



East Devon, Exeter and Teignbridge Household Survey and Predictions of Visitor Use of Greenspaces



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Summary

The study area spans three local authority areas (Teignbridge, Exeter and East Devon). Extensive house building is planned here over the next 20 years: potentially around 40,000 homes. A critical issue facing strategic planners is how to accommodate this level of new housing without an adverse affect on the integrity of the local European protected wildlife sites. For some European sites, 'diffuse' impacts from public access and recreation have been identified as likely to cause significant effects. A series of studies are being undertaken to investigate these effects and devise a suite of mitigation measures to ensure no additional adverse effects from the proposed development on the special interest of the sites.

Of several European protected wildlife sites in the area, public access/recreational use is of potential concern for three groups of sites:

The **Exe Estuary SPA**, at the heart of the study area, is designated primarily for over-wintering and migrating waterfowl. It attracts high number of visitors for different activities including a variety of watersports. At the mouth of the Estuary is **Dawlish Warren SAC**, a sand spit with designated dune habitats, popular for walking and beach recreation. Current visitor pressure on the Estuary and Warren is already a cause of concern, without the additional increases likely to result from new house building.

Dartmoor National Park lies to the west of the study area and is popular with residents as well as tourists for hiking and outdoor pursuits. **South Dartmoor Woods SAC** and **Dartmoor SAC** interest features include heathland, blanket bog, sessile oak woodland and the southern damselfly. Impacts from access and recreation are mostly very localised and may not constitute a 'significant effect' within these large SACs.

In the east of the study area lie the **Pebblebed Heaths SPA** and **SAC**. These are a collection of commons designated for their heathland habitats, birdlife and southern damselfly. They have a relatively local pull due to their size, lack of visitor infrastructure and rural location, but current levels of access may be causing disturbance and localised damage.

Detailed information was needed on the current visitor patterns of residents to these European sites and to put access patterns into context with other green spaces in the area. Some data existed on visitors to the Exe Estuary and Warren, but less information was available for Dartmoor and the Pebblebeds. A postal survey was therefore conducted to help fill these gaps and provide baseline information to inform strategic planning and possibly allow predictive impact models to be developed.

The survey was sent to 5100 addresses in south Devon equally divided (1700 recipients each) between the Teignbridge District Council (TDC) area, the Exeter City Council (ECC) area and the East Devon District Council (EDDC) area. The questions addressed the choice of sites visited by each household, the frequency and reason for visiting, the activities undertaken and the mode of transport used to access the sites. The questionnaire was divided into sections focussing on 'Coast and Estuaries', 'Dartmoor' and 'Other Countryside'. Within each section respondents were asked to comment on specific locations of interest to the study including specific subsections of the European sites. In addition respondents were given the opportunity to comment on further locations of their own choice and to provide free text responses. A total of 1296 households responded to the survey, a return rate of just over a quarter of households.

The survey has generated a wide range of results regarding visitor patterns and activities in the study area. In particular:

General

- Virtually all (94%) of respondents stated that they had visited the seaside, woods, moors, country parks or other similar places for recreation in the previous year.
- The Coast and Estuaries was the most popular location for recent visits compared to Dartmoor and Other Countryside sites. (The survey was sent out in early autumn).
- The Coast and Estuaries and Other Countryside sites were visited with the same frequency all year round whereas Dartmoor was visited slightly more frequently in the winter.
- Excluding Exeter, the settlements generating the most visits to European sites are Exmouth followed by Dawlish, Newton Abbot, Sidmouth and Teignmouth.
- The Exe was the busiest of the three European site groups, with 67,662 annual visits from the responding households.
- Visits to Dartmoor amount to less than half the number of visits made to the Exe (26,840 per year) and the Pebblebeds receives a third of the level of visitors to the Exe (at 20,724 per year).
- Dawlish Warren and beach received 10,436 visits per year.
- The majority of respondents either 'mainly visited' the Exe (53%), or 'mainly visited' Dartmoor (33%).

Activities

- For all sites, the activity undertaken by the most respondents was walking, within a few miles of home.
- However, the activity undertaken most frequently was dog walking.
- These findings are borne out at the 3 European sites: walking is the activity undertaken by the most respondents at all three sites. On the Exe and Dartmoor, walking also generates the most visits.
- But on the Pebblebeds, a higher frequency of visits by a smaller number of respondents makes dog walking the activity generating the highest number of visits. Dog walking generates the second highest number of visits on the Exe and Dartmoor.
- The third most popular activity on the Exe and the Pebblebeds is wildlife watching, while on Dartmoor it is visiting pubs/cafes, with wildlife watching in fourth place.
- The local terrain does, of course influence what 'outdoor' activities occur: on Dartmoor hiking comes in fifth, with remote camping as the seventh most popular activity. On the Pebblebeds, horse riding is in fourth place with mounting biking sixth. On the Exe/Warren, beach activities come fifth (pub/café is fourth), but the 'high profile' seaside activities of watersports and bait/shellfish collecting have far fewer practitioners.
- While dog walking and walking tend to be undertaken nearer to home, watersports and wildlife watching are popular activities undertaken further from home.
- 60% of respondents state that they undertake wildlife watching most months.
- Half of all mountain bike users and 42% of all watersports users undertake their favoured activities (locally) at least once a month.
- Dog walking occurred with the highest frequency (65% taking part most days) followed by walking in the countryside or coast (40% taking part most weeks).
- 60% of people who wildlife watch and 50% of mountain bike users and 42% of all watersports users take part locally at least once a month.

Demographics

- Only about 6% of respondents never visited the coast/countryside. The proportion was slightly lower for Exeter (5.2%) than for Teignbridge and East Devon (both with about 6.7%).
- The highest number of responses was from 'retired households' in Teignbridge and East Devon (32% and 36% of responses respectively). The highest number of Exeter responses was from 'full-time employed households' (29% with only 26% from 'retired households').

- The most common house type of respondents was either detached or semi-detached housing, as would be expected from the housing stock.
- There was a significant association between those households that never visited the countryside and presence of retired or reduced-mobility household members.
- On average, 21% of households that visit the countryside had a dog. But there was much variation, with dog ownership in East Devon households significantly higher than in Exeter.
- Dog ownership was lower for the 77 households that stated that they never visit the countryside, at 6.5%.

Exe and Dawlish Warren

- Responding households reported 67,662 visits per year to the Exe and Warren.
- For the Exe and Warren as a whole, 53% of visits were made by East Devon residents, 28% by Exeter residents and 19% by Teignbridge residents.
- As would be expected, there is local variation, with East Devon residents predominating at Exmouth sites, Teignbridge residents at the Warren and Exeter residents in 'second place' for most locations.
- Over 60% of visits to Dawlish Warren Nature Reserve and beach made by Teignbridge residents, about 25% by Exeter residents and only about 13 % by East Devon residents.
- The most popular sub-areas are Exmouth beach (31% of visits), 'unspecified location' (30%); the Warren (18%) and The Maer (14%).
- The majority of visits to most locations on the Exe were made by car, with Dawlish Warren being the site with the highest proportion of car-borne visits, although 22,000 Exe visits were made by foot (32% of the total).
- Residents living within 5km of the Exe estuary tend to visit disproportionately more than those living greater distances away. This trend was particularly notable for watersports visits.
- For all activities and all modes of transport combined, visitor rates to the Exe tend to 'flatten off' at around 12km, although this distance is reduced to 5km for foot visitors.
- 41,470 visits a year are for walking, 13,867 for dog walking and 13,017 for wildlife watching. Pub/café generated 9,421 visits a year, followed by beach activities (7,478), cycling (5,087), amusements/kid's activities (4,567), 'other' (3,065), watersports (1,964) and fishing/bait collecting (1,234).
- The proportion of visits which are really dependant on the 'seaside' landscape is rather small: 25% of visits for wildlife watching, beach activities, water sports or fishing; compared to 76% for walking, dog walking, pub, cycling or amusements.

Dartmoor

- Respondents reported that they made 26,840 visits per year to Dartmoor.
- Most visits to the Moor were made by Teignbridge residents: 58% compared to 22% from Exeter and 19% from East Devon).
- The most popular locations on Dartmoor overall were Dartmeet, Postbridge and Steps Bridge, although for Teignbridge residents these sites ranked third, fourth and fifth, after Widecombe-in-the-Moor and Yarner Wood.
- A suite of sites on the south east edge of the Moor where significantly more popular with Teignbridge residents than with others: Widecombe, Yarner, Haytor, Lustleigh Cleave/Bovey Valley, Newbridge and Holne Moor.
- 88% of visits to Dartmoor were made by car.
- Respondents living within 2-3km of Dartmoor visit the site around 150 times per year.
- Visit rates 'flatten off' at around 8-10km from the National Park boundary.
- 19,213 visits were for walking, 5,742 for dog walking, 4,851 for pub/café, 3,496 for wildlife watching, 1,846 for hiking, 568 for cycling, 490 for remote camping, 410 for mountain biking, 134 for rock climbing, 108 for off-roading and 79 for horse-riding.

Pebblebeds

- 20,724 annual visits were reported for the Pebblebed Heaths
- Most visits (83%) came from East Devon residents, with only 12% by Exeter residents and 5% by Teignbridge residents.
- For residents of all three districts, the most visited sub-site was Woodbury (35% of visits), followed by Lymptone Common (16%) and Colaton Raleigh (15%).
- 80% of visits to the Pebblebeds were made by car and 10% were made on foot.
- Visit rates 'flatten off' at around 10km from the Pebblebeds.
- Most visits were for dog walking (53%) and 90% of the dog walkers were East Devon residents.
- 10,942 visits were for dog walking, 10,343 for walking, 4,032 for wildlife watching, 1,474 for horse-riding, 1,106 for kid's activities, 1,075 for mountain biking, 635 for pub/café, 548 for cycling and 264 for other activities.

The implications of these results are discussed within the report in relation to strategic planning and impacts upon the target European Protected sites (Exe, Warren, Dartmoor and Pebblebeds). Settlements adjacent to the sites tend to use them more, although Dartmoor attracted visitors more equally from the three local authority districts. The final chapter outlines the steps followed to generate a spreadsheet which uses the visit rate curves, settlement distances and visit rates by distance from sites to enable prediction of the number of additional visits made to each site as a result of new housing.

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1. Introduction

Overview

- 1.1 This report presents the results of a household survey of residents of Exeter City, East Devon and Teignbridge council administrative areas. The survey was commissioned to provide a strategic overview of the recreational use of countryside sites, and in particular to consider a selection of sites that are important for nature conservation. Understanding the links between where people live and where they go in the countryside is necessary to inform strategic planning. New housing changes the spatial distribution of people, and can result in an increase in the number of people living near key sites. Levels of recreational use may also increase, and for some sites such use can have deleterious effects. Understanding the links between where people live and recreational use of the countryside is therefore necessary in order to determine how patterns of access will change, the consequences of these changes and measures which may be necessary to resolve any issues.

The need to make the link between recreational access and housing

- 1.2 Recreational use of the UK countryside is increasing, with a growing population enjoying a wider range of recreational pursuits in the outdoors (CCW & FC 2009; TNS Research International Travel & Tourism 2010). It is increasingly recognised that access to the countryside has wide benefits such as increasing people's awareness of the natural world and health benefits (English Nature 2002; Alessa, Bennett, & Kliskey 2003; Morris 2003; Bird 2004; Pretty et al. 2005).
- 1.3 There are however, circumstances where visitors can have a detrimental effect on the sites they visit, for example through disturbance or from trampling. There is a large body of scientific literature and unpublished reports addressing the impacts of access (for reviews see Hockin et al. 1992; Liddle 1997; Nisbet 2000; Saunders et al. 2000; Buckley 2004; Kirby et al. 2004; Woodfield & Langston 2004; Lowen et al. 2008). Such impacts are of most concern on sites of high nature conservation interest, in particular where the recreational use results in damage to European Protected sites, which have strict legal protection.
- 1.4 European sites are protected through the provisions of the Conservation of Habitats and Species Regulations 2010 (SI no. 490), usually referred to as 'the Habitat Regulations'. These Regulations transpose the requirements of both the Habitats Directive (Council Directive 92/43/EEC) and the Wild Birds Directive (Council Directive 79/409/EEC) into UK law. Article 6(2) of the Habitats Directive requires Member States to take appropriate steps to avoid the deterioration of natural habitats and the habitats of species and avoid the disturbance of species. Article 6(2) states that "Member States shall take appropriate steps to avoid..... deterioration of natural habitats.... as well as disturbance of the species..."; thereby putting a responsibility on the Member State to address such issues where they arise. The wording of the Directive is such that it is clear that there is an

ongoing responsibility to ensure that European sites remain in, or are managed to enable them to return to, a healthy and viable ecological state.

- 1.5 Regulation 61 implements the provisions of Article 6(3) of the Habitats Directive such that competent authorities can only agree to a plan or project which is likely to have a significant effect on a European site (either alone or in-combination) after having ascertained that it will not adversely affect the integrity of any European site (subject to exceptional cases where there are no alternative solutions and where there are imperative reasons of over-riding public interest for the plan or project). Impacts from recreation arising as a direct or indirect result of one particular or a number of plans or projects should therefore be prevented through the correct application of Regulation 61 by competent authorities.
- 1.6 The separation of the ongoing duty of care set out within Article 6(2) and the specific requirement for the assessment of plans and projects under Article 6(3) therefore leads to a separation in the consideration of disturbance issues, with Habitats Regulations Assessments generally making a clear distinction between disturbance associated with or occurring as a result of a plan or project, and other disturbance issues, normally those already in place and to which a link to specific plan(s) or project(s) cannot reasonably be established.
- 1.7 Strategic plans for future development must be subject to assessment under Article 6(3), and in order to conduct such an assessment it is necessary to have some understanding of:
- The current and potential impacts of recreation on relevant sites
 - The likely levels of change in access and use as a result of proposed development
 - The consequences of the increased recreation
 - What options are possible to resolve the impacts identified
- 1.8 This report is a step towards the second bullet, providing a strategic overview of access to selected sites, establishing the links between where people live and how frequently they visit key sites. It will also help inform the fourth bullet, by identifying where mitigation measures might be effective.

Key sites and existing work

- 1.9 The key European Protected sites that are particularly relevant to the three local authorities and where access impacts are relevant are:
- The Exe Estuary SPA/Ramsar
 - Dawlish Warren SAC
 - East Devon Pebblebed Heaths SAC/East Devon Heaths SPA
 - Dartmoor SAC/South Dartmoor Woods SAC
- 1.10 These are considered in more detail below.

The Exe Estuary SPA/Ramsar

- 1.11 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.
- 1.12 The Exe Estuary, including Dawlish Warren, is designated for its wintering waterfowl assemblage and for wintering avocet and slawonian grebe. Recreation impacts to the SPA/Ramsar interest features relate to the potential impacts of disturbance. On-going work on the Exe Estuary is determining the current impacts of disturbance. This work ('The Exe Disturbance Study') involved detailed ornithological work and visitor work to assess the scale of any impacts and to identify which activities, in which areas, potentially cause disturbance.

Dawlish Warren SAC

- 1.13 The classification of the site includes humid dune slacks, which is an Annex I habitat that forms the primary reason for selection of this site. Additionally, there are further Annex 1 habitats that are present as a qualifying feature, but that do not form a primary reason for site selection, which are the shifting dunes along the shoreline with marram grass *Ammophila arenaria* (i.e. white dunes) and fixed dunes with herbaceous vegetation (i.e. grey dunes). The latter is also a Priority Feature. Additionally, Dawlish Warren SAC supports a large population of petalwort, an Annex 2 species that is the primary reason for the selection of the site.
- 1.14 Detailed consideration of the impacts of recreation are provided by Lake (2010), who identifies the following potential issues:
- Trampling, which in some places is leading to significant erosion problems, with embryonic shifting dunes and mobile dunes particularly impacted. By contrast, in the more stable areas of the site, over-stabilisation of the mobile dunes is a problem and in these areas trampling may be beneficially increasing the mobility of sand in the system.
 - Dog fouling, with nutrient enrichment, presumably from dog faeces, evident near access points in the fixed dune grassland. The enrichment results in the characteristic dune grassland flora being replaced by coarser vegetation.
 - Increased fire risk (for example through the use of bar-b-ques), which can result in damage to dune vegetation.
 - Management of the golf course, which is within the SAC and where management such as fertilizer application is damaging to the flora.

East Devon Pebblebed Heaths SAC/East Devon Heaths SPA

- 1.15 The Pebblebed Heaths lie on the Triassic pebblebeds south east of Exeter, and cover an area of approximately 1400 ha. They have been designated as of European and national importance for their dry and wet heath and mire habitats, for the populations of breeding nightjars and Dartford warblers, and for their colonies of rare Southern damselfly. They are also regionally important for rare and scarce plants and invertebrates. The Pebblebed

Heaths lie in the East Devon AONB and are recognised as a significant landscape feature in east Devon.

- 1.16 The heaths have been open to the public for many years and are highly valued by local communities and visitors to the area. They are also a major asset to the Royal Marine Commandos who have used the heaths for training exercises for many years. The heaths have been registered as common land, although no commons rights have been exercised for many years and there is only one commoner. Under the Countryside and Rights of Way Act, 2000, there are full rights of public access on foot over the whole area of the common land (effectively the whole of the Pebblebed Heaths).
- 1.17 Most of the Commons are in a single ownership, the Clinton Devon Estates, who manage them through a charitable trust, The Pebblebeds Conservation Trust, with parts of the northern pebblebeds leased to and managed by the RSPB. The RSPB also lease part from East Devon District Council and own a further area in the north.

Dartmoor SAC/South Dartmoor Woods SAC

- 1.18 Dartmoor is protected by National Park Status and located in central Devon and covers 95,300 hectares. It offers in excess of 47,000 ha of open access land available to recreational users. The National Park offers leisure opportunities to walkers, joggers, cyclists, and horse riders. A substantial part of the National Park is designated as an SAC with 23,165 hectares covered by the Dartmoor SAC and 2,157 hectares by the South Dartmoor Woods SAC. The two SACs contain areas of Northern Atlantic Wet Heath with *Erica tetralix*, Dry Heath, Blanket Bogs and old sessile oak woods at Yarner Wood, Teign Valley Woods, Wistman's Wood etc. The rivers of Dartmoor support populations of the otter *Lutra lutra*, southern damselfly *Coenagrion mercuriale* and Atlantic salmon *Salmo salar*.

Other sites

- 1.19 In addition to the sites listed above, it is useful to gain information on a wider suite of sites. There are some other European Protected sites such as Sidmouth-West Bay SAC where access is perhaps less of an issue, but where it is still useful to have information on visitor use. In addition, general information on recreational use of a wide range of sites will provide added benefit, for example in relation to green infrastructure studies and helping to target resources. We have therefore included a wide range of sites in the survey. (There are other European wildlife sites in the area where access is not thought to be an issue, e.g. South Hams SAC. These have not been addressed in this study.)

Off-site visitor surveys

- 1.20 Detailed on-site monitoring data relating to visitors is available for the Exe Estuary and Dawlish Warren (Liley & Cruickshanks 2010). Dartmoor National Park also holds some visitor data for Dartmoor. Such on-site data is very useful at identifying local and site specific access patterns, for example where people walk on site and accurate information on the numbers of people at specific locations. To get a more strategic overview for multiple sites and crucially to identify people that do not visit sites (and therefore would never be encountered during an on-site survey), off-site visitor surveys are necessary.

Such surveys are particularly effective if combined with on-site monitoring, and where conducted together there is evidence that the two complement each other well (e.g. Liley et al. 2009).

- 1.21 Off-site sample surveys are therefore useful in providing an overview of patterns and motivations, and there have been a variety of such surveys in England involving postal questionnaires, telephone interviews or similar methods which ask about access to the outdoors (e.g. anon 2004; Natural England 2006; Liley *et al.* 2009; TNS Research International Travel & Tourism 2010).

Aims of this report

- 1.22 This report therefore aims to provide a strategic overview of recreational use of the countryside in this part of Devon, and in particular will:
- Derive comparative visitor rates to different countryside sites
 - Determine which residents in the three districts visit key European Protected sites and determine why they visit and how they travel to those sites
 - Determine where additional development may result in additional impacts to key sites

2. Methods

Questionnaire design

- 2.1 A postal questionnaire was sent out to 5100 addresses, selected at random, in south Devon (1700 to each of three local authority areas). This approach was chosen, as opposed to telephone or face-to-face interviews, as it provides a relatively cost effective means of contacting a random sample of people across a broad area. In addition, people are able to consider their responses and respond in their own time.
- 2.2 A critical problem associated with postal surveys is that there is little control over who fills in the questionnaire so results may not be representative. Those people with busy lives (parents, those in full time employment etc) may be less likely to complete the form. There also tends to always be a low response rate. The questionnaire was therefore carefully designed to ensure that it appeared simple to fill in and did not take too long to complete. It was made clear that the questionnaire was commissioned by local authorities (i.e. it was not related to any marketing) and a prize (£100 of shopping vouchers, given to one respondent selected at random) was allocated as an incentive for completing the questionnaire. A copy of the questionnaire is provided in Appendix 1.
- 2.3 The questionnaire was structured into the following sections:
- **A: When and why you visit the coast and countryside:** general questions about how often and how recently people visit different kinds of sites, at what time of year and the activities that people undertake.
 - **B: Visits to the coast and estuaries:** specifically asking the respondent how often they visit the coast, to provide information about 10 specific coastal locations marked on a map and to name up to five additional sites (15 labelled on the map but free text optional) and describe why they visit the site, how frequently etc.
 - **C: Visits to Dartmoor:** specifically asking the respondent how often they visit Dartmoor, to provide information about 8 particular locations marked on a map and to name up to five additional sites (19 labelled on the map but free text optional) and describe why they visit the site, how frequently etc.
 - **D: Visits to other countryside places:** specifically asking the respondent how often they visit other countryside places, to provide information about 11 particular locations marked on a map and to name up to five additional sites (28 labelled on the map but free text optional) and describe why they visit the site, how frequently etc.
 - **E: About you and your household:** general questions about the respondent and his / her household.
- 2.4 This structure was chosen to ensure that respondents were prompted to consider a wide range of different types of site that they might have visited. An alternative approach, such as simply asking respondents to list 20 sites that they visit, without categorising them at all, may have led people to miss sites they visit regularly. By specifically asking about the coast, Dartmoor and other countryside places we have attempted to ensure that as wide a range of sites – from formal parks to large tracts of countryside – would be listed.
- 2.5 We used a combined approach whereby target locations under each category (Coast and Estuaries; Dartmoor; and Countryside) were highlighted on the map and respondents were asked how frequently they visit these sites, the mode of transport used and the reason for

their visit. In addition visitors were given space to list up to five free text locations the frequency of their visit, transport and reason. This combined approach enabled a proportion of the target sites to be categorised without the need for interpreting entirely free text location responses.

- 2.6 Each questionnaire was given a unique identification number, allowing cross reference back to the address data, allowing the postcode of each respondent to then be linked to the questionnaire data. Questions were phrased so as to ask about the households visiting patterns rather than the individual.
- 2.7 Response errors cannot readily be quantified, but for this survey they will depend mainly on the ability and willingness of respondents to recall sites they and their household visit and to record accurately the activities they had undertaken.
- 2.8 Accompanying covering letters gave a telephone number for support or for people to request the questionnaire in a different format, such as large font size. The logos of the relevant local authorities were displayed both on the envelope and the covering letter.

Questionnaire design issues

- 2.9 After the questionnaire had been sent out to recipients it became apparent that earlier versions of the maps had been used in the final questionnaire by mistake. This mistake has implications for the assumptions made of the data collected in sections C and D only.
- 2.10 In section C 'visits to Dartmoor' only location A in the table matches the location on the map as the labelling order was changed for locations B-H in the most recent version. However, irrespective of the map locations, we feel that visitors will have answered question C2 with respect to the names in the table rather than the markers on the map for the eight well known target locations. However, for the free text section (question C3) the markers on the map match the labels in the map legend and can therefore be accurately analysed.
- 2.11 In section D 'visits to other countryside places' the first four specified sites in the table match the locations on the map whereas the remaining seven sites within the Pebblebed Heaths are incorrectly labelled on the map. Similarly the labels were re-ordered in the later version of the maps. However, like section C (above) we have assumed that respondents have described their visits to sites in question D2 with respect to the names in the table rather than the names on the map as it seems more likely that respondents would describe visits against a named site rather than the correct code on the map. For the free text section (question D3) the markers on the map match the labels in the map legend and can therefore be accurately analysed.

Selection of Addresses

- 2.12 A total of 1700 addresses were sent from each authority. Teignbridge District Council used their Local Land and Property Gazetteer to select all residential properties outside Dartmoor National Park (apart from one Teignbridge recipient within the boundary), and then from this selection 1700 addresses were selected at random. Exeter City Council used the Royal Mail Address List for the whole of Exeter, from which the 1700 addresses

were extracted. East Devon District Council addresses were randomly selected within a GIS.

- 2.13 The coding of recipients was managed differently between local authorities with Teignbridge labelling the questionnaire before they were sent and East Devon labelling them upon return. In total 33 responses could not be assigned to a recipient address and postcode as a problem arose with labelling the questionnaires. Of the 33 recipients without matched addresses and postcodes, 27 were from East Devon, 5 were from Exeter City and one was from Teignbridge.

Mailing Dates

- 2.14 Questionnaires were posted by each local authority on different dates in the autumn of 2010 (Table 1). A follow up reminder letter was sent by Teignbridge District Council and Exeter City Council only. Exeter City residents were given the longest time to respond with 50 days whereas East Devon residents were only given 21 days to respond

Table 1: Mailing and reminder dates 2010 for each local authority.

Milestone	Teignbridge	Exeter City	East Devon
Postal date	Wednesday 29 th September	Thursday 23 rd September	Friday 5 th November
Reminder	Friday 22 nd October	Wednesday 27 th October	Not sent
Deadline	Friday 12 th November	Friday 12 th November	Friday 26 th November

Data collation and error rates

- 2.15 Each local authority was responsible for collating data from respondents within their area. Questionnaires were returned to each local authority separately using a freepost address and data were entered by hand. All paper questionnaires were archived by the respective local authorities.
- 2.16 A check for data-entry errors was undertaken by checking a small sample of the questionnaires returned to Teignbridge District Council. Twenty-two questionnaires were checked after data entry and a total of 14 errors were found within 11 of the questionnaires (see paragraph 10.4).

Categorising sites

- 2.17 Where respondents gave free text answers to locations they visit (questions C3, D3 and E3) these have been categorised as far as possible where they are the same places as the numbered or lettered mapped locations in each section. Therefore visits to these locations are included in analyses regarding Dartmoor, other countryside sites and other coastal sites. Additional visits to the Exe were not combined from the free text comments as only 84 visits were identified for seven respondents and it was felt that it would be more straightforward in the analyses of the Exe data to retain the seven categories. For Dartmoor visits, additional information gathered in question C3 doubled the number of visits to Dartmoor and therefore all data was included. In all cases, additional visits to Dartmoor were only added to the totals per postcode for categorised locations where the

visit characteristics differed. Therefore visits would not be added if, despite having the same site name or code, the visit frequency, activity or mode of transport was the same (i.e. respondents may have described the same visits and activities and they would therefore not be added).

Analysis

2.18 The analysis is structured to provide a summary and basic statistical analysis of responses to each question (where possible) and to illustrate how site usage varies with distance from sites (with a focus on European Protected sites) and in relation to demographic details about the respondents including house type, dog ownership, transport availability and activities undertaken. Specifically the analyses will identify the following:

- the broad activities undertaken by visitors
- the frequency of visits to sites
- which households visit the designated sites
- how far people travel to different sites and types of sites
- why people visit designated sites and other types of sites (activities undertaken)
- the importance of geographical location and the distances people travel to different types of sites
- the frequency of visits with respect to house type and household demographics

2.19 All statistical tests and graphs were performed using Minitab (version 14) or Excel. All spatial queries and maps were generated using MapInfo (version 10.5).

Total visitor numbers to particular sites and for different activities

2.20 In order to calculate an estimate of the total number of visits to each site per year, the frequency of visit to each site was coded to give an actual rate. The number of days assigned to each frequency is given in Table 2.

2.21 Only one visit frequency could be provided for each location whereas multiple activities could be described at each location. Therefore we assigned the number of visits to each activity by assessing whether they could occur simultaneously. If they could occur simultaneously then each activity was assigned the total number of visits (e.g. 4 visits per year for walking and 4 for dog walking) whereas for non simultaneous activities (e.g. walking and sailing or walking and bicycling) the total number of visits was divided by the number of activities undertaken.

Table 2: Number of visits assumed for each frequency category

Frequency (categorical)	Number of visits assumed per year
Most days	250
Most weeks	40
Most months	12
A few times per year or less	4

3. Results overview

Response rate, distribution and demographics of respondents

- 3.1 A total of 1296 completed questionnaires were received (25.4% of the 5100 originally sent out). The highest response rate was from residents within the Teignbridge district with 30%, followed by East Devon with 26%, and Exeter with 20%. The proportion of responses submitted for each council's area are significantly different ($\chi^2_2 = 40.916$, $p < 0.001$). The postcodes of the recipients and respondents within each local authority area are shown with the European Protected sites in (Map 1). Across the whole survey, 20% of respondents were dog owners although this proportion differed significantly between local authorities ($\chi^2_2 = 19.31$, $p < 0.001$) with twice as many East Devon respondents owning dogs compared to Exeter City respondents.

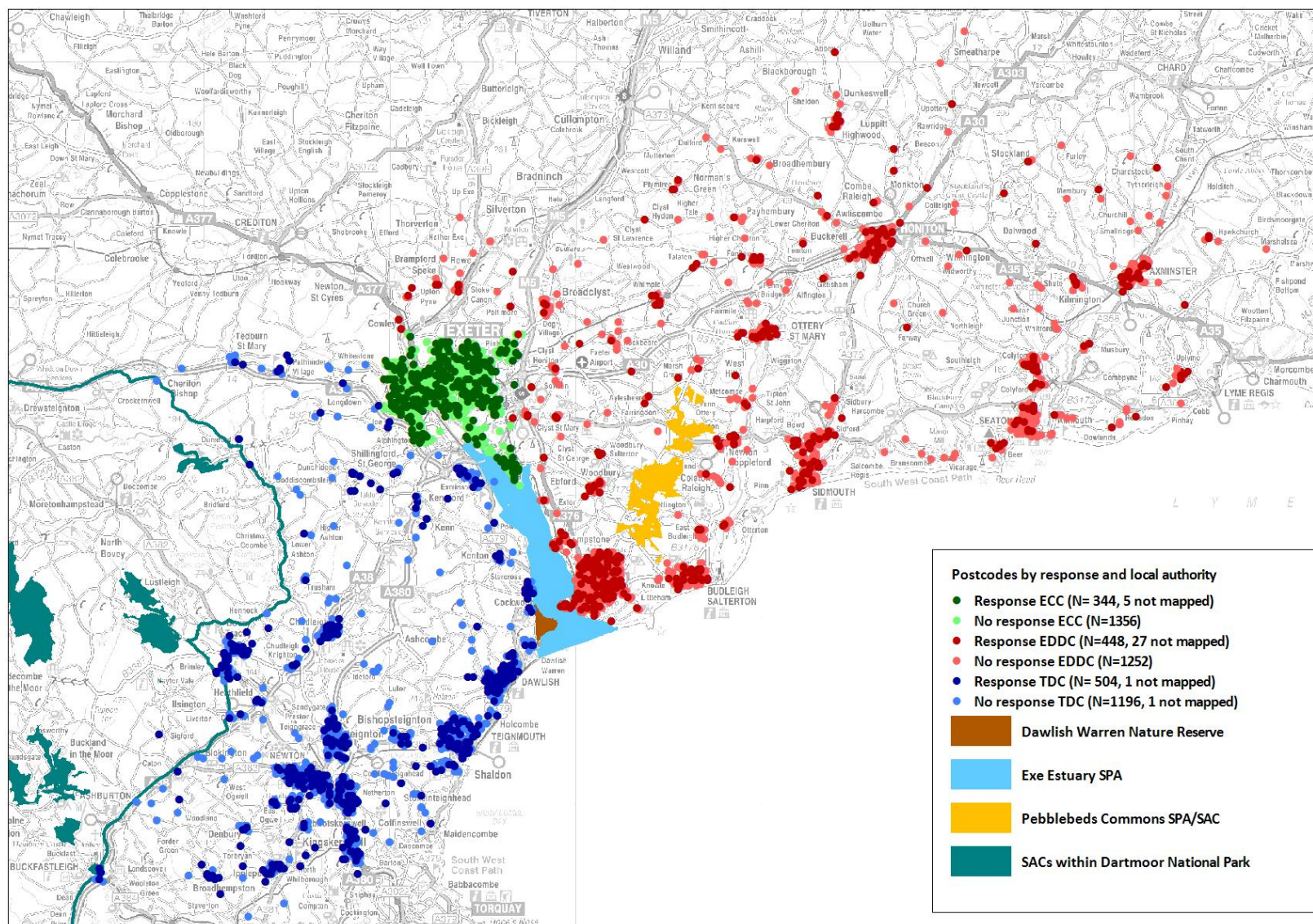
Table 3: Household demographics for respondents from each local authority.

Household demographics	Teignbridge	Exeter City	East Devon	Whole survey
Number of responses	504	344	448	1296
Mean household size	2.18	2.14	2.2	2.18
Mean number of children	0.25	0.3	0.35	0.3
Mean number of dogs	0.28	0.15	0.33	0.27
% households with access to transport	87.9	79.7	92	87
% households with someone with reduced mobility	25.4	21.5	24.8	24.2
% households with a dog	21	12.5	25	20.1

- 3.2 Higher proportions of family members of respondents from Teignbridge and East Devon were permanently retired (32% and 36% respectively) compared to only 26% of those family members living in Exeter. Across all three local authorities the majority of family members were in full- or part-time employment.

Table 4: Number of family members (% of total) and the employment status of respondents from each local authority. The most common status per local authority is shown in bold.

Employment status	Teignbridge	Exeter City	East Devon	Total
Employed full-time	213 (28)	152 (29)	166 (24)	531 (27)
Employed part-time	117 (15)	83 (16)	95 (14)	295 (15)
Unemployed and seeking work	16 (2)	13 (2)	14 (2)	43 (2)
Looking after the home or family	39 (5)	30 (6)	32 (5)	101 (5)
Permanently retired from paid work	243 (32)	137 (26)	250 (36)	630 (32)
In full-time further/higher education	30 (4)	26 (5)	17 (2)	73 (4)
In school	61 (8)	50 (10)	73 (11)	184 (9)
Under school age	26 (3)	16 (3)	28 (4)	70 (4)
Other	22 (3)	15 (3)	17 (2)	54 (3)
Total	768	524	695	1981



Map 1: Postcodes of recipients of the questionnaire and respondents within each local authority area. Note that not all postcodes could be geocoded. Contains Ordnance Survey © data Crown copyright and database right 2011.

- 3.3 Across all local authorities the most common house type was either a detached or semi-detached house (Table 5). The lowest proportion of responses received from people living in bungalows was from Exeter City residents (6% compared to 21% for Teignbridge and 20% for East Devon). The majority of the respondents had access to a private garden with the highest proportion with private gardens amongst respondents from the East Devon District Council area (Table 6).

Table 5: Number (%) of respondents living in different types of houses in each local authority area. The most common household type of the respondents per local authority is shown in bold.

Household type	Teignbridge	Exeter City	East Devon	Total
Flat (ground floor)	23 (5)	24 (7)	21 (5)	68 (5)
Flat (non-ground floor)	39 (8)	40 (12)	10 (2)	89 (7)
Bungalow	101 (20)	21 (6)	94 (21)	216 (17)
Terraced house	62 (12)	86 (25)	72 (16)	220 (17)
Semi-detached	104 (21)	109 (32)	131 (29)	344 (27)
Detached	150 (30)	52 (15)	109 (24)	311 (24)
Static caravan	6 (1)	1 (0.3)	3 (1)	10 (1)
Other	13 (3)	2 (1)	2 (0.4)	17 (1)
Blank	6 (1)	9 (3)	6 (1)	21 (2)

Table 6: Number (%) of respondents with access to a private garden, communal garden or neither from each local authority.

Household access to a garden	Teignbridge	Exeter City	East Devon	Total
Private garden	433 (86)	278 (81)	418 (93)	1129 (87)
Communal garden	26 (5)	34 (10)	20 (4)	80 (6)
Neither	38 (8)	26 (8)	8 (2)	72 (6)
Blank	7 (1)	6 (2)	2 (0.4)	15 (1)

Respondents that did not visit the countryside

- 3.4 Responses from 77 households stated that no one in the household made visits to the countryside i.e. 5.9% of the total respondents. There was no significant difference between each authority in terms of the proportion of people who stated that they did not visit the countryside, indicating that people living in Exeter city, for example, are not less likely to visit the countryside than those living in either Teignbridge or East Devon District ($\chi^2_2 = 0.41$, $p = 0.657$). Across all districts there was a significant association between those households that contained someone with reduced mobility and those households that didn't ever visit the countryside ($\chi^2_1 = 44.086$, $p < 0.001$). Respondents that stated they didn't visit the countryside also tended to live in smaller households, containing fewer children than those that did visit the countryside. Although a smaller proportion of these households owned dogs (only 6.5% compared to 21%), they were more likely to own more than one dog than those households that did visit the countryside.

Table 7: Household demographics for respondents from each local authority who did not visit the countryside compared to those that did visit. Table gives median values. Asterisks indicate significant differences (Mann-Whitney test) for the whole survey data (i.e. all districts combined).

Household demographics	Teignbridge		Exeter City		East Devon		Whole survey		
	No visits	Did Visit	No visits	Did Visit	No visits	Did Visit	No visits	Did Visit	Significance
Number of responses	32	472	17	327	28	420	77	1219	
Household size (number of people)	1	2	2	2	1	2	1	2	**
Number of beds	2	3	2	3	2	3	2	3	**
Number of children under 16 in household	1	2	1	2	1	2	1	2	**
Number of dogs	2	1	1.5	1	2	1	2	1	*

3.5 From the 77 households which stated that they do not visit the countryside, 74% of all family members were permanently retired from paid work. This figure was highest for Teignbridge at 89% and lowest in Exeter at 45%.

Table 8: Number of family members (% of total) and the employment status of respondents that did not visit the countryside from each local authority. The most common status per local authority is shown in bold.

Employment status	Teignbridge	Exeter City	East Devon	Total
Employed full-time	1 (2)	8 (28)	6 (15)	15 (13)
Employed part-time	1 (2)	3 (10)	2 (5)	6 (5)
Unemployed and seeking work		1 (3)		1 (1)
Looking after the home or family	1 (2)	2 (7)		3 (3)
Permanently retired from paid work	40 (89)	13 (45)	31 (78)	84 (74)
In full-time further/higher education				
In school		1 (3)		1 (1)
Under school age			1 (3)	1 (1)
Other	2 (4)	1 (3)		3 (3)

3.6 The most popular house type of respondents not utilising the countryside for recreation in the Teignbridge and East Devon districts lived in bungalows (Table 9). Most respondents in this category also had access to a private garden although nearly a quarter of non-recreating Exeter City residents did not have access to a garden or shared a communal garden (Table 10).

Table 9: Number (%) of respondents living in different types of houses that did not visit the countryside in each local authority area. The most common household type per local authority is shown in bold.

Household type	Teignbridge	Exeter City	East Devon	Total
Flat (ground floor)	2 (6)	1 (6)	4 (14)	7 (9)
Flat (non-ground floor)	1 (3)	4 (24)		5 (6)
Bungalow	11 (34)	2 (12)	10 (36)	23 (30)
Terraced house	4 (13)	2 (12)	3 (11)	9 (12)
Semi-detached	8 (25)	5 (29)	9 (32)	22 (29)
Detached	4 (13)	3 (18)		7 (9)
Static caravan			1 (4)	1 (1)
Other	2 (6)			2 (3)
Blank			1 (4)	1 (1)

Table 10: Percentage of respondents that did not visit the countryside with access to a private garden, communal garden or neither from each local authority.

Household access to a garden	Teignbridge	Exeter City	East Devon	Total
Private garden	26 (81)	13 (76)	25 (89)	64 (83)
Communal garden	1 (3)	2 (12)	1 (4)	4 (5)
Neither	4 (13)	2 (12)	1 (4)	7 (7)
Blank	1 (3)		1 (4)	2 (3)

General Patterns of Access

- 3.7 Very few people had not visited any outdoor sites, with over 94% of respondents stating they had visited the seaside, woods, moors, country parks or other similar places for recreation in the past year (Table 11).

Table 11: Responses to question A1: In the last year have you or your household visited any outdoor sites?

Response	Teignbridge	Exeter City	East Devon	Total (%)
Yes	472	327	420	1219
No	32	17	28	77
Total	504	344	448	1296 (100)

- 3.8 The 77 households which stated that they had not visited the countryside in the past year were excluded from subsequent analyses regarding activities and visits to locations. Table 12 shows the frequency with which people stated they visited the different types of sites, grouped according to types of sites. There were significant differences between the types of sites ($\chi^2_8 = 642.8$; $p < 0.001$, the 'Never' visit category was excluded for this analysis as one respondent stated that they never visit the coast and estuaries and counts of less than 5 can invalidate the test result). Over half of respondents who use outdoor spaces for recreation stated that they visited the coast and estuaries within the last week compared to 44% visiting other countryside locations with the same frequency (Table 12). Dartmoor was visited less frequently by respondents with the most popular category being a visit within the last 6 months (33%) and only 14% stated that they visited Dartmoor within the last week.

- 3.9 Looking at the time of year when people visit different locations, the coast and estuaries are visited by most respondents with the same frequency all year (60% of responses) as are other countryside sites (62% of responses) (Table 13). Dartmoor by contrast to the other types of sites, is visited slightly more frequently in the winter (34%) and only about a third (32%) of respondents that visited Dartmoor stated that they visited equally all year. The differences between types of sites are significant ($\chi^2_{10} = 288.97$; $p < 0.001$, excluding the 'Never' visit category due to counts of less than 5).

Table 12: Summary of responses to question A2 When was the last time your household visited a particular type of location? The most common frequency with which people visit is shown in bold for each location.

Location	Number (%) visiting						Total
	Within the last week	Within the last month	Within the last 6 months	Within the last year	More than a year ago	Never	
Coast and estuaries	632 (54)	344 (29)	164 (14)	28 (2)	10 (1)	1 (0.1)	1179
Dartmoor	151 (14)	270 (26)	351 (33)	124 (12)	143 (14)	17 (2)	1056
Other countryside	471 (44)	341 (32)	165 (15)	48 (5)	30 (3)	10 (1)	1065

Table 13: The number (%) of respondents that stated they visited the different types of location at different times of year. Respondents were able to give multiple responses (for example by stating that they visit more in the spring and the autumn). The most popular time of year for each location is shown in bold.

Location	Number of respondents (%) visiting more at a particular time of year						Total no. respondents
	equally all year	more in summer	more in winter	more in spring	more in autumn	never visit	
Coast and estuaries	806 (60)	107 (8)	288 (22)	83 (6)	49 (4)	1 (0.1)	1334
Dartmoor	392 (32)	179 (14)	424 (34)	152 (12)	47 (4)	43 (3)	1237
Other countryside	738 (62)	108 (9)	223 (19)	92 (8)	12 (1)	13 (1)	1186

3.10 Of the 77 respondents which stated that they do not use outdoor locations for recreation, only 6.5% were dog owners whereas 21% of people who use outdoor spaces are dog owners (Table 14). Interestingly the number of dogs owned by respondents not visiting the countryside is higher than those visiting the countryside. The rate of dog ownership is fairly consistent between respondents who have visited the three broad locations within the last year; the percentage of dog ownership ranges from 20.7% for coast and estuaries visitors to 21.9% for Dartmoor visitors (Table 15).

Table 14: Number of respondents, classified by dog ownership, who had visited outdoor space within the past year.

Dog ownership	Number of respondents (%) that visit outdoor space	
	Yes	No
Have dog	256 (21%)	5 (6.5%)
Don't have dog	963 (79%)	72 (93.5%)
Total	1219	77

Table 15: Number (%) of respondents who visited each type of outdoor space within the last year and whether or not they are dog owners.

Dog ownership	Number of respondents (%) with or without a dog visiting each location category in the past year		
	Coast and estuaries	Dartmoor	Other countryside
Have dog	242 (20.7)	196 (21.9)	221 (21.6)
Don't have dog	926 (79.3)	700 (78.1)	804 (78.4)
Total	1168	896	1025

Table 16: Demographics of households which have never visited the three broad locations or had not visited them within the past 12 months and households which had made a visit within the past year. Mean figures excluded where the sample size is less than 10.

Household demographics	Coast and estuaries visit in the past year?		Dartmoor visit in the past year?		Other countryside visit in the past year?	
	yes	no	yes	no	yes	no
Number of households	1168	11	896	160	1025	40
Mean size	2.23	1.9	2.3	2.2	2.3	1.8
Mean number of children	1.7		1.7	1.6	1.7	
Mean number of dogs	1.3		1.3	1.3	1.3	1.4
Access to transport (%)	1046 (90)	9 (75)	822 (93)	137 (86)	937 (92)	28 (70)
No access to transport (%)	112 (10)	3 (25)	65 (7)	22 (14)	77 (8)	12 (30)

Types of outdoor activities

3.11 Visitors were asked which activities they undertake within three broad distance categories: elsewhere in the country, elsewhere in Devon and within a few miles of home. The most popular activity was walking in the countryside/at the coast and the two activities which stand out as taking visitors further afield were watersports and wildlife watching (8% of respondents for both activities travel further than a few miles from home). Countryside and coastal walking was the most popular activity with the highest rate observed in East Devon District at 85% of respondents (Table 18). Wildlife watching was the second most popular activity undertaken by 36% of all respondents with the highest percentage from East Devon area (40%). Dog walking was the third most popular activity undertaken locally. Higher proportions of respondents from East Devon and Teignbridge areas undertook dog walking in the local area (30% and 25% respectively) than within the Exeter area (17%).

Table 17: Number (%) of total respondents (N=1219) that undertake certain activities in the countryside and the broad locations where they take place.

Activity	Location			No answer given
	Within a few miles of Home	Elsewhere in Devon	Elsewhere in the country	
Walking in countryside / at coast	753 (62)	205 (17)	18 (1)	243 (20)
Dog walking	285 (23)	14 (1)	5 (0.4)	915 (75)
Watersports	122 (10)	68 (6)	23 (2)	1006 (83)
Mountain biking / off-roading	150 (12)	40 (3)	5 (0.4)	1024 (84)
Horse riding (bridle paths / wider countryside)	64 (5)	17 (1)	5 (0.4)	1133 (93)
Fishing / bait digging / crabbing / crab tiling	127 (10)	37 (3)	13 (1)	1042 (85)
Wildlife watching	348 (29)	91 (7)	14 (1)	766 (63)
Wild camping (away from formal camp site)	30 (2)	43 (4)	20 (2)	1126 (92)
Climbing or Caving	21 (2)	25 (2)	5 (0.5)	1167 (96)

Table 18: Number (%) of respondents who use the general countryside for recreation and undertake different activities within a couple of miles of their home or elsewhere in Devon. (Percentages are calculated from the total respondents).

Activity	Number of responses (% of households)			Total (%)
	Teignbridge	Exeter City	East Devon	
Walking in countryside / at coast	355 (75)	248 (76)	355 (85)	958 (79)
Dog walking	119 (25)	55 (17)	125 (30)	299 (25)
Watersports	80 (17)	53 (16)	57 (14)	190 (16)
Mountain biking / off-roading	82 (17)	44 (13)	64 (15)	190 (16)
Horse riding (bridle paths / wider countryside)	32 (7)	13 (4)	36 (9)	81 (7)
Fishing / bait digging /crabbing / crab tiling	67 (14)	33 (10)	64 (15)	164 (13)
Wildlife watching	157 (33)	116 (35)	166 (40)	439 (36)
Wild camping (away from formal camp site)	29 (6)	28 (9)	16 (4)	73 (6)
Climbing or Caving	22 (5)	12 (4)	12 (3)	46 (4)
Total respondents	472	372	420	1219

3.12 Considering all respondents together, the activity that was undertaken with the highest frequency was dog walking (65% taking part most days) followed by walking in the countryside or coast (40% taking part most weeks) (Table 19). Wildlife watching stands out as an activity which takes place relatively regularly with 60% of participants stating that they take part at least once per month. Furthermore half of all mountain bike users (190 households in total) and 42% of all watersports users (189 households in total) take part locally at least once a month. For all other activities, the majority of respondents who undertook them stated that they did so just a few times a year or less.

Table 19: Number (%) of respondents and the frequency with which they undertake different activities within a few miles of home or elsewhere in Devon. The percentage is expressed as the proportion of total responses for each activity and the most common frequency for each activity is shown in bold.

Activity	Frequency of visits				Total responses for each activity
	Most weeks	Most months	Most days	Few times a year or less	
Walking in countryside / at coast	382 (40)	256 (27)	162 (17)	149 (16)	949
Dog walking	31 (10)	32 (11)	191 (65)	42 (14)	296
Watersports	28 (15)	48 (25)	3 (2)	110 (58)	189
Mountain biking / off-roading	29 (15)	57 (30)	9 (5)	95 (50)	190
Horse riding (bridle paths / wider countryside)	19 (23)	10 (12)	5 (6)	47 (58)	81
Fishing / bait digging /crabbing / crab tiling	13 (8)	26 (16)	3 (2)	121 (74)	163
Wildlife watching	89 (21)	104 (24)	66 (15)	174 (40)	433
Wild camping (away from formal camp site)	0 (0)	7 (10)	1 (1)	65 (89)	73
Climbing or Caving	1 (2)	5 (11)	0 (0)	40 (87)	46

Conclusions

The higher responses rate from Teignbridge district may be due to the higher proportions of retired residents compared to Exeter City. Whilst a fifth of all respondents owned a dog, the higher rate of ownership in East Devon is due to access to green spaces for walking the dog. It is interesting to note that the 6% who did not access the countryside are linked to low mobility, are mainly retired, are often living in bungalows but are also more likely to own a dog which is perhaps for companionship and would be exercised locally in parks and along the road.

Given the proximity of the coast to residents of all three districts, it is unsurprising that it is the most popular type of location to visit all year round. Dartmoor features as a less frequently visited location but it is slightly more popular in the winter and is popular with dog owners. The most popular activity was walking in the countryside/at the coast and the two activities which stand out as taking visitors furthest afield were watersports and wildlife watching. Dog walking was the most frequent activity with 65% taking part most days whilst activities such as wildlife watching, watersports and mountain biking take place less frequently.

4. Visits to the Exe Estuary

Summary

- 4.1 Households were asked specific questions about their visits to the coast and estuaries and within this they were asked about their visits to seven locations on the Exe Estuary: Dawlish Warren Beach, Dawlish Warren Nature Reserve, Exmouth LNR/ Duckpond, Imperial Recreation Ground, Exmouth Seafront, The Maer and 'Unspecified Exe Estuary' (the remainder of the estuary outside the other locations). Respondents were asked to state how often they visited the seven locations on the Exe, which mode of transport they used to get there and the activity that they undertook.
- 4.2 There was no significant difference ($\chi^2_5=4.854$; $p=0.43$) in the proportion of responses received in relation to the number of questionnaires sent within successive distance bands away from the Exe (Table 20), indicating that people who lived closer to the Exe were not more likely to respond to the survey compared to those living further away.

Table 20: The proportion of households responding to the postal questionnaire within distance bands from locations on the Exe Estuary

Distance band from Exe (km)	Total number of questionnaires sent	Total number of responses received	Percentage of questionnaires received from those sent per distance band	Number of visits from respondents within distance band per year	Number of houses within distance band
1	450	118	26	25004	15490
5	2459	532	22	55744	76047
10	3156	707	22	60362	97127
15	4153	963	23	63770	153336
20	4466	1064	24	64854	199230
25	4845	1131	23	65682	251056

- 4.3 Combining responses to question B2 for visits to all Exe Estuary sites there are 67,662 visits per year made by the respondents, 53% of which are undertaken by visitors from East Devon, 28% by Exeter City residents and 19% by Teignbridge residents (Table 21). When factoring in the number of responses to the questionnaire for each local authority area, East Devon has the highest mean visit number per household at 79.4 visits per year compared to 26 by Teignbridge residents and 55.3 visits by Exeter City residents (Table 21).
- 4.4 From the free text responses an additional 84 visits to the 'Unspecified Exe location' (44 visits, 6 respondents) and Exmouth Seafront (40 visits, 1 respondent) were made by seven respondents. These data were not integrated into the analysis in this section because it was felt that although they could be categorised, the respondent chose not to comment on them in question B2.
- 4.5 Over one third (35%) of visits to the Exe were to 'Unspecified Exe location' which represented the remainder of the estuary outside of the six other locations. In second

place receiving 28% of all the annual visits from respondents was Exmouth Seafront. The majority of visits to Dawlish Warren Nature Reserve and beach were undertaken by residents in the nearby Teignbridge area (contributing 64% of visits to the nature reserve) (Table 21, Figure 1). Similarly due to proximity, most visits to locations around Exmouth (LNR/duckpond, seafront, the Maer and Imperial Recreation Ground) were undertaken by East Devon residents. Most visits from Exeter residents were to 'Unspecified Exe location' constituting 44% of all visits to this site from Exeter residents.

Table 21: Number of annual visits to locations on the Exe estuary with the percentage of visits from residents of each local authority to each site shown in brackets.

Location	Teignbridge		Exeter City		East Devon		Total	
	Visits	Response s	Visits	Response s	Visits	Response s	Visits	Response s
Dawlish Warren Beach	3720 (64)	376	1376 (24)	247	704 (12)	294	5800 (9)	917
Dawlish Warren Nature Reserve	2792 (60)	345	1138 (25)	214	706 (15)	283	4636 (7)	842
Exmouth LNR/ Duckpond	368 (9)	314	894 (23)	180	2648 (68)	296	3910 (6)	790
Exmouth Seafront	1630 (9)	352	3912 (21)	276	13502 (71)	367	19044 (28)	995
Imperial Recreation Ground	140 (4)	299	348 (11)	157	2764 (85)	286	3252 (5)	742
The Maer	582 (8)	304	1046 (14)	164	5838 (78)	297	7466 (11)	765
Unspecified Exe location	3852 (16)	359	10300 (44)	251	9402 (40)	324	23554 (35)	934
Total	13084 (19)	2350	19014 (28)	1491	35564 (53)	2150	67662	5985
Total respondents	504		344		448		1219	
Mean per respondent	26		55.3		79.4		55.5	

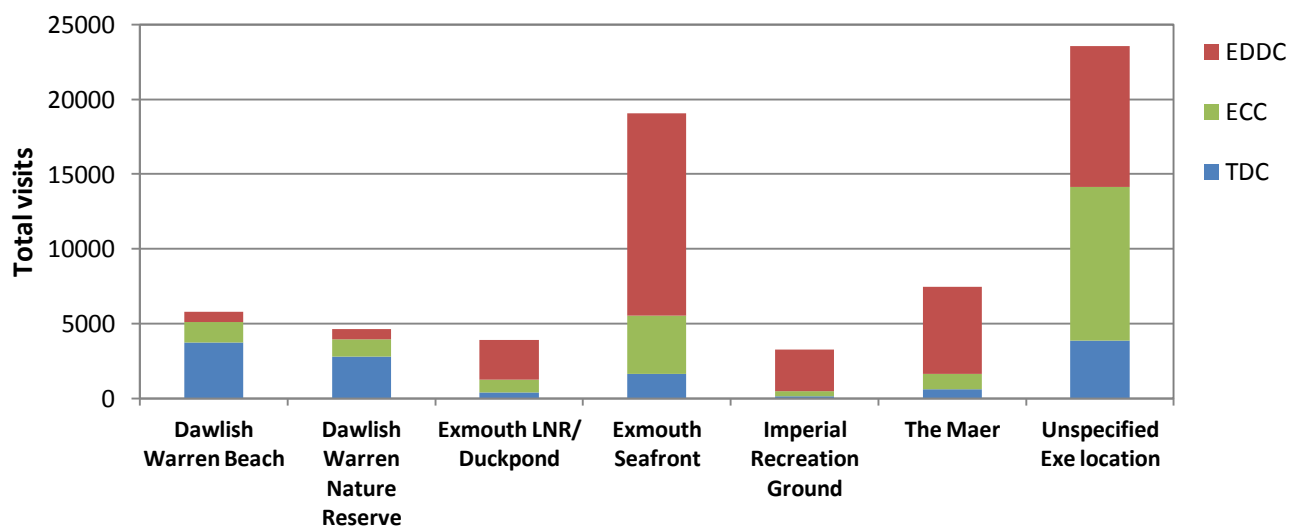
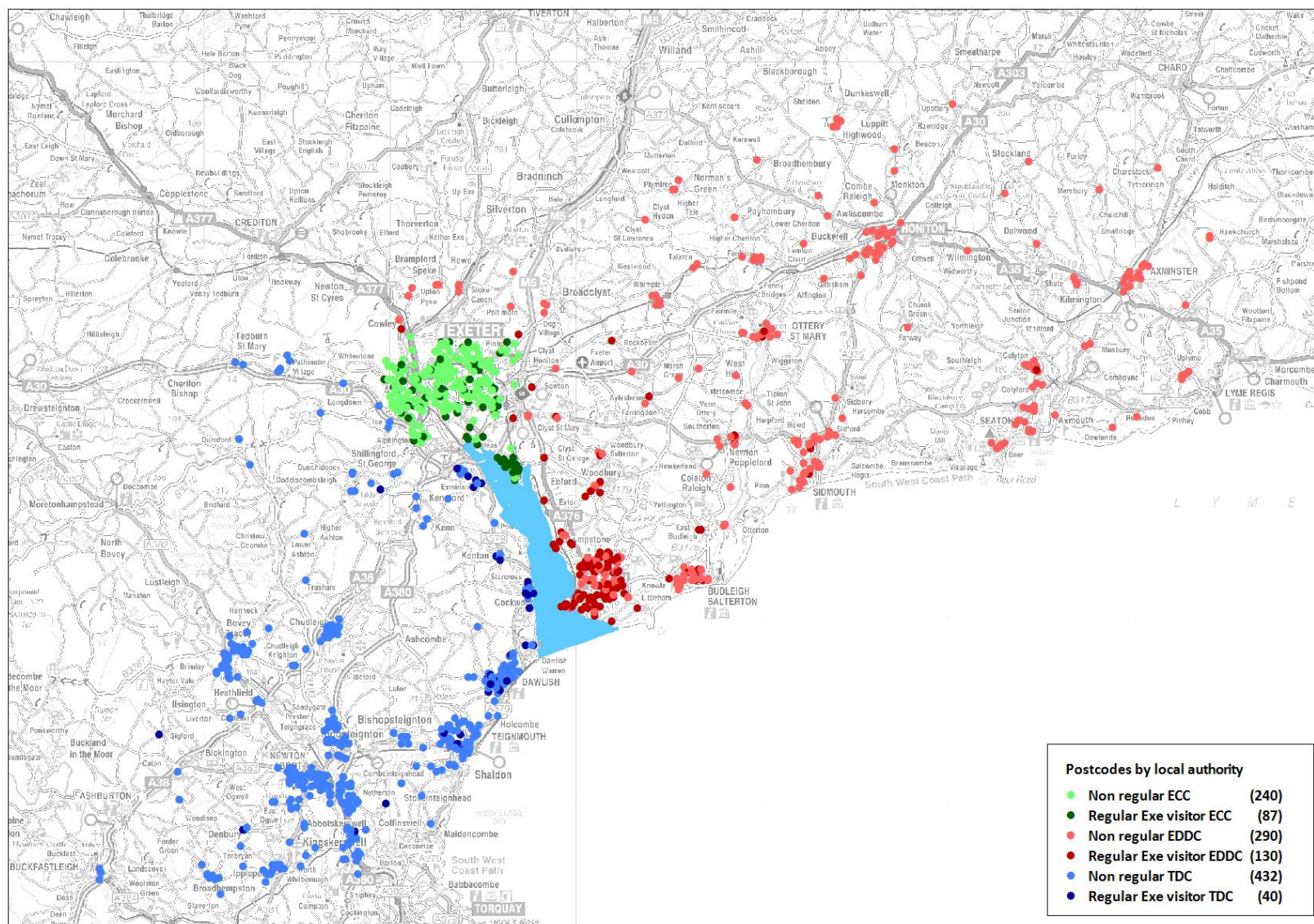


Figure 1: Number of visits to each location on the Exe by respondents from each local authority area.



Map 2: Postcodes of regular visitors (weekly or more) and non regular visitors to the Exe Estuary within each local authority area. Contains Ordnance Survey © data Crown copyright and database right 2011

The majority of visits to most locations on the Exe were made by car, with Dawlish Warren being the site with the highest proportion of car-borne visits. By contrast at the Exmouth sites a comparatively large proportion of visits are made on foot (Figure 2).

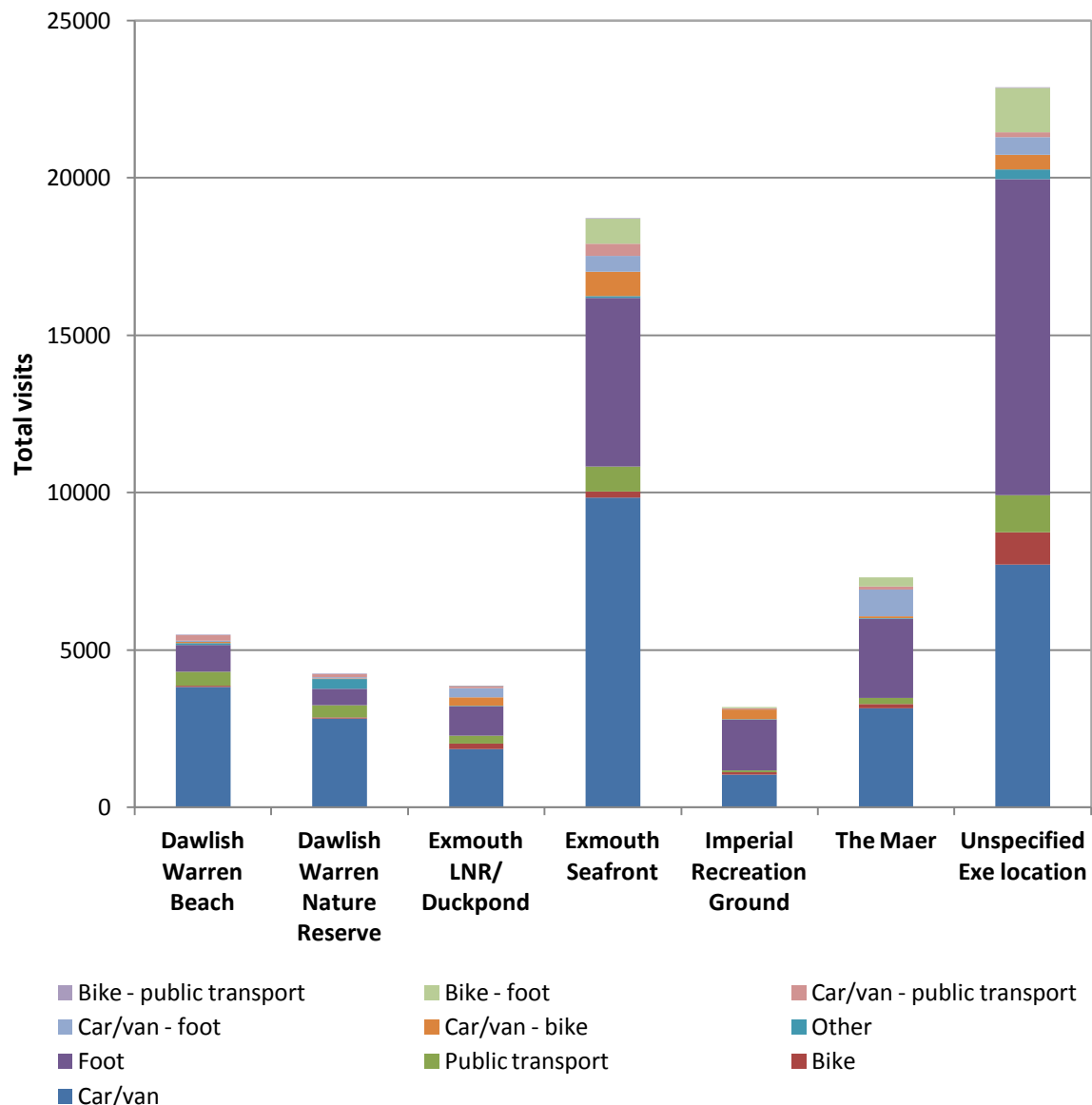


Figure 2: The number of visits made to each location on the Exe by transport type

4.6 Using the distance between respondents' home postcodes and the locations they visited it is possible to determine the distances at which people lived from the site (all distances determined as the straight line distance – i.e. 'as the crow flies' – rather than travel distance). These distances are summarised by mode of transport and by two particular types of activity (dog walking and watersports) in Table 22. As some respondents indicated that they used multiple different modes of transport (i.e. they perhaps visited a site by bicycle, by car and on foot) all combinations given are included in the table. It can be seen that over 30,000 visits per year are made by car/van, compared to nearly 22,000 on foot, with a further 13,000 visits made by other means of transport or by combinations (i.e. the respondent tended to vary which mode of transport they used). Car drivers typically travel the furthest: half of all respondents who stated that they visited the Exe and travelled there by car lived within 13.6km.

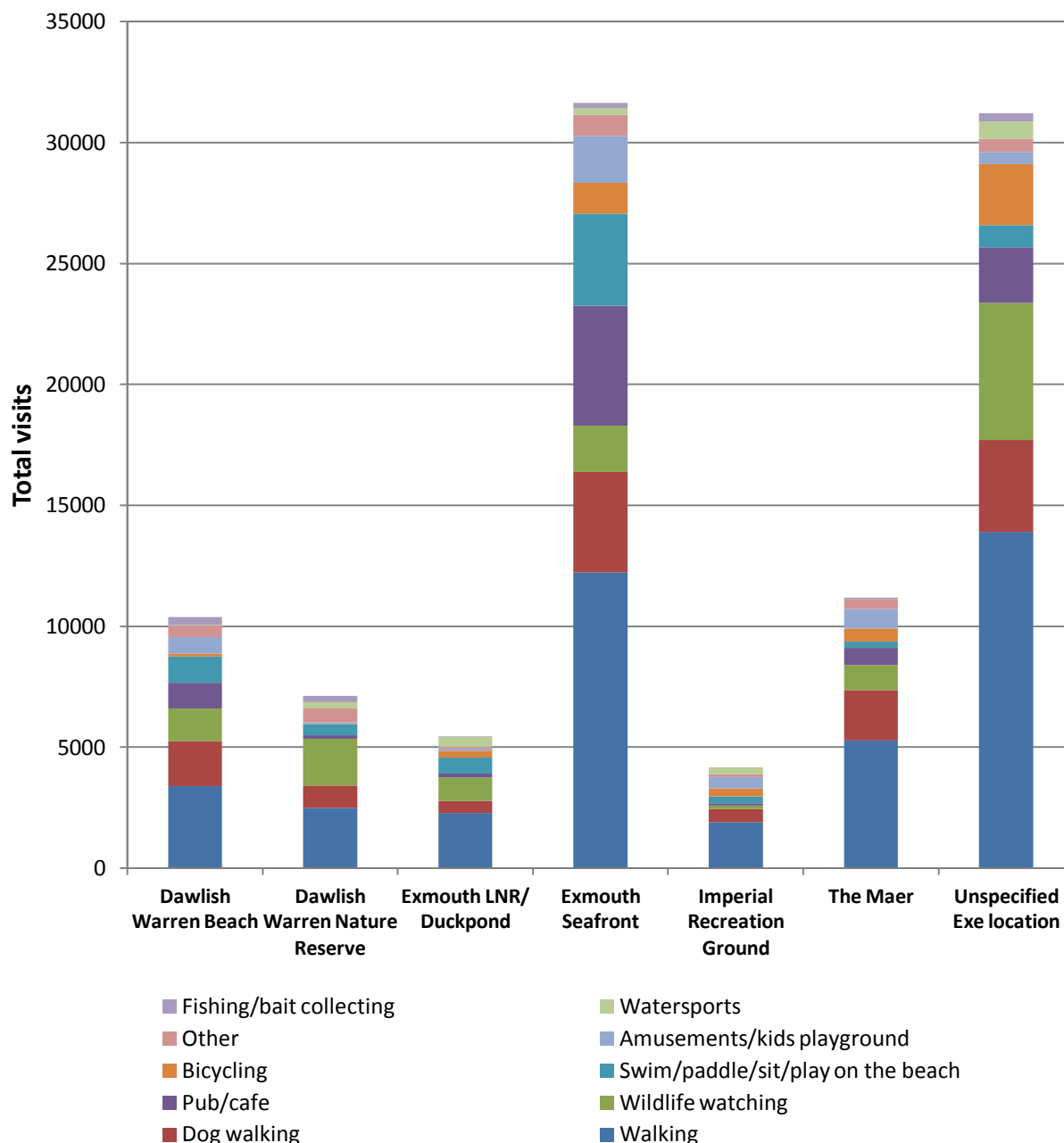
Table 22: Number of visits made to the Exe by each transport combination, the minimum, maximum and median distances from the home postcode to the site (for each respondent) and median distances for watersports and dog walking visits.

Transport	All visits					Watersports visits		Dog walking visits	
	Number of visits	Number of responses	Min distance (km)	Median distance (km)	Max distance (km)	Median distance (km)	Number of responses	Median distance (km)	Number of responses
Car/van	30248	2347	0.74	13.61	39.19	13.27	31	13.16	100
Foot	21794	289	0.21	3.11	18.57	1.23	2	3.89	9
Public transport	3300	327	1.65	13.21	34.47	16.83	1		
Bike - foot	2558	22	0.88	3.17	9.05	2.7	1		
Car/van - foot	2304	32	1.14	7.63	20.28			3.54	4
Car/van – bike	1914	54	1.42	8.73	22.75				
Bike	1668	87	0.88	7.87	25.51			17.86	1
Car/van - public transport	980	95	2.54	13.9	23.37			14.5	6
Other	800	42	1.18	6.2	26.29				
Bike - public transport	56	6	2.38	7.67	9.29				

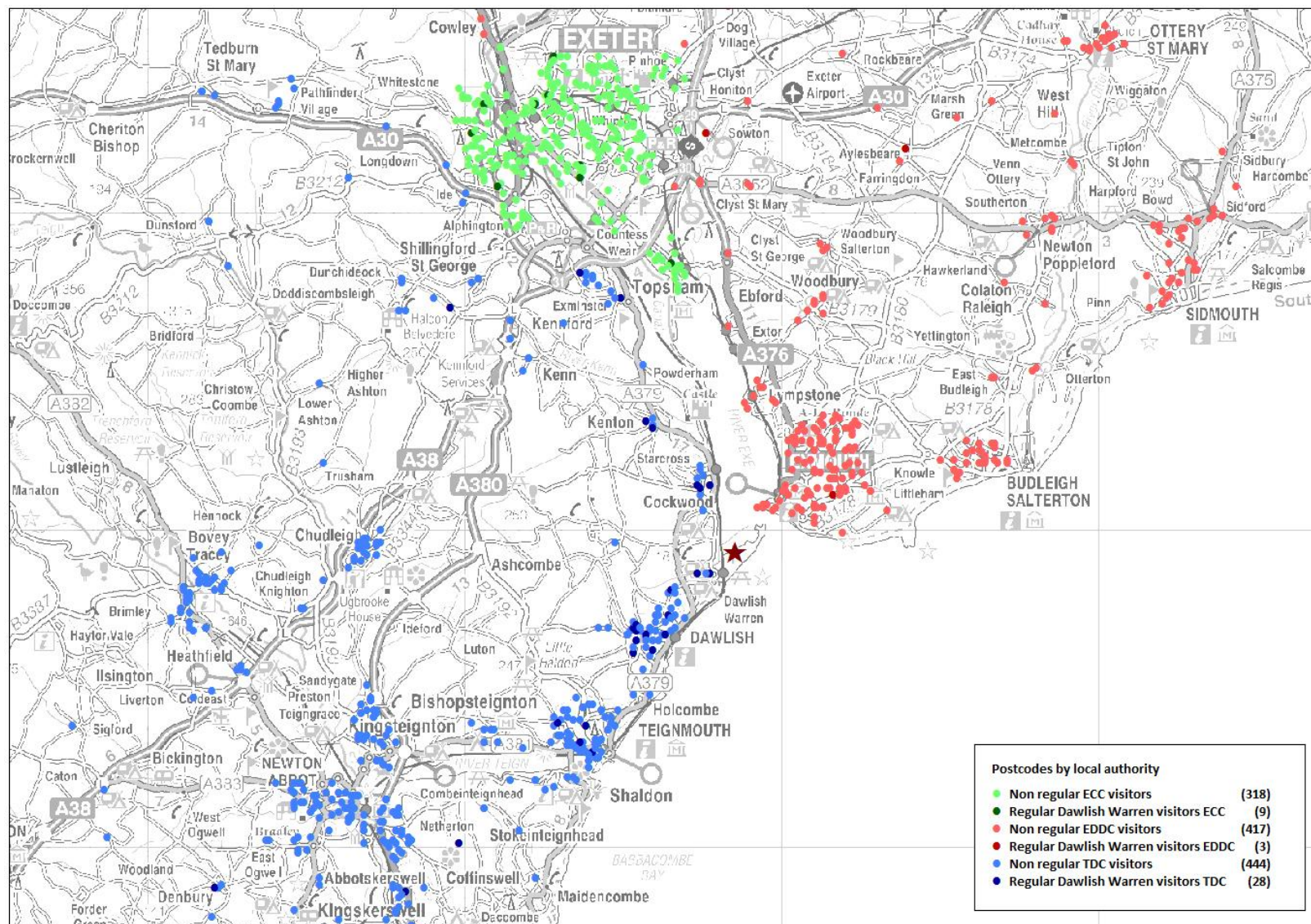
- 4.7 In cases where multiple activities were described, the number of annual visits for each individual activity at each location were calculated in the following way:
- if the multiple activities could happen simultaneously then the total number of visits (scaled up from the frequency see Table 2) was assigned to each activity
 - where the activities could not occur together (e.g. walking and watersports or walking and cycling) the total visits (as derived from Table 2) were divided by the number of activities
- 4.8 Therefore the total number of visits per activity per site is greater than the total visits to the Exe (67,662 per year compared to 101,170 considering visits per activity per site).
- 4.9 At each location on the Exe the most popular activity is walking which took place on 41% of all visits (Table 23). The locations which received the highest number of visits for walking were the 'Unspecified Exe location' and along Exmouth Seafront which also received the most dog walking visits.

Table 23: Number of visits to each location (% for each activity by location) on the Exe for each activity classified.

Activity	Dawlish Warren Beach		Dawlish Warren Nature Reserve		Exmouth LNR/ Duckpond		Exmouth Seafront		Imperial Recreation Ground		The Maer		Unspecified Exe location		Total	
	Visits	Responses	Visits	Responses	Visits	Responses	Visits	Responses	Visits	Responses	Visits	Responses	Visits	Responses	Visits	Responses
Walking	3400 (33)	478	2493 (35)	352	2274 (42)	200	12221 (39)	600	1904 (46)	120	5282 (47)	220	13896 (45)	519	41470 (41)	2489
Dog walking	1859 (18)	97	912 (13)	45	515 (9)	29	4157 (13)	123	537 (13)	27	2068 (19)	51	3820 (12)	116	13867 (14)	488
Wildlife watching	1342 (13)	113	1952 (27)	203	948 (17)	99	1923 (6)	67	144 (3)	14	1056 (9)	35	5652 (18)	200	13017 (13)	731
Pub/cafe	1066 (10)	102	133 (2)	26	170 (3)	24	449 (16)	214	104 (2)	16	691 (6)	27	2307 (7)	130	9421 (9)	539
Swim/paddle/sit/play on the beach	1091 (11)	147	445 (6)	28	654 (12)	16	3811 (12)	201	279 (7)	7	283 (3)	25	914 (3)	33	7478 (7)	457
Bicycling	104 (1)	23	39 (1)	9	288 (5)	22	1276 (4)	62	326 (8)	16	522 (5)	25	2533 (8)	122	5087 (5)	279
Amusements/kid's playground	693 (7)	60	74 (1)	8	97 (2)	10	1936 (6)	83	473 (11)	15	808 (7)	25	487 (2)	16	4567 (5)	217
Other	483 (5)	36	560 (8)	15	84 (2)	8	860 (3)	50	124 (3)	12	414 (4)	20	540 (2)	9	3065 (3)	150
Watersports	19 (0.2)	8	266 (4)	6	402 (7)	11	293 (1)	8	276 (7)	3	0		708 (2)	26	1964 (2)	62
Fishing/bait collecting	333 (3)	10	256 (4)	3	12 (0.2)	3	218 (1)	18	0		52 (0.5)	2	363 (1)	13	1234 (1)	49
Total	10389	1074	7130	695	5445	422	31645	1426	4168	230	11175	430	31220	1184	101170	5461



4.10 Most of the regular visitors to Dawlish Warren Nature Reserve lived in Teignbridge District, and in the settlements relatively close to the site, for example in Teignmouth, Dawlish, Exminster and Kenton (Map 3). There were four regular visitors who lived in Exeter and just one from East Devon (Exmouth). The site does however clearly also draw non-regular visitors from a wide area, including East Devon.



Map 3: Postcodes of regular visitors (weekly or more) and non regular visitors to Dawlish Warren Nature Reserve and beach within each local authority area (area selected to include the postcodes of all regular Dawlish Warren visitors). Contains Ordnance Survey © data Crown copyright and database right 2011.

- 4.11 Looking at visits for dog walking alone, the most popular locations for Teignbridge residents are Dawlish Warren Beach (42% of all Teignbridge dog walking visits to the Exe/Warren), Dawlish Warren Nature Reserve (19%) and 'Unspecified Exe location' (19%) (Table 24). The highest proportion of dog walking visits to the Exmouth LNR/duckpond came from residents of Exeter area whilst East Devon residents undertook most dog walking visits to the remaining locations near Exmouth. East Devon residents are responsible for more than half of all visits to the Exe for dog walking with each dog walker from the East Devon area visiting the Exe 105 times per year (roughly twice a week).

Table 24: Number (%) of visits to locations on the exe made for dog walking by residents from each local authority area. The local authority contributing the highest proportion of the dog walking visits to each location is shown in bold.

Location	Teignbridge	Exeter City	East Devon	Total
Dawlish Warren Beach	1758 (86)	208 (10)	72 (4)	2038 (12)
Dawlish Warren Nature Reserve	796 (86)	80 (9)	48 (5)	924 (6)
Exmouth LNR/ Duckpond	32 (6)	290 (50)	256 (44)	578 (4)
Exmouth Seafront	446 (9)	642 (13)	3992 (79)	5080 (31)
Imperial Recreation Ground	24 (4)	56 (10)	506 (86)	586 (4)
The Maer	346 (15)	390 (37)	1576 (47)	2312 (14)
Unspecified Exe location	788 (16)	1796 (21)	2260 (53)	4844 (30)
Total	4190 (26)	3462 (21)	8710 (53)	16362
Total dog walking households	72	41	83	196
Mean visits per dog walker	58	84	105	83

- 4.12 Visits to the Exe according to house type are summarised in Figure 3. The majority of visits were made by people living in large houses (more than 2 bedrooms). The true influence of house type is difficult to determine given the spatial variation in character of houses (i.e. particular types of house are likely to dominate in particular places). Differences were significant between house types (comparing bungalows, flats and the two sizes of house, $\chi^2_{27}=7223$; $p<0.001$). As can be seen from Figure 3 key differences were that a high proportion of people who lived in bungalows tended to go walking compared to the other house types; a comparatively high proportion of dog walkers at the Exe lived in bungalows, flats or houses with less than two bedrooms and a comparatively high proportion of those who lived in either type of house visited to undertake watersports. The most marked association was between fishing/bait collecting and people living in houses, particularly small houses (1 or 2 bedrooms).

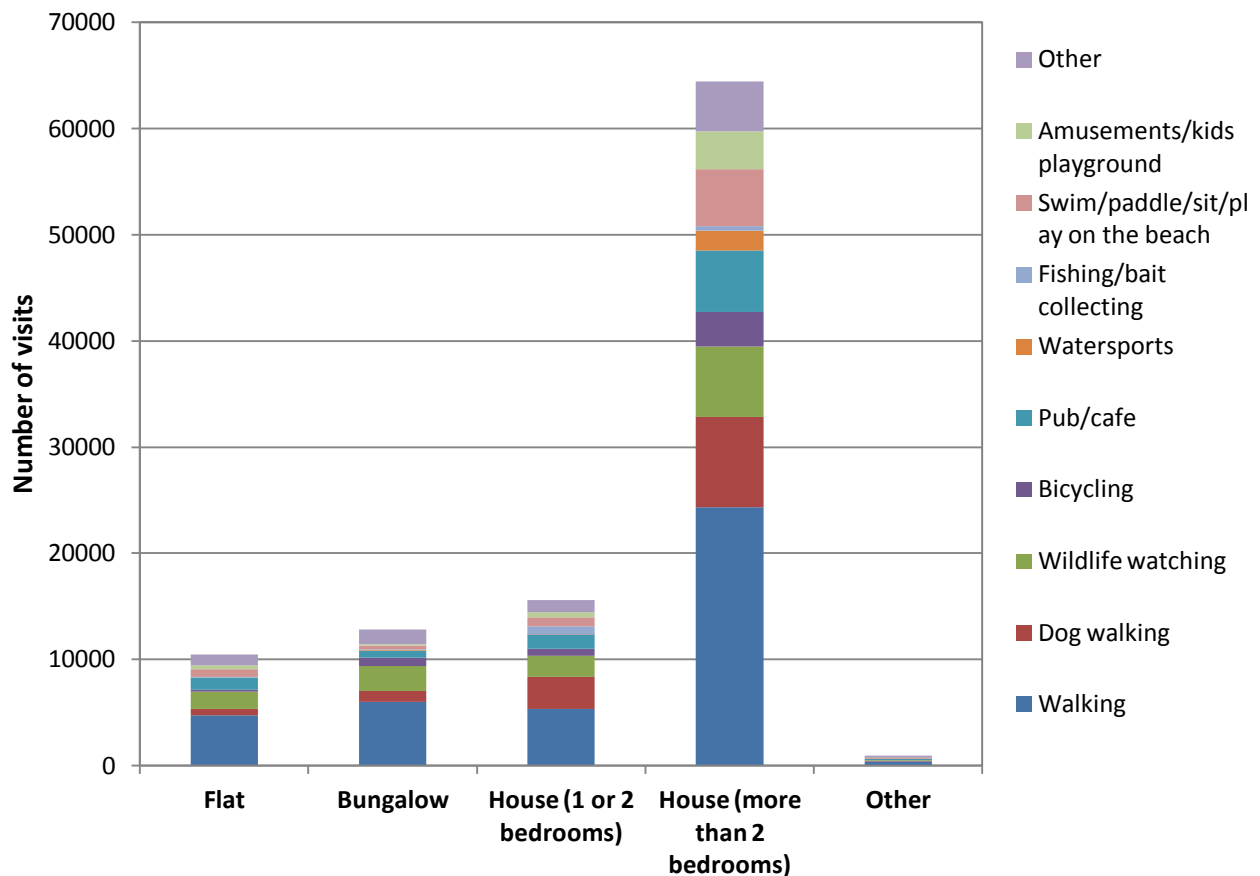


Figure 3: The number of visits to the Exe and activities undertaken with respect to house type.

Visitor rates to the Exe

4.13 Visitor rates (the number of visits per household per year) to the Exe Estuary (combining all individual locations) were plotted in relation to distance. These plots were derived by calculating the number of visits made by all respondents living within successive distance bands around the Exe, and then dividing this number of visits by the number of respondents. Lines were fitted through the points to provide easy visual summaries of the data. These plots, shown for different modes of transport and for dog walking and watersports (Figure 4 and Figure 5), highlight the distances at which relatively few visits are made, on average, by each household. The plots indicate the approximate distances from the estuary at which new development might be expected to result in relatively little additional access at the Exe. It can be seen that, for all activities and all modes of transport combined, visitor rates tend to 'flatten off' at around 12km. The settlements which fall at these distances of 5km and 12km are shown in Map 4. The sample size for watersports was relatively small, and so we have not plotted a line for these points (Figure 5), but it would appear that people living within 5km of the estuary tend to visit disproportionately more (to undertake watersports) than those living greater distances away.

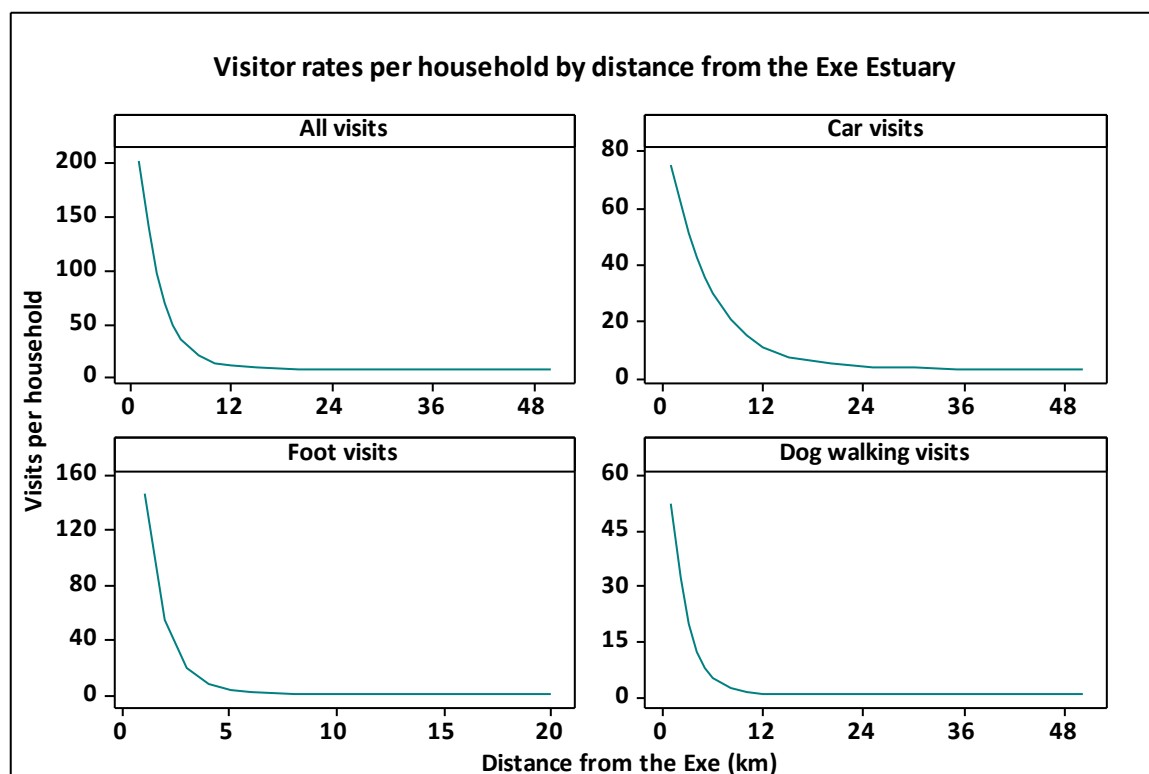


Figure 4: Visitor rates to the Exe estuary from households within distance bands from SPA boundary. Exponential trendlines fitted manually, so as to maximise R^2 (all visits $R^2=0.96$; car visits $R^2=0.74$; foot visits $R^2=0.99$; dog walking visits $R^2=0.87$). Scales differ between visit types.

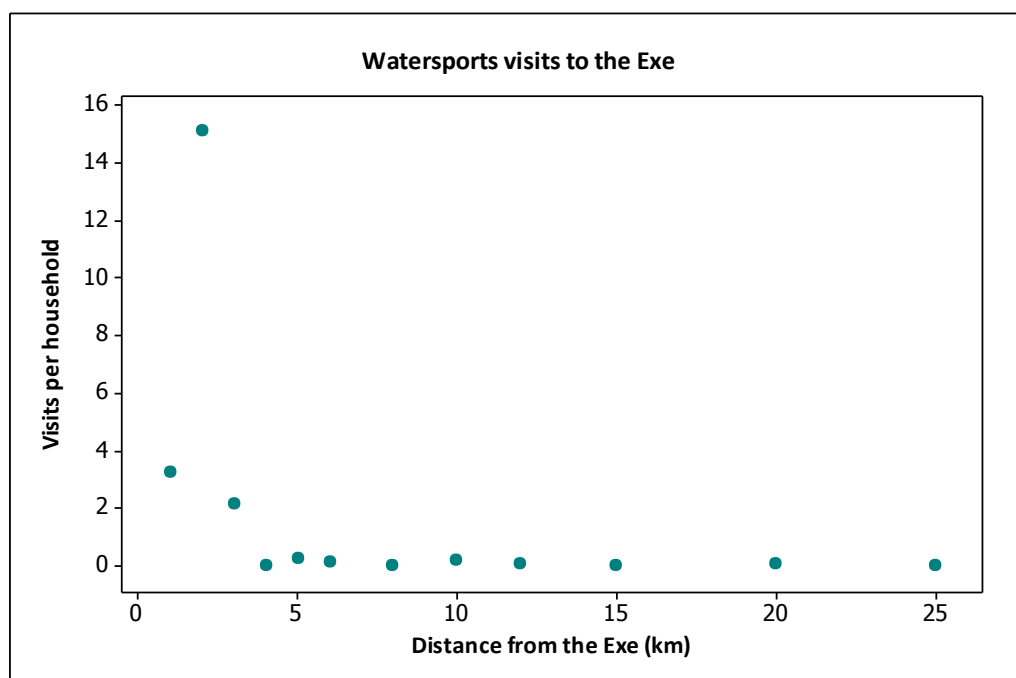


Figure 5: Visits per household for watersports activities on the Exe Estuary from households within distance bands up to 25km from SPA boundary.

Visit rates to Dawlish Warren Nature Reserve and Beach

4.14 Visitor rates (the number of visits per household per year) to the Dawlish Warren Nature Reserve and beach were plotted in relation to distance for all visits and visits on foot. Like

the Exe, these plots were derived by calculating the number of visits made by all respondents living within successive distance bands around the site (using a central point of the nature reserve as the location), and then dividing this number of visits by the number of respondents. Only data supplied by respondents on the west of the Exe Estuary (using a cut off line north from Countess Wear Bridge to Tiverton) were included as when looking at visit rates by distance bands the households to the east of the site will be included despite the fact that they would have to drive all the way around the Exe to reach Dawlish or use the water taxi (summer only). These plots show that for all visits (activities and transport combined), the visitor rates flatten off around 11km indicating the relatively local pull of the site. There are fewer foot visits to Dawlish Warren and foot visits are seldom seen from households further than 5km. The settlements which fall at these distances of 5km and 11km are shown in Map 4.

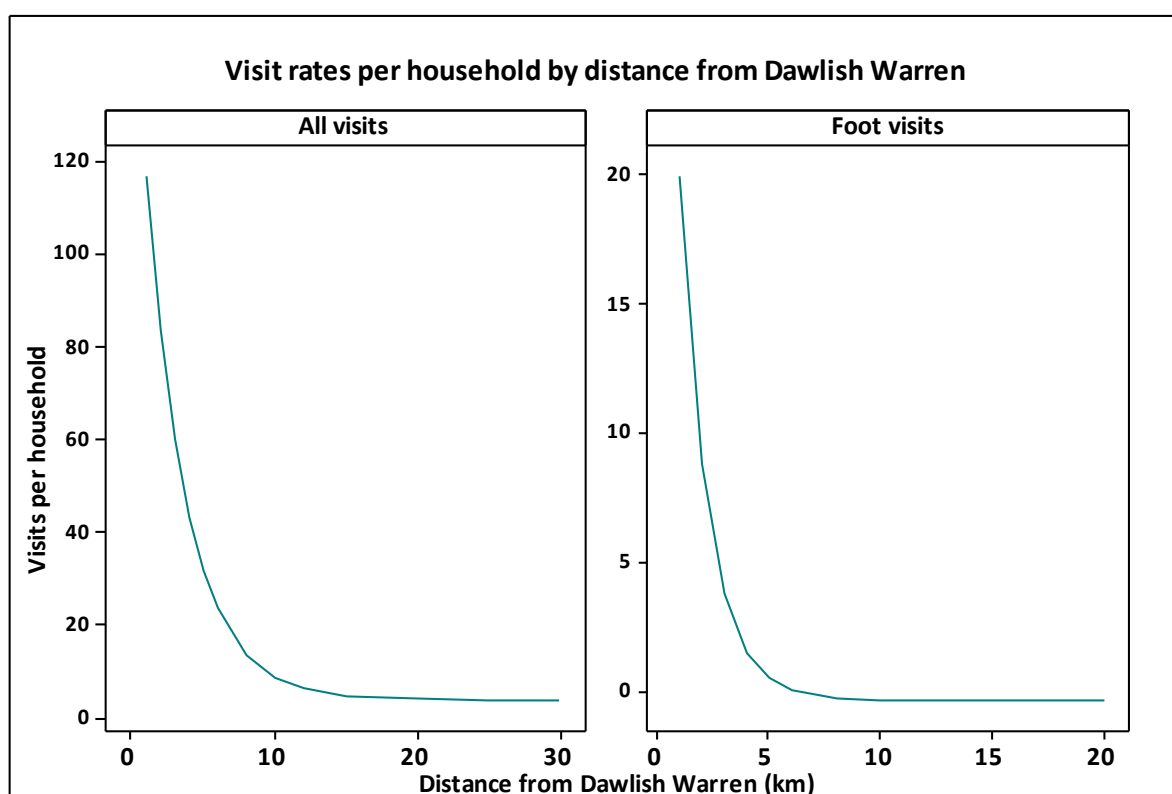
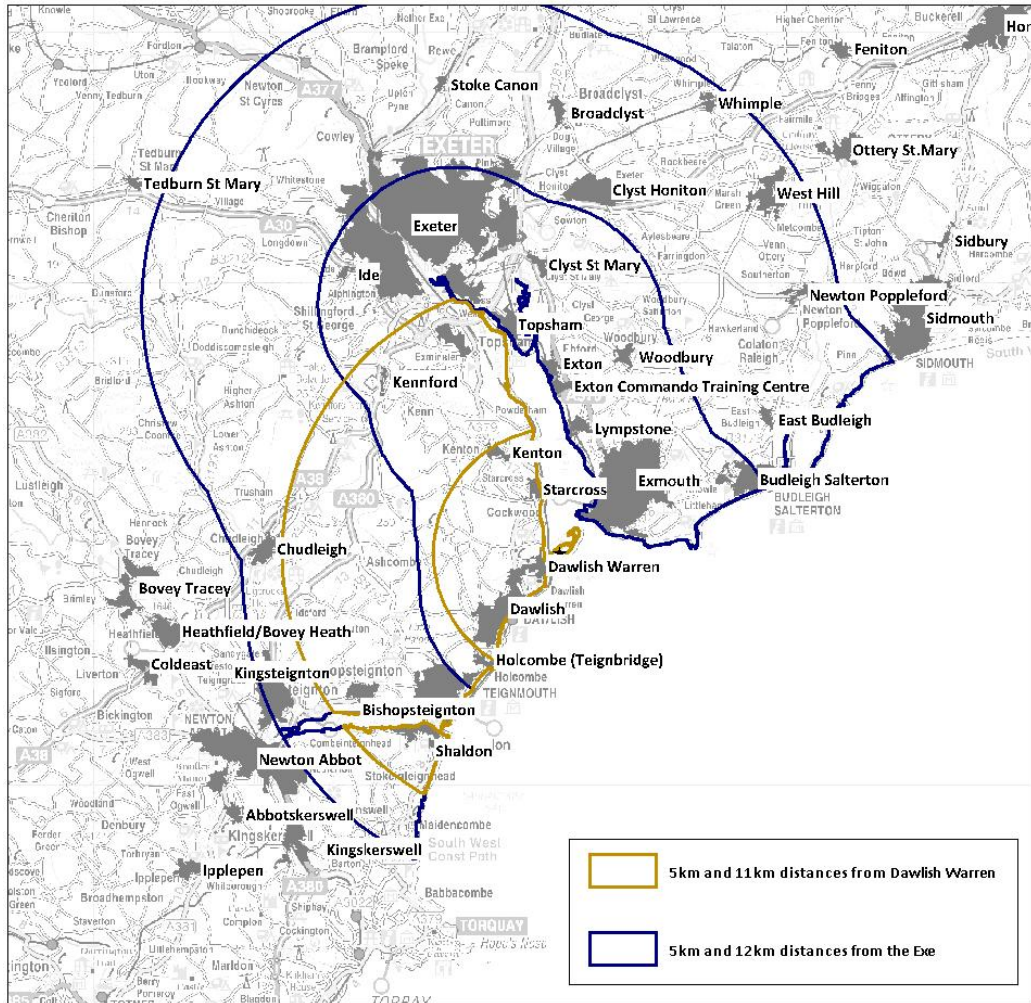


Figure 6: Visitor rates to Dawlish Warren Nature Reserve and beach from households within distance bands from the reserve boundary to the west of the Exe SPA. Exponential trendlines fitted manually, so as to maximise R^2 (all visits $R^2=0.38$; foot visits $R^2=0.92$). Scales differ between visit types.



Map 4: Settlements and buffers around the Dawlish Warren and the Exe estuary. Contains Ordnance Survey data Crown © copyright and database right 2011.

Conclusion

The Exe was the busiest location with 67,662 visits per year and the majority were made by visitors from East Devon District due to the high density of housing along the eastern edge of the estuary. From the categorised locations, Exmouth seafront was the most popular whilst the majority of visits to Dawlish Warren Nature Reserve were made by Teignbridge residents. Car was the most popular mode of transport to the Exe although many residents of Exmouth walk to their local seafront. Overall the most popular activity is walking. Differences were observed between the preferred locations of dog walkers from the different districts with Teignbridge dog walkers preferring Dawlish Warren Beach, East Devon dog walkers preferring Exmouth Seafront and Exeter City dog walkers most likely to use Exmouth LNR.

Considering all activities and modes of transport, visitor rates to the Exe flatten off at 12km whilst the majority of foot visitors and dog walkers travel from within 5km. Considering all visits by car alone, 18km appears to be the distance at which visitor rates per household flatten off. The attractiveness of the estuary to watersports users is apparent with people living within 5km of the estuary tending to visit disproportionately more to go out on the water.

5. Visits to Dartmoor

5.1 Households were asked about their visits to the Dartmoor National Park (DNP). Respondents were asked to comment on visits to eight specific locations (A-H), the option to comment on an additional 19 locations (1-19) plus the option to describe other locations. The data on visit frequency, activities and transport for all types of responses have been combined and are summarised below. With respect to the eight specific locations in question C2, we have assumed that responses received refer to the site names given in the table in question C2 rather than the labelled locations on the map (which are incorrectly labelled).

5.2 The eight target locations were Steps Bridge/ Dunsford Wood/ Bridford Wood, Newbridge/Spitchwick area, Dartmeet, Wistman's Wood, Grimspound, Warren house Inn, Yarner wood/Trendlebere Down and Postbridge. Of these locations the most popular, each with more than 2500 visits (around 10%) from respondents, were Dartmeet, Postbridge and Steps Bridge (Table 25). Residents from the Teignbridge area undertook the most visits to Dartmoor with an average of 30.9 visits per year per household undertaking 58% of the visits compared to only 17.5 visits by Exeter City residents contributing 22% of the visits and 11.7 visits by East Devon residents (19% of the total visits). Widecombe-in-the-Moor and Yarner Wood were the most visited locations by residents from the Teignbridge area whereas Steps Bridge, Postbridge and Dartmeet stood out for Exeter City and East Devon residents (Table 25, Figure 7).

Table 25: Number of annual visits and number of households that visit locations on Dartmoor. Mapped locations from question C2 in bold, locations omitted from question C2 in bold italic and mapped locations 1-19 in plain text. The percentage of visits from residents of each local authority to each site is shown in brackets and the local authority contributing the most visits shown in bold.

Location	Teignbridge		Exeter City		East Devon		Total	
	Visits	Responses	Visits	Responses	Visits	Responses	Visits	Responses
Dartmeet	1340 (52)	231	596 (23)	133	632 (25)	152	2568	516
Postbridge	1164 (46)	203	704 (28)	147	656 (26)	150	2524	500
Steps Bridge	1186 (47)	161	816 (32)	171	520 (21)	119	2522	451
Yarner Wood	1552 (79)	150	212 (11)	51	200 (10)	50	1964	251
Warren house Inn	740 (48)	131	452 (30)	86	340 (22)	77	1532	294
Wistman's Wood	824 (57)	151	272 (19)	66	344 (24)	69	1440	286
Grimspound	560 (53)	110	288 (27)	61	204 (19)	49	1052	220
Newbridge	336 (81)	78	80 (19)	9	0		416	87
<i>Haytor</i>	926 (78)	74	136 (11)	28	128 (11)	32	1190	134
<i>Holne Moor</i>	96 (96)	14			4 (4)	1	100	15
<i>Lustleigh Cleave/Bovey Valley</i>	740 (92)	35	12 (1)	3	56 (7)	14	808	52
Widecombe in the Moor	1632 (70)	170	280 (12)	66	408 (18)	92	2320	328
Teign Valley Woods/ Castle Drogo/Fingle Bridge/Clifford Bridge	804 (50)	115	452 (28)	93	360 (22)	82	1616	290
Princetown/Whiteworks	432 (49)	87	204 (23)	41	248 (28)	56	884	184

Location	Teignbridge		Exeter City		East Devon		Total	
	Visits	Responses	Visits	Responses	Visits	Responses	Visits	Responses
River Dart Country Park	530 (70)	50	88 (12)	22	144 (19)	34	762	106
Kennick/Trenchford/ Tottiford Reservoirs	492 (72)	74	148 (22)	26	44 (6)	11	684	111
Fernworthy Wood and Reservoir	252 (48)	43	176 (34)	36	96 (18)	22	524	101
Belstone/River Taw	176 (36)	27	228 (46)	49	88 (18)	22	492	98
Hembury Woods	386 (86)	29	28 (6)	7	36 (8)	9	450	45
Lydford	104 (24)	24	200 (46)	39	132 (30)	33	436	96
Ivybridge/South Brent/South Moor	212 (60)	27	72 (20)	16	72 (20)	18	356	61
Burrator Reservoir/Sheepstor	140 (41)	33	84 (24)	21	120 (35)	28	344	82
Meldon Reservoir	120 (36)	21	140 (42)	33	72 (22)	18	332	72
Okehampton Camp/military loop road	72 (30)	9	104 (43)	24	64 (27)	16	240	49
Merrivale	128 (62)	21	32 (15)	6	48 (23)	10	208	37
Shipley Bridge/Avon Down	156 (78)	24	32 (16)	6	12 (6)	3	200	33
Cadover Bridge	48 (60)	8	12 (15)	3	20 (25)	5	80	16
Harford Moor	52 (81)	4	4 (6)	1	8 (13)	2	64	7
Sourton/Prewley	4 (8)	1	32 (67)	6	12 (25)	3	48	10
Shaugh Bridge	16 (44)	4			20 (56)	5	36	9
Free text locations	376 (58)	33	132 (20)	23	140 (22)	25	648	81
Total	15596 (58)	2143	6016 (22)	1275	5228 (19)	1210	26840	4622
Total respondents	504		344		448		1219	
Mean per respondent	30.9		17.5		11.7		22	

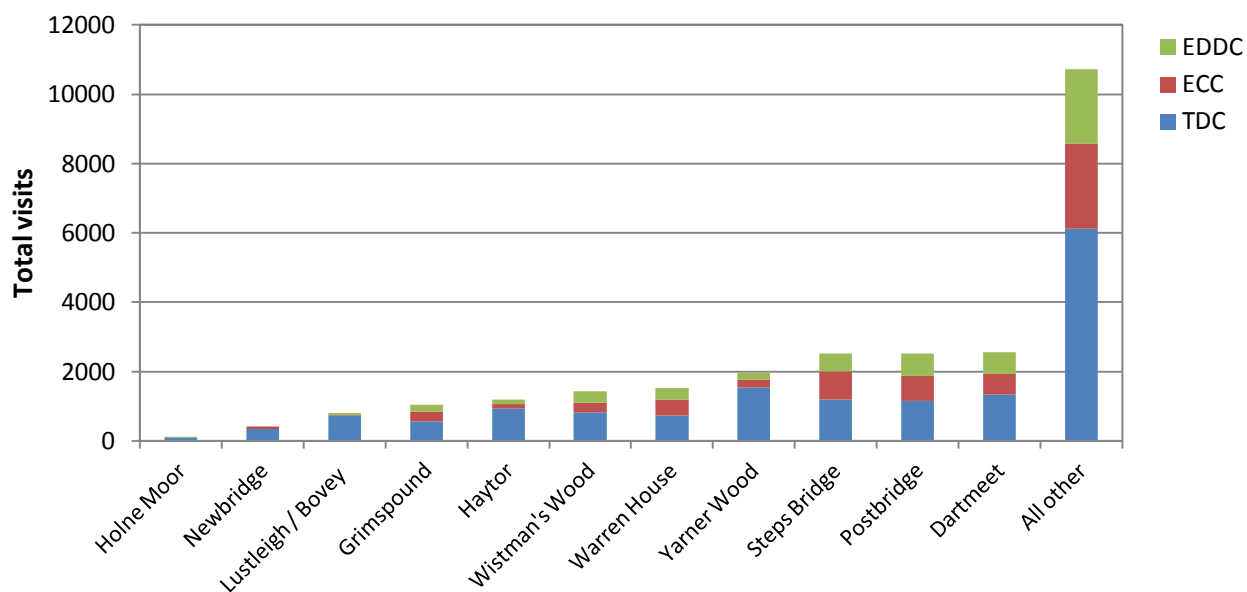
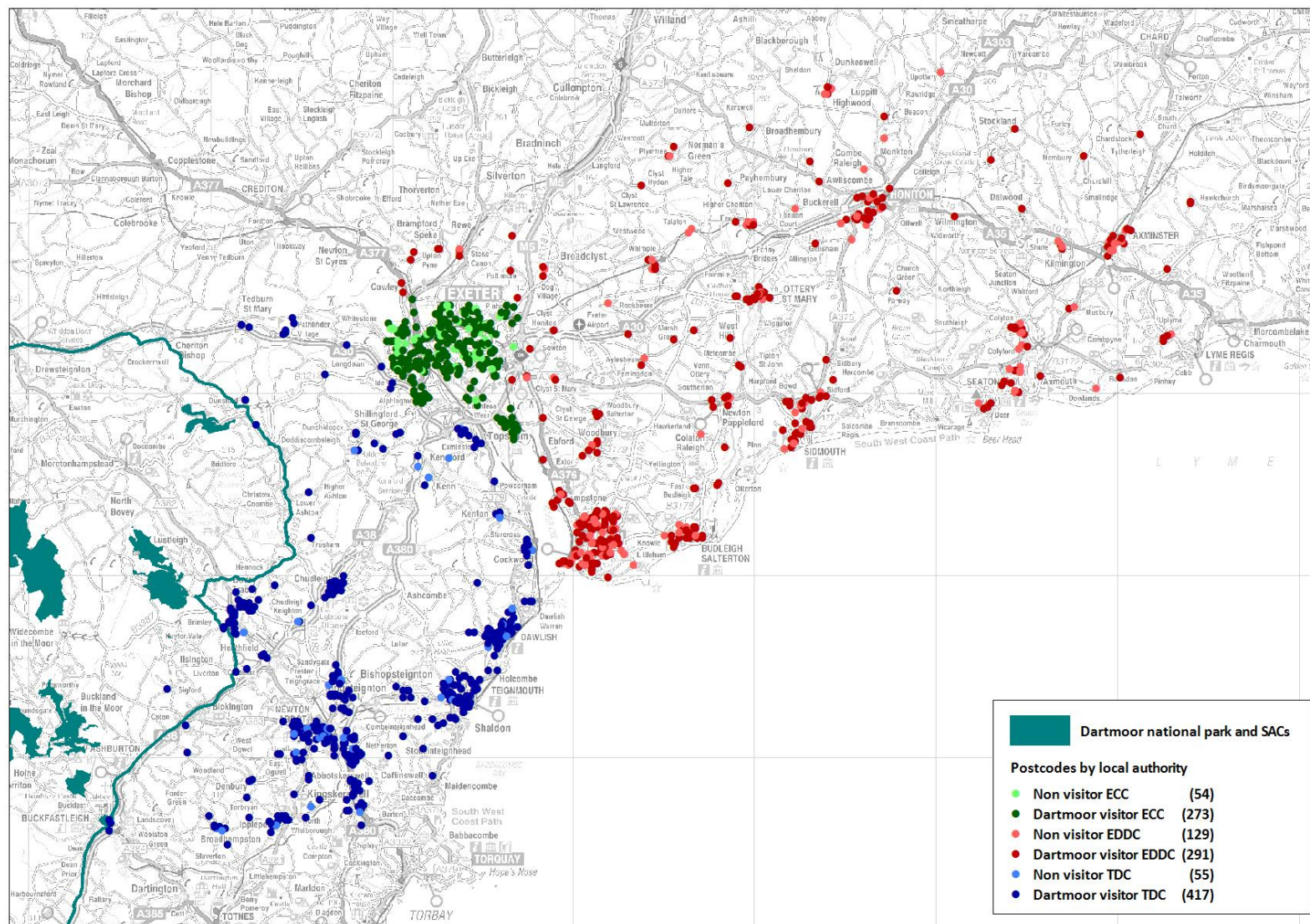


Figure 7: Number of visits to each location on Dartmoor by respondents from each local authority area.

- 5.3 There were significant differences in the proportion of questionnaire responses received according to distance from the Dartmoor National Park boundary ($\chi^2_5 = 18.301$; $p=0.003$). In particular there was a high proportion (33%) of responses received from the relatively small number of households that were within 1km of the national park boundary (Table 26).

Table 26: The proportion of households responding to the postal questionnaire within different fixed distance bands from Dartmoor National Park Boundary

Distance band from Dartmoor (km)	Total number of questionnaires sent	Total number of responses received	Percentage of questionnaires received from those sent per distance band	Number of visits from respondents within distance band per year	Number of houses within distance band
1	90	35	39	4208	28445
5	418	123	29	7874	70396
10	1720	415	24	14468	217601
15	3472	820	24	22012	350731
20	4027	951	24	23836	405164
25	4206	1005	24	24588	434442



Map 5: Postcodes of respondents within each local authority area that either visit or do not visit Dartmoor (combined data on locations A-H, 1-19 and free text from section C). Contains Ordnance Survey data Crown © copyright and database right 2011.

5.4 As would be expected the most visits to Dartmoor were made by car (88%), and people tended to travel quite some distance to reach the sites visited (Table 27), particularly when compared to the Exe. Half of all people travelling by car lived at least 26km from the site they stated they visited.

Table 27: Number of visits made to Dartmoor (eight specific locations A-H plus Holne Moor, Haytor and Lustleigh/Bovey) by each transport combination, the minimum, maximum and median distances from the home postcode to the site.

Transport	Number (%) of visits	Number of responses	Min distance (km)	Median distance (km)	Max distance (km)
Car/van	13772 (88)	2590	2.094	25.508	73.638
Car/van-foot-bike	682 (4)	39	4.08	20.44	33.17
Foot	560 (4)	13	2.05	11.49	34.43
Other	382 (2)	20	2.05	18.08	68.36
Public transport	184 (1)	33	4.02	24.72	35.85
Bicycling	116 (1)	10	4.26	12.39	31.95
Total	15696	2705			

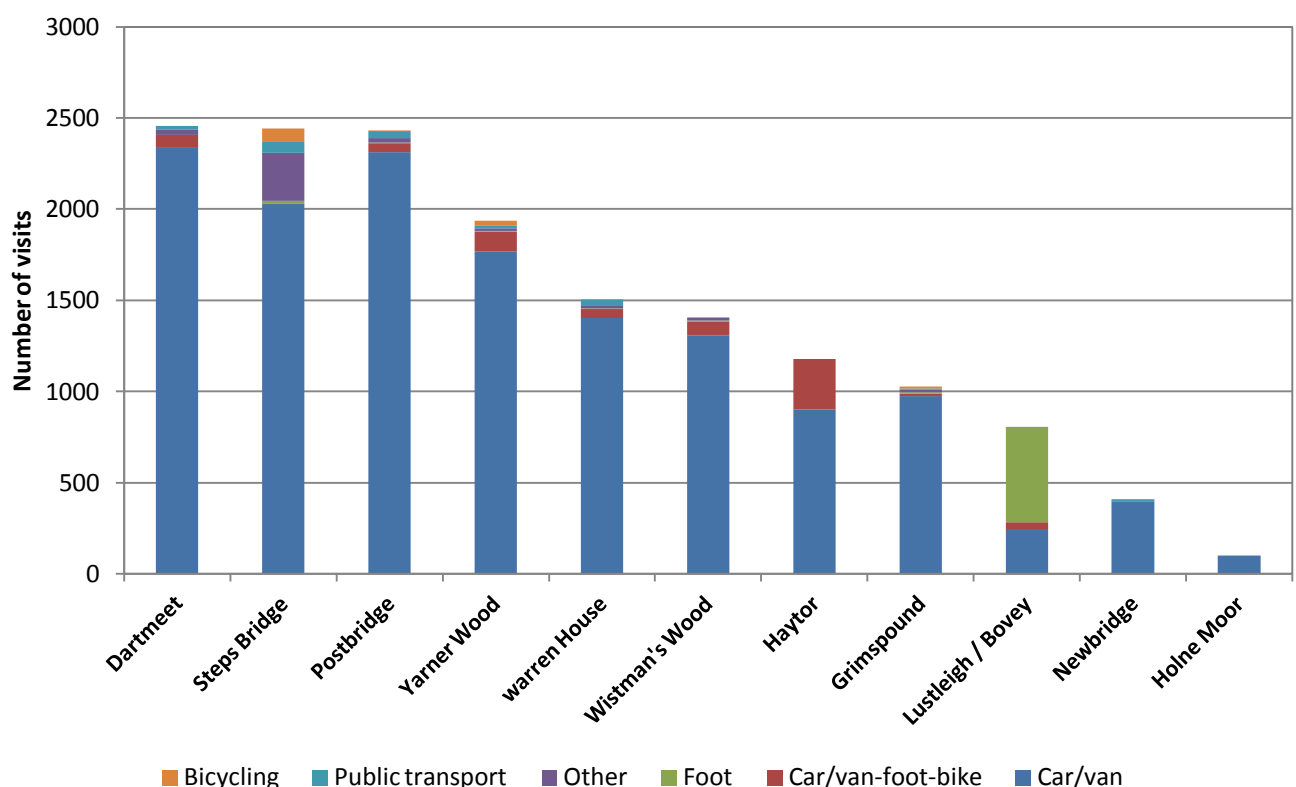


Figure 8: The number of visits made to each location on Dartmoor by transport type.

5.5 Dartmoor also appears to draw people for different reasons than the Exe and other sites. Figure 9 and Table 28 show the number of visits made by respondents to the key sites. Walking and dog walking are the main activities, but other activities such as mountain biking, remote camping, horse riding and rock climbing feature. While walking was the activity undertaken on by far the majority of visits, 'Pub/cafe' was the third most popular

cited activity. Wildlife watching was particularly popular at Steps Bridge, Yarner, Grimspond, Dartmeet and Wistman's Wood, with it being the second most popular activity after walking at Yarner, Wistman's and Grimspond

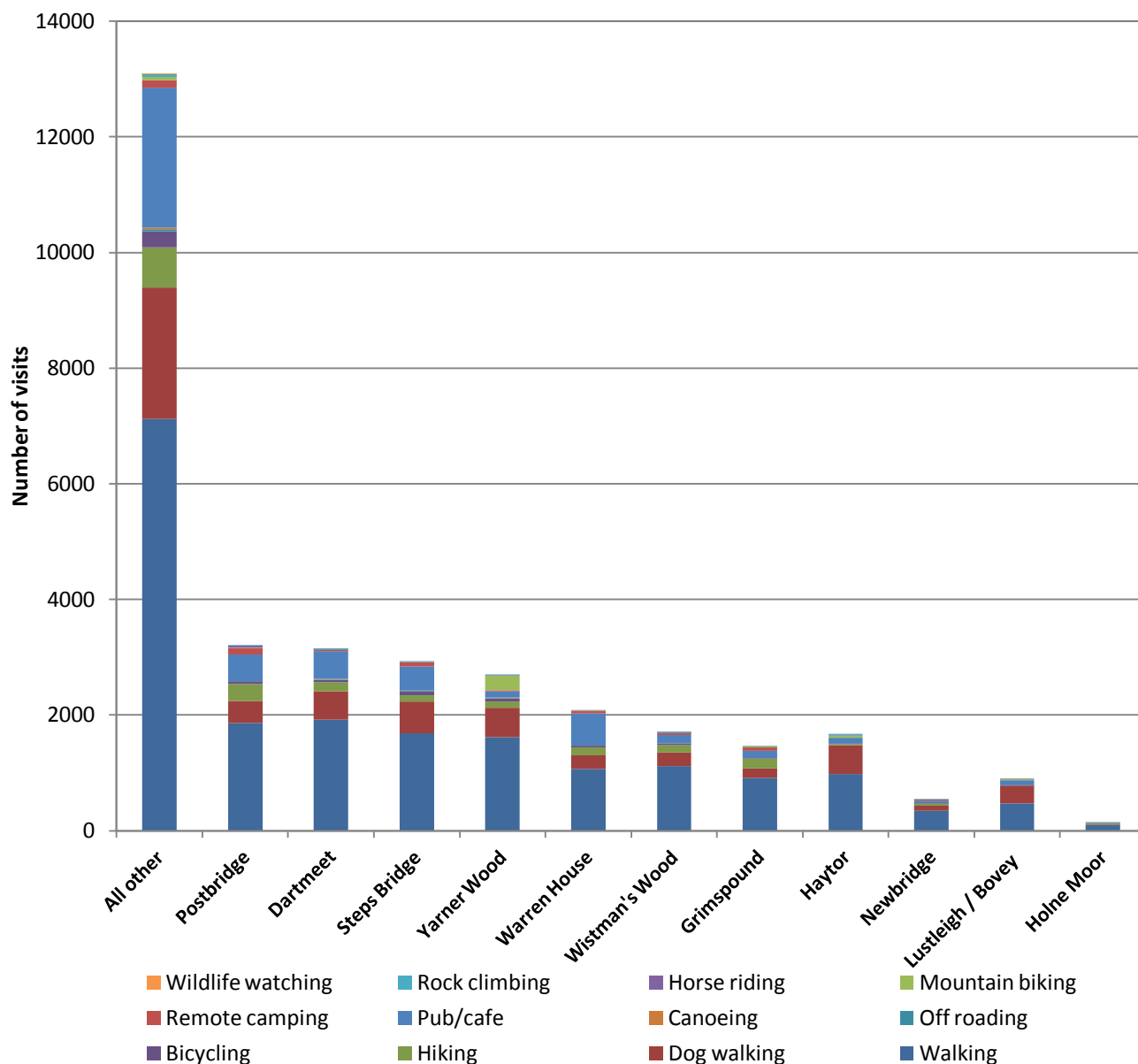


Figure 9: The number of visits for each activity category to each location on Dartmoor.

Table 28: Number of visits to each location (% for each activity by location) on Dartmoor for each activity classified and the number of responses (households which visit each location for each activity).

Activity	Dartmeet		Grimspound		Newbridge		Postbridge		Steps Bridge		Warren house		Wistman's wood		Yarner wood		Haytor		Holne Moor		Lustleigh Cleave/Bovey		All others		Total	
	Visits	Responses	Visits	Responses	Visits	Responses	Visits	Responses	Visits	Responses	Visits	Responses	Visits	Responses	Visits	Responses	Visits	Responses	Visits	Responses	Visits	Responses	Visits	Responses	Visits	Responses
Walking	1925 (54)	406	908 (54)	192	343 (58)	70	1862 (52)	403	1689 (49)	364	1068 (46)	226	1119 (57)	232	1621 (49)	215	984 (57)	113	97 (70)	15	468 (52)	44	7126 (52)	1428	19213 (52)	3708
Dog walking	489 (14)	93	170 (10)	33	92 (16)	19	384 (11)	77	541 (16)	90	238 (10)	48	238 (12)	44	508 (16)	43	494 (28)	27	16 (11)	2	306 (34)	4	2266 (16)	300	5742 (16)	780
Hiking	150 (4)	28	162 (10)	24	32 (5)	8	291 (8)	39	113 (3)	28	134 (6)	23	126 (6)	31	106 (3)	19	20 (1)	3	12 (9)	1	4 (0)	1	695 (5)	119	1846 (5)	324
Bicycling	39 (1)	11	11 (1)	8	1	1	35 (1)	14	70 (2)	14	27 (1)	9	24 (1)	9	47 (1)	14	9 (1)	2	0	0	21 (2)	3	282 (2)	77	568 (1.5)	162
Off roading	17 (0.5)	3	0	0	0	0	2 (0.1)	1	18 (1)	3	0	0	13 (1)	1	15 (0.4)	2	7 (0.4)	2	0	0	0	0	36 (0.3)	5	108 (0.3)	17
Canoeing	9 (0.2)	6	1 (0.03)	1	7 (1)	3	2 (0.1)	1	3 (0.1)	2	1 (0.02)	1	1 (0.03)	1	2 (0.1)	1		0	0	0	0	0	25 (0.2)	14	50 (0.1)	30
Pub/cafe	480 (13)	100	126 (8)	25	48 (8)	12	470 (13)	102	411 (12)	80	558 (24)	108	139 (7)	34	113 (3)	25	93 (5)	11	13 (10)	2	73 (8)	15	2425 (18)	433	4951 (13.3)	947
Remote camping	25 (1)	7	65 (4)	8	12 (2)	3	110 (3)	10	62 (2)	7	45 (2)	9	31 (2)	9	18 (1)	5	0	0	0	0	0	0	124 (1)	21	490 (1.3)	79
Mountain biking	1 (0.02)	1	13 (1)	2	0	0	6 (0.2)	2	11 (0.3)	4	9 (0.4)	2	1 (0.03)	1	254 (8)	4	40 (2)	1	0	0	19 (2)	3	58 (0.4)	26	410 (1)	46
Horse riding	5 (0.1)	2	0	0	0	0	41 (1)	2	1 (0.03)	1	5 (0.2)	2	1 (0.03)	1	5 (0.2)	2	13 (1)	2	1 (1)	1	1 (0.1)	1	5 (0.04)	2	79 (0.2)	16
Rock climbing	16 (0.4)	2	8 (0.5)	2	4 (1)	1	8 (0.2)	2	12 (0.3)	3	0	0	20 (1)	3	4 (0.1)	1	19 (1)	5	0	0	0	0	43 (0.3)	11	134 (0.4)	30
Wildlife watching	423 (12)	9	211 (13)	53	52 (9)	13	401 (11)	92	542 (16)	109	255 (11)	59	235 (12)	57	584 (18)	72	60 (3)	6	0	0	0	0	734 (5)	146	3496 (9)	699
Total	3579	751	1675	348	592	130	3612	745	3472	705	2340	487	1948	423	3278	403	1740	172	140	21	893	71	13819	2582	37087	6838

- 5.6 Most dog walking visits to Dartmoor are made by residents of Teignbridge District. While most dog walkers at most sites are from Teignbridge District, Steps Bridge appears to be used as much by dog walkers from Exeter whereas Postbridge is used mainly by dog walkers from East Devon (Table 29).

Table 29: Number (%) of visits to locations on Dartmoor made for dog walking by residents from each local authority area.

Location	Teignbridge		Exeter City		East Devon		Total	
	Number of visits	Number of responses	Number of visits	Number of responses	Number of visits	Number of responses	Total visits	Responses
Dartmeet	225 (46)	37	108 (22)	21	156 (32)	35	489	93
Steps bridge	208 (38)	29	208 (38)	31	125 (23)	30	541	90
Postbridge	164 (43)	28	80 (21)	18	140 (36)	31	384	77
Warren house	102 (43)	20	60 (25)	11	76 (32)	17	238	48
Yarner wood	448 (88)	28	24 (5)	6	36 (7)	9	508	43
Wistmans	138 (58)	23	36 (15)	9	64 (27)	12	238	44
Grimspound	98 (58)	15	40 (24)	10	32 (19)	8	170	33
Newbridge	64 (70)	14	28 (30)	5	0 (0)	0	92	19
Haytor	438 (89)	15	20 (4)	3	36 (7)	9	494	27
Holne Moor	12 (75)	1	0 (0)		4 (25)	1	16	2
Lustleigh / Bovey	306 (100)	4	0 (0)	0	0 (0)	0	306	4
All others	1330 (59)	109	440 (19)	81	496 (22)	110	2266	300
Total	3533 (62)	323	1044 (18)	195	1165 (20)	262	5742	780
Mean visits per dog walker	11		5.4		4.4		7.4	
Total respondents	504		344		448		1296	
Mean dog walking visits per respondent	7		3		3		4.4	

- 5.7 To analyse the difference between house types and the number of visits made to Dartmoor for different activities we excluded the category 'other' house type and also activities with no visits made for any particular house type category (rock climbing, mountain biking, horse riding, off roading) i.e. if there were no visits by horse riders living in flats then this combination was excluded. Therefore considering the eight remaining activities for flats, bungalows and the two types of house categories, differences were significant between house types ($\chi^2_{21}=897.9$; $p<0.001$). As can be seen from Figure 10, key differences were that a high proportion of people who lived in bungalows tended to go walking and dog walking compared to the remaining house types. Cycling was more popular with respondents that lived in houses compared to flats.

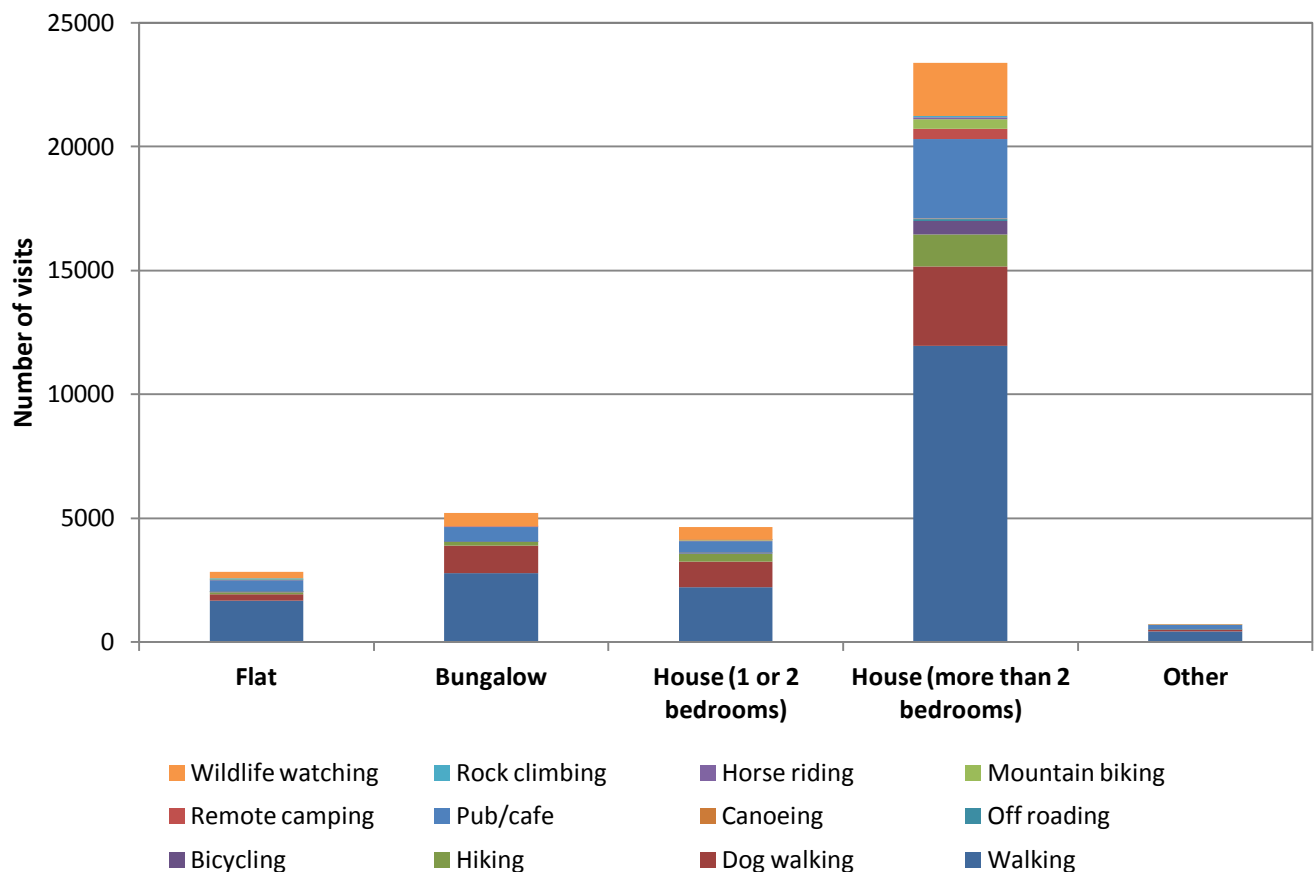


Figure 10: The number of visits to Dartmoor and activities undertaken with respect to household type.

Additional locations on Dartmoor

5.8 Free text responses were also given by 63 respondents detailing 648 visits to 36 locations. The location names were standardised as far as possible and the responses are shown in Table 30. The most popular location receiving 192 visits from 20 respondents was Hound Tor.

Table 30: Free text locations visited on Dartmoor with at least 10 annual visits. Locations were combined where they were the same or similar.

Location	Number of households visiting	Number of visits
Hound Tor	20	192
Manaton	4	124
'All' / 'Various Tors' / 'reservoirs'	7	44
Tavistock	5	44
Chagford	4	32
Buckfastleigh	4	24
Saddle Tor	2	16
Bonehill	1	12
north moors	1	12
Rippon Tor	1	12
Sharp Tor	1	12
Venford Reservoir	3	12
Becky Falls	2	8
Bellever	2	8
Canonteign	2	8

Location	Number of households visiting	Number of visits
Yelverton	2	8
Bel Tor	1	4
Brentor	1	4
Bridestone	1	4
Castle Keys	1	4
Drewsteignton	1	4
Fingle Bridge	1	4
Hangingstone	1	4
Heathercombe	1	4
Hexworthy	1	4
Higher Wilhays	1	4
Honey Bags	1	4
Huccaby	1	4
Mardon Down	1	4
Mavy Tavy	1	4
Min Pony Centre	1	4
Morwellan	1	4
Okehampton	1	4
Peter Tavey	1	4
Scophill	1	4
Winter Tor	1	4

Visit rates to Dartmoor

5.9 Visitor rates to Dartmoor (combining all individual locations and free text locations) were plotted in relation to distance. These plots were derived by calculating the number of visits made by all respondents living within successive distance bands around Dartmoor, and then dividing this number of visits by the number of respondents. These plots, shown for different modes of transport and activities (dog walking and outdoor pursuits which includes hiking, off roading, canoeing, remote camping, mountain biking, horse riding and rock climbing) (Table 11), highlight the distances at which relatively few visits are made, on average, by each household. Relatively few visits for all categories are made beyond 10km with foot visits tailing off around 4-5km. Given the westerly position of Dartmoor within the study area, the distance 10km from the boundary includes the western side of Exeter, Newton Abbot and Kingskerswell (Map 6). Beyond this distance relatively few additional visits would be made to Dartmoor from increased housing levels if patterns of recreation behaviour remain the same into the future.

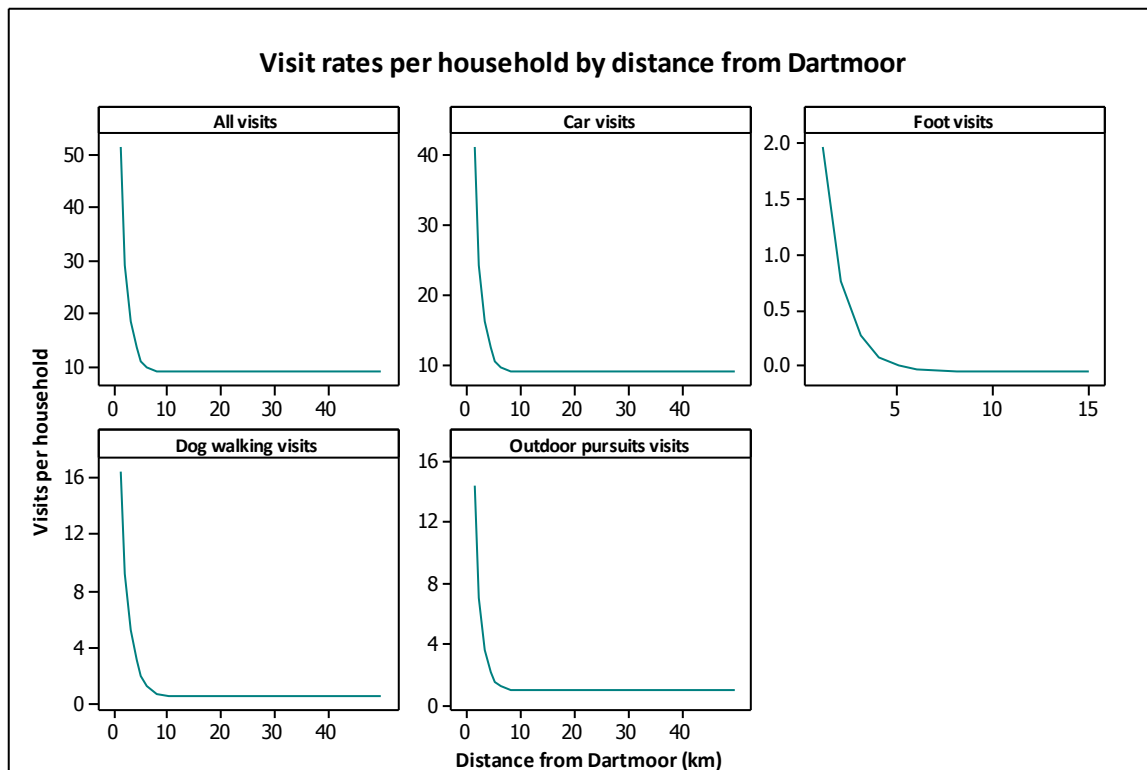
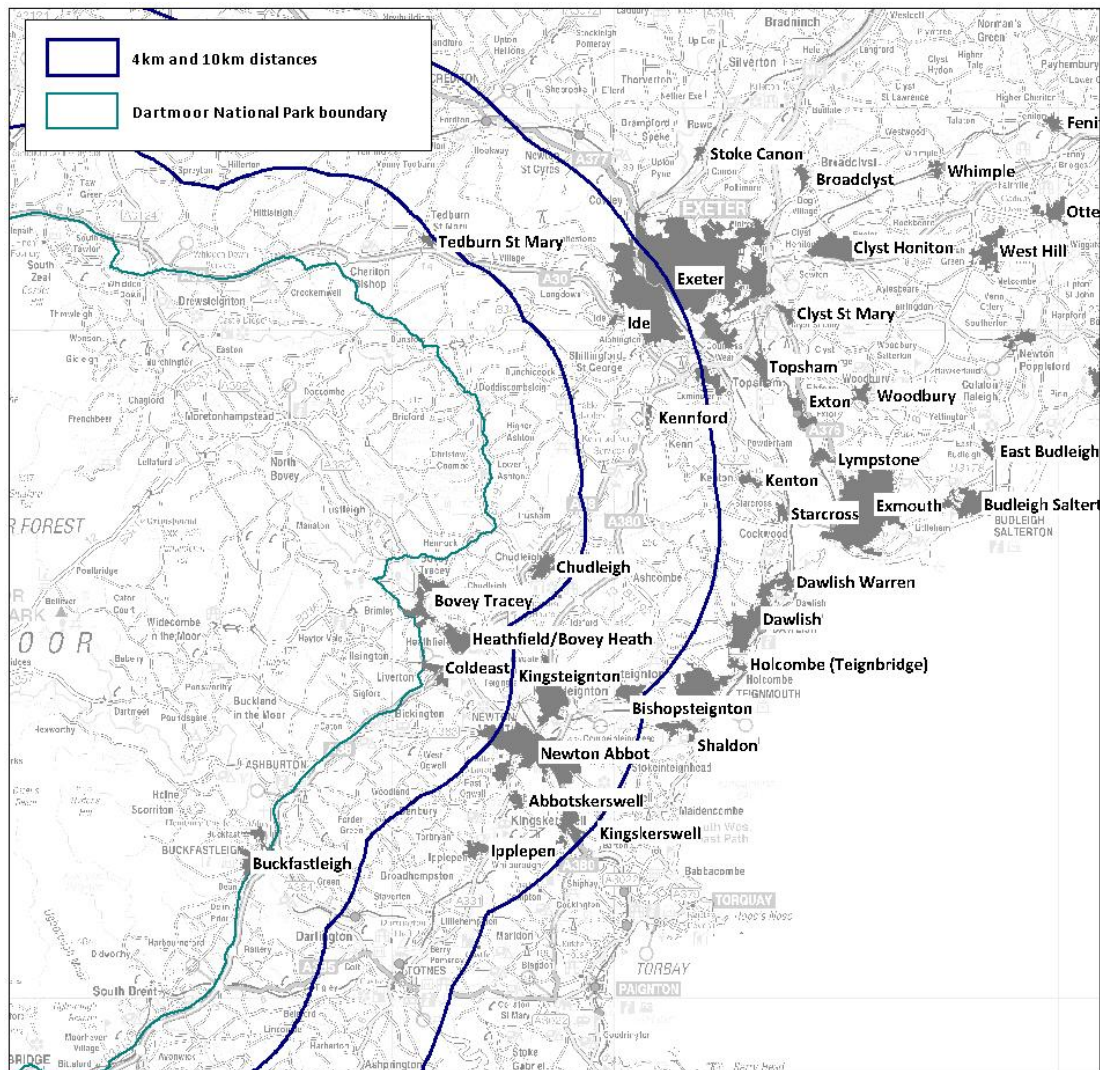


Figure 11: Visitor rates to Dartmoor from households within distance bands from National Park boundary for different visit types (outdoor pursuits includes hiking, off roading, canoeing, remote camping, mountain biking, horse riding and rock climbing). Exponential trendlines fitted manually, so as to maximise R2 (all visits R2=0.86; car visits R2=0.89; foot visits R2=0.50; dog walking visits R2=0.91; outdoor pursuits visits R2=0.90). Scales differ between visit types.



Map 6: Settlements and 4km and 10km buffers around the Dartmoor National Park Boundary. Contains Ordnance Survey data Crown © copyright and database right 2011.

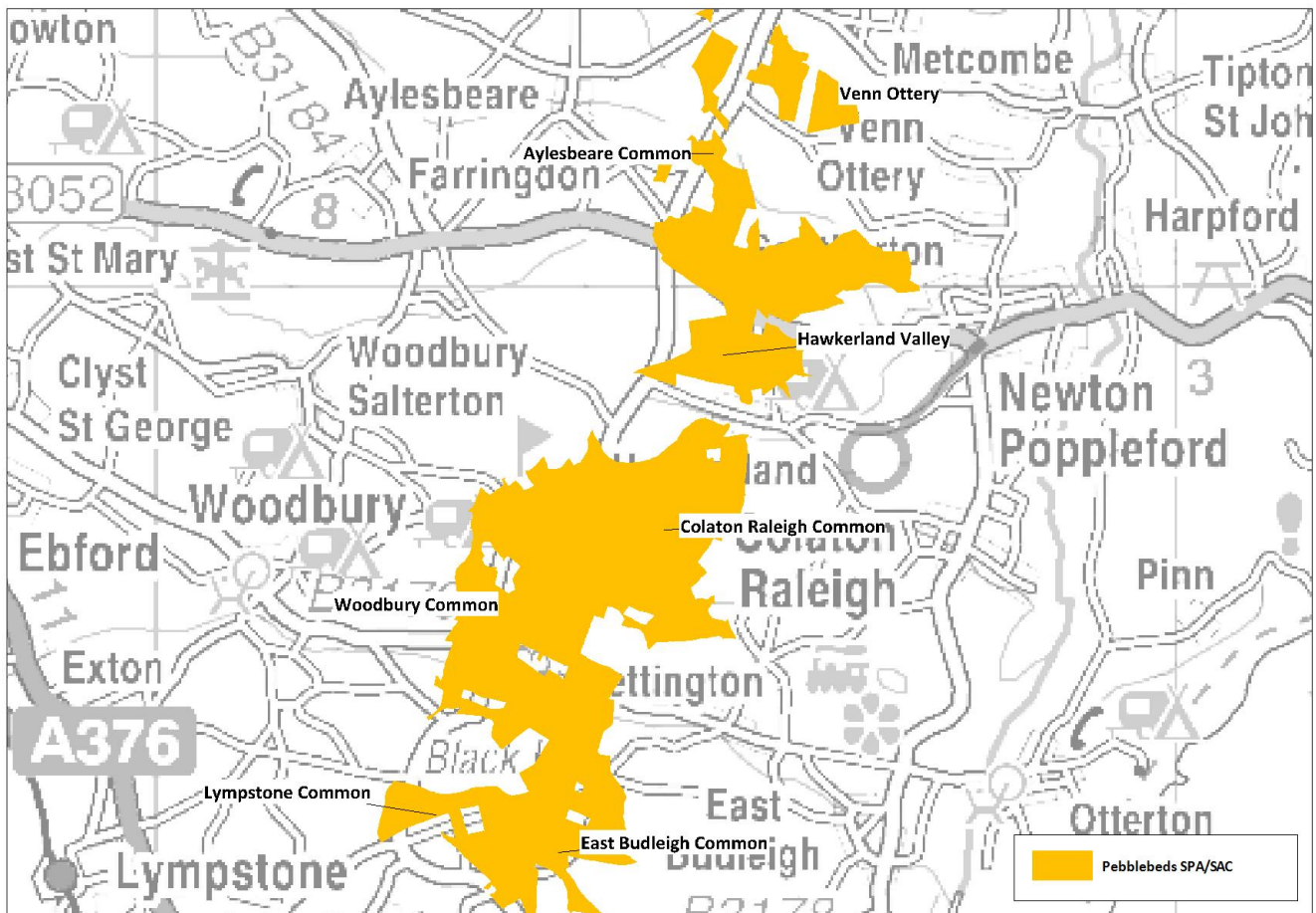
Conclusion

A third of responses were from houses within 1km of the National Park boundary and Teignbridge District residents undertook the most visits to Dartmoor with an average of 30.9 visits per year per household. Dartmeet, Postbridge and Steps Bridge were the most popular target locations. Widecombe-in-the-Moor and Yarnar Wood were the most visited locations by residents from the Teignbridge area whereas Steps Bridge, Postbridge and Dartmeet stood out for Exeter City and East Devon residents. Due to the nature of the National Park a very high proportion of visits were made by car and travel distances are typically higher than for other sites due to the attractiveness of the site for day trips and days out. Therefore whilst people may travel further to reach Dartmoor, they visit the site less frequently.

Walking and dog walking are the main activities, but due to the terrain, other activities such as mountain biking, remote camping, horse riding and rock climbing feature. Most dog walking visits to Dartmoor are made by residents of Teignbridge District. A link was seen between outdoor pursuits (horse riding, mountain biking etc) which require specialist equipment and space to store the equipment and people living in houses compared to smaller dwellings.

6. Visits to the Pebblebed Heaths

- 6.1 Households were asked about their visits to the Pebblebed Heaths. Respondents were asked to comment on visits to seven specific locations on the Heaths within the 'Visits to other countryside places' section. The information regarding these seven locations is summarised below. We have assumed that responses received refer to the site names given in the table on the questionnaire.



Map 7: Seven locations on the Pebblebeds which respondents were asked to provide information about. Contains Ordnance Survey data Crown © copyright and database right 2011.

- 6.2 East Devon residents make 82.9% of the 20,724 annual visits to the Pebblebeds by respondents followed by 12.4% by Exeter City residents and only 4.7% by Teignbridge residents (Table 31). There were significant differences between local authorities in the proportions of visits made to the different sites in Table 31 ($\chi^2_{12} = 258.96$, $p < 0.001$). Particular differences were that it seems Exeter residents favour Lympstone Common, Colaton Raleigh and Woodbury. A higher than expected number of Teignbridge residents stated they visited Venn Ottery.

Table 31: Number of annual visits and number of households that visit Pebblebed locations. The percentage of visits from residents of each local authority to each site is shown in brackets.

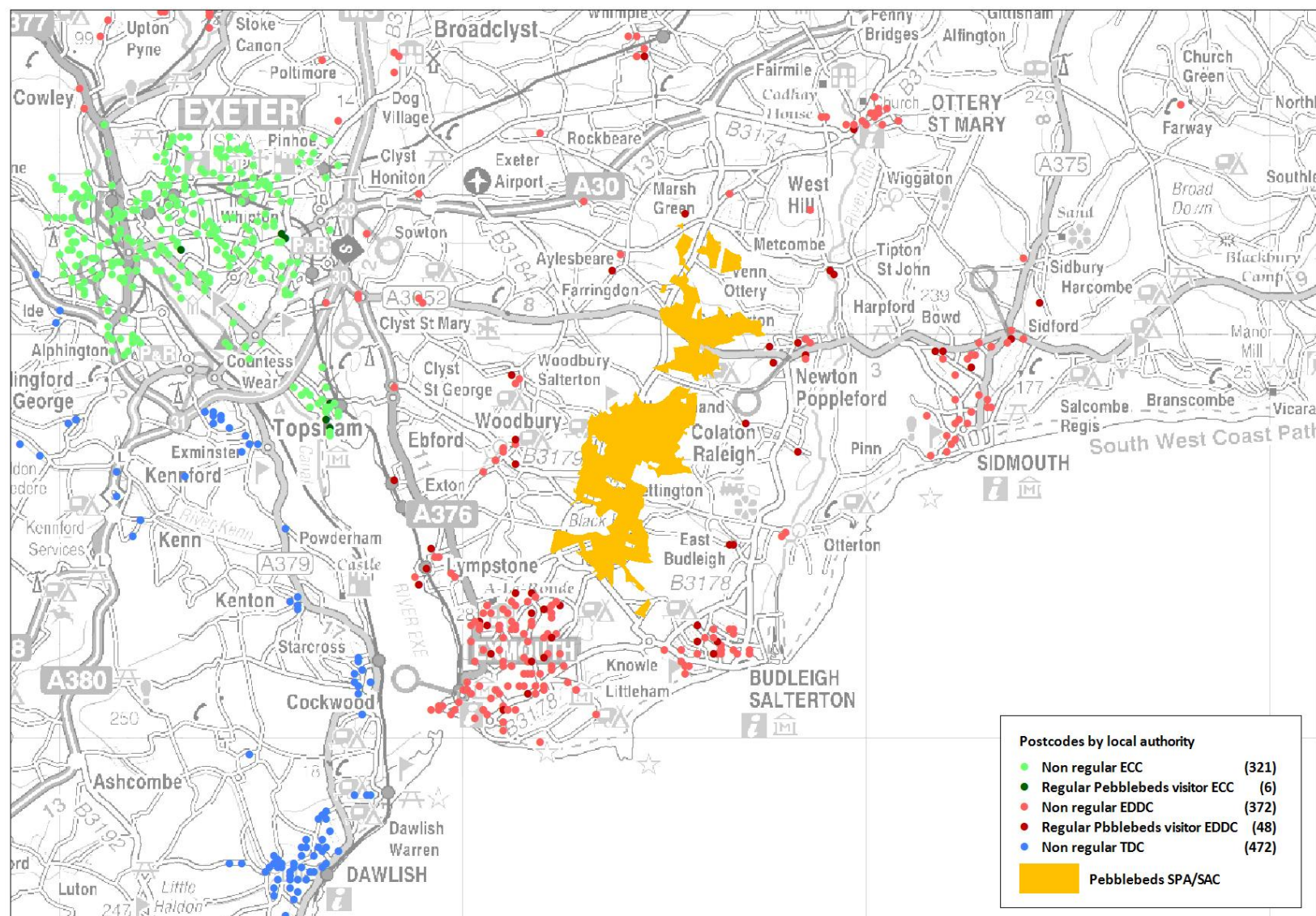
Location	Teignbridge		Exeter City		East Devon		Total	
	Number of visits	Number of responses	Number of visits	Number of responses	Number of visits	Number of responses	Number of visits	Number of responses
Woodbury	412 (42)	85	1118 (44)	140	5658 (33)	256	7188 (35)	481
East Budleigh	140 (14)	27	396 (15)	52	2878 (17)	126	3414 (16)	205
Lympstone	104 (11)	20	300 (12)	38	2780 (16)	85	3184 (15)	143
Colaton Raleigh	96 (10)	20	236 (9)	31	2276 (13)	82	2608 (13)	133
Aylesbeare	92 (9)	19	224 (9)	37	2018 (12)	95	233 (11)	151
Hawkerland	48 (5)	10	148 (6)	20	918 (5)	65	1114 (5)	95
Venn Ottery	84 (9)	19	144 (6)	28	654 (4)	55	882 (4)	102
Total	976 (4.7)	200	2566 (12.4)	346	17182 (82.9)	764	20724	1310
Total respondents	504		344		448		1219	
Mean per respondent	1.9		7.5		38.4		17	

6.3 There was no significant difference ($\chi^2_5 = 0.899$, $p = 0.970$) in the proportion of people responding and distance from the named sites in Table 31, indicating that people living near these sites were not more likely to complete and return the questionnaire (Table 32). Visit rates to the named sites declined with distance, with residents within 1km making on average 141 visits per year to the Pebblebed Heaths and residents living within 1-5km making around half that number of visits per year.

Table 32: The proportion of households responding to the postal questionnaire within different fixed distance bands from the Pebblebeds Commons

Distance band from Pebblebeds (km)	Total number of questionnaires sent	Total number of responses received	Percentage of questionnaires received from those sent per distance band	Number of visits from respondents within distance band per year	Number of houses within distance band	Number of visits per household per year
1	31	7	23	984	1514	140.6
5	830	213	26	15452	29562	72.5
10	1744	428	25	17982	60182	42.0
15	3610	808	22	19524	120099	24.2
20	4253	960	23	20000	147426	20.8
25	4985	1148	23	20272	218793	17.7

6.4 Map 6 shows the home postcodes of those respondents who stated that they visited the specified Pebblebed sites. Regular visitors live in surrounding settlements such as Ottery St. Mary, Sidmouth, Budleigh Salterton and Exmouth. The map shows six regular visitors from Exeter and no regular visitors from Teignbridge District.



Map 8: Postcodes of regular visitors (weekly or more) and non regular visitors to the Pebblebeds Heath within each local authority area (zoomed in to include the postcodes of all regular visitors). Contains Ordnance Survey © data Crown copyright and database right 2011.

6.5 The majority (80%) of visits to the specified Pebblebed Heath sites were made by car, with car drivers typically living within a distance of 10.6km – half of all drivers lived within this distance. Visitors arriving on foot accounted for around 10% of visits to the Pebblebed sites (Table 33). Venn Ottery and Hawkerland were notable in attracting a very small proportion of people arriving on foot (Figure 12).

Table 33: Number of visits made to the Pebblebeds by each transport combination, the minimum, maximum and median distances travelled from the home postcode to the site and median distances for outdoor pursuits and dog walking visits.

Transport	Number (%) of visits	Min distance travelled (km)	Median distance travelled (km)	Max distance travelled (km)
Car/van	15352 (80)	1.37	10.6	38.66
Foot	2020 (10)	1.32	4.04	27.47
Bike	872 (5)	1.61	6.34	27.06
Car/van - foot	592 (3)	1.78	4.86	15.7
Car/ bike	284 (1)	3.38	8.75	25.9
Other	92 (0)	6.71	21.33	25.99
Public transport	80 (0)	4.23	10.92	24.7
Total	19292			

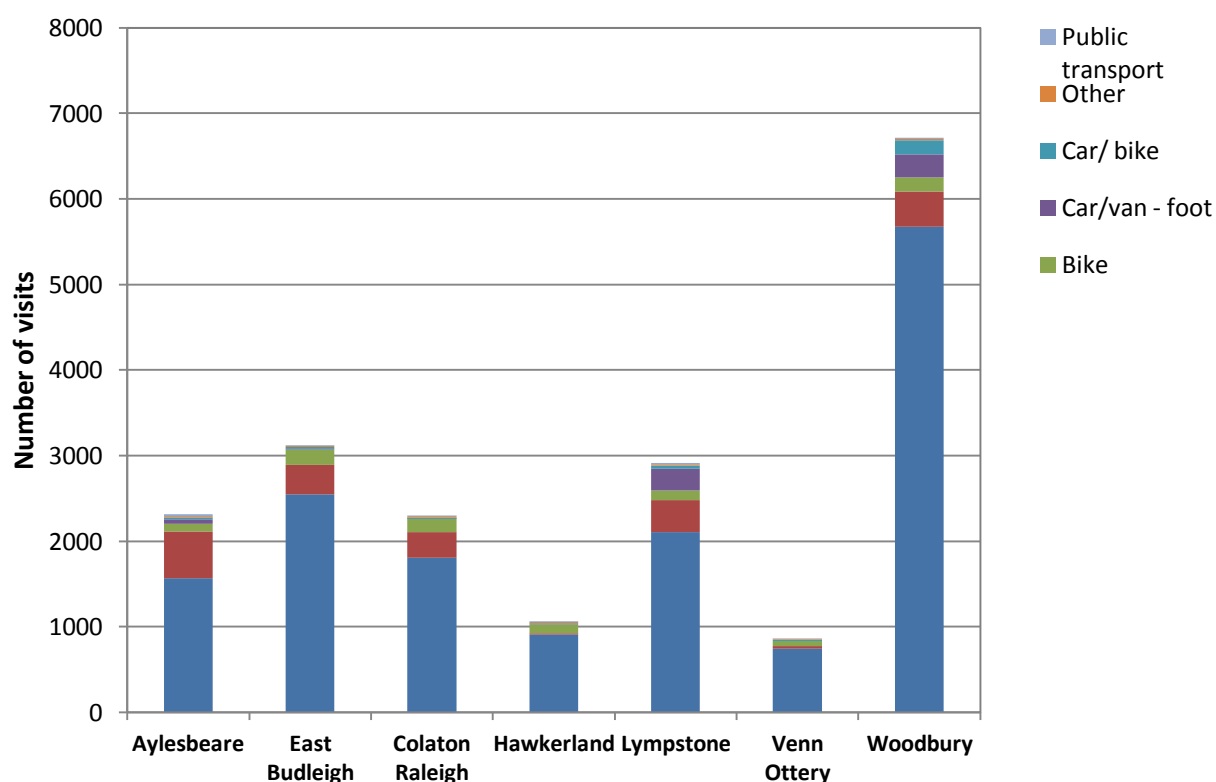


Figure 12: The number of visits made to each Pebblebeds location by transport type

6.6 The activities undertaken by each respondent at the specified Pebblebed sites are given in Table 34. The difference in the total number of visits between Table 31 and Table 34 is due to the way that visit numbers were assigned to activities dependent on whether or not they could occur simultaneously (see paragraph 4.7). Dog walking accounts for the most visits. A total of 399 respondents stated that they visited the Pebblebeds to walk, compared to 115 who listed dog walking, but the dog walkers clearly visit very regularly as

the total number of visits for dog walkers was 10,942 per year compared to 10,343 for walkers. Besides dog walking and walking, other activities included wildlife watching, horse riding, mountain biking and kid's activities.

- 6.7 Comparing between local authorities and focusing on dog walking it is clearly mainly East Devon residents who visit the Pebblebed Heaths to walk their dog, which is perhaps to be expected given their location. Across all the specified Pebbledbed Heath locations, 90% of dog walkers were from East Devon, with nine percent from Exeter city and two percent from Teignbridge District (Table 35).

Table 34: Number of visits to each Pebblebeds location (% for each activity by location) for each activity classified and the number of responses (households which visit each location for each activity). The most popular activity (i.e. most visits) at each site is highlighted in bold.

Activity	Aylesbeare		East Budleigh		Colaton Raleigh		Hawkerland		Lympstone		Venn Ottery		Woodbury		Total	
	Visits	Responses	Visits	Responses	Visits	Responses	Visits	Responses	Visits	Responses	Visits	Responses	Visits	Responses	Visits	Responses
Walking	1308 (13)	121	1849 (18)	156	1225 (12)	101	545 (5)	75	1481 (14)	111	420 (4)	79	3514 (34)	329	10343	972
Dog walking	1406 (13)	35	1607 (15)	43	1393 (13)	32	574 (5)	24	1655 (15)	30	410 (4)	19	3897 (36)	110	10942	293
Wildlife watching	572 (14)	47	675 (17)	44	499 (12)	28	439 (11)	22	481 (12)	34	403 (10)	25	963 (24)	82	4032	282
Bicycling	105 (19)	11	64 (12)	11	51 (9)	10	39 (7)	9	40 (7)	9	68 (12)	10	181 (33)	31	548	91
Pub/cafe	60 (9)	6	100 (16)	14	16 (3)	4	16 (3)	4	60 (9)	11	41 (7)	9	342 (54)	15	635	63
Horse riding	73 (5)	4	363 (25)	4	278 (19)	3	8 (1)	1	373 (25)	4	3 (0.2)	1	376 (25)	9	1474	26
Mountain biking	72 (7)	6	186 (17)	9	367 (34)	9	69 (6)	6	176 (16)	8	1 (0.1)	1	204 (19)	15	1075	54
Kid's activities	258 (23)	3	266 (24)	3	12 (1)	3	10 (1)	1	254 (23)	2	4 (0.4)	1	302 (27)	12	1106	25
Other	56 (21)	3	24 (9)	4	16 (6)	2	12 (5)	1	28 (11)	5	16 (6)	2	112 (42)	15	264	32
Total	3910	236	5134	288	3858	192	1712	143	4588	214	1368	147	9894	618	30464	1838

Table 35: Number (%) of visits to Pebblebeds locations made for dog walking by residents from each local authority area.

Location	Teignbridge		Exeter City		East Devon		Total	
	Number of visits	Number of responses	Number of visits	Number of responses	Number of visits	Number of responses	Total visits	Responses
Aylesbeare	4 (0.3)	1	76 (5)	6	1326 (94)	28	1406	35
East Budleigh	8 (0.5)	2	136 (8)	8	1463 (91)	33	1607	43
Colaton Raleigh	4 (0.3)	1	80 (6)	5	1309 (94)	26	1393	32
Hawkerland	4 (1)	1	40 (7)	4	530 (92)	19	574	24
Lympstone	4 (0.2)	1	96 (6)	9	1555 (94)	20	1655	30
Venn Ottery	8 (2)	2	36 (9)	3	366 (89)	14	410	19
Woodbury	77 (2)	14	470 (12)	24	3350 (86)	72	3897	110
Total	109 (2)	22	934 (9)	59	9899 (90)	212	10942	293
Mean visits per dog walker	4.9		15.8		46.7		37.3	
Total respondents	504		344		448		1296	
Mean dog walking visits per respondent	0.22		2.7		22		8.4	

6.8 The number of visits to the specified Pebblebed Heath locations are shown in Figure 13 according to activity and house type. There is a significant difference between the number of visits made to the Pebblebeds for different activities and type of house (excluding 'other' house type category and activity categories with no visits for one or more house types: horse riding, bicycling, kid's activities and 'other', $\chi^2_{15} = 2573.6$, $p < 0.001$). The importance of this site for dog walking is clearly seen in for all house types. Nearly 45% of all visits from respondents living in a house with 1 or 2 bedrooms were made for dog walking. It can be seen that activities such as horse riding, mountain biking and kid's activities tend to be associated with those living in large houses. Wildlife watching formed a large proportion of the visits undertaken by residents of bungalows.

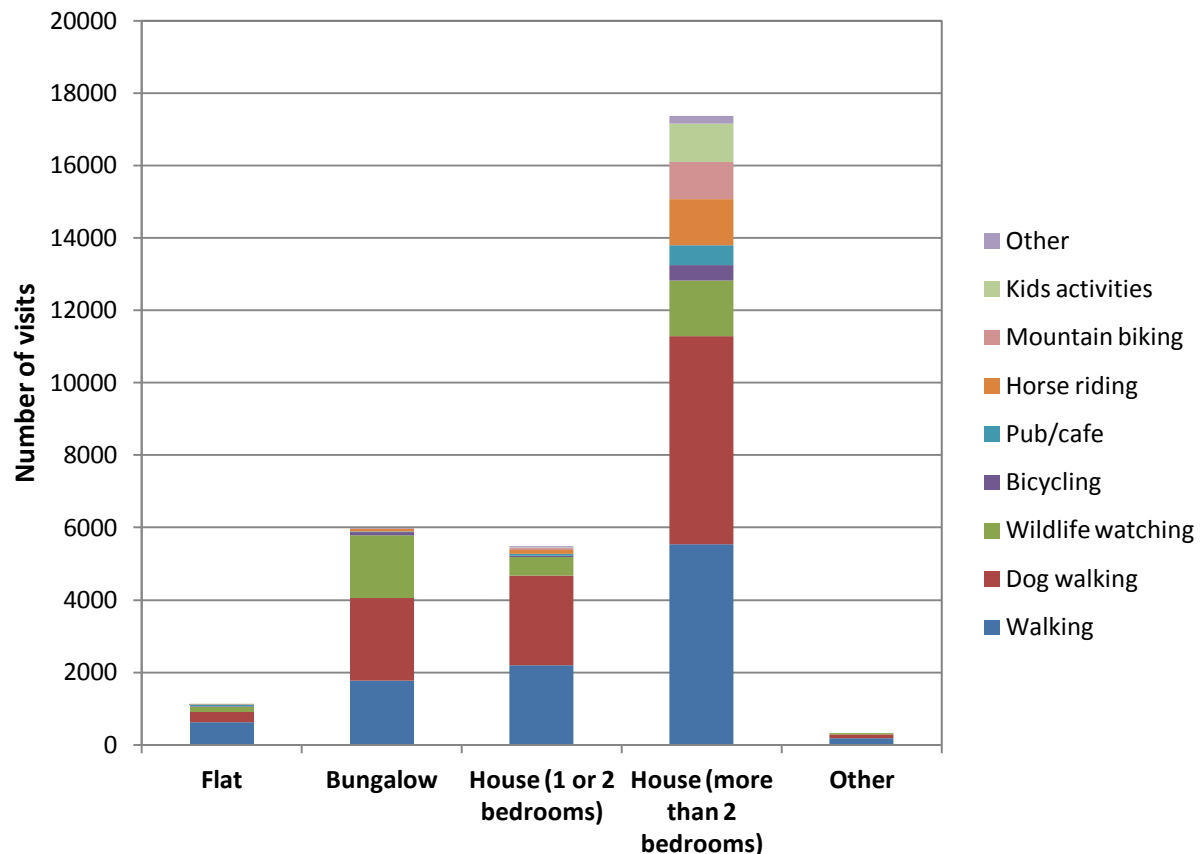


Figure 13: The number of visits to the Pebblebeds and activities undertaken with respect to household type.

Visit rates to the Pebblebeds

6.9 In Figure 14 we summarise visit rates to the Pebblebed Heaths in relation to distance considering all respondents. There are plots for all visits, car visits, foot visits and dog walking visits. It can be seen that for all visits it is at distances of 10km and above that households tend to make few visits (Figure 14, Map 9). Within 10km households tend to visit frequently, particularly the closer they live to the site. Foot visitors to the Pebblebeds drop off rapidly at 3km meaning that residents of settlements up to 3km away from the site could contribute up to 50 foot visits per settlement (Woodbury, Exmouth, Newton Poppleford, West Hill, East Budleigh and Budleigh Salterton) (Map 9).

6.10 To improve the accuracy of the visit rate curves we have presented them in Figure 15 using data derived from respondents within an area to the east and north of the Exe SPA only (excluding all respondents to the southwest of a line drawn from Countess Wear Bridge to Crediton) (Figure 15). Given the highly localised use of the Pebblebed Heaths it appears that visitors from the west of the Exe Estuary were not contributing a huge number of visits and the visit rates remain the same. Therefore the main effect of reducing the area to be included was to increase the number of visits per household since households which did not visit or visited infrequently were excluded.

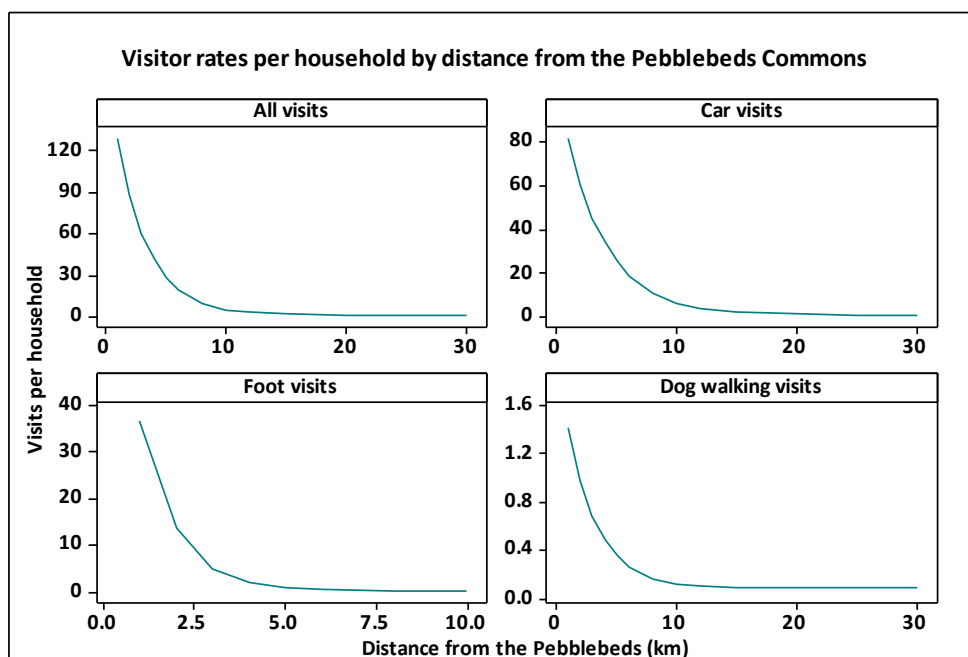


Figure 14: Visitor rates to the Pebblebeds from households within distance bands from SPA/SAC boundary. Exponential trendlines fitted manually, so as to maximise R^2 (all visits $R^2=0.79$; car visits $R^2=0.68$; foot visits $R^2=0.84$; dog walking visits $R^2=0.66$). Scales differ between visit types.

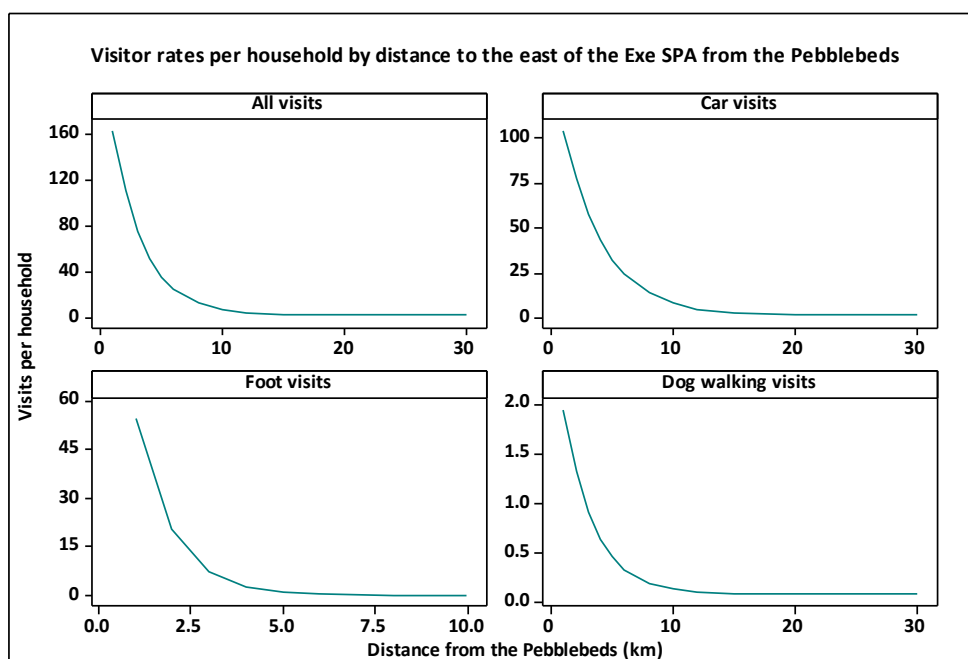


Figure 15: Visitor rates to the Pebblebeds from households within distance bands from SPA/SAC boundary within an area to the east and north of the Exe SPA only (excluding all respondents to the southwest of a line drawn from Countess Wear Bridge to Crediton). Exponential trendlines fitted manually, so as to maximise R^2 (all visits $R^2=0.94$; car visits $R^2=0.86$; foot visits $R^2=0.97$; dog walking visits $R^2=0.87$). Scales differ between visit types.



Map 9: Settlements and 3km and 10km buffers around the Pebblebeds SPA/SAC. Contains Ordnance Survey data Crown © copyright and database right 2011.

Conclusion

The Pebblebed Heaths have a far more local catchment than with the Exe or Dartmoor with East Devon residents making the vast majority of the 20,724 annual visits. Only 4.7% of visits to the seven listed locations were made by Teignbridge district residents with Venn Ottery being the most visited location. The localised use of the site may be due to the type of habitat and also the location on the eastern side of the Exe with relatively poor transport links. Indeed 80% of visits to the Pebblebeds are made by car. Residents within 1km of the Pebblebed Heaths make twice the number of annual visits compared to residents living between 1 and 5km of the site.

Dog walking is the most popular activity and accounts for 40% of visits followed by 34% for walking. Dog walkers visit more frequently with fewer people visiting more often compared to walking. Activities such as horse riding, mountain biking and kid's activities tend to be associated with those living in large houses. Wildlife watching formed a large proportion of the visits undertaken by residents of bungalows.

7. Visits to other coastal locations

Visits to specific locations

- 7.1 Visitors were asked specifically about visits to Beer Head/ Branscombe Underhooken, Axe Estuary Wetlands and also Axmouth to Lyme Regis Undercliffs in question B2 alongside the seven locations on the Exe Estuary. Beer Head/ Branscombe Underhooken and Axmouth to Lyme Regis Undercliffs were selected as they are within the Sidmouth to West Bay SAC. Axe Estuary Wetlands was selected as it represents a flagship project led by East Devon District Council to create habitat and access and may provide relevant information on the potential for estuarine SANGs. From 1219 respondents who visit the coast 43% visit state that they visit Beer Head, 27% visit Axmouth to Lyme Regis Undercliffs and 18% visit Axe Estuary. Most respondents visit the three locations infrequently with 84% visiting Beer Head a few times a year or less, 79% to the Axe Estuary and 84% to the Undercliffs with the same frequency.
- 7.2 There was a significant difference between the number of visits to the three locations from residents of the different districts ($\chi^2_4 = 398.3$, $p < 0.001$). Specifically the majority of visits to these locations were made by residents of East Devon District (Table 36).

Table 36: The number of visits (% contribution from each local authority) to three additional coastal sites and responses (% of total recreating respondents) from respondents within each local authority area. In all cases the highest number of visits to each site are from East Devon residents.

Location	Teignbridge		Exeter City		East Devon		Total	
	Visits	Responses	Visits	Responses	Visits	Responses	Visits	Responses
Beer head / Branscombe Underhooken	802 (19)	120	688 (16)	143	2718 (65)	259	4208	522 (43)
Axmouth to Lyme Regis Undercliffs	392 (11)	90	428 (2)	86	2692 (77)	157	3512	333 (27)
Axe Estuary Wetlands	204 (7)	47	208 (7)	44	2374 (85)	130	2786	221 (18)
Total	1398	257	1324	273	7784	546	10506	1076

- 7.3 There is a significant difference between the number of visits made to each location and the mode of transport used ($\chi^2_{12} = 755.15$, $p < 0.001$). The most popular mode of transport to each location was by car/van although the number of foot visits made to the Axe Estuary Wetlands is double the percentage made on foot to the other two locations indicating its proximity to housing in Colyford and Seaton.

Table 37: Number of visits (%) made to the three additional coastal locations by each transport combination and the median straight line distance of visits between home postcodes and the three locations.

Transport	Beer head / Branscombe Underhooken		Axmouth to Lyme Regis Undercliffs		Axe Estuary Wetlands	
	Visits	Median distance (km)	Visits	Median distance (km)	Visits	Median distance (km)
Car/van	2544 (61)	24.96	2366 (67)	35.316	1430 (51)	26.129
Foot	824 (20)	3.56	688 (20)	6.63	1136 (40)	1.121
Other	20 (1)	28.28	266 (8)	37.94	56 (2)	10.8
Public transport	124 (3)	29.08	76 (2)	38.63	40 (1)	32.74
Car/van - foot - bike	104 (3)	10.85	40 (1)	34.42	20 (0.7)	8.86
Car/van - public transport	16 (0.4)	17.71	16 (0.5)	30.07	12 (0.4)	34.24
Bike	8 (0.2)	25.57	4 (0.1)	43.534	8 (0.3)	20.3
Total	3640		3456		2702	

7.4 The most popular activity with the most number of visits at each location was walking (Table 38, Figure 16). At Beer Head the second most popular activity was visiting a pub/cafe although the most frequent in terms of visits the second most popular was dog walking. At the Axe Estuary the second most popular and most frequent activity was wildlife watching whilst along the Undercliffs the second most popular and frequent activity was visits to a pub/cafe (Figure 16).

Table 38: Number of visits to three additional coastal locations (% for each activity by location) for each activity classified and the number of responses (households which visit each location for each activity).

Activity	Beer head / Branscombe Underhooken		Axmouth to Lyme Regis Undercliffs		Axe Estuary Wetlands	
	Visits	Responses	Visits	Responses	Visits	Responses
Walking	2717 (42)	406	2104 (47)	265	2144 (51)	147
Wildlife watching	488 (8)	76	418 (9)	63	1205 (29)	90
Dog walking	1160 (18)	67	487 (11)	38	319 (8)	17
Pub/cafe	918 (14)	139	511 (11)	67	356 (9)	17
Swim/sit etc	487 (8)	68	193 (4)	30	32 (1)	6
Other	213 (3)	32	394 (9)	23	64 (2)	10
Fishing	355 (5)	12	279 (6)	7	12 (0.3)	3
Bicycling	41 (1)	12	56 (1)	8	30 (0.7)	7
Watersports	55 (1)	7	8 (0.2)	3	4 (0.1)	1
Amusements	25 (0.4)	7	32 (0.7)	4	8 (0.2)	2
Total	6458	826	4482	508	4174	300

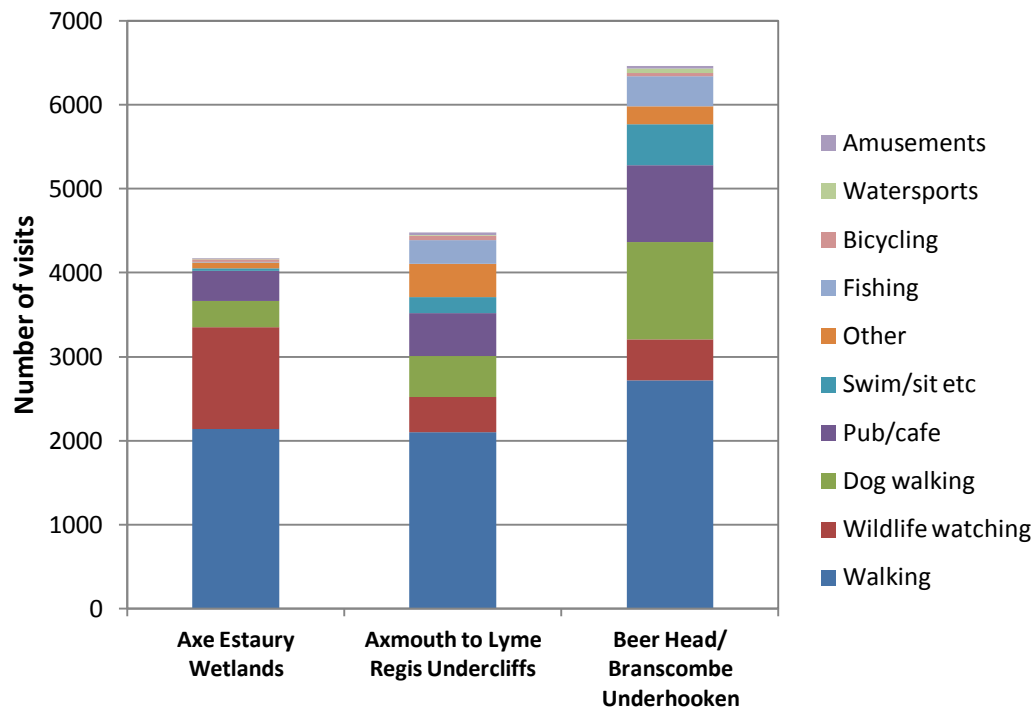


Figure 16: Number of visits made to three additional coastal locations by activity undertaken.

Visits to free choice locations

7.5 Respondents were given the opportunity to list up to 5 additional locations from a list of 15 mapped locations. The most visits to each site were made by residents from the closest local authority districts (Table 39). For example, the most popular (most households visiting) locations were Teignmouth Beach and Sidmouth Beach, although the most frequently visited location was Teignmouth Beach followed by Budleigh Salterton Beach (Table 39). Residents from Exeter City area made the fewest visits to the additional coastal locations although the most popular location for these visitors was also Budleigh Salterton Beach.

Table 39: Number of visits to each additional labelled coastal location with percentage of visits from each local authority to each location shown in brackets and the local authority contributing the most visits at each location shown in bold.

Location	Teignbridge		Exeter City		East Devon		Total	
	Visits	Responses	Visits	Responses	Visits	Responses	Visits	Responses
Teignmouth Beach	8684 (92)	204	484 (5)	71	284 (3)	50	9452	325
Budleigh Salterton Beach	312 (4)	42	952 (13)	98	6076 (83)	169	7340	309
Sidmouth Beach	280 (4)	46	688 (10)	86	5638 (85)	195	6606	327
Otter Estuary	136 (4)	23	484 (13)	64	3154 (84)	110	3774	197
Seaton Beach	116 (3)	11	72 (2)	14	3450 (95)	72	3638	97
Torbay Beaches	2834 (79)	157	496 (14)	74	244 (7)	49	3574	280
Shaldon Beach	2424 (83)	125	168 (6)	30	330 (11)	12	2922	167
Dawlish Beach	2178 (76)	64	566 (20)	49	120 (4)	22	2864	135
Teign Estuary	2212 (95)	85	92 (4)	15	28 (1)	5	2332	105
Beer Beach	148 (7)	15	120 (6)	29	1792 (87)	87	2060	131

Lady's Mile Beach	1162 (91)	28	72 (6)	8	48 (4)	10	1282	46
Branscombe Beach	104 (9)	18	116 (10)	28	932 (81)	67	1152	113
Sandy Bay	32 (3)	6	104 (11)	13	782 (85)	46	918	65
Maidencombe/Labrador Bay	424 (84)	48	48 (10)	10	32 (6)	6	504	64
Ladram Bay	20 (4)	3	84 (19)	13	344 (77)	31	448	47

- 7.6 Additional free text responses were received from 104 respondents detailing 1052 visits to 80 locations. Any locations that could be linked to the categorised locations 1-15 (Appendix 2) were transferred to the categorised data set. Two of the locations (Exmouth and Topsham) are within the Exe Estuary SPA but these visits were not added to the totals for the Exe as they only amounted to 84 visits. The number of visits and responses for each additional free text location are given in Appendix 2.

Conclusion

Visitors were asked specifically about visits to Beer Head/ Branscombe Underhooken, Axe Estuary Wetlands and also Axmouth to Lyme Regis Undercliffs. The most popular location was Beer Head, followed by Axmouth to Lyme Regis Undercliffs and then the Axe Estuary although none of these locations are visited frequently. Like Dartmoor, these locations are visited less frequently for days out. We observed links between specific activities and the different sites with a high level of wildlife watching taking place on the Axe. Other locations were listed for comment and the most popular locations were Teignmouth Beach and Sidmouth Beach, although the most frequently visited location was Teignmouth Beach followed by Budleigh Salterton Beach.

8. Visits to other countryside locations

- 8.1 In section D respondents were asked to comment on four additional countryside locations alongside the sites on the Pebblebeds. Visitors were asked specifically about visits to Berry Head, Exe Riverside Valley Park, Exminster Marshes and Haldon Forest. From 1219 respondents who visit the countryside 48% state that they visit Haldon Forest, 23% visit Exe Riverside Valley Park, 19% visit Exminster Marshes and only 2% visit Berry Head. The most visits were made to the Exe Riverside Valley Park and Haldon Forest.
- 8.2 Most respondents visit the four locations infrequently with 92% visiting Berry Head a few times a year or less and 80% to the Exminster Marshes with the same frequency. Haldon Forest and Exe Riverside Valley Park were visited more frequently with 27% of visitors to Exe Riverside and 40% of visitors to Haldon Forest visiting at least once per month.

Table 40: The number of visits (% contribution from each local authority) to four additional coastal sites and responses (% of total recreating respondents) from respondents within each local authority area. The local authority contributing the most visits to each site is shown in bold.

Location	Teignbridge		Exeter City		East Devon		Total	
	Number of visits	Number of responses	Number of visits	Number of responses	Number of visits	Number of responses	Number of visits	Number of responses
Berry Head	896 (68)	165	248 (19)	56	180 (14)	45	1324	266 (2)
Exe Riverside Valley Park	662 (10)	62	5608 (83)	150	492 (7)	72	6762	284 (23)
Exminster Marshes	1398 (64)	93	508 (23)	79	268 (12)	54	2174	226 (19)
Haldon Forest	3950 (61)	280	1894 (29)	177	668 (10)	126	6512	583 (48)
Total	6906	600	8258	462	1608	297	16772	1359

- 8.3 The most popular mode of transport to Berry Head and Haldon Forest was by car/van each with more than 80% of visits made in a car/van (Table 41). The local nature of Exminster Marshes and Exe Riverside Valley Park means that a higher proportion of visitors to these locations arrive on foot or bicycle.

Table 41: Number of responses and number of visits (%) made to the four additional locations by each transport combination and the median straight line distance between home postcodes and the four locations.

Transport	Berry Head			Haldon Forest			Exminster Marshes			Exe Riverside Valley Park		
	Visits	Responses	Median distance (km)	Visits	Responses	Median distance (km)	Visits	Responses	Median distance (km)	Visits	Responses	Median distance (km)
Car/van	1204 (93)	240	21.79	5064 (80)	534	11.23	872 (42)	157	9.709	1594 (24)	161	11.1
Foot	4 (0.3)	1	27.49	588 (9)	6	9.23	386 (18)	13	2.506	2370 (36)	42	2.29
Bike	4 (0.3)	1	27.82	16 (0.3)	4	9.28	136 (6)	15	5.963	1248 (19)	20	2.79
Car/van – foot/bike	20 (2)	5	25.12	410 (6)	16	8.89	302 (14)	10	7.57	656 (10)	10	2.98
Other	20 (2)	3	31.43	270 (4.2)	4	9.99	32 (2)	4	5.38	20 (0.3)	3	12.35
Public transport	40 (3)	8	19.57	8 (0.1)	2	7.59	80 (4)	14	10.85	216 (3)	22	6.1
Bike - foot							290 (14)	5	2.49	470 (7)	10	2.15
Total	1292	258		6356	566		2098	218		6558	268	

8.4 Walking comes out as the most frequently undertaken at all four locations in terms of the number of visits (Table 42, Figure 17). Comparing dog walking at the four locations, Haldon Forest and Exe Riverside are the most popular locations. Similarly cycling is most popular at Exe Riverside and Haldon Forest is visited more for children’s activities and Exminster Marshes is a key location for wildlife watching.

Table 42: Number of visits to the four additional other countryside locations (% for each activity by location) for each activity classified and the number of responses (households which visit each location for each activity).

Activity	Berry Head		Haldon Forest		Exminster Marshes		Exe Riverside Valley Park	
	Visits	Responses	Visits	Responses	Visits	Responses	Visits	Responses
Walking	961 (51)	209	3337 (37)	440	1346 (48)	157	3258 (34)	218
Dog walking	193 (10)	34	2703 (30)	126	237 (9)	25	1763 (19)	44
Wildlife watching	313 (17)	64	841 (9)	114	785 (28)	85	910 (10)	50
Bicycling	20 (1)	6	579 (7)	105	216 (8)	30	1727 (18)	60
Pub/cafe	238 (13)	40	392 (4)	55	126 (5)	22	888 (9)	39
Horse riding	0	0	11 (0.1)	4	0	0	0	0
Fishing	36 (2)	5	0	0	5 (0.2)	2	8 (0.1)	1
Mountain biking	3 (0.2)	3	323 (4)	31	3 (0.1)	2	19 (0.2)	4
Kid’s activities	9 (0.5)	3	547 (6)	71	0	0	290 (3)	8
Other	102 (5)	266	199 (2)	585	60 (2.2)	226	638 (7)	287

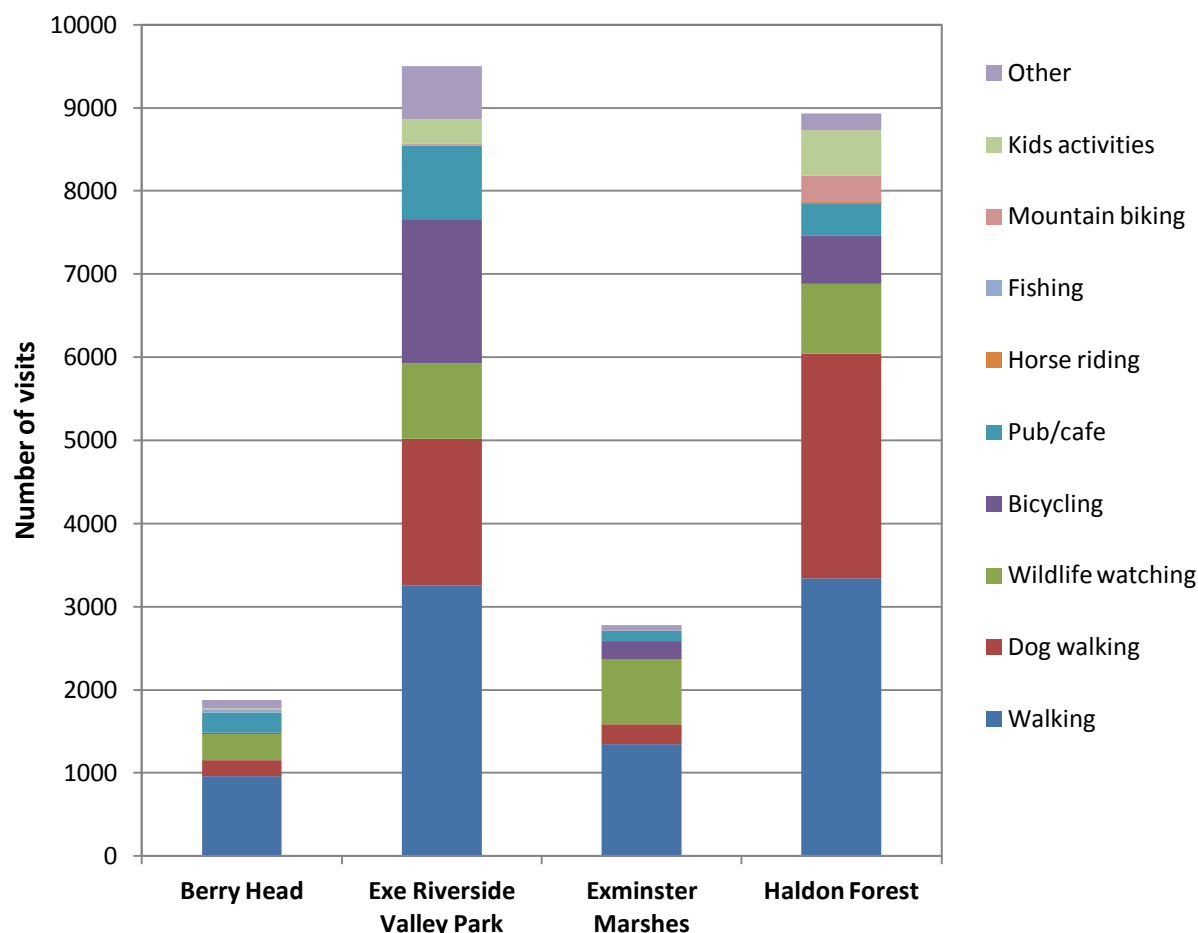


Figure 17: Number of visits made to four additional countryside locations by activity undertaken.

Visits to free choice locations

8.5 Respondents were given the opportunity to list up to 5 additional locations from a list of 28 mapped locations in the countryside. Across all three local authorities, the highest number of additional countryside visits were made to Decoy Country Park to the south of Newton Abbot. However 97% of the visits to Decoy Country Park were made by Teignbridge residents and more Teignbridge residents provided information on Stover Country Park. Exeter City residents made the most visits to Ludwell Valley Park which received over a quarter of the additional countryside visits although the site with the highest number of Exeter residents visiting was Killerton Estate. In the East of the area, Bickton Park received the most visits from East Devon residents (22%) (Table 43).

Table 43: Number of visits (%) to each additional labelled countryside locations and the number of responses by residents of each local authority area.

Countryside sites	Teignbridge		Exeter City		East Devon		Total	
	Visits	Responses	Visits	Responses	Visits	Responses	Visits	Responses
Decoy Country Park	2922 (18)	160	60 (1)	11	44 (1)	9	3026 (10)	180
Killerton Estate	630 (4)	71	1194 (16)	125	834 (13)	97	2658 (9)	293
Stover Country Park	2312 (14)	192	204 (3)	43	136 (2)	30	2652 (9)	265
Ludwell Valley Park	12 (0.1)	3	2096 (27)	51	64 (1)	7	2172 (7)	61
Bicton Park	514 (3)	37	244 (3)	43	1410 (22)	127	2168 (7)	207
Parke	1680 (10)	85	128 (2)	19	28 (0.4)	5	1836 (6)	109
Mincinglake Valley Park	44 (0.3)	2	1472 (19)	43	274 (4)	5	1790 (6)	50
East Cliff/The Rowdens	1762 (11)	43	8 (0.1)	2	4 (0.1)	1	1774 (6)	46
Orley Common	1434 (9)	26	16 (0.2)	2			1450 (5)	28
Fire Beacon Hill/Core Hill Woods/East Hill	12 (0.1)	3	40 (1)	8	1302 (20)	61	1354 (4)	72
Ideford Common	1220 (8)	21	24 (0.3)	4			1244 (4)	25
Stoke Woods	24 (0.1)	5	850 (11)	62	298 (5)	9	1172 (4)	76
Great Plantation	910 (6)	21				1	910 (3)	22
Dunyard Valley Park	20 (0.1)	3	718 (9)	28	20 (0.3)	4	758 (3)	35
Cockington Country Park	606 (4)	71	120 (2)	25	24 (0.4)	6	750 (2)	102
Coombe Valley	514 (3)	17	12 (0.2)	3	12 (0.2)	1	538 (2)	21
Blackbury Camp	20 (0.1)	5	32 (0.4)	8	440 (7)	61	492 (2)	74
Occombe Farm	452 (3)	59	24 (0.3)	6	4 (0.1)	1	480 (2)	66
Kerswell Down Hill	434 (3)	15					434 (1)	15
Grand Western Canal Country Park	88 (1)	18	148 (2)	33	156 (2)	31	392 (1)	82
Trinity Hill Nature Reserve and FC Woods	4 (0.02)	1			386 (6)	25	390 (1)	26
Morganhayes Wood					362 (6)	14	362 (1)	14
Ashclyst Forest	32 (0.2)	6	140 (2)	31	156 (2)	27	328 (1)	64
Labrador Bay RSPB Reserve	272 (2)	37	28 (0.4)	5	4 (0.1)	1	304 (1)	43
Stockland Turburies			8 (0.1)	2	286 (5)	8	294 (1)	10
Hopes Nose	172 (1)	30	80 (1)	14	16 (0.3)	4	268 (1)	48
Musbury Castle			4 (0.1)	1	76 (1)	13	80 (0.1)	14
Hense Moor					16 (0.3)	4	16 (0.3)	4
Total	16090	931	7650	569	6352	552	30092	2052

8.6 Respondents also gave free text responses to other countryside sites that they visit. These free text locations were checked and where possible visits were allocated to categorised locations. In total 91 household provided at least one free text location. In total 6132 visits to 90 locations were described and they are shown in Appendix 3 with the number of visits and the number of households which stated that they visit a site. The most popular free text locations were Dalditch and Knightshayes (each noted by five households) and the

locations receiving the most visits were Chudleigh and Shute Woods, each with 500 visits per year.

- 8.7 Only 64 visits to Dalditch were recorded by five respondents and therefore the data were not analysed alongside the Pebblebeds data. Although Dalditch was mapped alongside the 11 other key countryside sites, it was accidentally not included in the table in question D2. Therefore we felt that the accidental omission of Dalditch from question D2 would mean that it may not receive the same level of detail as the other Pebblebeds sites and should therefore be included under other countryside sites visits.

Conclusion

Visitors were asked specifically about visits to Berry Head, Exe Riverside Valley Park, Exminster Marshes and Haldon Forest. Haldon Forest is a well used site with 48% of respondents visiting and Exe Riverside Valley Park is also popular with nearly a quarter of respondents visiting. Most respondents visit the four locations infrequently and for example 92% visiting Berry Head a few times a year or less. Berry Head and Haldon Forest visited mainly by car whereas the proximity of residential areas mean that Exe Riverside Valley Park and Exminster Marshes receive a higher proportion on foot. Walking is the most popular activity across the four main sites although Haldon Forest and Exe Riverside are popular for dog walking. Similarly cycling is most popular at Exe Riverside and Haldon Forest is visited more for children's activities and Exminster Marshes is a key location for wildlife watching.

The highest number of additional countryside visits were made to Decoy Country Park and this site is used mainly by Teignbridge residents. Exeter City residents made the most visits to Ludwell Valley Park which received over 25% of additional countryside visits.

9. Relative use of the Exe, Dartmoor and the Pebblebed Heaths

- 9.1 Looking across the three target European Protected sites the busiest location is the Exe Estuary with 67,662 annual visits which is nearly three times the number made to Dartmoor (26,840) and more than three times the number made to the Pebblebeds (20,724). Whilst these figures could be indicative of the central location of the Exe within the study area it is also due to the diverse range of recreational opportunities from walking to kite surfing within a short travel distance for local residents.
- 9.2 The visit rate curves derived individually for each site of interest for all visits combined are displayed in Figure 18. When viewed together, the low visit rate to Dawlish Warren Nature Reserve and beach can be seen as well as the fact that visitors to Dawlish Warren travel relatively short distances to reach the site.
- 9.3 For all four locations, the curves begin to flatten out around 10km although the Exe has more widespread appeal and is the last to level out at around 12km. The highest numbers of local visits are made by visitors adjacent to the Exe Estuary with around 203 annual visits per household at 1km from the SPA boundary. Sharper declines in visit rates are seen for Dartmoor with 66 visits per year at 3km and the Pebblebeds with 75 visits per year at 3km. At distances of 15km and above Dartmoor draws the highest number of visits – just higher than the Exe and certainly higher than the Pebblebeds. In other words the number of visits a household makes to Dartmoor if the house was 15km away would be expected to be more than the number of visits made to the Exe by a household living 15km from the Exe. The Pebblebeds clearly have a very local draw in comparison with the other two sites.

Table 44: Visitor rates to European Protected sites for all visits as derived from the fitted trendlines (*Pebblebeds rate derived from responses from the east of the Exe only and Dawlish Warren rate derived from the west of the Exe only).

Distance (km)	Total visits per household per year			
	Dawlish Warren Nature Reserve and Beach*	Exe Estuary	Dartmoor	Pebblebeds*
1	116.8	203.3	161.6	163.5
2	83.45	139.9	102	111.0
3	59.99	97	65.8	75.5
4	43.46	67.9	43.8	51.4
5	31.8	48.3	30.5	35.1
6	23.59	34.9	22.4	24.1
8	13.73	19.8	14.6	11.6
10	8.83	12.9	11.7	5.9
12	6.4	9.7	10.6	3.2
15	4.84	7.8	10.1	1.7
20	4.15	7.1	10	1.1
25	4.03	7	10	1.0
30	4	7	10	1.0
35		7	10	
50		7	10	

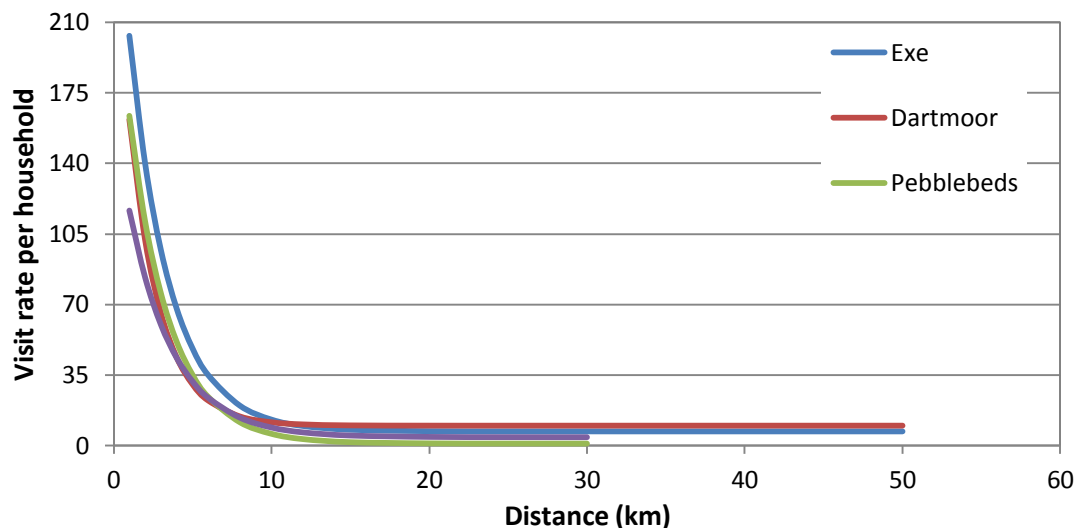
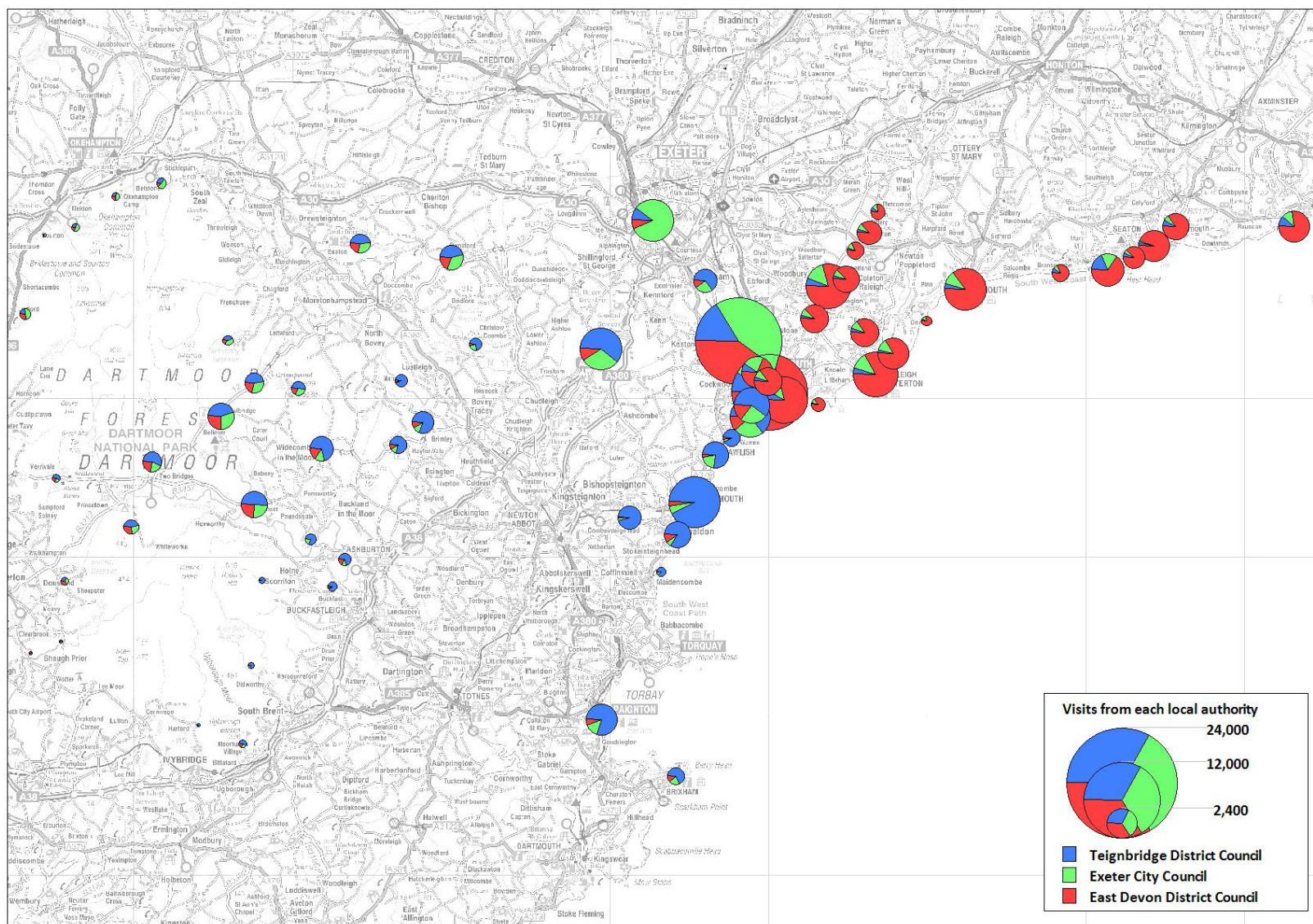


Figure 18: Visitor rates to European Protected sites for all visits. Exponential trendlines fitted manually, so as to maximise R^2 (Exe $R^2=0.96$; Dartmoor $R^2=0.85$; Pebblebeds $R^2=0.94$; Dawlish $R^2=0.38$).

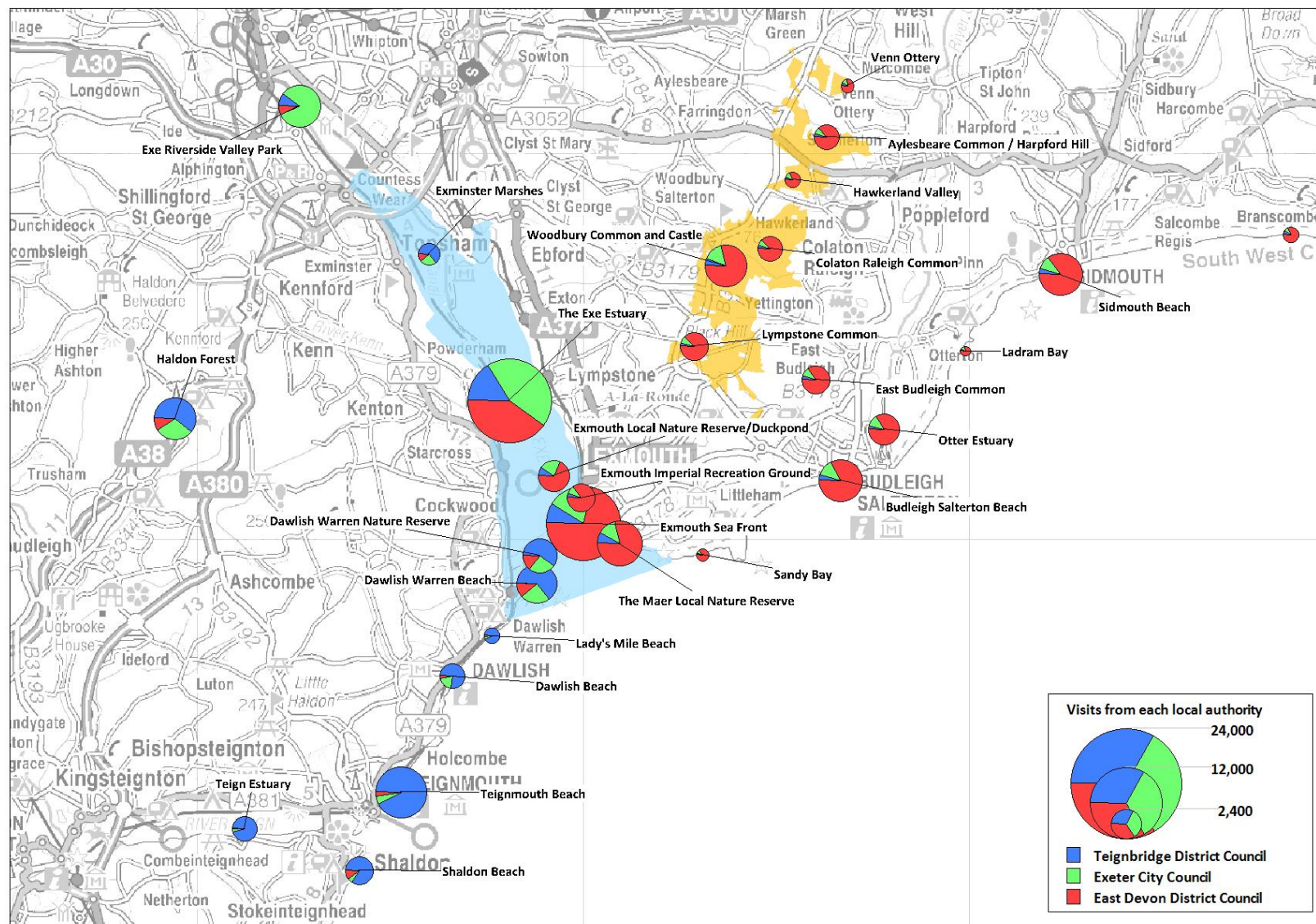
- 9.4 The total number of visits to each named location from residents of each local authority area is shown in Map 10, demonstrating the tendency of residents to use sites local to their district more often and showing the popularity of the sites around Exeter including the Exe. Given the nature of Dartmoor, visits to certain popular sites are spread equally between residents of the three local authorities whereas the Pebblebeds receive far more visits from local residents compared to those from Teignbridge District or Exeter City (Table 45: Map 10).
- 9.5 The total number of visits made by each respondent to each broad European Protected Site location was calculated and each postcode was assigned to a group according to the site that they visited most (Map 12). Some respondents visited two sites equally and hence six groups are displayed in Map 12. The majority of respondents were 'mainly Exe' visitors (53% of the 1219 respondents that visit the countryside) followed by 'mainly Dartmoor' (33%), 'mainly Pebblebeds' (6.3%), 'mainly Exe and Dartmoor' (6.2%) and 'mainly Exe and Pebblebeds' (0.8%). People that visit the Pebblebeds and Dartmoor to the same extent formed the smallest group with only five respondents (0.4%) (Map 12).
- 9.6 Looking at the total visits to each European Site from the three local authority areas, there is a significant difference between locations visited and districts where respondents live ($\chi^2_4 = 26751.9$, $p < 0.001$).

Table 45: The total number of visits (%) to each target location made by respondents of each local authority area.

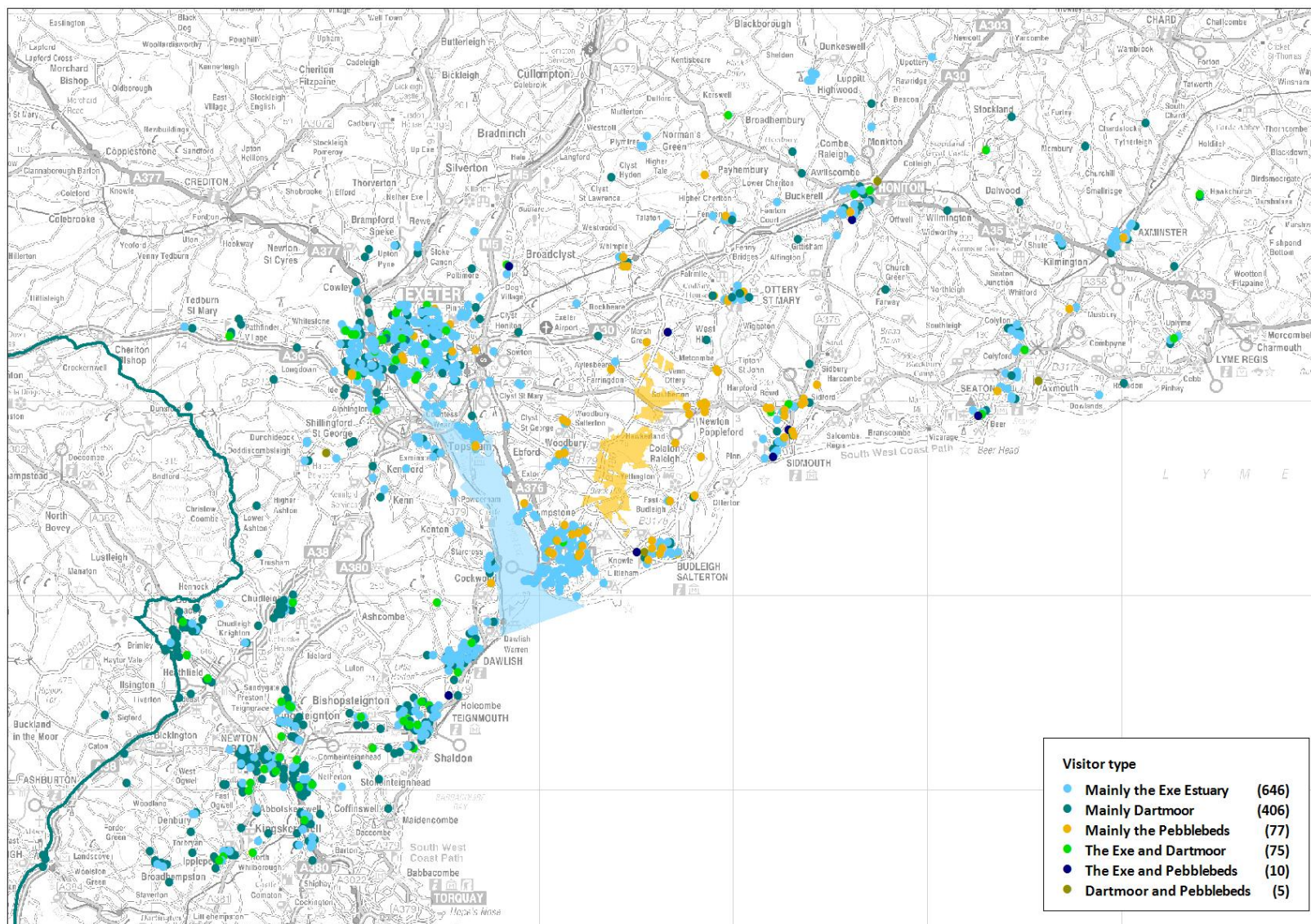
Local authority	Number of visits		
	Exe	Dartmoor	Pebblebeds
Teignbridge District Council	13084 (19)	15596 (58)	976 (5)
Exeter City Council	19014 (28)	6016 (22)	2566 (12)
East Devon District Council	35564 (53)	5228 (19)	17182 (83)
Total	67662	26840	20724



Map 10: The proportion of visits made to each named location by residents from each local authority. Pie charts scaled thematically to show the relative number of visits to each location. Contains Ordnance Survey © data Crown copyright and database right 2011.



Map 11: The proportion of visits made to named locations within and around the Exe Estuary SPA (blue) and the Pebblebed Heaths SPA/SAC (yellow) by residents from each local authority. Pie charts scaled thematically to show the relative number of visits to each location. Contains Ordnance Survey © data Crown copyright and database right 2011.



Map 12: Postcodes of respondents coloured according to the site (Exe, Dartmoor, Pebblebeds) or combination of sites that they visit the most. Contains Ordnance Survey © data Crown copyright and database right 2011.

- 9.7 The total number of respondents who stated that they undertook activities at each of the three target sites differed significantly when comparing five activity categories for which responses were received across the three sites (Walking, Dog walking, Pub/cafe, Wildlife watching, Bicycling) ($\chi^2_8 = 334.8$, $p < 0.001$) (Table 46). Walking is clearly the most popular activity at all three sites but it is clear that more visits to the Pebblebeds are for dog walking and fewer are for visiting a pub/cafe due to the fact that the Pebblebeds is a rural heathland location with a low level of visitor infrastructure such as pubs and cafes.

Table 46: Number of responses for activities undertaken at each site and the percentage of the total responses at each site.

Activity	Number of responses		
	Exe	Dartmoor	Pebblebeds
Walking	2489 (55)	3708 (59)	972 (57)
Dog walking	488 (11)	780 (12)	292 (17)
Wildlife watching	731 (16)	699 (11)	282 (17)
Bicycling	279 (6)	162 (3)	91 (5)
Pub/cafe	539 (12)	947 (15)	63 (4)
Total	4526	6296	1700

- 9.8 The visitor and visit information for each settlement within the study area is shown in Table 47. The number of visits made to each target European site by all residents in each settlement was calculated using the visit information derived from respondents and the visit rate curves generated in this report. The average distance between each individual named location within each of the three key sites and the centre point of each settlement (except Exeter due to its size) were calculated and entered into the equations to estimate a visit rate for each settlement. The visit rate was then scaled up to total visits per year per settlement by multiplying the household visit rate by the number of properties (residential delivery points) within each settlement (Table 47). These figures are based on the sample of responses received from the questionnaire and therefore where there is a low sample size within a settlement and the respondents visit locations very regularly, this can produce inflated visit numbers for that settlement and vice versa. Furthermore only 56% of the respondents that visit the countryside and where a postcode could be geocoded actually live within settlements therefore visits by people outside settlements are not accounted for in Table 47.

- 9.9 Looking at the total visits per settlement in Table 47, excluding Exeter, Exmouth contributes the most visits to all three sites combined (49.6% of the total visits, 63.3% of visits to the Exe and 46.1% of visits to the Pebblebeds). The high visit level from Exmouth residents is mainly due to the location of the town in the heart of the study area and particularly its proximity to the Exe (the busiest European site) and also the Pebblebeds. The data are also affected by a high response rate from Exmouth residents who may be more likely to respond as a higher proportion of residents are retired and have sufficient time to fill in the questionnaire.

- 9.10 All the other settlements contribute less than 7% each of the total visits to the three sites combined (excluding Exeter). Whilst Exmouth residents contribute the most visits to Dartmoor (17.3%) the majority is not as great as visits to the Exe (63.3%) and the visits to

Dartmoor are spread amongst a number of settlements such as Newton Abbot, Sidmouth, Teignmouth, Honiton and Seaton. Likewise Exmouth residents contribute the most visits to the Pebblebeds although around 20% of visits come from residents in Sidmouth (10.3%) and Budleigh Salterton (10%).

- 9.11 To achieve a similar estimate for Exeter, it may be useful to split the city into distinct sub-areas or districts where possible. Subdividing the city would produce better estimates of the distances from the city to the locations and hence generate more accurate estimates of the visit rates of residents, and hence total visits per year, in different parts of the city.

Table 47: The number of respondents from each settlement within the study area (667 or 56% of respondents out of 1191 geocoded postcodes of countryside visitors live within settlements), the total number of delivery points within each settlement (an estimate of residential properties) and the number of visits made to each target European site by respondents. The visit rate for residents of each settlement was derived by calculating the average distance from the centroid of each settlement to the each location within a site or the centroid of the site where a specific location is not provided. These distances were then inputted into the visit rate equations to estimate a visit rate which is multiplied by the number of delivery points to determine the total number of visits per settlement. Exeter is excluded as a measurement from the centre to each site would be inaccurate due to the size of the city.

Settlement name	Respondents	Delivery points	Visits by respondents			Visit rate per household				Total visits per year (% of total)			
			Exe	Dartmoor	Pebblebeds	Exe	Dartmoor	Pebblebeds	Total	Exe	Dartmoor	Pebblebeds	Total
Exmouth	107	15503	23780	1392	6134	107	10	19	136	1658442 (63.3)	155030 (17.3)	301081 (46.1)	2114553 (49.6)
Dawlish	37	4701	4206	660	60	47	10	2	59	220449 (8.4)	47010 (5.2)	10165 (1.6)	277624 (6.5)
Newton Abbot	87	10454	824	2210	80	7	10	1	18	78076 (3)	104565 (11.7)	10602 (1.6)	193243 (4.5)
Sidmouth	30	6400	420	456	748	8	10	11	28	49210 (1.9)	64000 (7.1)	67332 (10.3)	180542 (4.2)
Teignmouth	62	6613	1358	1068	104	16	10	1	27	10495 (0.4)	66131 (7.4)	8247 (1.3)	177873 (4.2)
Budleigh Salterton	24	2370	1438	304	1346	26	10	28	64	62560 (2.4)	23700 (2.6)	65437 (10)	151697 (3.6)
Honiton	25	5150	340	316	108	7	10	1	18	36120 (1.4)	51500 (5.7)	6850 (1)	94470 (2.2)
Kingsteignton	36	4489	420	808	128	8	10	1	19	36656 (1.4)	44899 (5)	4658 (0.7)	86213 (2)
Seaton	18	4146	164	112	52	7	10	1	18	29057 (1.1)	41460 (4.6)	4600 (0.7)	75117 (1.8)
Starcross	4	545	660	132	4	107	10	7	124	58580 (2.2)	5450 (0.6)	3717 (0.6)	67747 (1.6)
Lympstone	8	537	1532	192	1428	76	10	19	105	40677 (1.6)	5370 (0.6)	10294 (1.6)	56341 (1.3)
Topsham	19	1420	4650	440	488	19	10	8	37	26581 (1)	14200 (1.6)	11704 (1.8)	52485 (1.2)
Ottery St.Mary	22	2032	348	280	296	7	10	7	25	14764 (0.6)	20320 (2.3)	14923 (2.3)	50007 (1.2)
Woodbury	7	611	1674	204	1364	28	10	42	81	17258 (0.7)	6110 (0.7)	25881 (4)	49249 (1.2)
Lyme Regis	2	2561	4	16	0	7	10	1	18	17928 (0.7)	25610 (2.9)	2569 (0.4)	46107 (1.1)
Newton Poppleford	7	684	224	52	2438	9	10	43	62	6350 (0.2)	6840 (0.8)	29531 (4.5)	42721 (1)
Axminster	11	2244	64	80	36	7	10	1	18	15709 (0.6)	22440 (2.5)	2256 (0.3)	40405 (0.9)
Exminster	8	1282	658	120	32	17	10	4	31	21638 (0.8)	12820 (1.4)	5579 (0.9)	40037 (0.9)
Feniton	6	559	40	24	20	43	10	17	71	24304 (0.9)	5590 (0.6)	9674 (1.5)	39568 (0.9)
Dawlish Warren	3	340	200	104	4	99	10	4	112	33494 (1.3)	3400 (0.4)	1281 (0.2)	38175 (0.9)
Bovey Tracey	31	1898	284	3418	32	7	10	1	18	13721 (0.5)	19035 (2.1)	1920 (0.3)	34676 (0.8)
Kingskerswell	17	1808	280	552	44	7	10	1	18	13310 (0.5)	18081 (2)	1827 (0.3)	33218 (0.8)
Chudleigh	18	1524	268	684	32	9	10	1	20	13787 (0.5)	15244 (1.7)	1681 (0.3)	30712 (0.7)
West Hill	2	706	40	4	20	8	10	20	38	5566 (0.2)	7060 (0.8)	14179 (2.2)	26805 (0.6)

Settlement name	Respondents	Delivery points	Visits by respondents			Visit rate per household				Total visits per year (% of total)			
			Exe	Dartmoor	Pebblebeds	Exe	Dartmoor	Pebblebeds	Total	Exe	Dartmoor	Pebblebeds	Total
Buckfastleigh	2	1456	12	92	0	7	10	1	18	10197 (0.4)	14687 (1.6)	1456 (0.2)	26340 (0.6)
Kenton	3	313	172	12	4	62	10	6	78	19317 (0.7)	3130 (0.3)	1900 (0.3)	24347 (0.6)
Bishopsteignton	7	952	96	208	20	10	10	1	22	9958 (0.4)	9520 (1.1)	1049 (0.2)	20527 (0.5)
East Budleigh	2	254	216	64	148	18	10	48	76	4526 (0.2)	2540 (0.3)	12111 (1.9)	19177 (0.4)
Shaldon	6	864	92	148	0	10	10	1	22	9032 (0.3)	8640 (1)	949 (0.1)	18621 (0.4)
Colyton	7	864	116	44	16	7	10	1	18	6052 (0.2)	8640 (1)	926 (0.1)	15618 (0.4)
Ipplepen	11	863	100	204	28	7	10	1	18	6110 (0.2)	8632 (1)	865 (0.1)	15607 (0.4)
Heathfield/Bovey Heath	3	643	36	76	4	7	10	3	20	4546 (0.2)	6430 (0.7)	1653 (0.3)	12629 (0.3)
Broadclyst	2	503	8	4	4	8	10	4	21	3793 (0.1)	5030 (0.6)	1792 (0.3)	10615 (0.2)
Exton	1	180	204	4	80	32	10	15	58	5809 (0.2)	1800 (0.2)	2756 (0.4)	10365 (0.2)
Whimble	5	421	120	56	84	7	10	6	23	3093 (0.1)	4210 (0.5)	2536 (0.4)	9839 (0.2)
Highwood	6	526	108	12	12	7	10	1	18	3882 (0.1)	5267 (0.6)	534 (0.1)	9683 (0.2)
Clyst St Mary	1	296	24	12	0	12	10	10	32	3678 (0.1)	2960 (0.3)	2896 (0.4)	9534 (0.2)
Abbotskerswell	2	488	20	32	0	7	10	1	18	3531 (0.1)	4881 (0.5)	491 (0.1)	8903 (0.2)
Coldeast	1	426	8	44	0	7	10	1	18	3072 (0.1)	4269 (0.5)	430 (0.1)	7771 (0.2)
Holcombe	1	173	24	32	0	26	10	2	37	4489 (0.2)	1730 (0.2)	268 (0)	6487 (0.2)
Sidbury	1	269	8	12	0	7	10	6	23	1948 (0.1)	2690 (0.3)	1516 (0.2)	6154 (0.1)
Colyford	2	273	20	8	0	7	10	1	18	1912 (0.1)	2730 (0.3)	294 (0)	4936 (0.1)
Stoke Canon	2	247	96	48	4	7	10	2	19	1790 (0.1)	2470 (0.3)	385 (0.1)	4645 (0.1)
Kilmington	2	226	12	24	12	7	10	1	18	1582 (0.1)	2260 (0.3)	230 (0.04)	4072 (0.1)
Tedburn St Mary	2	208	80	92	12	7	10	1	18	1466 (0.1)	2080 (0.2)	212 (0.03)	3758 (0.1)
Raymond's Hill	1	197	4	28	0	7	10	1	18	1379 (0.1)	1970 (0.2)	198 (0.03)	3547 (0.1)
Ide	2	172	40	72	4	9	10	2	20	1468 (0.1)	1720 (0.2)	273 (0.04)	3461 (0.1)
Kennford	2	122	32	16	8	14	10	2	26	1673 (0.1)	1220 (0.1)	257 (0.04)	3150 (0.1)
Clyst Honiton	2	107	12	20	4	9	10	10	29	939 (0.04)	1070 (0.1)	1110 (0.2)	3119 (0.1)
Total	667	89620	45536	14992	15442	991	490	369	1851	2619974	896441	653075	4262490

Conclusion

The busiest location was the Exe estuary receiving three times more visitors than Dartmoor and the Pebblebeds. The Exe is most centrally located but it also provides opportunities for the widest variety of recreation activities. Visitor rates to the four key sites vary with Dawlish Warren Nature Reserve receiving the lowest visit rate and visitors travelling from relatively short distances. The Exe has the widest catchment with visit rates trailing off around 12km.

The highest numbers of local visits are made by visitors adjacent to the Exe Estuary with around 203 annual visits per household at 1km from the SPA boundary. The visitor rates demonstrate the attractiveness of Dartmoor and the local catchment of Pebblebeds. Visitors tend to use sites local to their district except Dartmoor which has a wider appeal. Looking at the type of each visitor by postcode 53% are 'mainly exe' visitors, 33% 'mainly Dartmoor'.

Walking is clearly the most popular activity at all three sites but it is clear that more visits to the Pebblebeds are for dog walking and fewer are for visiting a pub/cafe due to the fact that the Pebblebeds is a rural heathland location with a low level of visitor infrastructure such as pubs and cafes.

Visit rates per settlement based on the sample of postcodes - excluding Exeter, Exmouth contributes the most visits to all three sites combined (49.6% of the total visits, 63.3% of visits to the Exe and 46.1% of visits to the Pebblebeds).

10. Predicting visits to European Sites

- 10.1 This chapter provides information needed to calculate the number of household visits to each European site that will be generated by different numbers of houses built in different locations. The chapter pulls together analyses presented in the preceding chapters and provides a series of maps showing the visit rates within distance bands or 'zones' surrounding each European site.
- 10.2 Distances between settlements and European site centroids and nearest points are presented. These nearest point data are used in equations generated for each European site to determine the visit rates for all visitors from each settlement. Adjustments to visit rates have been made to account for the fact that the Exe is positioned centrally within the study area. Therefore straight line distances are not relevant for settlements where the straight line distance passes through the Exe Estuary. An excel spreadsheet is provided which allows users to select a settlement and the number of houses to generate a prediction of the number of visits made to each European site by those additional houses.
- 10.3 The same equations have been used to generate visit rates by distance from the site and these have been displayed in tables for different activities and modes of transport (where data are available) alongside the actual data collected for comparison. The visit rates from the fitted curve data are also presented as maps with 'zones' surrounding each European site. These figures are used in the predictions spreadsheet to allow a distance from a site to be entered to predict the number of additional visits per household per year and the total number of visits (by multiplying by the number of additional houses). The contribution of total visits by each zone is demonstrated in another series of maps which uses the visit rate and the number of delivery points to take account of the current distribution of housing. The visit rates generated for each settlement were used to determine the effect of closeness to the sea on the level of visits to Dawlish Warren.

Distances between settlements and European sites

- 10.4 In the previous chapter the average distance between the locations specified in the survey within each European site and the centroid of each settlement was used to generate visitor rates. For the purposes of this chapter and to simplify the predictions spreadsheet, the distances between each settlement within the study area and the centroid (central point) of the European site were generated within the GIS. We also generated distances using the nearest point on the European site (Table 48). The greatest distance between a settlement and a European site is between Raymond's Hill in East Devon and Dartmoor (73.5km) whilst Dawlish Warren is only 1.2km from the centroid of the nearest SAC. The distances used are straight lines rather than travel distances and therefore a number of the distances between settlements and Dartmoor and Dawlish Warren pass through the Exe (e.g. a straight line between Dawlish and the Pebblebed Heaths will pass through the Exe). The only way to account for the additional distance to travel around the Exe would be to estimate travel distances using the road network. In the absence of data on road networks and travel times, the straight line distance is used to estimate visitor rates in the remainder of this chapter and also in the prediction spreadsheet provided with this report.

- 10.5 To account for the fact that the Exe is placed centrally within the study area we have focussed on areas either side of the estuary when calculating visit rates to Dawlish Warren and the Pebblebed Heaths. Specifically visit rates to Dawlish Warren are generated from data provided by respondents living to the west of the Exe and for the Pebblebeds data are used for the east of the Exe only. In addition, an overall visit rate was estimated for settlements outside of these reduced areas. In practice this means that for Dawlish Warren an average visit rate is assigned to settlements to the east of the Exe with the exception of Exmouth where a separate visit rate to Dawlish Warren was generated to account for use of the ferries across the estuary. Similarly an average visit rate to the Pebblebeds is assigned to settlements to the west of the Exe.

Table 48: Straight line distances in kilometres between each settlement within the three local authority district boundaries and the centroid of each European site and the nearest point of each European site (* indicates straight line distances for nearest points which pass through the Exe). The closest European site to each settlement is shown in bold.

Local Authority	Settlement	Distance to centroid (km)				Distance to nearest point (km)			
		Dartmoor	Dawlish Warren	Exe Estuary	Pebblebed Heaths	Dartmoor	Dawlish Warren	Exe Estuary	Pebblebed Heaths
East Devon	Axminster	71.8	36.8	35.2	29.9	49.6	35.8*	33.6	24
	Broadclyst	40.8	17.4	13.1	11.5	19*	16.6	8.3	7.9
	Budleigh Salterton	46.5	7.9	8	5.1	25.4	7.1*	4.6	1.7
	Clyst Honiton	41.6	14.4	10.2	8	19.5	13.5	6.1	5.2
	Clyst St Mary	38.6	11.4	7	6.9	16.4	10.6	2.5	6.2
	Colyford	65.6	29.2	28	22.9	43.5	28.2*	25.9	17.4
	Colyton	65.6	29.7	28.3	23.2	43.5	28.8*	26.5	17.5
	Dunkeswell	59	32.1	28.7	24.2	37.7	31.1*	25.4	17
	East Budleigh	47.1	9.6	8.7	4.3	25.6*	8.7*	6.7	2
	Exmouth	41.7	3.8	3.5	4.3	20.7*	2.8*	1.2	2.6
	Exton	38.7	7.4	3.1	4.6	16.8*	6.6*	0.3	4.4
	Exton Commando Training Centre	39.1	6.5	2.3	4.1	17.4*	5.7*	0.4	3.7
	Feniton	52.3	22.8	19.5	14.9	30.3	21.8*	16.4	7.7
	Highwood	58.6	31.2	27.8	23.3	13.3	13.8*	3.4	10.5
	Honiton	58.4	27	24.2	19.2	36.3	26*	21.8	12.2
	Kilmington	68.5	33.8	32.1	26.9	46.4	32.9*	30.7	20.9
	Lympstone	39.9	4.9	1.5	3.8	18.5	4*	0.6	2.7
	Newton Poppleford	48.7	13.8	11.5	6.3	26.6*	12.8*	10.4	0.7
	Otterton	48.4	11.1	10	5.3	26.7*	10.1*	8.1	2.6
	Ottery St.Mary	51.3	19.4	16.4	11.5	29.1	18.4*	14	4.4
	Raymond'sHill	73.5	37.6	36.4	31.2	51.4	36.7*	34.4	25.5
	Seaton	64.9	27.9	27	21.9	42.8*	27*	24.6	16.7
	Sidbury	54.7	19.5	17.6	12.4	32.5	18.6	16.5	6.6
	Sidmouth	53.2	16.8	15.3	10.2	31.2*	15.8*	13.8	5.3
	Stoke Canon	36.7	19.1	14.8	14.8	15.5	18.5*	8.3	12.6
	West Hill	48	16.3	13.1	8.4	25.8	15.3*	10.5	1.2
	Whimble	46.5	18.7	14.9	11.2	24.6	17.7*	11.2	4.6
	Woodbury	41.7	8.1	4.6	1.8	19.9*	7.1*	3.3	1.7
Exeter	Exeter	35.4	14.4	10.2	11.2	13.3	13.8*	3.4	10.5

Local Authority	Settlement	Distance to centroid (km)				Distance to nearest point (km)			
		Dartmoor	Dawlish Warren	Exe Estuary	Pebblebed Heaths	Dartmoor	Dawlish Warren	Exe Estuary	Pebblebed Heaths
	Topsham	37	9.2	4.9	6.7	15*	8.6*	0.2	6.6
Teignbridge	Abbotskerswell	30.4	16.8	19.4	24.3	10.9	15.7*	15.3	22.8*
	Ashburton	21.5	25	26.4	31.7	1.6	24.1*	23.8	30.4*
	Bishopsteignton	33.1	9.8	12.6	17.4	13.0	8.8*	8.4	15.9*
	Bovey Tracey	22.8	17.3	17.7	22.9	2.7	16.6*	16.4	21.9*
	Buckfastleigh	22.4	27.6	29.3	34.6	0.8	27.7*	27.4	34.4*
	Christow	23.6	16.4	14.9	19.5	3.6	15.9*	11.4	18.9*
	Chudleigh	27.7	11.8	12.1	17.3	7.9	11.1	10.9	16.2*
	Coldeast	24.3	17.3	18.5	23.7	4.3	16.5	16.4	22.5*
	Dawlish	37.3	3.4	7	11.3	17.3	2.4*	2.0	9.6*
	Dawlish Warren	38.5	1.2	5	9	18.7	0.3	0.3	7.4*
	Exminster	34.8	9.3	5.5	8.6	12.9	8.9*	0.7	8.4*
	Heathfield/ Bovey Heath	25	15.9	16.8	22.1	4.9	15.1*	15	20.9*
	Holcombe (Teignbridge)	37.2	5.4	9.1	13.3	17.1	4.4*	3.7	11.6*
	Ide	31	13.9	10.4	13.4	8.8	13.6*	4	13.3*
	Ipplepen	30.3	19.5	22.2	27.1	9.4	18.5*	18	25.6*
	Kennford	31.9	9.8	7.1	11.3	10.3	9.5*	3.9	10.8*
	Kenton	36.6	4.6	2	7.2	15.6	4.2*	1.2	6.1*
	Kingskerswell	33	15.6	18.7	23.4	13.4	14.6*	14	21.8*
	Kingsteignton	29.6	12.8	14.8	19.9	9.6	11.8*	11.5	18.5*
	Moretonhampstead	16	24.1	22.7	27.2	3.5	23.5*	18.7	26.7*
	Newton Abbot	29.8	15	17.5	22.5	10	14*	13.7	21*
	Shaldon	35.1	9.8	13.1	17.6	15	8.8*	8.2	16*
	Starcross	37.9	2.6	2.1	6.9	17.3	2.3*	0.3	5.5*
	Tedburn St Mary	23.9	22.4	19.5	22.6	5.3	22.1*	13.3	22.4
	Teignmouth	36	7.4	10.9	15.3	15.9	6.4*	5.8	13.6*

Visit rates by distance from European sites

- 10.6 Visit rates based on distance from each site have been compiled for each European site using the actual data and the fitted curve data for different types of transport used and activity undertaken where data are available. The visit rates are displayed in tables 49-52 along with the number of respondents from each distance category to demonstrate where low sample sizes may affect the fit of the curves and the predictions in visit rates. For example a low response level was received from residents within 1km of Dawlish Warren (Table 50) and to Dartmoor within 2km (Table 51). In the cases of low response level it is useful to refer to the rates generated from actual data rather than the fitted curve data.
- 10.7 The data displayed in tables 49-52 are represented in maps 13-16 using the same distance bands, shaded according to the number of visits made per household. The maps give a clear picture of the catchment of the different sites although when comparing the maps it is important to consider that the ranges vary between sites with the Exe having the highest maximum visit rate and Dawlish Warren the lowest.
- 10.8 The Exe has a relatively small catchment given its size and attractiveness to a variety of visitors. The concentration of people living around the Exe means that within 4km visit rates are high (Map 13). Similarly Dawlish Warren has a very local catchment and due to the low number of respondents within 1km the visit rate for 2km has been mapped instead (Map 14). Dartmoor has a wider catchment as there are fewer houses within the closest distance bands as these are located within the national park boundary (Map 15). The Pebblebeds are also very locally used although the results of the survey showed that fewer people visit the site but they do so with greater frequency (Map 15).

Table 49: The visit rate to the Exe Estuary for different modes of transport and activities (where data are available) at different distances from the site. Visit rates are shown from the actual data and the fitted curves displayed in each chapter.

Distance (km)	Number of respondents that visit the Exe	Visit rates using the actual data				Visit rates using the fitted curve data			
		All	Car/van	Foot	Dog walkers	All	Car/van	Foot	Dog walkers
1	111	211.9	44.43	141.31	35.07	203.35	68.85	147.15	52.76
2	82	151.54	78.67	46.91	39.76	139.94	56.56	54.13	32.24
3	108	63.57	46.27	10.69	17.63	97.01	46.61	19.91	19.79
4	92	49.75	17.65	15.54	10.75	67.94	38.54	7.33	12.24
5	98	50.09	35.86	5.94	13.13	48.26	32	2.69	7.66
6	67	29.87	23.54	0.58	5.66	34.94	26.69	0.99	4.88
8	62	26.99	20.27	1.34	0.99	19.81	18.91	0.13	2.18
10	22	14.67	13.19	0.22	3.26	12.87	13.8	0.02	1.18
12	67	15.18	12.51	0.1	1.80	9.69	10.44	0	0.81
15	140	12.42	9.91	0.12	1.84	7.84	7.43	0	0.65
20	74	10.73	9.09	0.12	1.63	7.12	5.2	0	0.6
25	52	12.36	11.7	0	2.23	7.02	4.42		0.6
30	19	8.65	7.23	0	0.52	7	4.15		0.6
35	16	7.54	6.62	0	0	7	4.05		0.6
50	2	2.67	2.67	0	1.33	7	4		0.6

Table 50: The visit rate to Dawlish Warren Nature Reserve and Beach for different modes of transport and activities (where data are available) at different distances from the site. Visit rates are shown from the actual data and the fitted curves displayed in each chapter.

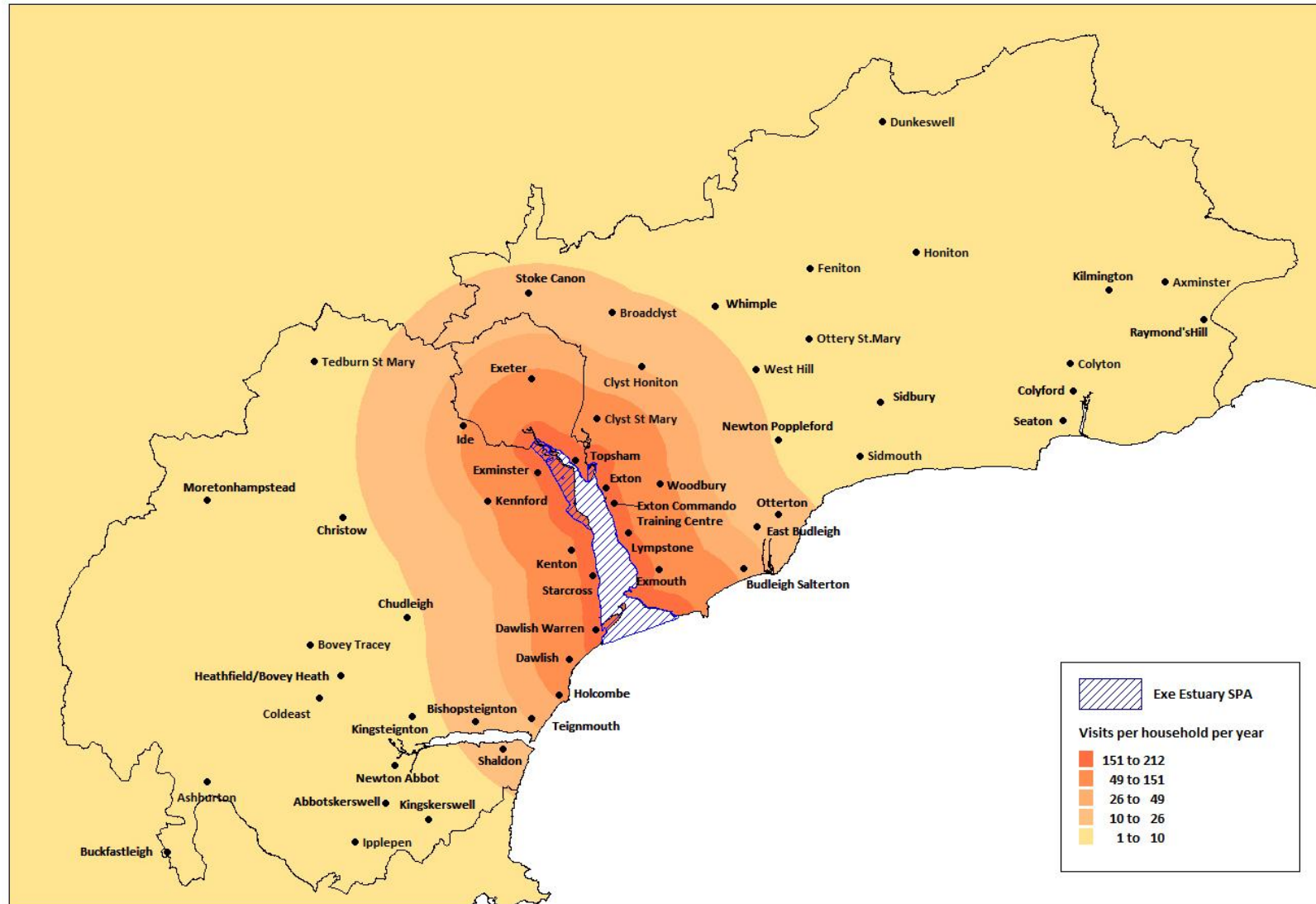
Distance (km)	Number of respondents that visit Dawlish Warren	Visit rates using the actual data		Visit rates using the fitted curve data	
		All	Foot	All	Foot
1	4	38.4	20	7	19.92
2	22	56.27	13.83	83.45	8.79
3	19	34.83	4.54	59.99	3.78
4	12	84.29	1.07	43.46	1.53
5	4	28	0	31.8	0.52
6	8	5	0	23.59	0.07
8	48	14.94	0.77	13.73	-0.23
10	23	11.38	0.31	8.83	-0.28
12	53	7.81	0	6.4	-0.3
15	209	6.95	0.05	4.84	-0.3
20	89	5.69	0.02	4.15	-0.3
25	7	4.86	0	4.03	0
30	1	2	0	4	0

Table 51: The visit rate to Dartmoor for different modes of transport and activities (where data are available) at different distances from the site. Visit rates are shown from the actual data and the fitted curves displayed in each chapter.

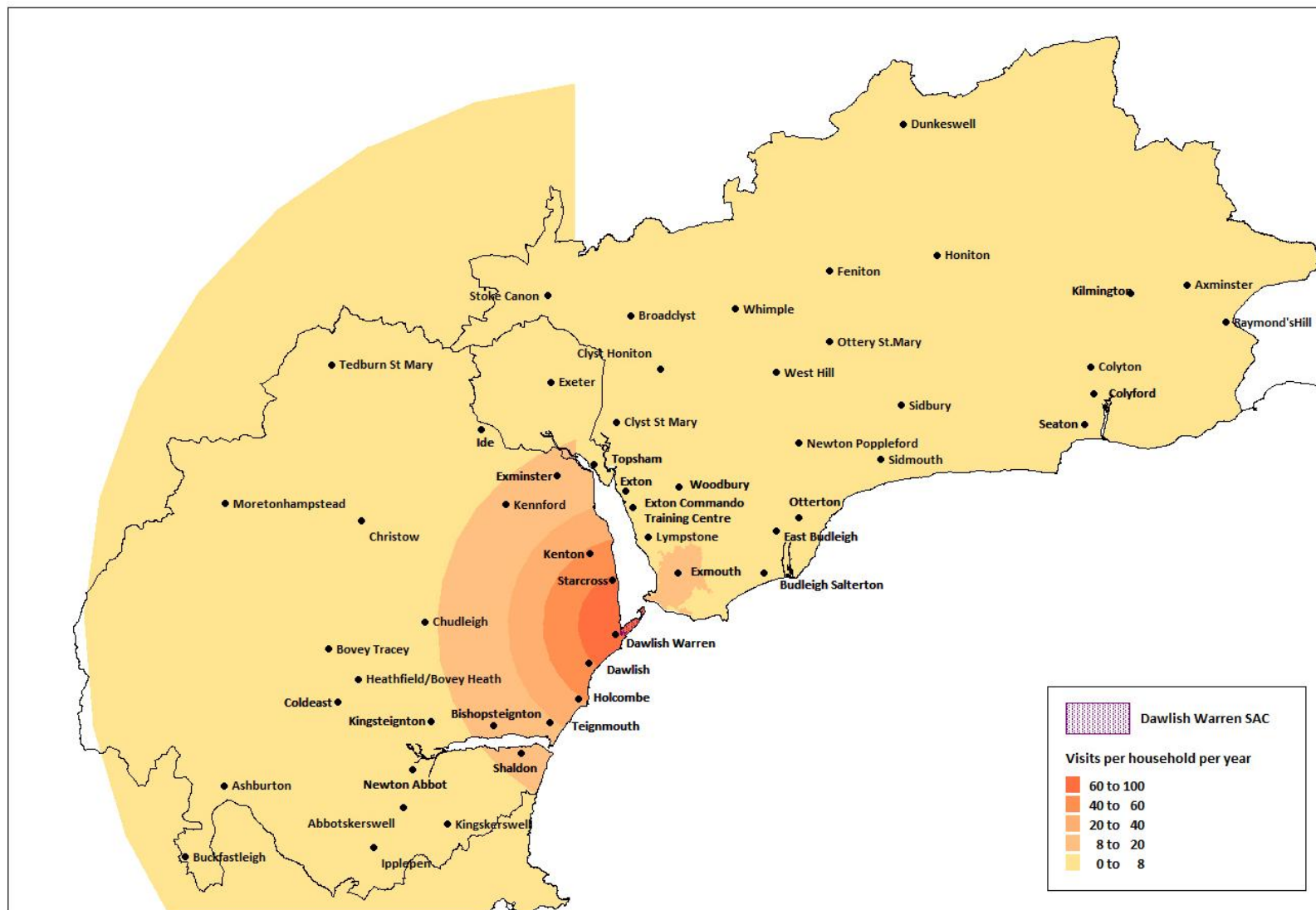
Distance (km)	Number of respondents that visit Dartmoor	Visit rates using the actual data					Visit rates using the fitted curve data				
		All	Car/van	Foot	Dog walkers	Outdoor pursuits	All	Car/van	Foot	Dog walkers	Outdoor pursuits
1	4	120.23	87.41	10.23	41.83	18.1	161.63	103.98	25.74	40.42	18.97
2	3	79.92	52.33	16.89	29.92	12.69	101.97	68.18	9.46	23.08	9.08
3	27	40.71	37.88	2.35	8.47	3.12	65.78	46.47	3.48	13.57	4.63
4	12	19.71	19.57	0	3	0.57	43.83	33.3	1.27	8.35	2.63
5	5	23.64	20.73	0.24	3.52	1.7	30.52	25.31	0.46	5.49	1.73
6	15	20.52	19.22	0.03	1.86	3.17	22.45	20.47	0.16	3.91	1.33
8	29	26.36	24.89	0	6.4	2.24	14.58	15.75	0.01	2.58	1.07
10	120	20.93	19.84	0	3.41	1.75	11.68	14.01	-0.01	2.17	1.01
12	133	17.81	16.66	0.12	2.15	2.36	10.62	13.37	-0.01	2.05	1
15	196	19.35	18.38	0.06	2.92	2.95	10.14	13.08	-0.01	2.01	1
20	193	13.92	13.1		2.69	0.73	10.01	13.01		2	1
25	70	13.93	13.78		4.74	0.96	10	13		2	1
30	54	12.34	12.29		2.93	0.29	10	13		2	1
35	35	12.48	12.16		3.68	0	10	13		2	1
50	58	9.14	8.84		1.23	0.57	10	13		2	1

Table 52: The visit rate to the Pebblebed Heaths for different modes of transport and activities (where data are available) at different distances from the site. Visit rates are shown from the actual data and the fitted curves displayed in each chapter.

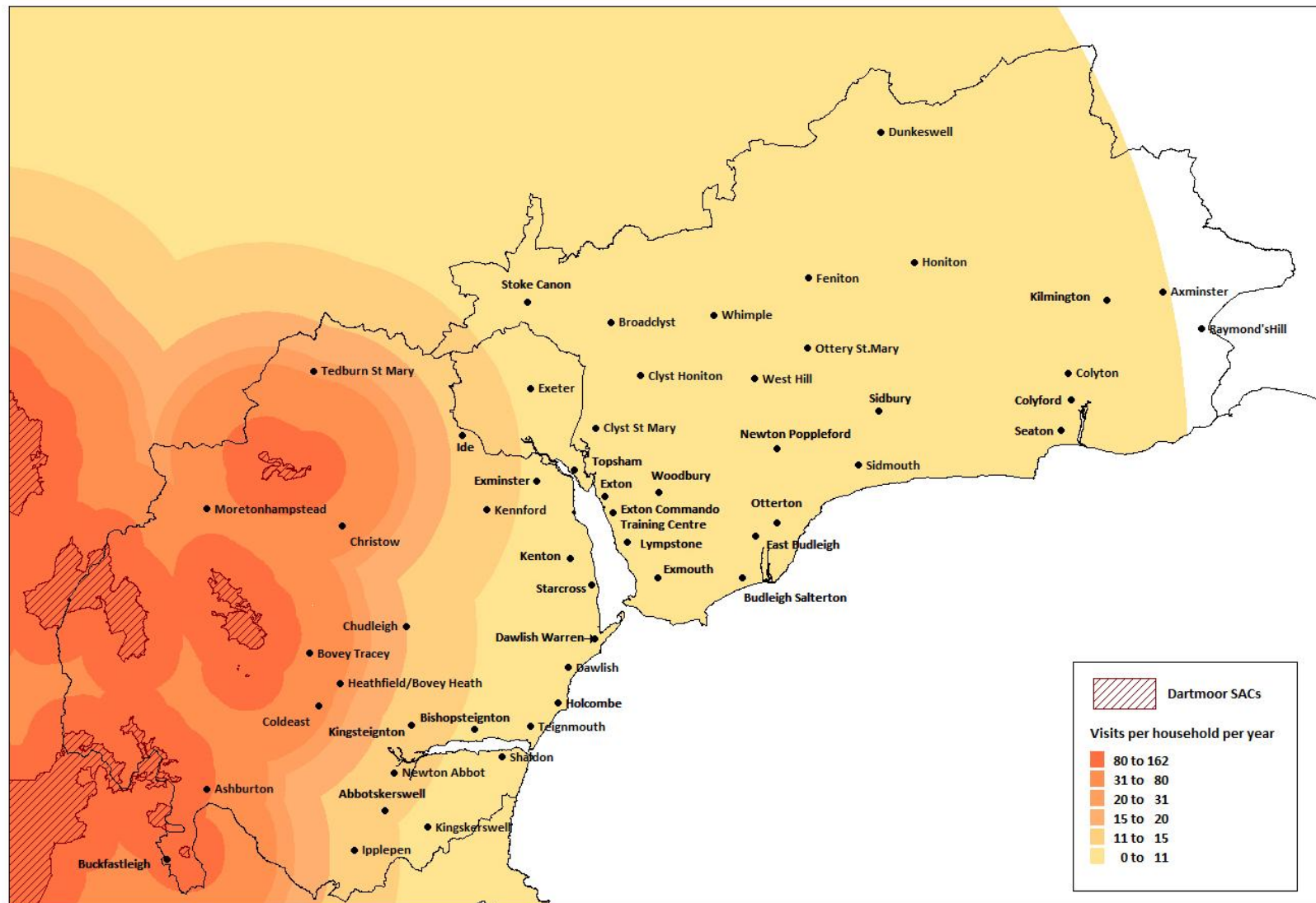
Distance (km)	Number of respondents that visit the Pebblebed Heaths	Visit rates using the actual data				Visit rates using the fitted curve data			
		All	Car/van	Foot	Dog walkers	All	Car/van	Foot	Dog walkers
1	7	140.57	82.57	51.71	1.57	163.49	104.21	55.18	1.96
2	48	131.26	97.56	28.04	1.37	111.02	77.33	20.3	1.34
3	59	61.65	51.71	5.25	0.68	75.49	57.42	7.47	0.92
4	26	61.94	18.37	1.53	0.26	51.43	42.67	2.75	0.65
5	36	18	16.23	0.91	0.59	35.15	31.74	1.01	0.46
6	18	17.24	16.55	0	0.31	24.12	23.64	0.37	0.33
8	29	25.59	22.95	0	0.55	11.6	13.2	0.05	0.19
10	39	8.05	7.73	0	0.12	5.86	7.47	0.01	0.13
12	47	6.54	6.18		0.15	3.23	4.33		0.1
15	30	3.73	3.67		0.16	1.69	2.06		0.09
20	17	3.13	2.96		0.15	1.1	0.85		0.08
25	11	3.38	2.23		0	1.01	0.58		0.08
30	2	3	3		0	1	0.52		0.08



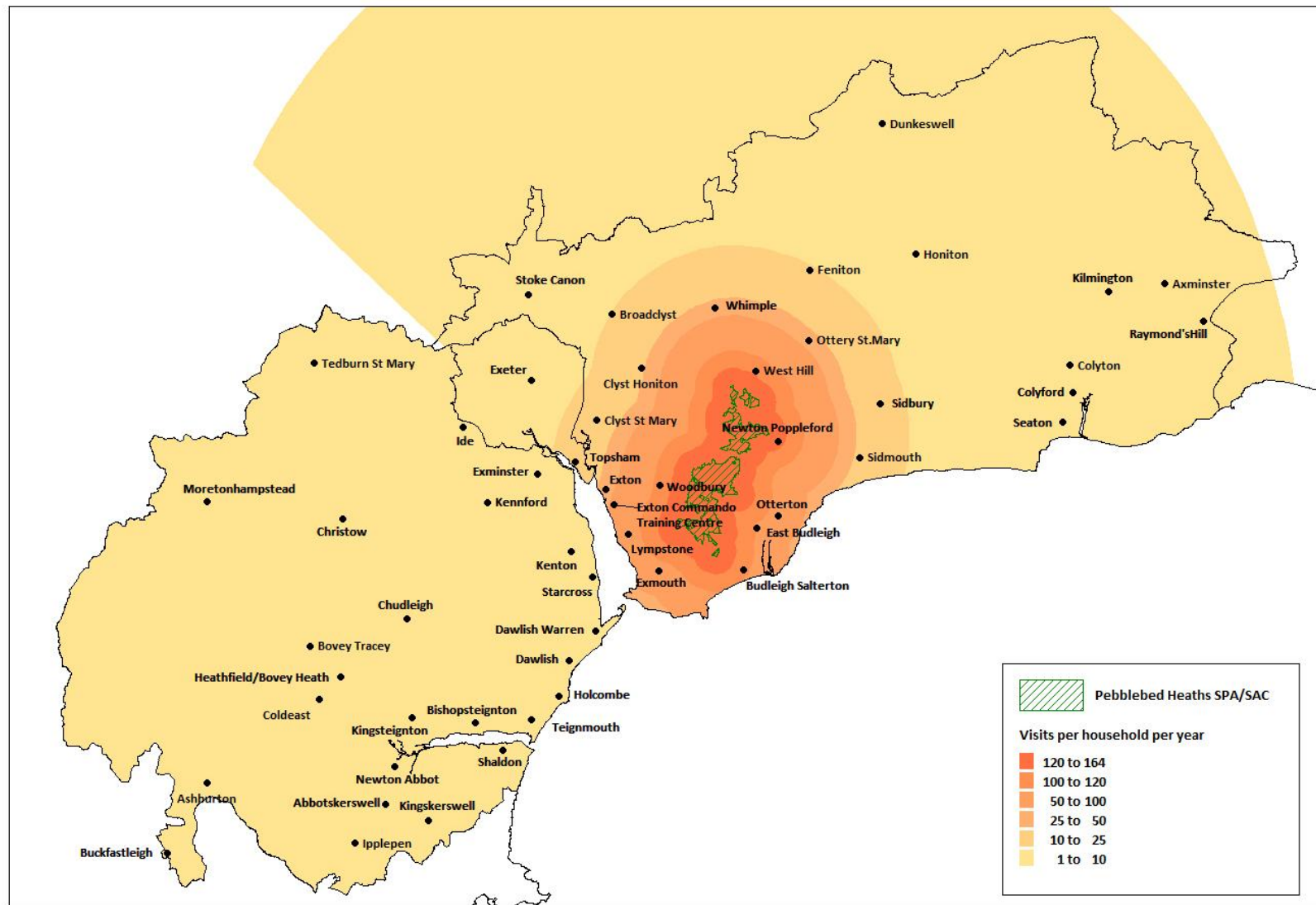
Map 13: The number of annual visits per household by distance band up to 50km from the Exe estuary.



Map 14: The number of annual visits per household by distance band from Dawlish Warren SAC. Visit rate predictions are shown up to 30km for the area to the west of the Exe and an overall visit rate is given for the rest of the study area except Exmouth where a separate rate was calculated to take account visitor access to Dawlish Warren by ferry. Due to the low number of respondents within 1km the predicted visit rate was inaccurate; therefore the visit rate for 2km has been shown.



Map 15: The number of annual visits per household by distance band up to 50km from Dartmoor.



Map 16: The number of annual visits per household by distance band from the Pebblebed Heaths. Visit rate predictions are shown up to 30km for the area to the east of the Exe and an overall visit rate is given for the rest of the study area.

10.9

The visit rates were used to estimate the total visits made by residents within each distance band by multiplying the rate by the number of delivery points (using Royal Mail PostZon data). The percentage of visits originating within each visit band is shown in maps 17-20 excluding the area to the west of the Exe for Pebblebeds and to the east of the Exe for Dawlish Warren. These maps take account of the density of housing around each site and demonstrate the differences in the rate of decline in the number of visits with increasing distance from each European site. These data are further demonstrated in Figure 19 where it can be clearly seen that the Pebblebeds is visited by people which live the closest to the site with 90% of visits coming from people living within 6km of the site (Map 20). The sharp drop off in visits to the Exe can be seen in Figure 19 and Map 17 where the level tails off from 77% of visits originating within 6km of the site. The stepped appearance of the visit curve for Dawlish Warren is influenced by low sample sizes and also low levels of housing at 5km and 6km and also the large number of houses between 12km and 15km which passes through the centre of Exeter which accounting for the increase of 20% in the number of visits (Map 18). The wider appeal of Dartmoor is very clear from Figure 19 and Map 19 as the visit curve increases very gradually with 90% of the visits originating with 38km of the site.

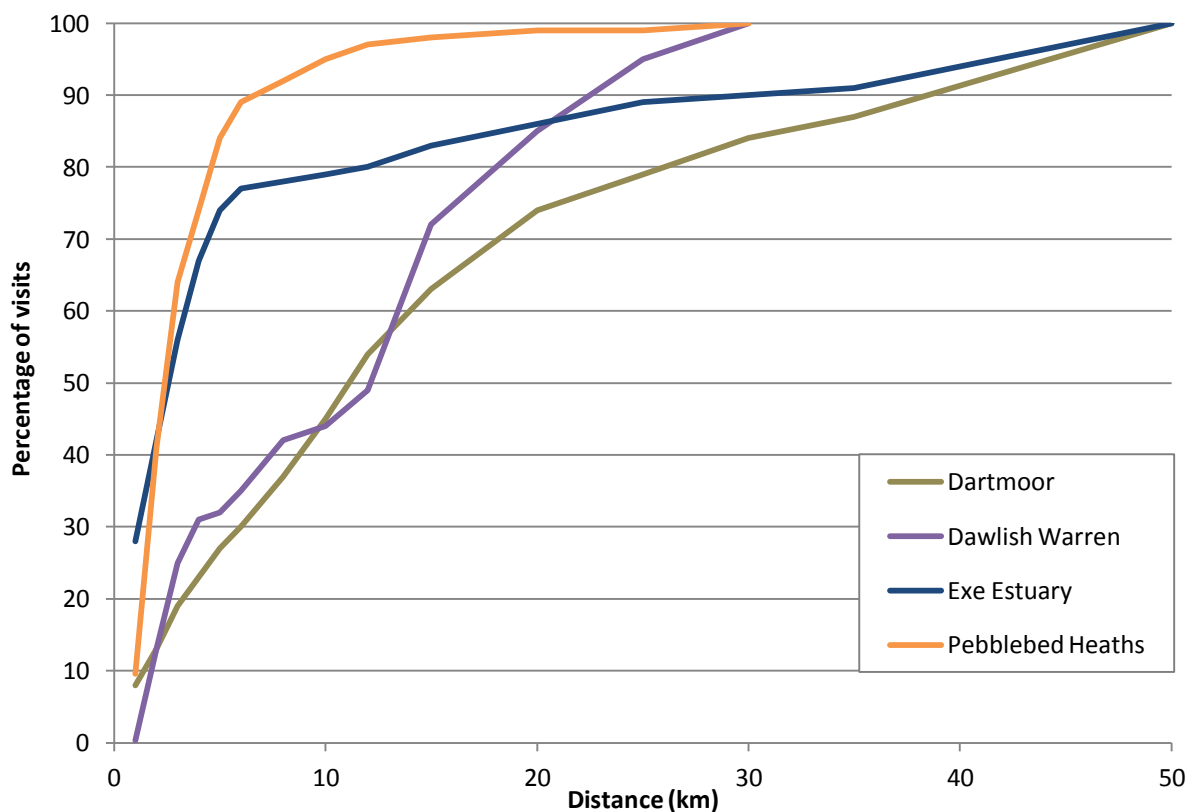
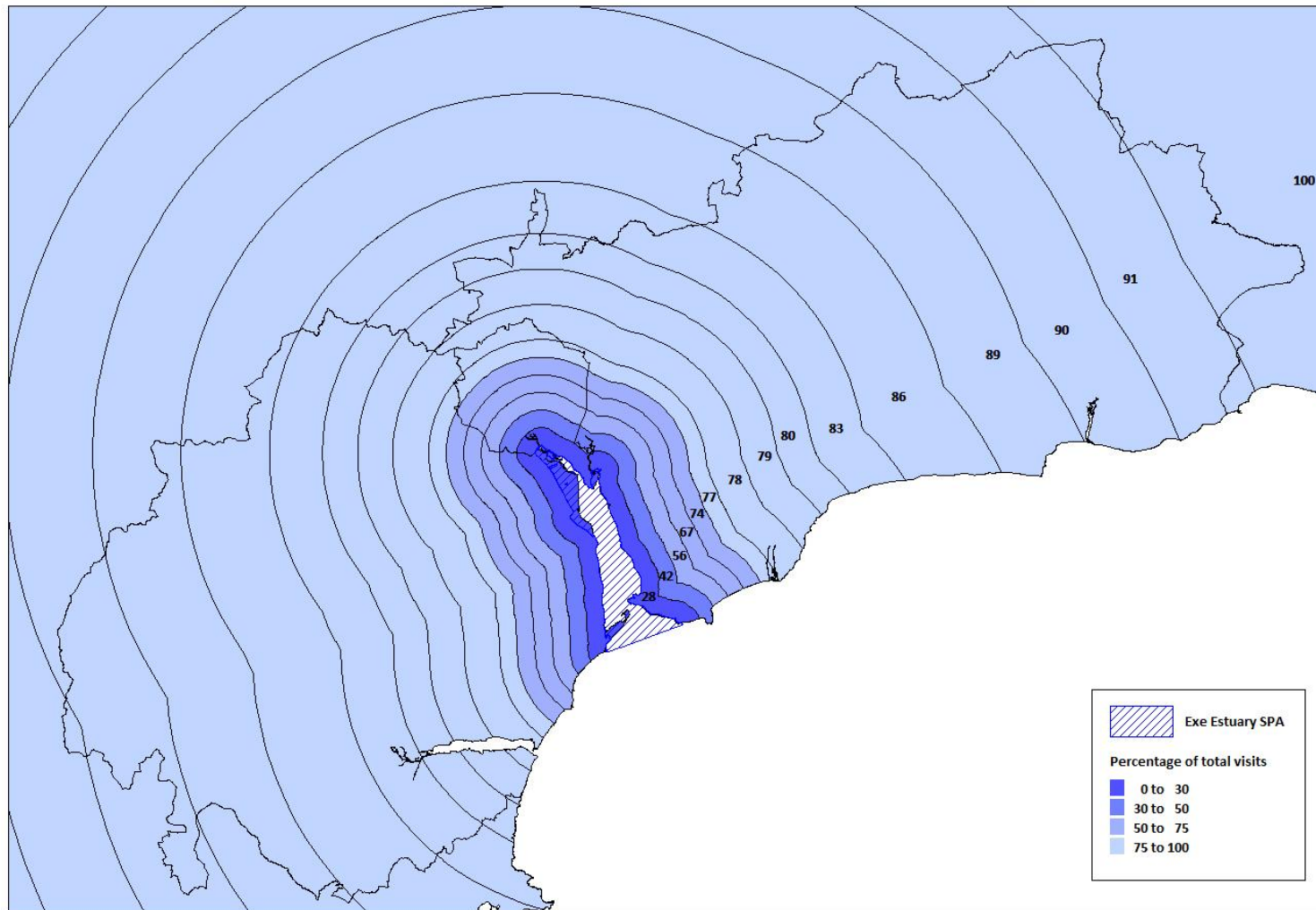
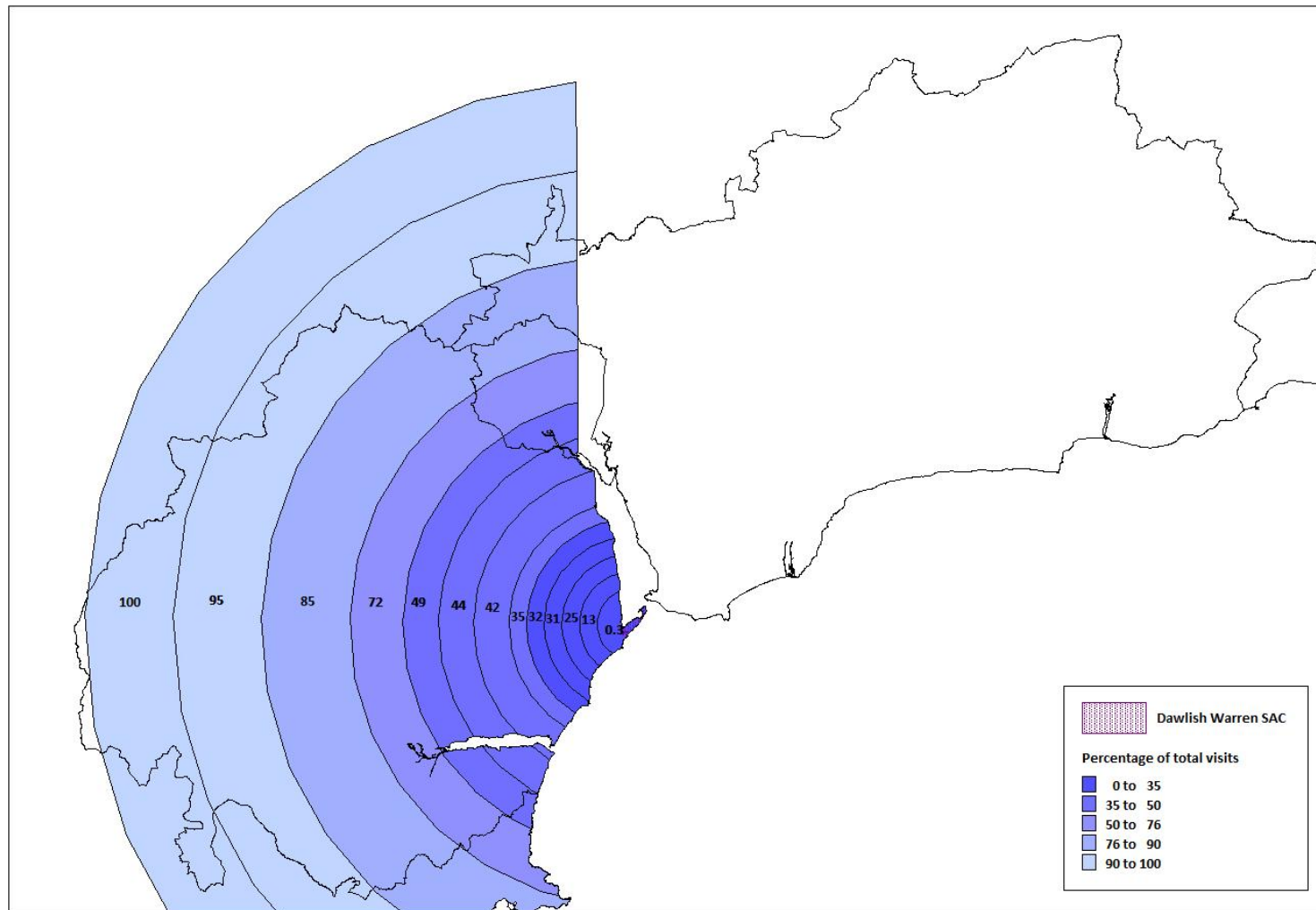


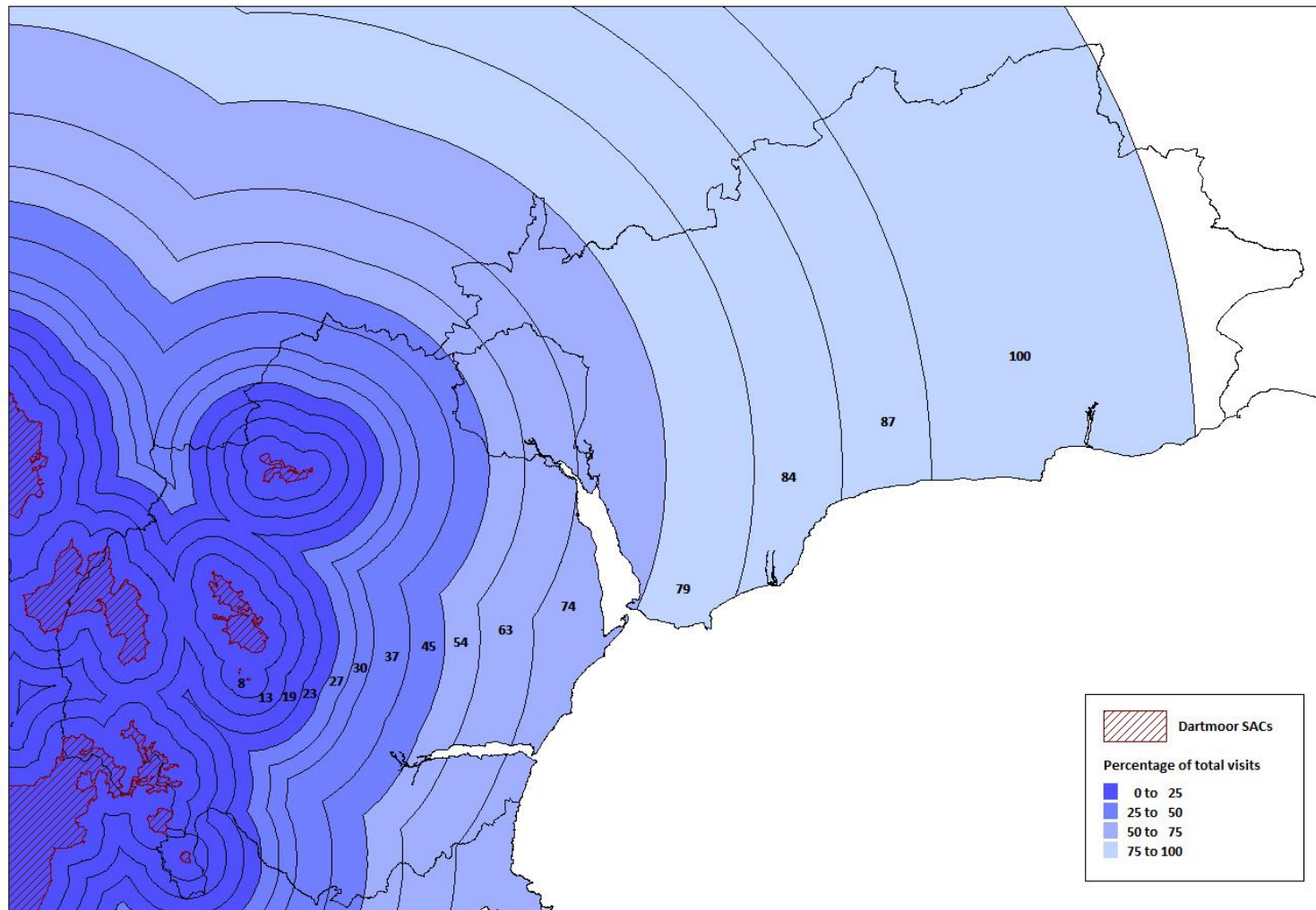
Figure 19: The cumulative percentage of visits to each European site by distance from the site. The number of visits is calculated from the visit rate and the number of households within each distance band.



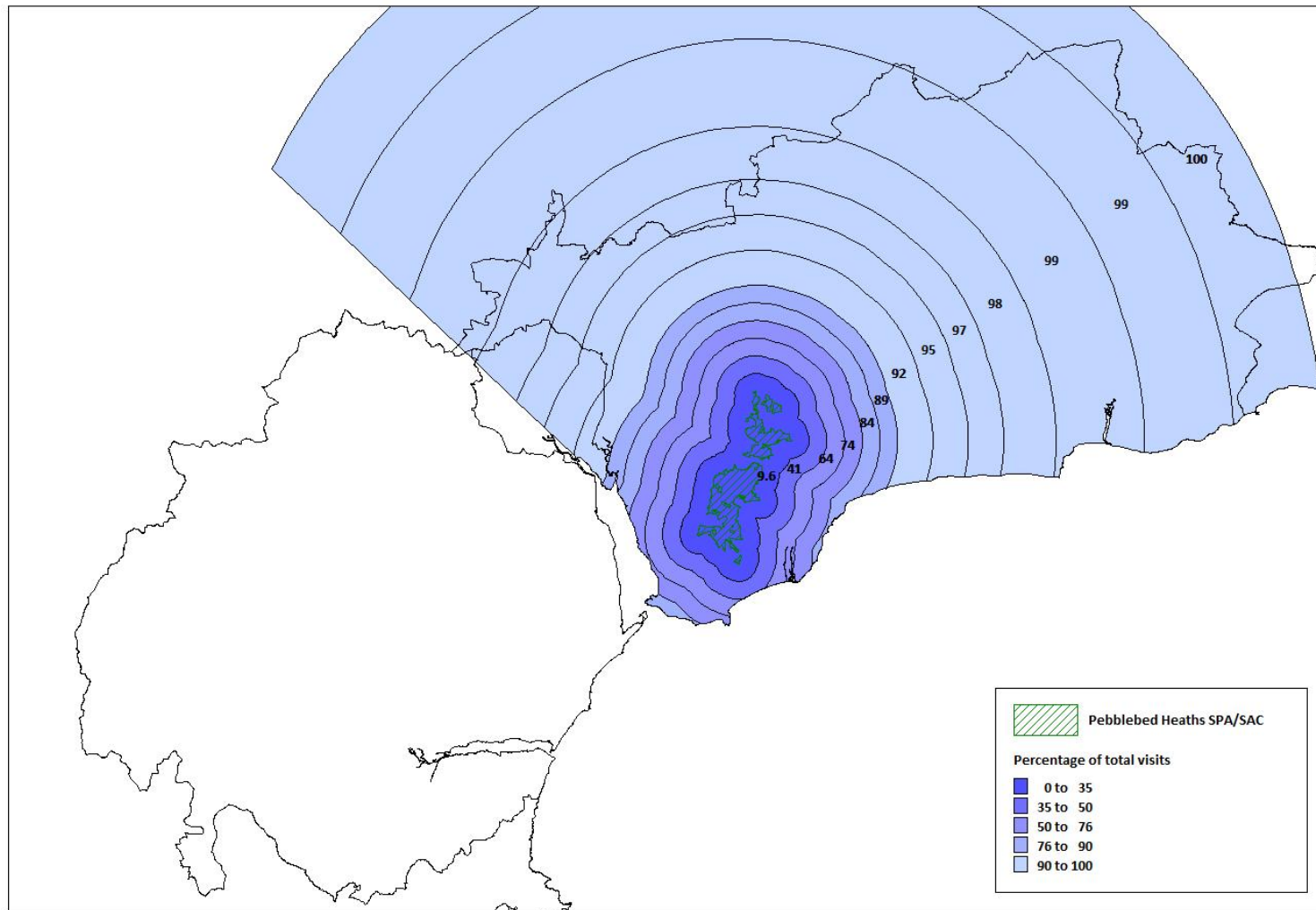
Map 17: Percentage of total visits to the Exe estuary by distance from the site. The number of visits is calculated from the visit rate and the number of households within each distance band.



Map 18: Percentage of total visits to Dawlish Warren by distance from the site excluding the area to the east of the Exe. The number of visits is calculated from the visit rate and the number of households within each distance band.



Map 19: Percentage of total visits to Dartmoor by distance from the site. The number of visits is calculated from the visit rate and the number of households within each distance band.



Map 20: Percentage of total visits to the Pebblebed Heaths by distance from the site excluding the area to the west of the Exe. The number of visits is calculated from the visit rate and the number of households within each distance band.

Distance to the coast and visit rates

10.10 Using the visit rates we investigated the effect of distance from the coast on visits to Dawlish Warren to determine whether people who live near the coast are more or less likely to visit the SAC. Figure 20 shows the visit rate to Dawlish Warren for each settlement to the west of the Exe with at least 1 respondent and whether the settlement is less than or more than 5km from the coast. This plot shows that the highest visit rates are from residents of Dawlish and Dawlish Warren village. A General Linear Model was used to show that both distance from the coast and distance from Dawlish Warren have significant effects on the visit rate ($p < 0.001$). Furthermore the interaction of these two factors was also significant ($p < 0.001$), implying that residents living more than 5km from the coast visit Dawlish Warren more frequently than other settlements at equivalent distances from the SAC. A selection of settlements have been labelled in Figure 20 showing that residents of towns such as Kenton and Exminster visit Dawlish Warren SAC more often than towns which are a similar distance from the SAC but that are within 5km of another part of the coast (e.g. Teignmouth and Shaldon).

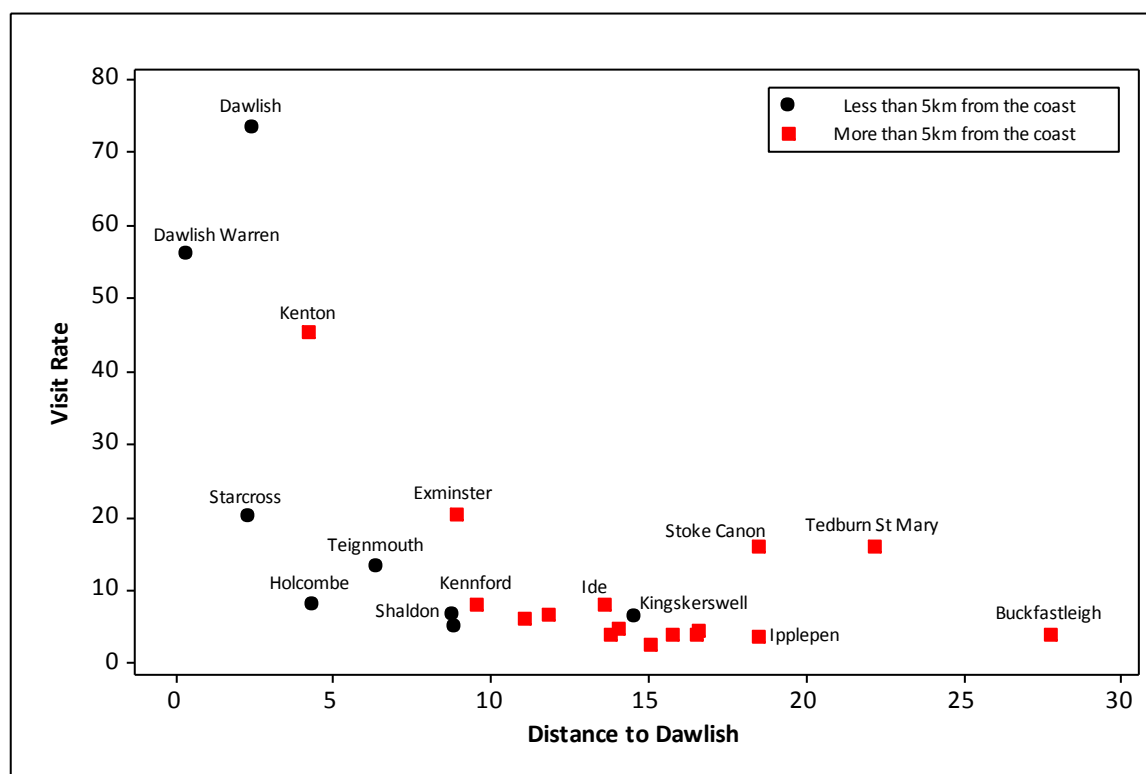


Figure 20: Visit rate to Dawlish Warren for each settlement to the west of the Exe with at least 1 respondent. The settlements have been separated by distance from the coast (excluding the Exe and Dawlish Warren): less than and more than 5km from the coast.

Conclusion

This chapter brings together the results of the household survey to provide a tool to predict the number of visits made to each of four European sites by new housing. This is a very simplified prediction based on all visits rather than visits by car, by foot by dog walkers etc. The predictions are also based on an average household i.e. it doesn't take account for different household types. The data are used to generate two types of predictions: additional housing within named settlements and additional housing by distance from the nearest point of each European site.

Maps are provided based on visit rates in different distance bands from European sites and also the proportion of the total visits made to sites from each distance band which gives an indication of housing density.

The maps demonstrate that the Exe has a relatively small catchment given its size and attractiveness to a variety of visitors but visit rates are high within 4km. Dawlish Warren has a very local catchment but due to the low number of respondents within 1km, the rate for 2km was displayed. Dartmoor has a wider catchment whilst the Pebblebeds are very locally used.

Distance from the coast seemed to have an effect on the visit rate to Dawlish Warren SAC with people visiting the SAC less often if they live in settlements that are close to other parts of the coast.

11. Discussion

Recreational access

- 11.1 The questionnaire results present a strategic overview of access across a large part of south Devon. Many of the sites considered within this report are very popular and well known sites, used by the local populace for a range of different activities. The ability to directly compare between sites and link where people live to their recreational use of sites is an important step in informing strategic planning. We are able to make direct comparisons and the results have implications for the management of visitor flows, green infrastructure provision and protection of Natura 2000 sites.

Factors of concern with respect to data quality

- 11.2 The questionnaire design was primarily undertaken by Teignbridge District Council with guidance from Footprint Ecology. The design was based on the Dorset Household Survey undertaken by Footprint Ecology to look at visitor use of the Dorset Heaths (Liley, Sharp, & Clarke 2008). Due to budget restrictions the questionnaire was designed to be entered manually by staff within each local authority and for coding and labelling of each response to be dealt with within each local authority. This meant that different data imputers interpreted the way to enter data differently resulting in the need for extensive standardisation of entries between three local authorities. Furthermore data from 45 respondents (3.5%) could not be linked to an address and postcode and could therefore not be included in geographical analyses (i.e. distance between postcodes and sites visited).
- 11.3 The fact that the incorrect versions of the maps were used in the final questionnaire had little effect on the final analysis of the data. This is because we assumed that the respondents commented on the locations in the table for questions B2, C2 and D2 rather than the codes and labelled locations on the associated maps. It is correct to assume that a respondent would describe visits to a location if they are asked to write their answers in boxes in a questionnaire next to the location name.
- 11.4 Data checking by Teignbridge District Council after data entry revealed a high proportion (50%) of questionnaires had been entered with errors. From checks of 22 questionnaires, mistakes were found in 11, with 14 errors in total, i.e. eight questionnaires had a single mistake and three more had two mistakes. As each questionnaire contains 242 pieces of information, then the error rate from data entry is around 0.4%, which is relatively minor.
- 11.5 We have scaled up each questionnaire to give an annual number of visits to each location. Respondents filling in each questionnaire were able to indicate that they visited a location most days, most weeks, most months or a few times a year or less. We used these responses to indicate 250, 40, 12 or 4 visits per year per household respectively. This scaling up is by necessity simplistic, and in particular there is a marked difference in scale between most days and most weeks.

- 11.6 Additional concerns relate to issues concerning recall. Off-site surveys typically ask people to remember visits and aspects of the visits. It is quite possible that responses will be different when someone is responding from memory rather than being directly questioned on site. Such issues may be potentially confounded if the off-site survey is conducted remotely (for example by telephone or by post) and there is no face-to-face contact.
- 11.7 Within the report we have considered house type and differences between people living within different types of house. While informative, such an approach is hindered by the fact that we do not understand the spatial distribution of house types and would need further information to interpret the number of visits to specific sites for different house types and increases in housing by settlements. This is also a key issue to consider when using the predictions spreadsheet which does not take account for different types of housing.

Implications for Strategic Planning and Management of Visitor Flows

- 11.8 Interestingly the number of dogs per dog-owning household was higher for those few households that stated that they never visited the countryside. In total 77 households stated they never visited the countryside, and these seventy-seven households were also more likely to be smaller households with at least one member of the household with reduced or impaired mobility. These respondents may therefore be those with small dogs that are walked on the pavement or exercised in the garden.
- 11.9 The results presented here including the visit rate predictions for additional housing should be combined with ecological understanding of recreation pressure on the European Sites and the potential for recreation to result in an adverse effect on the integrity of the European Sites. In combination this should provide the evidence to inform strategic planning as to which European Sites are potentially vulnerable to increases in recreation, which parts of those sites are particularly sensitive and where development would be expected to result in increased use of the sites of concern. Where development is located and what mitigation options are available can then be considered.
- 11.10 In general, the results suggest that the Exe already receives high numbers of visitors, due to the high population that live nearby and the draw of the site – in terms of the range of activities and opportunities for recreational use. Dartmoor sites appear to have less of a local draw than the Exe – i.e. someone living close to Dartmoor visits Dartmoor less compared to the number of visits to the Exe made by someone living at the same distance from the Exe. However, at distances of around 15km and more the Dartmoor sites have the biggest draw, i.e. Dartmoor appears to be the most popular sites for people to travel some distance to visit, e.g. for day trips etc. Visits to Dartmoor are mostly by car and it appears to be a destination mostly visited ‘occasionally’. The Pebblebeds clearly have the most ‘local’ draw of the three European Sites.

Similar work on the impacts of development around European Sites

- 11.11 On-site visitor surveys and analysis of visitor data in relation to housing have now been commissioned on a wide range of European sites where there are concerns relating to access impacts and the implications of new housing development. The concerns revolve

around gradual increases in development, occurring property by property, resulting over time in the area surrounding the sites becoming more urbanised and increasingly used by the local population for recreation. These studies include a range of heathland sites such as the Dorset Heaths (Clarke et al. 2006; Liley et al. 2006) the Brecks (Dolman, Lake, & Bertoncelj 2008), the Wealden Heaths (UE Associates Ltd 2009), the Thames Basin Heaths (Liley, Jackson, & Underhill-Day 2006; Liley et al. 2006), Ashdown Forest (UE Associates 2009; Clarke, Sharp, & Liley 2010), and the New Forest (Tourism South East Research Services & Geoff Broom Associates 2005; Sharp, Lowen, & Liley 2008) and coastal sites such as the Solent (Fearnley, Clarke, & Liley 2010)..

- 11.12 These studies highlight the popularity of these sites and, as might be expected, show that the sites are visited by local people for a range of activities. Differences between sites/studies are probably a reflection of site attributes (relative attractiveness of sites, facilities etc.), the relative availability of other places to visit and the spatial distribution of housing. A notable feature is the distance travelled to different sites, with work in the New Forest (UE Associates 2009) and Ashdown (Sharp et al. 2008) highlighting people travelling considerable distances to reach these particular places. While local people often visit sites regularly for short periods – such as the daily dog walk – some sites also draw people for longer day-trips and even staying tourists. Such visitors behave differently from regular visitors and are drawn to the sites for different reasons. Visitors coming for a day-trip may come from a wide geographic area (essentially meaning that any development in this wider area may have consequences for access levels). Management issues on such sites, when there is a range of different types of visitor, become potentially more complex (Liley et al. 2006; Sharp et al. 2008).
- 11.13 Issues relating to development and the Thames Basin Heaths SPA have been reasonably high profile, even reaching the front page of the national press¹. The Thames Basin Heaths SPA is designated for the presence of breeding heathland bird species. The individual heaths are fragmented, are subject to heavy visitor pressure, are surrounded by an existing high level of housing and there is considerable pressure for new development. In response to growing pressure and emerging evidence of disturbance impacts to the breeding bird interest, the then English Nature started raising concerns and objecting to new development. A strategic approach to the problem came together in the Thames Basin Heaths Delivery Plan.
- 11.14 The Thames Basin Delivery Plan was heavily scrutinised in the Examination in Public for the South-East Plan, which took place in 2006. The Inspector's report (Burley 2007), which was advisory only, raised a number of key points. He concluded that a significant scale of additional housing within 5km of the SPA would be likely to have a significant adverse effect on the SPA and therefore a strategic avoidance and mitigation strategy was necessary. He recommended that the strategy should only cover larger developments of

¹ The Independent, 6th May 2006: <http://www.independent.co.uk/environment/the-birds-that-blocked-20000-new-homes-476404.html>

more than 10 houses within 5 kilometres of the SPA or smaller developments of less than 10 houses within 1 kilometre of sensitive areas of the SPA. Developments of over 50 houses within 5-7 kilometres of the SPA should be individually assessed.

- 11.15 In terms of mitigation, Burley was critical of too much reliance on alternative sites (Suitable Alternative Natural Greenspace 'SANGs') and highlighted that access management and habitat management were also important. Burley's report highlighted the lack of evidence that SANGs would function effectively and the importance of monitoring the effectiveness of the strategy: "There is as yet little quantifiable evidence that the provision of SANGs, together with other measures, will be sufficient to mitigate the impact on the SPA".
- 11.16 Subsequent to Burley's report, various bodies were critical of his recommendations and there was further refining of the ideas and approach for strategic mitigation. In particular there was criticism of the attempt to create a breakpoint between developments of differing sizes. Natural England received a formal legal opinion (Drabble QC and Machin, 21st March 2007) that allowing less than 10 dwellings to go ahead in the Thames Basin Heaths Delivery Strategy would not be compliant with the Habitats Regulations, would be unworkable and inherently unfair. The opinion raised the problem of larger developments being divided and broken down into many small ones in order "to get under the radar".
- 11.17 The Thames Basin Delivery Framework (Joint Strategic Partnership Board 2008) was published in 2008 and sets out the recommendations on measures to enable development to take place without a significant effect on the SPA as a whole. There are a larger number of local authorities (some 13) and each of these will refer to the Delivery Framework in the preparation of local or joint mini-plans, DPDs and/or SPDs. Key elements within the Framework are:
- There are two zones: 0-400m (no development) and 400m – 5km (mitigation required through developer contributions), measured 'as the crow flies'. Large developments beyond the 5km boundary will require individual appropriate assessment.
 - The Framework addresses residential (use Class C3) and staff residential (Use Class C1 and C2A) development.
 - Avoidance measures and mitigation involve a three pronged approach: SANGs provision, access management and habitat management.
 - SANGs should be provided by individual local authorities or by groups of local authorities. SANGs can be created through the enhancement of existing sites or the provision of new sites, with 8ha per 1000 residents (calculated using 2.4 residents per household) the required area. SANGs are recommended to be of at least 2ha in size, and located within a wider open space or network of spaces (although smaller spaces may form part of a wider SANG network). A range of types and sizes of SANG should be provided, offering a range of experiences, including large sites. Guidelines for catchments for different sizes

of site are given, for example a SANG of 2-12ha will have a catchment of 2km. Developments of less than 10 dwellings do not need to be within a specified distance of SANG provided that a sufficient quantity and quality of SANG land to cater for the consequent increase in population is identified and available in that district or agreed in an adjoining district, and functional in advance of completion.

- Access management should be provided by existing landowners and managers with the funding (for perpetuity) provided through developer contributions. The access management should be coordinated strategically, by Natural England working with local authority and land managers, in line with an overarching strategy for access management on the SPA and SANGs. The management should focus on soft measures (as opposed to closures and restrictions) and should include a consistent SPA/SANG message.
- Monitoring should take place strategically and address: i) Habitat condition and birds ii) The provision of SANGs and delivery of dwellings iii) Access Management iv) Visitor Surveys.

11.18 In the Dorset Heaths there are similar issues to the Thames Basin Heaths, and the solution has been slightly different. There are a smaller number of local authorities, and these, in partnership with the then English Nature and others set up the 'Interim Planning Framework', which enabled development to proceed while the information was gathered to allow a joint DPD to be produced. This Heathland DPD is currently being written.

11.19 The Interim Planning Framework has used the same zones as the Thames Basin Heaths, namely 400m and 5km, and collected developer contributions for all residential development between 400m and 5km. These contributions have been used to fund a range of measures such as a team of wardens, improvements to green space sites outside the heaths and improved facilities for fire fighting (such as improved access and fire hydrants).

11.20 South-east Dorset and the Thames Basin Heaths are not the only areas where development control zones have been put in place to avoid impacts of development on heathland sites or zones within which developers provide funding for mitigation works. Breckland District has established a zone of 1500m around those parts of the Breckland SPA that support stone curlews (an interest feature of the SPA), based on research that has shown that stone curlews occur at lower densities within 1500m of housing. Within this zone development is largely excluded and can only take place if it fulfils particular criteria. The stone curlews occur primarily on arable land and in some places occur outside the SPA boundary, therefore a second zone sets out those areas of the District that are within 1500m of nesting stone curlew and fall outside the first 1500m zone. Within this second zone, development needs to provide mitigation specifically targeted towards stone curlews. A third zone – at 400m – has also been established around those parts of the SPA that support nightjar and woodlark. This is a no development zone and has been established for the same reasons as in Dorset and the Thames Basin Heaths. The Breckland

Core Strategy was subject to various criticisms from developers (promoting sites within the 1500m zone) but has been formally adopted following examination in public.

- 11.21 The choice of 400m and 5km zones around heathland sites therefore represent pragmatic choices, based on available evidence. The 400m development exclusion zone is intended to reduce impacts such as increased predation from cats, fragmentation as well as increased access and the effects of disturbance. Such zones are likely to be relatively site specific and there is not necessarily any justification in applying such distances to coastal or estuarine sites. Indeed, evidence presented here would suggest that for sites such as the Exe, the site has a considerable draw and larger zones may be required. The potentially difficult decision to make is to determine a sensible balance in terms of development 'exclusion' zones ensuring no new housing close to sites, the provision of alternative sites and on-site measures to reduce/remove disturbance issues.
- 11.22 The visitor rate curves show how visitor rates vary with distance away from the sites. Visitors living very close to the respective sites visit the most, and clearly new housing adjacent or nearby the boundaries of the relevant sites will result in the most increase in recreational use. There is of course no clear distance threshold at which development is best avoided. We have plotted maps to show indicative bands, to illustrate the distances shown in the graphs. The lines on the maps are not intended to show zones but rather to provide a spatial illustration of the distances discussed.

Efficacy of SANGs

- 11.23 A key issue to address when determining the level and location of housing which might have an impact on a nearby European site is the potential use of SANGs to deflect additional pressure on the site. Here we have used the results generated from this survey to provide brief comments on the efficacy of SANGs in terms of their role in attracting visitors away from the European sites within the study area. Here we consider the Exe and Dawlish Warren together and also the Pebblebed Heaths. We do not consider Dartmoor as it is a very unique location, used by visitors for its features as a large and diverse area of semi-natural landscape which is impossible to replicate with SANGs.

Attracting visitors away from the Exe and Dawlish Warren

- 11.24 The Exe is a very popular location and like Dartmoor, in the context of the surrounding area, it is highly unique. Access to the water's edge is possible for thousands of residents living in settlements along its shores and this provides many opportunities for a diverse range of activities. In terms of visitors to the Exe, alternative sites and additional green infrastructure are perhaps much less likely to be effective in their own right compared to such measures on heathland sites. It is clear that it would be very difficult to attract watersports users away from the Exe although a number of mitigation measures have been recommended in Liley & Hoskin (2011) based on the Exe Disturbance Study (Liley et al. 2011). These measures include provision or enhancement of watersports facilities elsewhere, clear zoning for users and improved communication and awareness raising.
- 11.25 With respect to other activities such as walking and dog walking the effectiveness of alternative sites would be greatly improved in combination with specific on-site management measures that may serve to deter visitors (e.g. changes to parking or dog

control orders in certain areas) and if they are targeted at very specific users (such as local dog walkers). In the Exe Visitor Survey (Liley & Cruickshanks 2010) nearly one-third (30%) of dog walkers indicated that no change was possible (i.e. an alternative site would be unlikely to work). Dog friendliness was the most important feature of an additional site to the 38% of respondents to the visitor survey who felt that they might use an alternative site. Given that the seafront and the Duckpond are the most popular areas for dog walking these would be the best places to target with on site measures and local SANGs.

- 11.26 Figure 6 provides some evidence that residents living along the coast are less likely to visit Dawlish Warren than people living the same distance away from Dawlish Warren, but inland. This only appears in the plot at distances beyond around 4km from Dawlish Warren. This would suggest that residents living close to the coast choose local coastal sites to visit, and this may mean there is merit in a coastal SANG, but that SANGs also clearly need to be accessible and close to new housing to work.

Attracting visitors away from the Pebblebed Heaths

- 11.27 It is possible that SANGs may be a more suitable option for Pebblebeds sites where a large proportion of the access comes from regular local visitors undertaking dog walking. Looking at the household survey data, regular visitors to the Pebblebeds are very local to the site. Of the 115 respondents who stated that they use the Pebblebeds for dog walking, 82% also use the Exe for dog walking, 38% use other coastal locations, 63% use Dartmoor and 56% use other countryside locations. Therefore dog walkers at the Pebblebeds show a moderate level of site fidelity ('faithfulness') and given that they use other sites, it could be assumed that they would be willing to try somewhere new. However, it is clear that Exe still has the greatest pull to visitors, particularly dog walkers, and any management to limit the level of use of the Pebblebeds could result in greater use of the Exe by residents living between the two sites.

Future changes in visitor behaviour

- 11.28 There is evidence that recreational use of the English countryside is increasing. The MENE (Monitor of Engagement with the Natural Environment; the national survey on people and the natural environment) survey was commissioned by Natural England to understand how people use, enjoy and are motivated to protect the natural environment and also to provide data that monitors change in use and enjoyment of the natural environment over time at a range of different spatial scales and key groups. The survey has revealed that for the English adult population an average of 69 visits per year are made to the natural environment (TNS Research International Travel & Tourism 2010). There are some issues with the direct comparison of the MENE survey data with previous work, but following a calibration exercise with the 2005 England Leisure Visits Survey (ELVS) there has been an estimated 7% increase in volume of visits to the natural environment between 2005 and 2009-10 (TNS Research International Travel & Tourism 2010). This increased number of visits to the natural environment is expected to continue and illustrates the importance of implementing and monitoring effective mitigation measures to ensure there no impacts occur to sensitive sites.

- 11.29 MENE draws from the English population as a whole, including urban areas. The 69 visits per person per year to the countryside is an interesting figure. The MENE survey gives an average group size of 2.5 for each visit, and assuming an average occupancy rate of 2.4 people per household², this would suggest that the visit rate per household is somewhere less than 69.
- 11.30 There is relatively little work done to date on the impacts of climate change on people's recreational use of the countryside. Sea-level rise will result in potential changes to beaches and the coastal environment which may have implications for recreational use. Changes in weather patterns may also result in changes in access patterns. Milder winters or warmer springs and autumns may result in increased use at these times. Milder weather and increased storminess may change participation in watersports, for example kite surfers and windsurfers require strong winds. Canoeists and kayakers are perhaps more likely to be out when the weather is milder and the water calmer.
- 11.31 Coombes (2007) reviews the impacts of climate change on coastal recreation and presents models to predict the changes in use in East Anglia. Her results suggest that climate change will result in a net increase in visitors, the positive effects of warmer and drier weather outweighing the predicted negative impacts of a loss of beach habitat and changes in the habitat likely to occur as a result of sea-level rise.
- 11.32 The range of activities people undertake in the countryside is increasing. Activities such as mountain biking are still relatively new - the first mountain bikes were imported into the UK in 1982 (Palmer 2006). Many activities, such as the use of personal water craft are showing an increasing trend in use (Whitfield & Roche 2007). Scottish Natural Heritage have assessed future trends in recreation use (Brown et al. 2010) and this would indicate that in general, the most likely trend in future outdoor recreation is an increasing diversity of activities concentrated in a smaller range of the most accessible, specialised locations. The report suggests that there will be less time for outdoor recreation given busy lifestyles and the increasing choice of alternative activities available. The current financial crisis may also dampen demand for some forms of outdoor recreation, at least in the short term. A key implication that is identified is the need to provide quality outdoor recreation opportunities, infrastructure and services, particularly in proximity to places of work and residence, for encouraging and managing access for a diversity of uses and users. Managing areas of concentrated use whilst maintaining sufficient investment in less used areas that are ecologically, socially or economically significant will also require careful balancing of resources.

Economic assessment

- 11.33 The data collected as part of this household survey can contribute to a limited economic assessment of the different locations and the types of visitors that visit them. For each

² Taken from the 2001 census, which gives an average of 2.36 for England and Wales and an average of 2.31 for the south-west region; <http://www.statistics.gov.uk/census2001/profiles/commentaries/housing.asp>

location we can provide a summary of the number of visits during which a pub/cafe was visited. For the coastal locations only we can also provide information on visits which involved the amusements. As an example, we can also collate responses for 'other' activities such as shopping which was recorded in the free text activity response on 84 visits to the Exe. Pub/cafe visits was not an activity category in the face to face visitor survey work undertaken around the Exe in 2010 for Teignbridge District Council (Liley & Cruickshanks 2010). Therefore combining data on economic factors derived from the face to face survey would require categorisation of free text responses, but could include additional information on holiday makers.

Predicting visitor rates: data considerations

- 11.34 In the final chapter, the steps used to generate a visitor rate prediction spreadsheet are described and there are some data quality issues to consider when interpreting the visit rate predictions provided. Firstly the visit rates generated using the fitted curves are limited by the fit of the curves. The curves were manually fitted using an exponential curve to maximise R^2 and these are displayed within the chapter relevant to each site. In some cases the R^2 was low due to low sample sizes in some distance bands therefore we have provided the actual data and sample sizes (number of respondents) for reference.

- 11.35 Low numbers of respondents in certain distance bands from sites means that unusual results were seen in some cases. Typically the closer people live to a site the more frequently they visit but in cases where there are low numbers of responses to generate the fitted curve a different pattern occurs whereby visit rate increases at certain distances. This is the case with the data for Dawlish Warren where few responses were received from residents within 1km, therefore the visit rate at 2km was higher than at 1km. To provide a useful map, we assumed that the visit rate to Dawlish Warren at 2km was the same at 1km.

- 11.36 It is also important to consider that for visit rates to Dawlish Warren and the Pebblebeds, a limited area has been selected to account for the fact that the Exe creates a barrier to travel within the study area. Therefore average visit rates have been used for settlements outside of the focal areas for these two sites except for Exmouth visit rates to Dawlish Warren which take account of the ferries allowing travel across the Exe in the summer.

- 11.37 Scaling up visit rates to the number of houses within a settlement or distance band when using the predictions spreadsheet does not take account for differences in visit rates of respondents living in different types of houses. For example a people who undertake watersports on the Exe are more likely to live in a house rather than a bungalow and a high proportion of dog walkers at the Exe live in bungalows, flats or houses with less than two bedrooms.

References

- Alessa, L., Bennett, S.M. & Kliskey, A.D. (2003) Effects of knowledge, personal attribution and perception of ecosystem health on depreciative behaviors in the intertidal zone of Pacific Rim National Park and Reserve. *Journal of Environmental Management*, **68**, 207–218.
- anon. (2004) *Great Britain Day Visits Survey 2002/3. A survey undertaken by the Countryside Agency, Countryside Council for Wales, British Waterways, Department for Culture, Media and Sport, Environment Agency, Forestry Commission, Scottish Natural Heritage, VisitBritain, VisitScotland and Wales Tourist Board*. Natural England.
- Bird, D.M. (2004) *Natural fit, can green space and biodiversity increase levels of physical activity*. RSPB, Sandy, Bedfordshire.
- Brown, K.M., Curry, N., Dille, R., Taylor, K. & Clark, K. (2010) *Assessing future recreation demand*. Buckley, R. (2004) *Environmental impacts of Ecotourism*. CABI, Wallingford, Oxfordshire.
- Burley, P. (2007) *Report to the panel for the draft south east plan examination in public on the Thames Basin Heaths Special Protection Area and Natural England's Draft Delivery Plan*. Inspectorate, Planning.
- CCW & FC. (2009) *Welsh Outdoor Recreation Survey 2008: Headline Results*. Countryside Council for Wales; Forestry Commission.
- Clarke, R.T., Liley, D., Underhill-Day, J.C. & Rose, R.J. (2006) *Visitor access patterns on the Dorset Heaths*. English Nature.
- Clarke, R., Sharp, J. & Liley, D. (2010) *Ashdown Forest visitor survey data analysis*. Natural England.
- Coomes, E.G. (2007) The effects of climate change on coastal recreation and biodiversity.
- Dolman, P., Lake, I.R. & Bertone, I. (2008) *Visitor flow rate and recreational modelling in Breckland*. UEA, Norwich.
- English Nature. (2002) *Revealing the value of nature*. English Nature, Peterborough.
- Fearnley, H., Clarke, R.T. & Liley, D. (2010) *The Solent Disturbance and Mitigation Project. Phase II. On-site visitor survey results from the Solent Region*. Footprint Ecology/Solent Forum.
- Hockin, D., Ounsted, M., Gorman, M., Hill, D., Keller, V. & Barker, M.A. (1992) Examination of the effects of Disturbance on birds with reference to its importance in Ecological Assessments. *Journal of Environmental Management*, **36**, 253–286.
- Joint Strategic Partnership Board. (2008) *Thames Basin heaths Delivery framework*. South East England Regional Assembly, Guildford.
- Kirby, J., Davidson, N., Giles, N., Owen, M. & Spray, C. (2004) *Waterbirds and Wetland Recreation Handbook*. Wildfowl and Wetlands Trust, Slimbridge, Gloucestershire.
- Lake, S. (2010) *Assessment of recreational impacts on Dawlish Warren Special Area of Conservation*. Footprint Ecology/Teignbridge District Council.
- Liddle, M.J. (1997) *Recreation Ecology*. Chapman & Hall, London.
- Liley, D., Clarke, R.T., Mallord, J.W. & Bullock, J.M. (2006) *The effect of urban development and human disturbance on the distribution and abundance of nightjars on the Thames Basin and Dorset Heaths*. Natural England / Footprint Ecology.
- Liley, D., Clarke, R.T., Underhill-Day, J. & Tyldesley, D.T. (2006) *Evidence to support the Appropriate Assessment of development plans and projects in south-east Dorset*. Footprint Ecology / Dorset County Council.

- Liley, D. & Cruickshanks, K. (2010) *Exe Visitor Survey, 2010*. Teignbridge District Council/Footprint Ecology.
- Liley, D., Cruickshanks, K., Waldon, J. & Fearnley, H. (2011) *Exe Disturbance Study*. Footprint Ecology/Exe Estuary Management Partnership.
- Liley, D. & Hoskin, R. (2011) *Exe Estuary SPA and Dawlish Warren SAC Interim Overarching Report Relating to Strategic Planning and Impacts from Recreation*.
- Liley, D., Jackson, D.B. & Underhill-Day, J.C. (2006) *Visitor Access Patterns on the Thames Basin Heaths*. English Nature, Peterborough.
- Liley, D., Sharp, J. & Clarke, R.T. (2008) *Access patterns in south-east Dorset. Dorset household survey and predictions of visitor use of potential greenspace sites. Dorset Heathlands Development Plan Document*. Footprint Ecology.
- Liley, D., Sharp, J., Clarke, R.T. & Lake, S. (2009) *Natural England's approach to monitoring access on sites, a review*. Footprint Ecology.
- Lowen, J., Liley, D., Underhill-Day, J. & Whitehouse, A.T. (2008) *Access and Nature Conservation Reconciliation: supplementary guidance for England*.
- Morris, N. (2003) *Health, well-being and open space literature review*. Edinburgh College of Art and Heriot-Watt University, Edinburgh.
- Natural England, DEFRA, Environment Agency, Forestry Commission, Broads Authority, Dartmoor NPA, Lake District NPA, North York Moors NPA, Northumberland NPA, Peak District NPA & Yorkshire Dales NPA. (2006) *England Leisure Visits Report of the 2005 Survey*. Various.
- Nisbet, I.C.T. (2000) Disturbance, habituation, and management of waterbird colonies - Commentary. *waterbirds*, **23**, 312–332.
- Palmer, C. (2006) Mountain Biking: settling into middle age or clicking up a gear. *Byway and Bridleway*, **3**, 33–34.
- Pretty, J., Griffin, M., Peacock, J., Hine, R., Selens, M. & South, N. (2005) A countryside for health and well-being: the physical and mental health benefits of green exercise. *Countryside Recreation*, **13**, 2–7.
- Saunders, C., Selwyn, J., Richardson, S., May, V. & Heeps, C. (2000) *A review of the effects of recreational interactions within UK European marine sites*. UK CEED & Bournemouth University.
- Sharp, J., Lowen, J. & Liley, D. (2008) *Recreational pressure on the New Forest National Park, with particular reference to the New Forest SPA*. New Forest National Park Authority / Footprint Ecology.
- TNS Research International Travel & Tourism. (2010) *Monitor of Engagement with the Natural Environment: The national survey on people and the natural environment - Annual Report from the 2009-10 survey*.
- Tourism South East Research Services & Geoff Broom Associates. (2005) *A survey of recreational visits to the New Forest National Park*. Countryside Agency.
- UE Associates. (2009) *Visitor Access Patterns on Ashdown Forest*. Conducted for Mid Sussex and Wealden District Councils.
- UE Associates Ltd. (2009) *Visitor access patterns on European sites surrounding Whitehill and Bourdon, East Hampshire*.
- Whitfield, R. & Roche, R. (2007) UK Personal Watercraft Management: A user perspective. *Marine Policy*, **31**, 564–572.
- Woodfield, E. & Langston, R. (2004) *Literature review on the impact on bird populations of disturbance due to human access on foot*. Royal Society for the Protection of Birds, Sandy, Beds.

Appendices

Appendix 1 the survey questionnaire sent to 5100 properties

Section E: About you and your household

Questionnaire Number:

E1. Household size

How many people live in your household?

How many of these are under 16?

How many dogs do you own?

E2. Please indicate how many of your household fall into the following categories:

Employed full-time (30+ hours per week)

Employed part-time (less than 30 hours per week)

Unemployed and seeking work

Looking after the home or family

Permanently retired from paid work

In full-time further/higher education

In school

Under school age

Other

E3. What type of dwelling do you live in (please tick one) and how many bedrooms does it have?

Flat (ground floor)	Semi-detached	
Flat (non-ground floor)	Detached	
Bungalow	Static Caravan	
Terraced house	Other	

Number of bedrooms

☐ One ☐ Four

☐ Two ☐ Five

☐ Three ☐ Six or more

E7. To help us research travel patterns please provide your post code:
If you do not wish to give your post code, please give the town or village where you live.

E4. Does your home have access to:

☐ A private garden ☐ A communal garden ☐ Neither

E5. Do you/your household have regular access to a car/van/motorbike for private transport?

☐ Yes ☐ No

E6. Does anyone in your household suffer from reduced mobility that might affect their visits, e.g. due to ill health, elderly or infirm, or physical disability?

☐ Yes ☐ No if yes, how many?

Thank you very much for filling in this questionnaire.

Your name and address (for prize draw only)

Coast and Countryside Recreation Survey

Section A: When and why you visit the coast and countryside

A1. In the last year have you, or anyone else in your household, visited the seaside, woods, moors, country parks or other similar outdoor places for recreation? (Tick One Box)

☐ Yes - Please go to Question A2 ☐ No - Please go to Section E

A2. For each of the following types of outdoor place, when was the last time you or a member of your household visited? (Tick one box for each type of place)

	Within the last week	Within the last month	Within the last 6 months	Within the last year	More than a year ago	Never
Coast & Estuaries						
Dartmoor						
Other Countryside						

A3. When do you or members of your household tend to visit each of the following types of outdoor place? (Tick as many as apply for each of the following places)

	Visit equally all year	Visit more in spring	Visit more in summer	Visit more in autumn	Visit more in winter	Never visit
Coast & Estuaries						
Dartmoor						
Other Countryside						

A4. Over the past year have you or anyone in your household undertaken any of the following outdoor activities? If so, please tell us a bit more about the activity.

	How often did you do the activity? Please use one of these codes: 0: Never 1: Few times a year or less 2: Most months 3: Most weeks 4: Most days	Where applicable, please specify exactly what activity you did: eg windsurfing or kite surfing, white-water canoeing or sea kayaking, 4x4 or trail riding, sea fishing or estuary fishing, etc.	Where did you tend to do the activity? Please use one of these codes: H: Within a few miles of home D: Elsewhere in Devon C: Elsewhere in the country	How many of your family did the activity?
Walking in countryside/at coast				
Dog Walking				
Water sports				
Mountain biking/off-roading				
Horse riding (bridle path/wider countryside)				
Fishing/bait digging/crabbing/crab tiling				
Wildlife watching				
Wild camping (away from formal camp sites)				
Climbing or caving				

Section B: Visits to the coast and estuaries

By coast and estuaries we mean beaches, estuaries, cliffs or stretches of coastline. We have listed some popular places on the coast that we are especially keen to find out about: these are coloured red on the map. We would also like to hear about other places you visit, including those coloured blue and any others not shown on the map.

B1. How often do you or your household visit the coast? (tick one box)

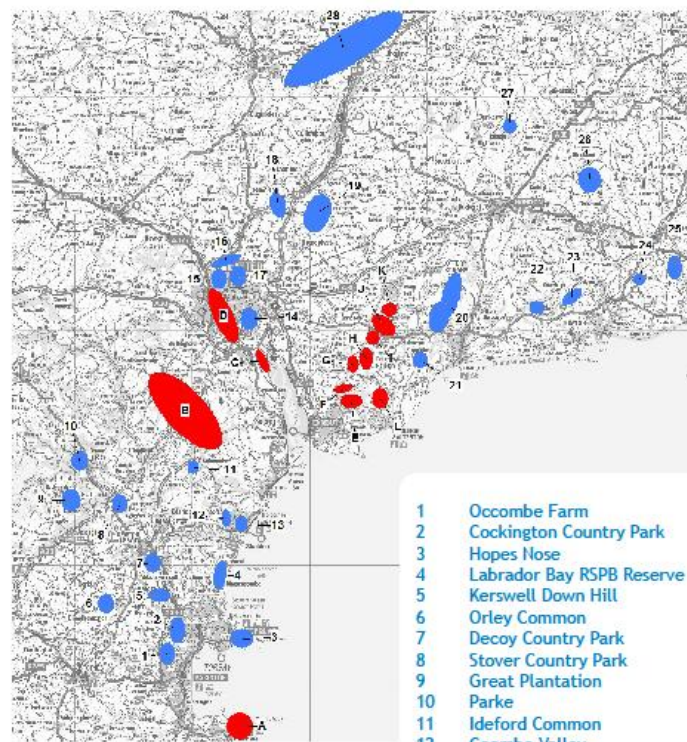
- ☐ Most Days ☐ Once a week ☐ Once a month ☐ Once every 6 months
☐ Once a year ☐ Less than once a year ☐ Never

B2. Please describe visits to the coastal places listed below that you or your household have made in the past year. (Use question B3 to describe any other coastal places you visited)

Place: See red sites on the map	How often do you tend to visit each place? Please use one of these codes: 0: Never 1: Few times a year or less 2: Most months 3: Most weeks 4: Most days	How do you usually get there? Please use one of these codes: C: Car/Van/ Motorbike F: Foot B: Bicycle P: Public Transport O: Other	The reason for your visit. You may use more than one code for each place. Please use one of these codes: W: Walking D: Dog walking B: Bicycling V: Wildlife watching P: Visiting pub/café WS: Water sports (please specify) F: Fishing/bait collecting (please specify) S: Swim/paddle/sit or play on beach A: Amusements/kids' playground O: Other (please specify)
A, Dawlish Warren Beach			
B, Dawlish Warren Nature Reserve			
C, Exe Estuary			
D, Exmouth Local Nature Reserve/ Duckpond			
E, Imperial Recreation Ground			
F, Exmouth Sea Front			
G, The Maer			
H, Beer Head / Branscombe Underhooken			
I, Axe Estuary Wetlands			
J, Axmouth to Lyme Regis Undercliffs			

B3. Please also tell us about visits to other coastal places that you or your household made in the past year. If you visited more than five other coastal places, please list the five you visited most often.

Place: Please use the site numbers from the blue sites on the map, or names for any sites not shown on the map	How often do you tend to visit each place? Please use one of these codes: 1: Few times a year or less 2: Most months 3: Most weeks 4: Most days	How do you usually get there? Please use one of these codes: C: Car/Van/ Motorbike F: Foot B: Bicycle P: Public Transport O: Other	The reason for your visit. You may use more than one code for each place. Please use one of these codes: W: Walking D: Dog walking B: Bicycling V: Wildlife watching P: Visiting pub/café WS: Water sports (please specify) F: Fishing/bait collecting (please specify) S: Swim/paddle/sit or play on beach A: Amusements/kids' playground O: Other (please specify)



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Countryside Site Key

A	Berry Head	1	Occombe Farm
B	Haldon Forest	2	Cockington Country Park
C	Exminster Marshes	3	Hopes Nose
D	Exe Riverside Valley Park	4	Labrador Bay RSPB Reserve
E	East Budleigh Common	5	Kerswell Down Hill
F	Lymstone Common	6	Orley Common
G	Woodbury Common	7	Decoy Country Park
H	Colaton Raleigh Common	8	Stover Country Park
I	Hawkerland Valley	9	Great Plantation
J	Aylesbeare Common / Harpford Common	10	Parke
K	Venn Ottery	11	Ideford Common
L	Dalditch/Squabmoor	12	Coombe Valley
		13	East Cliff/The Rowdens
		14	Ludwell Valley Park
		15	Duryard Valley Park
		16	Stoke Woods
		17	Mincinglake Valley Park
		18	Killerton Estate
		19	Ashclyst Forest
		20	Fire Beacon Hill/Core Hill Woods/ East Hill
		21	Bicton Park
		22	Blackbury Camp
		23	Morganhayes Wood
		24	Musbury Castle
		25	Trinity Hill Nature Reserve and Forestry Commission Woods
		26	Stockland Turbaries
		27	Hense Moor
		28	Grand Western Canal Country Park

Section D: Visits to other countryside places

Here we are interested to find out about any other areas of countryside that you visit, away from the coast or Dartmoor. We mean countryside or green spaces that are open to the public, such as country parks, local parks, woods or nature reserves. We have listed some countryside places that we are especially keen to find out about: these are coloured red on the map. We would also like to hear about other places that you visit, including those coloured blue and any others not shown on the map.

D1. How often do you or your household visit other areas of the countryside? (Tick one box)

- ☐ Most Days ☐ Once a week ☐ Once a month ☐ Once every 6 months
☐ Once a year ☐ Less than once a year ☐ Never

D2. Please describe visits to the countryside places listed below that you or your household have made in the past year. (Use question D3 to describe any other countryside places you visited)

Place: See red sites on the map	How often do you tend to visit each place? Please use one of these codes: 0: Never 1: Few times a year or less 2: Most months 3: Most weeks 4: Most days	How do you usually get there? Please use one of these codes: C: Car/Van/Motorbike F: Foot B: Bicycle P: Public Transport O: Other	The reason for your visit. You may use more than one code for each place. Please use one of these codes: W: Walking D: Dog walking B: Bicycling M: Mountain biking H: Horse riding F: Fishing P: Visiting pub/café A: Kids activities, play park, etc V: Wildlife watching O: Other (please specify)
A, Berry Head			
B, Haldon Forest			
C, Exminster Marshes			
D, Exe Riverside Valley Park			
E, Aylesbeare Common/Harpford Common			
F, Woodbury Common			
G, Lympstone Common			
H, East Budleigh Common			
J, Colaton Raleigh Common			
K, Hawkerland Valley			
L, Venn Ottery			

D3. Please also tell us about other countryside places that you or your household made in the past year. If you visited more than five other places, please list the five you visited most often.

Place: Please use the site numbers from the blue sites on the map, or names for any sites not shown on the map	How often do you tend to visit each place? Please use one of these codes: 1: Few times a year or less 2: Most months 3: Most weeks 4: Most days	How do you usually get there? Please use one of these codes: C: Car/Van/Motorbike F: Foot B: Bicycle P: Public Transport O: Other	The reason for your visit. You may use more than one code for each place. Please use one of these codes: W: Walking D: Dog walking B: Bicycling M: Mountain biking H: Horse riding F: Fishing P: Visiting pub/café A: Kids activities, play park, etc V: Wildlife watching O: Other (please specify)



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Coastal Site Key

A	Dawlish Warren Beach	1	Torbay Beaches
B	Dawlish Warren Nature Reserve	2	Maidencombe/Labrador Bay
C	Exe Estuary	3	Shaldon Beach
D	Exmouth Local Nature Reserve / Duckpond	4	Teign Estuary
E	Imperial Recreation Ground	5	Teignmouth Beach
F	Exmouth Sea Front	6	Dawlish Beach
G	The Maer	7	Lady's Mile Beach
H	Beer Head/Branscombe Underhooken	8	Sandy Bay
I	Axe Estuary Wetlands	9	Budleigh Salterton Beach
J	Axmouth to Lyme Regis Undercliffs	10	Otter Estuary
		11	Ladram Bay
		12	Sidmouth Beach
		13	Branscombe Beach
		14	Beer Beach
		15	Seaton Beach

Section C: Visits to Dartmoor

By Dartmoor we mean anywhere within Dartmoor National Park including the open moorland and tors, the wooded river valleys and farmland. We have listed some popular countryside places on Dartmoor that we are especially keen to find out about: these are coloured red on the map. We would also like to hear about other countryside places on Dartmoor that you visit, including those labeled blue and any others not shown on the map.

C1. How often do you or your household visit the Dartmoor? (tick one box)

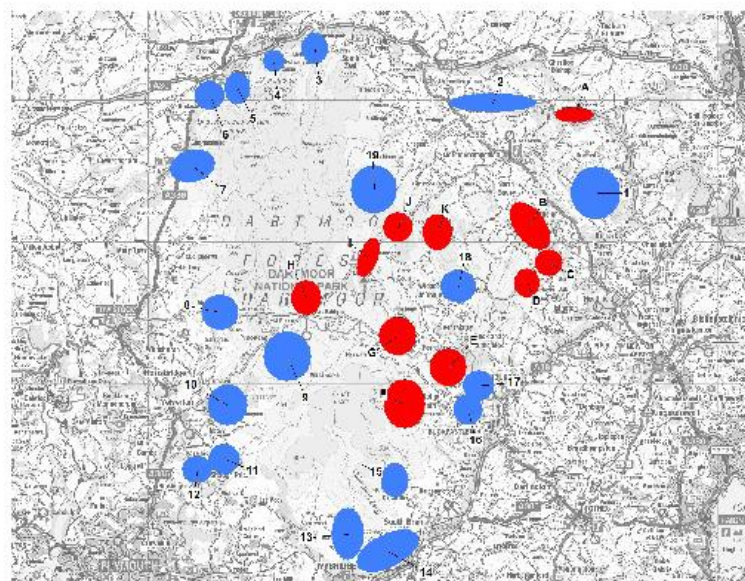
- ☐ Most Days ☐ Once a week ☐ Once a month ☐ Once every 6 months
☐ Once a year ☐ Less than once a year ☐ Never

C2. Please describe visits to the Dartmoor countryside places listed below that you or your household have made in the past year. (Use question C3 to describe any other Dartmoor places you visited)

Place: See red sites on the map	How often do you tend to visit each place? Please use one of these codes: 0: Never 1: Few times a year or less 2: Most months 3: Most weeks 4: Most days	How do you usually get there? Please use one of these codes: C: Car/Van/Motorbike F: Foot B: Bicycle P: Public Transport O: Other	The reason for your visit. You may use more than one code for each place. Please use one of these codes: W: Walking D: Dog walking H: Hiking/Backpacking Z: Remote camping B: Bicycling M: Mountain biking X: Off-roading H: Horse riding C: Canoeing R: Rock climbing P: Visiting pub/café V: Wildlife watching O: Other (please specify)
A, Steps Bridge/Dunsford Wood/ Bridford Wood			
B, Newbridge/Spitchwick area			
C, Dartmeet area			
D, Wistman's Wood area			
E, Grimspound area			
F, Warren House Inn area			
G, Yarnor Wood/ Trendlebere Down			
H, Postbridge area			

C3. Please also tell us about other Dartmoor countryside places that you or your household made in the past year. If you visited more than five other places, please list the five you visited most often.

Place: Please use the site numbers from the blue sites on the map, or names for any sites not shown on the map	How often do you tend to visit each place? Please use one of these codes: 1: Few times a year or less 2: Most months 3: Most weeks 4: Most days	How do you usually get there? Please use one of these codes: C: Car/Van/Motorbike F: Foot B: Bicycle P: Public Transport O: Other	The reason for your visit. You may use more than one code for each place. Please use one of these codes: W: Walking D: Dog walking H: Hiking/Backpacking Z: Remote camping B: Bicycling M: Mountain biking X: Off-roading H: Horse riding C: Canoeing R: Rock climbing P: Visiting pub/café V: Wildlife watching O: Other (please specify)



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Dartmoor Site Key

A	Steps Bridge/ Dunsford Wood/ Bridford Wood	1	Kennick/ Trenchford/ Tottiford Reservoirs
B	Lustleigh Cleave / Bovey Valley	2	Teign Valley Woods/ Castle Drogo/ Fingle Bridge/ Clifford Bridge
C	Yarnor Wood/ Trendlebere Down	3	Belstone/ River Taw
D	Haytor	4	Okehampton Camp/ military loop road
E	Newbridge/ Spitchwick area	5	Meldon Reservoir
F	Holne Moor	6	Sourton/ Prewley
G	Dartmeet area	7	Lydford
H	Wistman's Wood / Two Bridges area	8	Merrivale
I	Postbridge area	9	Princetown/ Whiteworks
J	Warren House Inn area	10	Burrator Reservoir/ Sheepstor
K	Grimspound area	11	Cadover Bridge
		12	Shaugh Bridge
		13	Harford Moor
		14	Ivybridge/ South Brent/ South Moor
		15	Shipley Bridge/ Avon Down
		16	Hembury Woods
		17	River Dart Country Park
		18	Widcombe in the Moor
		19	Fernworthy Wood and Reservoir

Appendix 2 additional free text coastal locations

Location	Number of responses	Number of visits
Lyme Regis	9	124
Bude	4	60
Dartmouth	7	52
Phear Park Exmouth	2	52
Charmouth	5	36
Salcombe	6	32
Babbacombe	3	28
Cornwall	5	28
North Devon	3	28
Slapton	5	28
Blackpool Sands	4	24
Coast Path	2	24
Exeter	2	24
Soar Mill Cove	2	24
Bantham	3	20
Powderham	3	20
West Bay	3	20
Woolacombe	5	20
Bigbury	2	16
Kingswear	2	16
Weymouth	4	16
Chesil Beach	1	12
country pond	1	12
Hope Cove	3	12
Jurassic Coast	1	12
Lympstone cycle	1	12
Noss Mayo	1	12
Orcombe Point	1	12
Portland	1	12
West Combe Beach	1	12
Kingston	1	12
Westward Ho	1	12
Widemouth	1	12
Blackpool	2	8
Ilfracombe	2	8
Minehead	2	8
Newquay	2	8
Otterton	2	8
South Hams	2	8
Topsham	2	8
Thurlstone	2	8
All listed	1	4
Beesands	1	4
Bluebell Wood, Seaton	1	4
Bournemouth	1	4
Braunton	1	4
Brixham	1	4
Cedar	1	4
Constantine Bay	1	4
Croyde	1	4

Location	Number of responses	Number of visits
Dart estuary	1	4
Donegal	1	4
East Prawle	1	4
Fremington Beach	1	4
Hall Sands	1	4
Harlyn, Cornwall	1	4
Instow	1	4
Isle of Wight	1	4
Lamberts Castle	1	4
Little Dartmouth	1	4
Mousehole	1	4
Newlyn	1	4
North Cornwall	1	4
North Devon	1	4
Outer Hebrides	1	4
Padston	1	4
Penwith	1	4
Perranporth	1	4
Plymouth Hoe	1	4
Poole	1	4
Scilly Isles	1	4
South Devon Coast Path	1	4
Sennen	1	4
Sharkham Point	1	4
Spekes Mill Mouth	1	4
St Ives	1	4
Stoke Gabriel	1	4
Taw/Torridge	1	4
The Exe	1	4
Valley of the Rocks	1	4
Watcombe	1	4
Weston	1	4

Appendix 3 additional free text countryside locations

Location	Number of responses	Number of visits
Chudleigh	2	500
Shute Woods	2	500
Bradley Woods	4	306
Couchill Woods	2	290
Brampford Speke	3	266
South Hams	2	262
Blackdown Hills	1	250
Farway area	1	250
Ipplepen	1	250
Local Fields	1	250
Stoke Canon	1	250
Talaton area	1	250
The Glen Honiton	1	250
Upton Pyne	1	250
Walks around Pinhoe	1	250
Whimble	1	250
Holliford Woods	2	80
Escot	4	68
Dalditch	5	64
Hackney Marshes	3	56
Budleigh Cycle Route	2	52
Raddon Hills	2	52
Charmouth Woods	2	44
Barley Valley Nature Reserve	1	40
Colyford	1	40
Danes Wood	1	40
Dunkeswell Area	1	40
East Hill Strip	1	40
Footpaths in Ted St Mary	1	40
Ide/Coombehead	1	40
Lyme	1	40
Orcombe Point	1	40
Ottery St Mary	1	40
Pinhoe area	1	40
Rackerhayes	1	40
Route 2 cycle path	1	40
Teigngrace	1	40
Wapperwell	1	40
Wilmington	1	40
Woods nr Kenn	1	40
Knightshayes	5	36
Lamberts Castle	3	28
Exeter	3	20
Axminster	2	16
Tiverton	2	16
Devon	1	12
Dumpton Hill	1	12
Dumsdon Hill	1	12

Location	Number of responses	Number of visits
Forde Abbey	1	12
Honiton	1	12
NT properties	2	12
Otter Valley	1	12
Otterton	3	12
Peak Hil	1	12
Stone Barrow	1	12
Topsham Bowling Green	1	12
Upham farm	1	12
Venn Farm Sandford	1	12
A la Ronde	2	8
Exmoor	3	8
Hembury fort	2	8
Barrington	1	4
Berry Pomeroy	1	4
Blue Anchor	1	4
Cape Cornwall	1	4
Charlestown	1	4
Cove Woods	1	4
Crealy	1	4
Eden Project	1	4
Eggesford	1	4
Hamdon Down	1	4
Maritime Museum	1	4
Montecute	1	4
New Forest	1	4
Newton Poppleford	1	4
Northbrook Park	1	4
Okehampton	1	4
Oldway Mansion	1	4
Plymouth	1	4
River Dart	1	4
River Lemon	1	4
Rosemoor, Torrington	1	4
Salcombe	1	4
St Ives	1	4
Various	1	4
West Dorset	1	4
Weymouth	1	4
Wimbleball Lake	1	4
Woolacombe	1	4
Yellow Book Gardens	1	4