footprint ECOLOGY

Tourist use of the Exe Estuary, Dawlish Warren and East Devon Heaths

Chris Panter & Durwyn Liley

Forest Office
Cold Harbour
Wareham
Dorset BH20 7PA
Tel/Fax: 01929 552444
info@footprint-ecology.co.uk

connecting wildlife and people

www.footprint-ecology.co.uk

Footprint Contract Reference: 268
Date: 20th March 2017
Version: Final
Recommended Citation: Panter, C. & Liley, D. (2016). Tourist use of the Exe Estuary, Dawlish Warren and East Devon Heaths. Report by Footprint Ecology for East Devon District Council and Teignbridge District Council.

Summary

This visitor survey report summarises use of the Exe Estuary, Dawlish Warren and the Pebblebed Heaths by tourists staying in Teignbridge and East Devon Districts. The report has been commissioned by Teignbridge and East Devon District Councils in order to understand the potential implications of new tourist development with respect to designated European sites and recreation pressure. The results of the survey will be used to inform Habitats Regulations Assessments and the extent to which mitigation measures relating to tourist development are necessary. The European sites of particular relevance are the Exe Estuary SPA/Ramsar, Dawlish Warren SAC and the East Devon Heaths SPA/East Devon Pebblebed Heaths SAC.

Data were collected primarily through an online survey circulated and promoted through social media and locally distributed flyers. The survey was then boosted by face-face interviews (involving a slimmed down version of the survey), at a selection of tourist accommodation sites and tourist sites.

There was a total of 239 responses to the questionnaire. After excluding responses from those not on holiday or staying outside the area of interest, 189 responses were the focus of the analysis. Responses primarily related to the summer period. Key findings included:

- Respondents had stayed at a variety of locations across South-East Devon, but the majority (64%) had stayed at Dawlish Warren.
- Respondents had used a variety of types of accommodation including static caravans (33%), self-catering houses/lodges/chalets (25%), touring caravans/campervans (16%) and tents (11%).
- Respondents typically stayed for seven nights (32%) or eight or more nights (27%), but there was some variation in the length of stay between accommodation types. Those staying in static caravans, self-catering accommodation or tents tended to stay for longer periods while those staying in hotels, pubs, guesthouses and bed and breakfasts were often staying for a much shorter period.
- Respondents who visited sites such as Exmouth Beach and the Exe Estuary were staying across a wide geographic area. Respondents visiting Dawlish Warren Nature Reserve were quite geographically restricted, and mainly included those staying close to the Exe Estuary (e.g. Dawlish Warren, Topsham, Exmouth). The Pebblebeds were mostly visited by those staying east of the Exe Estuary, but there were some visits from tourists staying in Teignmouth and Shaldon.
- A range of activities were undertaken by respondents during their holiday. Of particular relevance in terms of European site impacts were dog walking (undertaken by 14% of respondents) and watersports (undertaken by 4% of respondents).
- Those respondents who were dog walking were staying in a range of accommodation types (static caravans, self-catering house/lodge/chalet, touring caravan/campervan or tent) and a range of locations. Those respondents undertaking watersports were staying at Shaldon and Dawlish Warren and were staying in static caravans, touring caravans/campervans or tents.
- Respondents' home postcodes reflected a wide spread across England and south Wales and were particularly concentrated around the West Midlands.
- Visit rates (visits per day) were broadly similar to residential development, at least for the Exe Estuary and Pebblebed Heaths, i.e. overall, visits per tourist accommodation unit were similar to the number of visits from a single residential property. For Dawlish Warren Nature Reserve and Exmouth Seafront tourist visit rates were higher.

Implications for Habitats Regulations Assessment and mitigation of future tourism development are discussed.

Contents

1. Introduction 4
2. Methods 6
Overview 6
Survey methodology 6
Survey questions 6
Survey promotion 7
3. Results 8
Overview 8
Timing of responses 8
Location of tourist accommodation 9
Types of tourist accommodation 9
Duration of stay 13
Previous visits 14
Group sizes 15
Areas visited 16
Visit rate for sites 19
Activities conducted 20
Views on management measures 24
Origin of visitors 26
4. Discussion 29
Limitations 29
Implications in terms of Habitats Regulations Assessment and European Sites 31
5. References 37

Appendix 1: Survey Questionnaire (face-face version, adapted and shortened from web version) 38

Appendix 2: Number of days at different accommodation types 44

Acknowledgements

This report was commissioned by East Devon District Council and Teignbridge District Council. We are grateful to Matt Dickins (East Devon District Council) and Mary Rush (Teignbridge District Council) for overseeing the work. Matt, Mary and Gavin Bloomfield (RSPB) provided useful comments on an initial draft.

The initial questionnaire design was undertaken by Carolyn Petersen (Footprint Ecology). Face-face interviews were conducted by Deborah Blake and Chris Sadler (both Footprint Ecology). We are grateful to all those who helped promote and circulate the survey and to those accommodation providers who provided access for the face-face interviews. Our thanks also to all those who completed the survey on-line or face-face.

1. Introduction

1.1 This survey has been commissioned by East Devon District Council and Teignbridge District Council in order to better understand tourist use of key European sites in South-East Devon.

1.2 A particular issue for nature conservation in England is how to accommodate increasing demand for new homes and other development, including tourism, without compromising the integrity of protected wildlife sites. Wildlife sites are protected through legislation in place at both a national[1] and European level[2], and these place particular duties on local authorities and government bodies.

1.3 The relevant sites for this report are the Exe Estuary SPA/Ramsar, Dawlish Warren SAC and the East Devon Heaths SPA/East Devon Pebblebed Heaths SAC. All three of these sites are popular sites for recreation and there are concerns about the impacts of increasing recreation pressure on their designated interest features.

1.4 The designation, protection and restoration of European wildlife sites is embedded in the Conservation of Habitats and Species Regulations 2010, as amended, which are commonly referred to as the 'Habitats Regulations'. The Habitats Regulations are in place to transpose European legislation set out within the Habitats Directive (Council Directive 92/43/EEC) and the Birds Directive (Council Directive 2009/147/EC). These key pieces of European legislation seek to protect, conserve and restore habitats and species that are of utmost conservation importance and concern across Europe.

1.5 Regulation 61 of the Habitats Regulations sets out the Habitats Regulations Assessment process for plans and projects, which is the process by which any potential impacts arising from plans and projects are considered before any form of permission is given or the plan or project is implemented. Regulation 102 of the Habitats Regulations specifically sets out the process for assessing emerging land use plans prior to their adoption.

1.6 Local authority plans relating to East Devon, Exeter and Teignbridge set out a marked level of housing growth over the current plan period. In order to ensure no adverse effects on site integrity, local planning authorities have established a strategic mitigation scheme (see Liley *et al.* 2014) to avoid and mitigate impacts of new residential development. This scheme includes provision of new greenspace, wardening and other mitigation measures which are funded through developer contributions.

[1] Sites of Special Scientific Interest, SSSIs

[2] European wildlife sites, often also referred to as Natura 2000 sites, which include Special Protection Areas (SPAs) and Special Areas of Conservation (SACs)

1.7 The mitigation scheme has been developed following a range of studies that have looked at the recreational use of the sites and impacts from recreation (Lake 2010; Liley, Fearnley & Cruickshanks 2010; Liley *et al.* 2011; Cruickshanks & Liley 2012; Liley, Panter & Underhill-Day 2016). Much of the focus for this work, and indeed the mitigation strategy, has been recreational use by local residents and links between local housing and recreation.

1.8 A key gap in our understanding relates to tourist use and potential impacts of future tourist development. While local plans do not quantify any projected growth in tourist accommodation, a better understanding of tourist development and potential implications is required. This study has been commissioned to fill that particular gap and seeks to address the following:

- To what extent do tourists visit the three relevant European sites?
- What activities do tourists undertake on the three relevant European sites?
- Are there particular locations where tourists stay and visit the three relevant European sites?
- Are there any particular types of tourist accommodation that are associated with higher recreation use of the three relevant European sites?
- Are there particular mitigation measures that relate to tourist use of the three relevant European sites?

2. Methods

Overview

2.1 The survey undertaken aims to determine how many and what kind of activity are undertaken by users of tourist developments (e.g. hotels, guest houses, B&Bs, campsites, holiday cottages, etc.) within the Teignbridge and East Devon area make to the Exe Estuary, Dawlish Warren and the East Devon Pebblebed Heaths.

2.2 Following an initial inception meeting with Teignbridge District Council (TDC) and RSPB, methodology options, sampling strategies, sources of existing data and contact lists for tourism providers were discussed, along with timing considerations. It was decided that survey data would need to be collected over a 12-month period. This would include the winter months when large numbers of migrating birds are present in the Exe estuary area, and also the spring/summer period when the breeding bird interest is potentially vulnerable. It was also agreed that the survey would be primarily an online survey, with additional face-to-face interviews.

Survey methodology

2.3 Surveying was conducted from the beginning May 2015 to end of September 2016. The focus of the survey was for completion online, as opposed to telephone or face-to-face interviews. The online surveys provide a relatively cost effective means of contacting a sample of people across a broad area. People are able to consider their responses and respond in their own time, rather than more invasive survey methodology, such as telephone interviews.

2.4 The questionnaire was designed using SNAP survey software and the introduction page clearly stated that the survey was on behalf of local authorities (i.e., it is not related to any marketing) and a prize (£100 of High Street shopping vouchers, given to one respondent selected at random) was allocated as an incentive for completing the questionnaire.

Survey questions

2.5 The survey was trialled in-house, and a draft questionnaire circulated to relevant parties (TDC, EDDC, RSPB) and to some carefully selected external respondents for comment prior to the end of the pilot.

2.6 The questionnaire (see Appendix 1) was structured into the following sections:

- 'About your holiday and accommodation' – includes questions on type of accommodation, length of stay, etc.
- 'Reasons for visiting Teignbridge/East Devon'
- 'Activities you took part in on your holiday' – includes questions on watersports, walking, dog walking, cycling and beach activities, and on location and frequency of undertaking these activities.
- Questions about whether they would support a range of mitigation measures for Pebblebed Heaths, Dawlish Warren and the Exe.
- 'Did you know..?' - about awareness of environmental rules and regulations.

- 'Your holiday accommodation, transport and weather during your stay'.
- 'About you' - demographic questions.

Survey promotion

2.7 The survey was promoted as follows:

- Survey link emailed via online networks/newsletters such as the Coast (Sustainable Tourism) Project.
- Direct email to local tourist accommodation providers, asking them to circulate the survey to holiday-makers staying in their accommodation (we compiled a list of 120 accommodation providers based on a list provided by VisitDevon and supplemented with additional web searches).
- Flyers were posted in various tourist offices and accommodation providers (50 of the accommodation providers on our above list agreed to circulate copies of the fliers and were given a set to distribute)
- Some accommodation owners (holiday cottages etc) were telephoned directly, two companies agreed to host a direct link to the survey on their personal websites.
- The National Trust Killerton Estate posted a link to the survey on their social media feed.
- The survey was promoted through Footprint Ecology's website and social media accounts (Twitter and Facebook).
- The survey was advertised via Facebook, in Spring and Summer 2015, utilising the ability to promote via paid boosts to advertise the survey. This allows us to actively target particular Facebook users and these were men and women, between the ages of 18-65, and with interests in the term 'holiday' in combination with a wide range of locations (e.g. 'Teignbridge', 'Dawlish', 'Exmouth'). This was estimated to have reached a total of 4,200 users.
- We directly contacted (in June 2015 and Feb 2016) HeartofDevon and VisitSouthDevon to request they promote the survey through their own networks and both confirmed they would be posting out to their contacts.

2.8 Two full days were spent by staff visiting accommodation providers to talk to staff, provide them and any visitors with fliers, these visits were focused towards Dawlish Warren and Exmouth (April and August 2015). A further full day in April 2016 was spent visiting accommodation to hand out leaflets, and attempting to conduct face-to-face interviews. In September 2016, a significant pulse of fieldwork, over a further four days, was spent undertaking face-to-face interviews and handing out leaflets. Survey locations during this period included locations where a through-flow of holiday-makers was likely and included Exmouth Seafront, the Exe cycle trail (at Starcross and at Exmouth) and the seafront at Dawlish.

3. Results

Overview

3.1 A total of 239 responses to the questionnaire were completed. Most (168 responses) were through the online survey, and 71 completed the survey through the face-to-face interviews. We use the term respondent throughout this report to refer to both those who completed the on-line survey and those interviewed.

3.2 A total of 189 responses were used in later analysis and the other responses discounted, as the interviewees were either not on holiday or not staying in the Teignbridge/East Devon area and as such they were not relevant to the study. The total of 189 does include 4 responses from tourists staying at Topsham, which is outside of Teignbridge/East Devon, but given the proximity to both and the proximity to the Exe Estuary these were included.

3.3 Figure 1 summarises how the different respondents were categorised (based on the initial screening question, Q1) and shows how the total of 189 was derived.

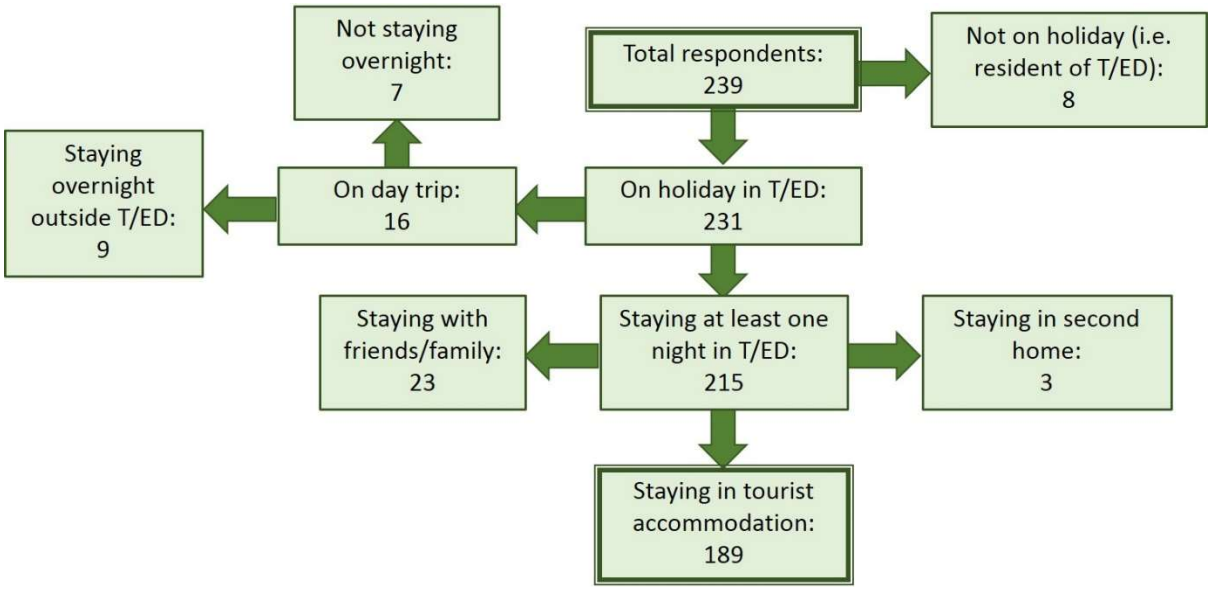


Figure 1: Flow chart to show how all responses were broken down to reach the 189 respondents examined in further detail.

Timing of responses

3.4 Most of the respondents were visiting during the summer months and the number of responses during the winter months was relatively low. The cumulative number of responses is shown over time in Figure 2. There were relatively few responses over the winter 2015/16 and numbers started to build from March 2016. The pulse of face-face interviews undertaken in August 2016 were particularly successful, and a pulse of online responses were received at this time too (flyers were widely distributed in addition to paid advertising). This pulse relates to peak tourist use.

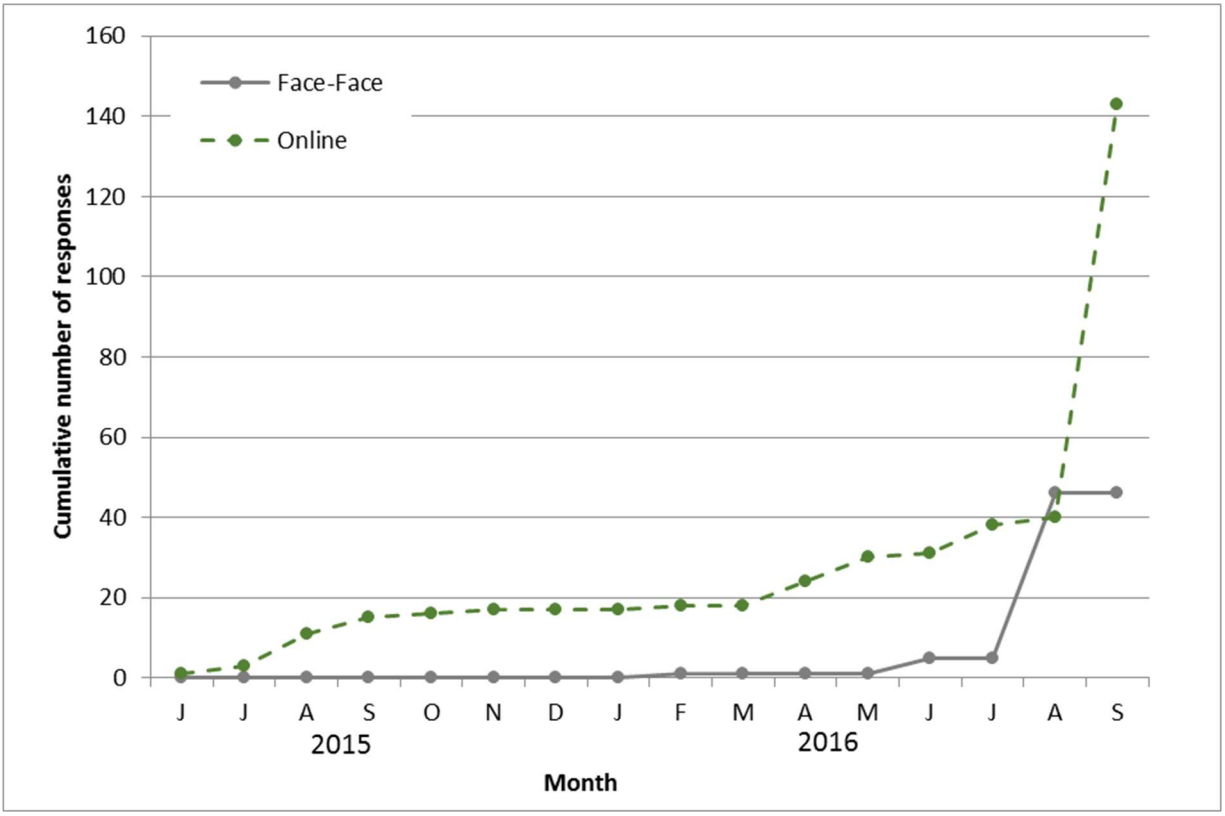


Figure 2: Cumulative number of responses over time

Location of tourist accommodation

3.5 Respondents were asked to give the name of the accommodation they were staying in, and the location. These broad locations were used to assess the relative number of respondents staying in the different areas, as shown in Map 1.

3.6 From Map 1 it is clear that the majority of respondents, 64% (121 respondents), were staying at Dawlish Warren. The locations with the next greatest number of respondents were Cofton (10 respondents, 5%), Sandy Bay and Exmouth (both with 8, 4%), Shaldon (6, 3%), and Teignmouth (5, 3%). The remaining 15 named locations were reported by less than 5 respondents, and accounted for the remaining 16% (30) of respondents.

Types of tourist accommodation

3.7 Of the 189 respondents using tourist accommodation, 97% (184) described their visit as purely for holiday, while the remaining five respondents said they were visiting friends and family (although not staying with them).

3.8 A range of accommodation types were recorded from the 189 respondents (Figure 3). Approximately one third of respondents (33%) were staying in static caravans, followed by self-catering houses/lodges/chalets (25%). This was followed by pitched accommodation, such as touring caravans/campervans (16%) and tents (11%). The remaining respondents accounted for roughly 16% of respondents, and included hotels, bed and breakfasts, and pubs/guesthouses. A single respondent, from the face-face interviews, did not know where they were staying that evening yet, but were planning to use overnight tourist accommodation within the area.

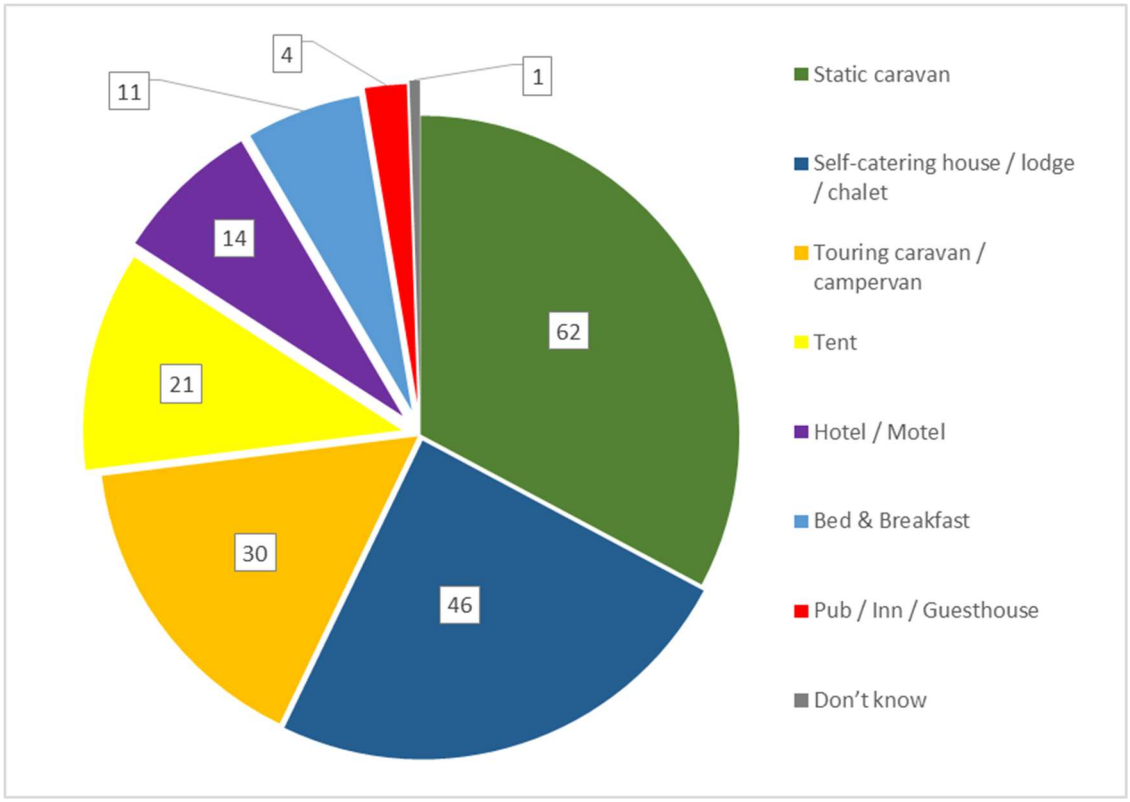


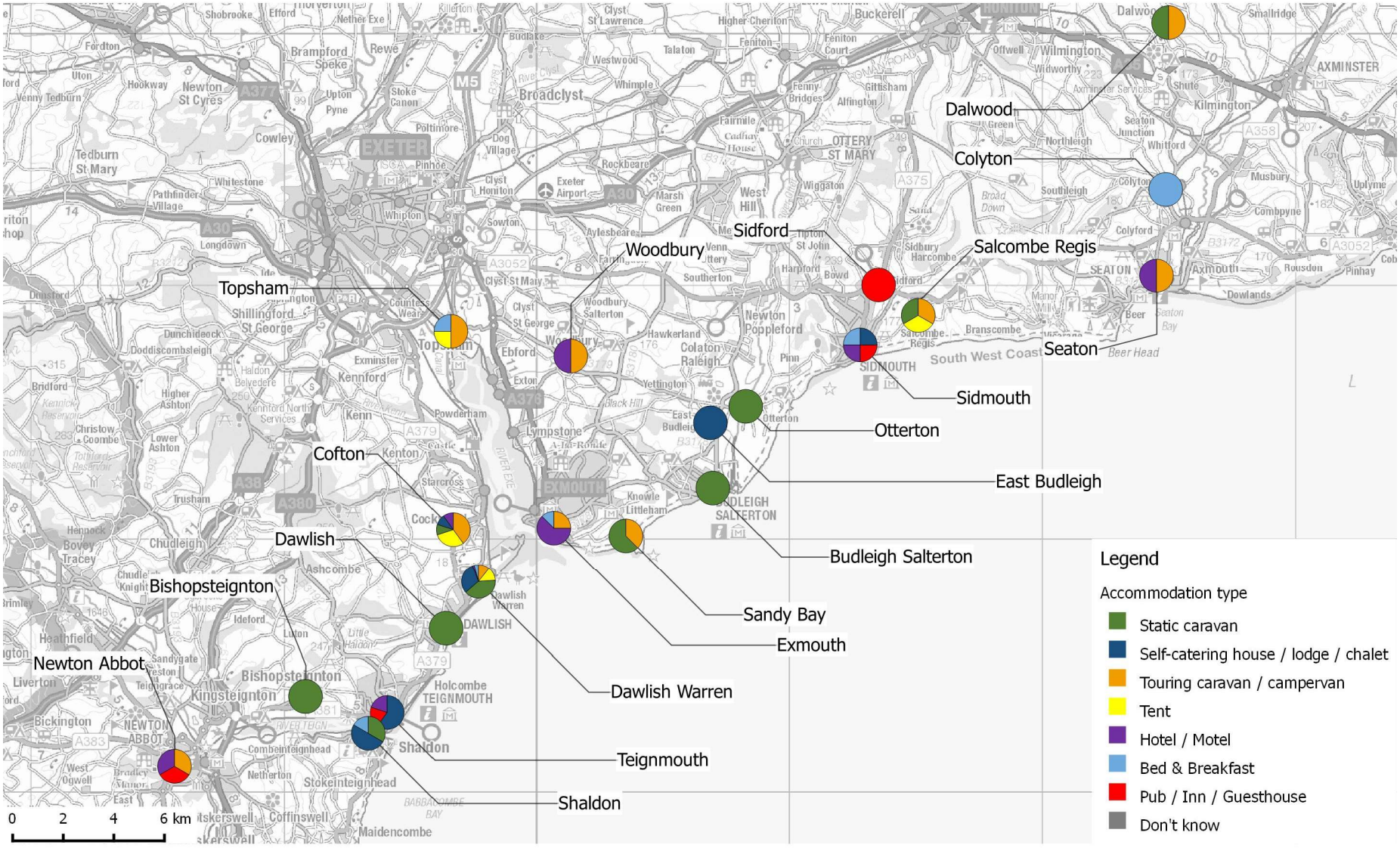
Figure 3: The percentage of interviewees from each accommodation type.

3.9 Map 2 shows the respondents' accommodation types by location, and this information is also presented in Table 1. Sample sizes for many locations are small and as such close examination is likely to be unreliable. However, some broad trends were visible. Static caravans were most common close to the coast, around the Exe, focused in the areas where there are large static sites e.g. Dawlish Warren, Sandy Bay. While in more urban areas, such as Exmouth there was more respondents staying in Hotels. Also at Teignmouth and Shaldon there appeared to be more respondents in self-catering accommodation.

Map 1: Map of the location of tourist accommodation sites respondents were staying at. Points are sized by the number of respondents. Location name is followed by the number of respondents from the location.

Contains Ordnance Survey data © Crown copyright and Database Right 2016. Contains map data © OpenStreetMap contributors. Terms: www.openstreetmap.org/copyright

Map 2: Location of places tourists were staying, with pie charts to indicate the proportion of accommodation types being used.



Contains Ordnance Survey data © Crown copyright and Database Right 2016. Contains map data © OpenStreetMap contributors. Terms: www.openstreetmap.org/copyright

Table 1: Number of interviewees staying at different named locations, separated for each accommodation type. Only those interviewees staying overnight within Teignbridge/ East Devon are shown [189]. Top three ranked cells are highlighted for each accommodation type. Named locations were corrected to have consistent naming, and checked for their local authority to ensure these were within Teignbridge/ East Devon.

Location	Static caravan	Self-catering house/lodge/chalet	Touring caravan/campervan	Tent	Hotel/Motel	Bed & Breakfast	Pub/Inn/Guesthouse	Not known	Total
Dawlish Warren	48	37	13	16	2	5			
Cofton	1	1	4	3	1				10
Exmouth			2		5	1			8
Sandy Bay	5		3						8
Shaldon	2	3				1			6
Teignmouth		3			1		1		5
Sidmouth		1			1	1	1		4
Topsham			2	1		1			4
Woodbury			2		2				4
Newton Abbot			1		1		1		3
Salcombe Regis	1		1	1					3
Dalwood	1		1						2
Seaton			1		1				2
Bishopsteignton	1								1
Budleigh Salterton	1								1
Colyton						1			1
Dawlish	1								1
East Budleigh		1							1
Ockham						1			1
Otterton	1								1
Sidford							1		1
(blank)								1	1
Total	**62**	**46**	**30**	**21**	**14**	**11**	**4**	**1**	**189**

Duration of stay

3.10 Respondents were asked how many nights they had stayed/were staying at their tourist accommodation. The most common response was staying for seven nights (60 respondents, 32%), followed by those staying for eight or more nights (51, 27%). However, this was influenced by the different accommodation types, for which the typical duration of visits could be quite different.

3.11 The respondents staying in static caravans or self-catering accommodation were most often staying for seven nights, as were those in tents (Figure 4), while the majority of respondents staying in touring caravans/campervans were staying for longer, 63% for eight or more nights. Those respondents staying in hotels, pubs, guesthouses and bed and breakfasts were often staying for a much shorter period, with most staying between three and five nights.

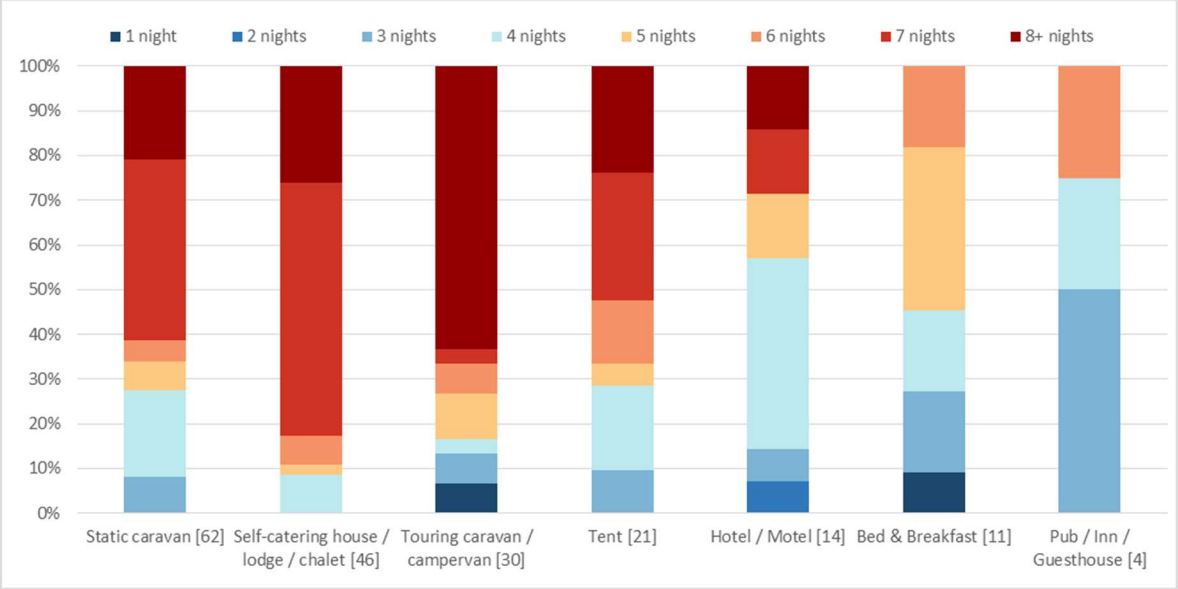


Figure 4: The number of nights interviewees were staying in the area, shown as a proportion for each accommodation type. Only those interviewees staying overnight and in the Teignbridge/East Devon area were used [189]. A single interviewee who did not know where they were staying is not shown.

Previous visits

3.12 Many of the respondents had stayed at the site or approximate location several times before. Overall, 55% of respondents have been at the site or location at least four times previously, while only 11% were on their first visit. Data are summarised by the different accommodation types in Figure 5. It can be seen that the highest proportion of respondents who were more regular visitors to the site/location were those in self-catering accommodation (70%) and static caravans (65%).

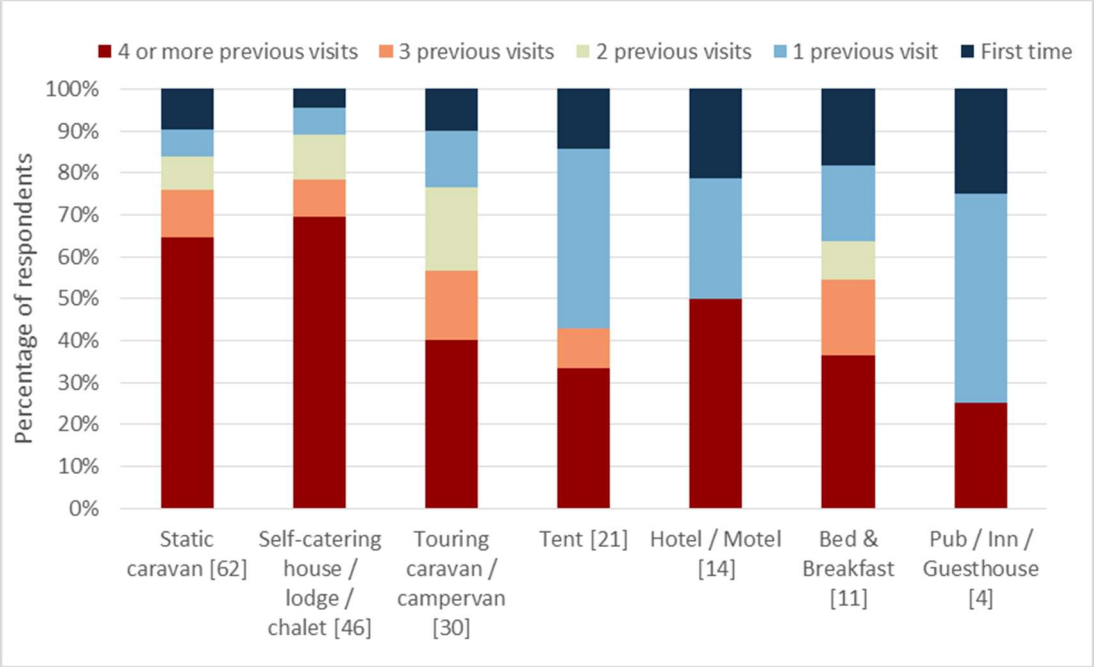


Figure 5: Number of previous visits respondents had made to the location, separated by the accommodation type they were staying in.

Group sizes

3.13 The questionnaire asked respondents to provide details of the group size of their holiday party. Overall group sizes for respondents staying in static caravans and self-catering accommodation were often large, with over a third of respondents in a group of four or more (Figure 6). Clearly there are certain accommodation types which are less geared towards large family groups, such as Bed and Breakfasts, Pubs/ Guesthouses and Hotels.

3.14 At Bed and Breakfasts, Hotels and Pubs/ Guesthouse none of the respondents had a dog staying with their party. In tent accommodation, only one respondent had a dog staying with them, while at the remaining accommodation types (self-catering, static caravan, touring caravan / campervan), around a quarter had a dog with them (17, 18 and 27% respectively).

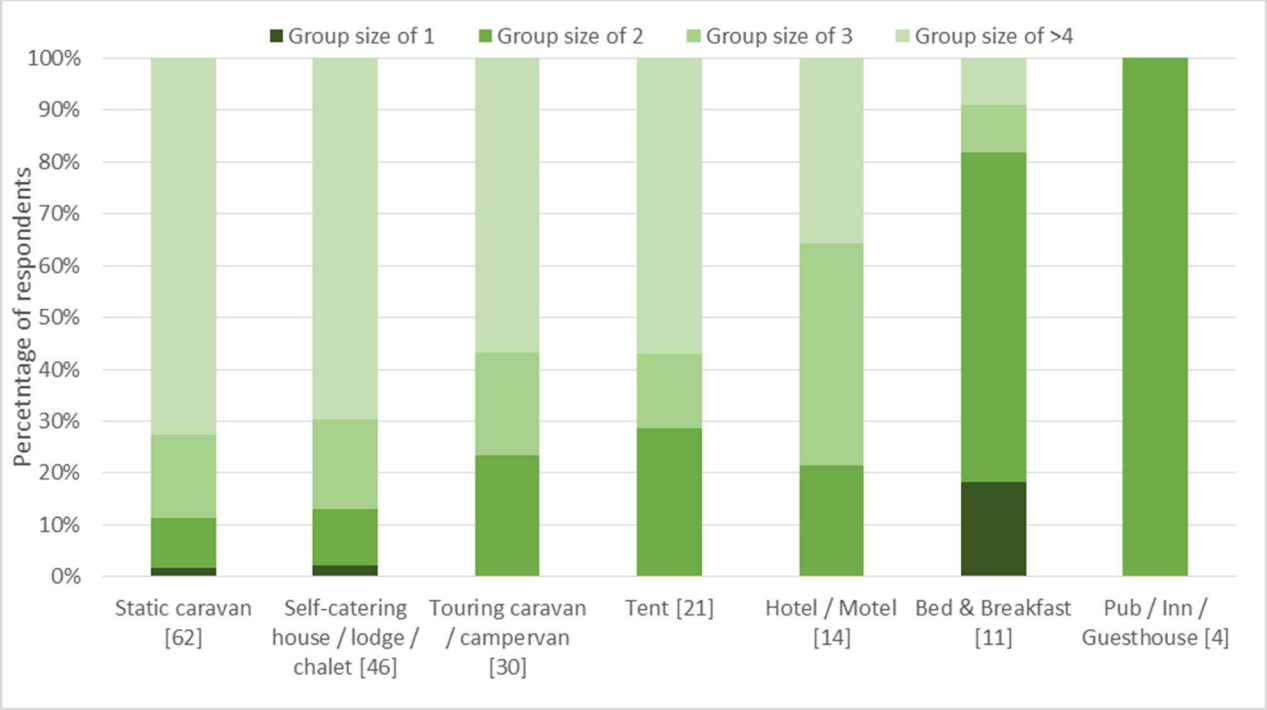


Figure 6: The group size of respondents by each accommodation type

Areas visited

3.15 Respondents were asked if they had made any visits to five destinations relating to the three European sites, results of which are summarised in Table 2. Approximately 6% of respondents (11) did not visit any of the named destinations. This was broadly similar across all accommodation types, although all respondents in static caravans reported visiting at least one site, while only half of those in Pubs/Guesthouses reported visiting a site. One of the factors in this may have been the number of nights respondents were staying for. Around 60% of respondents staying for one or two nights visited one of the sites. For respondents staying two or three nights this figure was approximately 86%, while for those staying for five or more nights the average was 99% of respondents visiting at least one site.

3.16 Dawlish Warren Beach was the most commonly visited area, with most of those visiting many times (Table 2). Just under half of the respondents (43%) visited Dawlish Warren Beach four or more times during their stay and 77% visited at least once. This is perhaps expected given the high number of respondents from Dawlish Warren. However, controlling for those staying at Dawlish Warren (by removing these), the number visiting at least once remained relatively high (41%).

3.17 Other locations such as the Dawlish Warren Nature Reserve and Exmouth beach or mudflats were popular, with around half of all respondents visiting at least once (48% and 41% respectively). The Exe Estuary and Pebblebed Heaths/Woodbury Common were less commonly visited with around a quarter or less visiting at least once (27% and 14% respectively).

Table 2: Percentage of respondents who made visits to each of the five important wildlife areas of interest. Bold values indicated the highest two classes for each areas

					9
					8
Exe Estuary (other than those above)	**73**	**16**	6	2	3
					1

3.18 Map 3 shows the visiting patterns of respondents to important wildlife sites by location. It can be seen that sites such as Exmouth Beach and the Exe Estuary have a wide draw with respondents from almost all locations, however only those respondents staying close to the Exe Estuary (e.g. Dawlish Warren, Topsham, Exmouth) visited Dawlish Warren Nature Reserve. The Pebblebeds were mostly visited by those staying east of the Exe Estuary, but there were some visits from tourists staying in Teignmouth and Shaldon.

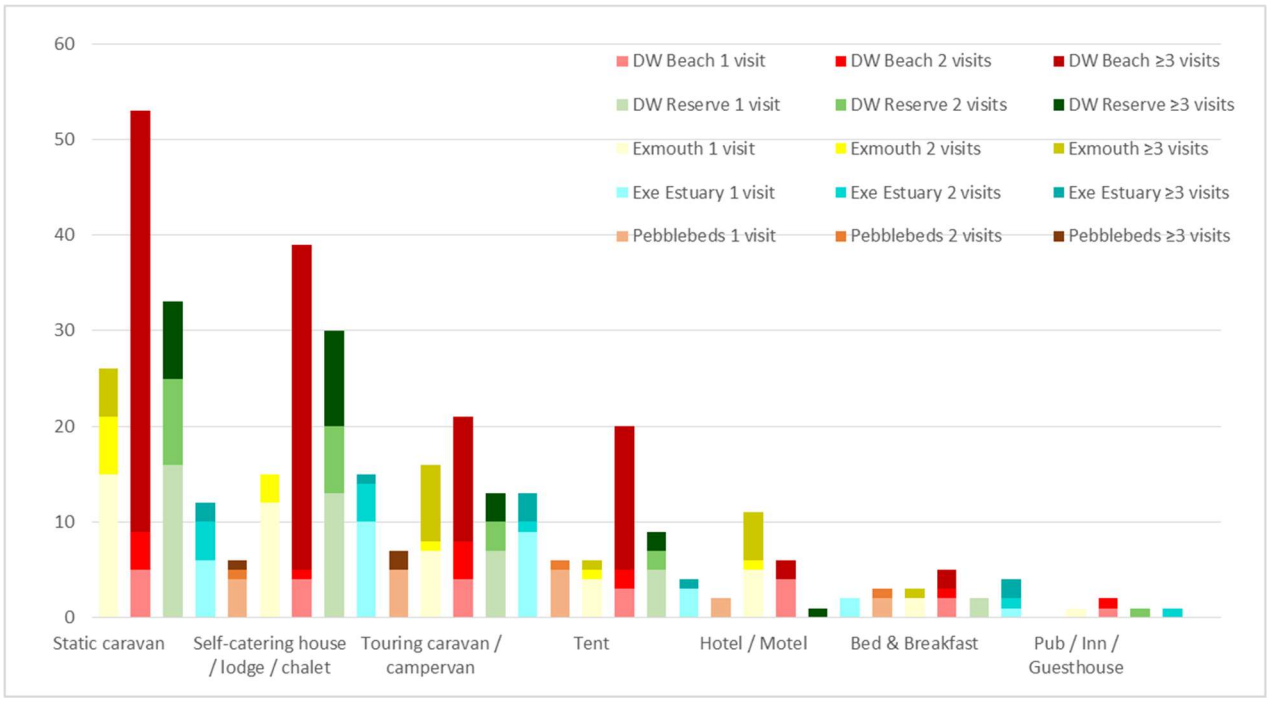
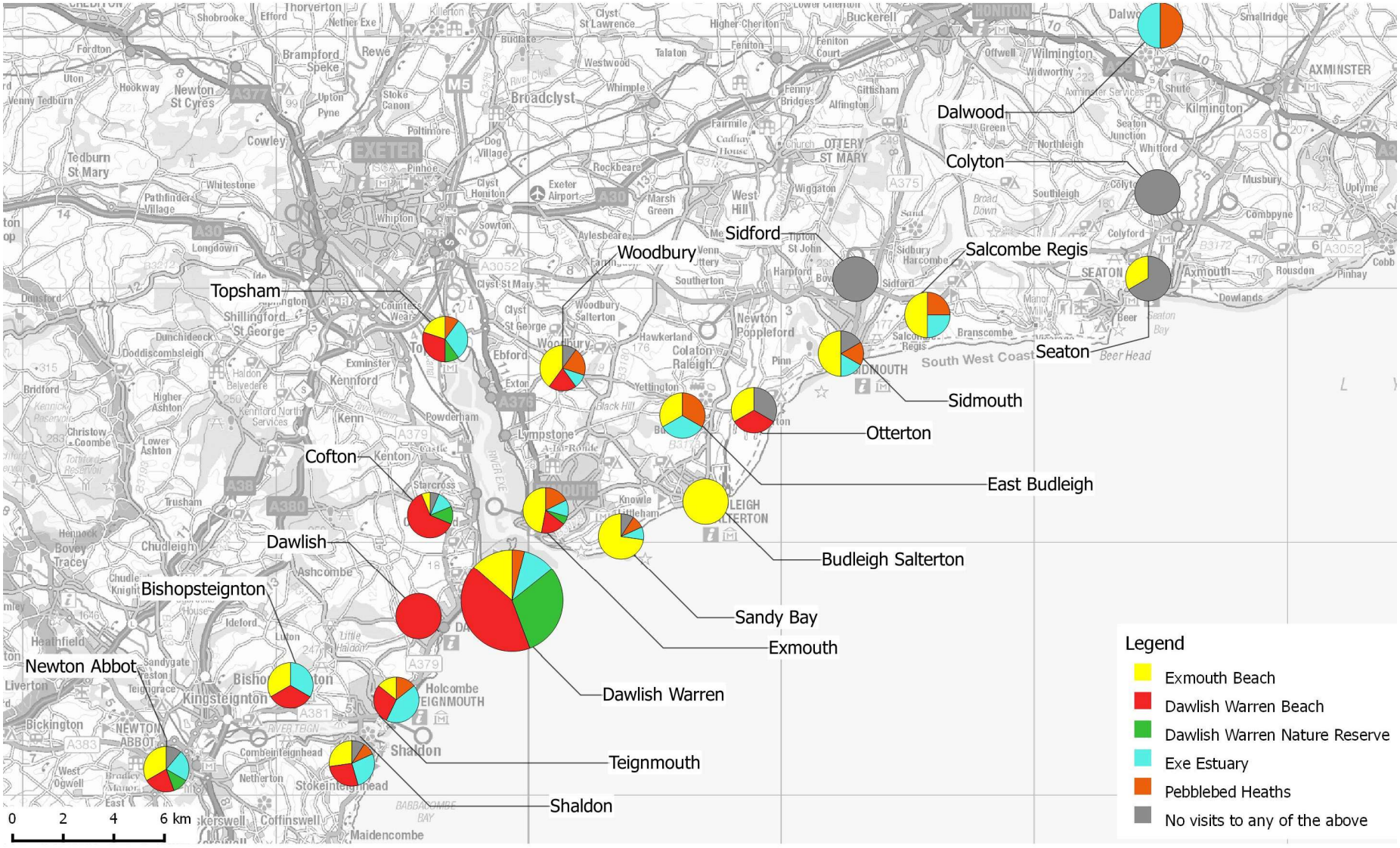


Figure 7: Number of respondents separated by accommodation type who had visited particular wildlife areas.

Map 3: Location of places tourists were staying, with pie charts to indicate areas which they visited at least once during their stay.



Contains Ordnance Survey data © Crown copyright and Database Right 2016. Contains map data © OpenStreetMap contributors. Terms: www.openstreetmap.org/copyright

Visit rate for sites

3.19 Typical visit rates for the different European sites were calculated. These visit rates reflected the likelihood of a group in a particular type of accommodation visiting the European sites. We generated these estimates to allow direct comparison with residential accommodation. Visit rates were calculated by taking the average number of visits made to a given site by people staying in a particular accommodation type and dividing this number by the average length of stay (number of nights in given accommodation, plus 1 to account for days on either side). So as a hypothetical example, if people staying in static caravans indicated they had visited the Exe Estuary twice during their stay (i.e. median value 2), and the typical length of stay (median visit length) was 3 nights (i.e. potentially 4 days) then the visit rate would be 0.5, equivalent to one visit every two days. The typical length of stay and number of days each site was visited, are given for each accommodation type in Appendix 2.

3.20 As some areas had only a limited local catchment, such as Dawlish Warren Nature Reserve, the calculations of visit rate were based only on those respondents who were staying within a defined catchment of the sites. The catchments were estimated using the questionnaire data on which sites respondents visited (Map 3). Catchments and the results are summarised in Table 3.

3.21 The data in Table 3 reflect a complex pattern as visit rates will be linked to distance (i.e. how close particular accommodation types are to each site) and a range of other factors. The highest visit rate for any accommodation type was for those staying in hotels/motels and visiting Exmouth Beach, with a rate of 0.35, i.e. roughly equivalent to one visit for every 3 days of stay. Other relatively high rates included self-catering accommodation and visits to Dawlish Warren Nature Reserve (visit rate of 0.24) and to the Pebblebed Heaths (0.22), and those staying in Bed & Breakfast and visiting the Exe Estuary (visit rate 0.24).

Table 3: The visit rate (visits to site per day of stay) for tourists to each site, calculated for the different accommodation types. Highest values for each site are highlighted in bold. Rates are calculated based on responses from different geographic areas for each European site (see Map 3), the locations used are given in the table.

				0.01
Self-catering house/lodge/chalet [46]	**0.24**	0.05	0.06	**0.22**
Touring caravan/campervan [30]	0.17	0.21	0.10	0.06
Tent [21]	0.13	0.07	0.05	0.08
Hotel/Motel [14]	0.09	**0.35**	0.02	0.06
Bed & Breakfast [11]	0.05	0.15	**0.24**	0.00
Pub/Inn/Guesthouse [4]	-	0.07	0.10	0.00
				0.05

Activities conducted

3.22 There are a wide range of activities that tourists in the area could potentially participate in, and respondents were asked to select which activities they had conducted during their visit, choosing from a list of eleven. The percentage of respondents suggesting they had conducted one of these activities is shown in Figure 8. Respondents were able to select multiple activities and had the option to list any additional activities, grouped as 'Other' in Figure 8. The most commonly selected activity was general 'Beach Holiday', with 82% of respondents selecting this. This was closely followed by 'Family activities' (60%), Amusements/entertainments (57%) and Walking (55%).

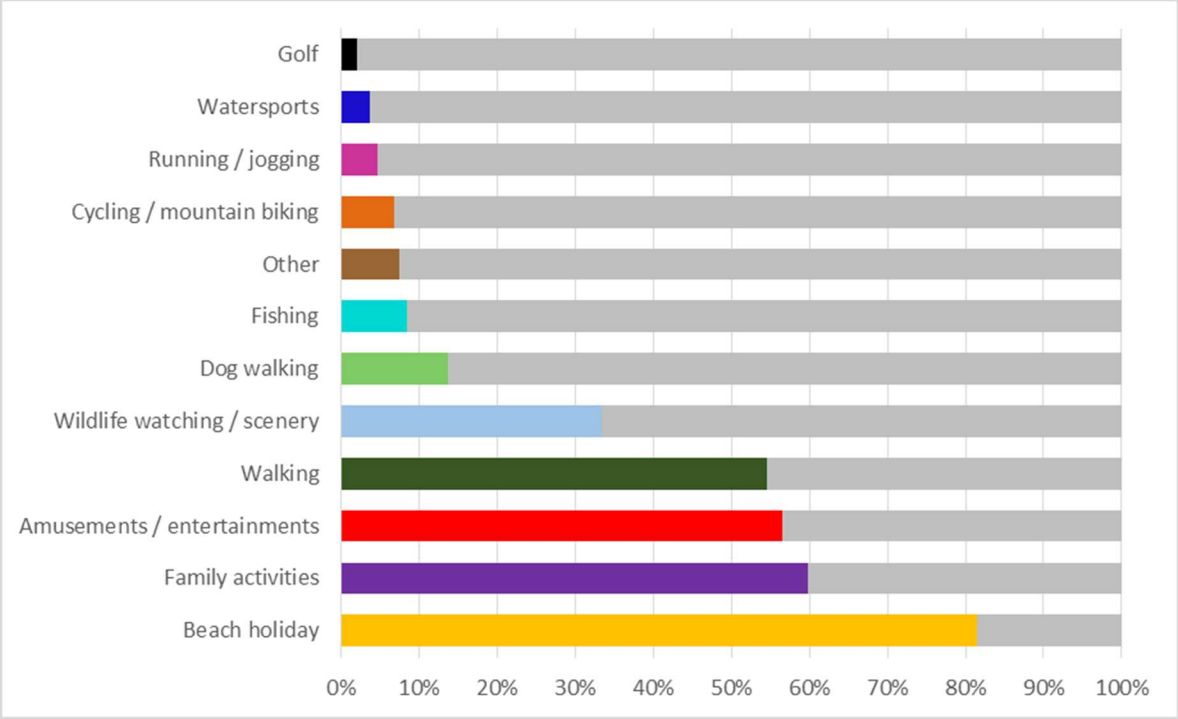


Figure 8: The percentage of respondents conducting different activities during their visit.

3.23 The range of activities recorded are summarised by location in Table 4. With the exception of Newton Abbott, 'Beach Holiday' was the most frequent or joint most frequent activity from respondents in every location. The average across locations was 73% for beach activity, while the next highest was 'Family activities' with 47%. Dawlish Warren included the widest range of activities, but had a very large sample size.

Table 4: The percentage of respondents for each location and the activities which they were undertaking.

	Beach holiday	Wildlife watching/scenery	Family activities	Amusements/ entertainments	Watersports	Cycling/mountain biking	Dog walking	Walking	Running/jogging	Fishing	Golf	Other
Bishopsteignton [1]	100	100										
Budleigh Salterton [1]	100							100				
Cofton [10]	80	30	40	50		10	20	30		10		
Colyton [1]			100					100				
Dalwood [2]	50	50						50				50
Dawlish [1]	100		100	100			100	100				
Dawlish Warren [121]	83	38	66	76	5	6	17	68	7	10	2	5
East Budleigh [1]	100	100	100	100			100					
Exmouth [8]	88		38	25		13	13	38	13			25
Newton Abbot [3]	33	67	33					33				
Ockham [1]	100											100
Otterton [1]	100		100									
Salcombe Regis [3]	67		67			33		33				
Sandy Bay [8]	100		88			13		13				
Seaton [2]	50	50						50				
Shaldon [6]	83	50	83	50	17			33		33		17
Sidford [1]												100
Sidmouth [4]	50		25				25	50				
Teignmouth [5]	100	60	40					20		20		20
Topsham [4]	50	25	50	50		50		25			25	
Woodbury [4]	100	25	50	25							25	25
Average across locations	**73**	**28**	**47**	**23**	**1**	**6**	**13**	**35**	**1**	**3**	**2**	**16**

3.24 Differences between the activities by the different accommodation types used are shown in Figure 9. There was generally little in the way of major differences between groups. For example, dog walkers were staying in a range of accommodation types (static caravans, self-catering house/lodge/chalet, touring caravan/campervan or tent). Those undertaking watersports were only those staying in static caravans, touring caravans/campervans or tents. However, differences such as the high proportion of respondents conducting watersports staying in static caravans are likely to be influenced by the relatively low frequency at which this activity was reported overall.

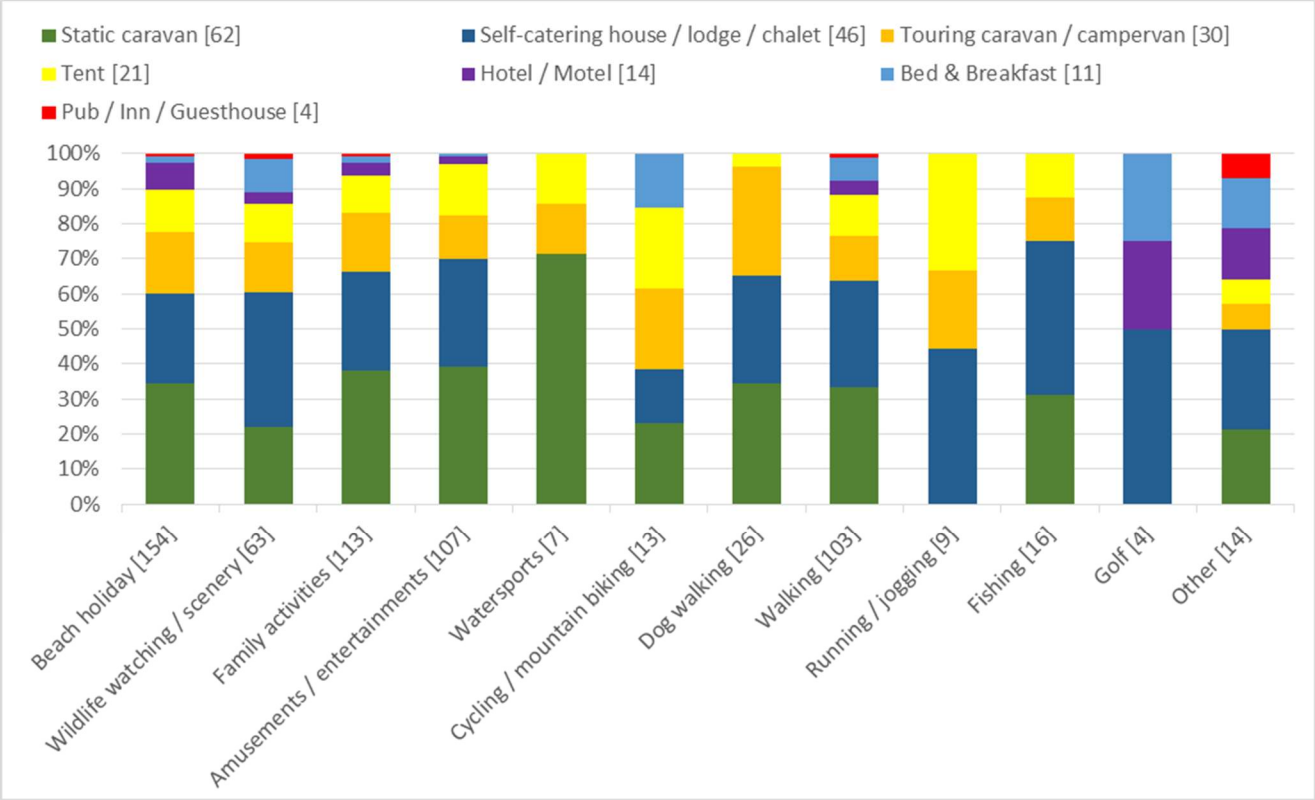


Figure 9: The percentage of respondents conducting different activities, separated by the accommodation type.

Views on management measures

3.25 Views on potential management measures were asked for selected groups.

3.26 Those who responded that they went walking or cycling on the Pebblebeds were asked their views on a range of measures. The results are summarised in Table 5. Only a small number of respondents answered this question and only limited analysis is possible. It would appear that compulsory parking charges and closure of parking areas would be unpopular while there appears to be very strong support for enforcement relating to dog fouling.

3.27 Those who visited the Exe Estuary, including Exmouth Beach and Dawlish Warren Nature Reserve were asked to score a slightly different list of measures. The sample size here was larger and the results are summarised in Table 6. For this group of respondents there was support for most measures, with increased parking charges being the one measure with limited support. Screening to protect roosting birds and dog control orders to limit dogs off leads on the mudflats were the two measures with the most support. Overall, measures to which more than half responded positively (i.e. level of support 4/5) were: new signs and interpretation boards (66%), creation of screening to protect roosting birds (64%), dog control orders to ensure dogs are on leads on the mudflats (63%), improved path network (62%) and new leaflets (50%).

3.28 The opinions on some of these issues were examined separately for those with dogs. Amongst respondents who went walking/cycling in the Pebblebeds those who opposed (categories 1 and 2) the enforcement of dogs on leads were all those with dogs (three respondents). While those who supported the measure (categories 4 and 5) were mostly non-dog walkers (five respondents), and one respondent with a dog. For those visiting the Exe or Dawlish Warren, the similar question regarding dogs on leads on the mudflats also had less support from those with dogs. Of those without a dog, just eight respondents (7%) opposed this, with 69 respondents (64%) supporting, compared to those with dogs, with 6 respondents (23%) opposing and 15 respondents supporting (58%).

Table 5: Responses to Q42, asked only of those who went cycling or walking on the Pebblebed Heaths (a total of 10 respondents completed this question): ….”would you support the following measures to protect wildlife and limit environmental damage?”. Grey shading indicates where at least four interviewees indicated a given level of support with darker grey shading reflecting values above six and very dark shading values of eight or more.

	1 Don't support				
More dog bins	0	0	4	0	6
Routes promoted for Mountain Bikes	1	0	5	2	2
					3
Boardwalks or surfaced paths in wet areas	0	1	3	3	3
Greater warden presence	0	2	6	0	2
					2
Yearly parking permit	3	0	2	3	1
Compulsory parking charges	4	3	1	1	1
			1	1	1
Codes of conduct for different user groups	2	2	2	1	3
Enforcement of dogs on leads, March-July	2	1	1	1	5
Enforcement relating to dog fouling	0	0	0	2	8
Improved surfacing to some car-parks	0	1	6	1	2

Table 6: Responses to Q43, asked only of those who went visited the Exe or Dawlish Warren Nature Reserve (a total of 134 respondents completed this question, though not all scored each measure, minimum sample size for each = 132): ….”would you support the following measures to protect wildlife and limit environmental damage?”. Grey shading indicates where at least 30% of interviewees indicated a given level of support with darker grey shading reflecting values above 40% and very dark shading values of 50% or more.

new signs and interpretation boards	2	3	40	45	43
new leaflets	2	6	58	36	31
improved path network	1	7	43	47	36
New codes of conduct	4	6	68	32	23
Revision of byelaws on watersports	3	5	90	20	13
Clearer zoning for watersports	4	3	74	34	17
Dog control orders to ensure dogs are on leads on the mudflats	6	8	36	32	52
Creation of screening to protect roosting birds…	2	3	42	41	44
Increased parking charges in sensitive areas…	26	19	46	25	16

Origin of visitors

3.29 Map 4a shows the mapped distribution of home postcodes from respondents. It is clear respondents come from across England to visit locations in the Teignbridge/East Devon area. However, it is noted that there were particularly high in the south west and the west midlands. From these postcodes a straight-line (Euclidean) distance was calculated between the home postcode and the location the respondent was staying at.

3.30 The distances are summarised by the respondent's accommodation type, summarised in Table 7, Figure 10 and shown in Map 4b. While distances for certain accommodation types appear to often be smaller e.g. Pub/Guesthouses, Touring caravans/campervans, there was no significant difference in these linear distances by accommodation type (conducted using an ANOVA, a statistical test to examine if differences between mean values are significant, $F_{6,157}$=1.54, p=0.170). These was also no significant difference in linear distance between the respondent's home postcode and the location stayed when grouped by the different locations (ANOVA, $F_{15,148}$=1.43, p=0.141).

3.31 In might also be plausible that the distance to the location would have some bearing on how frequently they visited. Respondents on their first visit, or second visit to the area often appeared to live relatively close compared to those who had been visiting for longer (Map 4c). However, there was no significant difference in linear distance between home postcode and location stayed at by number of previous visits (ANOVA, $F4_{,159}$=1.83, p=0.126).

Table 7: Summary of the linear distances between respondents' home postcodes and the location they were staying at.

	210 (13.6)	
		396
Touring caravan/campervan [30]	189 (23.4)	472
Tent [21]	255 (26.0)	478
Hotel/Motel [14]	209 (40.7)	497
Bed & Breakfast [11]	215 (40.4)	363
		223

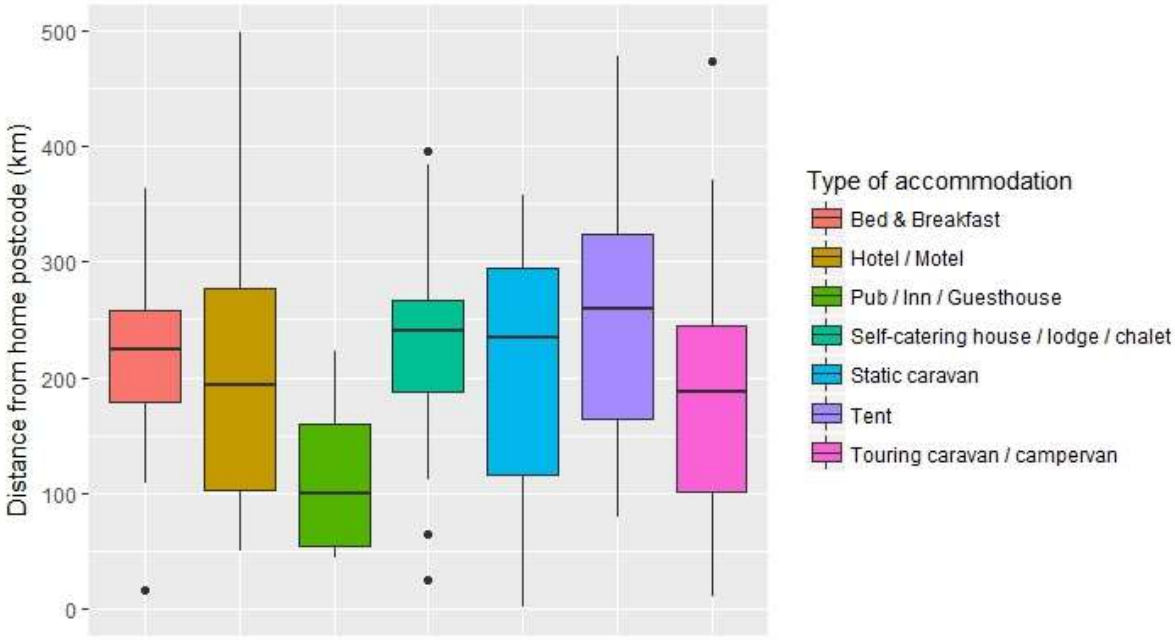
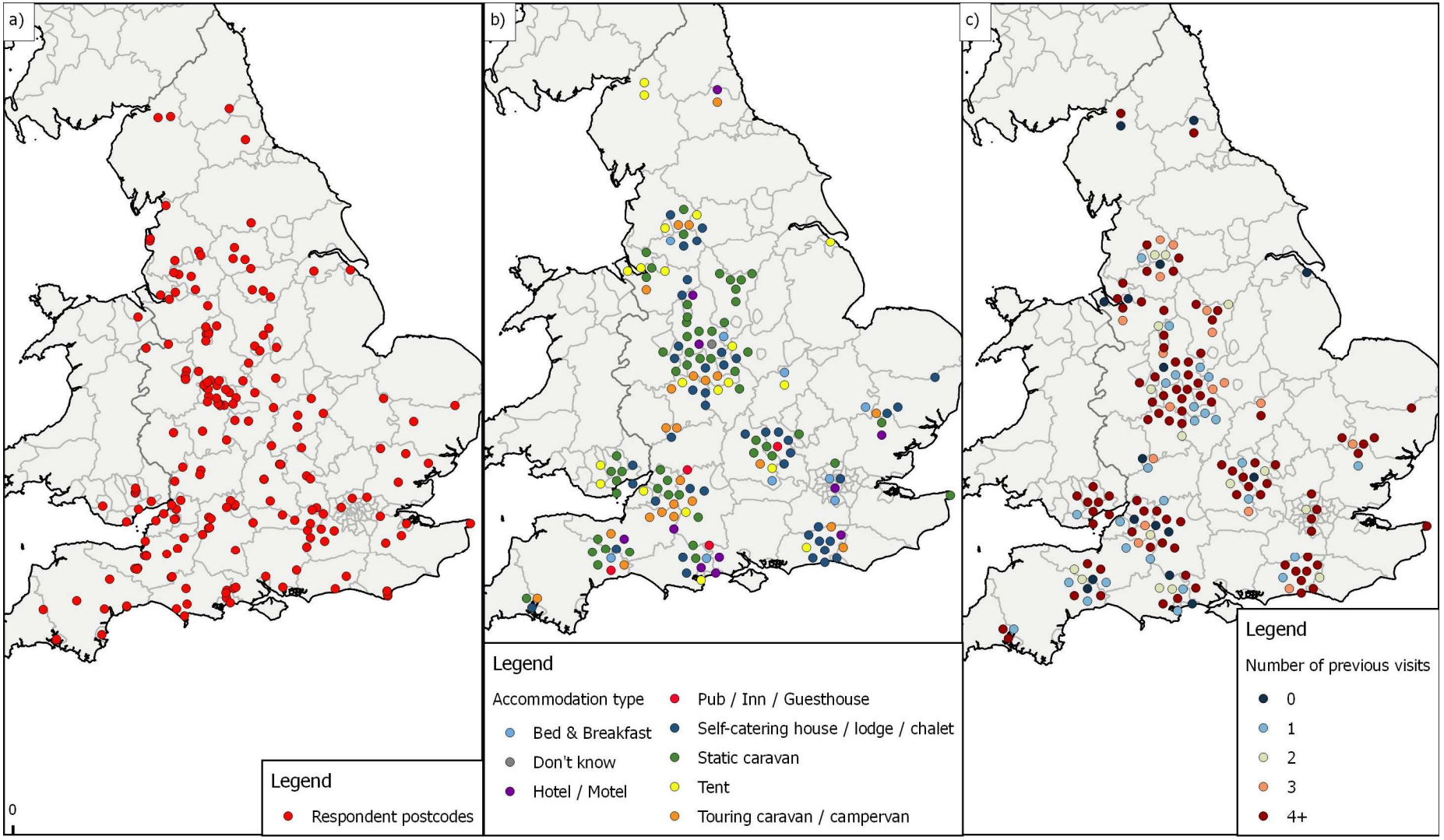


Figure 10: Boxplots to show the range of distances between home postcodes and the accommodation for each respondent separated by accommodation types.

Map 4: Distribution of respondents postcodes shown across the UK (a), and with postcodes offset in concentric rings to show the accommodation type (b) and number of previous visits (c) for each respondent.



Contains Ordnance Survey data © Crown copyright and Database Right 2016. Contains map data © OpenStreetMap contributors. Terms: www.openstreetmap.org/copyright

4. Discussion

4.1 The survey provides an overview of tourist use at the relevant European sites and as such provides useful evidence for future assessment of potential impacts of tourism development in South-east Devon. Here we discuss limitations to the survey and the implications in terms of European sites and Habitat Regulations Assessment.

Limitations

4.2 The survey was established on-line and responses closely monitored to gauge circulation. On-line surveys have the advantage that they provide the interviewee with the opportunity to complete the survey in their own time, allow images and allow detailed questions to be asked in a structured manner. The survey was carefully designed to gather much information yet be quick and simple to complete. As with any online survey there is little control over who completed the questionnaire and we therefore filtered some respondents out of the data analysis – for example those not on holiday. There is likely to be some bias in respondents in that those who did respond are more likely to be those with good computer access and available time to complete the survey.

4.3 It had been hoped that the survey would gather momentum through social media, and we relied initially on promotion through tourist offices and local authority websites etc. However, response rates from this were low. We then promoted the survey by boosting within Facebook. As with any online survey promoted through social media the reach and response rate is focussed towards those who use social media frequently.

4.4 Face-to-face interviews provided a means of boosting the sample and engaging with a wider range of tourists, however the choice of survey locations was dictated by the practicalities of undertaking face-face interviews. Ideally, we would have selected a sample of survey locations based on a data set showing all accommodation providers and sampling based on distance from the European sites and accommodation type. Such an approach was not possible due to the difficulty in identifying all accommodation providers in the area and the need to conduct face-face interviews at locations with a concentration of holiday makers (i.e. single holiday cottages would have been impractical to survey). The selection of locations was also influenced by those where we could get permission to conduct surveys, and many locations were closed until Easter. Within sites themselves there were some challenges in choosing suitable locations to intercept visitors. The geographic spread of the questionnaire responses, as summarised in Map 1, is therefore perhaps not as comprehensive as might be hoped.

4.5 To further boost the survey, we also included some survey locations away from accommodation where there were good chances of intercepting holiday makers, such as the start of the Exe cycle way and along the Exmouth seafront. The choice of such

locations means that some tourists – perhaps those that chose to avoid tourist hotspots might have been less likely to have been interviewed.

4.6 The responses mainly relate to tourists visiting in the summer months. It proved hard to find accommodation venues that were open in the winter and suitable for conducting face-to-face interviews and tourist use appears to be very much concentrated during the summer. This can be seen in Figure 3 which shows England-wide data on the number of holiday nights per month in 2015 (taken from TNS 2016). The figure also shows the breakdown of interviews in this survey, by month when the survey was completed. The summer peak is clearly visible in both datasets.

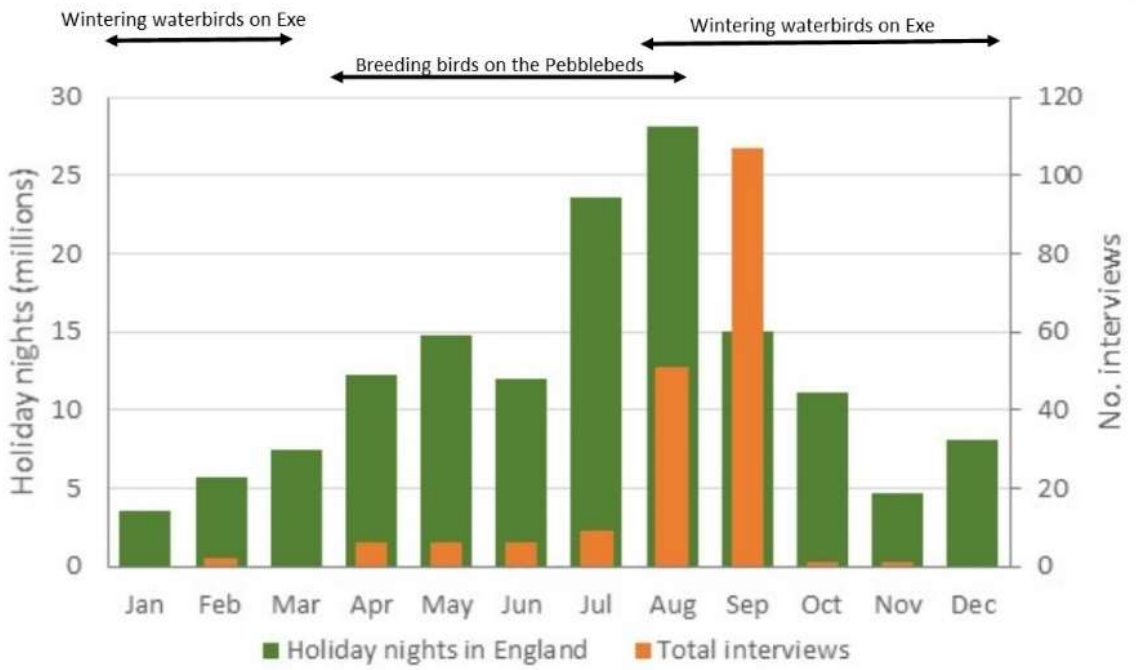


Figure 11: Tourism by month for England (dark green) and months when responses were received for this survey (orange, secondary axis). English data from TNS (TNS 2016). Arrows at top indicate key periods for SPA interest at key European sites.

4.7 We have calculated visit rates to different European sites from different types of tourist accommodation. These visit rates are calculated based on the number of visits interviewees stated they made to the European sites and the length of their stay. We have not accounted for group size in these visit rates. From Figure 6, group sizes in tourist accommodation are often larger than typical residential household occupancy rates[3]. In terms of impact, group size is perhaps not however of particular importance. For foredune habitats (one of the key habitats at Dawlish Warren) the relationship between damage and the amount of footfall is not thought to be linear, with small amounts of footfall having a disproportionate impact (Coombes 2007). Likewise with bird disturbance, there is evidence to show that birds will respond differently to larger groups of people (Beale & Monaghan 2004), but there was no significant effect of group

[3] e.g. Office of national statistics data from 2011 census gives England average occupancy of 2.36

size on the response of birds, i.e. similar responses were observed regardless of the number of people in the group. Group size does not therefore necessarily need to be considered in our calculations and would simply add to the complexity.

4.8 The survey has therefore included a range of approaches to engage with tourists and as such we have maximised the range of people interviewed. We have achieved broad geographic coverage and the survey includes respondents from a range of accommodation types, but is focussed towards the summer months.

Implications in terms of Habitats Regulations Assessment and European Sites

4.9 To date key evidence on tourist use of the sites considered here has come from on-site visitor surveys. In a visitor survey of the Exe Estuary (including Dawlish Warren), conducted during the winter 2010 (Liley, Fearnley & Cruickshanks 2010), 9% of people interviewed were on holiday in the area and staying away from home. Activities undertaken by these tourists were primarily walking and dog walking; 8% of the dogs counted during the survey were associated with the holiday-makers interviewed.

4.10 In a visitor survey of the Pebblebed Heaths, undertaken during the spring and late summer 2015 (Liley, Panter & Underhill-Day 2016) 5% of the people interviewed were tourists, staying away from home. Comparing interviews in the spring to late summer (August) the proportion of holiday makers was higher in August, but not significantly so.

4.11 These two surveys, conducted at the times of year when the European site interest features are perhaps particularly vulnerable to recreation impacts, suggest that tourist use accounts for a relatively small proportion of the access at the sites of interest.

4.12 This does not necessarily mean however that future tourist development can be assumed to have no likely significant effect on the European sites, as changes in the amount or type of tourist accommodation in the area may still have the potential to result in increased recreational use.

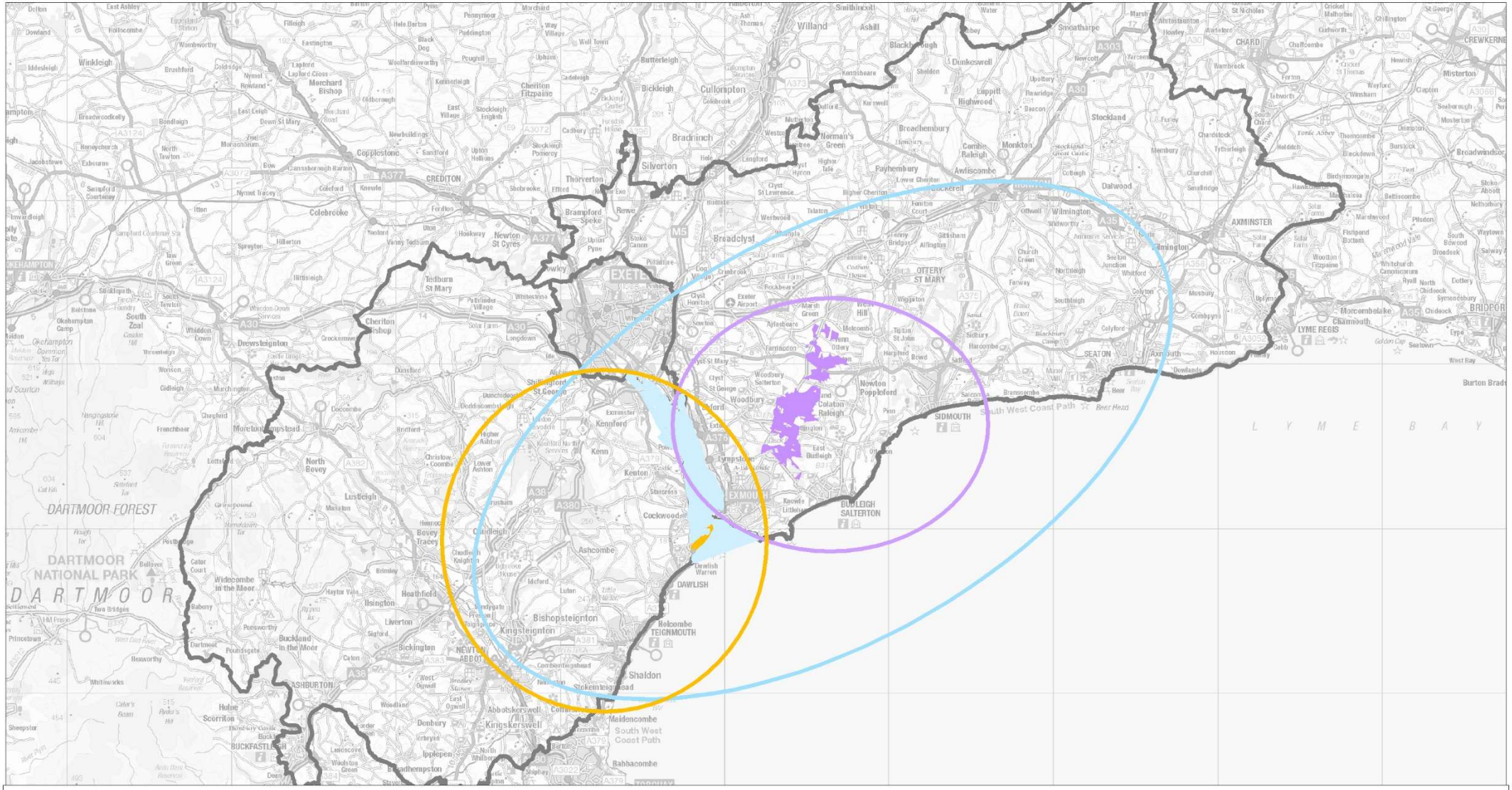
4.13 From the survey results we would highlight the following as relevant to future assessment:

- Tourist use is focussed in the summer months; while relevant to the European site interest features, this is not the time of year when waterbird numbers peak on the Exe Estuary.
- A range of activities were undertaken by respondents during their holiday. Of particular relevance in terms of European site impacts were dog walking (undertaken by 14% of respondents) and watersports (undertaken by 4% of respondents).
- Those respondents who were dog walking were staying in a range of accommodation types (static caravans, self-catering house/lodge/chalet, touring caravan/campervan or tent) and a range of locations.
- Those respondents undertaking watersports were staying at Shaldon and Dawlish Warren and were staying in static caravans, touring caravans/campervans or tents.

4.14 In terms of the geographic catchment and the areas where new tourist development might result in increased access to the European sites, it has not been possible (due to limited sample sizes and spread of responses) to plot visit rates in relation to distance from the European sites. We can however identify broad areas for each European site and these are summarised below, and plotted as approximate and indicative areas in Map 5.

- Dawlish Warren Nature Reserve was primarily visited by tourists staying west of the Exe Estuary and as far as Newton Abbot. East of the Exe Estuary tourists only originated from Topsham and Exmouth.
- The Exe Estuary, even after excluding Exmouth Beach, has a wide draw, extending from Honiton to Newton Abbot.
- The Pebblebed Heaths were primarily visited by tourists staying to the east of the Exe Estuary but there is evidence of visits from people staying as far west as Shaldon and Teignmouth.

Map 5: Approximate tourist catchments for European sites



Contains Ordnance Survey Data. © Crown copyright and database right 2016
Designated site boundaries from the Natural England website. © Natural England .

4.15 Using the information in Table 3 it is possible to compare visit rates from tourist accommodation to typical visit rates from residential dwellings. We have used the results from the postal survey of South-east Devon residents (Cruickshanks & Liley 2012) to generate visit rates from residential properties. We summarise visit rates from holiday accommodation and residential accommodation alongside each other in Table 8. These visit rates in the table do not account for distance – for tourist accommodation the rates have been calculated for a particular geographic area (different for each site, see above and Map 5) while for residential accommodation the rates given are those for the whole of the south-east Devon area included in the 2012 postal survey. For both types of accommodation there will be an effect of distance, i.e. people in accommodation directly adjacent to European sites will visit more frequently than those further away.

Table 8: The visit rate (visits to site per day of stay) for tourists to each site compared to residential rates. Tourist visit rates are taken from Table 3 in this report. Residential visit rates are taken from Cruickshanks & Liley (2012) – see tables 21 and 31 in that report. To calculate the residential visit rates we have used the total visit rates to each site and divided these by 1,296, the number of respondents in the household survey (including those that never visited any of the sites).

Overall visit rate (per 'dwelling' per day)	0.18	0.12	0.07	0.05
Key types of accommodation	Self-catering house/lodge/ chalet, static caravan, touring caravan/ campervan, tent	Hotel/Motel, touring caravan/ campervan, static caravan, Bed & breakfast	Bed & breakfast, touring caravan/ campervan, Pub/Inn/ Guesthouse	Self-catering house/lodge/ chalet
Residential accommodation				
Number of visits per year per household	3.6	14.69	29.46	15.99
				0.04

4.16 The table suggests that for the Exe Estuary and the Pebblebed Heaths, the number of visits for tourist accommodation is similar to that from residential accommodation, in other words a new tourist 'dwelling' would potentially generate a similar number of visits to the given site as a new residential property. For Exmouth beach and Dawlish Warren Reserve the number of visits from tourist accommodation is much higher than that from residential accommodation (per dwelling). For Dawlish Warren Nature Reserve the tourist visit rate is based on accommodation within a limited area which may in part explain the relatively high rate, with the data suggesting around 18x as many visits per 'dwelling' from tourist accommodation when compared to residential accommodation. These tourist visit rates for all locations are primarily based on data from tourists visiting over the summer. This time of year does to some extent coincide with the presence of breeding birds on the heaths and initial arrival/passage of

waterfowl on the Exe Estuary, but is not at the time of year when there are peak numbers of birds on the Exe.

4.17 Currently, planning applications relating to tourism developments are assessed by the local authorities on a case-by-case basis and developments contribute towards European site mitigation as though each tourist unit was a single residential property, with the tariff then adjusted based on typical occupancy. Occupancy data are drawn from SW tourism figures, and for example, if self-catering units have an occupancy of 52% (i.e. occupied for 52% of the year), then the mitigation tariff for a new self-catering unit would be 52% of the cost of a residential property.

4.18 The results from this study suggest that visit rates in tourist accommodation are not always equivalent to residential development, particularly for Exmouth Beach and Dawlish Warren Nature Reserve. The visit rates we have calculated do not include occupancy – for example our estimate that there are 18x more visits per tourist unit per day to Dawlish Warren Nature Reserve compared to residential accommodation relates only to when that tourist unit is occupied. As such, a self-catering unit which was expected to be occupied only half the year would therefore potentially generate around 9x as many visits to Dawlish Warren compared to residential accommodation.

4.19 The results presented here provide a means of setting a tariff for tourist development. The approximate catchments in Map 5 could be simplified such that the area encompassed by the blue line (the Exe catchment) could be split into two, east and west of the estuary. In the area to the west (roughly extending from the estuary as far west as Newton Abbot) tourist development would need to contribute to mitigation relating to both the Exe and Dawlish Warren. For development to the east, new tourist development would need to contribute to mitigation measures on the Exe and the Pebblebeds. Using the tourist visit rates in Table 3, the summed visit rate for Dawlish Warren Nature Reserve and the Exe Estuary is 0.25, which is around 2.75x greater than the equivalent rate for residential accommodation. For the eastern side, the summed tourist visit rate for the Exmouth beach/mudflats, the Exe Estuary and the Pebblebeds is 0.24, 1.5x greater than the equivalent rate for residential accommodation.

4.20 The above figures could therefore be used to calculate a tariff for different types of tourist development (see Table 3), taking occupancy into account (i.e. adjusted down to take into account the amount that each type of tourist dwelling is typically occupied). The tariff would then essentially be treating tourist development as equivalent to residential development and providing the same mitigation. An alternative approach would be to set the tariff based on the costs of mitigation measures that were directly targeted and linked to tourist development and separate to the mitigation for residential development. Such an approach would allow mitigation to be targeted and dovetailed to tourist development, but would mean a separate scheme. A separate scheme would have the disadvantage of being costly to establish and run, and the administrative costs may be excessive. It may also be difficult to forecast future tourist development, which would mean setting a tariff would be complicated.

4.21 Our understanding of the impacts on the European sites of tourist use compared to local residents is limited. Clearly there is likely to be much overlap, and measures such as wardening, interpretation, signage etc. will apply to both tourists and residents. There may well therefore be merit in following a simple approach to mitigation delivery, whereby mitigation for tourism and residential development are not separated. From the results of this survey many tourists have visited the area before, often many times and only 11% were on their first visit. As such, staying-tourists will have a knowledge of the local area and where to go, perhaps broadly similar to residents. The activities undertaken by staying tourists are different from local residents. For example, across all respondents, the level of dog walking (undertaken by 14% of respondents) and watersports (4% of respondents) was relatively low. For example, in the household survey (Cruickshanks & Liley 2012), dog walking was undertaken by 24% of respondents and watersports by 18%. These are both activities of particular relevance in terms of disturbance impacts.

4.22 We therefore suggest that the approach of setting a tariff for tourism mitigation, based on the residential tariff, is appropriate and mitigation is most likely to be most effective and efficient if delivered together, i.e. with the mitigation for residential housing. There is scope to improve our understanding of the relative impacts of tourists compared to local residents and monitoring of the numbers of tourist units coming forward will be necessary.

5. References

Beale, C.M. & Monaghan, P. (2004) Human disturbance: people as predation-free predators? *Journal of Applied Ecology*, **41**, 335–343.

Coombes, E.G. (2007) *The Effects of Climate Change on Coastal Recreation and Biodiversity*. University of East Anglia, School of Environmental Sciences, Norwich.

Cruickshanks, K. & Liley, D. (2012) *East Devon, Exeter and Teignbridge Household Survey and Predictions of Visitor Use of Greenspaces*. Footprint Ecology.

Lake, S. (2010) *An Assessment of Recreational Impacts at Dawlish Warren SAC*. Footprint Ecology / Teignbridge District Council.

Liley, D., Cruickshanks, K., Waldon, J. & Fearnley, H. (2011) *Exe Disturbance Study*. Footprint Ecology / Exe Estuary Management Partnership.

Liley, D., Fearnley, H. & Cruickshanks, K. (2010) *Exe Visitor Survey, 2010*. Footprint Ecology / Teignbridge District Council.

Liley, D., Hoskin, R., Lake, S., Underhill-Day, J. & Cruickshanks, K. (2014) *South-East Devon European Site Mitigation Strategy*. Footprint Ecology.

Liley, D., Panter, C. & Underhill-Day, J. (2016) *East Devon Pebblebed Heaths Visitor Management Plan*. Unpublished report for East Devon District Council.

TNS. (2016) *GB Tourist Statistics 2015*.

Appendix 1: Survey Questionnaire (face-face version, adapted and shortened from web version)

Hello. I am undertaking a survey on behalf of local authorities on the experiences of holidaymakers and visiting the countryside in the Teignbridge and East Devon areas. Could you please spare me a few minutes to answer some questions. Anyone who completes the questionnaire has the option to enter a prize draw.

Q1 Can I just confirm, are you currently on holiday?

- ◯ Yes
- ◯ No
- ◯ Don't know/uncertain

About your holiday and accommodation

Q2 Are you **[Tick closest answer - single response only]**

- ◯ **On holiday or short break, staying in Teignbridge or East Devon,** if no
- ◯ **Visiting family, staying in Teignbridge or East Devon** if no
- ◯ **On a day trip, staying outside Teignbridge / East Devon** if no
- ◯ **If none of the above, how would you describe your visit to this area?**

Further details

Q3 **What type of accommodation are you staying in?** [Tick closest answer - single response only]

- ◯ Hotel / Motel
- ◯ Bed & Breakfast
- ◯ Pub / Inn / Guesthouse
- ◯ Self-catering house / lodge / chalet
- ◯ Second home
- ◯ Home of friend/relative
- ◯ Static caravan
- ◯ Touring caravan / campervan
- ◯ Tent
- ◯ Yurt / pod / safari tent / glamping
- ◯ Other, please detail:

Further details

Q4 What is the name of the accommodation site / location (or postcode) where you are staying or recently stayed in Teignbridge / East Devon?

Q5 What is the name of the nearest village or town to your accommodation?

Q6 **How many nights are you staying in Teignbridge or East Devon for?**

- ◯ 0
- ◯ 1
- ◯ 2
- ◯ 3
- ◯ 4
- ◯ 5
- ◯ 6
- ◯ 7
- ◯ 8+

Q7 How many times have you stayed at this site / location or nearby before?

- ◯ 0
- ◯ 1
- ◯ 2
- ◯ 3
- ◯ 4+

Q8 How many people aged over 65 are in your group on this holiday?
- ○ 0
- ○ 1
- ○ 2
- ○ 3
- ○ 4+

Q9 How many people aged between 41 and 65 are in your group on this holiday?
- ○ 0
- ○ 1
- ○ 2
- ○ 3
- ○ 4+

Q10 How many people aged between 18 and 40 are in your group on this holiday?
- ○ 0
- ○ 1
- ○ 2
- ○ 3
- ○ 4+

Q11 How many people aged under 18 are in your group on this holiday?
- ○ 0
- ○ 1
- ○ 2
- ○ 3
- ○ 4+

Q12 How many dogs have you and your group with you on this holiday?
- ○ 0
- ○ 1
- ○ 2
- ○ 3
- ○ 4+

Activities you did while in Teignbridge / East Devon

Q13 **What activities will you (and your holiday group) do while on this holiday?** do not prompt, tick **all** that apply]
- ☐ Beach holiday
- ☐ Wildlife watching / natural history / scenery
- ☐ Family activities
- ☐ Amusements / entertainments
- ☐ Watersports
- ☐ Cycling / mountain biking
- ☐ Dog walking
- ☐ Walking
- ☐ Running / jogging
- ☐ Fishing
- ☐ Golf
- ☐ Other, please detail:

Further details

Q14 **Roughly how many times will you (or someone in your holiday group) have visited the following locations during your holiday?** [Work through the list and for each ask **how many times will you have visited** XX?]

	0	1	2	3	4+
Dawlish Warren beach	○	○	○	○	○
Dawlish Warren nature reserve	○	○	○	○	○
Exmouth beach or mudflats	○	○	○	○	○
Exe estuary (other location than above)	○	○	○	○	○
Pebblebed Heaths / Woodbury Common (and / or adjacent commons)	○	○	○	○	○

More about the activities you took part in on your holiday

Q15 Will you (or someone in your holiday group) have done any watersports during the holiday (Watersports includes sailing, boating, windsurfing, kayaking, etc.)**?**
- ○ Yes
- ○ No

Q16 **What kind of watersports will you (or someone in your holiday group) have done?** [do not prompt, tick **all** that apply]
- ☐ Windsurfing / kite-surfing
- ☐ Canoeing / kayaking / paddle boarding
- ☐ Jet-skiing
- ☐ Dinghy / yacht sailing
- ☐ Motor boating / power boating
- ☐ Other, please detail

Further details

Q17 **At which sites will you (or someone in your holiday group) have done watersports?** [do not prompt, tick **all** that apply]
- ☐ Dawlish Warren
- ☐ Exmouth
- ☐ Exe estuary (up-river between Exmouth / Dawlish and Exeter)
- ☐ Exe estuary - offshore
- ☐ Teign estuary / river
- ☐ Dart river
- ☐ Axe estuary / river
- ☐ Torbay (Torquay, Paignton, etc.)
- ☐ Exeter canal
- ☐ Other, please detail

Further details

Q18 **How many times will you (or someone in your holiday group) have done watersports in the following locations during your recent holiday?** [read out each in turn, ask: **How many times will you have done watersports at XX?** tick closest answer]

	0	1	2	3	4+
Dawlish Warren	○	○	○	○	○
Exmouth	○	○	○	○	○
Exe estuary (up-river between Exmouth / Dawlish and Exeter)	○	○	○	○	○
Exe estuary - offshore	○	○	○	○	○
Teign estuary / river	○	○	○	○	○
Dart river	○	○	○	○	○
Axe estuary / river	○	○	○	○	○
Torbay (Torquay, Paignton, etc.)	○	○	○	○	○
Exeter canal	○	○	○	○	○
Other	○	○	○	○	○

Q19 How long do you (or someone in your holiday group) typically spend each time you go out doing watersports during your holiday? **do not prompt, tick closest**

- ○ Less than 30 minutes
- ○ Between 30 minutes and 1 hour
- ○ 1 - 2 hours
- ○ 2 - 3 hours
- ○ More than 3 hours

Q20 **Will any of the the watersports activity be part of an organised trip or with a specific provider?**

- ○ No
- ○ Yes, please detail

Further details

Q21 **Was the guidance appropriate from the provideer appropriate for you to know where you are allowed and not allowed to go when doing watersports in the Exe?**

- ○ Yes
- ○ No
- ○ Don't know/unsure

Q22 Will you (or someone in your holiday group) have gone fishing during your holiday?

- ○ Yes
- ○ No

Q23 **What type of fishing will you (or someone in your holiday group) have done ?** [Do not prompt, tick **all** that apply]

- ☐ Fishing from the shore
- ☐ Fishing from a boat
- ☐ Bait collecting
- ☐ Shellfish collecting
- ☐ Other, please detail

Further details

Q24 **At which sites will you (or someone in your holiday group) have gone fishing** [Do not prompt, tick **all** that apply]

- ☐ Dawlish Warren
- ☐ Exmouth
- ☐ Exe estuary (up-river between Exmouth / Dawlish and Exeter)
- ☐ In the sea near the Exe (offshore)
- ☐ Teign estuary / river
- ☐ Other, please detail

Further details

Q25 **How many times will you (or someone in your holiday group) have gone fishing in the following locations during your recent holiday?** [read out each in turn, ask: **How many times will you have gone fishing at XX?** tick closest answer]

	0	1	2	3	4+
Dawlish Warren	○	○	○	○	○
Exmouth	○	○	○	○	○
Exe estuary (up-river between Exmouth / Dawlish and Exeter)	○	○	○	○	○
In the sea near the Exe (offshore)	○	○	○	○	○
Teign estuary / river	○	○	○	○	○
Other	○	○	○	○	○

Q26 **How long do you (or someone in your holiday group) typically spend each time you go fishing while on holiday?** [Do not prompt, tick closest answer]

- ○ Less than 30 minutes
- ○ Between 30 minutes and 1 hour
- ○ 1 - 2 hours
- ○ 2 - 3 hours
- ○ More than 3 hours

Q27 Will you (or someone in your holiday group) go mountain biking / cycling during your holiday?

- ○ Yes
- ○ No

Q28 **At which site(s) will you (or someone in your holiday group) have gone mountain biking / cycling?** [Do not prompt, tick all that apply]

- ☐ Haldon Forest
- ☐ Pebblebed Heaths / Woodbury Common (and / or adjacent commons)
- ☐ Exe estuary cycle trail
- ☐ Dartmoor
- ☐ Mamhead (near Haldon Forest)
- ☐ Other, please detail

Further details

Q29 **How many times will you (or someone in your holiday group) have gone mountain biking / cycling in the following locations during your recent holiday?** [read out each in turn, ask: **How many times will you have gone cycling at XX?** tick closest answer]

	0	1	2	3	4+
Haldon Forest	○	○	○	○	○
Pebblebed Heaths / Woodbury Common (and / or adjacent commons)	○	○	○	○	○
Exe estuary cycle trail	○	○	○	○	○
Dartmoor	○	○	○	○	○
Mamhead (near Haldon Forest)	○	○	○	○	○
Other	○	○	○	○	○

Q30 **How long do you (or someone in your holiday group) typically spend when out mountain biking / cycling while on holiday?** [Do not prompt, tick closest answer]

- ○ Less than 30 minutes
- ○ Between 30 minutes and 1 hour
- ○ 1 - 2 hours
- ○ 2 - 3 hours
- ○ More than 3 hours

Q31 Will you (or someone in your holiday group) have gone for walks with a dog on this holiday?

- ◯ Yes
- ◯ No

Q32 **Where will you (or someone in your holiday group) have walked with a dog?** [Do not prompt, tick **all** that apply]

- ☐ Dawlish Warren beach
- ☐ Dawlish Warren sand dunes
- ☐ Dawlish Warren nature reserve
- ☐ Exe estuary trail
- ☐ Exmouth beach
- ☐ Teignmouth beach
- ☐ Pebblebed Heaths / Woodbury Common (and / or adjacent commons)
- ☐ Dartmoor
- ☐ Other, please detail

Further details

Q33 **How many times will you (or someone in your holiday group) have walked your dog in the following locations during your recent holiday?** [read out each in turn, ask: **How many times will you have walked your dog at XX?** tick closest answer]

	0	1	2	3	4+
Dawlish Warren beach	◯	◯	◯	◯	◯
Dawlish Warren sand dunes	◯	◯	◯	◯	◯
Dawlish Warren nature reserve	◯	◯	◯	◯	◯
Exe estuary trail	◯	◯	◯	◯	◯
Exmouth beach	◯	◯	◯	◯	◯
Teignmouth beach	◯	◯	◯	◯	◯
Pebblebed Heaths / Woodbury Common (and / or adjacent commons)	◯	◯	◯	◯	◯
Dartmoor	◯	◯	◯	◯	◯
Other	◯	◯	◯	◯	◯

Q34 **How long do you (or someone in your holiday group) typically spend when you go out for a walk with a dog while on holiday?** [Do not prompt, tick closest answer]

- ◯ Less than 30 minutes
- ◯ Between 30 minutes and 1 hour
- ◯ 1 - 2 hours
- ◯ 2 - 3 hours
- ◯ More than 3 hours

Q35 Will you (or someone in your holiday group) have gone for walks (without a dog) during your holiday?

- ◯ Yes
- ◯ No

Q36 **Where will you (or someone in your holiday group) have gone for a walk (without a dog)?** [Do not prompt, tick **all** that apply]

- ☐ Dawlish Warren beach
- ☐ Dawlish Warren sand dunes
- ☐ Dawlish Warren nature reserve
- ☐ Exe estuary trail
- ☐ Exmouth beach
- ☐ Teignmouth beach
- ☐ Pebblebed Heaths / Woodbury Common (and / or adjacent commons)
- ☐ Dartmoor
- ☐ Other, please detail

Further details

Q37 **How many times did you (or someone in your holiday group) go for a walk (without a dog) in the following locations during your recent holiday?** [read out each in turn, ask: **How many times will you have walked without a dog at XX?** tick closest answer]

	0	1	2	3	4+
Dawlish Warren beach	◯	◯	◯	◯	◯
Dawlish Warren sand dunes	◯	◯	◯	◯	◯
Dawlish Warren nature reserve	◯	◯	◯	◯	◯
Exe estuary trail	◯	◯	◯	◯	◯
Exmouth beach	◯	◯	◯	◯	◯
Teignmouth beach	◯	◯	◯	◯	◯
Pebblebed Heaths / Woodbury Common (and / or adjacent commons)	◯	◯	◯	◯	◯
Dartmoor	◯	◯	◯	◯	◯
Other	◯	◯	◯	◯	◯

Q38 **How long do you (or someone in your holiday group) typically spend when you go for a walk (without a dog) while on holiday?** [Do not prompt, tick closest answer]

- ◯ Less than 30 minutes
- ◯ Between 30 minutes and 1 hour
- ◯ 1 - 2 hours
- ◯ 2 - 3 hours
- ◯ More than 3 hours

Q39 If you (or someone in your holiday group) have visited the **Dawlish Warren or Exmouth beaches or nature reserves, which of the following activities did you do?** [Do not prompt, tick **all** that apply]

- ☐ Sunbathe / relax
- ☐ Play on beach
- ☐ Paddle / swim
- ☐ Explore dunes
- ☐ Explore nature reserve
- ☐ Walk dog on beach
- ☐ Walk dog on nature reserve
- ☐ Watch birds / wildlife
- ☐ Visit the Dawlish Warren Visitor Centre
- ☐ Visit a bird hide
- ☐ Rock-pooling
- ☐ Picnic / BBQ
- ☐ Visit Dawlish Warren amusement arcades
- ☐ Play golf at Dawlish Warren
- ☐ Other, please detail

Further details

Q40 **As someone who has or will walk or cycle on the Pebblebed Heaths / Woodbury Common, would you support the following suggested measures to protect wildlife and limit environmental damage?** Please give a score from 1 to 5, giving a score of 3 if you have no particular opinion about the measure, 5 would indicate you strongly support the measure, and a score of 1 would indicate you do not support the measure at all.

	1 Don't support at all	2	3 No opinion	4	5 Strongly support
More dog bins	○	○	○	○	○
Routes promoted for mountain bikes, horse riding, etc.	○	○	○	○	○
More interpretation relating to wildlife and heritage interest	○	○	○	○	○
Boardwalks or surfaced paths in wet areas	○	○	○	○	○
Greater warden presence	○	○	○	○	○
Voluntary parking charges	○	○	○	○	○
Yearly parking permit (paid) allowing parking on any Pebblebeds site	○	○	○	○	○
Compulsory parking charges	○	○	○	○	○
Closure of some parking areas	○	○	○	○	○
Codes of conduct for different user groups	○	○	○	○	○
Enforcement of dogs on leads March-July	○	○	○	○	○
Enforcement relating to dog fouling	○	○	○	○	○
Improved surfacing to some car-parks	○	○	○	○	○

Q41 **As someone who has or will visit Dawlish Warren beach / nature reserve and / or Exmouth beach / estuary during your holiday, would you support the following suggested measures to protect wildlife and limit environmental damage?** Please give a score from 1 to 5, giving a score of 3 if you have no particular opinion about the measure, 5 would indicate you strongly support the measure, and a score of 1 would indicate you do not support the measure at all.

	1 Don't support at all	2	3 No opinion	4	5 Strongly support
New signs and interpretation boards (with revised information on wildlife, routes, watersports, etc.)	○	○	○	○	○
New leaflets	○	○	○	○	○
Improved path network	○	○	○	○	○
New codes of conduct	○	○	○	○	○
Revision of byelaws on watersports in the Exe Estuary	○	○	○	○	○
Clearer zoning for watersports	○	○	○	○	○
Dog control orders to ensure dogs are on the lead on mudflats	○	○	○	○	○
Creation of screening to protect roosting birds from disturbance in sensitive areas	○	○	○	○	○
Increased parking charges in sensitive areas to reduce bird disturbance	○	○	○	○	○
Byelaws preventing fires and BBQs in the buffer zone (Dawlish Warren)	○	○	○	○	○
Landscaping / fencing around Dawlish Warren nature reserve car park (with clear access to the visitor centre)	○	○	○	○	○
Re-siting of visitor centre to main access point	○	○	○	○	○

Q42 Did you know that Dawlish Warren has an important National Nature Reserve?
- ○ Yes
- ○ No
- ○ unsure/don't know

Q43 Did you know that the Exe Estuary is globally important for wild birds?
- ○ Yes
- ○ No
- ○ unsure/don't know

Q44 Did you know that the Pebblebed Heaths / Woodbury Common are internationally important for wildlife?
- ○ Yes
- ○ No
- ○ unsure/don't know

Q45 Did you know that there are parts of Dawlish Warren beach / nature reserve where dogs are not allowed or only be allowed on leads)?
- ○ Yes
- ○ No
- ○ unsure/don't know

Q46 Did you know that dog owners are required by law to pick up dog fouling on all land where the public have access in Devon?
- ○ Yes
- ○ No
- ○ unsure/don't know

Q47 Did you know that there is a 10 knots speed limit in the Exe Estuary for watersports?
- ○ Yes
- ○ No
- ○ unsure/don't know

Q48 Did you know that BBQs and fires are not allowed anywhere on Dawlish Warren beach or nature reserve?
- ○ Yes
- ○ No
- ○ unsure/don't know

Q49 How well do you think these rules are advertised to visitors? Would you say they are advertised very well, fairly well, not very well or badly?
- ○ Very well
- ○ Fairly well
- ○ Not very well
- ○ Badly

Q50 How could rules be advertised more effectively?

Other questions about your holiday

Q51 **What was the weather like during your holiday?** [Do not prompt, tick one only]
- ○ Mainly sunny with very little or no rain
- ○ Mainly sunny - rained on less than half of the days
- ○ Variable - rained on about half the days
- ○ Rained most days
- ○ Rained every day

Q52 **How did you get to your holiday destination?** [If necessary prompt with: **What form of transport did you use?** Tick one - the main form of transport only.]
- ○ Car / van
- ○ Public transport
- ○ Bicycle
- ○ On foot
- ○ Other, please detail

Further details:

Q53 **When planning your trip, which source(s) did you consult?** [Do not prompt, tick **all** that apply]
- ☐ Articles / advertisements in the national media
- ☐ Articles / advertisements in the local media
- ☐ VisitDevon / other tourism website
- ☐ Local information website (Teignbridge, East Devon, etc.)
- ☐ TripAdvisor
- ☐ Other website
- ☐ Travel guide
- ☐ Word of mouth / recommendations
- ☐ Social media (Facebook, Twitter, etc.)
- ☐ Visit to local tourist information office
- ☐ Family / friends living locally
- ☐ Other, please detail

Further details

Q54 **Please tell us your full home postcode** if necessary add: **this is to help us find out how far visitors travel to go on holiday in Teignbridge / East Devon, and can't be used to identify individual dwellings**

Q55 Do you have any other comments about your holiday in this area and visits to the countryside?

You have now completed the survey. Thank you very much for your time and participation.

Prize draw entry

Q56 **If you would like to be entered into a prize draw for a £100 high street gift voucher (Love2shop) please can I have your email address below** (record postal address/phone no if no email) Add if necessary: **contact details will only be used for the prize draw and will not be passed on to third parties:**

Q57 SURVEYOR: use this box to record any additional details/notes or ammendments relating to the interview

Q58 What was the gender of the interviewee?

- ◯ Male
- ◯ Female
- ◯ Transgender

In which case thank you for your time, the questionnaire only applies to holidaymakers.

Appendix 2: Number of days at different accommodation types

The estimated typical number of days respondents were staying for at each accommodation type, considering those staying in the defined catchments for the sites. Also listed are the typical number of visits respondents made to the each of the four sites during their stay.

type								
Static caravan [62]	7.0	1.3	7.2	0.8	7.1	0.4	7.6	0.1
Self-catering house / lodge / chalet [46]	7.9	1.9	7.9	0.4	7.9	0.5	9.0	2.0
Touring caravan / campervan [30]	7.7	1.3	7.8	1.6	7.6	0.7	7.3	0.4
Tent [21]	7.2	1.0	7.0	0.5	7.0	0.4	6.5	0.5
Hotel / Motel [14]	6.9	0.6	6.0	2.1	5.9	0.1	5.6	0.3
Bed & Breakfast [11]	5.3	0.3	5.2	0.8	5.4	1.3	4.0	0.0
Pub / Inn / Guesthouse [4]			5.0	0.3	5.0	0.5	4.5	0.0
Total	7.3	1.3	7.2	0.9	7.2	0.5	6.6	0.4