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Scottish Marine Recreation and Tourism Survey 2015

Final Report
Prepared by LUC
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1 Executive Summary

1. The Scottish Marine Recreation and Tourism Survey (SMRTS) was carried out between August and October 2015.

2. The SMRTS was designed to gather information for 23 different recreation and tourism activities undertaken at sea or around the Scottish coastline. For the purposes of this study marine recreation and tourism is defined as: ‘including those activities which involve travel away from one’s “habitual” place of residence, which have as their host or focus the marine environment and/or the coastal zone’.

SMRTS comprised a web-based survey which gathered spatial information on the activities people had undertaken during the previous twelve months and asked detailed questions about their one or two most important activities. A survey of businesses was also undertaken.

Activity survey sample

3. A total of 2170 individuals and representatives of 137 clubs or similar organisations completed the activity survey. People had taken part in an average of four activities during previous twelve months, mapping around six locations for each. This generated a total of over 52,000 mapped locations across the 23 activities. More detailed questionnaire answers were provided for the activities people identified as being their ‘most important’ activities.

4. This was not a random survey of the whole population. Publicity for the survey was based around formal and informal networks relating to marine recreation and tourism and it is likely that, as a result, it is biased towards those who are most active and under-represents those who make less frequent visits for general recreation. It is likely to have achieved higher responses from activities with strong networks and poorer responses where involvement is more individualistic or less organised.

5. While the survey provides a good national picture for the most reported recreation and tourism activities, it is perhaps not as reliable for less popular activities or for less visited areas.

Participation in recreation activities

6. Figure 1 shows the total number of respondents who undertook each activity over the previous twelve months.
   - ‘General marine and coastal recreation’ (which includes a wide range of beach activities) was the most popular category overall.
   - Longer distance walks, bird watching, visits to historic sites and other visitor attractions and general tourism activities such as coach tours and scenic drives were also popular.
   - There was a relatively even spread of responses across more specialist activities such as kayaking, sailing, diving and angling.

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1 The survey was commissioned by the Scottish Government, The Crown Estate, the Firth of Clyde Forum and the Scottish Coastal Forum. It was undertaken with support from Scottish Natural Heritage, sportscotland, Visit Scotland, the Royal Yachting Association, Scottish Canals, British Marine Scotland, Sail Scotland and the West Highland Anchorages and Mooring Association. The survey was carried out by LUC with support from Brand New Media and Aquatera.
Figure 1: Number of Respondents taking part in each activity included in the survey
Figure 2: Breakdown of ‘Most Important’ Activities
7. **Figure 2** shows the breakdown of activities which people identified as being most important to them. It shows a slightly different pattern to Figure 1:

- A number of more specialist activities such as sailing / dinghy cruising and canoeing and kayaking more frequently listed as important activities; and
- More general tourism activities less frequently listed.

8. **Map 1** shows the spread of recreation and tourism activity around the Scottish coastline. Key concentrations of activity include the Firth of Clyde, Argyll and West Highland coast, together with the Lothians and Fife coastline and the Moray Firth. A further 23 maps show locations where each of the individual activities take place. These highlight, for example, concentrations of walking along parts of the east coast, diving at Scapa Flow and in the Sound of Mull, windsurfing on Tiree and sailing around the west coast.

9. This map, together with maps for each of the activities included in the survey, is available on Marine Scotland’s National Marine Plan Interactive (NMPi) website ([https://marinescotland.atkinsgeospatial.com/nmpi/](https://marinescotland.atkinsgeospatial.com/nmpi/)).

**Recreation and tourism trips**

10. Respondents were asked about the factors influencing their decision on where to go:

- The biggest influences included the suitability of the location for the recreation or tourism activity in question, the presence of attractive scenery and the possibility of seeing wildlife;
- Secondary influences included the presence of cultural heritage, other facilities such as pubs, cafés and restaurants, and advice people had received from others; and
- The availability of suitable accommodation was relatively unimportant.

11. The results suggest people value a range of ‘ecosystem services’ (or benefits) provided by the marine and coastal environment, a finding which may be worth addressing in further research.

12. Respondents were asked about the information they used when deciding where to go:

- People’s own knowledge of the Scottish coast, or recommendations from friends or family were of most importance;
- Websites are regarded as being more important than guidebooks, magazines or clubs and associations.

13. The survey gathered information about the transport people used to get to the coast:

- Car is by far the most common mode of transport to the start of people’s visit to the coast, with around 95% of respondents indicating they always or sometimes travel by car.

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2 [http://www.snh.gov.uk/docs/C210222.pdf](http://www.snh.gov.uk/docs/C210222.pdf)
Map 1: All Activities Combined
Around 60% of people indicate that they always or sometimes walk (reflecting the high proportion of respondents who live within 1 mile of the Scottish coast);

40% sometimes use a ferry as part of their journey.

14. Activity peaks in July with around 40% of respondents undertaking recreation or tourism activity several times a week and over 80% taking part at least twice a month. Comparable proportions for January are less than 15% and less than 50%.

15. People made an average of 5.95 day trips, 1.99 short breaks and 1.39 longer breaks per year.

- For overnight trips, staying on a boat, followed by staying with friends and family, camping and self-catering were the most frequently used forms of accommodation.
- People were most commonly with friends, followed closely by partner or family, club members or alone. The average party size was estimated at around 4.5 people, with slightly more males than females.

16. Parking and access were most commonly cited as requiring improvement. Other areas of improvement included online information and apps, visitor facilities and transport.

**Spending and the economic value of the sector**

17. Analysis of survey respondents’ spending suggests a median expenditure of around £55 per day during recreation and tourism trips on the Scottish coast. Most, but not all, of this is likely to be spent in coastal communities. People were also asked about their annual expenditure on their chosen activities. The results suggest a median spend of around £2000 per annum. This is a high figure but a proportion of this is likely to be spent outside Scotland, for example on equipment that is manufactured or sold by businesses elsewhere in the UK or overseas.

18. Information on daily spending levels was used in conjunction with data on the total number of trips to the Scottish coastline (derived from the SPANS national omnibus survey\(^3\)) and the breakdown between different activities (based on SPANS and information from the British Marine Watersports Participation Survey\(^4\)) to estimate the total expenditure associated with the sector. The survey findings suggest that:

- Taking all 23 activities covered by the survey, annual expenditure\(^5\) on marine recreation and tourism activities is estimated to be worth up to £3.7 billion to the Scottish economy;
- Around £2.4 billion of this is associated with general marine recreation and tourism; and
- Around £1.3 billion is associated with more specialist activities including wildlife watching, sailing, kayaking, surfing and angling.

19. Benchmarking data for the marine economy, tourism in Scotland and the economic value of sailing provide context for these figures:

- Scottish GDP at between £142 and 153 billion\(^6\) for the year up to June 2015;

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\(^3\) [http://www.snh.gov.uk/docs/A1471713.pdf](http://www.snh.gov.uk/docs/A1471713.pdf)


\(^5\) Expenditure is a different measure to GVA (gross value added), which is used in Scotland's Marine Economy publication to measure a sector's net contribution to the economy

The value of the marine economy (excluding recreation and tourism) has been calculated as being £4.5 billion GVA in 20137;

Expenditure associated with overnight tourism trips in Scotland totalled £4.8 billion8 in 2014.

‘Sustainable tourism’ in Scotland accounted for turnover of £6.7 billion9 in 2013;

Direct and indirect spending generated by sailing tourism was calculated at around £100 million10 in 2010.

20. Some caution needs to be exercised in the interpretation of these figures since the survey sample is probably biased towards higher spending participants. Nevertheless, the findings highlight the vital economic contribution marine recreation and tourism makes to Scotland’s marine economy alongside other key sectors such as fishing, renewable energy and oil and gas.

Visitors to Scotland

21. Around 16% of respondents came from outside Scotland. The survey revealed a high level of loyalty and satisfaction among these visitors:

- 80% of people had visited the Scottish coast before;
- 90% indicated that they were very likely to visit again; and
- Only 2% were unlikely or very unlikely to visit again.

22. Visitors to Scotland were more likely to undertake more general forms of recreation and tourism. The most popular specialist activities were bird/wildlife watching, yacht cruising, kayaking, angling and SCUBA diving. Visitors tended to have a higher daily spend but a lower annual spend.

Findings from the business survey

23. A survey of businesses involved in marine recreation and tourism was also undertaken. A total of 279 businesses responded to the business survey. While the sample under-represents the sector (with low returns from accommodation providers, for example), particularly in more remote parts of Scotland, the survey findings do provide an overview of businesses which serve marine recreation and tourism:

- The largest proportion of responding businesses provide organised or led excursions on the coast or at sea, followed by instruction / training and the hire or charter of boats.
- There is a concentration of businesses in those geographic areas which recorded the highest levels of recreation and tourism activity.
- When asked which categories of recreation and tourism activity they serve the largest proportion identified bird and wildlife watching, followed by general recreation, sailing and other forms of boating.
- 60% operate all year round, with the remaining 40% most active between April and October.

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8 http://www.visitscotland.org/pdf/2015%200729%20Tourism%2oin%20Scotland%202014_Final%20draft.pdf
10 Scottish Enterprise (2010) Sailing in Scotland
Figure 3: Marine Recreation and Tourism Activities served by Businesses (%)

- Just over 40% of businesses ran excursions.

- As might be expected, practical issues such as weather or sea conditions, client needs and abilities and people’s own knowledge of the coast were of greatest importance in deciding where to run such excursions. However, environmental issues such as the potential to see wildlife and the presence of attractive scenery were also of importance.

- On average, and across all categories of employment, businesses employed just over seven people (around 5 full time and 2 part time) and had just under two volunteers.

- Businesses were asked about the challenges they face in finding staff with the necessary skills. Technical skill shortages appear to be the most significant issue affecting businesses across the sector but particularly severe in relation to the hire or charter of equipment (including boats) and the operation of cafés, pubs and restaurants.

24. The survey suggests that the sector is optimistic with most respondents anticipating growth in turnover over the next five years:

- The most positive outlook was reported by businesses running excursions, training and hiring or chartering equipment including boats.

- Businesses serving bird and wildlife watching, general recreation, canoeing and kayaking and other boat based activities also tended to have a positive view of the next five years.

Next steps

25. SMRTS has more than met its objectives of gathering spatial and other information on recreation and tourism activity around the Scottish coastline. This provides a rich source of data to inform marine and terrestrial planning. It will also help guide future
public and private sector investment. The results provide a powerful evidence base to demonstrate the economic and social contribution of marine recreation and tourism, adding weight to the view that it should be considered on equal terms with other marine sectors.

26. It is recommended that the survey is repeated after five years which will allow the results to be updated and the effects of changing trends and investment patterns to be monitored. It is anticipated that the outputs of the 2015 survey will generate further interest amongst the public and businesses and result in greater levels of participation in subsequent surveys. The main report outlines a number of lessons which should be reflected in future surveys of this kind.
2 Introduction and background

2.1 The Scottish Marine Recreation and Tourism Survey (SMRTS) was carried out between August and October 2015. The survey was commissioned by the Scottish Government, the Firth of Clyde Forum, The Crown Estate, and the Scottish Coastal Forum. It was undertaken with support from Scottish Natural Heritage, sportscotland, Visit Scotland, the Royal Yachting Association, Scottish Canals, British Marine Scotland, Sail Scotland and the West Highland Anchorages and Mooring Association. The survey was carried out by LUC with support from Brand New Media and Aquatera.

2.2 The survey covered a wide range of recreation and tourism activities and businesses in, on or near to the sea. Its aim was to gather robust information on marine recreation and tourism activity in Scotland including where they take place, what factors influence people’s choice of location and the economic activity supported by the sector.

2.3 The survey results provide baseline information to inform marine planning in Scotland. The maps and data on areas of use and intensity of activity allows these activities to be reflected more accurately in marine planning and decision making to facilitate effective use of marine and coastal resources. The National Marine Plan\(^\text{11}\), Scotland’s first statutory marine plan was published in March 2015. It provides a comprehensive planning framework for all marine activity - inshore and offshore, devolved and reserved. Regional Marine Plans will also be developed by Marine Planning Partnerships within the 11 Scottish Marine Regions; they will extend to 12 nautical miles and will be developed in accordance with the National Marine Plan.

2.4 The survey of Scottish marine recreation and tourism used an innovative combination of on-line questionnaires, interactive mapping for more than 20 types of activity, workshop meetings and a survey of marine recreation and tourism businesses. The survey was supported by an extensive social media campaign designed to maximise the reach of the survey.

2.5 More than 2100 individuals, 137 clubs and 279 businesses completed the survey, providing information about where people undertake different activities and insights into their visits to the coast for recreation and tourism. While the sample is generally robust, lower response rates for a handful of activities and more remote parts of the Scottish coast means that the findings are not fully representative. Furthermore, the survey was not based on a random sample of the Scottish population, focusing instead on networks of people active in marine recreation and tourism. The results must, therefore, be interpreted with some caution. Chapter 3 of this report deals with these sampling issues in greater detail.

2.6 The remainder of this report comprises the following sections:

- Methodology
- Survey of Recreation and Tourism Activities
- Benchmarking and estimated spend
- Business Survey
- Appendices giving detailed analysis of responses recreation 23 activities.

Table 2.1: Definitions

<table>
<thead>
<tr>
<th>Category</th>
<th>Definition</th>
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<tbody>
<tr>
<td><strong>Tourism</strong></td>
<td>Tourism is defined as comprising the activities of persons travelling to and staying in places outside their usual environment for not more than one consecutive year for leisure, business and other purposes…tourism refers to all activities of visitors, including over-night and same day visitors.</td>
</tr>
<tr>
<td><strong>Recreation</strong></td>
<td>Recreation is defined as any pursuit engaged in during leisure time. Recreation activities may form part of tourism.</td>
</tr>
<tr>
<td><strong>Marine recreation and tourism</strong></td>
<td>Marine recreation and tourism is defined as: ‘including those activities which involve travel away from one’s “habitual” place of residence, which have as their host or focus the marine environment and/or the coastal zone’.</td>
</tr>
<tr>
<td><strong>General marine recreation activities</strong></td>
<td>General marine and coastal recreation includes beach games, beach combing, rock pooling, painting, kite flying, sunbathing, naturism, picnicking, yoga, paddling, walking less than 2 miles, general sightseeing, fossil hunting, beach team sports, body boarding, general swimming and snorkelling, coastal cycling, horse-riding and dog walking.</td>
</tr>
<tr>
<td><strong>General marine tourism activities</strong></td>
<td>General marine and coastal tourism includes activities such as scenic drives or bus tours.</td>
</tr>
<tr>
<td><strong>Marine Regions</strong></td>
<td>Under the Marine (Scotland) Act 2010, Scottish Ministers were given the power to identify the boundaries of Scottish Marine Regions (SMRs) for the purposes of regional marine planning. The Scottish Marine Regions Order 2015 identifies 11 Scottish Marine Regions and establishes their boundaries.</td>
</tr>
<tr>
<td><strong>Heat maps</strong></td>
<td>A heat map is a graphical representation of data where the individual values contained in a matrix are represented as colours.</td>
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<tr>
<td><strong>Benchmarking</strong></td>
<td>Process of comparing questionnaire responses for different activities to the profile that might be expected on the basis of previous surveys.</td>
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<tr>
<td><strong>Mean</strong></td>
<td>The mean is the average of the numbers: a calculated &quot;central&quot; value of a set of numbers. It is calculated by adding up all the numbers and dividing by how many numbers there are.</td>
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<tr>
<td><strong>Median</strong></td>
<td>The median is the middle value in a series of values arranged from smallest to largest.</td>
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<tr>
<td><strong>Most important activity(ies)</strong></td>
<td>The one or two activities which questionnaire respondents identified as being most important to them. Respondents were asked a suite of detailed questions about these activities.</td>
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<tr>
<td><strong>Territorial waters</strong></td>
<td>Defined under the Territorial Sea Act 1987 as the waters stretching from the baselines out to a maximum of 12 nautical miles, or the median line between adjacent countries.</td>
</tr>
<tr>
<td><strong>Marine activities</strong></td>
<td>Activities taking place on or in the sea (within Scottish territorial waters) – saline and tide affected together with the Caledonian, Crinan and Forth and Clyde Canals.</td>
</tr>
<tr>
<td><strong>Coastal activities</strong></td>
<td>While entry of spatial data was not limited to a defined coastal zone, subsequent analysis and presentation has discarded most spatial data further than 5km from the coast/canals. This extended further inland than the 1km normally used to define the coastal zone but was selected to allow for errors in data entry (e.g. where data points were added at the scale of Scotland).</td>
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Fuller explanations of definitions and assumptions can be found in the separate Method Statement for the survey.
3 Methodology

3.1 This section of the report provides an overview of the survey methodology. It covers the activity and business surveys and identifies a number of issues and lessons learned.

3.2 The work was undertaken by a consultancy team led by LUC with inputs from Aquatera (particularly in relation to the Pentland Firth and Orkney Waters pilot study) and Brand New Media (web design).

3.3 The project was managed by the Firth of Clyde Forum on behalf of the Scottish Government. The Steering Group also included representatives from the Scottish Government and the Scottish Coastal Forum. A wider data subgroup with additional representatives from the Scottish Coastal Forum, the Crown Estate, sportscotland, Visit Scotland, Scottish Canals, Royal Yachting Association Scotland, British Marine Scotland, Sail Scotland and the West Highland Anchorages and Mooring Association oversaw the project at key points.

3.4 The timeline for project is illustrated in Table 3.1.

Methodology: activity survey

Desk review

3.5 Early in the project, a focused desk review was undertaken in order to inform the design of the Scottish Marine Recreation and Tourism Survey (SMRTS). This found that other research, studies and surveys provide a detailed picture for individual activities, groups of activities or specific geographic areas. These could not, however, confidently be amalgamated to provide a comprehensive and reliable picture of recreation and tourism around the Scottish coastline. The closest was a survey conducted by LUC on behalf of Scottish Natural Heritage in 2010. While this gathered spatial information, the response rate totalled only around 400 users and 12 businesses. British Marine carries out bi-annual surveys of marine businesses, though these tend to focus on businesses supporting boat based activities.

3.6 The desk review found a particular lack of consistent and comprehensive spatial information on the type and amount of activity. This has been identified as a key requirement for marine planning. This part of the research, therefore, confirmed the need for a survey which would aim to capture spatial and other information across a wide range of recreation and tourism activities.

3.7 The desk research was used to define the categories of recreation and tourism activity that would be used for the survey. This would help ensure that, wherever possible, there could be read-across between the results of the SMRTS and other surveys. This included consideration of the activity categories adopted by the Marine Management Organisation in England, by Scottish Natural Heritage in Scotland’s People and Nature Survey (SPANS) and the British Marine annual Watersports Participation Survey (WPS). The review considered the questions that had been included in these and other surveys to inform design of the SMRTS.
### Table 3.1: Project timeline

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<td>Desk review</td>
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<td>Survey Launch</td>
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<td>Preliminary analysis</td>
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<td>Workshops</td>
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<tr>
<td>Detailed analysis and reporting</td>
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</table>
3.8 The desk review was used to develop benchmarking data for the SMRTS, based on the total levels of participation in coastal and marine recreation and tourism in Scotland and the likely split of this total between the different categories to be included in the survey. This would allow the number of responses to be monitored during the course of the survey. It would also allow the representativeness of the final sample to be assessed.

3.9 Finally, the desk review confirmed the view that the survey should be based on respondent self-selection, with publicity and promotion focused on networks and organisations active within the sector. Two alternatives were considered. The first, based around a random survey of the whole population was dismissed because it would need an extremely large sample to secure a reasonable sample for the range of specialist activities to be included in the survey. The second, based on conducting the survey at key locations around the Scottish coast would very likely result in spatially biased results, with patterns of activity potentially mirroring the locations at which the survey was administered. The self-selection method inevitably results in some survey bias. This is discussed under lessons learnt (Chapter 7).

3.10 The results of the desk review, comprising a literature and data review, are available separately.

Survey design

3.11 Design of the survey was informed by the findings of the desk review, together with the requirements of the project stakeholders.

3.12 The process comprised a series of iterations focused on:

- Defining the recreation and tourism activities, a key objective being to limit the total number of categories whilst retaining the level of detail needed for the marine planning and other applications;

- Narrowing the list of potential questions down to focus on those judged to be of greatest importance. It was necessary to strike a balance between brevity and comprehensiveness, recognising that the longer and more complex the survey, the fewer completions would be achieved.

- Developing ways of capturing spatial data. While the original proposal was to collect point data, it was concluded that this would not adequately represent activities which comprise a journey (e.g. walking along the coast, or kayaking from point A to point B) or take place in a particular area (e.g. dinghy racing or wildlife watching). To keep things as simple as possible, each activity was allocated one of these data formats (point, line or polygon) and the web development team devised a mapping tool which would allow the survey to capture this information. This was one of the most technically challenging aspects of the project and one where the survey broke new ground. The interface was not without issues and these are discussed under 'Lessons learned' (Chapter 7).

3.13 The survey was intended to capture spatial information on where people undertook different activities and to follow this with a series of questions about their activity over the previous 12 months. Recognising that many people would indicate participation in several types of activity, it was decided that asking them to complete a section of the questionnaire for each would be very onerous, potentially resulting in people quitting the survey or providing only partial information. An alternative
approach based on asking people to define and then answer questions on their one or two ‘most important’ activities was developed instead. This would result in a smaller number of more complete responses. However, it was recognised that it could affect the nature of the sample, potentially securing responses from people who are more active and enthusiastic about the activity in question. It would also weaken the link between spatial data collected by the survey and answers to survey questions.

3.14 Use of SurveyMonkey\textsuperscript{12} allowed prototypes of the survey to be developed and tested. Once in a near final format it was provided to the web development specialists who incorporated it into a website. The website was designed in a way to differentiate between different kinds of respondent. It directed businesses to the separate business survey, collected only spatial information from club representatives and full information from individuals. The website also included: background information for those interested; a blog; links to social media (Twitter and Facebook); and a prize draw.

3.15 The survey questions are provided in Appendix 24.

3.16 It was agreed to run the survey for three months during the late summer and early autumn. Given that the survey was designed to gather information for the previous 12 months, this would encourage questionnaire completion while the memory of activity over the summer months was still fresh.

Pilot

3.17 In parallel with the process of survey design, Aquatera carried out a pilot study focusing on the Pentland Firth and Orkney Waters. This work was intended to test the broad approach that would be rolled out nationally as well as providing locally specific information which could help inform the Pentland Firth and Orkney Waters Marine Spatial Plan.

3.18 The pilot study was carried out in advance of the national survey website being operational and was, therefore, based around a number of workshops and face to face meetings, using paper maps to capture spatial information.

3.19 The methodology and results of the pilot are available here\textsuperscript{13}.

Launch and publicity

3.20 Considerable preparatory work was undertaken by the project team and partner organisations ahead of the launch of the survey at the start of August 2015. This included the compilation of contact lists for organisations (representative bodies, clubs, associations, operators, regulators, public agencies) and the circulation of pre-publicity emails. There had also been general raising of awareness throughout the sector so key networks were primed. An e-shot branded with the same design as the survey website was sent out to this contact list on Friday 31 July 2015. The preparatory work paid off, with very high opening rates (20-38% compared with averages of 2 to 3% for typical e-shot communication). Press releases, which included Ministerial quotes, were sent to key media organisation, user groups and industry organisations. As an incentive to participate in the survey, a prize draw was included as part of the website, providing the opportunity for those respondents who were happy to provide their details.

\textsuperscript{12} https://en.wikipedia.org/wiki/SurveyMonkey
\textsuperscript{13} http://www.gov.scot/Topics/marine/seamanagement/regional/activity/pentlandorkney/two/CaseStudy
3.21 Survey responses and personal information provided as part of the prize draw were kept separate to avoid impinging on people’s privacy.

3.22 Facebook and Twitter accounts were set up using the survey website’s branding. This allowed updates to be distributed to those who had ‘liked’ or were following SMRTS. It also provided a channel for people to report technical or other issues with the website or survey.

3.23 Survey responses were monitored during the time it was live. This allowed the spread of responses to be compared with those suggested by the benchmarking exercise (see separate survey method statement) and additional effort directed to those activities where responses were lower than might have been expected.

3.24 Further press releases and e-shots were sent out from the midpoint to the end of the survey period to remind people and encourage them to take part.

Workshops

3.25 The survey closed at the end of October 2015. It was agreed that it would be useful to review the preliminary results by running a series of stakeholder workshops. These would pick up some of the main areas of activity as well as more remote areas where the data gathered by the survey would be sparser.

3.26 The project team undertook headline analysis of the survey data during the two weeks following the end of the survey, with a particular emphasis on generating maps showing the spatial pattern of activity across the activity categories.

3.27 Workshops were then held in Stornoway, Inverness, Oban, Glasgow and Lerwick, with an additional event piggybacking on a Wild Scotland event at SNH’s conference centre near Perth. The purpose was to explore the initial findings from the work, identify any issues, omissions, surprises or obvious errors, inform the way that the data would be analysed and discuss how the results might be used at a local or sectoral level.

Analysis

3.28 Detailed analysis of the survey data took place following the last workshop, held in early December. The work comprised the following elements:

- Developing and applying a mapping methodology which could quickly and accurately reflect the pattern of spatial activity recorded by the survey. This was a technical challenge given the mix of point, line and polygon (area) data. The final process used a heat-mapping technique to indicate where the greatest concentrations of activity were recorded for individual activities. A limited amount of data-cleaning was undertaken to remove inland entries (with the exception of routes recorded by people on scenic drives or bus tours) and locations beyond the outer boundary of the Scottish Marine Regions. Analysis of the spatial data highlighted a number of data entry issues including differing scales of working (some people used the zoom facility to focus on areas they had visited, providing spatially accurate information, others entering points, lines or polygons at a national scale) and the presence of apparently erroneous data points (the web survey maps had limited capability to ‘undo’ errors). Overall the data capture method appeared effective, with over 52,000 individual points, lines or polygons collected by the survey, an average of around 24 per respondent. The heat-mapping methodology and shapefile metadata are available separately.
Questionnaire responses were analysed for each activity included in the survey. The survey recorded information about participation in marine and coastal recreation and tourism activities in two ways. Firstly, it asked people to indicate which activities they had taken part in over the past 12 months (for each of these they were asked to complete a map showing where they had been). Secondly, it asked people to nominate their one or two most important activities and to answer questions about these. The survey also gathered information on age, gender and household income of the respondent. This means that the analysis can calculate the gross number of respondents taking part in an activity and provide much more detailed analysis on the subset of people who had identified it as their most important activity. In some cases there was a strong correlation between the two groups (for example, 70% of those who had been yacht or dinghy cruising during the previous 12 months also identified it as their most important activity), in other cases, much less so (for example, only 19% of those who said they had been bird or wildlife watching also identified it as their most important activity). Socio-economic information provided by respondents (age, gender, household income) can be combined with both datasets.

A limited amount of benchmarking was undertaken to compare the activity composition of the sample to the profile of activities identified during the desk review process, though there was no attempt to weight the results to normalise the distribution. The age, gender and household income of the sample was also compared to the Scottish average.

A limited amount of extrapolation was undertaken to generate figures for total trip spend by activity, marine region and for the sector as a whole. This drew on information on the total volume of coastal visits, benchmarked information on the proportions of activities, and SMRTS figures for average trip length and median daily spending figures. The methodology for this is described in Chapter 5.

**Heat mapping**

3.29 The spatial data from the questionnaire was captured using different shapes (polygon, point or line) depending on the activity. For example, bird and wildlife watching is area based activity, so polygons were used. Rock climbing on the other hand is generally undertaken in a single location so point data were used. Longer distance walks normally take the form of journeys from one location to another (and often back to the original location), so lines were used to collect the data. Table 3.2 shows the data capture method used for each of the activities included in the survey.

3.30 Straightforward mapping of these points, lines and polygons was unsatisfactory, partly because of the density of spatial information in the most frequently visited locations and partly due to the stacking effects of polygons in particular. Further data processing was therefore needed to produce maps which usefully represented the results of the survey. Heat mapping was selected as the most effective method of illustrating the density of activity. The spatial data had to be processed in different ways depending on the shape used.

3.31 Polygon data already has an area so the process is relatively simple. All the polygons for a given activity are stacked on top of each other and counted, with a red colour attributed to a higher count and a green colour attributed to a lower count:
# Table 3.2: Survey activities and data capture format

<table>
<thead>
<tr>
<th>Category</th>
<th>Data capture</th>
</tr>
</thead>
<tbody>
<tr>
<td>General marine and coastal recreation</td>
<td>Point</td>
</tr>
<tr>
<td>General marine and coastal tourism activities</td>
<td>Line</td>
</tr>
<tr>
<td>Visiting historic sites on the coast or visits to attractions</td>
<td>Point</td>
</tr>
<tr>
<td>Walking at the coast (more than two miles)</td>
<td>Line</td>
</tr>
<tr>
<td>Long distance swimming</td>
<td>Line</td>
</tr>
<tr>
<td>Bird and wildlife watching</td>
<td>Area</td>
</tr>
<tr>
<td>Climbing, bouldering and coasteering at the coast</td>
<td>Point</td>
</tr>
<tr>
<td>Land yachting, power kiting, and kite buggying at the coast</td>
<td>Point</td>
</tr>
<tr>
<td>SCUBA diving in the sea</td>
<td>Point</td>
</tr>
<tr>
<td>Windsurfing and kite surfing at the coast</td>
<td>Area</td>
</tr>
<tr>
<td>Surfing Surf kayaking, Paddle boarding in the sea</td>
<td>Area</td>
</tr>
<tr>
<td>Canoeing, kayaking in the sea</td>
<td>Line</td>
</tr>
<tr>
<td>Rowing and sculling in the sea</td>
<td>Area</td>
</tr>
<tr>
<td>Water skiing and wakeboarding in the sea</td>
<td>Area</td>
</tr>
<tr>
<td>Dinghy racing at sea</td>
<td>Area</td>
</tr>
<tr>
<td>Yacht racing at sea</td>
<td>Area</td>
</tr>
<tr>
<td>Sailing cruising including dinghy cruising at sea</td>
<td>Line</td>
</tr>
<tr>
<td>Motor cruising at sea</td>
<td>Line</td>
</tr>
<tr>
<td>Power boating at sea</td>
<td>Area</td>
</tr>
<tr>
<td>Personal watercraft (jet skis) at sea</td>
<td>Area</td>
</tr>
<tr>
<td>Sea angling - from the shore</td>
<td>Point</td>
</tr>
<tr>
<td>Sea angling - from a private or chartered boat</td>
<td>Area</td>
</tr>
</tbody>
</table>
3.32 Point and line data do not have an area so to identify where numbers of lines or points overlap, an area around the line or point needs to be considered. Without this, points just a few metres from each other would be counted separately making mapping of density of activity impossible. The Kernel Density Tool from ArcGIS Spatial Analyst Toolbox was used to create a buffer or area around each point and line using a defined cell size and radius. All the point and line activities were given a cell size of 250m and a radius of 2.5km. These values were then used to calculate how closely points and lines are drawn on the map. The more these areas overlap, the higher density of activity that is displayed on the heat map.

Map 3.2: Point and line data

3.33 The final step is applying a style to the density values. A continuous colour ramp rather than a stepped colour ramp was used. This ranged from light grey through green and yellow to red. This is a natural colour range that allows the reader easily to identify which areas show most activity without needing to refer to the key. The transition from one colour to the next was set to provide a good indication of differing levels of activity across Scotland.

Methodology: business survey

3.34 A survey of businesses involved in marine and coastal recreation and tourism was developed and run in parallel with the main activity survey. The purpose was to get better information on the ‘supply side’ to complement data on the pattern of activities and wherever practical the questions were designed to mirror or complement those in the main survey.

3.35 The survey was hosted on-line using SurveyMonkey and run over the same period as the activity survey.

3.36 The survey questions are included in Appendix 2.
3.37 The survey achieved 279 completions. This was a significant advance over the 2010 survey which only received 12 business responses and it covers a wider range of businesses than British Marine in their bi-annual surveys. The sample is, however, still relatively small, particularly when analysed by Marine Region or business type. Careful analysis and interpretation of the findings is, therefore, needed.

Provisos and health warnings

3.38 The characteristics of the survey sample mean that the survey findings require careful qualification and interpretation. This was not a random survey of the whole population. Publicity for the survey was channelled through formal and informal networks in the marine recreation and tourism sector\(^\text{14}\). As a result, it is likely to be biased towards those who are most active and under-represents those who make less frequent visits for more general types of recreation.

3.39 Respondents were self-selecting and their decision to take part in the survey will have been influenced by a range of factors which may include their commitment to the activities they undertake and their understanding of the benefits of completing the survey.

3.40 A significant part of the survey was focused on the one or two activities which people regarded as being ‘most important’. This allowed the questionnaire to be kept as short as possible. It is likely that by focusing on people’s most important activities the sample is biased towards the more active, committed and potentially higher spending participants.

3.41 Analysis of the age and gender of people completing the survey suggests the sample is biased towards men, particularly amongst older respondents. Information from the survey on participation in recreation and tourism activities shows a much less pronounced bias towards men in older age groups.

3.42 Taken together, these factors mean that the results of the survey should be treated with caution and attempts to extrapolate to represent the wider population of people undertaking marine and coastal recreation very carefully qualified.

3.43 The survey was successful in gathering a large volume of spatial data across the 23 categories of marine and coastal recreation and tourism. This provides a good national picture for the most reported recreation and tourism activities but is not so reliable for less popular activities. Low response rates for land yachting, power kiting, kite buggying, waterskiing, wakeboarding, and the use of personal watercraft, in particular, mean that the spatial data for these activities must be treated with caution.

3.44 While the spatial data collected by the survey is regarded as being generally very reliable for those parts of Scotland that are most frequently visited, information for remoter parts of the country is limited. Workshop meetings to review the data in Stornoway and Shetland, for example, indicated that, while most of the locations identified are of importance, the relatively low number of responses meant that other important locations did not register. It is important, therefore, that the absence of

\(^{14}\) The option of undertaking a random survey of the wider population was rejected since a very large sample would have been needed to secure sufficient responses to allow analysis by key activity type. An alternative, based on surveying at known recreation locations was rejected since it would not be random and would introduce significant spatial bias into the survey. The selected approach involved targeting groups or individuals who were known to take part in marine and coastal recreation and tourism.
spatial data, particularly in remoter areas, is not taken as an indication that no activity takes place.

3.45 It is important to recognise that in collecting spatial information on where people undertake the 23 activities, there was no attempt to gather data on the frequency each location is visited. This is significant since it means the maps may not fully represent local, frequently visited locations. Given the high proportion of people living on or close to the coast, this may have particular implications for ‘general’ activities such as short walks or playing on the beach and locations closest to centres of population.

3.46 The survey deliberately focused on people’s activity over the previous 12 months since it was considered this would provide the most reliable information. It was, however, noted at one of the workshops that year to year variations in weather patterns (prevailing winds, rainfall etc.) can have a significant influence both on the level of activity, and its spatial distribution. In Shetland, for example, the direction of prevailing winds can have a significant influence on the location of water based activities. It is, therefore, important to recognise that the survey maps provide a snapshot of activity and that there may be variations from one year to the next.

3.47 Detailed questions about people’s recreation and tourism activity were focused on the subset of respondents who had identified a particular activity as being important to them. Some of the sample sizes are small as a result. Where the number of people selecting an activity as their most important activity is between 30 and 60 the report warns that the results should be treated with care. Where the number is below 30 detailed analysis of activity-specific data is not presented. Even where the response was above 60, it is possible that responses to particular questions were lower (none of the questions were mandatory) and the results, therefore, less reliable. Where the response was more than 100 there is greater confidence in the results.
4 Survey findings: marine recreation and tourism activities

4.1 This part of the report presents an overview of the survey results. More detailed analysis and mapping for each of the 22 recreation and tourism categories included in the survey, together with ‘wildfowling’ which accounted for most ‘other activity’ responses, is included in the appendices to this report.

4.2 The recreation categories are as follows:

- General marine and coastal recreation
- General marine and coastal tourism
- Visits to historic sites or to attractions such as museums or aquariums on the coast
- Walking at the coast (more than two miles)
- Long distance swimming in the sea
- Bird and wildlife watching
- Climbing, bouldering and coasteering at the coast
- Land yachting, power kiting, and kite buggying at the coast
- SCUBA diving in the sea
- Surfing, surf kayaking or paddleboarding in the sea
- Windsurfing and kite surfing at the coast
- Canoeing or kayaking in the sea
- Rowing and sculling in the sea
- Water skiing and wakeboarding in the sea
- Dinghy racing at sea
- Yacht racing at sea
- Sailing cruising including dinghy cruising at sea
- Motor cruising at sea
- Power boating at sea
- Personal watercraft (jet skis) at sea
- Sea angling from the shore
- Sea angling from a private or chartered boat
- Wildfowling

4.3 For each of these activities, appendices provide the following information:

- Sample sizes
- Spatial data
- Trip planning
  - Factors influencing decisions on where to go
  - Sources of information
- Characteristics of the trip to the coast
  - Transport to start point
  - Monthly profile of activity
  - Trip length
  - Accommodation used
- Improvements to make the trip more enjoyable
• Party
  - Who you were with
  - Age groups and gender composition of party

• Spending
  - Spending during last trip
  - Annual spending on activity

• Clubs and codes of conduct
  - Club membership
  - Awareness of codes of conduct

• Socio-economic profile
  - Age and gender
  - Household income
Overview of the sample

4.4 A total of 2170 people completed the survey as individuals, with a further 137 club or other organisation responses. Individuals were asked to provide spatial information for all the activities they took part in over the previous 12 months and were presented with detailed questions on their one or two most important activities. Clubs and organisations were only asked to provide spatial information.

4.5 Respondents reported taking part in an average of just under four different activities during the previous 12 months, resulting in over 9140 maps of marine recreational and tourism activity. Together these generated over 52,000 individual points, lines or areas, spread across the 23 activity categories.

4.6 All 2170 individuals were asked to identify their most important activity and were then asked detailed questions relating to this activity. A further 266 elected to answer the same questions for a second important activity, boosting the total number of completions for this part of the survey to 2335.

4.7 A target of 60 responses was set for each type of recreation and tourism activity. Where the number of people selecting an activity as their most important activity is between 30 and 60 the report warns that the results should be treated with care. Where the number is below 30 detailed analysis of activity-specific data is not presented. Even where the response was above 60, it is possible that responses to particular questions were lower (none of the questions were mandatory) and the results, therefore, less reliable. Where the response was more than 100 there is greater confidence in the results.

4.8 Table 4.1 shows the total number of responses for each activity, distinguishing between the number of people providing spatial information and those who identified the activity as one of their most important activities.

4.9 It should be noted that not all respondents provided answers to each question, so sample numbers vary between questions.

Socio-economic characteristic of the survey sample

4.10 This was not a random survey of the whole population. Publicity for the survey was based around formal and informal networks relating to marine recreation and tourism and it is likely that, as a result, it is biased towards those who are most active and under-represents those who make less frequent visits for general recreation. It is likely to have achieved higher responses from activities with strong networks and poorer responses where involvement is more individualistic or less organised.

4.11 Comparison of the socio-economic characteristics of the survey sample with those for the whole population of Scotland is instructive. Figure 4.1, taken from the 2011 Census, shows a relatively even distribution of age and gender within the population as a whole. Figure 4.2, which shows the age and gender distribution of the survey sample, is significantly different. Most striking is the dominance of male respondents in the 45 to 65 and over 65 categories, between them accounting for just under half of the total sample. This dominance is at the expense of those under the age of 24 and women over the age of 65. Interestingly, the proportions of men and women in the 25 to 34 and 35 to 44 age groups, and women aged 45 to 65 are broadly in line with the national population. Overall, the 68% of the survey sample was aged 45 or
over compared with 44% for the general population, while 60% were male compared with 48% for Scotland as a whole.

Table 4.1: Activity categories and response rates

<table>
<thead>
<tr>
<th>Activity category</th>
<th>Took part in activity during the past 12 months</th>
<th>Identified as 'most important' activity</th>
<th>Most important activity as % of all activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>General marine and coastal recreation</td>
<td>1673</td>
<td>530</td>
<td>28.5%</td>
</tr>
<tr>
<td>General marine and coastal tourism</td>
<td>810</td>
<td>40</td>
<td>4.6%</td>
</tr>
<tr>
<td>Visits to historic sites or to attractions such as museums or aquariums on the coast</td>
<td>924</td>
<td>31</td>
<td>2.9%</td>
</tr>
<tr>
<td>Walking at the coast (more than two miles)</td>
<td>1413</td>
<td>259</td>
<td>17.1%</td>
</tr>
<tr>
<td>Long distance swimming in the sea</td>
<td>83</td>
<td>18</td>
<td>16.9%</td>
</tr>
<tr>
<td>Bird and wildlife watching</td>
<td>944</td>
<td>176</td>
<td>16.9%</td>
</tr>
<tr>
<td>Climbing, bouldering and coasteering at the coast</td>
<td>238</td>
<td>44</td>
<td>16.8%</td>
</tr>
<tr>
<td>Land yachting, power kiting, and kite buggying at the coast</td>
<td>26</td>
<td>1</td>
<td>3.8%</td>
</tr>
<tr>
<td>SCUBA diving in the sea</td>
<td>168</td>
<td>106</td>
<td>60.1%</td>
</tr>
<tr>
<td>Surfing, surf kayaking or paddleboarding in the sea</td>
<td>201</td>
<td>80</td>
<td>37.8%</td>
</tr>
<tr>
<td>Windsurfing and kite surfing at the coast</td>
<td>52</td>
<td>14</td>
<td>23.1%</td>
</tr>
<tr>
<td>Canoeing or kayaking in the sea</td>
<td>423</td>
<td>164</td>
<td>34.5%</td>
</tr>
<tr>
<td>Rowing and sculling in the sea</td>
<td>237</td>
<td>104</td>
<td>39.7%</td>
</tr>
<tr>
<td>Water skiing and wakeboarding in the sea</td>
<td>25</td>
<td>3</td>
<td>8.0%</td>
</tr>
<tr>
<td>Dinghy racing at sea</td>
<td>88</td>
<td>24</td>
<td>23.9%</td>
</tr>
<tr>
<td>Yacht racing at sea</td>
<td>133</td>
<td>25</td>
<td>18.8%</td>
</tr>
<tr>
<td>Sailing cruising including dinghy cruising at sea</td>
<td>543</td>
<td>381</td>
<td>69.1%</td>
</tr>
<tr>
<td>Motor cruising at sea</td>
<td>166</td>
<td>26</td>
<td>15.1%</td>
</tr>
<tr>
<td>Power boating at sea</td>
<td>204</td>
<td>34</td>
<td>15.7%</td>
</tr>
<tr>
<td>Personal watercraft (jet skis) at sea</td>
<td>9</td>
<td>0</td>
<td>0.0%</td>
</tr>
<tr>
<td>Sea angling from the shore</td>
<td>368</td>
<td>105</td>
<td>26.1%</td>
</tr>
<tr>
<td>Sea angling from a private or chartered boat</td>
<td>353</td>
<td>94</td>
<td>25.5%</td>
</tr>
<tr>
<td>Wildfowling</td>
<td>59</td>
<td>55</td>
<td>93.2%</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>9140</strong></td>
<td><strong>2335</strong></td>
<td><strong>23.5%</strong></td>
</tr>
</tbody>
</table>

Legend:
- Green: Good sample
- Orange: Low sample – treat results with care
- Pink: Low sample – do not analyse
4.12 Comparison of figures for total household income also suggests that the survey sample is significantly different from the Scottish population as a whole. Figures from 2014\(^1\) suggest that average household income in 2014 stood at £23,000. While it is impossible to calculate a precise average figure for the survey sample, we can say that just under three quarters of respondents’ reported total household income.

\(^{15}\) http://www.bbc.co.uk/news/uk-scotland-scotland-business-32236595
income stood at more than £26,000. This suggests that the survey sample was considerably more wealthy than the Scottish population as a whole.

4.13 From this analysis, it is evident that the survey sample is generally older, more male and more affluent than the wider population. While some of this variance may reflect wider participation in marine recreation and tourism, it may also be a consequence of the survey methodology, particularly the distribution and publicity via organisations and networks involved in marine recreation. It is also possible that the fact that the survey was hosted online had an influence on response rates, particularly for women in older age groups who tend to make less use of the internet than younger age groups. This issue is explored further in relation to specific activities where gender response rates differ significantly by age group.

Marine recreation and tourism activities undertaken by the survey sample

4.14 Figure 4.3 shows the total number of respondents who undertook each activity over the previous twelve months. Not surprisingly, ‘general marine and coastal recreation’ (which includes a wide range of beach activities) was the most popular category overall. Longer distance walks, bird watching, visits to historic sites and other visitor attractions and general tourism activities such as coach tours and scenic drives were also popular. There was a relatively even spread of responses across more specialist activities such as kayaking, sailing, diving and angling.

![Number of respondents taking part in recreation and tourism activities over the previous twelve months](http://www.ons.gov.uk/ons/dcp171778_310435.pdf)
4.15 **Figure 4.4** shows the breakdown of activities which people identified as being most important to them. It shows a slightly different pattern to **Figure 4.3**, with a number of more specialist activities such as sailing / dinghy cruising and canoeing and kayaking listed more frequently as important activities and more general tourism activities less frequently listed.

![Figure 4.4: Breakdown of ‘Most Important’ Activities](image)

**Spatial data**

4.16 People completing the survey identified 52,218 locations (points, routes and areas) where they had undertaken marine recreation and tourism. This information has been used to generate a heat map showing the concentration of activity around the Scottish coast (see **Map 4.1**). The map shows key concentrations of activity within the Firth of Clyde and Argyll coast and the Firth of Forth.

4.17 **Figure 4.5** shows the percentage distribution of all recreation activities across Marine Regions. It shows a concentration of activity in the Forth and Tay, Clyde, Argyll and West Highland Marine Regions.
4.18 The apparent mismatch between Map 4.1 and Figure 4.5 reflects high levels of general recreation, general tourism, visits to historic sites and other attractions and walking more than two miles within the Forth and Tay Marine Region. These activities tend to have a more focused geographic spread than other activities such as sailing or bird and wildlife watching, so do not emerge so clearly on a map base.

4.19 Around 40% of respondents lived within a mile of the Scottish coastline, 18% between one and five miles and 25% more than five miles. The remaining 15% of respondents came from outside Scotland.
Map 4.1: All activities combined
Trip planning

4.20 Respondents were asked about the factors influencing their decision on where to go and about the sources of information they used to make that decision.

Factors influencing decisions on where to go

4.21 The most important factors influencing decisions on where to go include the suitability of the location for the recreation or tourism activity in question, the presence of attractive scenery and the possibility of seeing wildlife. Cultural heritage, the presence of other facilities such as pubs, cafés and restaurants, together with advice people had received from others, were factors of secondary importance. The availability of suitable accommodation was the least important factor.

Figure 4.6: All activities – factors influencing where to go

Sources of information

4.22 People’s own knowledge of the Scottish coast, followed by recommendations from friends or family represented the most important sources of information when people were deciding where to go. Websites are regarded as being more important than guidebooks, magazines or clubs and associations.
Figure 4.7: All activities – information when deciding where to go

**Characteristics of trips to the coast**

**Transport to start point**

4.23 Car is by far the most common mode of transport to the start of people’s visit to the coast, with around 65% of respondents indicating they always travel that way, and a further 30% indicating they sometimes go by car. Around 60% of people indicate that they always or sometimes walk (reflecting the high proportion of respondents who live within 1 mile of the Scottish coast), while 40% sometimes use a ferry as part of their journey. Around a quarter sometimes travel by bicycle, bus or train with less than 10% ever travelling by motorbike.
Figure 4.8: All activities – transport to the coast

Monthly profile of activity

4.24 Figure 4.9 shows the clear influence of seasonality on the number and frequency of visits to the coast for recreation and tourism. Activity peaks in July with around 40% of respondents undertaking recreation or tourism activity several times a week and over 80% taking part at least twice a month. Comparable proportions for January are less than 15% and less than 50%. Again, the high level of activity, particularly during the summer months, is probably a reflection of the proportion of respondents living close to the coast, and the nature of the survey sample which is likely to over-represent more active participants.
4.25 Respondents were asked about the number of day trips, short and longer breaks to the Scottish coast they had made during the previous twelve months. For the survey sample as a whole, people made an average of 5.95 day trips, 1.99 short breaks and 1.39 longer breaks per year.

The sample as a whole accounts for at least 12,439 day trips, 4,223 short breaks and 2,966 longer breaks.
Accommodation used

4.27 People provided information on the types of accommodation they typically use. Figure 4.12 shows that, for the sample as a whole, staying on a boat, followed by staying with friends and family, camping and self-catering were the most frequently used forms of accommodation.

Improvements to make trip more enjoyable

4.28 People were asked to indicate which of areas for potential improvement were most important. The most frequently cited area for improvement was parking and access. Other improvements included online information and apps, visitor facilities and
transport. Accommodation and signage and on-site information were less frequently highlighted as areas for improvement.

![Improvements Diagram]

**Figure 4.13: All activities – improvements**

**Composition of Party**

4.29 Respondents were asked a number of questions about the people they are normally with when undertaking their chosen recreation or tourism activity.

**Who was with you?**

4.30 **Figure 4.14** suggests that, for the sample as a whole, there was a fairly even spread across the different types of companion. People were most commonly with friends, followed closely by partner or family, club members or alone. People were least frequently with other members of an organised trip.
Figure 4.14: All activities – who was with you?

Age groups and gender composition of party

4.31 Respondents were also asked about the age and gender composition of their party\textsuperscript{17}. Figure 4.15 shows that parties typically had largest numbers of males and females between the ages of 16 and 65. The balance of male and female is more even than the profile of respondents, confirming the premise that men were more likely to complete the survey than women. The average party size was calculated at around 4.5 though this is likely to be an underestimate given the inclusion of an open upper category for party size (5 or above) which was assigned a value of 5 for the purposes of analysis.

\textsuperscript{17} * respondents were asked whether there were 1, 2, 3, 4 or 5 or more people in each age/gender category. For the purposes of analysis, returns of ‘5 or more’ have been taken to be ‘5’. As a result, the estimate of average party size is likely to be an underestimate.
4.32 People completing the survey were asked to provide information on how much they spent per day during their last visit to the coast and how much they typically spend each year.

4.33 Analysis excludes the 216 respondents who provided no information on their spending, but includes the 281 respondents who stated that they typically spent nothing during their visit to the coast.

4.34 Table 4.2 shows the maximum, mean and median daily spending against a series of headings. It is evident that the sample included some very high maximum spending figures and it is, therefore, likely that median rather than mean figures provide a more typical picture of spending associated with marine recreation and tourism. This suggests a median spend of around £55 per day during recreation and tourism trips to the Scottish coast.

4.35 Mean and median spending figures are also shown in Figure 4.16. Note that some popular categories of activity (e.g. general recreation and general tourism) require no specialist equipment, resulting in a low median figure for this category.
Table 4.2: all activities – max, mean and median spend per trip (£)

<table>
<thead>
<tr>
<th>Activity</th>
<th>Max (£)</th>
<th>Mean (£)</th>
<th>Median (£)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Petrol/diesel/LPG</td>
<td>500</td>
<td>23</td>
<td>10</td>
</tr>
<tr>
<td>Bus/train fares</td>
<td>200</td>
<td>11</td>
<td>1</td>
</tr>
<tr>
<td>Car parking</td>
<td>50</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Overnight accommodation</td>
<td>2000</td>
<td>59</td>
<td>40</td>
</tr>
<tr>
<td>Eating out</td>
<td>2500</td>
<td>33</td>
<td>20</td>
</tr>
<tr>
<td>Food and groceries</td>
<td>1500</td>
<td>22</td>
<td>10</td>
</tr>
<tr>
<td>Entrance to local visitor attractions</td>
<td>100</td>
<td>12</td>
<td>10</td>
</tr>
<tr>
<td>Mooring or transit fees</td>
<td>4500</td>
<td>43</td>
<td>15</td>
</tr>
<tr>
<td>Hire of equipment</td>
<td>300</td>
<td>19</td>
<td>0</td>
</tr>
<tr>
<td>Maps/guidebooks/leaflets</td>
<td>250</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>Gifts/souvenirs</td>
<td>200</td>
<td>10</td>
<td>5</td>
</tr>
<tr>
<td>Other</td>
<td>350</td>
<td>19</td>
<td>10</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>£10,750</strong></td>
<td><strong>£103</strong></td>
<td><strong>£55</strong></td>
</tr>
</tbody>
</table>

Figure 4.16: All activities – mean and median daily spending
4.36 Similar analysis was carried out for respondents’ annual spending on their most important recreation activity. Again, the figures exclude the 720 respondents who provided no information on their spending, but includes the 76 respondents who stated that they had spent nothing during the previous year.

4.37 **Table 4.3** shows the maximum, mean and median annual spending against a series of headings. Again, it is evident that the sample included some very high maximum spending figures and it is, therefore, likely that median rather than mean figures provide a more typical picture of spending associated with marine recreation and tourism. This suggests a median spend of around £2000 per annum on people’s most important marine recreation or tourism activity. This is a high figure, but it should be noted that this may not all be to the benefit of the Scottish economy, with a proportion being spent, for example, on equipment made or sold by companies elsewhere in the UK or overseas.

4.38 Mean and median spending figures are also shown in **Figure 4.17**.

**Table 4.3: all activities – max, mean and median annual spend (£)**

<table>
<thead>
<tr>
<th></th>
<th>Max(£)</th>
<th>Mean(£)</th>
<th>Median(£)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equipment</td>
<td>50,000</td>
<td>875</td>
<td>1000</td>
</tr>
<tr>
<td>Storage</td>
<td>22,000</td>
<td>1382</td>
<td>1200</td>
</tr>
<tr>
<td>Memberships</td>
<td>2,500</td>
<td>131</td>
<td>100</td>
</tr>
<tr>
<td>Insurance</td>
<td>4,000</td>
<td>304</td>
<td>300</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>54,700</td>
<td>1772</td>
<td>2000</td>
</tr>
</tbody>
</table>
Clubs and codes of conduct

4.39 Respondents were asked about their membership of clubs and their awareness of codes of conduct. Most of this information is relevant to specific types of activity, but the data relating to all activities is presented here for completeness.

Membership of clubs, associations or governing bodies

4.40 Of the 550 people who answered this question, around 40% reported that they do not belong to an organisation which relates to coastal recreation or tourism. This is not surprising given the high proportion of people undertaking less formal forms of recreation.

Table 4.4: All activities - membership of clubs, associations or governing bodies

<table>
<thead>
<tr>
<th></th>
<th>Do you belong to any clubs, associations or governing bodies relating to coastal recreation?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local organisation</td>
<td>138</td>
</tr>
<tr>
<td>National organisation</td>
<td>145</td>
</tr>
<tr>
<td>None</td>
<td>222</td>
</tr>
<tr>
<td><strong>Grand Total</strong></td>
<td><strong>505</strong></td>
</tr>
</tbody>
</table>
Awareness of codes of conduct

4.41 Analysis suggests that, across the survey sample as a whole there were relatively high levels of awareness of the Scottish Outdoor Access Code (around 85% stating they were definitely or possibly aware) and the Scottish Marine Wildlife Watching Code (around 67% stating they were definitely or possibly aware). Most of the other codes of conduct are activity specific, so it is not surprising that awareness rates are much lower.

![Awareness of codes of conduct](image)

**Figure 4.18: All activities – awareness of codes of conduct**

**Combinations of activities**

4.42 Each respondent listed all the activities they undertook during the previous 12 months before identifying their most important activity. Comparison of the two allows us to identify which combinations of activity were most common. In **Table 4.5**, main activities are listed down the left hand side of the table, with other activities people undertook during the previous 12 months listed across the top. Darker cells indicate that more people undertook both activities. Not surprisingly, general recreation and tourism, visits to historic and other attractions and longer distance walks emerge as common activities across the board. Bird and wildlife watching are also popular, echoing the importance of wildlife when people are deciding where to visit.
Table 4.5: Other activities undertaken according to people’s ‘most important’ activity

<table>
<thead>
<tr>
<th>Most Important Activity</th>
<th>Number</th>
<th>General marine and coastal recreation</th>
<th>General marine and coastal tourism</th>
<th>Visits to historic sites or to attractions</th>
</tr>
</thead>
<tbody>
<tr>
<td>General marine and coastal recreation</td>
<td>477</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>General marine and coastal tourism</td>
<td>37</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visits to historic sites or to attractions</td>
<td>27</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Walking (more than two miles)</td>
<td>241</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Long distance swimming</td>
<td>14</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bird and wildlife watching</td>
<td>160</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Climbing, bouldering and coasthiking</td>
<td>40</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Land yachting, power kiting, and kite buggying</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SCUBA diving</td>
<td>101</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Surfing, surf kayaking or paddleboarding</td>
<td>76</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Windsurfing and kite surfing</td>
<td>12</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Canoeing or kayaking</td>
<td>146</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rowing and sculling</td>
<td>94</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water skiing and wakeboarding</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dinghy racing</td>
<td>21</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yacht racing</td>
<td>25</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sailing cruising including dinghy cruising</td>
<td>375</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power boating</td>
<td>32</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Motor cruising</td>
<td>25</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sea angling from the shore</td>
<td>96</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sea angling from a boat</td>
<td>90</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>0-25%</th>
<th>26-50%</th>
<th>51-75%</th>
<th>76-100%</th>
</tr>
</thead>
<tbody>
<tr>
<td>General marine and coastal recreation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>General marine and coastal tourism</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visits to historic sites or to attractions</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Walking (more than two miles)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Long distance swimming</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bird and wildlife watching</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Climbing, bouldering and coasthiking</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Land yachting, power kiting, and kite buggying</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SCUBA diving</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Surfing, surf kayaking or paddleboarding</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Windsurfing and kite surfing</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Canoeing or kayaking</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rowing and sculling</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water skiing and wakeboarding</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dinghy racing</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yacht racing</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sailing cruising including dinghy cruising</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power boating</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Motor cruising</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sea angling from the shore</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sea angling from a boat</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Visitors to Scotland

4.43 Approximately 16% of survey respondents were visitors from outside Scotland. It is likely that, since publicity for the survey was mainly via Scottish recreation and tourism networks, this is an underestimate of visitors from other part of the UK and overseas. The survey is likely to have missed fairly sizeable numbers of people sailing or cruising from Northern Ireland, England and Wales and from Scandinavia and other parts of mainland Europe.

4.44 Around 80% of visitors to Scotland were on return trips, having visited the Scottish coast before. 90% indicated that they were very likely to visit again, with just 2% stating that they were unlikely or very unlikely to visit again. This indicates a high satisfaction rate and strong loyalty.

4.45 Figure 4.19 Shows the activities that visitors to Scotland undertook, based on participation across the 23 categories included in the survey. It is evident that the largest numbers of visitors undertake less specialist activities including general recreation, longer distance walks, visits to historic sites and other visitor attractions, bird and wildlife watching and general tourism. More popular specialist activities include dinghy and yacht cruising, fishing (from the shore and from a boat), kayaking and SCUBA diving. Many of these samples are of small size, so more detailed analysis for each activity category is not recommended.
4.46 **Figure 4.20** Shows the factors that influenced the decisions of visitors to Scotland on which parts of the Scottish coastline to visit. The balance of factors is similar to the survey sample as a whole, with the requirements of the activity together with environmental qualities (wildlife, scenery, cultural sites) being of most importance. Proximity to home / ease of access is less important, as might be expected.

![Visitors - factors influencing where to go](image)

**Figure 4.20: Factors influencing where visitors to Scotland go**

4.47 **Figure 4.21** shows the sources of information used by visitors to Scotland when deciding where to go. People’s own knowledge of the Scottish coast, together with websites and recommendations from friends and family are the most important information sources. This is similar to the wider survey sample.

![Visitors - sources of information](image)

**Figure 4.21: Sources of information used by visitors to Scotland**
4.48 **Figure 4.22** shows the accommodation used by visitors to Scotland. The most frequently used forms of accommodation include staying on a boat, self-catering, staying with friends and family and camping. This is a more pronounced pattern than for the whole survey sample.

![Figure 4.22: Accommodation used by visitors to Scotland](image)

4.49 **Table 4.6** shows the maximum, mean and median daily spending against a series of headings. It is evident that the sample included some very high maximum spending figures and it is, therefore, likely that median rather than mean figures provide a more typical picture of spending associated with marine recreation and tourism. This suggests a median spend of around £87 per day for visitors to Scotland. This is higher than the survey sample as a whole (median of £55).

4.50 Mean and median spending figures are also shown in **Figure 4.23**.

**Table 4.6: Visitors to Scotland – max, mean and median spend per trip (£)**

<table>
<thead>
<tr>
<th>Item</th>
<th>Max (£)</th>
<th>Mean (£)</th>
<th>Median (£)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Petrol/diesel/LPG</td>
<td>400</td>
<td>28.40</td>
<td>15</td>
</tr>
<tr>
<td>Bus/train fares</td>
<td>200</td>
<td>20</td>
<td>5</td>
</tr>
<tr>
<td>Car parking</td>
<td>40</td>
<td>5.38</td>
<td>5</td>
</tr>
<tr>
<td>Overnight accommodation</td>
<td>2000</td>
<td>96.34</td>
<td>50</td>
</tr>
<tr>
<td>Eating out</td>
<td>2500</td>
<td>45.58</td>
<td>20</td>
</tr>
<tr>
<td>Food and groceries</td>
<td>1500</td>
<td>30.81</td>
<td>10</td>
</tr>
<tr>
<td>Entrance to local visitor attractions</td>
<td>100</td>
<td>14.46</td>
<td>10</td>
</tr>
<tr>
<td>Mooring or transit fees</td>
<td>4500</td>
<td>68.25</td>
<td>15</td>
</tr>
<tr>
<td>Hire of equipment</td>
<td>300</td>
<td>51.23</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>Max(£)</td>
<td>Mean(£)</td>
<td>Median(£)</td>
</tr>
<tr>
<td>----------------------</td>
<td>--------</td>
<td>---------</td>
<td>-----------</td>
</tr>
<tr>
<td>Maps/guidebooks/leaflets</td>
<td>250</td>
<td>10.65</td>
<td>12</td>
</tr>
<tr>
<td>Gifts/souvenirs</td>
<td>100</td>
<td>18.03</td>
<td>10</td>
</tr>
<tr>
<td>Other</td>
<td>300</td>
<td>29.71</td>
<td>10</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>10,750</strong></td>
<td><strong>181.49</strong></td>
<td><strong>87</strong></td>
</tr>
</tbody>
</table>

Figure 4.23: Visitors to Scotland – mean and median daily spend

4.51 Similar analysis was carried out for visitors’ annual spending on their most important recreation activity. Table 4.7 shows the maximum, mean and median annual spending against a series of headings. Again, it is evident that the sample included some very high maximum spending figures and it is, therefore, likely that median rather than mean figures provide a more typical picture of spending associated with marine recreation and tourism. This suggests a median spend of around £590 per annum. This is much lower than for the whole survey sample (£2000) and reflects the mix of activities undertaken by visitors which was more biased towards activities which do not require expensive equipment. Mean and median spending figures are also shown in Figure 4.24.
Table 4.7: Visitors to Scotland – max, mean and median spend per annum (£)

<table>
<thead>
<tr>
<th></th>
<th>Max (£)</th>
<th>Mean (£)</th>
<th>Median (£)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equipment</td>
<td>15,000</td>
<td>840.78</td>
<td>400</td>
</tr>
<tr>
<td>Storage</td>
<td>5,000</td>
<td>1,580.55</td>
<td>1,300</td>
</tr>
<tr>
<td>Memberships</td>
<td>2,500</td>
<td>158.80</td>
<td>100</td>
</tr>
<tr>
<td>Insurance</td>
<td>4,000</td>
<td>346.87</td>
<td>167.50</td>
</tr>
<tr>
<td>TOTAL</td>
<td>15,950</td>
<td>1,543.96</td>
<td>590</td>
</tr>
</tbody>
</table>

Figure 4.24: All activities – mean and median annual spending
**Use of the Caledonian, Crinan and Forth and Clyde Canals**

4.52 Respondents who had sailed or been motorcruising in the past 12 months were asked how many times they had used the Caledonian, Forth and Clyde and Crinan Canals. Just over 30% of the 620 people who had sailed or been motorcruising had used one of the canals. **Figure 4.25** shows the frequency of use for each canal.

![Graph showing use of canals](image)

**Figure 4.25: Use of the Caledonian, Crinan and Forth and Clyde Canals**
5 Benchmarking and estimated spend

5.1 Although the aim was to achieve a balanced and representative sample of people undertaking marine recreation and tourism in Scotland, it was recognised that this would be difficult to achieve for a number of reasons including:

- Differences between activities included in the survey, including the extent to which representative bodies, clubs and informal networks including social media provided a way of reaching participants. Some activities are well organised with good communication networks. Others are less organised and more individualistic meaning that participants can be harder to reach;

- By using existing networks to raise awareness of the survey it was probable that the sample includes a higher proportion of more active participants. It is, therefore, likely that the results do not fully represent all those who take part in each of the activities. This particularly relates to information gathered on people’s one or two main activities.

5.2 As a result, it was anticipated that the survey would under-represent more casual recreation and tourism activities, and less active participants. The split of the sample between recreation categories was also considered unlikely to be representative.

5.3 In order to monitor the number of responses across the 23 recreation and tourism categories some benchmarking was undertaken during the survey design stage. This focussed on the following sources of data:

- SNH SPAN Survey for 2013/14 – providing a breakdown of recreation activities undertaken during trips to the seaside;

- 2013 Watersports Participation Survey – providing a breakdown of participation in watersports in Scotland.

5.4 It was recognised that these two surveys collect different types of information, but it was considered that together they provided the best benchmarks with which to compare data collected by the SMRTS.

5.5 The benchmarking process was based on the following steps:

- Match SMRTS categories to SPANS categories – amalgamating SPANS categories as appropriate;

- Where SPANS categories cover more than one SMRTS category (e.g. watersports) break this down into more detailed sub-categories using proportions derived from the Watersports Participation Survey and, where no other information existed, proportions based on the SMRTS data;

- Calculation of the expected percentage split across SMRTS activity categories and derivation of the ‘expected’ distribution of SMRTS survey completions;

- Comparison of the ‘expected’ and achieved response rates across the 23 recreation and tourism categories.
5.6 It became clear from the above analysis that SMRTS had significantly lower numbers of respondents undertaking ‘general recreation’ and ‘walking’ than would be anticipated based on SPANS data in particular. This is not surprising given the specialist nature of the survey and the distribution networks which focused on people likely to be undertaking more specialist forms of recreation or tourism. The survey was not targeted at the wider population.

5.7 Recognising this bias, the above analysis was re-run with ‘general recreation’ and ‘walking over 2 miles’ omitted. Table 5.1 compares the expected and achieved responses for the remaining categories. It shows that responses for a number of activities were significantly lower than might be anticipated. These include long distance swimming and climbing, bouldering and coasteering where definitions in SMRTS does not correspond exactly to other surveys. Other categories with lower response rates include personal watercraft, sea angling from the shore and a boat. Other activity categories achieved higher than ‘expected’ returns as a result. It would be possible to apply the benchmarking figures to the SMRTS sample to adjust the number of responses across activity categories, though this has not been done, largely because of the sample bias resulting from the survey design and methodology.

Table 5.1: Benchmark and achieved responses by type of activity

<table>
<thead>
<tr>
<th>Activity Description</th>
<th>Expected number of responses based on benchmarking</th>
<th>Number of SMRTS responses</th>
<th>SMRTS responses as a proportion of ‘expected’ Benchmark responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>General marine and coastal tourism activities</td>
<td>578</td>
<td>810</td>
<td>1.40</td>
</tr>
<tr>
<td>Visits to historic sites or to attractions</td>
<td>660</td>
<td>924</td>
<td>1.40</td>
</tr>
<tr>
<td>Long distance swimming in the sea</td>
<td>518</td>
<td>83</td>
<td>0.16</td>
</tr>
<tr>
<td>Bird and wildlife watching</td>
<td>799</td>
<td>944</td>
<td>1.18</td>
</tr>
<tr>
<td>Climbing, bouldering and coasteering at the coast</td>
<td>1481</td>
<td>238</td>
<td>0.16</td>
</tr>
<tr>
<td>Land yachting, power kiting, and kite buggying at the coast</td>
<td>11</td>
<td>26</td>
<td>2.34</td>
</tr>
<tr>
<td>SCUBA diving in the sea</td>
<td>78</td>
<td>168</td>
<td>2.16</td>
</tr>
<tr>
<td>Surfing, surf kayaking or paddleboarding in the sea</td>
<td>100</td>
<td>201</td>
<td>2.01</td>
</tr>
<tr>
<td>Windsurfing and kite surfing at the coast</td>
<td>22</td>
<td>52</td>
<td>2.34</td>
</tr>
<tr>
<td>Canoeing or kayaking in the sea</td>
<td>200</td>
<td>423</td>
<td>2.12</td>
</tr>
<tr>
<td>Rowing and sculling in the sea</td>
<td>122</td>
<td>237</td>
<td>1.94</td>
</tr>
</tbody>
</table>
### Expected number of responses based on benchmarking

<table>
<thead>
<tr>
<th>Activity</th>
<th>Expected</th>
<th>Number</th>
<th>SMRTS responses as a proportion of 'expected' Benchmark responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water skiing and wakeboarding in the sea</td>
<td>11</td>
<td>25</td>
<td>2.25</td>
</tr>
<tr>
<td>Dinghy racing at sea</td>
<td>44</td>
<td>88</td>
<td>1.98</td>
</tr>
<tr>
<td>Yacht racing at sea</td>
<td>67</td>
<td>133</td>
<td>2.00</td>
</tr>
<tr>
<td>Sailing cruising including dinghy cruising at sea</td>
<td>255</td>
<td>543</td>
<td>2.13</td>
</tr>
<tr>
<td>Motor cruising at sea</td>
<td>78</td>
<td>166</td>
<td>2.14</td>
</tr>
<tr>
<td>Power boating at sea</td>
<td>100</td>
<td>204</td>
<td>2.04</td>
</tr>
<tr>
<td>Personal watercraft (jet skis) at sea</td>
<td>11</td>
<td>9</td>
<td>0.81</td>
</tr>
<tr>
<td>Sea angling from the shore</td>
<td>436</td>
<td>368</td>
<td>0.84</td>
</tr>
<tr>
<td>Sea angling from a private or chartered boat</td>
<td>425</td>
<td>353</td>
<td>0.83</td>
</tr>
</tbody>
</table>

### Estimating total spend associated with marine recreation and tourism in Scotland

5.8 One of the aims of the research was to build a picture of the value of marine recreation and tourism in Scotland.

5.9 To do this, the following steps have been followed:

- Identify the global figure for coastal recreation. The SPANS 2013/14 survey estimated that there were a total of 63.4 million trips per annum to the Scottish coast.
- Use of the benchmarking figures described in the previous section to break this total down between the 22 recreation and tourism categories included in the survey (plus wildfowling identified as the principal ‘other’ activity).
- Multiply the number of trips by the average trip length (days) for each SMRTS activity category to calculate the total number of days. It was assumed that short breaks typically lasted two days, while long breaks typically lasted 7 days (an alternative calculation, designed to define the upper limit was based on short breaks of 3 days and long breaks of 14 days).
- Apply the SMRTS trip spend data for each of these categories to generate total spend figures for each activity. For activities where response rates were too low to generate reliable spend data, spend figures for comparable activities were substituted. Given the significant range of spending recorded during the survey,
and the skewing effect of a small number of very large figures, the analysis has been based on median rather than mean figures. This also helps to balance the fact that spending data was collected for people's most important activity and may therefore not be typical of spending across all those engaging in that activity. It is nevertheless likely that the spend figures derived from this survey are higher than apply to the participating population as a whole.

5.10 This analysis suggests that, taking all 23 activities covered by the survey, annual expenditure\(^\text{18}\) on marine recreation and tourism activities is estimated to be worth up to £3.7 billion to the Scottish economy. While much of this will benefit the economy of coastal communities, some spending (e.g. fuel) may take place away from the Scottish coast.

5.11 The largest share of expenditure (£2.1 billion) is attributable to general marine recreation, reflecting the very large number of participants. Tourism activities such as scenic drives, bus tours, and visits to historic sites, museums and other visitor attractions account for around £230 million. More specialist activities account for the remaining £1.3 billion, with activities focused around the use of craft (e.g. boats, surfboards etc.) accounting for just under £100 million.

5.12 These are large figures and, given the survey methodology and characteristics of the respondent sample, are likely to be over-estimates. The following benchmark figures for the marine economy, tourism in Scotland and the economic value of sailing provide context for these figures:

- During the twelve months to June 2015, Scottish GDP (including off-shore economic activity) is estimated at between £142 and £153 billion\(^\text{19}\).
- The Scottish Government\(^\text{20}\) estimates the value of the marine economy (based on core activities which do not include recreation and tourism) to have been £4.5 billion GVA in 2013.
- In 2014, Visit Scotland estimated that expenditure associated with overnight tourism trips in Scotland totalled £4.8 billion\(^\text{21}\). SMTRS covered a much larger number of trips (overnight trips comprised a relatively small proportion trips to the coast) and included activities better described as recreation than tourism (e.g. walking the dog at the coast) which would not be captured by the Visit Scotland figure.
- The Scottish Annual Business Survey estimated that, in 2013 ‘sustainable tourism’ in Scotland accounted for turnover of £6.7 billion\(^\text{22}\).
- In 2010, Scottish Enterprise estimated the total value of the sailing market in Scotland to be between £270 and £300 million\(^\text{23}\) with around £100 million attributed to the direct and indirect spending generated by sailing tourism. It calculated average daily expenditure per person ranging between £36.68 for non-Scottish sailors to £43.75 for Scottish sailors. These are lower daily figures than the mean and median values identified by the SMRTS, though the sailing tourism total is in line with the SMRTS figures.

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\(^{18}\) Expenditure is a different measure to GVA (gross value added), which is used in Scotland’s Marine Economy publication to measure a sector’s net contribution to the economy.

\(^{19}\) http://www.gov.scot/topics/statistics/browse/economy/QNA2015Q2


\(^{21}\) http://www.visitscotland.org/pdf/2015%200729%20Tourism%20in%20Scotland%202014_Final%20draft.pdf


\(^{23}\) Scottish Enterprise (2010) Sailing in Scotland
### Table 5.2: Activity specific estimates of trip based spending.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Benchmark split applied to SPANS total coastal visits (63.4m)</th>
<th>MRTS mean trip length - days (assumptions)</th>
<th>MRTS median spend per trip</th>
<th>SPANS based coastal visits x MRTS median trip spend x mean trip length (days)</th>
</tr>
</thead>
<tbody>
<tr>
<td>General marine and coastal recreation</td>
<td>40199329</td>
<td>1.72</td>
<td>£31.00</td>
<td>£2,143,428,206</td>
</tr>
<tr>
<td>General marine and coastal tourism activities</td>
<td>610715</td>
<td>2.35</td>
<td>£93.00</td>
<td>£133,471,792</td>
</tr>
<tr>
<td>Visits to historic sites or to attractions</td>
<td>697026</td>
<td>1.98</td>
<td>£70.00</td>
<td>£96,607,810</td>
</tr>
<tr>
<td>Walking (more than two miles)</td>
<td>12956989</td>
<td>1.75</td>
<td>£25.00</td>
<td>£566,868,272</td>
</tr>
<tr>
<td>Long distance swimming(^1)</td>
<td>546801</td>
<td>1.45</td>
<td>£25.00</td>
<td>£19,821,524</td>
</tr>
<tr>
<td>Bird and wildlife watching</td>
<td>843371</td>
<td>1.92</td>
<td>£40.00</td>
<td>£64,770,923</td>
</tr>
<tr>
<td>Climbing, bouldering and coasteering</td>
<td>1564389</td>
<td>1.74</td>
<td>£28.00</td>
<td>£76,217,048</td>
</tr>
<tr>
<td>Land yachting, power kiting, and kite buggying</td>
<td>11712</td>
<td>1.44</td>
<td>£34.00</td>
<td>£573,436</td>
</tr>
<tr>
<td>SCUBA diving</td>
<td>81986</td>
<td>2.34</td>
<td>£70.00</td>
<td>£13,429,376</td>
</tr>
<tr>
<td>Surfing, surf kayaking or paddleboarding</td>
<td>105411</td>
<td>1.86</td>
<td>£34.00</td>
<td>£6,666,199</td>
</tr>
<tr>
<td>Windsurfing and kite surfing(^1)</td>
<td>23425</td>
<td>2.41</td>
<td>£34.00</td>
<td>£1,919,419</td>
</tr>
<tr>
<td>Canoeing or kayaking</td>
<td>210822</td>
<td>1.98</td>
<td>£40.00</td>
<td>£16,697,121</td>
</tr>
<tr>
<td>Rowing and sculling</td>
<td>128836</td>
<td>1.43</td>
<td>£15.00</td>
<td>£2,763,528</td>
</tr>
<tr>
<td>Water skiing and wakeboarding(^1)</td>
<td>11712</td>
<td>1.50</td>
<td>£34.00</td>
<td>£597,330</td>
</tr>
<tr>
<td>Dinghy racing</td>
<td>46849</td>
<td>1.92</td>
<td>£25.00</td>
<td>£2,248,770</td>
</tr>
<tr>
<td>Yacht racing(^1)</td>
<td>70274</td>
<td>1.79</td>
<td>£62.00</td>
<td>£7,799,017</td>
</tr>
<tr>
<td>Sailing cruising including dinghy cruising</td>
<td>269384</td>
<td>3.09</td>
<td>£62.00</td>
<td>£51,608,579</td>
</tr>
<tr>
<td>Motor cruising(^1)</td>
<td>81986</td>
<td>2.34</td>
<td>£62.00</td>
<td>£11,894,590</td>
</tr>
<tr>
<td>Power boating</td>
<td>105411</td>
<td>2.37</td>
<td>£103.00</td>
<td>£25,731,907</td>
</tr>
<tr>
<td>Personal water craft(^1)</td>
<td>11712</td>
<td>1.50</td>
<td>£34.00</td>
<td>£597,330</td>
</tr>
<tr>
<td>Sea angling from the shore</td>
<td>460374</td>
<td>1.88</td>
<td>£60.00</td>
<td>£51,930,216</td>
</tr>
<tr>
<td>Sea angling from a private or chartered boat</td>
<td>448570</td>
<td>2.36</td>
<td>£100.00</td>
<td>£105,862,470</td>
</tr>
<tr>
<td>None of the above (wildfowling)</td>
<td>3912913</td>
<td>1.90</td>
<td>£43.00</td>
<td>£319,685,022</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>63,400,000</strong></td>
<td><strong>2.10</strong></td>
<td><strong>£55</strong></td>
<td><strong>£3,721,189,885</strong></td>
</tr>
</tbody>
</table>

Note: \(^1\) – spend figure from comparable activity because survey sample too small for activity in question
6 Business Survey

6.1 A total of 279 businesses responded to the business survey. Figure 6.1 shows the distribution of responses across Scotland’s Marine Regions. It is immediately evident that the sample significantly under-represents the sector, for example in terms of the total number of accommodation or catering businesses. This is most pronounced in some more remote areas such as the Outer Hebrides, Orkney and Shetland.

Map 6.1: Business survey responses
6.2 Figure 6.1 shows the breakdown of the sample according to the type of service provided by each business. Note that businesses could provide more than one service, so the total adds to more than 100%. It is likely that some service providers, for example accommodation, food and drink and possibly operation of visitor centres and attractions are under-represented in the sample.

![Services provided by businesses (%)](image)

**Figure 6.1: Services provided by business respondents**

6.3 Notwithstanding the observations about geographic representation, Figure 6.2 shows the concentration of marine recreation and tourism businesses in those Marine Regions which recorded some of the highest concentrations of recreation and tourism activity (Chapter 4 of this report).

6.4 Figure 6.3 shows which of the 22 marine and coastal recreation and tourism activities named in the activity survey were served by businesses participating in the business survey. Respondents could select more than one activity so the totals add to more than 100%. By far the largest proportion of businesses who responded served bird and wildlife watching activities.
Figure 6.2: Breakdown of services by marine region
Figure 6.3: Breakdown of recreation and tourism activities served by businesses

6.5 Figure 6.4 shows the effects of seasonality on the operation of respondent businesses. Just over 60% operate all year round, with most of the remainder operating between April and October.

Figure 6.4: Months of operation
6.6 Just over 40% of businesses ran excursions. **Figure 6.5** shows the factors that businesses take into account when deciding where to run excursions. As might be expected, practical issues such as weather or sea conditions, client needs and abilities and people’s own knowledge of the coast were of greatest importance. However, environmental issues such as the potential to see wildlife and the presence of attractive scenery were also of importance.

![Factors influencing location of excursions (percentage of businesses running excursions)](image)

**Figure 6.5**: Factors influence excursion locations

6.7 **Figure 6.6** shows that most clients came from Scotland or elsewhere in the UK, with comparatively few businesses suggesting large numbers come from nearby or from overseas.
There was wide variation in the number of people employed by responding businesses. Figure 6.7 shows the mean, median and total number of employees, distinguished between full and part time, seasonal and all year jobs. On average, and across all categories of employment, businesses employed just over seven people and had just under two volunteers. Three quarters of employees were from Scotland, 17% from elsewhere in the UK, 6% from the rest of Europe and less than 1% from elsewhere in the world.

**Figure 6.6: Client origins**
Figure 6.7: Employment

6.9 Figure 6.8 shows the range of minimum and maximum salaries reported by responding businesses. Minimum salaries peak somewhere between £10,400 and £15,599. Maximum salaries are more evenly spread.

Figure 6.8: Minimum and maximum salaries

6.10 Businesses were asked about the challenges they face in finding staff with the necessary skills. Figure 6.9 shows the overall results, highlighting the greatest
difficulty in relation to the recruitment of people with technical skills needed for the business in question.

Figure 6.9: skills issues in recruitment

6.11 Figure 6.10 explores this issue in terms of the types of service provided by respondent businesses, focusing on the proportions who considered recruitment issues to be difficult or very difficult. It shows that difficulties in recruiting people with technical skills are common across most service types, and greatest for businesses supplying or hiring equipment for marine recreation or providing food and drink. Figure 6.11 provides the same information broken down by the types of recreation and tourism activity served by businesses.
Figure 6.10: Percentage of businesses finding it difficult or very difficult to find staff with the necessary skills, by business type
Figure 6.11: Percentage of businesses finding it difficult or very difficult to find staff with the necessary skills, by activity type.
Figure 6.12: Median turnover by activity type
6.12 Around half of the responding businesses provided information on their annual turnover. When analysed by type of activity or type of business some of the sample numbers are very low so the results must be treated with great caution. Analysis of turnover included the removal of some obviously erroneous figures and a process of factoring to reflect the proportion of activity each business attributed to the marine and coastal environment. Median figures have been used since there was a significant range in turnover figures within the sample and use of arithmetic means would have further skewed the findings.

![Median Turnover by Type of Business](image)

**Figure 6.13: Median turnover by type of business**

6.13 Businesses were asked whether they thought their turnover would change over the next five years. Overall, 47% anticipated some growth and 18% major growth. Only around 6% anticipated a decrease in turnover, with the remaining 27% predicting little change. **Figure 6.14** shows how these views break down according the range of services provided by businesses. It shows that the most optimistic businesses are those running excursions, providing equipment and training.
6.14 **Figure 6.15** shows how these views break down according to the range of activities served by responding businesses. It shows that the most optimistic businesses are those serving bird and wildlife watching, general recreation, canoeing and kayaking and sailing/powered boating.
Figure 6.15: Change in turnover in the next five years, by activity type
6.15 **Figure 6.16** records the extent to which businesses think their clients make use of other local businesses, contributing to a multiplier effect. It shows that local shops, cafés, pubs and restaurants tend to benefit most from commerce generated by businesses in the marine recreation and tourism sector.

![Figure 6.16: Client use of other local businesses](http://www.gov.scot/Topics/marine/marine-environment/mpanetwork)

6.16 Businesses were asked about their awareness of marine protection measures including designations such as Marine Protected Areas. **Figure 6.17** shows that most respondents were aware of these measures.

![Figure 6.17: Awareness of marine protection measures](http://www.gov.scot/Topics/marine/marine-environment/mpanetwork)
6.17 Moving on from this, businesses were asked about their awareness of codes of conduct. **Figure 6.18** shows highest levels of awareness of the Scottish Marine Wildlife Watching Code\(^\text{25}\) and the Scottish Outdoor Access Code\(^\text{26}\). Around 70% of responding businesses were members of a national or regional organisation responsible for promoting standards.

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**Figure 6.18: Awareness of codes of conduct**

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\(^25\) [http://www.marinecode.org/](http://www.marinecode.org/)

\(^26\) [http://www.outdooraccess-scotland.com/](http://www.outdooraccess-scotland.com/)
7 Lessons learnt

7.1. The survey proved to be very successful, with a good response rate overall and excellent spatial data across most activities and most parts of Scottish coast and seas. It is, however, worth noting a number of challenges which emerged during the course of the project which it would be useful to consider when undertaking a similar exercise in the future.

Participation

7.2. The project team aimed to encourage as wide a participation in the survey as possible, using key organisation and networks to publicise it. Despite this, the team received some feedback that key stakeholders or participants were unaware of the survey, sometimes because news of the survey was not broadcast within local networks or because local organisations were not affiliated to national representative bodies. While it is difficult to overcome the ‘gatekeeper’ effect of individuals choosing not to forward on information about the survey to local memberships etc. it was suggested that there would have been some merit in holding regional meetings just after the survey had been launched. This would have helped raise awareness and short circuited potential failures of local networks to publicise the survey. Reflecting on this issue, the project team concluded that part of the problem was lack of understanding of what the survey was about and what information it would produce. It was interesting that more than one participant at the workshops in late 2015, when seeing the survey outputs, commented that they had known about the survey and now they wished they had taken part.

7.3. Use of a website to host the survey provided a number of advantages in terms of distribution through web and email networks, collection of spatial and questionnaire data without the need for secondary coding or data entry. Greater access to the internet means that this survey is likely to have had a far greater reach than a similar survey a decade ago, but it is nevertheless important to recognise that not everyone has access to the internet or wishes to participate in web base surveys of this kind. The project team did anticipate that some people would ask for paper versions of the survey maps and questionnaire and was ready to issue these. While the 2015 survey results provide confidence that most people are happy to take part in web based surveys of this kind, it may be helpful to more clearly publicise the availability of paper based alternatives in the knowledge that such requests are likely to be limited in number and are therefore unlikely to create a major resourcing issue in terms of administration and data entry.

Trips to the coast or at the coast

7.4. Much of the language and wording of questions in the survey focused on trips to the coast. In reality almost half of the survey respondents lived within one mile of the coast meaning the for much of the time the concept of a trip to the coast was not relevant and that most of their day to day recreation (for example, dog walking etc.)
was taken in a coastal context. Many coastal rowers, for example, live in coastal towns and villages and form part of their local rowing team. Most times they go rowing this takes place locally and does not really represent a ‘trip’. This issue was identified following the Pentland Firth and Orkney Waters pilot work and some modifications made to the national survey, but it would be worth exploring this issue further if the survey is repeated.

Spatial data capture

7.5. The use of the website to capture spatial data represented a significant step forward for this kind of survey and yielded information of a quality and quantity that had not been achieved previously. It was, however, a novel approach which encountered a number of issues in operation:

- The data input process made use of a zoomable map of Scotland onto which people could enter points, lines or polygons to represent places or areas that they visited while undertaking their activities. Since the map was zoomable, the team found that people had entered data at very different scales. Some had zoomed in to the local level to provide spatially accurate data, others had worked at the scale of Scotland as a whole, drawing, for example, polygons covering large parts of the east or west coast. This has presentational implications as well as affecting the fidelity of some of the data captured. Additional research is needed to see if there is a technical solution for this, such as zooming automatically to the first point entered, or recording the zoom level at which data was entered.

- Instructions for the survey recommended use of a laptop or desktop in preference to tablets or smart phones due to the likelihood that swipe and pinch/expand commands on the latter could inadvertently add erroneous points to the map. There were a number of ‘stray’ data points (for example plotting coastal or marine activities inland, or land based activities off-shore) which may be the product of this issue. The website did not allow for individual points to be ‘undone’, with the only option being to start the map from scratch, so it is likely that many errors remained. Since the maps are intended to provide information on where key concentrations of activity occur, this should not represent too significant an issue. However, for activities with smaller numbers of participants, and in parts of Scotland with smaller numbers of data points, this issue will need to be borne in mind. Inclusion of an undo command in future surveys of this kind would help address this issue.

- The website was designed to be compatible with as wide a range of internet browsers as possible, but there was some limit on the ability to ensure it worked with particularly old versions of software. Some guidance was provided on this at the outset of the survey and in feedback to comments from users the project team did make recommendations to update software to the latest version. Further research is needed to explore the scale of this issue and whether technical or alternative solutions are warranted.
Testing

7.6. Although the questionnaire and web based survey were tested by the web team, wider consultancy team and client organisations, one issue did not get picked up until the survey was part way through. The intention had been to collect postcode data from participants to allow later analysis. Unfortunately, while this was asked of visitors from outside Scotland, it was omitted for respondents from within Scotland. While alternative means of locating trip origins have been explored, with mixed success, this does underline the importance of thorough testing and piloting of the operational website before it goes live.

Analysis

7.7. Use of standard questions and pre-coded answers was intended to make analysis of survey responses as simple as possible. However, the combination of the way several questions were asked (multiple options, each with a range of possible answers) and way that the website recorded this information resulted in a complex dataset and an even more complex analysis process for the 23 activity categories. Survey design should, wherever possible, take account of the format in which data will be collected and analysed so that unnecessary complexity is avoided.

Business survey response rate

7.8. While the business survey achieved a much higher response rate than comparable surveys in the past, the sample still represents a very small share of the total number of businesses with an involvement in marine and coastal recreation and tourism. This is particularly the case for catering and accommodation businesses. Low response rates may be attributable to a number of factors, but it was noted that by synchronising the business survey with the main survey, we were contacting businesses at their busiest time. It might, therefore, be better to time the business survey for later in the autumn or during the winter months. Some businesses might have felt that the survey was of limited relevance to them. It is hoped that the findings from the activity survey will help reinforce the significance of marine recreation and tourism, and the local economic benefit it provides across the country. This may help underline the link between individual businesses and these activities.
8 Conclusions and recommendations

8.1 The Scottish Government’s first survey of marine recreation and tourism has been undertaken with the involvement and support of a wide range of agencies and organisations with an interest in the marine environment and people’s enjoyment of it. This partnership approach, and the potential offered by networks within the sector was critical in achieving the survey response rate, including the spread across activities and representation of different parts of the Scottish coasts and seas.

Survey sample

8.2 A total of over 2100 individuals, 137 clubs and 279 businesses took part in the survey, mapping their activities and answering questions about their favourite pastimes. Since the survey was not based on a random sample of the Scottish population, focusing instead on networks of people involved in marine recreation and tourism, the results are likely to represent the more active, older and more affluent segment of the population and should, therefore, be interpreted with some caution.

Spatial data

8.3 One of the principal aims of the survey was to gather better spatial information, showing where around Scotland people undertake different marine recreation and tourism activities. Taken as a whole, the online survey collected over 52,000 pieces of spatial information across a total of 23 different activities. This provides hugely improved insights into which areas of coast and seas are of most importance for recreation and tourism. Low response rates for a minority of activities mean that some spatial information is incomplete. Similarly, the smaller number of responses covering remoter parts of Scotland means that spatial information for areas such as the Western Isles and Shetland is also likely to be partial. Despite this, for the most part, the survey has generated a rich and detailed spatial dataset which will be of value to marine planners, recreation and tourism organisations and businesses, guiding policy, investment and future management.

Questionnaire survey

8.4 The survey also aimed to gather non-spatial information on people’s marine recreation and tourism activities. The second part of the online survey provides information on people’s most important activities. It included questions on decisions about where to go, transport to the coast, use of accommodation, type and length of trip, composition of party, spending patterns and the socio-economic profile of people taking part in the survey. This information is available for activities where the total number of responses was more than 30, though the more reliable results are found where responses exceeded 100.
Valuing marine recreation and tourism

8.5 An attempt was made to estimate the total value of marine recreation and tourism activities, based on information provided by respondents about their typical spending patterns on trips to the coast. The analysis suggested that expenditure in the sector is worth up to £3.7 billion annually. The characteristics of the survey sample indicate that this is likely to be an overestimate, though benchmarking against other economic measures suggest that this figure is in the correct order of magnitude. This is an important finding and underlines the significant economic value of the sector, placing it alongside other industries such as fishing, energy and shipping.

Business survey

8.6 The survey of businesses involved in marine recreation and tourism provided information on the types of services provided to the sector, employment and skills, current and anticipated turnover. Whilst the sample of businesses was too small to be fully representative, the survey highlighted a number of key findings, including the scale of technical skill shortages affecting many businesses, the optimistic outlook of most businesses in the sector and the use of other businesses by their clients.

Overview and next steps

8.7 This is a brief overview of the survey and confirms it met the aims of gathering comprehensive information on marine recreation and tourism around the Scottish coasts and seas. The creation of spatial datasets for 23 different activities represents a major step forward, creating a significant evidence base for planning, investment and management.

8.8 Attention now focuses on dissemination of the survey results. This will include:

- Publication of survey heat maps on Marine Scotland’s NMPi website;27
- Publication of this report and activity specific appendices;
- A webinar in April 2016;
- Use of conferences, journals and social media to publicise the survey results.

8.9 Looking further into the future, there would be considerable value in repeating the survey at five year intervals. This would detect trends in people’s participation in marine recreation and tourism together with the effects of marine planning and investment in the sector.

8.10 As far as possible, future surveys should aim to replicate the structure and questions used in 2015. They should, however, benefit from lessons learned during the present survey, including targeting explicitly under-represented activities and geographic areas, ensuring the survey is tailored to people living on as well as visiting the coast, further improving the mapping interface and improving the

27 http://www.gov.scot/Topics/marine/seamanagement/nmpihome
business response rate by working with trade organisations and timing the survey to avoid the busiest time of year.

8.11 There is considerable potential for further analysis of the data collected by the survey, including:

- Analysis and interpretation at activity level, for example to provide additional insights into activities such as canoeing and kayaking which have been highlighted as having high participation rates but where information is less than for activities such as sailing;

- Analysis at Marine Region level and, particularly for more popular areas, local areas to consider the interaction of different recreation and tourism activities and their relationship with other sectors of the marine and coastal economy; and

- Development and testing of an ecosystems approach, drawing on the qualities, or environmental services (e.g. scenic quality, wildlife, cultural heritage) that underpin the attraction of Scotland's marine and coastal environment as a place for recreation and tourism.

8.12 The Scottish Government should play a key role in curating of the survey, working with researchers, representative bodies, user groups, local groups and organisations to realise the full potential of the information collected by the survey.
Appendix 1
General marine and coastal recreation