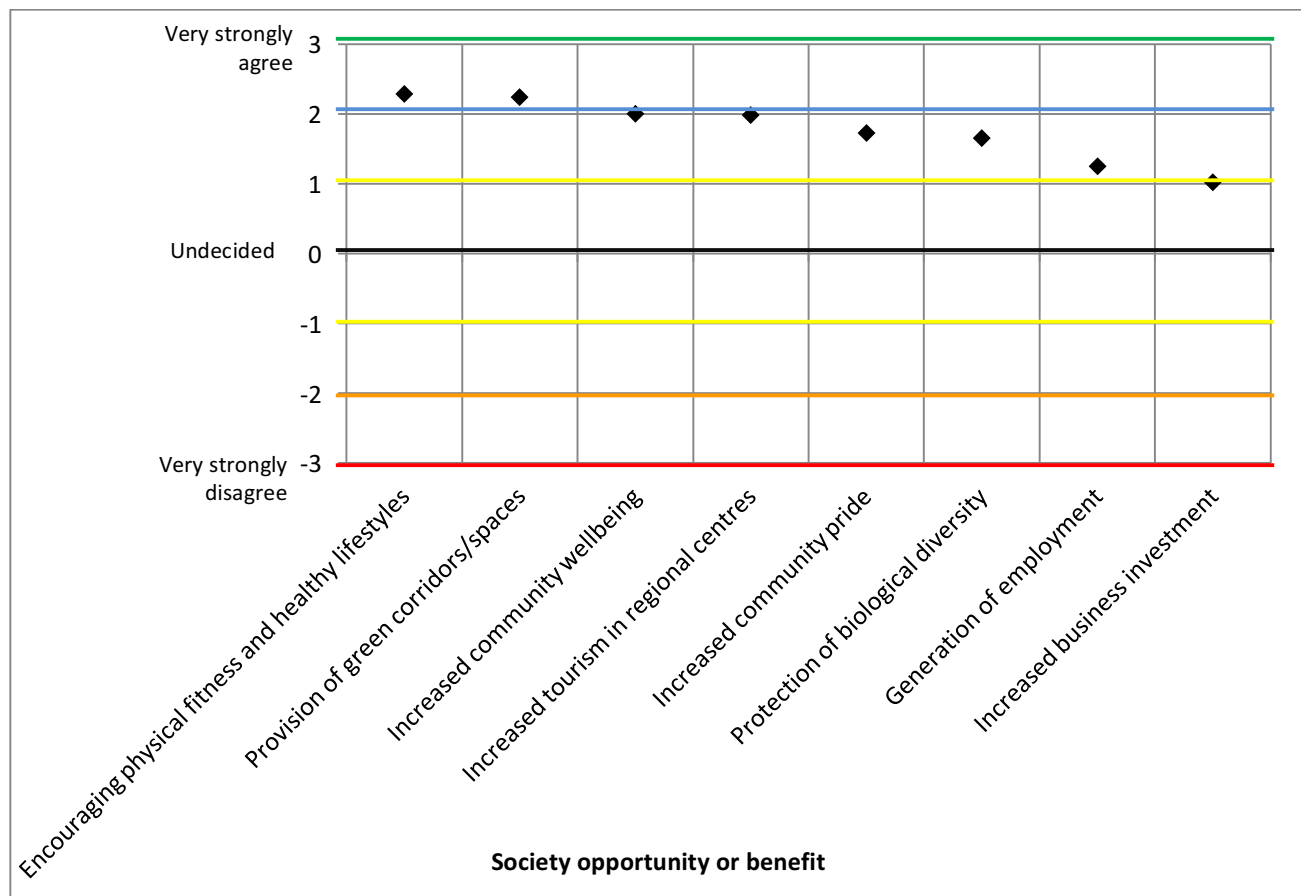
When asked to indicate level of agreement with a range of statements in relation to personal benefits or opportunities provided by walking on the Bibbulmun Track (Figure 17), respondents indicated strong agreement with most statements (n=549). “Appreciate scenic beauty”, “engage in healthy activity”, “access natural experiences” and “escape urban environment” all received equally high ratings in terms of strong agreement. This would tend to reflect main motivations for walking on the Bibbulmun Track and is typical of activities based on walking in natural areas. The statement “socialise with friends and family” received a slightly lower average positive rating compared with the other statements. This suggests that socialisation is important but not as significant as other aspects of the experience.



**Figure 17: Mean ratings in response to statements regarding personal benefits and opportunities associated with walking on the Bibbulmun Track (n=549).**

## Societal opportunities and benefits

When asked to rate their level of agreement with various statements regarding benefits and opportunities the Bibbulmun Track provides to society (Figure 18), average ratings were positive for all statements, although some statements varied slightly in level of average agreement rating. Statements about fitness, wellbeing, green space and tourism were rated on average with strong agreement amongst respondents. Statements about employment and business investment were rated on average lower than other statements, although still received a positive level of agreement.



**Figure 18: Mean ratings in response to statements regarding benefits and opportunities to society associated with the Bibbulmun Track (n=549).**

# Bibbulmun Track User Direct expenditure

Survey respondents were asked to indicate their expenditure for their most recently completed trip based on a list of items included in the questionnaire. This information in combination with other data from the survey was used to calculate various patterns of average direct expenditure as well as total annual direct expenditure for walkers on the Bibbulmun Track.

## Itemised direct expenditure and patterns

Table 5 details the itemised mean direct expenditure per person per day using the categories listed in the Bibbulmun Track survey. The portion of respondents indicating expenditure on an item is indicated by the n% column in Table 4. The most common items of expenditure were travel/transport (92% of respondents) and food/drink supplies (81%). The least common items of expenditure for the whole sample were accommodation (32%) and activities (34%).

Expenditure on equipment had the highest mean PPD (per person per day) value for the sample (\$19.36) followed by travel/transport (\$13.22), accommodation (\$11.59) and food/drink supplies (\$10.02).

It is important to note that the sum of the itemized mean expenditures does not equal the mean total direct expenditure because not all respondents indicated expenditure on all items. For example, 92% of respondents indicated expenditure on travel/transport meaning 8% did not, 50% of respondents indicated expenditure on meals (eating out) indicating that 50% of the respondents did not. Respondents who indicated expenditure on fewer items tended to have a lower total expenditure relative to those indicating more items. Therefore, the mean total direct expenditure for the sample is lower than the sum of the itemized mean expenditure.

The 2008 expenditure question was prone to greater margins of error (as noted previously) and had slightly different categories. However, when the 2008 results are re-analysed based as much as possible on the same technique used for the 2014-15 survey data, the mean daily itemized expenditure per person values have many similarities.

For example, the expenditure PPD on transport related items is similar between the two surveys if the 2008 petrol and other transport item values are added together (\$13.60 PPD), comparable to the 2014-15 transport item value of \$13.22 PPD. Other items were also very similar (taking into account the variation in data) such as expenditure on equipment, maps, meals and food/drink supplies. A notable difference in accommodation expenditure PPD is probably a result of differences in how questions were asked in 2008 and then in 2014-15. The 2008 Bibbulmun Track day walk users indicated trips that included nights in a range of accommodation where-as the 2014-15 day users did not indicate overnight stays in accommodation as previously noted.

**Table 5: Itemised mean direct expenditure per person per day for most recent trip for all respondents (N=514).**

Expenditure item	n	n%	Mean direct expenditure PPD	2008 mean expenditure PPD
Travel/transport	471	92%	\$13.22	-
Petrol	-	-	-	\$9.57
Other transport /parking	-	-	-	\$4.04
Accommodation	167	32%	\$11.59	\$6.77
Food/drink supplies	415	81%	\$10.02	\$9.72
Meals (eating out)	257	50%	\$6.64	\$7.83
Activities (tours etc.)	173	34%	\$0.88	\$0.18
Equipment	253	49%	\$19.36	\$15.22
Maps/guides	230	45%	\$3.30	\$3.50
Other	204	40%	\$6.03	\$1.29

Table 6 demonstrates the itemised mean expenditure of day users versus overnight walkers. A greater proportion of day users indicated expenditure on travel/transport (97%) compared with overnight walkers (87%). This may be due to overnight walkers more commonly being dropped off using someone else's car while day walkers tended to access the Track using their own car. A greater proportion of overnight walkers indicated expenditure on food/drink supplies and equipment compared to day walkers (which makes common sense).

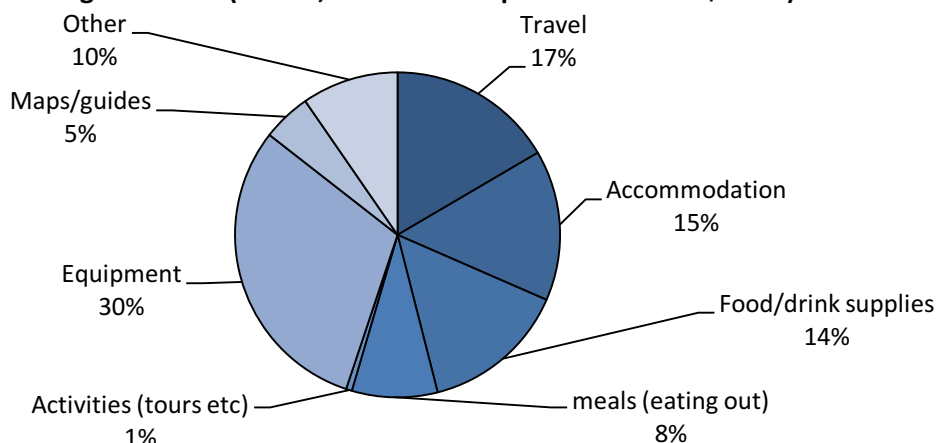
In terms of dollar values, the highest mean expenditure item for day walkers was travel/transport (\$13.66) closely followed by Equipment (\$13.19). Overnight walkers indicated their highest mean expenditure item was Equipment (\$23.52), which dominated the itemised mean expenditure with Transport/travel a distant second (\$12.81).

**Table 6: Itemised mean direct expenditure per person per day for most recent trip for day users and overnight walkers.**

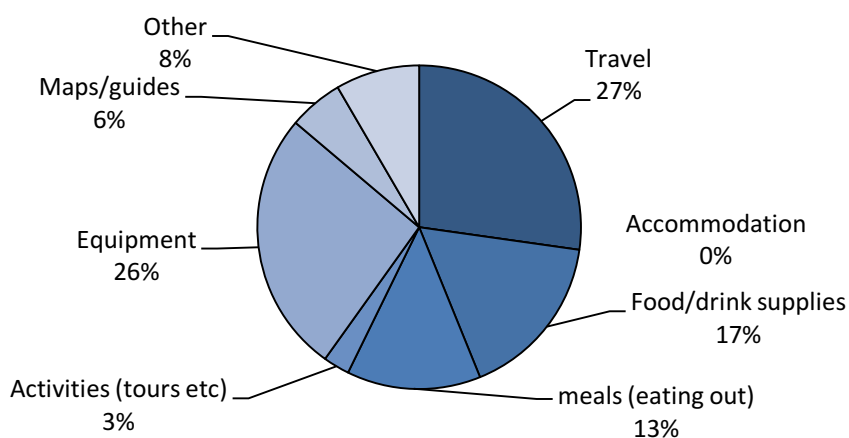
Expenditure item	Day users (N=232)			Overnight walkers (N=282)		
	n	n%	Mean direct expenditure PPD	n	n%	Mean direct expenditure PPD
Travel/transport	226	97%	\$13.66	245	87%	\$12.81
Accommodation	-	-	-	167	59%	\$11.59
Food/drink supplies	172	74%	\$8.34	243	86%	\$11.20
meals (eating out)	106	46%	\$6.72	151	54%	\$6.59
Activities (tours etc.)	86	37%	\$1.32	87	31%	\$0.45
Equipment	102	44%	\$13.19	151	54%	\$23.52
Maps/guides	101	44%	\$2.73	129	46%	\$3.74
Other	89	38%	\$4.21	115	41%	\$7.43

Analysing itemized direct expenditure as a proportion of total direct expenditure (Figure 19) confirms that the majority of the expenditure for overnight walkers was for equipment, travel, accommodation and food supplies (76% of total expenditure PPD). Day user expenditure consists primarily of expenditure for travel, equipment, food supplies and purchased meals (83% of total expenditure PPD). The highest proportion of overnight walker mean expenditure is on equipment. The highest portion of day use expenditure is on travel closely followed by equipment

**Overnight walkers (n= 282, mean total expenditure PPD = \$45.09)**



**Day users (n= 232, mean total expenditure PPD = \$30.95)**



**Figure 19: Itemised mean direct expenditure as a proportion of mean total direct expenditure per person per day (PPD) for day users and overnight walkers.**

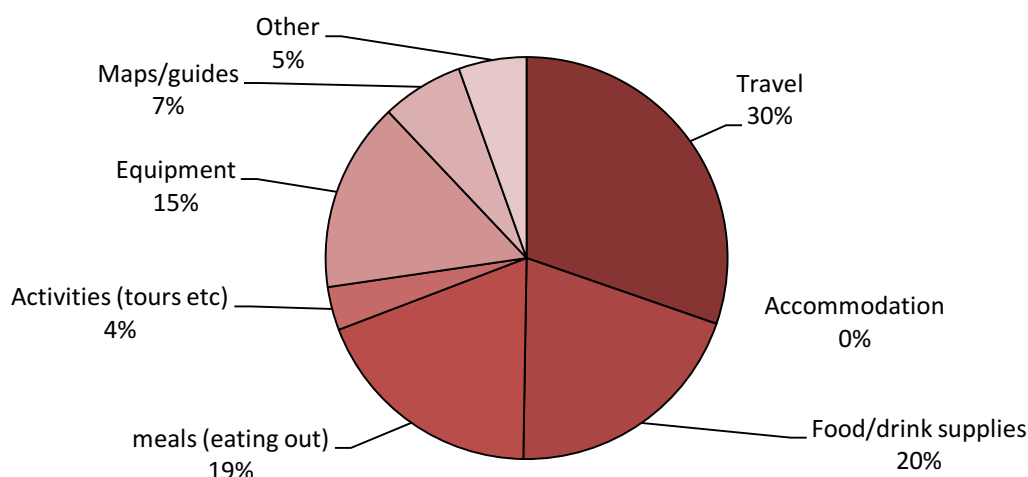
Dividing the day walk group into the subgroups of <2 – 4hrs and 4hrs - 1 day reveals differences in itemised mean expenditure (Table 7). The most common items of expenditure for the 4hrs-1day subgroup was transport/travel (100% of respondents) and Food/drink supplies (82% of respondents). Most of the <2-4hrs day user sub group also indicated expenditure on transport (95%) and Food/drink supplies (66%).

In terms of dollar values, the 4hrs-1 day group had a noticeably higher mean expenditure on Equipment (\$19.66) and Transport/travel (\$17.48) when compared with the <2-4hrs day user group. This explains the higher mean total expenditure PPD for the 4hrs-1day group compared with the shorter duration day users.

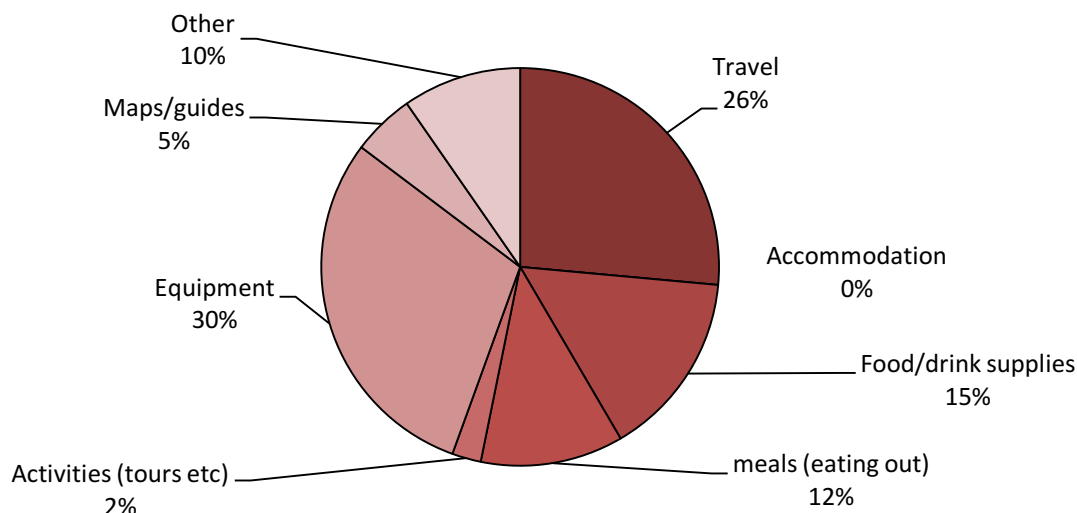
**Table 7: Itemised mean direct expenditure per person per day for most recent trip for day user subgroups.**

Expenditure item	Day User Subgroup Type					
	<2 - 4 hrs (N=111)			4hrs - 1 day (N=121)		
	n	n%	Mean direct expenditure PPD	n	n%	Mean direct expenditure PPD
Travel/transport	105	95%	\$9.27	121	100%	\$17.48
Accommodation		-			-	
Food/drink supplies	73	66%	\$6.10	99	82%	\$9.99
meals (eating out)	54	49%	\$5.79	52	43%	\$7.68
Activities (tours etc.)	41	37%	\$1.07	45	37%	\$1.56
Equipment	44	40%	\$4.67	58	48%	\$19.66
Maps/guides	47	42%	\$2.01	54	45%	\$3.35
Other	41	37%	\$1.67	48	40%	\$6.38

As a proportion of total expenditure (Figures 20 and 21). Half the <2-4hrs group expenditure is on travel and food supplies while almost 20% is spent on meals (eating out). The 4hrs-1day groups expenditure on equipment is proportionally twice that of the <2-4hr group while expenditure on meals (eating out) is proportionally lower.



**Figure 20: Itemised mean direct expenditure as a proportion of mean total expenditure per person per day for <2 up to 4 hours walkers (n = 111, mean total expenditure PPD = \$21.57)**



**Figure 21: Itemised mean direct expenditure as a proportion of mean total expenditure per person per day for 4hrs - 1 day walkers (n= 121, mean total expenditure PPD = \$39.46)**

## Average total daily direct expenditure per person

Table 8 indicates that the average daily direct expenditure per person of all respondents using the Bibbulmun Track was \$38.71. However, when categorized by overnight and day-walk respondents, it is apparent that respondents on overnight walks (\$45.09) spent considerably more per person per day than those on day trips (\$30.95). This was mainly because of the requirement to pay for accommodation as well as a comparatively higher expenditure on equipment and food.

Categorising the respondents according to the type of walk in terms of 'one way' versus 'out and back' also indicates differences in direct expenditure by each group (Table 8). One way walkers have a higher mean total expenditure per person per day than 'out and back' walkers. The 2008 results indicate a similar relationship where the 'out and back' walk expenditure was less when compared with one way walkers.

The direct expenditure results for the 2014-15 survey are not directly comparable to the 2008 survey due to the differences in how the question was asked in each survey and how the data was analysed and presented. The 2008 survey focussed on the respondent's trip as a whole and requested current and potential future expenditure for the current trip. The 2008 survey not only requested possible future expenditure but also a calculation of how much of the total expenditure for the trip was associated with the specific individual responding to the survey. This creates potential for significant margins of error. The 2014-15 survey focussed on actual expenditure associated with the whole travel group for the most recent completed use of the Track. For example, the day user respondents in the 2014-15 survey were asked to focus on their most recent walk specifically and subsequently indicated they spent zero nights in accommodation. The 2014-15 expenditure questions are hence a more reliable method for gathering expenditure data, as it is easier for the respondent to accurately recall what they actually spent for their group as a whole and then indicate how many people were in the group. This data can subsequently be analysed to calculate expenditure person per day.

The consequence of the style of questioning is that those in the 2008 survey indicating a walk of 1 day or less also indicated they were staying an average (based on nights spent in various accommodation during the trip) of about 6 days in the area, as part of a trip that included a walk on the Bibbulmun Track. The 2008 survey results in a daily expenditure of \$48 per person.

The 2008 mean total expenditure values are higher than the 2014-15 day trip mean total direct expenditure of \$30.95 per person per day. This was primarily due to the difference in question and subsequent responses and how the 2008 data was analysed.

**Table 8: Total Mean Trip Direct expenditure Per Person Per Day: Day trip vs. Overnight**

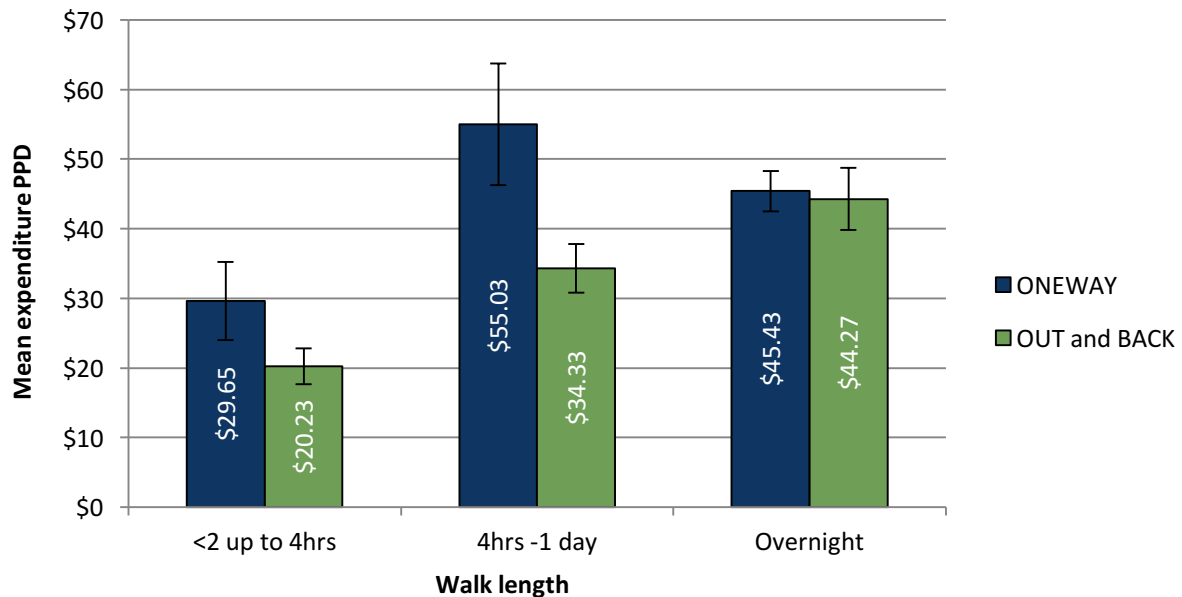
Walk type	n	Mean total direct expenditure PPD
Day walk <sup>+</sup>	232	\$30.95
Overnight walk	282	\$45.09
<i>Total sample mean</i>	<i>514</i>	<i>\$38.71</i>

<sup>+</sup>Day walk = combined '<2-4 hrs' and '4hrs-1 day' trip categories.

**Table 9: Total Mean Trip Direct expenditure Per Person Per Day (AU\$) by walk type**

Walk Type	N	Mean total direct expenditure PPD
out and back walk	268	\$32.46
one way	246	\$45.51
<i>Total sample mean</i>	<i>514</i>	<i>\$38.71</i>

Dividing the one-way and out and back walkers into walk length categories shows that this difference appears to be confined to the day walk groups as indicated in Figure 22. One way walkers in both day walk groups had a significantly higher direct expenditure than the out and back day walk groups. This difference appears mainly due to a much greater expenditure on equipment, maps and food supplies by the one-way day walking groups. In contrast, the overnight walkers showed no difference in mean total daily direct expenditure per person between those walking one way and those on out and back walks.



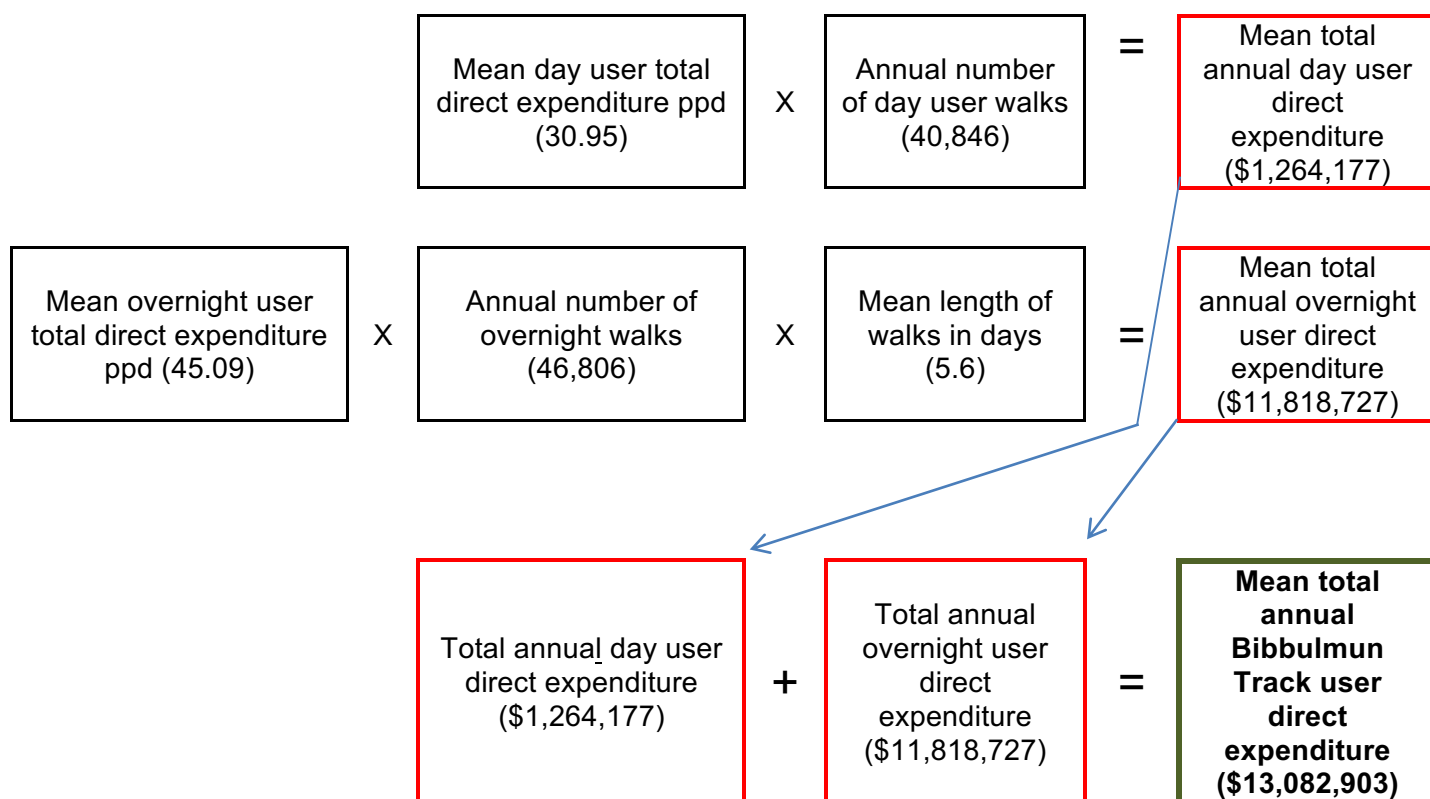
**Figure 22: Mean total Bibbulmun Track direct expenditure per person per day by walk length and type.**

## Mean total annual Bibbulmun Track user direct expenditure

Given the daily direct expenditure per person (PPD) is known and the average length of overnight walks is known, it is possible to calculate an estimated total annual mean direct expenditure for Bibbulmun Track users using estimates for the annual number of day use walks and the annual number of overnight walks respectively. This estimate relates to money spent by Bibbulmun Track users that is directly associated with their most recent walk on the Track, as requested by the survey questionnaire.

For the purposes of this estimate calculation, mean day user total direct expenditure PPD includes the combined mean total direct expenditure PPD of the <2-4hr group and the 4hr-1 day group.

Using the data gather from the survey combined with estimates of day walker and overnight walker number of the Track, an estimate for the annual total direct expenditure of Bibbulmun Track walkers could be calculated as follows:



The estimated total average annual direct expenditure by Bibbulmun Track walkers is estimated at \$13.1 million.

# Implications

This survey report provides a snap shot of Bibbulmun Track users in 2014-2015. Repeating the survey at regular intervals (e.g. 5 to 7 year intervals) would provide important longitudinal information regarding Track use, types of users, their frequency and patterns of use, satisfaction levels and direct expenditure levels and patterns for future planning, management, maintenance, sponsorship and marketing purposes.

Surveyed Track users are highly satisfied with their experience. They highly rate a range of personal and social benefits and opportunities associated with use of the Track. This may be the foundation for expansion of support for the Track to other sponsors such as private health providers and insurers and government and non-government health promotion organisations.

Based on the survey results, the Bibbulmun Track appears to be mainly used by Western Australian residents. This indicates a potential to implement marketing strategies and broaden the user profile to include interstate and international users, increasing the total annual direct expenditure by Track users and providing access to the associated health benefits to a larger portion of the community.

Repeating the expenditure survey over time will enhance the reliability of expenditure estimates through accumulated data. This type of survey will provide an indication of what Bibbulmun Track users spend directly in relation to use of the Track.

# References

- Carlsen, J., & Wood, D. S. (2004). *Assessment of the economic value of recreation and tourism in Western Australia's national parks, marine parks and forests*. Gold Coast, Queensland: CRC for Sustainable Tourism.
- Colmar Brunton (2008). *2008 Bibbulmun Track User Research Report*. Department of Environment and Conservation, Perth, Australia and Bibbulmun Track Foundation, Perth, Australia. pp. 53.
- Hughes, M., Carlsen, J. & Wood, D, (2005). *Assessment of the Economic Value of Heritage Tourism in Three Western Australian Locations*. Report for the Heritage Council of Western Australia. June 2005.
- Hughes, M., Jones, T., Deery, M., Wood, D, Fredline, L., Whitely, Z. & Lockwood, M. (2009). *Estimating the economic, social and environmental value of tourism to protected areas*. Technical report for Sustainable Tourism CRC. Gold Coast, Australia
- Hughes, M. and Smith, A.J. (2011). *2009-10 Munda Biddi Trail User Survey Results*. A report for the Munda Biddi Trail Foundation and Department of Environment and Conservation for submission to Lotterywest. Curtin University and Department of Environment and Conservation, Perth, Australia. pp. 34.
- Jones, T., Hughes, M., Wood, D., Lewis, A. & Chandler, P. (2010). *Ningaloo coast region visitor statistics: collected for the Ningaloo destination modelling project*. Technical report for Sustainable Tourism CRC. Gold Coast, Australia

# Appendix 1: Survey Questionnaire

## Bibbulmun Track User Survey 2014

### 1. Tell us about your Bibbulmun Track experience!

Dear trail user,

The Bibbulmun Track is a trail managed by the Department of Parks and Wildlife in partnership with the Bibbulmun Track Foundation.

This survey aims to obtain your views about your visit within the last four weeks to the Bibbulmun Track. Your feedback will help us manage this trail better. PLEASE ONLY CONTINUE THIS SURVEY IF YOU HAVE VISITED THE BIBBULMUN TRACK IN THE LAST FOUR WEEKS.

The survey is representative of only the person completing the form, so please answer for yourself only.

Your answers are confidential and will be analysed independently.

Your feedback is important to us. Thank you for sharing your thoughts and ideas.

#### \*1. Have you visited the Bibbulmun Track in the LAST FOUR WEEKS?

- ☐ No (Thank you for your time. The survey is complete.)
- ☐ Yes (please continue survey)



Department of  
Parks and Wildlife



### 2. Your Bibbulmun Track experience

Please tell us about your last visit (within the last four weeks) to the Bibbulmun Track, how you heard about the track and how you accessed the track (please answer for yourself only).

#### \*2. What was the date of your last visit to the Bibbulmun Track?

Date of last visit (if  
unsure of exact date,  
enter day as 01 of  
the month you  
visited)

DD / MM / YYYY

/  /

## Bibbulmun Track User Survey 2014

### 3. Have you heard of the Bibbulmun Track Foundation or Friends of the Bibbulmun Track previously?

- ☐ Yes - heard of them before  
☐ Yes - current member  
☐ Yes - used to be a member  
☐ No

### 4. What first prompted you to walk the Bibbulmun Track?

- |   |  |
|---|--|
| <input type="checkbox"/> Bibbulmun Track Foundation website       | <input type="checkbox"/> Brochure                    |
| <input type="checkbox"/> Department of Parks and Wildlife website | <input type="checkbox"/> Top Trail/Trails WA website |
| <input type="checkbox"/> Word of mouth/friends                    | <input type="checkbox"/> Other website               |
| <input type="checkbox"/> Tour operator                            | <input type="checkbox"/> Tourist magazine/map        |
| <input type="checkbox"/> Visitor Centre (local tourism office)    | <input type="checkbox"/> School Trip                 |
| <input type="checkbox"/> Local knowledge                          | <input type="checkbox"/> Other                       |
| <input type="checkbox"/> Bibbulmun Track Foundation event         |  |

### 5. What form of transport did you use to arrive at the Bibbulmun Track for your last trip?

- |  |  |
|--|--|
| <input type="radio"/> Walked                       | <input type="radio"/> Tour bus/coach     |
| <input type="radio"/> Car (my own)                 | <input type="radio"/> Taxi               |
| <input type="radio"/> Car (dropped off)            | <input type="radio"/> Transport operator |
| <input type="radio"/> Public transport (bus/train) |  |
| <input type="radio"/> Other (please specify)       |  |

## 3.

Please tell us about the details of your last visit (within the last four weeks) to the Bibbulmun Track.

### \*6. Please indicate if your last trip was an

- ☐ out and back walk  
☐ one way

### \*7. How long did you walk on the Bibbulmun Track during your last trip?

- ☐ Less than 2 hours  
☐ 2 to 4 hours  
☐ 4 hours to 1 day  
☐ Overnight (please specify number of nights)

## Bibbulmun Track User Survey 2014

4.

**\* 8. During your most recent trip to the Bibbulmun Track, please indicate where you stayed by completing the number of nights stayed (e.g. 5) for each type of accommodation where applicable? (If you did not stay overnight please indicate below and go to next question)**

Did not stay overnight  
(please indicate by typing '1')

Bibbulmun Track camp site -  
shelter (number of nights)

Bibbulmun Track camp site -  
tent (number of nights)

Backpackers/visitor hostel  
(number of nights)

Bed and breakfast/guest  
house (number of nights)

Other camp site/caravan park  
off the trail (number of  
nights)

Family and friends (number  
of nights)

Self-contained  
accommodation/chalets/units  
(number of nights)

Hotel/motel/motor inn  
(number of nights)

**9. Did you record your walk in a green log-book at the campsites?**

☐

Yes

☐

No

☐

Didn't visit a camp site

**\* 10. Including your last trip, how often have you used the Bibbulmun Track in the last 12 months?**

Number of individual  
TRIPS (if first time = 1):

Total number of HALF  
DAYS (e.g. <4 hours) spent  
on the trail over last 12  
months:

Total number of FULL  
DAYS (e.g. >4 hours) spent  
on the trail over last 12  
months:

**\* 11. For your last trip, overall how satisfied were you with your walk on the Bibbulmun Track?**

Not at all satisfied

2

3

4

Extremely satisfied

Overall experience

☐☐☐☐☐

## Bibbulmun Track User Survey 2014

**\* 12. How strongly would you recommend a walk on the Bibbulmun Track to friends who share your interests?**

	Not at all	2	3	4	Very strongly
Recommend to friends	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**5.**

We would like to know about what you spent on your most recent trip to the Bibbulmun Track. This includes what you spent on your most recent walk or in preparation for this walk, including travelling to and from the track. This helps us calculate a value of the track to its users.

**\* 13. During your most recent trip to the Bibbulmun Track in the last four weeks, would you mind telling us how much you spent to access and use the track? (\$Australian - type in amount only e.g. 50 (no \$) to nearest dollar value). (If money was not spent for a particular category please leave blank).**

Travel/transport (fuel, car hire, taxi etc.) to and from the Bibbulmun Track	<input type="text"/>
Accommodation	<input type="text"/>
Food/drink supplies/medicinals	<input type="text"/>
Meals (eating out)	<input type="text"/>
Activities (sightseeing trips, tours, lessons, etc.)	<input type="text"/>
Equipment (purchased or hired for this trip)	<input type="text"/>
Maps, guides and other publications (purchased for this trip)	<input type="text"/>
Other (clothing, merchandise, souvenirs, etc. purchased for this trip)	<input type="text"/>

**\* 14. Please indicate if the above figures are**

- ☐ per night, or
- ☐ for the total length of your most recent trip

**\* 15. Including yourself, how many people do these figures cover?**

**16. How much would you spend (\$ Australian) on bushwalking gear in an average year? (e.g. backpack, books, clothes, shoes, maps etc.)**

\$ Australian

**6.**

## Bibbulmun Track User Survey 2014

**\*17. What was the start and finish point for your walk on the Bibbulmun Track during your last trip?**

**Indicate below your start and finish/turn around points from the access list below by placing an 'S' where you started and 'F' where you finished/turned around.**

<b>Kalamunda (MAP 1A)</b>	Brockman Highway (west)
Fern Road	<b>Willow Springs (MAP 5A)</b>
Camel Farm (Pauls Valley Road)	Donnelly River Village
Asher Road	Shoe Road/Donnelly Drive Bridge
Hewett's Hill Camp site	Donnelly Drive Twin Bridges (north)
South Ledge	Tom Road Camp site
Mundaring Weir Hotel	Donnelly Drive/Panda Road/Twin Bridges (south)
Perth Hills National Parks Centre	Green's Island access road
Ball Creek Camp site	Graphite Road (One Tree Bridge)
Helena Camp site	Chappels Bridge
Waalegh Camp site	Boarding House Camp site
Beraking Camp site	Palings Road
Dale Road	Beavis Camp site
Mt Dale Camp site	Seven Day Road
Brookton Camp site	<b>Beedelup Road (Karri Forest Explorer Drive) (MAP 5B)</b>
Brookton Highway	Beedelup Falls
Canning Camp site	Beedelup Camp site
Monadnocks Camp site	Channybearup Road
<b>Sullivan Rock spur trail (MAP 1B)</b>	Stirling Road
Mt Cooke Camp site	Big Brook Dam
Nerang Camp site	Pemberton
Wearne Road	Gloucester Tree
Gringer Creek Camp site	Cascades spur trail
Albany Highway	Gloucester Road
White Horse Hills Camp site	Warren Camp site
Mt Wells Camp site	River Road Bridge
Chadoora Camp site	Wheatley Coast Road (north)
<b>Inglehope Rail Crossing (MAP 2A)</b>	Hill Brook Road
Dwellingup	Schafer Camp site
Nanga Road	Karri Hill Road
River Road	Lane-Poole Road
Swamp Oak Camp site	Middleton Road
<b>Yarragil Form (MAP 2B)</b>	<b>Muirillup Road (MAP 6A)</b>
Murray Camp site	Northcliffe
Driver Road	Wheatley Coast Road (south)
Dookanelly Camp site	Gardner Camp site
<b>Harvey-Quindanning Road (MAP 3A)</b>	Chesapeake Road (west)
Possum Springs Camp site	Lake Maringup Camp site
Yourdamung Camp site	Chesapeake Road (east)
Harris Dam Camp site	<b>Deeside Coast Road (MAP 6B)</b>
<b>Harris Dam Picnic Area (MAP 3B)</b>	Dog Road
Mornington Mills Road	Dog Pool Camp site
Patstone Road	Mt Chance Camp site
Coalfields Highway	<b>Broke Inlet Road (MAP 7A)</b>
Collie	Woolbales Camp site
Mungilup Road Bridge	Mandalay Beach Road
Mungilup Road (south)	Long Point Camp site
Yabberup Camp site	Shedley Drive/Deep River Bridge
Collie-Preston Road (after Glen Mervyn Dam)	Mt Clare Camp site
<b>Mumballup Forest Tavern (Boyup Brook Road) (MAP 4A)</b>	Tinglewood Drive
Noggerup Camp site	John Rate Lookout
Lowden-Grimwade Road	Isle Road
Grimwade Camp site	Rest Point Road
Grimwade-Kirup Road	Walpole
Grimwade-Balingup Road	Coalmine Beach (Knoll Drive)
Jayes Road	South Coast Highway (west)
Balingup	Hill Top Lookout
Golden Valley Tree Park	Giant Tingle Tree (Gully Rd)
<b>Hay Road (MAP 4B)</b>	Frankland River Camp site
Spring Gully Road (east)	Sappers Bridge
Spring Gully Road (west)	<b>Tree Top Walk (MAP 7B)</b>
Blackwood Camp site	Giants Camp site
Southampton Bridge	South Coast Highway (east)
Gregory Brook Camp site	Ficifolia Road
Karri Gully spur trail	Conspicuous Beach

List continues over page.....

## Bibbulmun Track User Survey 2014

	Rame Head Camp site
	Peaceful Bay
	Peaceful Bay Road (north)
	Boat Harbour Camp site
	Boat Harbour Road (WD)
	Parry Beach Road
	Parry Beach Camping Area
	<b>William Bay Road (MAP 8A)</b>
	William Bay Camp site
	Lights Beach Car park
	Lights Beach Road
	Ocean Beach Road
	Denmark Trail Head (Denmark River/river mouth)
	Eden Road Gate
	Nullaki Camp site
	Tennessee Road South
	West Cape Howe Camp site
	<b>Shelley Beach Road (MAP 8B)</b>
	Torbay Camp site
	Cosy Corner Picnic Area
	Mutton Bird Road Car park
	Mutton Bird Road
	Mutton Bird Camp site
	Sandpatch Car park
	Sandpatch Camp site
	Frenchman Bay Road
	Albany

**\*18. How many kilometres did you cover in total during your last trip on the Bibbulmun Track? (Please use a whole number)**

## Bibbulmun Track User Survey 2014

**19. Please indicate on the scale below your level of agreement with each of the following statements. Walking on the Bibbulmun Track provides me with the following opportunities or benefits:**

	Very strongly disagree	Strongly disagree	Disagree	Undecided	Agree	Strongly agree	Very strongly agree
Access natural experiences	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Appreciate scenic beauty	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Challenge yourself	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Engage in an active/healthy activity	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Escape the urban environment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Experience something new and different	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Relax and unwind	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Socialise with friends and family	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Participate in outdoor recreation activities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Connect with nature	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Improve quality of life	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Increase appreciation of the natural environment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Achieve physical and mental health benefits	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**20. Please indicate on the scale below your level of agreement with each of the following statements. The Bibbulmun Track provides the following benefits to society:**

	Very strongly disagree	Strongly disagree	Disagree	Undecided	Agree	Strongly agree	Very strongly agree
Provision of green corridors/spaces	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Increased community wellbeing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Increased tourism in regional centres	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Increased community pride	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Generation of employment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Protection of biological diversity	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Encouraging physical fitness and healthy lifestyles	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Increased business investment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**8.**

Please tell us some information about yourself

## Bibbulmun Track User Survey 2014

### 21. Where is your usual place of residence?

- ☐ Australia
- ☐ Overseas

9.

### 22. If you are an Australian resident, what state/territory do you live in?

- |  |   |
|--|---|
| <input type="radio"/> Australian Capital Territory | <input type="radio"/> South Australia   |
| <input type="radio"/> New South Wales              | <input type="radio"/> Tasmania          |
| <input type="radio"/> Northern Territory           | <input type="radio"/> Victoria          |
| <input type="radio"/> Queensland                   | <input type="radio"/> Western Australia |

10.

### 23. If you normally reside overseas, what country are you from? (please select from the list below)

- |                                 |                                   |  |
|---------------------------------|-----------------------------------|--|
| <input type="radio"/> Austria   | <input type="radio"/> Indonesia   | <input type="radio"/> South Africa             |
| <input type="radio"/> Belgium   | <input type="radio"/> Italy       | <input type="radio"/> South America            |
| <input type="radio"/> Canada    | <input type="radio"/> Japan       | <input type="radio"/> Sweden                   |
| <input type="radio"/> China     | <input type="radio"/> Korea       | <input type="radio"/> Switzerland              |
| <input type="radio"/> Denmark   | <input type="radio"/> Malaysia    | <input type="radio"/> Taiwan                   |
| <input type="radio"/> France    | <input type="radio"/> Netherlands | <input type="radio"/> United Kingdom           |
| <input type="radio"/> Germany   | <input type="radio"/> New Zealand | <input type="radio"/> United States of America |
| <input type="radio"/> Hong Kong | <input type="radio"/> Norway      |  |
| <input type="radio"/> India     | <input type="radio"/> Singapore   |  |

Other (please specify)

### 24. If from overseas or interstate, when did you decide to walk on the Bibbulmun Track?

- ☐ Before arriving in Western Australia
- ☐ After arriving in Western Australia

11.

### 25. If you are a Western Australian resident, what is your postcode?

12.

## Bibbulmun Track User Survey 2014

**26. Do you intend to walk on the Bibbulmun Track again?**

☐ Yes

☐ No

**27. Was the Bibbulmun Track the main reason you came to this particular area?**

☐ Yes

☐ No

**28. Your gender?**

☐ Male

☐ Female

**29. Your age group**

☐ 18-24

☐ 55-64

☐ 25-34

☐ 65-69

☐ 35-44

☐ 70-75

☐ 45-54

☐ 75 or older

**30. Which best describes the travel group you visited the Bibbulmun Track with during your most recent trip?**

☐ By yourself

☐ With school/university group

☐ With friends

☐ With a club/organisation

☐ With family

☐ Tour group

☐ With spouse/partner

☐ Other (please specify)

**31. Including yourself, how many people in your personal (i.e. family) group were adults and how many were children during your last trip to the Bibbulmun Track?**

Number of adults

Number of children (aged 4 and under)

Number of children (aged 5 to 17)

**13.**

Thank you very much for taking the time to complete this survey.