Report

footprint ECOLOGY

# Exe Estuary Visitor Survey

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## Summary

This report presents the results of an on-site visitor survey of the Exe Estuary. The survey has been devised to enhance our understanding of the links between recreational access on the Exe Estuary and local development. The Exe Estuary is internationally important for wintering birds, for which disturbance from recreational activity can be an issue. This survey provides background information necessary for Habitats Regulations Assessments of strategic development and individual developments surrounding the estuary and also links to a study of the impact of disturbance currently being undertaken on the estuary.

Visitor fieldwork involving interviews and counts of people took place at eight sites, with 16 hours of standardised recording taking place at each site. Additional 'boost' surveys focused on particular times of day and weather conditions so as to interview certain users such as kite surfers. In total 586 interviews were undertaken. Interviews asked questions relating to choice of site, route taken, home postcode and some simple visitor profile information.

### Key Findings

- 586 interviews were conducted.
- Group sized of interviewed groups ranged from 1 to 9 (median 2).
- Using their home postcodes, interviewees were categorised as local residents if they gave a valid postcode within East Devon (183 interviews, 31%), Exeter (106 interviews, 18%) or Teignbridge Districts (113 interviews, 19%). These local residents accounted for 69% of the interviews.
- The remaining 184 interviews were with non-local day visitors that were travelling from outside the three local districts (76 interviews, 13%); tourists (48 interviews, 8%), those visiting friends/family (18 interviews, 3%) and then 'others' (42 interviews, 7%) who did not fall into any these categories (and includes those who were unable to give valid postcodes).
- Dog walking was the most popular activity (39% of people interviewed), and walking was also popular (38% of interviews). Other activities included boating, birdwatching, cycling, kite surfing, family outings, windsurfing, fishing and jogging. A significantly higher proportion of Teignbridge and East Devon residents were visiting to walk their dog compared to Exeter residents (for which the most commonly recorded activity was cycling).
- Exmouth Sea Front, the Duck Pond and Dawlish Warren were particularly popular with dog walkers.
- Most visits were short (74% less than 2 hours), with the length of visit varying significantly between activity types. Birdwatchers, windsurfers, kitesurfers, those boating and those fishing all tended to spend longest on site
- Across all interviewees, about one-third (34%) visited most days. Dog walkers in particular tended to visit on a daily basis, but those visiting for activities such as walking, cycling, kite surfing and boating also tended to visit most days or at least multiple visits per week. Birdwatchers and those undertaking family outings were more likely to visit much more sporadically.
- There was relatively little variation in the time of day people tended to visit, and visitor numbers would appear to be relatively even throughout the day. Numbers of visitors did tend to be highest in the morning, and across all interviewees, for those that did indicate a preferred time to visit it was 09:00-12:00. Dog walkers indicated that they tended to visit most in the early morning and late afternoon.
- Weekends were busier than weekdays, with count data indicating that there are roughly three times as many people visiting on weekend days compared to weekdays.

- Most (57%) interviewees visit all year round. Of those that did tend to visit more at a particular time of year 17% of interviewees stated that they tended to visit more in the summer. 15% stated that they tended to visit more in the winter. Over a fifth of dog walkers (21%) visited more in the winter.
- The main factor underlying people's choice of site was the attractiveness of the scenery (cited by 33% of interviewees). Proximity to home was also important for many (27%). A greater proportion of Exeter residents visited for the attractive scenery and because it was the right place for their activity; proximity to home was a factor for Exeter and East Devon residents whereas short travel time seemed important for residents of Teignbridge District. Dog walking issues were particularly important for East Devon residents.
- Interviewees were asked what features would be necessary to make another site attractive for them to use instead of the location interviewed. Around one third of interviewees (34%) indicated that there was nothing that would attract them to other sites. Dog walkers were the group for which the highest proportion of interviewees felt something could be done to draw them elsewhere.
- Interviewees originated mostly from Exmouth, Exeter, Topsham and Dawlish. The highest number of dog walkers was from Exmouth. The kite surfers interviewed lived in Axminster, Exmouth, Exeter, Topsham and Teignmouth. Cyclists predominantly came from Exeter, walkers from Exmouth, Exeter and Topsham.
- 60% interviewees had travelled by car to the Exe. Lympstone was the site with the highest number of foot visitors, and the Exmouth sites (the Duck Pond and the Sea Front) also had relatively high numbers of foot visitors compared to other sites. The Turf was the location where the most people had come by bike.
- 67% of people travelling on foot had come from postcodes within 1km of the estuary. By contrast for people arriving by car just over half (51%) lived within 10km (linear distance) from the estuary. People visiting to undertaking boating, cycling, walking dog walking or jogging were relatively local, whereas those visiting to birdwatch, kite surf, on an outing with family or walking lived at greater distances from the survey location.
- Visitors' routes on site were recorded using paper maps. Across all interviewees, 439 (75%) were within 10m of Mean High Water, indicating that around three-quarters of visitors go on the beach, seawall or out onto the intertidal. Activities such as windsurfing, kite surfing and boating in virtually all instances involved people on the sub/intertidal, but perhaps surprisingly over half of all the dog walkers interviewed (56%) had also ventured at least 10m below mean high water mark (i.e. walking on the sandflats/mudflats).

# Contents

## Acknowledgements

This report was commissioned by consortium of local authorities. The data collected and data entry were funded by Teignbridge District Council and the report was commissioned by East Devon Council. We are grateful to Mary Rush for her support and organising much of the logistics, including the contracts for the surveyor, the data entry and GIS support. Matthew Dickins and April Waterman were the principal contacts at East Devon Council. All fieldwork was conducted by Helen Cleasby, employed under contract by Teignbridge District Council. Routes were entered by Simon Laughton and other data by Karen Smith and Carol Allerton (all Teignbridge District Council).

Footprint Ecology has been undertaking work on access and disturbance to birds on the Exe since September 2009 – the Exe Disturbance Study. My thanks to Jenny Lockett (Exe Estuary Officer) and all the other members of the steering group for their support for this wider work.

# 1. Introduction

## Overview

1.1 This report presents the results of an on-site visitor survey of the Exe Estuary. The survey has been devised to enhance our understanding of the links between recreational access on the Exe Estuary and local development. The Exe Estuary is internationally important for wintering birds, for which disturbance from recreational activity can be an issue. This visitor survey provides the necessary background for Habitats Regulations Assessments of Local Development Plan Framework documents and links to a study of the impact of disturbance currently being undertaken on the estuary.

## The Exe Estuary, relevant designations and importance for nature conservation

1.2 The Exe Estuary extends 10km south from Exeter to the open sea at Dawlish Warren. It forms a partially enclosed tidal area of water, foreshore, low-lying land, saltmarsh and an unusual double spit across the mouth of the estuary. There is an area of sand dunes at Dawlish Warren. Dawlish Warren and Pole Sands (a sand bank) form natural breakwaters between the approach channel and open water of Lyme Bay to the south west.

1.3 The Exe Estuary, including Dawlish Warren, is internationally important for its wintering waterfowl assemblage and for wintering avocet and slavonian grebe, reflected in the Special Protection Area (SPA) and Ramsar designations for the site. It is therefore the winter period that is the focus for this piece of work. Numbers of passage and wintering waterfowl using the estuary will build from July onwards.

1.4 Dawlish Warren is also separately designated as a Special Area for Conservation (SAC), reflecting the important sand dune habitats and flora present at the site.

## Links to other work

1.5 During the winter 2009/10 Footprint Ecology have been undertaking detailed ornithological fieldwork and collecting data on visitor numbers and access patterns in order to understand more about the impacts of recreational disturbance to the wintering waterfowl. Footprint Ecology have also been commissioned by Teignbridge District Council to assess the impacts of recreation on the SAC site at Dawlish Warren.

1.6 There are therefore three inter-linked pieces of work:

- The Exe Estuary Disturbance work, specifically looking at the issues relating to disturbance to the wintering waterfowl
- The work to assess the impacts of recreation to Dawlish Warren SAC
- This visitor survey

1.7 The links between the three pieces of work are clear; the ornithological work will provide an understanding of disturbance on the Exe Estuary SPA, for example identifying whether disturbance is an issue, for which species, which locations and in

which circumstances. The work at Dawlish will assess the extent to which current levels of access are impacting the integrity of the European Protected Site.

1.8 The visitor work set out in this report provides further detail on the recreational activities, and in particular allows links to be made between housing and access. The three pieces of work therefore dovetail to provide some of the evidence to inform strategic planning in the Districts adjacent to the Exe Estuary.

1.9 This on-site visitor work also links with a larger visitor survey that took place across East Devon, Exeter and Teignbridge Districts in the autumn 2010. The larger survey was an off-site visitor survey, involving a postal questionnaire addressing recreation to countryside and designated sites around the Districts, including Dartmoor, the Pebblebed Heaths as well as the Exe Estuary. The wider survey is, by nature, more generic and looks across a very wide area. The on-site work on the Exe Estuary, as presented here, focuses on detailed recreational patterns at a site level and is able to explore exactly how people choose specific locations and where they go during their visit.

## Aims and Objectives of this work

1.10 This report therefore aims to:

- Understand who visits the Exe, what activities they undertake and how frequently
- Understand where people go and how they behave while visiting the estuary
- Make the links between where people live and their access patterns
- Understand what options may be available to reduce any potential impacts of recreation.

## 2. Methods

2.1 On-site visitor fieldwork was conducted at eight main sites (see Table 1 and Map 1), each sampled for 8 sessions. Each session was two hours, and they were spread over the day (covering the periods 07:30-09:30; 10:00-12:00; 12:30-14:30; 15:00-17:00). The eight sessions were equally split between weekends and weekdays, therefore ensuring equal coverage at all locations, with each of the four session periods being covered on a weekday and a weekend day. All survey work was undertaken by the same surveyor.

2.2 The sites were selected to achieve good spatial coverage of the estuary (i.e both the east and west sides and the length of the estuary), and to ensure the main sites where visitor use is concentrated were surveyed. Selection of sites was guided by the ongoing fieldwork on birds, with visitor survey sites closely tying to the bird survey locations, providing the potential in the future to link work on disturbance to birds on the SPA to the behaviour of visitors.

2.3 Surveys took place in February and early March 2010, coinciding with the period when the wintering birds (the interest feature of the SPA) are present.

2.4 During each two hour period the surveyor collected two sets of data, count data and interview data. The count data involved a tally of visitor numbers and the interview data involved face-to-face questionnaires with a sample of people at each access point. The surveyor positioned herself at each location so as to be best placed to both count and interview people. At some locations this meant she roamed slightly in order to catch people using different paths / routes. Notes are given in Table 1 of the approach used at each location.

2.5 In order to boost the sample size for a few particular activities, additional sessions were carried out at a selection of locations. These additional sessions were targeted around slipways and key locations for particular watersports, with the timing of each visit carefully selected to ensure people undertaking watersports could be interviewed (see (see Table 1 and Map 1, for further descriptions). Details of dates, times and sampling visits to each location are given in Appendix 1. A copy of the questionnaire is provided in Appendix 2.

2.6 The count data involved a tally, recording the numbers of people (and the number of groups) passing the surveyor. Counts were maintained separately for each direction people were passing (i.e. entering and leaving if at an access point). Numbers of dogs were also counted.

2.7 As many people leaving as possible were interviewed. The sample of people interviewed was randomised through the surveyor approaching all people leaving (as long as they are not already interviewing others). Only one person (selected at random) from each group / party was interviewed. The following survey protocol was followed:

- The surveyor was typically based at their car at an access point.
- The surveyor carried photo ID and was wearing a high visibility jacket.

- A sign was posted in the car to indicate that a visitor survey was taking place (relevant access points only)
- No unaccompanied minors were approached or interviewed.
- As far as possible, days with inclement weather were avoided.

2.8 The questionnaire was reasonably brief and asked questions relating to:

- Transport used to reach the site
- Activities undertaken
- Other parts of the area visited
- Visitor profile: age, gender etc.
- Home postcode and whether a local resident or visiting tourist
- Identify opinions relating to management issues and potential changes
- Route travelled on site

2.9 Information on people's routes was collected using maps in the field, with the interviewer probing the interviewee about their route and showing the interviewee the map. Routes were drawn as lines on the map, individually cross-referenced to each questionnaire. These data were subsequently entered into a GIS as polylines. Within the GIS (MapInfo 9.5) these were then summarised to give a total length of route. The amount of the route within the intertidal was also calculated, this was derived by determining the length of each route within the following zones: a) within 10m of MHWM (either above or below MHWM); b) below 10m of the MHWM.

2.10 The home postcode data were used to determine the distance between interviewee's homes and the location interviewed. Postcodes from the interview data were geocoded using a standard Royal Mail postcode database (Postzon™ 100 data) within a GIS (MapInfo 9.5). The linear distance between the postcode and the survey location was then extracted for all postcodes.

**Table 1: Survey locations and details of approach used at each location. Map refs correspond to the location codes in Map 1.**

| Map Ref | Location | District | Notes / description | Survey Type |
|---|---|---|---|---|
| 1 | Exmouth Maer | East Devon | sunny days with wind at F4 or above, weekends ideally | Targeted, kite surfers and windsurfers |
| 2 | Exmouth Sea front | East Devon | Interviewing people on beach only, not people walking above sea wall / on pavement | Standard, 16 hours |
| 3 | Exmouth slipway | East Devon | sunny weekends, late morning or afternoon | Targeted, jet skiers and other slipway users |
| 4 | Exmouth duck pond slipway | East Devon | sunny days with wind at F3 or above, weekends ideally, tide high. Not too strong winds | Targeted, kite surfers, windsurfers and other craft. |
| 5 | Duck Pond | East Devon | By slipway, interviewing people using slipway, using park and walking on mudflats. Need to roam. | Standard, 16 hours |
| 6 | Lympstone | East Devon | Roaming, interviewing people around mouth of channel / slipway, need to catch walkers heading south | Standard, 16 hours |
| 7 | Topsham | Exeter | Start of goat walk, by slipway and benches. | Standard, 16 hours |
| 8 | Turf | Teignbridge | Adjacent to the Lock, interviewing boat users and walkers and visitors to pub and seawall | Standard, 16 hours |
| 9 | Powderham | Teignbridge | By road and small parking area, interviewing people using railway crossing | Standard, 16 hours |
| 10 | Dawlish Warren | Teignbridge | Near gate, catching people walking along dunes / beach too, therefore roaming a bit | Standard, 16 hours |
| 11 | Starcross | Teignbridge | Interviewing people using car-park | Standard, 16 hours |

# 3. Results

## Overview of data

3.1 A total of 715 groups (and 1374 people) were counted 'entering' sites during the standard counts, roughly similar to the 656 groups (and 1175 people) counted leaving. These counts were conducted over a total period of 128 hours, giving an overall visitor rate at the sampled locations of 5.6 people per hour 'entering'.

3.2 Table 2 summarises the counts of people by site. Dawlish Warren was the busiest site, with a total of 141 groups counted 'entering' the site during the 16 hours of observation. Powderham was the quietest site with 40 groups counted 'entering'.

3.3 Mid morning was the busiest time period, with the 10-12:00 session being the busiest, in terms of groups entering, for all sites apart from Topsham, where the highest numbers of people entering was recording during the 15:00-17:00 session.

3.4 A total of 586 interviews were conducted, 562 of these were at the 'standard' locations. One interview was conducted per group, accounting for group size the questionnaires involved a total of over 1138 people[1], accompanied by 307 dogs. Group size (of those interviewed) ranged from 1 to 9 (with a median of 2). Just under half (44%) of interviewed groups were recorded as containing one person and 79% of groups contained 2 or less people.

3.5 There were in 59 refusals. There were also a further 32 people approached that had previously been interviewed and who were not re-interviewed.

[1] note that group size was not recorded for five different interviews

**Table 2: Numbers (%) of groups and people both entering and leaving the main sampling points, by time period. Grey shaded cells show the busiest period at each site.**

| | | Dawlish Warren | Duck Pond | Exmouth Sea Front | Lympstone | Powderham | Starcross | Topsham | Turf | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| 07:30-09:30 | Groups entering | 26 (18) | 24 (24) | 21 (19) | 13 (23) | 7 (18) | 9 (9) | 20 (24) | 12 (14) | 132 (18) |
| | Groups leaving | 17 (13) | 19 (25) | 21 (20) | 14 (21) | 7 (18) | 9 (15) | 21 (22) | 13 (16) | 121 (18) |
| | People entering | 35 (11) | 29 (19) | 38 (18) | 15 (16) | 12 (17) | 12 (6) | 28 (17) | 20 (13) | 189 (14) |
| | People leaving | 18 (6) | 24 (19) | 29 (15) | 15 (14) | 10 (15) | 11 (10) | 27 (18) | 17 (12) | 151 (13) |
| 10:00-12:00 | Groups entering | 48 (34) | 28 (28) | 32 (29) | 17 (30) | 17 (43) | 40 (40) | 22 (26) | 33 (39) | 237 (33) |
| | Groups leaving | 36 (27) | 21 (27) | 27 (25) | 17 (25) | 12 (32) | 11 (18) | 24 (26) | 26 (33) | 174 (27) |
| | People entering | 113 (34) | 47 (30) | 66 (31) | 30 (32) | 31 (45) | 80 (40) | 52 (32) | 50 (32) | 469 (34) |
| | People leaving | 81 (29) | 36 (29) | 44 (23) | 30 (27) | 21 (32) | 13 (12) | 37 (25) | 36 (26) | 298 (25) |
| 12:30-14:30 | Groups entering | 32 (23) | 25 (25) | 25 (23) | 12 (21) | 11 (28) | 30 (30) | 19 (23) | 22 (26) | 176 (25) |
| | Groups leaving | 37 (28) | 16 (21) | 32 (30) | 17 (25) | 8 (21) | 22 (36) | 23 (24) | 22 (28) | 177 (27) |
| | People entering | 104 (32) | 44 (28) | 62 (29) | 23 (25) | 17 (25) | 63 (32) | 37 (23) | 53 (34) | 403 (29) |
| | People leaving | 94 (33) | 34 (27) | 68 (36) | 32 (29) | 17 (26) | 48 (43) | 42 (28) | 54 (38) | 389 (33) |
| 15:00-17:00 | Groups entering | 35 (25) | 22 (22) | 31 (28) | 15 (26) | 5 (13) | 22 (22) | 23 (27) | 17 (20) | 170 (24) |
| | Groups leaving | 42 (32) | 21 (27) | 26 (25) | 20 (29) | 11 (29) | 19 (31) | 26 (28) | 19 (24) | 184 (28) |
| | People entering | 76 (23) | 36 (23) | 45 (21) | 25 (27) | 9 (13) | 43 (22) | 47 (29) | 32 (21) | 313 (23) |
| | People leaving | 89 (32) | 30 (24) | 50 (26) | 34 (31) | 18 (27) | 39 (35) | 43 (29) | 34 (24) | 337 (29) |
| **Total** | Groups entering | 141 | 99 | 109 | 57 | 40 | 101 | 84 | 84 | **715** |
| | Groups leaving | 132 | 77 | 106 | 68 | 38 | 61 | 94 | 80 | **656** |
| | People entering | 328 | 156 | 211 | 93 | 69 | 198 | 164 | 155 | **1374** |
| | People leaving | 282 | 124 | 191 | 111 | 66 | 111 | 149 | 141 | **1175** |

## Separating tourists from other types of visitors

3.6 Question 1 identified whether visitors were on holiday, visiting from home, visiting as part of a work break or visiting from a friend's house. People visiting from home on a short visit or day trip accounted for the majority of people interviewed. Very few people stated that they were visiting as part of a work break or visiting from a friend or relation's house. Approximately 1 in ten (9%) of the groups interviewed were holidaymakers, and local residents, day trippers or those coming for a short visit encompassed 86% of the interviews (83% of people). By far the majority of dogs (88%) were associated with people who were visiting from their home on a short visit or day trip (Table 3).

**Table 3: Number (%) of groups interviewed, total people and total dogs categorised according to holiday makers, local residents etc. (question 1).**

| | Number of groups | Total People | Total Dogs |
|---|---|---|---|
| Away from home on holiday in the area | 55 (9) | 141 (12) | 25 (8) |
| Visiting from home on short visit or day trip | 506 (86) | 942 (83) | 271 (88) |
| Visiting as part of a work break | 1 (0) | 2 (0) | (0) |
| Visiting from a friend/relation's house | 21 (4) | 51 (4) | 10 (3) |
| Blank | 3 (1) | 2 (0) | 1 (0) |
| Total | 586 (100) | 1138 (100) | 307 (100) |

3.7 Initial geocoding of the postcodes from the questionnaires successfully located 523 home postcodes, leaving 63 questionnaires (11%) where the postcode did not match the database or no postcode was given. For 12 of these 63 the respondent gave a home town location, rather than a postcode, and for these 12 questionnaires a single point was manually plotted within the GIS at the centre of the town. This left 51 questionnaires where the home postcode of the respondent could not be located. Of these 51, 39 were visiting from home on a short visit or day trip, nine were away from home on holiday in the area and three were visiting from a friend or relation's house.

3.8 There were 55 holiday makers – i.e. those staying away from home on holiday – for which valid postcodes were collected. These people's home postcodes included Anglesey, the Midlands and across the south-east (Map 2). These tourists lived considerable distances away from the Exe (median distance = 169km, range 0.1 – 279.6km).

3.9 The home postcode locations for those visiting on a short day trip / short visit directly are shown in Map 3. Map 4 also shows the same data, but with visitor's home postcodes coloured to reflect activity undertaken during the visit.

3.10 Using the postcode data, data relating to residents of the three local authorities directly adjacent to the Exe Estuary were extracted. Of the three districts, the most interviewees (who gave valid postcodes) were from East Devon (183 interviewees), with a further 113 interviewees from Teignbridge District and 106 from Exeter (Table 4 and Map 5).

**Table 4: Number of visitors visiting from East Devon, Exeter and Teignbridge Districts.**

| Response to Question 1 | Location of home postcode (where mapped) | | | | Not mapped (i.e. no valid postcode) | Total |
|---|---|---|---|---|---|---|
| | East Devon | Exeter | Teignbridg | Outside local area | | |
| Away from home on holiday in area | 4 | 1 | 2 | 39 | 9 | 55 |
| Visiting from home on a short visit or day trip | 178 | 105 | 108 | 76 | 39 | 506 |
| Visiting as part of a work break | | | | | 1 | 1 |
| Visiting from friend's/relation's house | 1 | | 2 | 15 | 3 | 21 |
| No answer | | | 1 | | 2 | 3 |
| **Total** | **183** | **106** | **113** | **130** | **54** | **586** |

3.11 As Table 4 shows, a small proportion of the people that gave postcodes within three local districts also indicated that they were on holiday in the area or visiting friends/relatives. These people all gave valid postcodes, and cross-reference back to the original data indicates that some were second-home owners, we therefore simply group all those who gave postcodes within the 3 local authority areas as 'local residents', accepting that this grouping also includes second home owners etc. In total 402 interviewees were therefore classified as local residents, i.e. interviewees who gave valid postcodes relating to East Devon, Teignbridge or Exeter Districts.

3.12 After assigning the 402 interviewees that gave home postcodes within the 3 districts, the remaining interviewees (following Table 4) were broken down into the following categories:

- Non local day visitors from outside the 3 districts (i.e. those who gave valid postcodes, n=76)
- Tourists (n=48)
- Visiting friends/family (n=18)
- Other (i.e. those who did fall into none of the above categories, n=42)

3.13 Throughout the rest of the results section the above categories are frequently used to distinguish between local residents and others.

## Activities undertaken during visit

3.14 Interviewees were assigned by the surveyor according to the main activity undertaken. For twelve interviewees no activity was assigned at all by the surveyor. Dog walking was the activity that was categorised as the main activity for the most interviews; it was the main activity for 225 interviewees (38%). Taking all people rather than interviewees, 373 people (35%) were visiting to walk their dog. Exmouth Seafront, Exmouth Duck Pond and Dawlish Warren were the locations with the most dog walkers interviewed (Figure 1). The next most popular activity was walking; this was the main activity for 191 interviewees (33%) and 412 people (36%). There were significant differences between sites in the proportion of people for which dog walking, walking and all others were the main activities undertaken (taking standard survey locations only, $\chi 2 = 217.8$, 14 df, $p<0.001$).

3.15 A wide range of other activities were recorded (categorised by the surveyor), including specific activities such as windsurfing (1 windsurfer was interviewed), kite surfing (23 interviews), boating (18 interviews) and fishing (1 interview). Boating included speed boats (3 interviews), wake boarding (1 interview), sailing (1 interview), "engine powered" (1 interview) and rowing (1 interview). There were also a range of "other" activities that were perhaps not expected for example a number of the bird watchers were joining an RSPB bird boat (12 interviews, 33 people), some groups were having lunch (7 interviews), photography (5 interviews), looking for old bottles (1 interview), playing with remote controlled car (1 interview), music(1 interview), attending an arts and crafts meeting (1 interview) and flying a remote controlled plane (1 interview).

3.16 The main activities undertaken by each category of resident are summarised in Figure 2. More local residents from East Devon and Teignbridge visited the estuary to walk their dogs in comparison to any other activity (Figure 2) The most popular activity by visitors classified as either 'Exeter resident', 'non-local day visitors', 'tourists' and 'those visiting friends and family' was walking. Just over a quarter (28%) of visitors classified as 'non-local' day visitors were bird watching. Bird watching was also cited by several Teignbridge residents. The highest proportion of cyclists were from Exeter, with 22% of the Exeter residents that were interviewed undertaking cycling as their main activity.

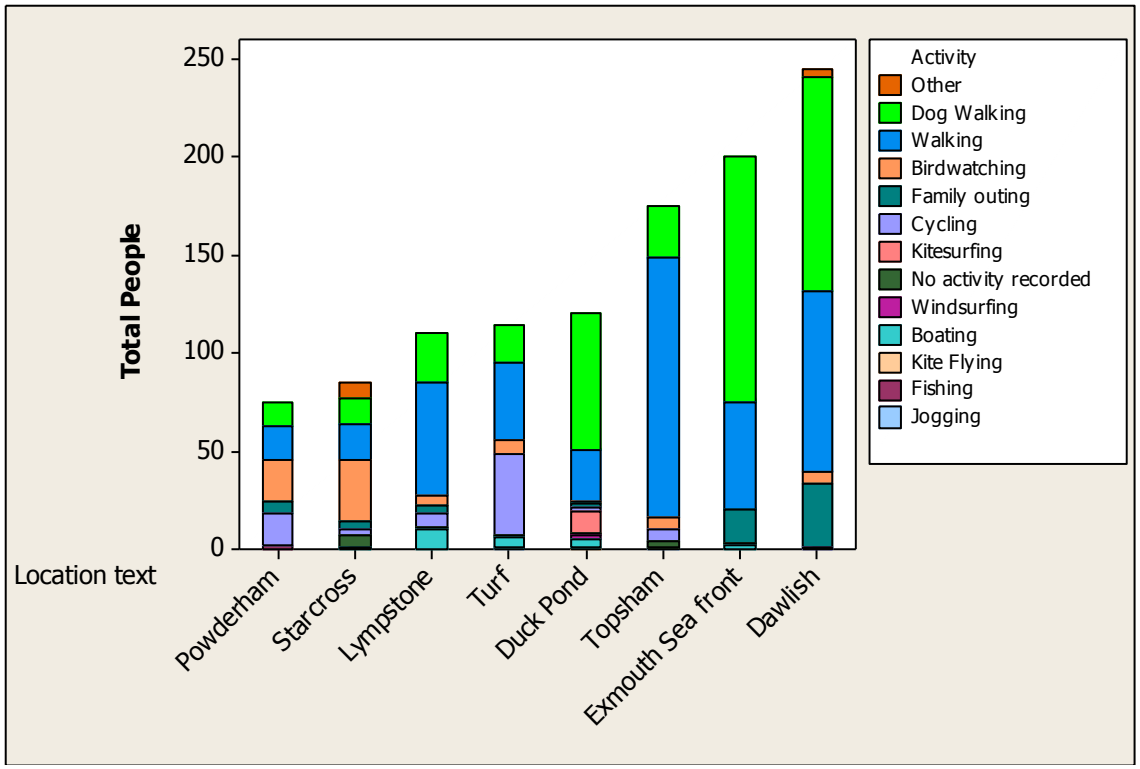


**Figure 1: Total people at each site (standard survey locations only), according to activity. Total people is the sum of the group size for each of the interviewed groups.**

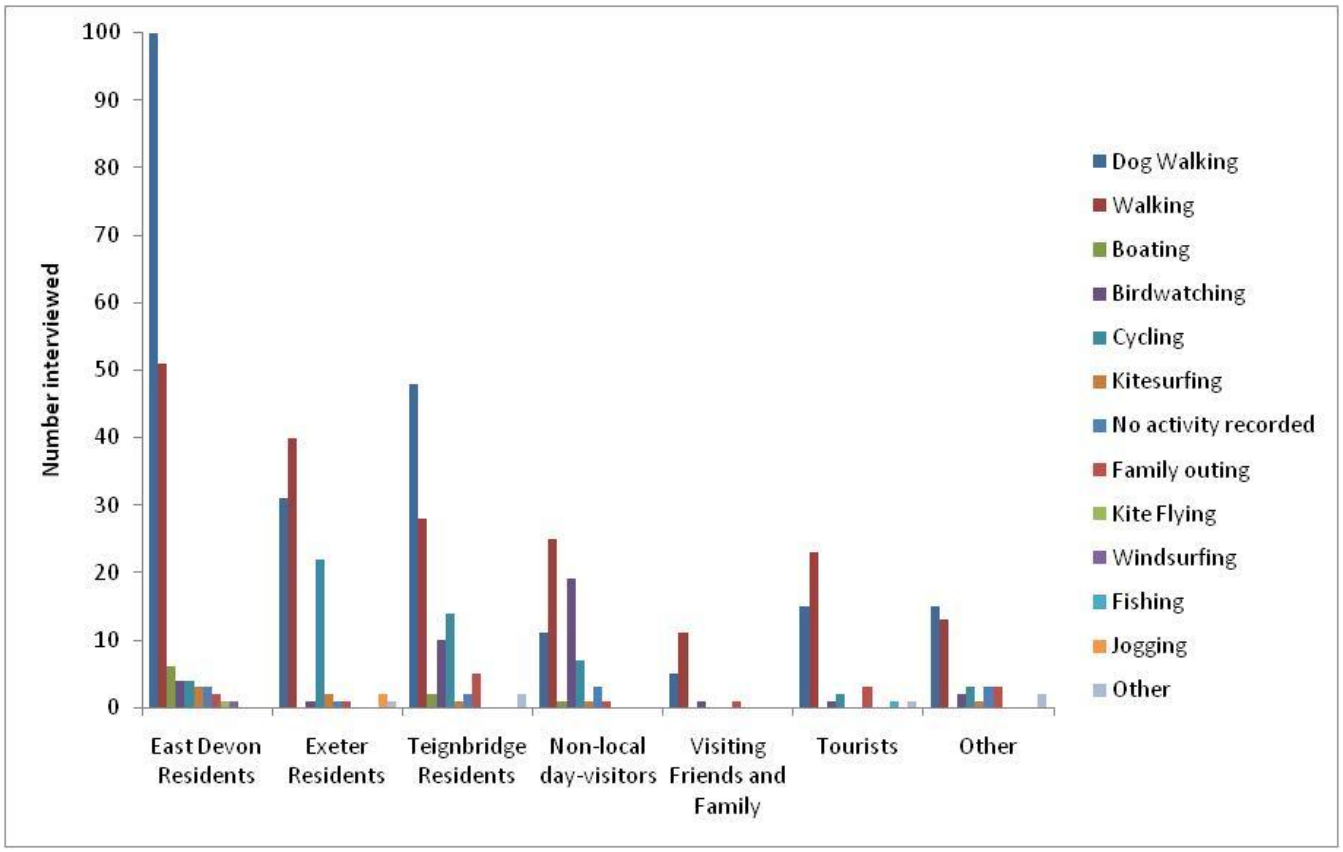


**Figure 2: Main activities undertaken by each category of visitor, using the data from standard survey locations only**

3.17 In many cases visitors were undertaking more than one activity, for example some family outings might also involve walking the dog. In such cases assigning a single main activity is difficult. Additional activities were therefore recorded for some interviews (at least one activity type was recorded for 574 interviewees, of these an additional activity was recorded for 126 interviewees, three activities were recorded for 10 of these and for one interviewee four different activities were recorded). This gives a total of 711 different responses from the 586 interviews. Using all responses, it can be seen that dog walking is still the main activity undertaken, but the percentage of interviewees visiting to simply walk as opposed to dog walk is similar (Figure 3). The wide range of activities undertaken is apparent.

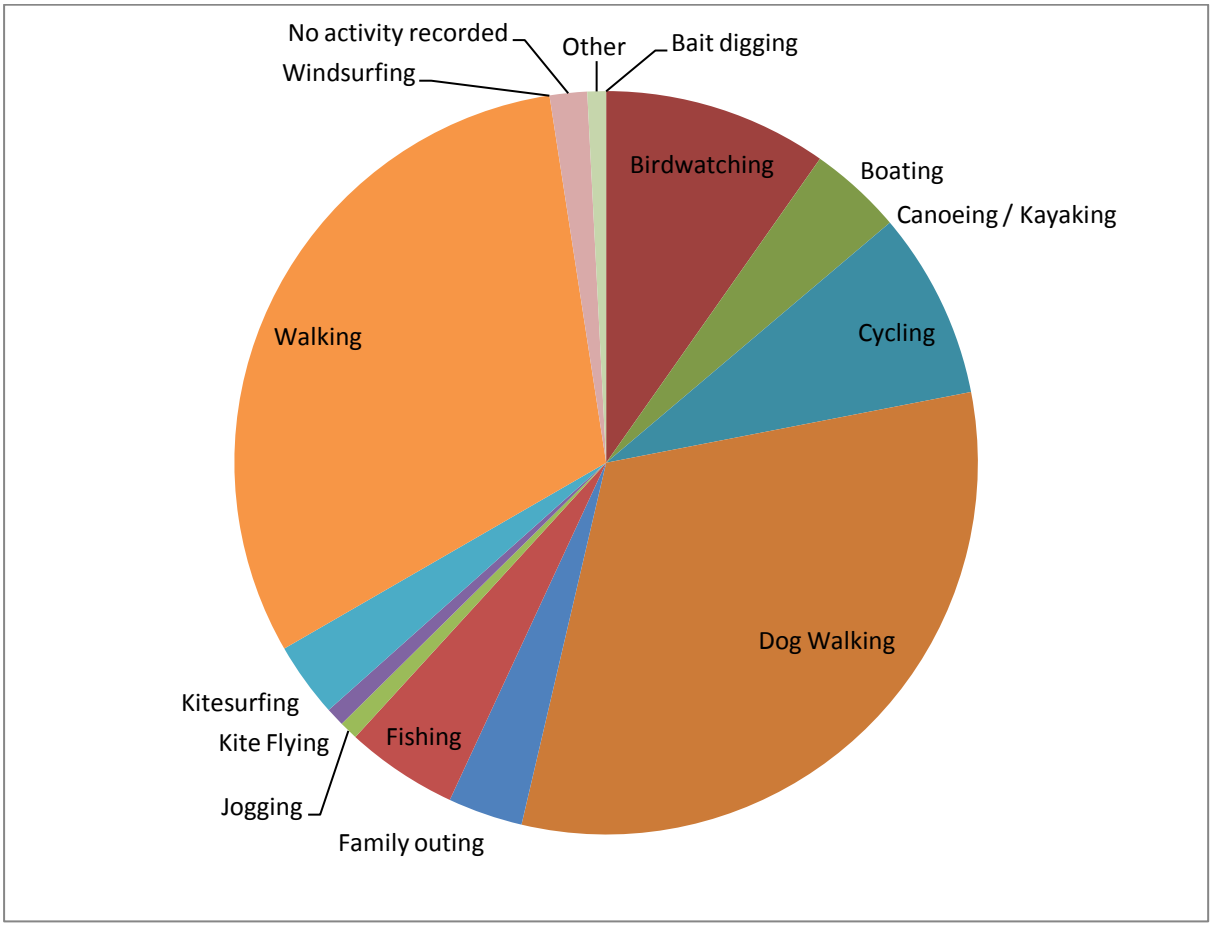


**Figure 3: Activities undertaken, including additional activities where recorded.**

3.18 Taking the data that includes these additional activities, we summarise the totals for different categories of residents in Table 6. There are some significant differences between residents of East Devon, Exeter and Teignbridge Districts. A significantly higher proportion of the visitors interviewed from Teignbridge were visiting the estuary for birdwatching, whereas a significantly higher proportion of residents from Exeter were visiting to cycle. A smaller proportion of Exeter residents were visiting to walk their dog compared to residents from East Devon or Teignbridge.

**Table 5: Activities taken by each category of visitor. Table gives number (%) of interviewees stating that they visited to undertake the particular activity, and includes data from all 711 responses (i.e. some respondents were undertaking more than one activity). Grey colouring highlights significant differences between residents in the three Districts (χ2; one asterisk indicates p<0.05; two asterisks indicates p<0.001).**

| Activity | East Devon Residents | Exeter Residents | Teignbridge Residents | Non-local day-visitors | Visiting Friends and Family | Tourists | Other | Total |
|---|---|---|---|---|---|---|---|---|
| Bait digging | 1 (1) | 0 (0) | 0 (0) | 0 (0) | 0 (0) | 0 (0) | 0 (0) | 1 (0) |
| Birdwatching* | 10 (5) | 6 (6) | 16 (14) | 23 (30) | 3 (17) | 9 (19) | 3 (7) | 70 (12) |
| Boating | 11 (6) | 1 (1) | 3 (3) | 10 (13) | 0 (0) | 2 (4) | 0 (0) | 27 (5) |
| Canoeing / Kayaking | 0 (0) | 1 (1) | 0 (0) | 0 (0) | 0 (0) | 0 (0) | 0 (0) | 1 (0) |
| Cycling** | 7 (4) | 23 (22) | 16 (14) | 7 (9) | 0 (0) | 2 (4) | 5 (12) | 60 (10) |
| Dog Walking** | 100 (55) | 32 (30) | 49 (43) | 11 (14) | 5 (28) | 16 (33) | 15 (36) | 228 (39) |
| Family outing | 3 (2) | 1 (1) | 5 (4) | 3 (4) | 1 (6) | 4 (8) | 4 (10) | 21 (4) |
| Fishing | 8 (4) | 5 (5) | 7 (6) | 3 (4) | 4 (22) | 3 (6) | 5 (12) | 35 (6) |
| Jogging | 1 (1) | 4 (4) | 0 (0) | 0 (0) | 0 (0) | 0 (0) | 0 (0) | 5 (1) |
| Kite Flying | 3 (2) | 2 (2) | 2 (2) | 0 (0) | 0 (0) | 0 (0) | 0 (0) | 7 (1) |
| Kitesurfing | 7 (4) | 6 (6) | 2 (2) | 7 (9) | 0 (0) | 0 (0) | 1 (2) | 23 (4) |
| No activity recorded | 3 (2) | 1 (1) | 2 (2) | 3 (4) | 0 (0) | 0 (0) | 3 (7) | 12 (2) |
| Other | 0 (0) | 1 (1) | 2 (2) | 0 (0) | 0 (0) | 2 (4) | 2 (5) | 7 (1) |
| Walking | 59 (32) | 43 (41) | 38 (34) | 30 (39) | 11 (61) | 25 (52) | 18 (43) | 224 (38) |
| Windsurfing | 1 (1) | 1 (1) | 0 (0) | 0 (0) | 0 (0) | 0 (0) | 0 (0) | 2 (0) |
| Number of interviewees | 183 (100) | 106 (100) | 113 (100) | 76 (100) | 18 (100) | 48 (100) | 42 (100) | 586 (100) |

## Time spent at the interview location

3.19 Approximately one third (31%) of the interviewed groups were visiting for less than one hour, and a little under half (43%) of all groups interviewed were visiting for between one and two hours. Only a quarter (25%) of groups was visiting for two hours or more.

3.20 Perhaps not surprisingly, the amount of time spent on the site varied according to the activity undertaken (

3.21 Table 6). Few dog walks appear to last more than two hours, but roughly as many groups spent an hour on site (44% of groups dog-walking) compared to those spending 1-2 hours on site (48%). Birdwatchers, windsurfers, kitesurfers, those boating and those fishing all tended to spend longer on site, for example 45% of the groups that were birdwatching were visiting for more than three hours.

**Table 6: Numbers (%) of groups and the amount of time spent on site. Figures in bold highlight the time period with the highest number of groups for each activity.**

| | Length of time spent on the site interviewed | | | | | |
|---|---|---|---|---|---|---|
| **Main Activity** | **less than 1 hour** | **1-2 hours** | **2-3 hours** | **More than 3 hours** | **No response recorded for the question** | **Total** |
| Dog Walking | 99 (44) | **109 (48)** | 9 (4) | 8 (4) | (0) | 225 |
| Walking | 54 (28) | **79 (41)** | 31 (16) | 26 (14) | 1 (1) | 191 |
| Cycling | 12 (23) | **25 (48)** | 8 (15) | 7 (13) | (0) | 52 |
| Birdwatching | 4 (11) | 12 (32) | 5 (13) | **17 (45)** | (0) | 38 |
| Kitesurfing | (0) | 6 (26) | **12 (52)** | 5 (22) | (0) | 23 |
| Boating | (0) | 4 (22) | 4 (22) | **10 (56)** | (0) | 18 |
| Family outing | 4 (25) | **9 (56)** | 2 (13) | 1 (6) | (0) | 16 |
| Other | 5 (83) | 1 (17) | (0) | (0) | (0) | 6 |
| Jogging | **1 (50)** | **1 (50)** | (0) | (0) | (0) | 2 |
| Windsurfing | (0) | (0) | (0) | **1 (100)** | (0) | 1 |
| Fishing | (0) | (0) | (0) | **1 (100)** | (0) | 1 |
| Kite Flying | (0) | (0) | (0) | **1 (100)** | (0) | 1 |
| No main activity given | **5 (42)** | 4 (33) | (0) | 1 (8) | 2 (17) | 12 |
| Total | 184 (31) | **250 (43)** | 71 (12) | 78 (13) | 3 (1) | 586 |

## Frequency of Visit

3.22 Across all groups interviewed over one third (34%) visited most days, i.e. at least 180 visits per annum (Table 7). Dog walkers accounted for a particularly large proportion of the groups that visited most days; around one fifth (19%) of all the groups interviewed (113 groups) were dog walkers who visited most days. Walkers tended to visit on a more weekly basis, with 26% of walkers visiting most days and another 24% tending to visit 1-3 times per week.

**Table 7: Numbers (%) of groups and frequency of visit. Figures in bold highlight the frequency category with the highest number of groups for each activity.**

| Main Activity | Frequency of Visit | | | | | | | Total |
|---|---|---|---|---|---|---|---|---|
| | Most days | 1-3 times per week | 2-3 times per month | Once a month | Less than once per month | Don't know / first time | No frequency given | |
| Dog Walking | **113 (50)** | 49 (22) | 15 (7) | 18 (8) | 16 (7) | 12 (5) | 2 (1) | 225 |
| Walking | **49 (26)** | 46 (24) | 17 (9) | 24 (13) | 31 (16) | 23 (12) | 1 (1) | 191 |
| Cycling | **16 (31)** | 12 (23) | 6 (12) | 9 (17) | 5 (10) | 4 (8) | (0) | 52 |
| Birdwatching | 3 (8) | 3 (8) | 3 (8) | **11 (29)** | 8 (21) | 8 (21) | 2 (5) | 38 |
| Kitesurfing | 4 (17) | **8 (35)** | 5 (22) | 3 (13) | 1 (4) | 2 (9) | (0) | 23 |
| Boating | **7 (39)** | 5 (28) | 2 (11) | 2 (11) | 2 (11) | (0) | (0) | 18 |
| Family outing | (0) | 4 (25) | (0) | 3 (19) | **6 (38)** | 2 (13) | 1 (6) | 16 |
| Other | (0) | 3 (50) | 1 (17) | (0) | 2 (33) | (0) | (0) | 6 |
| Jogging | **1 (50)** | **1 (50)** | (0) | (0) | (0) | (0) | (0) | 2 |
| Windsurfing | (0) | **1 (100)** | (0) | (0) | (0) | (0) | (0) | 1 |
| Fishing | (0) | (0) | (0) | (0) | (0) | **1 (100)** | (0) | 1 |
| Kite Flying | **1 (100)** | (0) | (0) | (0) | (0) | (0) | (0) | 1 |
| No main activity given | **4 (33)** | 1 (8) | 1 (8) | 3 (25) | 1 (8) | (0) | 2 (17) | 12 |
| Total | 198 (34) | 133 (23) | 50 (9) | 73 (12) | 72 (12) | 52 (9) | 8 (1) | 586 |

## Time of day

3.24 There was relatively little variation in the time of day that people visited (Table 8). By far the highest percentage of people responded that they didn't visit at a particular time (or didn't know / visiting for the first time). For those that did indicate a time, the highest percentage of visitors (by a very small margin) was the 0900 – 1200 period, when 18% of interviewees stated that they tended to visit. Interestingly some 16% of interviewees visited before 0900 and 9% after 1700. Given the winter daylight hours, these frequencies would suggest that there are relatively even visitor numbers throughout the daylight hours in the winter. Dog walkers were the main visitors in the early morning (60% of the interviewees that indicated they visited most at this time were dog walkers, significantly more than other activities: $\chi^2 = 15.75$, 1 df, $p<0.001$). Similarly with the post 1700 time period, dog walkers accounted for a disproportionate number of the interviewees who stated they tended to visit more during this time period ($\chi^2 = 8.95$, 1 df, $p=0.003$).

**Table 8: Time of day and numbers (%) of groups and people. Percentages are calculated based on the number of groups interviewed (586) and number of people in the groups (1138) rather than the number of responses, as interviewees could indicate multiple time periods.**

| Time of day | Groups | People |
|---|---|---|
| Before 09;00 | 93 (16) | 135 (12) |
| 09:00 – 12:00 | 108 (18) | 207 (18) |
| 12:00 – 15:00 | 74 (13) | 174 (15) |
| 15:00-17:00 | 89 (15) | 189 (17) |
| After 17:00 | 52 (9) | 87 (8) |
| Don't know / first visit / no particular time | 320 (55) | 654 (57) |
| Total number of interviews / people | 586 | 1138 |

3.25 Figure 4 shows the number of people interviewed from each category of resident according to the time of day. More visitors from East Devon and Teignbridge were interviewed in the morning while more Exeter residents were interviewed in the afternoon (with the 3-5pm period being the peak time for Exeter residents). Non-local day visitors appear to peak in the middle of the day while more people visiting friends and family and 'others' were interviewed in the 9am-12 period. Simply comparing the residents from the three local authority districts, the differences were not significant ($\chi^2$ = 0.689, p=0.548).

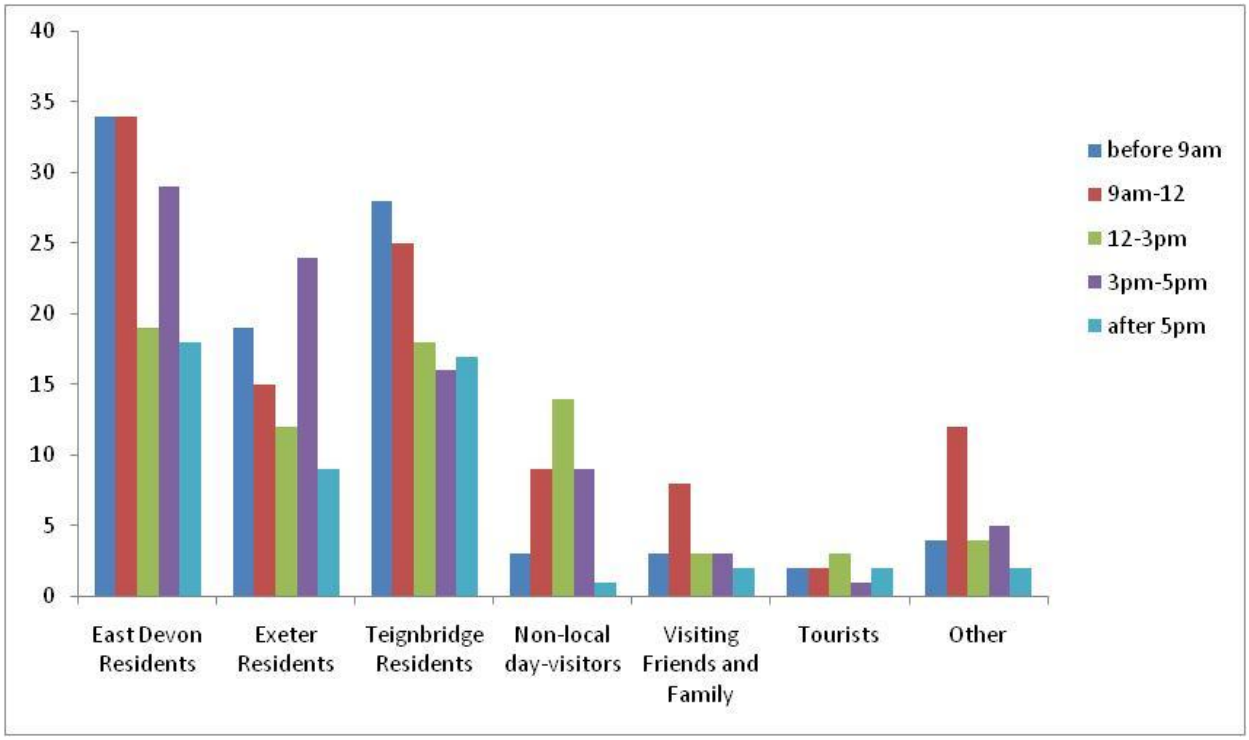


**Figure 4: Timing of visits to the Exe estuary according to user group by total number of people (group size)**

## Weekends and Weekdays

3.26 At the standard survey locations survey effort was split equally between weekdays and weekends, with 32 two-hour counts undertaken at each location. For virtually all time periods and all sites there were more people counted entering the site at weekends when compared to the weekdays (Table 9) (paired T = -6.55, $p<0.001$). Across all sites the ratio of people during the weekdays compared to the weekends was roughly 1:3, with 32% of the people entering the sites counted on weekdays and 68% on weekend days. Across all sites, group size was significantly larger at the weekend (weekday median = 1, weekend median = 2, Mann-Whitney W=5886.5, $p<0.001$).

**Table 9: Numbers of people entering sites per time period on weekdays (Wd) and weekend days (We).**

| Row Labels | 07:30 | | 10:00 | | 12:30 | | 15:00 | | Total |
|---|---|---|---|---|---|---|---|---|---|
| | Wd | We | Wd | We | Wd | We | Wd | We | |
| Dawlish Warren | 13 | 22 | 46 | 67 | 34 | 70 | 28 | 48 | 328 |
| Duck Pond | 14 | 15 | 19 | 28 | 17 | 27 | 13 | 23 | 156 |
| Exmouth Sea Front | 5 | 33 | 14 | 52 | 14 | 48 | 17 | 28 | 211 |
| Lympstone | 6 | 9 | 15 | 15 | 3 | 20 | 5 | 20 | 93 |
| Powderham | 2 | 10 | 8 | 23 | 1 | 16 | 1 | 8 | 69 |
| Starcross | 10 | 2 | 14 | 66 | 24 | 39 | 18 | 25 | 198 |
| Topsham | 14 | 14 | 24 | 28 | 10 | 27 | 15 | 32 | 164 |
| Turf | 5 | 15 | 21 | 29 | 11 | 42 | 10 | 22 | 155 |
| **Total** | **69** | **120** | **161** | **308** | **114** | **289** | **107** | **206** | **1374** |

## Time of Year

3.27 The majority of interviewees stated that they visited all year round, with 57% of groups (54% of people) stating that they did not tend to visit more at a particular time of year and visited all through the year. Of those that did tend to visit more at a particular time of year 17% of interviewees stated that they tended to visit more in the summer. A roughly similar number (15%) stated that they tended to visit more in the winter. Perhaps not surprisingly, it was a significantly higher proportion of dog walkers (compared to other users) who tended to visit more in the winter ($\chi^2 = 7.23$, 1 df, $p=0.007$); nearly a fifth of dog walkers (21%) stated that they visited more in the winter, a time of year when access restrictions for dog walkers on the beaches are lifted. A relatively high proportion of dog walkers also stated that they tended to visit all year round, but compared to other users there was no significant difference between the two groups ($\chi^2 = 3.74$, 1 df, $p=0.053$).

**Table 10: Time of year that people tended to visit most, and numbers (%) of groups and people. Percentages are calculated based on the number of groups interviewed (586) and number of people in the groups (1138).**

| Season | Groups | People |
|---|---|---|
| Spring | 57 (10) | 116 (10) |
| Summer | 98 (17) | 193 (17) |
| Autumn | 28 (5) | 50 (4) |
| Winter | 90 (15) | 189 (17) |
| Don't know | 57 (10) | 136 (12) |
| Same all year | 334 (57) | 615 (54) |
| Total number of interviews / people | 586 | 1138 |

## Factors influencing choice of site

3.28 Question nine of the questionnaire addressed the factors influencing interviewee's specific choice of site to visit. Factors were coded by the surveyor, and 559 interviewees gave answers that were coded. For many of these interviewees there were multiple reasons behind their choice: for 190 interviewees there was a second reason coded, for 48 of these there was also a third reason and for nine of these a fourth reason. This therefore resulted in 806 coded reasons for site selection, from the total of 502 interviews.

3.29 This total of 806 is summarised in Table 11, which also provides a breakdown by activity. The most common reason given by interviewees related to the attractiveness of the scenery, with 195 (24%) of the responses given being coded as relating to attractive scenery. The second most common reason related to proximity to home, indicating that a large proportion (particularly dog walkers) visit the Exe 'due to it's proximity to where they live'. We summarise the results according to where people live/travel from in Table 12. Simply taking the residents of the three local authorities, there were some significant differences. A greater proportion of Exeter residents visited for the attractive scenery and because it was the right place for their activity; proximity to home was a factor for Exeter and East Devon residents whereas short travel time seemed important for residents of Teignbridge District. Dog walking issues were particularly important for East Devon residents, with 'good for the dog' and the 'ability to let the dog off a lead' popular responses.

**Table 11: Factors influencing why people chose the specific location where interviewed. Categories (rows) coded by the surveyor during the interview. Cells in grey highlight the most frequently cited reason within each column.**

| | Activity | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Dog Walking | Walking | Jogging | Family outing | Cycling | Birdwatching | Windsurfing | Kitesurfing | Boating | Fishing | Kite Flying | Other | No activity recorded | Total |
| Attractive scenery / views | 61 | **84** | **2** | **7** | **29** | 2 | 0 | 2 | 3 | **1** | 0 | 1 | 3 | **195** |
| Close to home | **67** | 54 | 1 | 2 | 8 | 4 | 0 | 6 | 6 | 0 | 0 | **2** | **6** | 156 |
| Short travel time from home | 41 | 29 | 0 | 0 | 8 | 2 | 0 | 4 | 2 | 0 | 0 | **2** | 0 | 88 |
| Right place for activity | 9 | 16 | 0 | 2 | 26 | 4 | 1 | **20** | **7** | 0 | **1** | 0 | 2 | 88 |
| Particular wildlife interest | 5 | 21 | 0 | 1 | 1 | **29** | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 58 |
| Good for dog | 55 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 55 |
| Substrate type | 31 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 42 |
| Ability to let dog off lead | 34 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 34 |
| Don't know / others in party chose | 10 | 13 | 0 | 4 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 29 |
| Refreshments / cafe / pub | 8 | 12 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 22 |
| Good / easy parking | 5 | 4 | 0 | 1 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 1 | 2 | 15 |
| Feel safe here / safety issues | 1 | 1 | 0 | 0 | 4 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 9 |
| Choice of routes / different circuits | 0 | 5 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| Suitability given weather conditions | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| Toilets | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| Particular launching facilities | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 2 |
| **Total** | 328 | 256 | 3 | 18 | 80 | 41 | 1 | 35 | 22 | 1 | 1 | 6 | 14 | 806 |

**Table 12: Factors relating to ' What makes you come here rather than another local site?' according to categories of local resident. The values in brackets are the percentage of responses per response option per user category. Grey shading highlights significant differences in the proportion of East Devon, Exeter and Teignbridge residents giving the reason ($\chi 2$ test; single asterisk, $p<0.05$; double asterisk, $p<0.01$).**

| Reason underpinning site choice | East Devon Residents | Exeter Residents | Teignbridge Residents | Non-local day-visitors | Visiting Friends and Family | Tourists | Other | Total |
|---|---|---|---|---|---|---|---|---|
| Attractive scenery / views** | 64 (35) | 49 (46) | 29 (26) | 22 (29) | 6 (33) | 15 (31) | 10 (24) | 195 (33) |
| Close to home** | 69 (38) | 38 (36) | 23 (20) | 6 (8) | 4 (22) | 7 (15) | 9 (21) | 156 (27) |
| Short travel time from home* | 27 (15) | 13 (12) | 26 (23) | 8 (11) | 4 (22) | 4 (8) | 6 (14) | 88 (15) |
| Right place for activity** | 20 (11) | 26 (25) | 14 (12) | 20 (26) | 1 (6) | 4 (8) | 3 (7) | 88 (15) |
| Particular wildlife interest | 10 (5) | 7 (7) | 12 (11) | 21 (28) | 1 (6) | 4 (8) | 3 (7) | 58 (10) |
| Good for dog* | 27 (15) | 9 (8) | 7 (6) | 3 (4) | 1 (6) | 3 (6) | 5 (12) | 55 (9) |
| Substrate type | 19 (10) | 8 (8) | 7 (6) | 3 (4) | 0 (0) | 2 (4) | 3 (7) | 42 (7) |
| Ability to let dog off lead* | 23 (13) | 3 (3) | 3 (3) | 1 (1) | 0 (0) | 1 (2) | 3 (7) | 34 (6) |
| Don't know / others in party chose | 1 (1) | 3 (3) | 5 (4) | 4 (5) | 4 (22) | 8 (17) | 4 (10) | 29 (5) |
| Refreshments / cafe / pub | 3 (2) | 6 (6) | 5 (4) | 4 (5) | 0 (0) | 2 (4) | 2 (5) | 22 (4) |
| Good / easy parking | 3 (2) | 2 (2) | 2 (2) | 7 (9) | 0 (0) | 0 (0) | 1 (2) | 15 (3) |
| Feel safe here / safety issues | 0 (0) | 4 (4) | 1 (1) | 2 (3) | 0 (0) | 0 (0) | 2 (5) | 9 (2) |
| Choice of routes / different circuits | 0 (0) | 1 (1) | 0 (0) | 2 (3) | 1 (6) | 2 (4) | 0 (0) | 6 (1) |
| Suitability given weather conditions | 0 (0) | 2 (2) | 1 (1) | 1 (1) | 0 (0) | 0 (0) | 0 (0) | 4 (1) |
| Toilets | 0 (0) | 0 (0) | 1 (1) | 1 (1) | 0 (0) | 0 (0) | 1 (2) | 3 (1) |
| Particular launching facilities | 0 (0) | 0 (0) | 0 (0) | 0 (0) | 0 (0) | 2 (4) | 0 (0) | 2 (0) |
| Total | 183 (100) | 106 (100) | 113 (100) | 76 (100) | 18 (100) | 48 (100) | 42 (100) | 586 (100) |

## Effectiveness of mitigation measures

3.33 Visitors were asked to consider a number of hypothetical changes to the estuary and asked whether they would then spend more or less time visiting the estuary (question 12). The responses are summarised in Table 13. For most changes the largest proportion of people interviewed stated that they would not change the amount of time they spent, or felt that they didn't know. The one factor that did seem to potentially make a difference was how busy the site was, with well over half (67%) of people interviewed stating that they would spend less time on the Exe if it was busier.

**Table 13: Responses to different changes to the Exe and number (%) of visitors that would spend more or less time on the site.**

| | Groups | | | | People | | | |
|---|---|---|---|---|---|---|---|---|
| **Changes** | **Spend more time** | **Spend less time** | **Neither / don't know or blank** | **Total** | **Spend more time** | **Spend less time** | **Neither / don't know or blank** | **Total** |
| Site is busier with more people | 4 (1) | 338 (67) | 244 (49) | 586 | 12 (1) | 658 (68) | 468 (48) | 1138 |
| Better path surfaces or routes | 249 (50) | 20 (4) | 317 (63) | 586 | 483 (50) | 35 (4) | 620 (64) | 1138 |
| Parking charges introduced or increased | 7 (1) | 192 (38) | 387 (77) | 586 | 17 (2) | 430 (44) | 691 (71) | 1138 |
| Dogs required to be on leads | 132 (26) | 182 (36) | 272 (54) | 586 | 251 (26) | 322 (33) | 565 (58) | 1138 |
| Presence of warden / beach manager | 114 (23) | 21 (4) | 451 (90) | 586 | 251 (26) | 33 (3) | 854 (88) | 1138 |
| Part of shore closed in areas sensitive for wildlife | 124 (25) | 71 (14) | 391 (78) | 586 | 257 (26) | 129 (13) | 752 (77) | 1138 |

3.34 Interviewees were also asked what features would be necessary to make another site attractive for them to use (for their given activity) instead of the location where interviewed. Around one third of all people (34% of groups) indicated that there was nothing that would attract them to other sites (Table 14). There were significant differences between activities (grouped as "dog walkers", "walkers" and "all others") in the proportion of people interviewed for which there was nothing that could be done to draw them to another site ($\chi^2 = 9.4$, 2 df, $p=0.009$). Dog walkers were the group for which the highest proportion of interviewees felt something could be done to draw them elsewhere.

3.35 The most commonly cited change was making sites more dog friendly, with 15% of all interviewees indicating this as an important feature. Not surprisingly most of these were dog walkers, with 38% of dog walkers interviewed suggesting that making other sites more dog friendly would potentially make other sites more attractive for them to visit. Comments relating to 'dog-friendliness' help to define what aspects are seen as making sites more friendly for dogs. Comments included more space, enclosed space (i.e. safe areas to let dogs off leads, with roads etc. fenced), dog bins, presence of a dog warden, less wildlife, less mud, ability to let dogs off leads, longer walkers and no restrictions.

3.36 Better path surfacing was also a feature cited by relatively high proportion of interviewees. Across all groups interviewed, 12% of groups indicated this as an important feature.

**Table 14: Responses to question 13, the numbers (%) of people and features of another site that would make another site more attractive for them to visit.**

| Features | Total | | Dog Walkers | | Walkers | | Others | |
|---|---|---|---|---|---|---|---|---|
| | Groups | People | Groups | People | Groups | People | Groups | People |
| Nothing / no changes possible | 201 (34) | 380 (33) | 67 (30) | 112 (28) | 82 (43) | 162 (39) | 52 (31) | 106 (32) |
| More dog friendly | 87 (15) | 154 (14) | 85 (38) | 149 (38) | 1 (1) | 3 (1) | 1 (1) | 2 (1) |
| Better launching / access to water | 15 (3) | 29 (3) | 1 (0) | 3 (1) | 1 (1) | 2 (0) | 13 (8) | 24 (7) |
| Better path surfacing | 73 (12) | 139 (12) | 14 (6) | 28 (7) | 27 (14) | 51 (12) | 32 (19) | 60 (18) |
| Refreshments | 40 (7) | 99 (9) | 9 (4) | 22 (6) | 18 (9) | 44 (11) | 13 (8) | 33 (10) |
| Better information | 5 (1) | 8 (1) | 0 (0) | 0 (0) | 3 (2) | 3 (1) | 2 (1) | 5 (2) |
| Measures to control other users | 29 (5) | 47 (4) | 15 (7) | 20 (5) | 5 (3) | 10 (2) | 9 (5) | 17 (5) |
| Toilets | 32 (5) | 71 (6) | 8 (4) | 16 (4) | 12 (6) | 31 (8) | 12 (7) | 24 (7) |
| Better / easier parking | 23 (4) | 51 (4) | 3 (1) | 7 (2) | 6 (3) | 14 (3) | 14 (8) | 30 (9) |
| Cheaper / free parking | 19 (3) | 57 (5) | 5 (2) | 18 (5) | 7 (4) | 19 (5) | 7 (4) | 20 (6) |
| Closer to home | 26 (4) | 48 (4) | 12 (5) | 19 (5) | 8 (4) | 16 (4) | 6 (4) | 13 (4) |
| Attractive scenery | 49 (8) | 97 (9) | 20 (9) | 36 (9) | 18 (9) | 41 (10) | 11 (6) | 20 (6) |

## Mode of Transport

3.37 Around two thirds of visitors (a minimum of 60% of groups and 69% of people) had travelled to the site (where interviewed) by car, with around another third (a minimum of 29% of groups, 23% of people) arriving on foot. A small number of people had arrived by bicycle (around 4% of groups, 3% of people) and very small numbers (around 1% of groups and people) had arrived by bus and a similar number by train. The mode of transport was not recorded for 4% of groups (3% of people).

3.38 Starcross was the only interview location (of the eight main survey sites) where all visitors that were interviewed arrived by car (Figure 5). Lympstone was the site with the highest number of foot visitors, and the Exmouth sites (the Duck Pond and the Sea Front) also had relatively high numbers of foot visitors compared to other sites. The Turf was the location where the most people had come by bike.

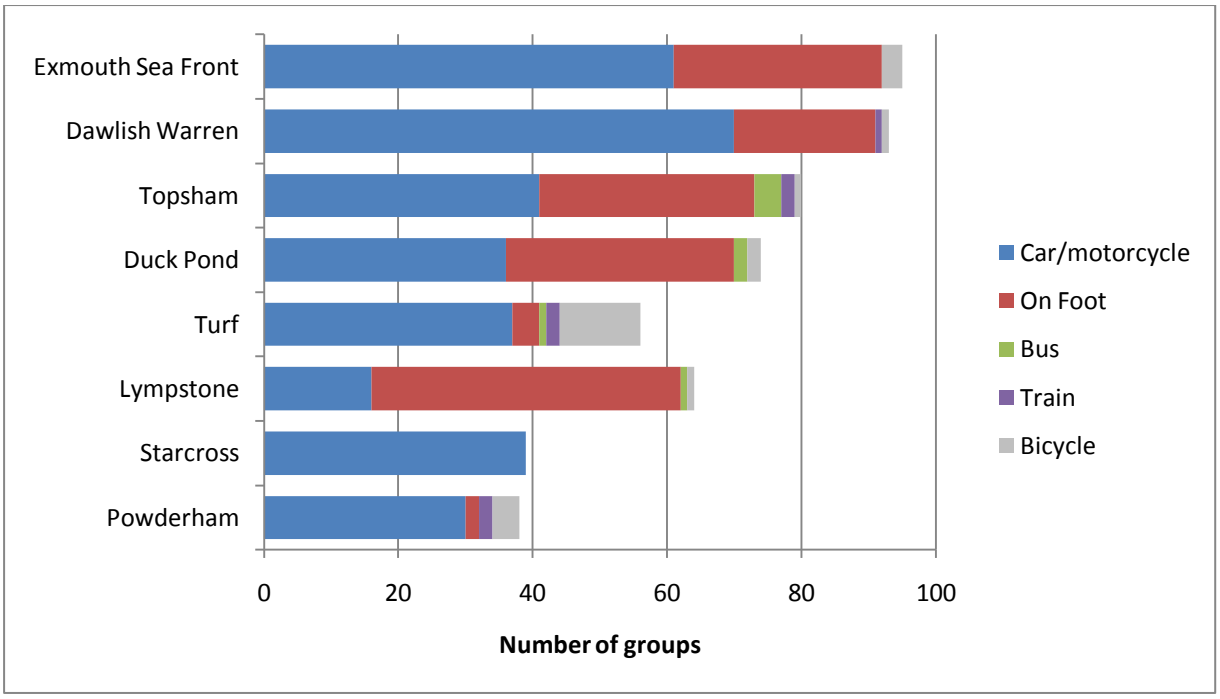


**Figure 5: Numbers of groups interviewed at each site and mode of transport.**

3.39 A relatively high proportion of dog walkers tended to travel to sites on foot, with 41% of dog walkers arriving at the interview location on foot (Figure 6). For those visiting sites to go walking, roughly a third (35%) walked to the interview location rather than come by car (59% of walkers). Cyclists, perhaps not surprisingly, were the group with the highest proportion of groups arriving by bicycle; 38% of those groups that were cycling had travelled to the site by bike, while 29% had travelled to the site by car and brought their bike with them on/inside the vehicle. Very few cyclists (4% of groups) had brought their bike on the train.

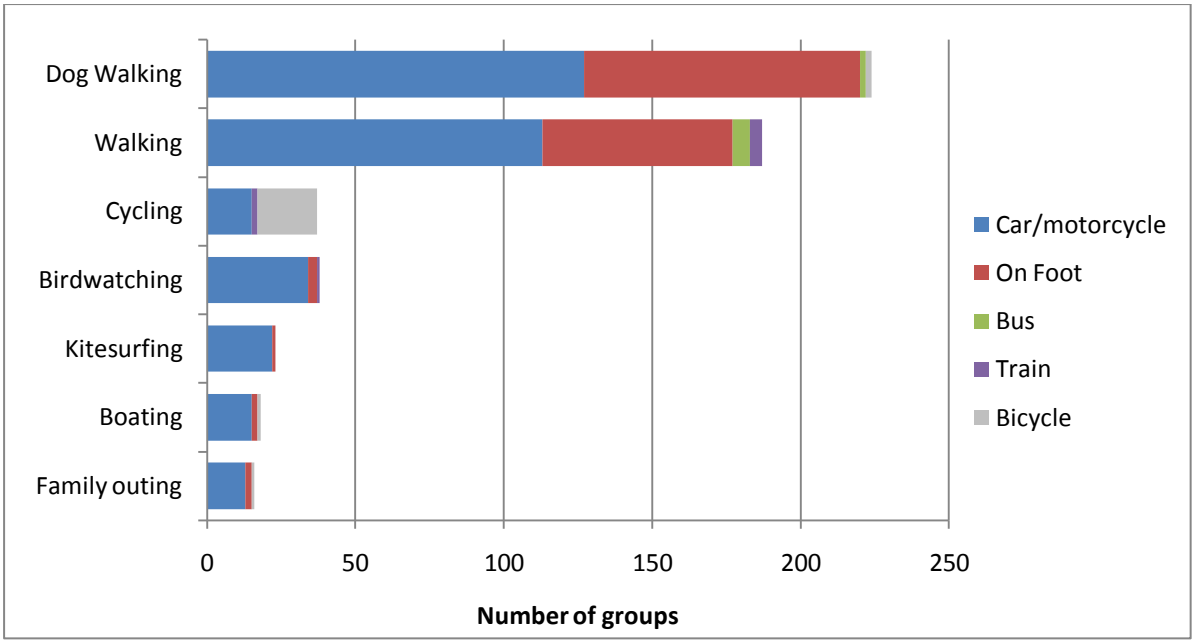


**Figure 6: Numbers of groups interviewed by activity, split by mode of transport. Only activities with a reasonable sample size are shown.**

## The 'Draw' of the Estuary: Where visitors come from and how far they travel

3.40 Map 6, Figure 7 and Table 15 show the proportion of local residents at each of the standard survey locations. As might be expected, East Devon residents tend to visit the eastern shore of the estuary and Teignbridge residents tend to visit the western shore. Topsham (the survey location) within the Exeter district received the highest percentage of visitors from Exeter local residents.

3.41 The survey locations on the west side (Teignbridge) of the estuary tended to have a higher proportion of visitors who were categorised as 'non- local day trippers' and tourists' in comparison to the survey locations on the east side of the estuary. This suggests that either the locations of the west of the estuary are more popular with non-local day trippers and tourists or that such visitors tend to come from the west rather than the east.

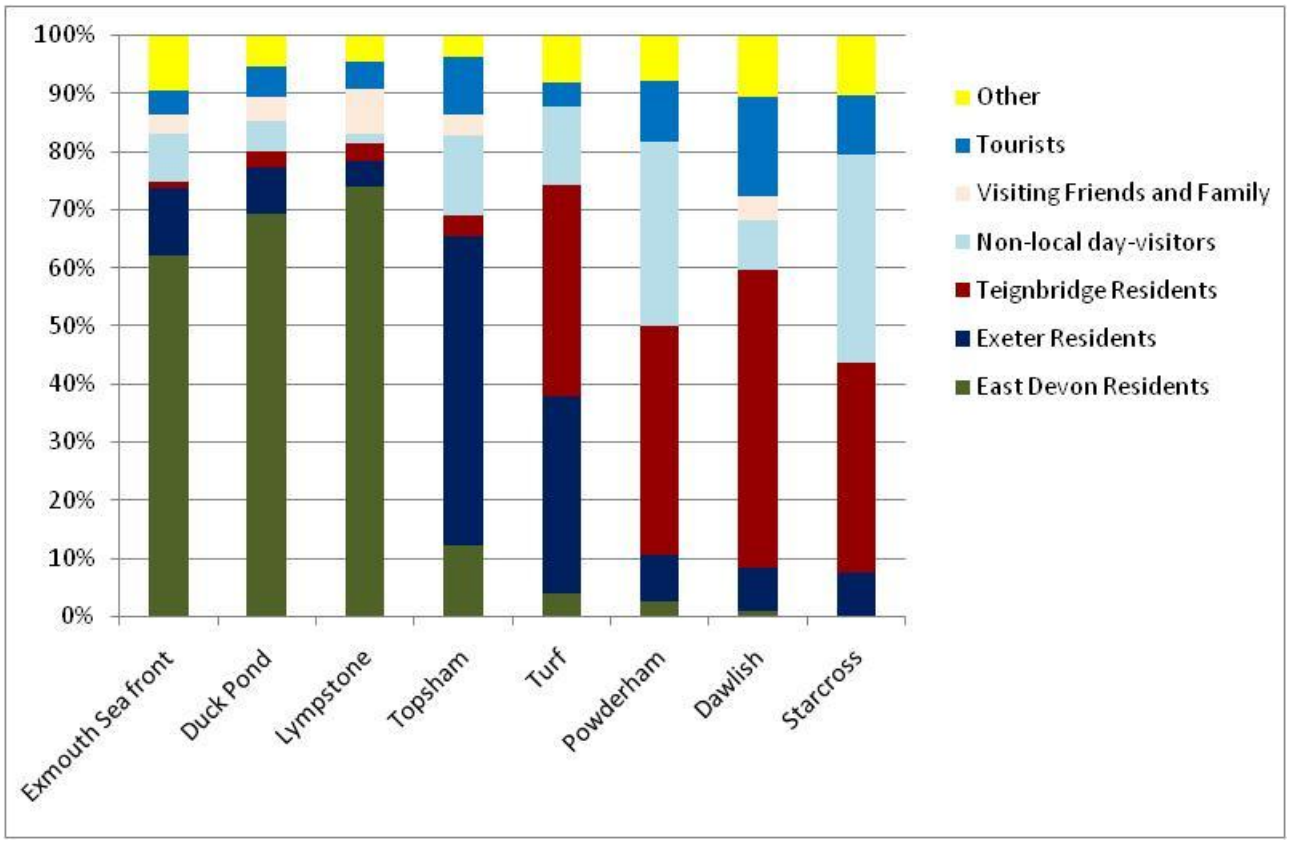


**Figure 7: The survey locations visited by different user groups from the Exe visitor monitoring during Winter 2009/2010. Standard survey locations only.**

**Table 15: Numbers (%) of visitors at different locations according to different categories of visitor. Bold is used to highlight locations where at least 25% of a given category of visitor occur. Grey rows highlight standard survey locations.**

| Location | East Devon Residents | Exeter Residents | Teignbridge Residents | Non-local day-visitors | Visiting Friends and Family | Tourists | Other | Total |
|---|---|---|---|---|---|---|---|---|
| Exmouth Sea front | **59 (32)** | 11 (10) | 1 (1) | 8 (11) | 3 (17) | 4 (8) | 9 (21) | 95 (16) |
| Exmouth slipway | 4 (2) | 1 (1) | 0 (0) | 1 (1) | 0 (0) | 2 (4) | 0 (0) | 8 (1) |
| Exmouth duck pond slipway | 4 (2) | 4 (4) | 1 (1) | 7 (9) | 0 (0) | 0 (0) | 0 (0) | 16 (3) |
| Duck Pond | **53 (29)** | 6 (6) | 2 (2) | 4 (5) | 3 (17) | 4 (8) | 4 (10) | 76 (13) |
| Lympstone | **48 (26)** | 3 (3) | 2 (2) | 1 (1) | **5 (28)** | 3 (6) | 3 (7) | 65 (11) |
| Topsham | 10 (5) | **43 (41)** | 3 (3) | 11 (14) | 3 (17) | 8 (17) | 3 (7) | 81 (14) |
| Turf | 3 (2) | **25 (24)** | 27 (24) | 10 (13) | (0) | 3 (6) | 6 (14) | 74 (13) |
| Powderham | 1 (1) | 3 (3) | 15 (13) | 12 (16) | (0) | 4 (8) | 3 (7) | 38 (6) |
| Dawlish | 1 (1) | 7 (7) | **48 (42)** | 8 (11) | 4 (22) | **16 (33)** | 10 (24) | 94 (16) |
| Starcross | 0 (0) | 3 (3) | 14 (12) | 14 (18) | 0 (0) | 4 (8) | 4 (10) | 39 (7) |
| Total | 183 (100) | 106 (100) | 113 (100) | 76 (100) | 18 (100) | 48 (100) | 42 (100) | 586 (100) |

3.42 Travel distances according to mode of transport are summarised in Figure 8. The majority of car drivers are coming from within 31km (the top of the green boxes represents the third quartile, i.e. 75% of the data has a value equal or below this level, for car drivers this third quartile is at 31km). People travelling by foot and by bicycle are typically coming from much closer distances. For those arriving by car, foot, bus or train there are also a number of records of people with home postcodes that are hundreds of kilometres from the survey location. These are holiday makers.

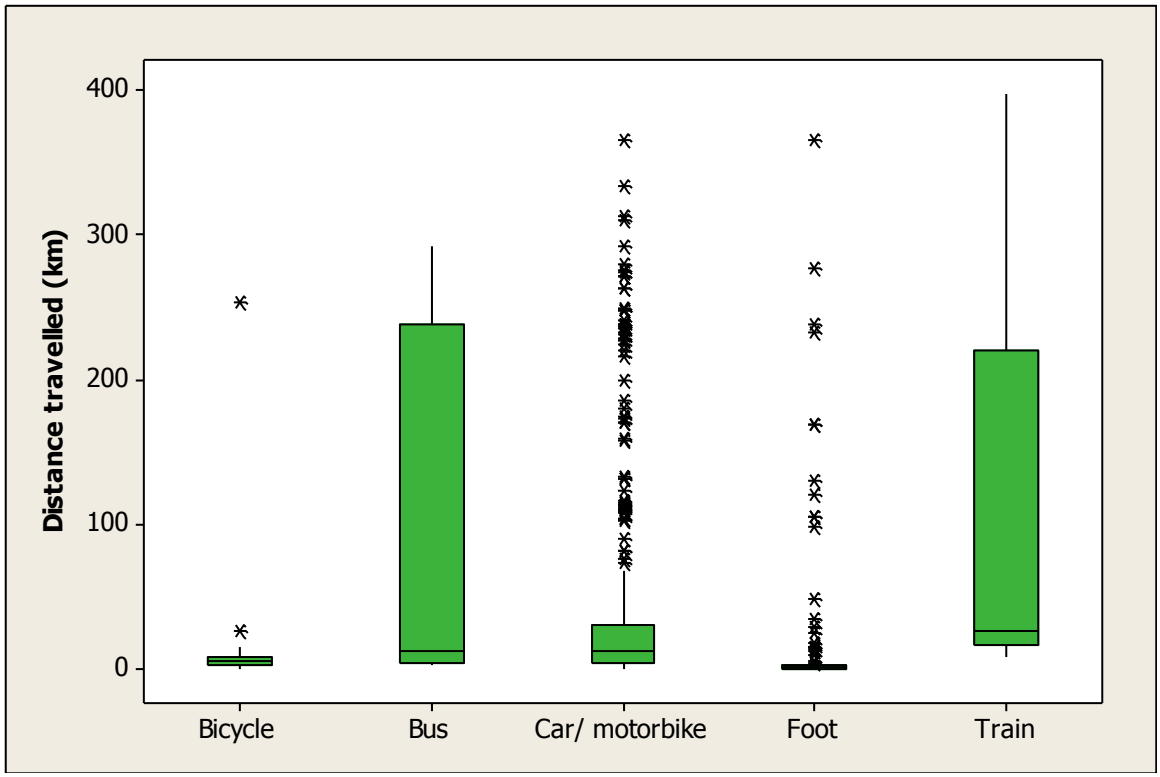


**Figure 8: Boxplot summarising travel distances (in km) for all interviews where the home location for the interviewee was identified, either by postcode (n=523) or where the town was given and manually entered in the GIS (n=12).**

3.43 The data for those visiting on a short day trip / short visit directly from their home are summarised in Table 16.

**Table 16: Travel distances for those people who were visiting directly from their home, on a short visit or day trip, split by mode of transport. Distances were calculated as the linear distance from the home postcode (or centre of home town) to the survey location.**

| Mode of Transport | Count | Range (km) | Median (km) |
|---|---|---|---|
| Car | 299 | 0.16-366.7 | 9.8 |
| Foot | 154 | 0.06-169.34 | 0.72 |
| Bus | 5 | 2.42-16.7 | 16.70 |
| Train | 6 | 7.5-219.9 | 24.2 |
| Bicycle | 22 | 0.47-25.74 | 5.88 |

3.44 Taking just the people travelling from home, for a day trip or short visit, Figure 9 shows the distance between the survey location and home postcode as cumulative percentages, by mode of transport. This plot essentially highlights the distances at which people are travelling to visit the estuary. The percentages are also summarised in

Table 17; it can be seen that 67% of people travelling on foot live at postcodes that are within 1km of the estuary. By contrast for people arriving by car just over half (51%) live within 10km (linear distance) from the estuary.

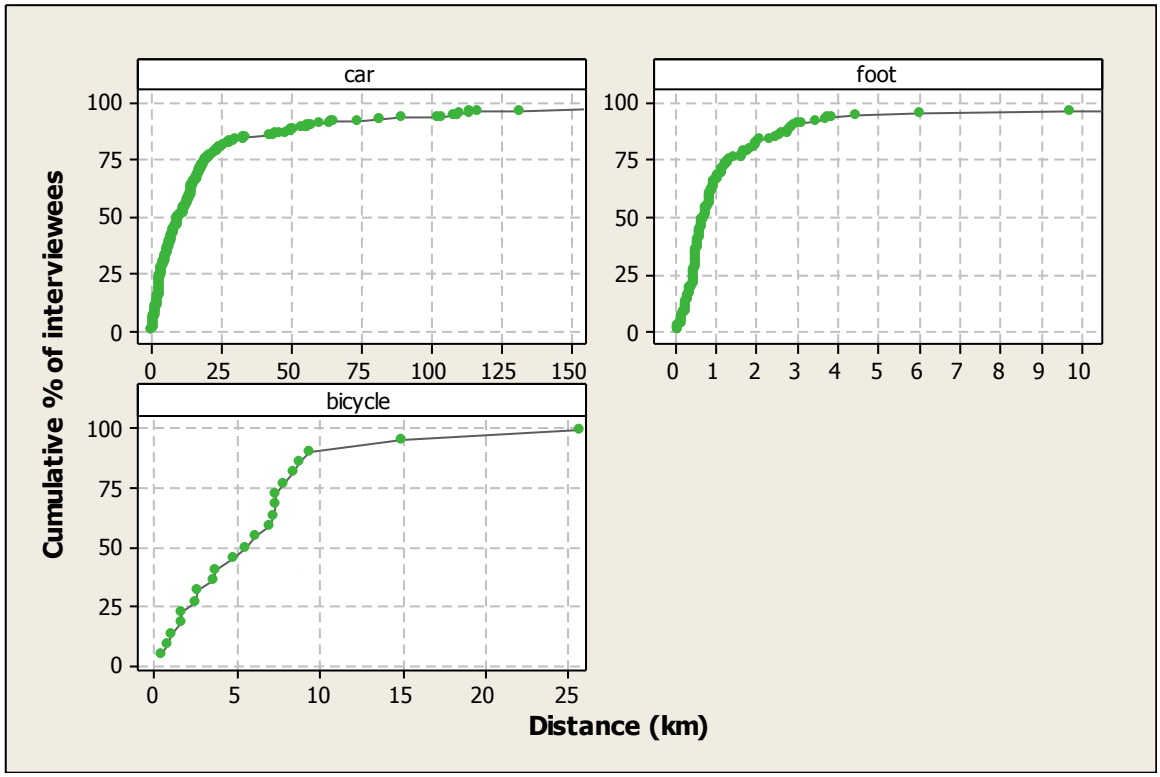


**Figure 9: Frequency distribution showing the cumulative percentage of interviewees with postcodes at given distances from the survey location. Data are for people visiting from home on a short trip or day trip only, and the data are split by mode of transport. Reference lines are given at 5, 10 and 20km.**

**Table 17: Percentage of interviewees and distance of home postcode from survey location. Data for people visiting from home on a short trip or day trip only, as in Figure 9.**

| | Distance | | | |
|---|---|---|---|---|
| | **1km** | **5km** | **10km** | **20km** |
| Bicycle | 13% | 46% | 92% | 98% |
| Car | 6% | 35% | 51% | 75% |
| Foot | 67% | 95% | 96% | 99% |

3.45 In Figure 10 the data relating to distance travelled are shown, split by activity, again just for those people visiting on a short trip or day trip from their homes. It can be seen that those undertaking boating, cycling, dog walking or jogging are all relatively local, whereas those visiting to birdwatch, kite surf, on an outing with family or to walk tend to live at greater distances from the survey location. The differences between these activities (i.e. the activities in Figure 10) and the distances travelled are significant (Kruskal-Wallis H=84.70; 7 df, p<0.001). These data are also shown in Map 5.

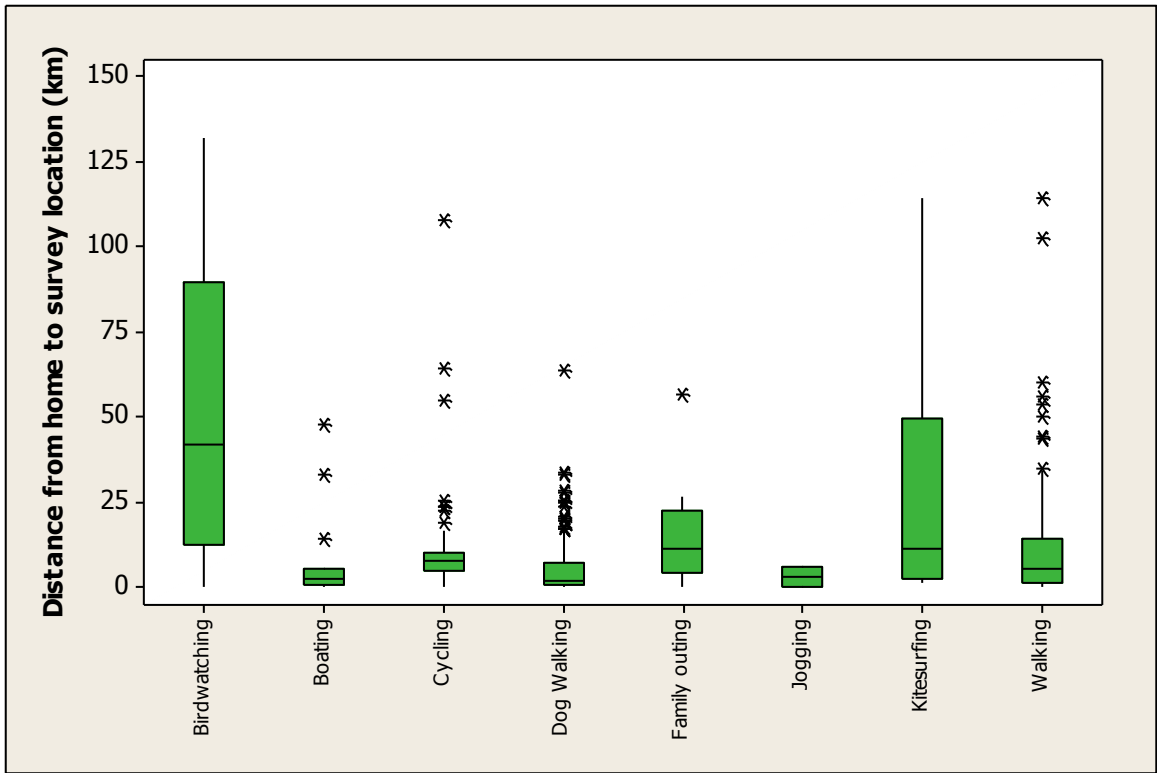


**Figure 10: Distance from home postcode to survey location, for people visiting on a short visit or day trip only, split by main activity undertaken during visit. Selected activities (with reasonable sample sizes) are shown. Y axis is truncated at 125km.**

3.46 Table 18 summarises the number of interviews with residents from main towns/villages in East Devon, Exeter and Teignbridge Districts. Totals are broken down by main activity type for each town. It can be seen that interviewees originated mostly from Exmouth, Exeter, Topsham and Dawlish. The highest number of dog walkers was from Exmouth. The kite surfers interviewed lived in Axminster, Exmouth, Exeter, Topsham and Teignmouth. Cyclists predominantly came from Exeter, walkers from Exmouth, Exeter and Topsham.

**Table 18: Numbers of interviewees from different towns in the three relevant Districts. Towns defined using OS Open Source Data (Built-up Areas). Totals give number of interviewees and main activity for each town.**

| | Bird watching | Boating | Cycling | Dog Walking | Family outing | Jogging | Kite Flying | Kite surfing | Walking | Windsurfing | Other | No activity recorded | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **East Devon** | | | | | | | | | | | | | |
| Axminster | | | | | | | | 1 | | | | | 1 |
| Budleigh Salterton | | | | 3 | | | | | | | | | 3 |
| Exmouth | 1 | 6 | 3 | 71 | | | 1 | 5 | 30 | 1 | | 1 | 119 |
| Honiton | 1 | | 1 | | 1 | | | | 1 | | | | 4 |
| Lympstone | 1 | 3 | | 7 | | | | | 6 | | | 1 | 18 |
| Ottery St.Mary | | | | | | | | | 1 | | | | 1 |
| Sidmouth | | | | 1 | | | | | 4 | | | | 5 |
| Whimple | | | | 1 | | | | | 1 | | | | 2 |
| Woodbury | | 1 | | 1 | | | | | | | | | 2 |
| **Total** | **3** | **10** | **4** | **84** | **1** | | **1** | **6** | **43** | **1** | | **2** | |
| **Exeter** | | | | | | | | | | | | | |
| Exeter | 1 | 1 | 21 | 16 | 1 | 1 | | 3 | 21 | | | 1 | 66 |
| Topsham | | | 1 | 8 | | | | 2 | 12 | | | | 23 |
| **Total** | **1** | **1** | **22** | **24** | **1** | **1** | | **5** | **33** | | | **1** | **89** |
| **Teignbridge** | | | | | | | | | | | | | |
| Bishopsteignton | | | | 1 | | | | | 1 | | | | 2 |
| Bovey Tracey | 1 | | | | | | | | | | | | 1 |
| Chudleigh | | | | 3 | | | | | | | | | 3 |
| Coldeast | | | | | | | | | 1 | | | | 1 |
| Dawlish | 2 | 1 | 3 | 12 | 1 | | | | 3 | | | | 22 |
| Dawlish Warren | | | | 9 | 1 | | | | 3 | | | | 13 |
| Exminster | | | 2 | 4 | | | | | 2 | | | | 8 |
| Heathfield/Bovey Heath | 1 | | | | | | | | | | | | 1 |
| Ipplepen | | | | | | | | | 1 | | | | 1 |
| Kenton | | | | 3 | | | | | 4 | | | | 7 |
| Kingsteignton | | | | 1 | | | | | 1 | | | | 2 |
| Newton Abbot | 1 | | 1 | | 1 | | | | | | | | 3 |
| Shaldon | | | | | | | | | 1 | | | | 1 |
| Starcross | | | 1 | 2 | | | | | 2 | | 1 | 2 | 8 |
| Tedburn St Mary | | | | | | | | | 1 | | | | 1 |
| Teignmouth | 3 | | 1 | 1 | 1 | | | 1 | 2 | | | | 9 |
| **Total** | **8** | **1** | **8** | **36** | **4** | | | **1** | **22** | | **1** | **2** | **83** |

While the totals of interviewees from each town, as summarised above, is useful in highlighting where people come from, it does not provide a means of assessing the relative impact of new

housing in each settlement as, of course, each settlement is a different size. In order to assess the effect of distance from estuary on visitor rates (and therefore the relative impact of development at different distances), we generated a series of concentric buffers ('bands') around the estuary using the GIS. We then calculated the number of residential properties within each band and also the number of interviewees whose home postcode fell within the band. Using these two figures it is possible to determine the number of people interviewed within the survey as a proportion of the number of residents. The resulting plot (Figure 11) would indicate that visit rates do decline quite markedly with distance. The proportion of residents interviewed dropped quite markedly with distance between 0 and 5km, and then beyond somewhere between 10 and 15km it appears that there is relatively little change in visitor rates, with a very small proportion of residents captured within the survey at distances above 15km.

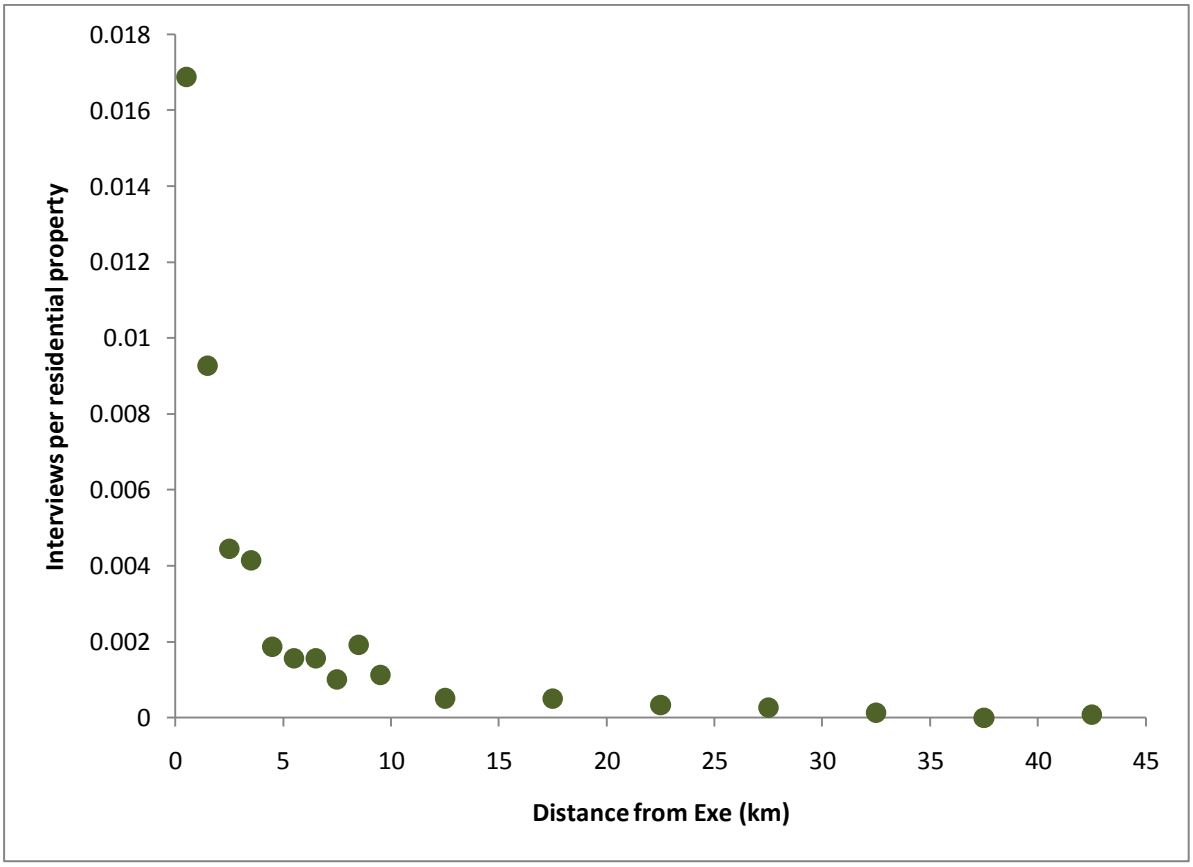


**Figure 11: Visitor rates in relation to distance. Visitor rates expressed as number of interviews per residential property. These rates calculated for successive distance bands drawn around the estuary (at bands of 1km interval in the range 1-10km and above 10km calculated at 5km intervals). Number of residential properties extracted from GIS using postcode data.**

## Routes

3.47 Visitors' routes were mapped as polylines within the GIS and the total length of each route calculated. These data are summarised in Figure 12, Table 20 and Table 20. The routes taken by visitors have been mapped per survey location (Maps 7 – 15) and Map 16 shows the routes taken by all visitors who were dog walking.

3.48 Boating was a broad category that encompassed a range of different activities and perhaps not surprisingly route lengths for those undertaking boating ranged widely,

from 41m to 29km. Taking just the main land-based activities (birdwatching, cycling, dog walking, family outings and walking) there were significant differences between the different activities in the length of their routes (Kruskal-Wallis H = 22.94, 4 df, $p < 0.001$), with family outings involving the shortest routes (median 1376m) and cyclists travelling the furthest (median = 1901m).

3.49 A total of 586 different routes were mapped. Of these, 147 routes did not go within 10m of the MHWM, for example people walking within the dunes at Dawlish Warren. Across all sites and all activities, 439 routes were at least in part within 10m of MHWM or below MHWM. As might be expected activities such as windsurfing, kite surfing and boating in virtually all instances involved people on the intertidal (Table 19), but perhaps surprisingly over half of all the dog walkers interviewed (56%) had walked on the intertidal.

3.50 Map 17 shows visitor density (plotted as number of groups within 25m cells) within Dawlish Warren SSSI. Visitor densities are highest in the dunes rather than on the beach, with visitor density seemingly concentrated (at least during the winter period) in the area between the car-park and the visitor centre and a little way further east of the visitor centre.

**Table 19: Number (%) of routes that encompass the beach and intertidal habitats by activity. The total number of routes is all the routes that were mapped. The number on beach is the number that went (at least in part) within 10m of MHWM. The number on intertidal is the number that went (at least in part) at least 10m below MHWM.**

| Row Labels | Total number of routes | Number on beach | Number on intertidal |
|---|---|---|---|
| Birdwatching | 38 | 21 (55) | 15 (39) |
| Boating | 18 | 15 (83) | 14 (78) |
| Cycling | 52 | 22 (42) | 4 (8) |
| Dog Walking | 225 | 177 (79) | 125 (56) |
| Family outing | 16 | 11 (69) | 5 (31) |
| Fishing | 1 | 1 (100) | 1 (100) |
| Jogging | 2 | 1 (50) | 1 (50) |
| Kite Flying | 1 | (0) | (0) |
| Kitesurfing | 23 | 23 (100) | 23 (100) |
| Walking | 191 | 157 (82) | 61 (32) |
| Windsurfing | 1 | 1 (100) | 1 (100) |

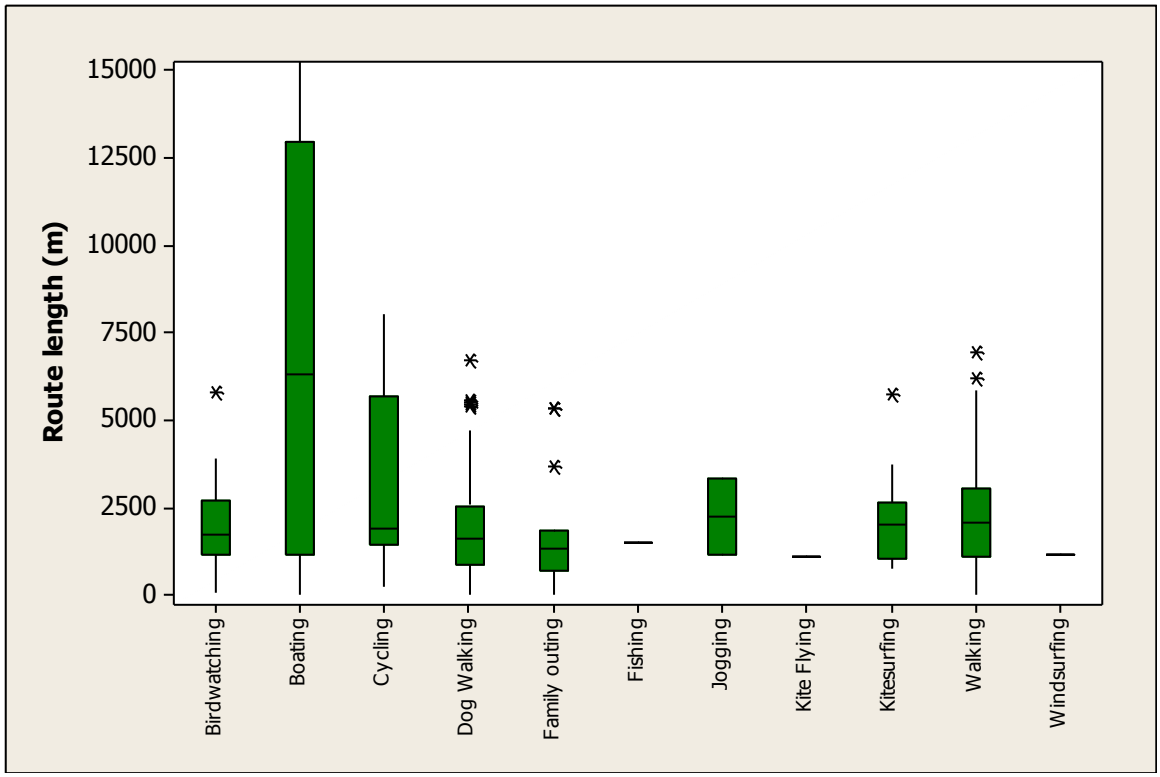


**Figure 12: Boxplots showing route data, per activity. Note that the y axis is truncated at 15km.**

**Table 20: Summary statistics relating to routes for each activity type.**

| Activity | Number of Routes | Route length (m) | | | |
|---|---|---|---|---|---|
| | | Mean (SE) | Min | Max | Median |
| **Birdwatching** | 38 | 1954 (202) | 81 | 5791 | 1741 |
| **Boating** | 18 | 8562 (2074) | 41 | 29833 | 6350 |
| **Cycling** | 52 | 3513 (351) | 256 | 8021 | 1901 |
| **Dog Walking** | 225 | 1842 (82) | 31 | 6723 | 1644 |
| **Family Outing** | 16 | 1825 (404) | 42 | 5379 | 1376 |
| **Fishing** | 1 | 1541 | 1542 | 1542 | 1541 |
| **Jogging** | 2 | 2267 (1076) | 1191 | 3343 | 2267 |
| **Kite Flying** | 1 | 1106 | 1106 | 1106 | 1106 |
| **Kite Surfing** | 23 | 2171 (247) | 797 | 5732 | 2056 |
| **Walking** | 191 | 2255 (106) | 11 | 6933 | 2087 |
| **Windsurfing** | 1 | 1196 | 1196 | 1196 | 1196 |

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# 4. Discussion

4.1 The data presented in this report provides a fascinating overview of winter recreational use on the Exe Estuary. Given the relatively small, discrete size of the estuary it has been possible to achieve a good level of coverage for the entire SPA, with all the main visitor locations around the estuary included in the survey.

4.2 The visitor information is of interest in its own right, but will be particularly powerful when combined with the results from the disturbance study (to be produced over the winter 2010/11). The disturbance work will identify which activities, at which locations and under what circumstances different activities are causing disturbance to wintering waterfowl on the estuary. This work will then put these activities into context, highlighting where people live, how they choose where to go, what features are important to them and where they tend to go during their visit. This information will provide a detailed and extensive evidence base to underpin Habitat Regulations Assessments relating to development and strategic planning in the areas around the Exe.

4.3 The approach of standard time periods coupled with focused sampling at key locations and times to boost the sample for particular activities seemed to work well, especially for activities such as kite surfing, where 23 were interviewed. The standard locations were chosen to provide directly comparable data, with sampling effort being standardised and therefore directly comparable. Where we directly compare between locations, it is data from these sites that is used. The 'boost' sessions were necessary because some types of activity, such as kite surfing or windsurfing take place in very specific locations and weather conditions.

4.4 The visitor survey work was focused in a relatively limited time period during the late winter. Were the work to have been commissioned during the summer, it is likely that the results would have been very different, but the results would have had little relevance to the SPA designation. The timing is important as the SPA is designated for it's wintering bird assemblage, and for two wintering bird species, slavonian grebe and avocet. The wintering bird assemblage builds up from the late summer (August), peaking in the mid winter. Many of the most abundant wintering species, such as brent goose and wigeon are only present in significant numbers from late October through to March. Peak numbers typically occur on southern estuary sites in January or February.

4.5 Visitor access patterns through the winter will probably vary, and therefore in order to fully understand recreational use in relation to the wintering birds, visitor survey work would have been ideally conducted throughout the winter. In particular the Christmas period, when many people are on holiday, would probably involve different levels of use and patterns of use. Running visitor surveys throughout the winter would however have been logistically complex and costly. By focusing on a relatively short period in February/March the results presented here are directly comparable between sites and did coincide with the period when bird numbers are high.

4.6 The fieldwork was limited to a selection of locations, chosen to capture a reasonable spread around the estuary, to include both sides of the estuary, and to include most of the main visitor locations. The survey points also largely coincided with the bird disturbance work, matching some of the points where the ornithological fieldwork has taken place. It is important to recognise that of course it was impossible to survey all locations. Therefore the results – such as the numbers of people from different local authorities – are for the sample locations rather than the estuary as a whole.

4.7 The sample size of 586 interviews provides a reasonable data set. Other visitor surveys designed to understand recreational access patterns on European Protected Sites and implications for strategic planning have relied on similar sample sizes generated from a much larger survey effort. For example the Dorset Heaths Visitor Survey (Clarke et al. 2006) followed nearly identical methods (16 hours per survey location) and analysed visitor data from 632 interviews, generated from twenty different survey locations. In this example the SPA is composed of multiple SSSIs spread over a wide geographic area, so the visitor survey locations were much more disparate when compared to the Exe. The data from the Dorset Heaths work has subsequently been used to underpin the design and implementation of various mitigation projects.

4.8 The results of the visitor work indicate how complex and varied the recreational use of the Exe Estuary is. There are a wide range of activities that take place, both on the shore and the water. Even in the winter there is a mix of local residents and tourists visiting the area. For each of these activities the distance people travel, where they go on the site and how people behave varies. The maps showing postcodes are particularly interesting and relevant to strategic planning. The maps show a relatively local distribution for some activities such as dog walking. For both kite surfing and cycling there are clearly strong links with Exeter and city residents utilising the Exe for their favoured sports. For activities such as bird watching and walking, the postcodes of visitors were widely scattered and included rural locations such as north Devon and the edge of Dartmoor, highlighting the more regional draw of the site for some activities.

4.9 The postcode maps also reflect the importance of the transport network, with a pattern of home postcodes along the motorways, spreading up towards Bristol and down towards Plymouth.

4.10 The route data shows where people have been during their visit. The map of the whole estuary and all the routes shows a complex 'spider's web' of routes and indicates how people spread out from the different interview sites. These routes may be particularly inaccurate for water-based activities taking place on the sea, due to the lack of features and landmarks. Activities such as kite surfing, where users tack and zig-zag over an area, will be particularly difficult to map in this fashion. However, with this caveat the data do provide a good indication of where people go and particularly for the shore based activities the lines show which types of activity take place on the intertidal zone (where there is most potential to disturb birds). The routes for Dawlish Warren have the potential to inform more detailed work on the SAC relating to trampling and visitor pressure.

## 5. Conclusions

5.1 The results show that the Exe Estuary is a busy site and widely used for recreation. At least 69% of the interviews were with residents of the three districts (East Devon, Exeter and Teignbridge). It is therefore clear that much of the winter recreational use of the estuary is undertaken by local residents.

5.2 Once the results of the disturbance study are available it will be possible to identify which – if any – activities are linked to likely significant effects on the SPA interest features (the wintering waterbird assemblage, avocet and slavonian grebe). It will be also able to identify which locations and when such activities are an issue. This understanding, linked to the results here should help inform the need for, and scale of, any mitigation measures.

5.3 An increase in the number of people living close to the estuary will be expected to result in increases in visitor use, out to around 10km from the estuary. Residents tend to visit the parts of the estuary nearest to them, at least for certain activities such as dog walking that are done on a regular basis. Within this 10km, the closer people live to the estuary the more they visit.

5.4 In general boating, cycling, dog walking, jogging and walking were activities where the interviewees were particularly local, although some walkers, cyclists and dog walkers also came from considerable distances too. People visiting to kite surf or for family outings tended to be a little less 'local' (although for both user groups the median distance travelled was still less than 15km). Birdwatchers tended to typically travel a bit further, with the median distance for this group being over 40km.

5.5 Around 39% of interviewees were visiting to walk their dog. Exmouth sites and Dawlish Warren were clearly popular with dog walkers. Many of those interviewed at the Exmouth sites also lived in Exmouth, some travelling on foot. Certainly around the Duck Pond area many walk on the intertidal habitats. Dog walkers in particular visit very regularly, often early morning and late afternoon and tend not to spend too long on their visit (92% of visits by dog walkers were less than 2 hours). Dog walkers were attracted to sites in part due to the proximity to the home location, sites being 'good for the dog' was also important.

5.6 Walkers accounted for around 38% of interviewees. Topsham was particularly popular with walkers. Walkers tended to spend anything from less than an hour to over three hours on their visit. Just under half of walkers were just visiting for 1-2 hours. Walkers, more than any other group, had chosen to visit the site where interviewed due to the attractive scenery.

5.7 Cyclists accounted for around 10% of use at the surveyed sites. Cyclists seemed to particularly come from Exeter, and typically (48% of cyclists interviewed) spent between 1-2 hours on site. Cyclists tended to visit most days or a few times a week. Attractive scenery was important in determining site choice for cyclists, but of almost equal

importance was the Exe being the right place for the activity – i.e. the marked cycle routes etc.

5.8 Kite surfers had travelled from Axminster, Exmouth, Exeter, Topsham and Teignmouth and some much further. Kite surfing is concentrated around Exmouth – near the Duck Pond or off the Maer, where the wind and other conditions tend to be ideal. Unsurprisingly the 'right place for the activity' was by far the main factor determining where kite surfers tended to surf. Kite surfers typically spent around 2-3 hours on site (78% spent less than 3 hours) and kite surfers tended to vary in how often they visited; just over half of those interviewed (52%) visited most days or 1-3 times per week, but around 13% also visited less than once per month or didn't know/were visiting for the first time.

5.9 Activities such as birdwatching are less likely to be linked to local housing. Birdwatchers for example tended not to visit the estuary very frequently and tended to live at greater distances (compared to those undertaking other activities) from the estuary.

5.10 Should any mitigation measures be necessary in the future, the results give some guidance as to what might be effective. Alternative sites might work for around a third of dog walkers, such sites would need to be dog friendly and at least as close to housing as the Exe. For most other activities it seems that it is the attractiveness of the Exe and particular features of the Exe that draw visitors, and therefore access management on-site is likely to be more effective, and will need to be targeted at the closest parts of the estuary or the locations where particular activities take place.

## Appendices

## Appendix 1: Dates and times of visits

| Location | Site Number | Date | Day of Week | 07:30 | 10:00 | 12:30 | 15:00 |
|---|---|---|---|---|---|---|---|
| Dawlish Warren | 10 | 17/02/2010 | Wednesday | | | 1 | 1 |
| | | 19/02/2010 | Friday | 1 | 1 | | |
| | | 20/02/2010 | Saturday | 1 | 1 | 1 | 1 |
| Duck Pond | 5 | 28/02/2010 | Sunday | 1 | 1 | 1 | 1 |
| | | 04/03/2010 | Thur | 1 | 1 | 1 | 1 |
| Duck Pond Slipway | 4 | 14/03/2010 | Sunday | | | 1 | 1 |
| Exmouth Dock Slipway | 3 | 27/02/2010 | Saturday | | | 1 | |
| | | 27/03/2010 | Saturday | | | | 1 |
| Exmouth Dock Slipway | 3 | 10/04/2010 | Saturday | | | 1 | 1 |
| Exmouth Maer | 1 | 28/03/2010 | Sunday | | | 1 | 1 |
| Exmouth Sea Front | 2 | 15/02/2010 | Monday | 1 | | | |
| | | 21/02/2010 | Sunday | 1 | 1 | 1 | 1 |
| | | 24/02/2010 | Wednesday | | 1 | 1 | 1 |
| Lympstone | 6 | 03/03/2010 | Wednesday | | | 1 | 1 |
| | | 05/03/2010 | Friday | | 1 | | |
| | | | Friday | 1 | | | |
| | | 07/03/2010 | Sunday | 1 | 1 | 1 | 1 |
| Powderham | 9 | 25/02/2010 | Thursday | 1 | 1 | 1 | 1 |
| | | 27/02/2010 | Saturday | | | 1 | 1 |
| | | 06/03/2010 | Saturday | 1 | 1 | | |
| Starcross | 11 | 18/02/2010 | Thursday | | | 1 | 1 |
| | | 26/02/2010 | Friday | 1 | 1 | | |
| | | 27/02/2010 | Saturday | 1 | 1 | | |
| | | 06/03/2010 | Saturday | | | 1 | 1 |

| Location | Site Number | Date | Day of Week | 07:30 | 10:00 | 12:30 | 15:00 |
|---|---|---|---|---|---|---|---|
| Topsham | 7 | 11/03/2010 | Thursday | 1 | 1 | 1 | 1 |
| | | 27/03/2010 | Saturday | 1 | 1 | | |
| | | 03/04/2010 | Saturday | | | 1 | 1 |
| Turf | 8 | 09/03/2010 | Tuesday | 1 | 1 | | |
| | | 10/03/2010 | Wednesday | | | 1 | 1 |
| | | 13/03/2010 | Saturday | 1 | 1 | 1 | 1 |
| Total | | | | 16 | 16 | 20 | 20 |

## Appendix 2. Questionnaire and Tally Form

# Exe Visitor Survey

**Good am / pm. Please could you spare me a few minutes to take part in a short survey about your visit today. The survey is being conducted for the Exe Estuary Partnership.**

**Q1 Which of the following best describes your situation today?** *Read list. Tick closest, single answer only*

| | |
|---|---|
| | 1 Away from home on holiday in the area |
| | 2 Visiting from home on a short visit or day trip |
| | 3 Visiting as part of work break |
| | 4 Visiting from a friend's / relation's house |
| | 5 Other: [note details below]: |

**Q2 What is the main activity you are undertaking today?** *No prompt. Multiple answers ok, tick as appropriate to categorise.*

| | |
|---|---|
| | 1 Dog walking |
| | 2 Walking |
| | 3 Jogging/power walking/Nordic walking |
| | 4 Outing with children/family |
| | 5 Cycling |
| | 6 Birdwatching / wildlife watching |
| | 7 Windsurfing |
| | 8 Kite surfing |
| | 9 Boating (give details in free text) |
| | 10 Bait Digging / Cockling / Crab tiling |
| | 11 Canoeing / kayaking |
| | 12 Fishing |
| | 13 Short cut |
| | 14 Kite flying |
| | 15 Other/further detail: |

**Q3 How long have you spent / will you spend in the area today?** *Tick closest, single answer only.*

| | |
|---|---|
| | 1 Less than 1 hour |
| | 2 1 - 2 hours |
| | 3 2 - 3 hours |
| | 4 More than 3 hours |

**Q4 Over the past year, roughly how often have you visited the Exe?** *Tick closest answer. Probe if interviewee struggles. Single answer only.*

| | |
|---|---|
| | 1: >180 visits "*Most days*" |
| | 2: 40—180 visits "*1 to 3 times a week*" |
| | 3: 15-40 visits "2 to 3 times per month" |
| | 4: 6-15 visits "*Once a month*" |
| | 5: 2-5 visits "*Less than once a month*" |
| | 6: Don't know / first time |
| | Specific detail/no visits: |

**Q5 Do you tend to visit this area at a certain time of day?** *Tick closest, multiple answers ok, do not prompt*

| | |
|---|---|
| | 1 Before 9am |
| | 2 Between 9am and 12 |
| | 3 Between 12 and 3pm |
| | 4 Between 3 and 5pm |
| | 5 After 5pm |
| | 6 No / Don't know / first visit |

**Q6 Do you tend to visit this area more at a particular time of year for [*insert activity*]?** *Multiple answers ok*

| | | | |
|---|---|---|---|
| | 1 Spring | | 4 Winter |
| | 2 Summer | | 5 Don't know / 1st visit |
| | 3 Autumn | | 6 Same all year |

**Q7 How did you get here?** *Add if necessary:* **What form of transport did you use?** *Do not prompt. Categorise as appropriate. Single answer only.*

| | | | |
|---|---|---|---|
| | 1 Car / motorcycle | | 5 Horse |
| | 2 On Foot | | 6 Bicycle |
| | 3 Bus | | 7 Over water (e.g. Boat, canoe etc). |
| | 4 Train | | |

Free Text: other detail.

**Q8 Aside from this location, do you visit any other places for [*insert activity*], either on the Exe or further afield?** *IF YES:* **which two or three do you use most often?** *Multiple answers ok. Do not prompt. Record locations.*

| | |
|---|---|
| | 1: |
| | 2: |
| | 3: |

Additional details / sites :

**Q9 What makes you come here, specifically, rather than another local site?** *Multiple answers ok. Do not prompt. Tick closest answers as appropriate. Use free text box for reasons that didn't fit with categories/extra detail.*

| | | | |
|---|---|---|---|
| | 1 Don't know / others in party chose | | 9 Right place for activity (eg kite surf/fishing/ good for kids) |
| | 2 Close to home | | 10 Particular wildlife interest |
| | 3 Short travel time from home | | 11 Refreshments / Cafe / Pub |
| | 4 Good /easy parking | | 12 Substrate type (e.g. Sandy beach) |
| | 5 Feel safe here/safety issues | | 13 Good for dog/dog enjoys it |
| | 6 Toilets | | 14 Suitability given weather conditions |
| | 7 Choice of routes/ability to do different circuits | | 15 Ability to let dog off lead |
| | 8 Attractive scenery/views | | 16 Particular launching facilities |

Free Text: other reasons / detail. Draw out site specific features and note details here.

**Now I'd like to ask you about your route today. Looking at the area shown on this map, can you show me where you parked (if travelling by car) and where you started your walk or visit today. And the finish point. And your route please ?** *Probe to ensure route accurately documented. Use* **P** *to indicate parking,* **E** *to indicate start point and* **X** *to mark exit and mark route with a line. Use solid line for actual route and dotted line for expected / remaining route. If relevant add tideline.*

**Q10 Is/Was your route today a typical length for you when you visit this location for [***insert activity***]?** *Single tick only, do not prompt, code as appropriate.*

| | | | | |
|---|---|---|---|---|
| | 1 Yes, normal | | | 3 Shorter than normal |
| | 2 Longer than normal | | | 4 Not sure/visit erratically /first visit/no typical visit |

**Q11 What (if anything) influenced your choice of route here today?** *Multiple answers ok. Do not prompt. Tick closest answers as appropriate. Use free text box for reasons that didn't fit with categories/extra detail.*

| | | | | |
|---|---|---|---|---|
| | 1 Rainfall | | | 6 Muddy tracks/paths |
| | 2 Daylight | | | 7 Wind |
| | 3 Cold | | | 8 Tide |
| | 4 Other users (i.e. presence of people) | | | 9 Activity undertaken (e.g. presence of dog) |
| | 5 Time available | | | 10 Particular members of group (e.g. kids) |

Free Text: other reasons / detail:

**Q12 And in terms of this location, if the following changes were made, would you spend more or less time here on the Exe for [***insert activity***]?** *Read out each type of change in turn.*

| | more | less | Neither / don't know | Comment |
|---|---|---|---|---|
| Site is busier with more people | | | | |
| Better path surfaces or routes | | | | |
| Parking charges or increased charges | | | | |
| Dogs required to be on leads | | | | |
| Presence of warden / beach manager | | | | |
| Part of shore closed in areas sensitive for wildlife | | | | |

**Q13 For [***insert activity***] what features would be necessary to make another site attractive for you to use instead of here?** *Do not prompt. Categorise as appropriate.*

| | | | | |
|---|---|---|---|---|
| | 1 No features / nothing | | | 7 Measures to control other users |
| | 2 More dog friendly | | | 8 Toilets |
| | 3 Better launching / access to water | | | 9 Better / easier parking facilities |
| | 4 Better path surfacing / path network | | | 10 Cheaper/free parking |
| | 5 Refreshments (e.g. cafe / pub) | | | 11 Closer to home |
| | 6 Better information / maps / boards | | | 12 Attractive scenery |

Free Text: other reasons / detail:

**Q14 Do you have any other comments about this area?**

**Finally, so that we can check whether we have a representative sample, please answer the following questions. This information will not be used for anything else.**

**Q15 What is your full home postcode?**
*If unable/refusal to give postcode*: **What is the name of the nearest village/town or if in a city the nearest district/suburb?** *Enter as much detail as possible to allow the location to be mapped.*

**Q16 How many of your party fall into the following age categories?** *Enter number*

| | | | | |
|---|---|---|---|---|
| | 1 Under 18 | | | 3 41-65 |
| | 2 18-40 | | | 4 Older than 65 |

**THAT IS THE END. THANK YOU VERY MUCH FOR YOUR TIME**

| | | | |
|---|---|---|---|
| COMPLETE AFTER INTERVIEW FINISHED: | Interview conducted part way through route (tick if yes) | Surveyor: | NOTES: |
| Date: | Number of dogs: | Accompanying map? (tick for yes, x for no): | |
| Time: | Dog(s) seen off leads? Y/N | Gender of respondent (M / F): | |
| Location: | Group size (total people): | | |

# RECORDING FORM / TALLY SHEET

| | |
|---|---|
| Date | |
| Day of week | |
| Location | |

| | |
|---|---|
| Recorder | |
| Site Number | |

**WEATHER**

| Rainfall (tick one) | | | Cloud cover (8ths) in middle of period: | |
|---|---|---|---|---|
| None | | | Temperature (tick those that apply): | |
| Yes, less than ¼ of the 2 hour time period | | | cool | |
| Yes, ¼ to ½ of the 2 hour period | | | mild | |
| Yes, ½ to ¾ of the 2 hour period | | | warm | |
| Yes, more than ¾s of the 2 hour period | | | hot | |

Give any further descriptions of weather conditions (especially if likely to influence visitor nos—e.g. thunder storm or high winds.) Also any tide details if relevant to access.

| Time Period (tick one) | |
|---|---|
| 0730—0930 | |
| 1000—1200 | |
| 1230—1430 | |
| 1500—1700 | |

| | |
|---|---|
| No. refusals during 2 hr period | |
| No. already interviewed | |
| Total no. interviews during 2 hrs | |
| Start no. for questionnaire nos. | |

**TALLY: record people passing or within predefined count area (use notes box to describe how tally completed if no clear entrance / exit)**

| Entering the site | | | Leaving the site | | |
|---|---|---|---|---|---|
| Total people | Total Groups | Total dogs | Total people | Total Groups | Total dogs |
| | | | | | |

**NOTES: record any incidents, unusual activities, unusual types of access and also any reasons for unusual numbers of visitors**