Report

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Pagham Harbour Visitor Survey

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Summary

This report presents the results of on-site visitor surveys of Pagham Harbour SPA. The surveys were carried out to establish how the Harbour and surrounding area is currently used by visitors for recreation during the winter and summer months. The survey was commissioned by Chichester District Council to inform the Habitat Regulations Assessment of a new Local Plan, with the issue of concern being the potential links between increased development leading to increased access and disturbance impacts to the SPA/Ramsar interest features within the harbour.

The visitor surveys were conducted in January and February 2012 and were repeated in June and July 2012 to assess the level and type of visitor use at three selected locations on the western side of the harbour including the Visitor Centre, the Church Norton car park and the foot access point at Greenlease Farm. The interviews were structured to gather generic and site specific information and visitor details to help us build a picture of who, where, when and why people use the site. Each location was surveyed in two periods (winter and summer) for eight 2 hour sessions, four sessions were conducted at a weekday and on a weekend day for each location which totalled 92 visitor monitoring hours. A total of 575 visitors were recorded entering and leaving the survey locations and 273 visitor groups were interviewed (126 in winter and 147 in summer). The interview data represents the visiting patterns of 508 people and their 154 dogs.

Most of the visitors to the site travelled from home (84%) and of those visitors 77% spent between 1 and 2 hours on site. In the winter, visitors spent more time at the Visitor Centre and made the shortest trips to Greenlease Farm. In the winter, most visitors stated that they visit the site equally all year (73%) compared to 43% of summer visitors. The highest number of interviews was conducted at Church Norton where the number of people recorded entering the site was 40% higher compared to Greenlease Farm. Visitor numbers were typically higher on weekend days than weekdays.

Visitors undertook a relatively limited range of activities with dog walking, wildlife watching and walking as the three most popular. The highest proportion of visitors were dog walking (35%) as their main activity and a further 33% were walking and 22% were wildlife watching which together, account for 90% of the main activity responses. Wildlife watching was more popular in the winter surveys with 30% stating this as their main activity compared to 14% in the summer. Furthermore, dog walking was the main activity of 40% of interviewed visitors in the winter compared to 30% in the summer. The most popular locations for wildlife watching were the Visitor Centre in the summer and Church Norton in the winter whilst dog walking was most popular at Greenlease Farm in both survey periods. The majority of winter visitors' choice of location was most influenced by a particular wildlife interest – usually bird watching (27% of responses) closely followed by the fact that the site is 'close to home' (25%). In the summer, 'close to home' was the most popular reason influencing the visits (45%). The main modes of transport used to access visit locations were by car/van (68%) or on foot (27%).

The home postcodes of visitors were used to identify the linear distance between the survey location and the visitors home and we found 90% of winter visitors who arrived by foot lived within 2.7km of their visit location while 50% of winter visitors who arrived by car lived within 49.8km of

their visit location. In the summer survey visitors on foot travelled further with 90% living within 3.5km and only 66% of summer visitors lived within 75km. When looking at postcodes of visitors in terms of settlements, the highest proportion of local visitors lived within Selsey (38% of winter postcodes and 50% in the summer). In the winter survey only 6% lived in Chichester and this rose to 10% in the summer.

Route information showed that in the winter, neither activity nor visit location had a significant effect on route length although the longest routes recorded were by cyclists and joggers. In the summer there was a significant difference in route lengths with walkers and joggers producing the longest routes compared to dog walkers and wildlife watchers. Similarly there was no difference between route lengths at the three sites in the winter survey whilst the summer survey showed that the longest routes were recorded at Greenlease Farm. We also identified that overall 33% of visitor routes strayed from the path network and crossed onto the intertidal areas. More people walk on the mudflats in the winter compared to the summer and winter visitors were most likely to remain on paths when visiting the Visitor Centre whilst visitors to Greenlease Farm were most likely to leave paths as the access point leads straight on to the beach.

The route data were used to generate intensity use maps and the busiest areas were at the Visitor Centre and along the coast towards Church Norton and in the summer the higher levels of use extend along the seafront towards Selsey.

Summary: Key points

Visitor numbers, patterns and activities visiting patterns:

- Three survey locations on the western side of the harbour were surveyed for 16 hours each (eight hours on a week day and eight hours on a weekend day) between 21st January and 4th February 2012 and this was repeated 26th June and 29th June - 1st July (96 survey hours in total).
- 273 groups of visitors were interviewed (126 winter, 147 summer) representing information from 508 people with 154 dogs.
- In total 575 visitors (272 winter and 303 summer) in 311 groups were recorded entering the site and hence interviews captured 88% of the visitors.
- 71% of the interviewees across both survey periods were male.
- The highest number of interviews was conducted at Church Norton.
- 42% of interviewed groups in the winter and 35% in the summer were accompanied by at least one dog.
- 84% (230) interviewed groups were local residents who made their visit from home (90.5% in the winter).
- Visitors from home made up 90% of interviewees in the winter and 79% in the summer.
- Holiday makers made up 19% of interviewees in the summer compared to 3% in the summer.
- 77% of visitors travelling from home spent less than an hour or between 1 and 2 hours at the harbour with the shortest visits taking place at Greenlease Farm.
- 73% of winter interviewees stated they visit the area equally all year compared to 43% in the summer.
- 20% of visitor groups made their trip 1-3 times per week, 16% visited most days and 8% visited daily with daily winter visitors at 13% compared to 5% in the summer.
- 40% of winter visitors were dog walking and the majority of dog walks take place at the Visitor Centre and Greenlease Farm.
- 41% of summer visitors were walking compared to 22% of winter visitors.
- Wildlife watching was most popular in the winter with 30% of interviewees were wildlife watching/bird watching and the majority of this activity takes place at Church Norton.
- 14% of summer visitors were wildlife watching.
- Church Norton was the busiest location with 40% more people recorded entering compared to Greenlease Farm.
- 27% of winter visitors stated that a particular wildlife interest and 25% stated that closeness to home was the main motivation for visiting.
- 45% of summer visitors stated that closeness to home was the most important reason for visiting,
- 70% of winter visitors and 26% of summer visitors stated that nothing could make another site attractive for them.

Travel and distance to survey locations:

- 73% of winter visitors and 65% of summer visitors travelled to their visit location by car or van.
- 25% of winter visitors and 29% of summer visitors arrived by foot and 2% (winter) and 5% (summer) arrived by bicycle.
- The highest proportion of car visitors in the winter was recorded at Church Norton and at the Visitor Centre in the summer.
- 41% of visitor postcodes were within the settlement boundary of Selsey.
- 94% of winter visitors to Greenlease Farm lived within or south of Chichester.
- Visitors lived, on average, 18.9km from the location where they were surveyed on the harbour (linear distance).
- Wildlife watching attracts visitors from furthest afield with a median travel distance of 49.8km in the winter

and 26.1km in the summer.

- 75% of winter dog walkers live within 3.3km of the site and 5.4km for summer dog walkers.
- Ninety percent of winter visitors and 66% of summer visitors by car lived within 75km and 90% of winter visitors by foot lived within 2.7km compared to 3.5km in the summer.
- 61% of winter visitors on foot visit the harbour most days or daily compared to 47% in the summer.

Visitor routes:

- The length of a visitor's route did not vary significantly between the survey locations or between different activity types in the winter.
- Summer routes were shortest at the Visitor Centre and longest at Greenlease Farm.
- 56% of winter visitors stated that they left the paths and walked on mudflats or open beach and 42% of these visitors were accompanied by at least one dog.
- Only 14% of summer visitors stated that they left the paths.
- The busiest areas of the site are at the visitor centre and along the shore towards Church Norton. Also the short loop at Church Norton and the paths which link inland towards Selsey.

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1. Introduction

Overview

1.1 This report provides the results of onsite visitor surveys conducted in two periods: winter (January and February 2012) and summer (June and July 2012) at three sites around Pagham Harbour. This visitor report was commissioned to inform the Habitat Regulations Assessment of a new local plan, with the issue of concern being the potential links between increased development leading to increased access and disturbance impacts to the SPA/Ramsar interest features.

Pagham Harbour SPA/Ramsar/SSSI/LNR

1.2 Pagham Harbour is a well known and much loved local nature reserve on the West Sussex coast, enjoyed by people in the Chichester area with the site attracting many thousands of birds throughout the year. The visitor experience at Pagham Harbour is enhanced by the presence of a small visitor centre, hides and good access around the site. People visit the harbour to enjoy the scenery, watch the birds and walk their dog, often following the nature trail or heading out to the hides. Boating activities, water sports, fishing and bait digging are only allowed by permit.

1.3 Pagham Harbour is classified as a Special Protection Area (SPA) for its populations of birds that are rare or vulnerable in a European context (Map 1). The European wildlife designation recognises the international importance of the Harbour for its extensive saltmarsh and intertidal mudflats offering vital feeding grounds for a range of water birds, particularly over winter, along with its dynamic shingle areas offering perfect breeding sites for terns. The bird interest features for Pagham Harbour SPA are therefore as follows: Pagham Harbour qualifies under Article 4.1 of the Birds Directive by supporting breeding populations of Little Tern *Sterna albifrons*, Common Tern *Sterna hirundo*, Wintering populations of Ruff *Philomachus pugnax.* Pagham Harbour qualifies under Article 4.2 of the Birds Directive by supporting migratory (overwintering) populations of Dark-bellied Brent Goose *Branta bernicla bernicla.* Pagham Harbour qualifies under Article 4.2 of the Birds Directive, as identified by the SPA Review of 2001, by supporting migratory (overwintering) populations of Pintail *Anas acuta.*

1.4 Pagham Harbour is also listed as a Ramsar site, a wetland site of international importance, again specifically for its water birds. Species specifically identified on the Ramsar Information Sheet are: Dark-bellied Brent Goose *Branta bernicla bernicla* and Ruff *Philomachus pugnax.*

1.5 Pagham Harbour has been notified as a Site of Special Scientific Interest (SSSI), which makes it a site of national wildlife importance. The SSSI notification takes into account the nationally important habitats in and around the harbour, hosting rare communities of plants and invertebrates, as well as supporting the wintering wildfowl and waders. In terms of avian interest features, the SSSI notification refers to 120 species of bird overwintering at the site. Specific reference is made to

pintail, ringed and grey plover and black-tailed godwit, ruff, brent goose, oystercatcher, shelduck and redshank.

1.6 The SSSI recognises the geological and geomorphological interest at the site, including the shingle spit landform and shingle movements. The site is highlighted for its excellent example of weed wafting of shingle in coastal sediment budgets. The palaeobotany of the site, with 130 species having been found within plant fossils, is also a geological feature for which the site is notified. Invertebrate interest includes the sand dart *Agrotis ripae*, Matthew's wainscot moth *Mythimna favicolor* and the long-winged conehead grasshopper *Conocephalus discolor*. The nationally endangered starlet sea anemone *Nematostella vectensis* is a further non-avian interest feature.

The links between housing, access and nature conservation impacts

1.7 An issue for nature conservation in the UK is how to accommodate increasing pressure for new homes and other development without compromising the integrity of protected sites. There is now a strong body of evidence showing how increasing levels of development, even when well outside the boundary of protected sites, can have negative impacts on the sites. The issues are particularly acute in southern England, where work on heathlands (Mallord 2005; Underhill-Day 2005; Liley & Clarke 2006; Clarke, Sharp, & Liley 2008; Sharp et al. 2008) and coastal sites (Saunders et al. 2000; Randall 2004; Liley & Sutherland 2007; Clarke et al. 2008; Liley 2008; Stillman et al. 2009) provides compelling indications of the links between housing, development and nature conservation impacts.

1.8 The issues are not, however, straight forward. In the past access and nature conservation have typically been viewed as opposing goals (Adams 1996; Bathe 2007) to the extent that nature reserves often restricted visitor numbers and access (e.g. through permits, fencing and restrictive routes). It is now increasingly recognised that access to the countryside is crucial to the long term success of nature conservation projects and has wider 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).Therefore, there is the potential for conflict where high human populations occur alongside areas of conservation importance, particularly where there are existing rights of access to those sites. It is likely that numbers of houses in an area will correlate with the number of people living there and that the number of local residents will be closely linked to the number of visitors at a site. Increasing the amount of housing potentially will lead to increased population and therefore increased access. The issues are often particularly acute in coastal areas, as the coast will always have a strong draw for visitors and the areas attractive to people and wildlife tend to coincide along a narrow strip of land around the water's edge. Often managing increased development, the provision of access and maintaining the nature conservation interest involves a balancing act.

1.9 The impacts and issues are complex and researchers tend to focus on the ecological or theoretical implications of their research and avoid making practical recommendations. While there is a large body of scientific and grey literature addressing the impacts of access in coastal environments, and a number of reviews on the effects of access are available (for example see (Hockin et al. 1992; Nisbet 2000; Saunders et al. 2000; Kirby et al. 2004; Woodfield & Langston 2004a; b; Penny Anderson Associates 2006; Lowen et al. 2008; Stillman et al. 2009) these rarely provide detailed guidance to inform policy or planning. It is often difficult for conservation practitioners or policy makers to fully understand the implications of the research, let alone see a plan or project through appropriate assessment or understand the practical measures necessary to avoid adverse effects on the integrity of a site.

1.10 A detailed understanding of the recreational use of sites is clearly therefore important to underpin strategic planning and policy, particularly where there are development pressures around European Protected Sites. The spatial patterns of recreational access (both on the water and on the shore) and other disturbance are also critical to reaching a full understanding of access issues. In particular the relationship between access and development (e.g. how housing relates to access) is often the missing piece in the jigsaw as few ecologists are interested in such issues (but see Clarke et al. 2006; Liley & Clarke 2006; Liley, Sharp, & Clarke 2008).

1.11 Pagham Harbour is a particularly small site, and direct comparison with other estuarine SPAs (Hoskin, Liley, & Underhill-Day 2011)in England highlights the small size and considerable human population in the vicinity. The small size is particularly relevant as it means the site has less 'space' and opportunities for birds to avoid disturbance. For the SPA, Ramsar site and SSSI, impacts upon breeding bird interest features as a result of disturbance are considered possible (Hoskin et al. 2011).

Aims and Objectives

1.12 In this report we set out the results of on-site visitor surveys that involved direct counts of visitors and interviews with samples of visitors at a range of locations along the shoreline. Surveys were conducted in both the winter and summer to provide a comprehensive picture of visitor patterns and use at two key times of year. Visitor data are necessary to understand visitor patterns and motivations of individuals using this location. This information will allow us to identify areas of the harbour that are experiencing the greatest pressures and determine how far visitors are travelling to the shoreline. We can then consider how they use the harbour, how long they spend and their motivation for the visit. This visitor information will allow us to evaluate how Pagham Harbour is currently used by local residents and visitors. The data produced will allow an HRA process to assess the likely impact of the increase in visitor numbers to Pagham Harbour from a range of housing scenarios in Chichester District.

2. Methods

Visitor surveys

2.1 The visitor survey work focussed on people counts and interviews with a random sample of visitors. Counts and interviews were conducted at three survey locations, to capture the range of recreational use at the site. The surveys were carried out at the Pagham Harbour Visitor Centre car park, Church Norton car park and where the footpath from Greenlease Farm meets the beach (see Map 1). The surveyors undertook the counts and interviews in two-hour sessions, spread over a day. The survey times varied between the summer and winter surveys to make the most of the available daylight. In the winter surveys sessions took place from 07:30-17:00 (07:30-09:30; 10:00-12:00; 12:30-14:30; 15:00-17:00) whereas the summer surveys took place between 07:00 – 19:00 (07:00-09:00; 10:00-12:00; 13:00-15:00; 17:00-19:00). This collected eight hours of survey information on each day for each location monitored. Visitor pressure was consistently recorded across all three locations to allow direct comparisons between visitor patterns whilst providing the surveyor with breaks. Each location was surveyed for two whole days including a full day on both a week day and a day over a weekend in two stages between Saturday 21st January and Saturday 4th February 2012 and these were repeated between Sunday 24th June and Sunday 1st July 2012.

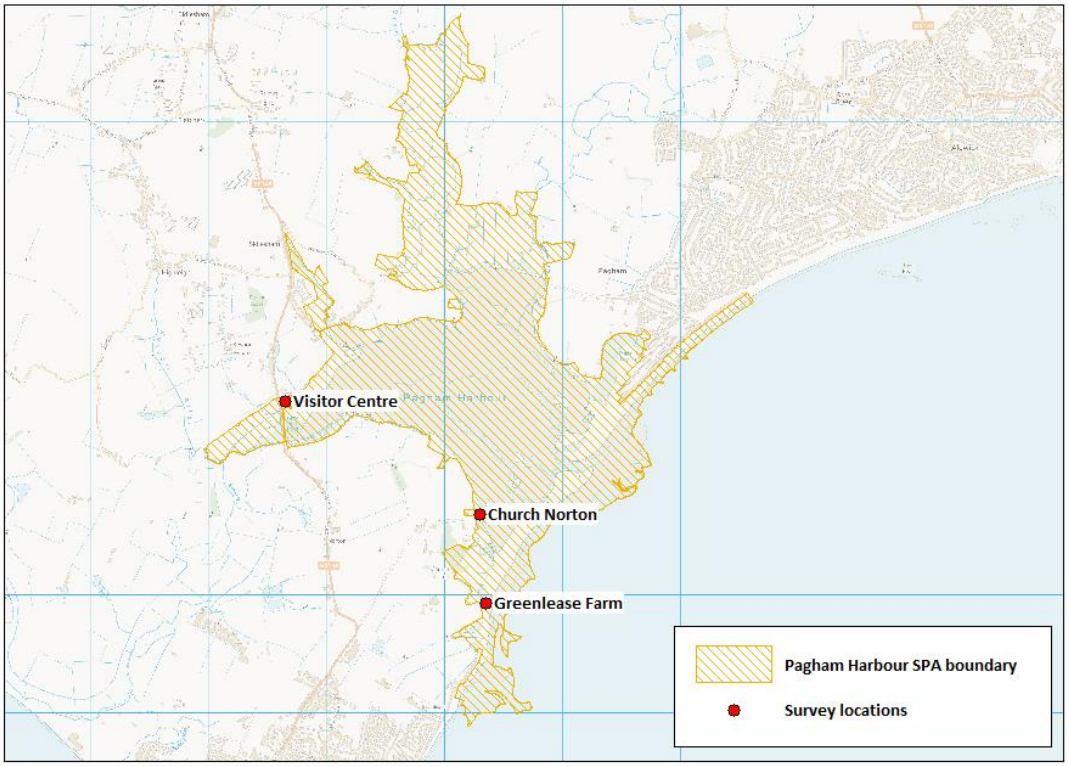
2.2 During each two hour period the surveyor recorded the number of people (and the number of groups) entering and leaving the site (i.e. passing through each access point). Separate totals were recorded for people, groups and dogs entering and leaving. As many people as possible were interviewed when leaving the site. The sample of people interviewed was randomised by the surveyor who approached all people leaving (as long as they were not already interviewing others). Only one person (selected at random) from each group / party was interviewed. The following survey protocol was followed:

- Surveyors carried photo ID and wore high visibility jackets.
- No unaccompanied minors were approached or interviewed.
- Surveyors carried business cards that were handed out to anyone wishing to check their identity.
- Surveyors were polite and courteous at all times.
- Surveyors were trained in the questionnaire and interview approach, ensuring standard sampling.
- All surveyors read a risk assessment and carried a mobile phone at all times.
- We aimed to avoid days with inclement weather and incorporated some flexibility into the fieldwork to allow for such days.

2.3 The questionnaire was reasonably brief and the survey was designed to capture the following visitor information (a copy of the questionnaire can be found in Appendix 1):

- Access points used

- Activities undertaken
- Reason for visiting
- Home postcode of the visitor
- Route travelled on site (as recorded on a paper map or by the use of a hand held GPS unit)
- Identify opinions relating to management issues and potential changes
- Other parts of the area visited
- Route travelled on site
- Visitor profile: age, employment status etc.
- Home postcode and whether a local resident or visiting tourist



Map 1: Survey locations and Pagham Harbour SPA boundary. Contains Ordnance Survey data © Crown copyright and database right 2012.

Visitor postcodes

2.4 The distance between each visitor's home postcode and the survey location of the site they visited was analysed to provide an indication of the spatial distribution of visitors. The visitor data consists of the group size of each interviewee reflecting the true number of individuals represented by the visitor surveys. Each interviewed visitor to the Harbour was asked for the full postcode from which they had travelled. GIS (MapInfo Professional v10.5) was used to geocode (plot) each postcode location so the distance each group of visitors travelled to the survey locations could be calculated. Postcodes from the interview data were geocoded using a standard Royal Mail postcode database (Postzon™ 100 data).

Visitor routes

2.5 Information on people's routes was collected using maps in the field, with the interviewer asking each interviewee about their route and showing the interviewee the map. Routes were drawn as lines on the map, individually cross-referenced to each questionnaire. These data were subsequently entered into a GIS as polylines. Within the GIS (MapInfo v10.5) these were then summarised to give a total length of route.

2.6 In addition, route data were also collected using small GPS Travel Tracker and IGotU units which were handed to visitors as they entered or first passed through the survey locations. The trackers logged the location of the visitors every three seconds and the unit was returned to the surveyor at the end of their walk when the interview was carried out. These points were uploaded using the host software of the unit then imported from a CSV format into MapInfo (v10.5) and all GPS points were correct to British Coordinate System (British OSGRS 80 Grid). The stream of consecutive GPS points were then converted to polylines using an add-in application to Mapinfo called 'Connect the dots'.

3. Results

Visitor Numbers & Overview of Data

3.1 Visitors to Pagham Harbour were interviewed during 96 hours of survey time (48 two hour sessions). The interviews were conducted in two winter phases between the 21st - 23rd January and the 2nd - 4th February 2012 and two summer phases 24th - 26th June and 29th June - 1st July. Each site was surveyed for four sessions on a week day and four sessions on a weekend day. The sessions ran between 07:30-17:00 in the winter and between 07:00-19:00 in the summer.

3.2 A total 273 interviews were conducted (126 winter and 147 summer) which represents 508 people (225 winter and 283 summer) and 154 dogs (72 winter and 82 summer). More men were interviewed than women with 71% of interviewees being male. The most interviews were conducted at Church Norton (n=102) and the Visitor Centre (n=90) and whilst slightly fewer interviews were conducted at Greenlease Farm (n=81) (Table 1). Across the three sites and both survey periods, the median group size was 2 although this value varied between the survey locations with the Greenlease Farm location resulting in a median group size of 1 in the winter survey (Table 1).

3.3 The majority of interviews represent the visiting patterns of single visitors (41%) and pairs of visitors (47%) (88% in total). A further 5% of interviews were from visitors who were in a group of three people and the remaining 7% of interviews captured information from groups of 4 or more people.

3.4 Of the 508 people within the 273 visitor groups, age groups were categorised for 507 and 54% of people fell into the 41 to 65 age category whilst 25% were over 65, 15% were aged between 18 and 40 and 7% of people in groups were under 18.

3.5 A total of 38% (105) of interviewed groups of visitors had dogs with them which gave an average of 1.5 dogs per group with dogs. In the winter survey dog ownership was slightly higher at 42% compared to 35% in the summer. The highest number of dogs was recorded at Greenlease Farm (n=71) compared to only 40 dogs recorded with interviewed visitors at Church Norton and 43% at the Visitor Centre (Table 1).

Table 1: Summary statistics from the three survey locations around Pagham Harbour.

Survey period	Winter				Summer				Combined results			
Site Name	**Visitor Centre**	**Church Norton**	**Greenlease Farm**	**Total**	**Visitor Centre**	**Church Norton**	**Greenlease Farm**	**Total**	**Visitor Centre**	**Church Norton**	**Greenlease Farm**	**Total**
Number of interviewed groups	47	46	33	126	43	56	48	147	90	102	81	273
Number of visitors in interviewed groups	81	94	50	225	98	102	83	283	179	196	133	508
Median group size	2	2	1	2	2	2	2	2	2	2	1	2
Number of groups with dogs	17	10	26	53	13	20	19	52	30	30	45	105
Number of dogs recorded	22	13	37	72	21	27	34	82	43	40	71	154
Percentage of groups with dogs	36	22	79	42	30	36	40	35	33	29	56	38
Number of people entering the site	100	116	56	272	104	111	88	303	204	227	144	575
Number of groups entering the site	53	56	37	146	52	51	62	165	105	118	88	311
Percentage of interview refusals from approached visitors	7.8	2.1	5.7	6	15.7	12.5	14.3	14	11.8	8.1	11	10.2
Percentage of people interviewed who entered the site	81	81	89	83	94	92	94	93	88	86	92	88

3.6 The number of people recorded entering survey locations totalled 575 (272 winter and 303 summer) and these visitors were in 311 different groups (146 winter and 165 summer). Most of the people (62%) entering the site were recorded at the weekend. The visitor monitoring captured interview data from 88% of the total number of visitor groups entering all the survey locations. Overall the busiest location in terms of people entering the site was Church Norton where visitor numbers were 34% higher than at Greenlease Farm (χ^2 = 10.15, 2 d.f, p<0.05) (Table 1). The difference between the number of people entering the sites was greatest in the winter with twice as many visitors to Church Norton compared to Greenlease Farm (χ^2 = 21.29, 2 d.f, p<0.001).

3.7 The average refusal rate across the survey locations was low in the winter (5%) but was higher in the summer (14%) giving an overall figure of 10%. This winter refusal rate is lower than those observed in other recent visitor surveys (Fearnley, Clarke, & Liley 2010; Fearnley, Liley, & Cruickshanks 2010). The most refusals were recorded at the Visitor Centre where people were more likely to refuse as they said that they were only walking a short distance or using the facilities.

3.8 The majority of interviewed visitor groups (84%, n=230) that had travelled to the site from their home (not necessarily local), a further 3% (9 groups) were on a day trip or short visit and were staying with friends and family and a further 12% (32 groups) of interviewees were on holiday in the area and staying away from home. Visitors from home made up 90% of interviewees in the winter and 79% in the summer. Holiday makers made up a higher proportion of interviewees in the summer (19% compared to 3%). Two interviewees gave no response to this question.

Time Spent at survey location

3.9 Visitors were asked how long they spent or would spend in the area (survey location). When looking at results from visitors which were local and travelled from home (n=230), the majority of groups (77%) spent less than 2 hours in the area (44% less than 1 hour and 33% between 1 and 2 hours). The length of time people spent at an area varied with site and time of year. At the Visitor Centre and Church Norton in the winter survey, a higher percentage of visitors stayed for 1-2 hours (45% and 33% respectively) whereas most visitors to Greenlease Farm stayed for less than an hour (52%). In the summer survey the most popular length of visit was less than 1 hour at all three sites (Table 2). In both survey periods there was a trend towards longer visits for local visitors at Church Norton with 16% of winter visits and 23% of summer visits lasting more than 3 hours.

Table 2: The percentage of interviewed visitors travelling from home by length of time per survey location and per survey period.

Site	Winter			Summer			Total
	Visitor Centre	Church Norton	Greenlease Farm	Visitor Centre	Church Norton	Greenlease Farm	
Less than 1 hour	38	30	52	59	36	55	44
Between 1 and	45	33	45	21	25	29	33

2 hours							
Between 2 and 3 hours	8	21	3	12	11	5	10
More than three hours	10	16	0	9	23	8	12
No response	0	0	0	0	5	3	1

Temporal visitor patterns

3.10 Visitors were asked whether seasonality influences how frequently they visit the survey locations. The interviewees were able to select multiple answers and a total of 330 responses were recorded from the 273 interviews. The majority of visitors (55%) stated that their visit patterns were not influenced by seasonality as they visited the survey location equally all year (Table 3).

3.11 Considering winter visitors only, 73% visit equally all year compared to 43% of summer visitors. A total of 7% of the responses indicated a preference for winter visitation with 8% of the responses indicating a preference for making autumn visits, 8% for summer visits, 9% for spring visits and 9.5% of respondents stated that they didn't know or that this was their first visit.

Table 3: Percentage of total responses regarding the time of year that interviewees visit the site most often (multiple answers were allowed).

Survey period	Spring	Summer	Autumn	Winter	Don't Know	Same all year
Summer	13	13	11	6	15	43
Winter	4	1	5	7	9	73
Total	9	8	8	7	12	55

3.12 A fifth of interviewed visitors (20%) made a visit to the survey location between 1-3 times per week and 16% visited most days 8% stated that they visit daily (Table 4). Visitors which did not visit at least once a month accounted for 34% of the responses. Visit frequency differed significantly between the two survey periods (χ^2 = 16.13, 6 d.f, $p<0.05$) with a higher proportion of winter visitors visiting more regularly compared to summer visitors (indicating a higher proportion of holiday makers in the summer).

Table 4: Percentage of total responses regarding the frequency with which interviewees visit the site.

Survey period	Daily	Most days 180+ visits	1-3 times a week, 40-180	2-3 times per month, 15-40	6-15 visits, once a month	2-5 visits, less than once a month	Don't know / first time	No response
Summer	5	16	15	10	10	23	20	1
Winter	13	15	25	12	8	14	10	2
Total	8	16	20	11	9	19	15	1

Activities

3.13 Visitors were asked about the main activity they undertook during their visit to the harbour for which only one response was recorded. The survey then allowed multiple other responses to be checked as activities also undertaken during the same visit. For example, the main activity undertaken during a visit could be 'dog walking' with other activities such as 'outing with children/family' and 'enjoy the scenery' listed as other activities undertaken during the same visit.

3.14 The most popular main activity undertaken by interviewed visitors during their visit was dog walking as stated by 35% of interviewees across the two survey periods. The second most popular activity cited by 33% of the visitors was walking. A total of 22% of visitors stated wildlife watching as their main activity and other activities included Jogging (4%), cycling (2%), fishing (2%) and photography (1%) (Table 5).

3.15 Comparing the two survey periods, dog walking and wildlife watching are the most popular activities in the winter whilst walking and dog walking are the most popular in the summer (Table 5).

Table 5: The number and percentage of visitor responses when asked 'What is the main activity you are undertaking today?'.

Main activity	Winter	Summer	Combined
Dog walking	**51 (40)**	44 (30)	**95 (35)**
Walking	28 (22)	**61 (41)**	89 (33)
Jogging etc	3 (2)	7 (5)	10 (4)
Cycling	1 (1)	4 (3)	5 (2)
Wildlife watching/bird watching	38 (30)	21 (14)	59 (22)
Fishing	1 (1)	4 (3)	5 (2)
Photography	1 (1)	2 (1)	3 (1)
Other		2 (1)	2 (1)
No response	3 (2)	2 (1)	5 (2)
Total	126	147	273

3.16 The main activities stated by interviewees at the different three survey locations show that in the winter, the majority of dog walking occurs at the Visitor Centre and Greenlease Farm. The Visitor Centre is the most popular summer location for wildlife watching (23%) and Church Norton attracts the most winter wildlife watchers (43%) (Table 6). In the winter survey, Church Norton experienced the greatest variety of activities including fishing and photography. Dog walking constituted the greatest proportion of visits at Greenlease Farm (73% winter and 40% summer) compared to 40% in the winter and 30% in the summer at the Visitor Centre.

Table 6: The main activity undertaken at each site expressed as a percentage in brackets of the number visitors to each survey location stating their main activities. The most common activity per location in each survey period is shown in bold.

Activity	Winter				Summer				Combined			
	Visitor Centre	Church Norton	Greenlease Farm	Total	Visitor Centre	Church Norton	Greenlease Farm	Total	Visitor Centre	Church Norton	Greenlease Farm	Total
Dog Walking	**19 (40)**	8 (17)	**24 (73)**	**51 (40)**	13 (30)	11 (20)	**20 (42)**	44 (30)	**32 (36)**	19 (19)	**44 (54)**	**95 (35)**
Walking	10 (21)	14 (30)	4 (12)	28 (22)	**16 (37)**	**27 (48)**	18 (38)	**61 (41)**	26 (29)	**41 (40)**	22 (27)	89 (33)
Jogging etc	2 (4)	1 (2)		3 (2)	1 (2)	3 (5)	3 (6)	7 (5)	3 (3)	4 (4)	3 (4)	10 (4)
Cycling			1 (3)	1 (1)	1 (2)	1 (2)	2 (4)	4 (3)	1 (1)	1 (1)	3 (4)	5 (2)
Wildlife watching/bird watching	16 (34)	**20 (43)**	2 (6)	38 (30)	10 (23)	9 (16)	2 (4)	21 (14)	26 (29)	29 (28)	4 (5)	59 (22)
Fishing		1 (2)		1 (1)		2 (4)	2 (4)	4 (3)		3 (3)	2 (2)	5 (2)
Photography		1 (2)		1 (1)	1 (2)	1 (2)		2 (1)	1 (1)	2 (2)		3 (1)
Other						1 (2)	1 (2)	2 (1)		1 (1)	1 (1)	2 (1)
No response		1 (2)	2 (6)	3 (2)	1 (2)	1 (2)		2 (1)	1 (1)	2 (2)	2 (2)	5 (2)
Total	47	46	33	126	43	56	48	147	90	102	81	273

3.17 Additional activities which were undertaken in the same visit as the main activity are summarised per survey location in Table 7. The most popular additional activities in the winter were walking (with 35 responses), enjoying the scenery (with 12 responses) and wildlife watching/bird watching (with 10 responses). Winter visitors to Church Norton undertook the greatest variety of other activities. In the summer surveys the most popular additional activities were walking (85 responses), dog walking (48 responses) and wildlife watching (40 responses) (Table 7).

Table 7: Other activities stated by interviewees which are undertaken at each site and in both survey periods. The values represent the number of responses given by the interviewed groups at each location – interviewees could undertake more than one of these activities.

Activity	Winter				Summer				Combined			
	Visitor Centre	Church Norton	Greenlease Farm	Total	Visitor Centre	Church Norton	Greenlease Farm	Total	Visitor Centre	Church Norton	Greenlease Farm	Total
Walking	**10**	7	**18**	**35**	18	**36**	**31**	**85**	28	43	**49**	**120**
Enjoy Scenery	1	**9**	2	12	5	14	7	26	6	23	9	38
Wildlife watching/bird watching	5	5		10	**19**	17	4	40	24	22	4	50
Dog Walking	2	2	2	6	10	18	20	48	12	20	22	54
Outing with children/family		2		2	3	2	1	6	3	4	1	8
Photography		2		2	1		1	2	1	2	1	4
Jogging/power walking/Nordic walking	1			1		3	5	8	1	3	5	9
Fishing		1		1		2	2	4		3	2	5
Cycling					2	1	3	6	2	1	3	6
Meet up with friends					2	1	1	4	2	1	1	4
Other						1	2	3		1	2	3
Total	**19**	**28**	**22**	**69**	**60**	**95**	**77**	**232**	**79**	**123**	**99**	**301**

Motivations for visiting

3.19 Visitors were asked what made/motivated them to visit the specific location at which they were interviewed rather than another local site. Interviewees were asked to list features which attracted them then asked which had the most influence over their choice of visit location. The majority of winter visitors' choice of location was most influenced by a particular wildlife interest – usually bird watching (27% of responses). Wildlife interest was closely followed in the winter survey by the fact that the site is 'close to home' (25%) and the third most popular reason was the quality of the area of coast as reported by 21% of visitors. Whilst dog walking was the most popular activity (40% stated dog walking as the main activity), only 2% of visitors stated that their dog's enjoyment of the site was a main factor influencing their choice of location whereas 19% mentioned dogs as an additional factor influencing their use of the site

3.20 In the summer months the most popular response was closeness to home (45%) and excluding visitors who did not provide an answer to this question, this was followed by a particular wildlife interest (11%) and then 'Quick and easy travel route from home/accommodation' which was stated by 9% of respondents. Over the whole survey period (winter and summer), closeness to home is the main factor that influences visitor's use of the site with a combined total of 36% of responses.

3.21 Looking at the individual survey locations in the winter survey, it is clear that visitors to Greenlease Farm are less interested in wildlife than visitors to the locations which have direct access to the nature reserve and the best views of the wildlife interest i.e. from hides. Visitors to Greenlease are primarily influenced by closeness to home and this is unsurprising given that this location is the closest to Selsey and is linked by a footpath through farmland to the town. In the summer months, closeness to home featured as the most popular response at all three sites when the category 'blank/no response' was excluded.

Table 8: The factor which most influenced each visitor to make a trip to the specific location where they were interviewed. Percentage shown in brackets of visitors stating each reason by location and the most frequently listed reason at each site shown in bold.

Activity	Winter				Summer				Combined Total
	Visitor Centre	Church Norton	Greenlease Farm	Total	Visitor Centre	Church Norton	Greenlease Farm	Total	
Particular wildlife interest	**15 (32)**	**18 (39)**	1 (3)	**34 (27)**	8 (19)	8 (14)		16 (11)	50 (18)
Close to home	10 (21)	8 (17)	**14 (42)**	32 (25)	9 (21)	**22 (39)**	**35 (73)**	**66 (45)**	**98 (36)**
Quality of this area of coast	8 (17)	9 (20)	10 (30)	27 (21)	2 (5)	3 (5)	3 (6)	8 (5)	35 (13)
Blank/no response	8 (17)	9 (20)	6 (18)	23 (18)	**11 (26)**	13 (23)	7 (15)	31 (21)	54 (20)
Rural feel/wild landscape	3 (6)			3 (2)			1 (2)	1 (1)	4 (1)
Don't know/others in party chose	1 (2)		1 (3)	2 (2)	1 (2)			1 (1)	3 (1)
Good for dog/dog enjoys it		(2)	1 (3)	2 (2)	1 (2)			1 (1)	3 (1)
Quick and easy travel route from home/accommodation	1 (2)			1 (1)	7 (16)	4 (7)	2 (4)	13 (9)	14 (5)
Right place for activity		1 (2)		1 (1)		3 (5)		3 (2)	4 (1)
Quiet with no traffic noise	1 (2)			1 (1)					1 (0.4)
Choice of routes/ability to do different circuits					2 (5)	1 (2)		3 (2)	3 (1)
Particular facilities here					1 (2)			1 (1)	1 (0.4)
Habit / Familiarity						1 (2)		1 (1)	1 (0.4)
Refreshments/Cafe/Pub nearby					1 (2)			1 (1)	1 (0.4)
Closest coast to home						1 (2)		1 (1)	1 (0.4)
Total	**47**	**46**	**33**	**126**	**43**	**56**	**48**	**147**	**273**

3.24 An additional 754 responses were given by the interviewed groups when asked which factors made/motivated them to make a visit to the survey location. In both survey periods (summer and winter), the most frequently cited factors/motivations overall were the quality of the area (19% of winter responses and 18% summer) and the rural feel/wild landscape (was also reported by 19% of winter visitors and 13% of summer visitors. The third most popular reason in both survey periods was 'habit/familiarity' (17% in winter and 13 % in the summer) (Table 9).

Table 9: Other factors which also influenced each visitor to make a trip to the specific location where they were interviewed. Percentage of total visitors to each site and overall shown in brackets and most popular additional reasons per site are shown in bold.

Reason for visiting	Winter				Summer				Combined total
	Visitor Centre	Church Norton	Greenlease Farm	Total	Visitor Centre	Church Norton	Greenlease Farm	Total	
Quality of this area of coast	11 (12)	**25 (26)**	13 (18)	**49 (19)**	**23 (17)**	**32 (17)**	**35 (20)**	**90 (18)**	**139 (18)**
Rural feel/wild landscape	9 (10)	**25 (26)**	**15 (21)**	**49 (19)**	18 (13)	20 (11)	24 (14)	62 (13)	**111 (15)**
Habit/familiarity	**14 (15)**	16 (17)	**15 (21)**	45 (17)	8 (6)	20 (11)	22 (13)	50 (10)	**95 (13)**
Good for dog/dog enjoys it	6 (7)	1 (1)	12 (17)	19 (7)	5 (4)	7 (4)	5 (3)	17 (3)	**36 (5)**
Close to home	7 (8)	7 (7)	3 (4)	17 (7)	10 (7)	26 (14)	**35 (20)**	71 (14)	**88 (12)**
Quiet with no traffic noise	4 (4)	8 (8)	5 (7)	17 (7)	7 (5)	10 (5)	15 (9)	32 (6)	**49 (6)**
Quick and easy travel route from home/accommodation	5 (5)	3 (3)	3 (4)	11 (4)	14 (10)	14 (8)	7 (4)	35 (7)	**46 (6)**
Not many people	4 (4)	5 (5)	1(1)	10 (4)	7 (5)	13 (7)	8 (5)	28 (6)	**38 (5)**
Choice of routes/ability to do different circuits	10 (11)			10 (4)	12 (9)	10 (5)	6 (3)	28 (6)	**38 (5)**
Particular wildlife interest	3 (3)	3 (3)	2 (3)	8 (3)	14 (10)	15 (8)	3 (2)	32 (6)	**40 (5)**
Good/easy parking	4 (4)		1 (1)	5 (2)	7 (5)	5 (3)		12 (2)	**17 (2)**
Right place for activity	3 (3)	1 (1)		4 (2)	2 (1)	6 (3)	2 (1)	10 (2)	**14 (2)**
Refreshments/Cafe/Pub nearby	4 (4)			4 (2)	2 (1)	1 (0.5)		3 (0.6)	**7 (1)**
Feel safe here	3 (3)			3 (1)			2 (1)	2 (0.4)	**5 (0.7)**
Don't know/others in party chose	1 (1)	2 (2)		3 (1)	1 (0.7)	1 (0.5)		2 (0.4)	**5 (0.7)**
Suitability of area given weather conditions	2 (2)		1 (1)	3 (1)		1 (0.5)	1 (0.6)	2 (0.4)	**5 (0.7)**
Particular facilities here	2 (2)			2 (1)	1 (0.7)			1 (0.2)	**3 (0.4)**
Ability to let dog off the lead					2 (1)	2 (1)	11 (6)	15 (3)	**15 (2)**
Closest coast to home					0 (0)	2 (1)		2 (0.4)	**2 (0.3)**
Substrate type					1 (0.7)			1 (0.2)	**1 (0.1)**
Total	**92**	**96**	**71**	**259**	**134**	**185**	**176**	**495**	**754**

Other visits and visit locations

3.26 Interviewees were also asked whether they made visits to other locations for similar purposes. The responses were divided into coastal and inland locations (Table 10).

The most popular coastal location visited by winter interviewees was Chichester Harbour which was listed 70 times (including the six specified locations e.g. Fishbourne, Bosham etc) which constitutes 34% of all responses for coastal locations. In the summer survey, Selsey was listed as the most popular additional location with 50 responses (19%). Combining the two survey periods, Selsey is the most popular additional coastal location indicating the local use of the site (16% of total additional visits). A number of nature reserves were listed as locations visited for similar purposes, which demonstrates the attraction of Pagham Harbour to wildlife enthusiasts. Unsurprisingly there were fewer inland locations listed (224 total responses compared to 475 coastal responses) and the most popular location listed by winter visitors was Pulborough Brooks RSPB reserve (43% of inland responses) followed by the South Downs (31%). However in the summer surveys the South Downs stand out as the most popular additional location with 47 responses (30% of total responses). Therefore combining the two survey periods, the South Downs National Park is the most popular inland location with 26% of the responses.

Table 10: Other coastal and inland locations listed by interviewees and the number of responses (grouped where possible).

	Number of responses		
Coastal locations	**Winter**	**Summer**	**Total**
Selsey	25	50	75
West Wittering – Chichester Harbour	19	45	64
Chichester Harbour	29	28	57
Other locations further afield	26	21	47
Pagham Harbour and Visitor Centre	17	22	39
Bracklesham	4	27	31
Bosham - Chidham - Chichester Harbour	12	6	18
Sidlesham	4	14	18
Itchenor - Chichester Harbour	4	13	17
Church Norton	12	4	16
Hayling Island	8	7	15
Fishbourne Creek - Chichester Harbour	6	9	15
Horsey Farm - North Wall	8	2	10
Arundel Marshes/wetlands	7		7
Farlington Marshes - Hampshire Wildlife Trust Reserve	6	1	7
Thorney Island		7	7
Titchfield Haven - NNR	4	2	6
Ham Farm	4		4
Langston Harbour	4		4
Emsworth	3	1	4
West Field	3		3
Birdham		3	3
Bognor Regis		3	3
Chichester Canal		2	2
Beachy Head	1	2	3
Total	206	269	475
Inland locations	Winter	Summer	Total
South Downs	12	47	59
Pulborough Brooks RSPB reserve	15	13	28
Other locations further afield		23	23
Goodwood	10	10	20
Footpaths around Selsey	5	8	13
New Forest	2	9	11
Arun Valley	4	6	10
Kingley Vale NNR	1	5	6
West Dean Downs	3	3	6
North Downs		5	5

Stoughton		4	4
Chichester	1	2	3
Pumping Station walk		3	3
Arundel	2		2
Ashdown Forest		2	2
Burton Mill Pond – Sussex Wildlife Trust reserve	1	1	2
Halsey's Farm		2	2
Petworth		2	2
Arlington Reservoir		1	1
Bramshill		1	1
Charlton Forest		1	1
Chilgrove	1		1
Chilterns		1	1
Clent Hills		1	1
Denham Gardens	1		1
Fontwell Park		1	1
Forest of Dean		1	1
Golf Links Lane		1	1
Greatham	1		1
Greenleaze Farm		1	1
Holly Hill farm	1		1
Horsham		1	1
Hunston Canal	1		1
Iping Common		1	1
Itchen Valley Country Park	1		1
Loch Garten - RSPB reserve	1		1
Mindham	1		1
Queen Elizabeth Park - Petersfield	1		1
River Lavant	1		1
South Harting		1	1
South Mundon		1	1
Welney - Cambridgeshire	1		1
Total	**66**	**158**	**224**

3.27 Visitors were asked to list features that would be necessary to make another site attractive to them instead of Pagham Harbour. Overall and at each site and in both survey periods, the most popular response to this question was that no features/nothing would make another site attractive for the respondents (Table 11). In the summer surveys, 13% of respondents stated that the feature that would make another site attractive would be a site that was closer to home. This suggests that it would be difficult to deflect these visitors from the sites which they were visiting. In the winter, the second most popular response to this question was other reasons specified by each interviewee which included better access for disabled visitors, better bike access, a larger car park, more birds, more dog bins, if dogs were banned or restricted and if the site became too busy causing too much disturbance to birds. Interestingly only 5% of respondents in the winter and 3% in summer would find a more dog friendly site attractive.

Table 11: Features which would make another site attractive to visitors surveyed at each location and overall. Percentage of total responses at each site and overall shown in brackets.

Features	Winter				Summer				Combined total
	Visitor Centre	Church Norton	Greenlease Farm	Total	Visitor Centre	Church Norton	Greenlease Farm	Total	
No features/nothing	39 (71)	39 (68)	25 (71)	103 (70)	12 (13)	27 (29)	28 (39)	67 (26)	170 (43)
Other reasons	5 (9)	6 (11)	5 (14)	16 (11)	12 (13)	10 (11)	5 (7)	27 (11)	43 (11)
More dog friendly	1 (2)	1 (2)	3 (9)	5 (3)	5 (6)	2 (2)	1 (1)	8 (3)	13 (3)

Better paths	2 (4)	2 (4)	1 (3)	5 (3)	3 (3)	2 (2)	3 (4)	8 (3)	13 (3)
Measures to control other users	2 (4)	2 (4)	1 (3)	5 (3)	2 (2)	1 (1)	1 (1)	4 (2)	9 (2)
Closer to home	4 (7)	1 (2)		5 (3)	18 (20)	12 (13)	16 (23)	46 (18)	51 (13)
Refreshments		2 (4)		2 (1)	7 (8)	8 (9)	1 (1)	16 (6)	18 (5)
Better information/maps	2 (4)			2 (1)					2 (1)
Better /easier parking		2 (4)		2 (1)		1 (1)		1 (0.3)	3 (1)
Toilets		1 (2)		1 (1)	9 (10)	8 (9)	1 (1)	18 (7)	19 (5)
Attractive scenery		1 (2)		1 (1)	19 (21)	19 (20)	15 (21)	53 (21)	54 (14)
Cheaper/free parking					2 (2)	3 (3)		5 (2)	5 (1)
Total	**55**	**57**	**35**	**147**	**89**	**93**	**71**	**253**	**400**

Mode of transport to visitor location

3.28 Across the two survey periods, travelling by car was the most popular response with 68% of the 273 interviewees, travelling by car (Table 12). Nearly three quarters of the interviewed visitors in the winter 73% (92) and 65% (95) of summer visitors to all survey locations travelled by car/van. Winter foot visitors formed 25% (31) of respondents compared to 29% (43) in the summer surveys. The percentage of visitors arriving by bicycle was 2% in the winter and 5% in the summer.

3.29 In the winter survey, the highest proportion of car visitors was recorded at Church Norton (91%) (Table 12) which has the lowest housing density within 1km followed by the Visitor Centre (77%) which has the highest housing density within 1km (Table 13). However in the summer surveys, the highest proportion of car visitors was recorded at the Visitor Centre (88%). In both survey periods, Greenlease Farm visitors were most likely to arrive by modes of transport other than the car and these included 50% on foot and by bicycle (combined) and 66% in the summer surveys. Greenlease Farm has the highest housing density within 1.5km (Table 13) and these results further demonstrate the local use of this location by Selsey residents.

Table 12: The mode of transport used by visitors to Pagham Harbour. The percentages shown in brackets represent the values per transport category as a percentage of the total number of interviewed visitors at each location who arrived by each transport mode.

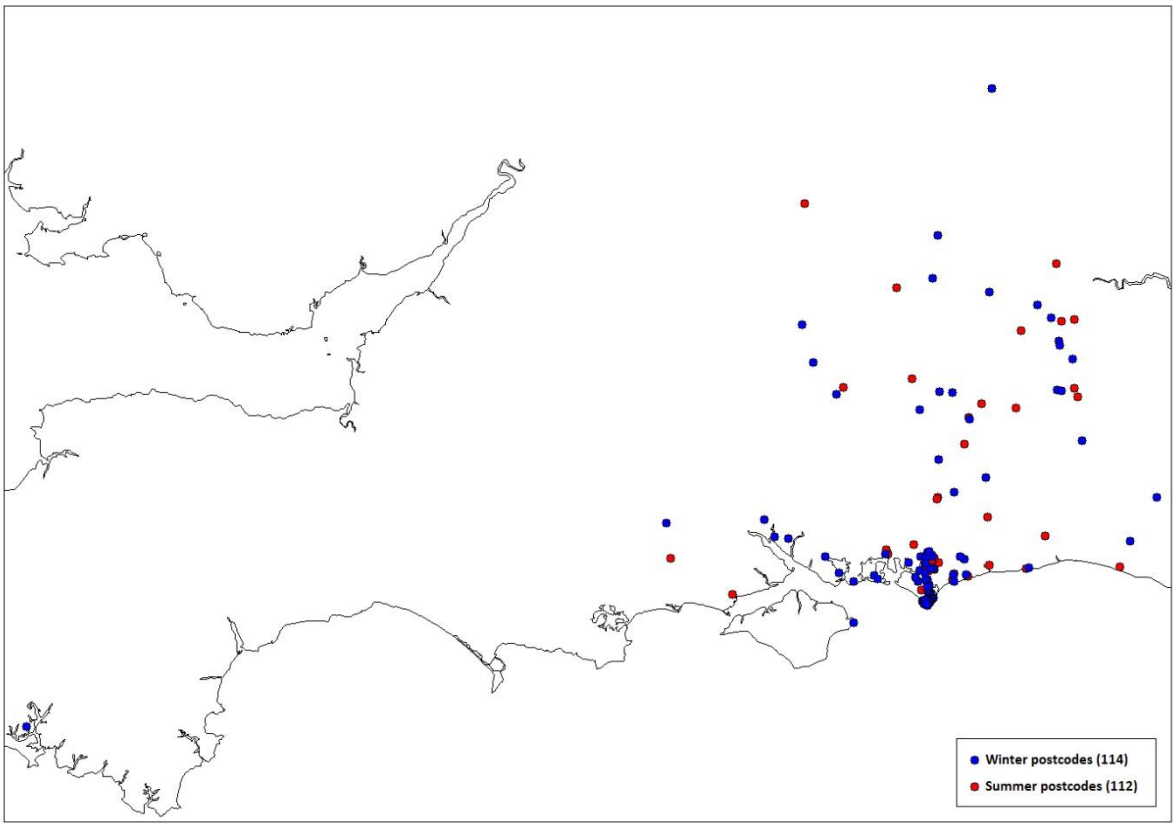
Mode of transport	Winter				Summer				Combined total
	Visitor Centre	Church Norton	Greenlease Farm	Total	Visitor Centre	Church Norton	Greenlease Farm	Total	
Car/van	36 (77)	42 (91)	14 (42)	92 (73)	38 (88)	41 (73)	16 (33)	95 (65)	187 (68)
Foot	11 (23)	4 (9)	16 (48)	31 (25)	2 (5)	12 (21)	29 (60)	43 (29)	74 (27)
Bicycle			2 (6)	2 (2)	1 (2)	3 (5)	3 (6)	7 (5)	9 (3)
No response/other			1 (3)	1 (1)	2 (5)			2 (1)	3 (1)
Total interviewed	**47**	**46**	**33**	**126**	**43**	**56**	**48**	**147**	**273**

Table 13: Number of residential delivery points with 500m distance bands from each survey locations. Data gathered from Postzon and code point using Royal Mail Postcode Address File from BPH Data Limited.

Distance from survey location (m)	Number of residential delivery points from each survey location		
	Visitor Centre	Church Norton	Greenlease Farm
500	14	12	10
1000	182	25	63
1500	271	66	534

Home postcodes of interviewed visitors

3.31 From the 273 visitors interviewed, 47 visitors (or 17%) provided invalid or incomplete postcodes. Looking at the individual survey periods, more incomplete or invalid postcodes were collected in the summer (24%) compared to the winter (9%). All visitor postcodes are shown below in Map 2 and show that the majority of visitors travel from the local area and adjacent coastal towns and cities to the east and west. There are also a large proportion of visitors travelling from locations along the major roads heading towards London and the surrounding counties including East Sussex, Surrey, Berkshire and Buckinghamshire. The furthest postcodes recorded were from winter visitors in Bedfordshire and Cornwall (Map 2).



Map 2: Visitor postcodes and for both survey periods (summer and winter).

3.32 Map 3 and Map 4 show the postcode locations of all interviewed visitors who provided a valid postcode coded by the type of visitor (from home/on holiday etc). The main difference to be noted in the distribution of home visitors is that in the winter many people are interviewed from the A27/M27 corridor (Portsmouth and Southampton) to the west of the Pagham /Chichester area whilst few visitors interviewed in the summer live in this area.

3.33 From the 226 geocoded postcodes, 200 could be associated with urban settlements and 26 postcodes fell beyond settlement boundaries (Table 14). The settlement with the most interviewed visitors is Selsey with 38% of the winter postcodes and 50% of the summer postcodes (within settlements) and 42% of all postcodes (including those outside of settlements). Chichester contributes 6% of interviewed winter

visitors and 10% of summer visitors, whilst Sidlesham contributes 4% of winter visitors and 6% of summer visitors. In the winter, the remaining 42 postcodes are distributed across 34 additional settlements whilst in the summer the remaining 37 postcodes are distributed across 24 additional settlements.

Table 14: The number of geocoded postcodes and the percentage of the total (n=114) which fall within settlement boundaries.

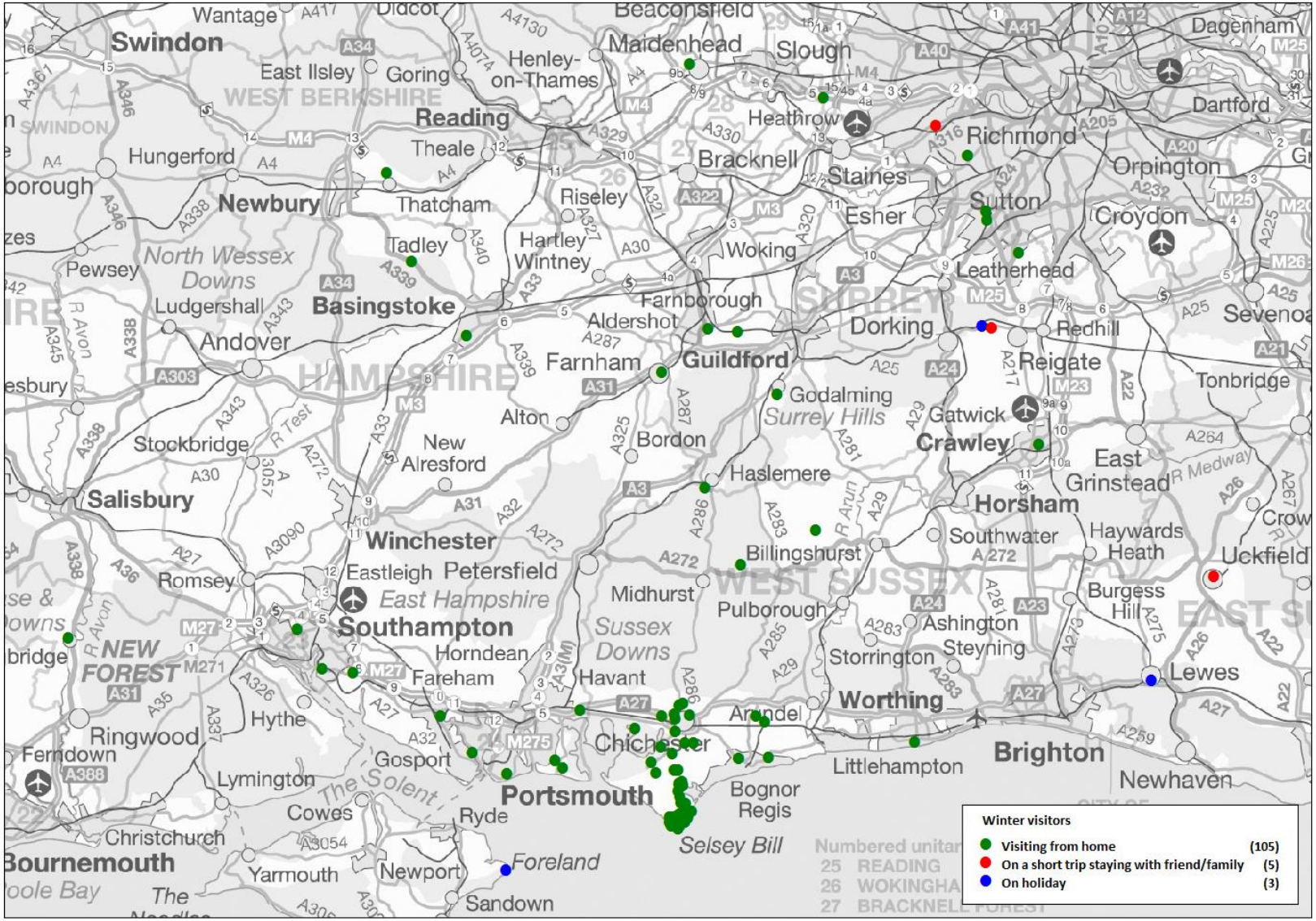
Settlement	County/area	Number of postcodes (%)	
		Winter	Summer
Selsey	West Sussex	43 (38)	52 (50)
Chichester	West Sussex	7 (6)	10 (10)
Sidlesham	West Sussex	5 (4)	6 (6)
Bognor Regis	West Sussex	3 (3)	4 (4)
Southampton	Hampshire	2 (2)	
Hayling Island	Hampshire	2 (2)	
Richmond upon Thames	Surrey	2 (2)	
Epsom and Ewell	Surrey	2 (2)	
Westergate/Barnham/Yapton	West Sussex	2 (2)	
Birdham	West Sussex	2 (2)	1 (1)
Westoning	Bedfordshire	1 (1)	
Thatcham	Berkshire	1 (1)	
High Wycombe	Buckinghamshire	1 (1)	
Maidenhead	Buckinghamshire	1 (1)	
Colnbrook	Buckinghamshire	1 (1)	
Saltash	Cornwall	1 (1)	
Uckfield	East Sussex	1 (1)	
Lewes	East Sussex	1 (1)	
Farnham	Hampshire	1 (1)	
Fordingbridge	Hampshire	1 (1)	
Bursledon	Hampshire	1 (1)	
Fareham/Portchester	Hampshire	1 (1)	
Gosport	Hampshire	1 (1)	
Portsmouth	Hampshire	1 (1)	
Basingstoke	Hampshire	1 (1)	1 (1)
Bembridge	Isle of Wight	1 (1)	
Banstead/Tadworth	Surrey	1 (1)	
Aldershot	Surrey	1 (1)	
Normandy	Surrey	1 (1)	
Crawley	Surrey	1 (1)	
Godalming	Surrey	1 (1)	1 (1)
Lodsworth	West Sussex	1 (1)	
Bosham	West Sussex	1 (1)	
Worthing	West Sussex	1 (1)	1 (1)
Mundham	West Sussex	1 (1)	2 (2)
Munston	West Sussex	1 (1)	2 (2)
Emsworth/Southbourne	West Sussex	1 (1)	3 (3)
Midhurst	West Sussex		3 (3)
Reigate/Redhill	Surrey		2 (2)
Merton	Borough of London		2 (2)
Brent	Borough of London		1 (1)
Rottingdean/Saltdean	East Sussex		1 (1)

Fleet	Hampshire		1 (1)
Lymington	Hampshire		1 (1)
Ringwood	Hampshire		1 (1)
Kennington	Oxfordshire		1 (1)
Chiddingfold	Surrey		1 (1)
Guildford	Surrey		1 (1)
Peaslake	Surrey		1 (1)
Walton and Weybridge	Surrey		1 (1)
Coldwaltham	West Sussex		1 (1)
Littlehampton	West Sussex		1 (1)
Steyning/Upper Beeding	West Sussex		1 (1)

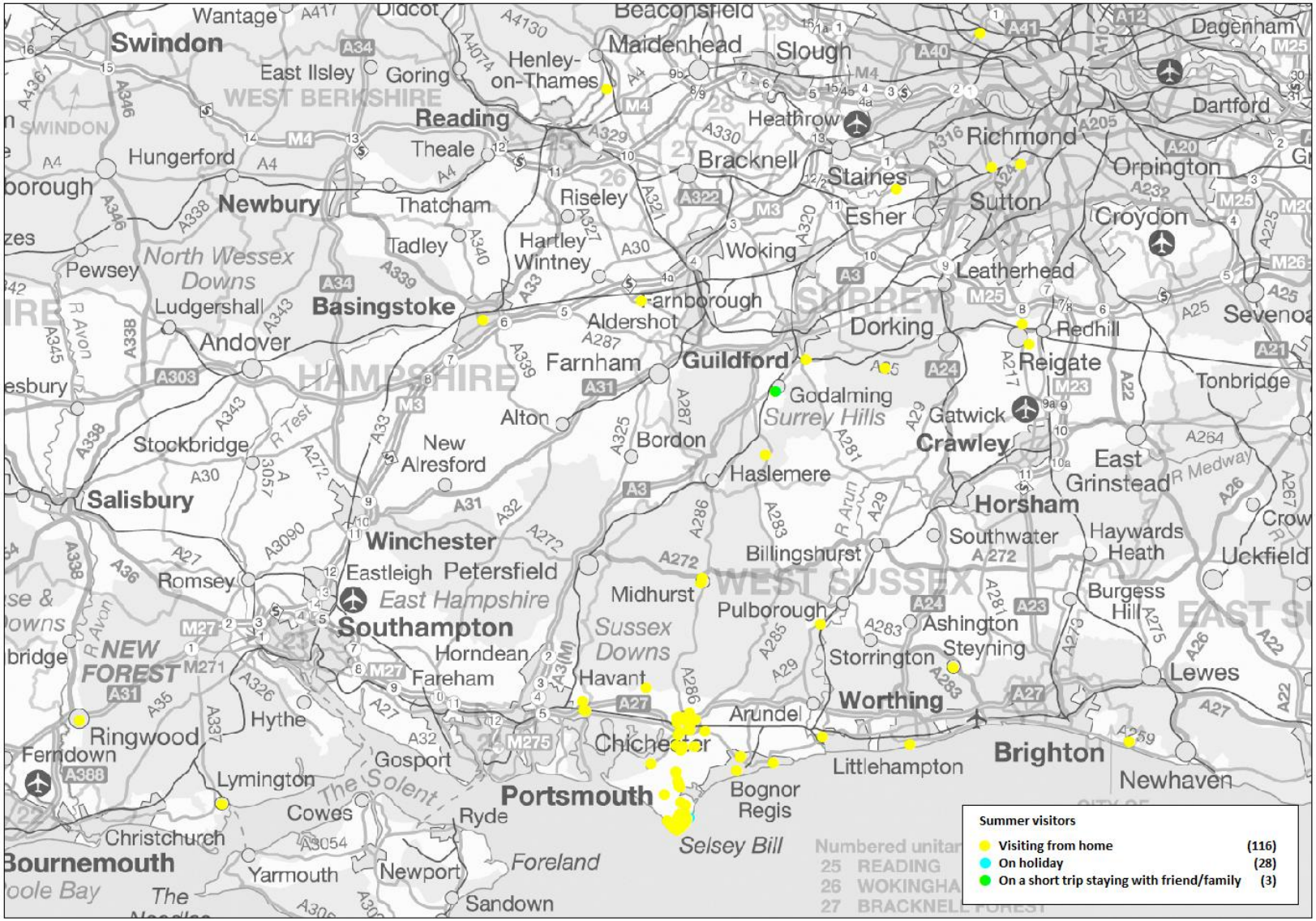
Visit frequency and dog ownership

3.34 The frequency with which interviewees visit the site is shown by postcode on Map 5. The spatial data demonstrated that the closer to the site that people live the more frequently they visit the site (Map 5). The furthest postcode recorded of a daily or 'most days' visitor was just south of Chichester near Hunston.

Map 6 shows the postcode locations of visitors and whether or not they were accompanied by one or more dogs. Of the interviewed visitors a higher proportion did not have dogs with them. From 114 geocoded postcodes in the winter survey 42% of visitor groups were accompanied by at least one dog and the level of dog ownership was similar in the summer at 43%. The majority of winter and summer visitors with dogs live roughly south of Chichester (96% in both surveys) whilst the remaining visitors with dogs were visiting from further afield or on holiday in the area.



Map 3: Winter visitor postcodes and type of visitor (from home, on a short trip or on holiday). Contains Ordnance Survey data © Crown copyright and database right 2012.



Map 4: Summer visitor postcodes and type of visitor (from home, on a short trip or on holiday). Contains Ordnance Survey data © Crown copyright and database right 2012.

3.35 To investigate possible relationships between housing levels and visitor rates, the number of visitors who lived within different buffer zones around all three surveyed sites combined was identified using postcode data from the questionnaires and the actual number of houses (delivery points) was extracted for the same distance bands. The ratio between these two totals per distance band can be used to assess visitor rates (Figure 1).

3.36 Separate visit rate curves were generated for winter and summer visitors to compare the two survey periods. In the winter the visitor rate drops off very sharply with few visitors (and few houses) within 0.5km of the site but the rate increases at 1km which represents the high number of visitors from the north eastern side of Selsey. The visitor rate then declines steadily to 5km from which point a very low visit rate is observed. It is interesting to note that there is no peak in the winter visit rate and only a slight increase in the summer visit rate at 9km which passes through the centre of Chichester (Figure 1) since only 6% of winter visitors and 10% of summer visitors were from Chichester. A very similar relationship is observed when delivery points from the eastern side of the harbour are discounted to take into account the travel distance from Pagham and Bognor Regis to the survey locations.

3.37 Looking at the summer visit rates, generally rates are lower nearest to the site with summer visit rates at 1km being 60% lower than in the winter. At 3km visit rates are higher in the summer and then level off to become very similar to winter rates.

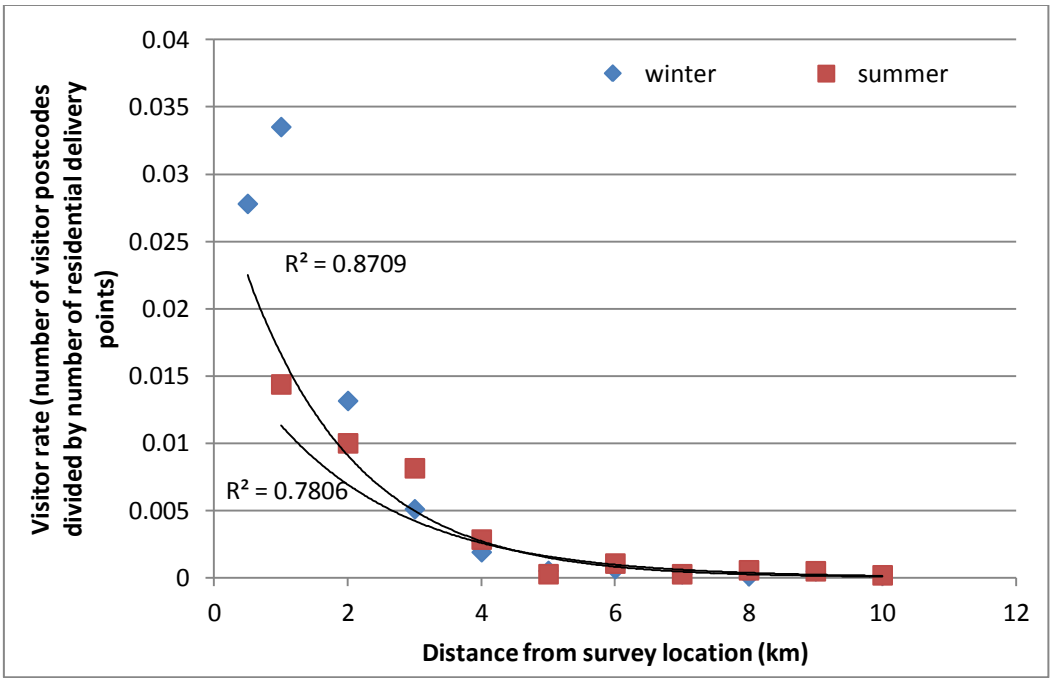
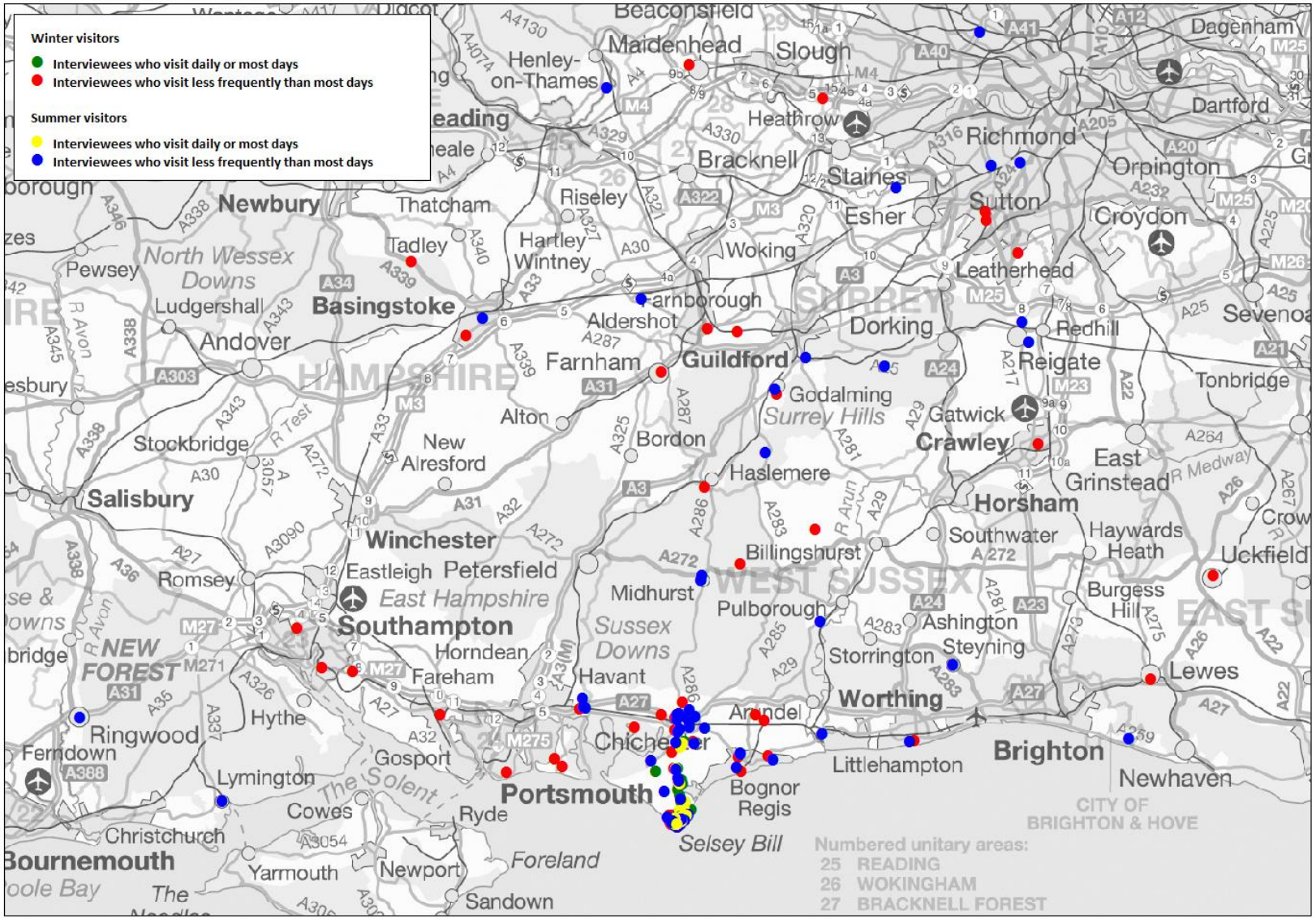
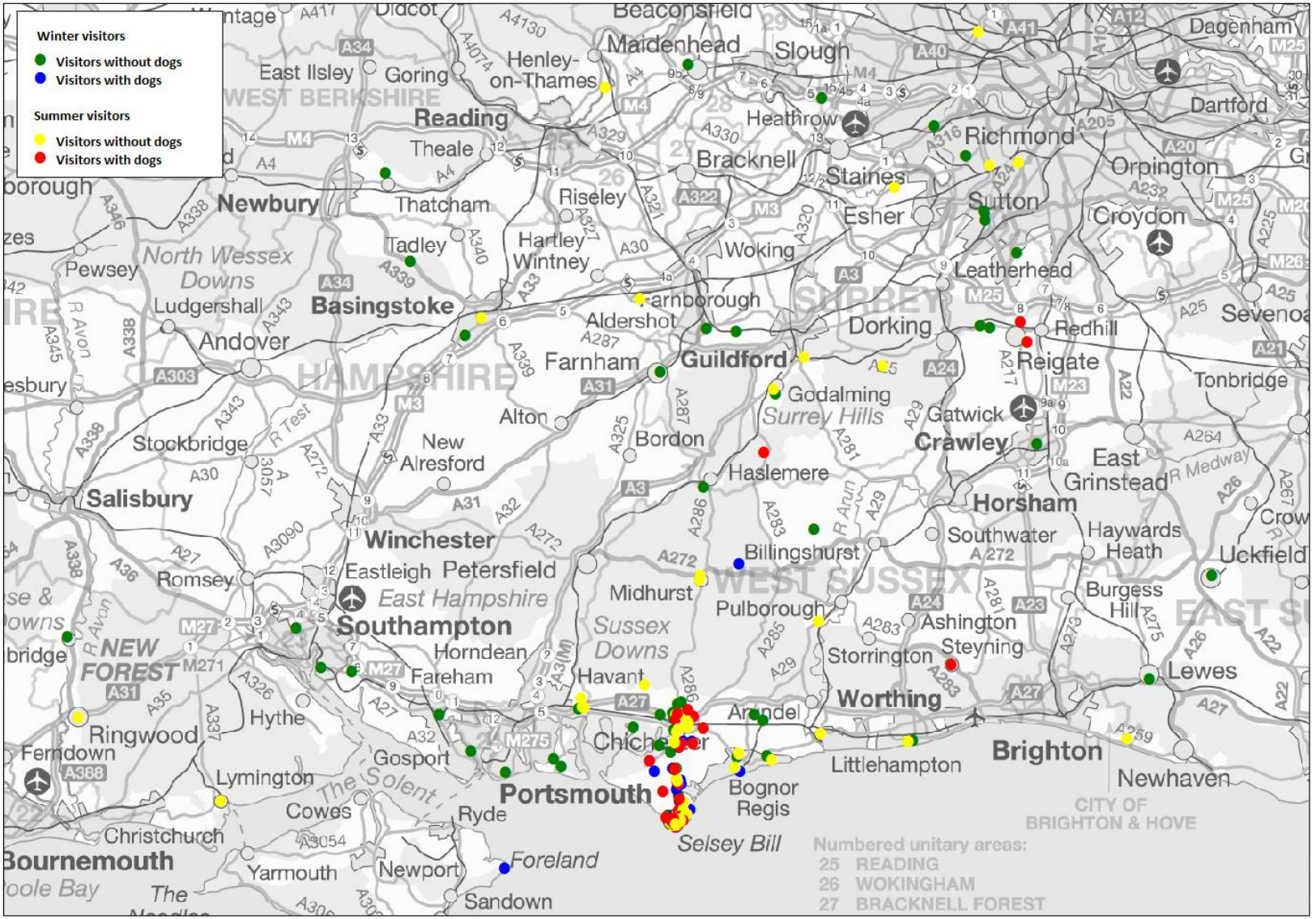


Figure 1: Visitor rates by summer and winter visitors to Pagham Harbour using the number of visitor postcodes in each buffer around the three survey locations divided by the number of residential delivery points (exponential trendline winter R^2=0.87, summer R^2=0.78).



Map 5: Visitor postcodes and the frequency with which they visit Pagham Harbour. Contains Ordnance Survey data © Crown copyright and database right 2012.



Map 6: Visitor postcodes and dog ownership. Contains Ordnance Survey data © Crown copyright and database right 2012.

Distance to survey locations from visitors home postcode

General

3.38 The home postcodes of visitors to each survey location are shown in Map 7. Visitors appeared to travel different distances to different survey locations with Greenlease Farm attracting visitors from the smallest catchment area with 93% of all visitors travelling from the Chichester area south towards Selsey. Visitors to Church Norton and the Visitor Centre travelled from further afield in both survey periods, with the Visitor Centre attracting visitors from greater distances in the summer and Church Norton having the widest catchment in the winter (Figure 2 and Figure 3).

3.39 Across all survey location visitors lived on average 18.9km (linear distance) from the survey location where they were interviewed. Taking the summer visitors alone, the average linear distance from home was 15.5km and in the winter it was 23.3km although there was no significant difference between median distances in the two survey periods. When considering people visiting from home only, the average linear distance travelled to the site in winter was 17.1km and 15.3km in summer. Considering all visitors, in the winter the shortest distance from a postcode location to a survey location was 0.56km to Greenlease Farm and the greatest distance was 247km to the Visitor Centre. In the summer the shortest and longest travel distances were both to the Visitor centre and were 0.71km and 110km.

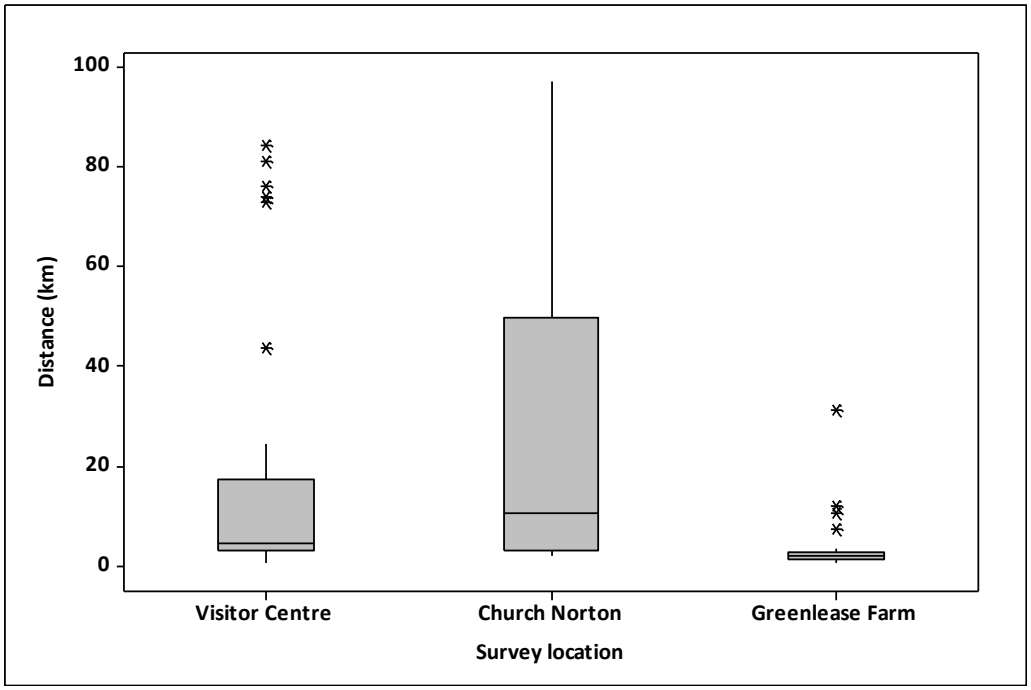


Figure 2: Linear distance from home postcodes to the survey location where visitors were interviewed in the WINTER survey. The figure only includes data from visitors who stated that they were visiting from home (n=106). These plots show the median (i.e. the midpoint value of the data – represented by a horizontal line), the interquartile range (i.e. 25%-75% of the data – represented by the box, while the vertical lines show the upper and lower limits of the data, with the outlying values represented by asterisks.

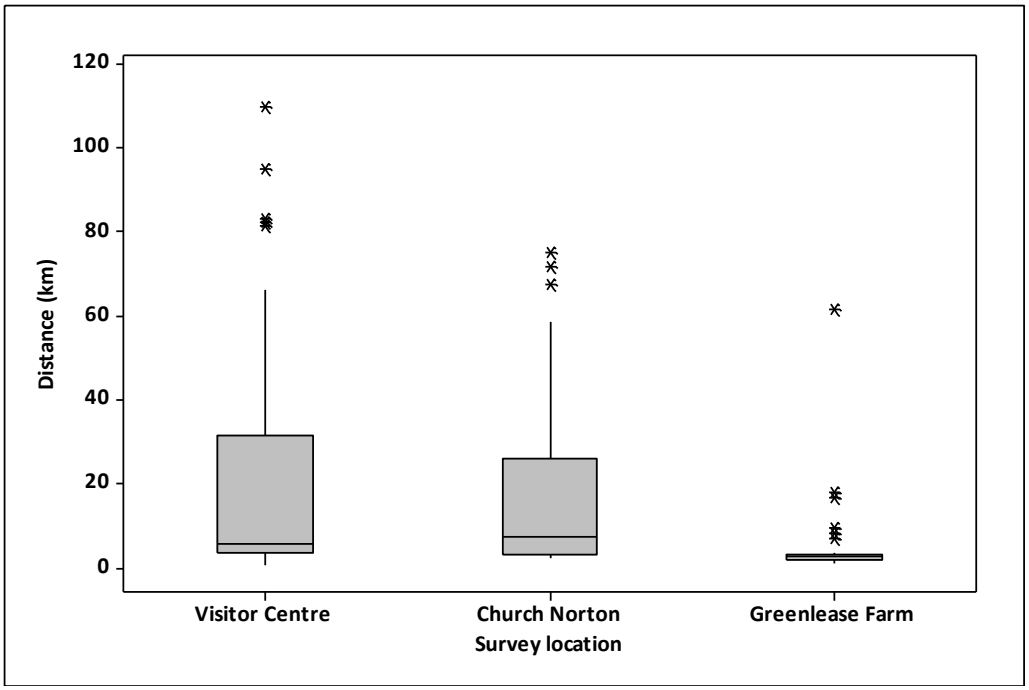
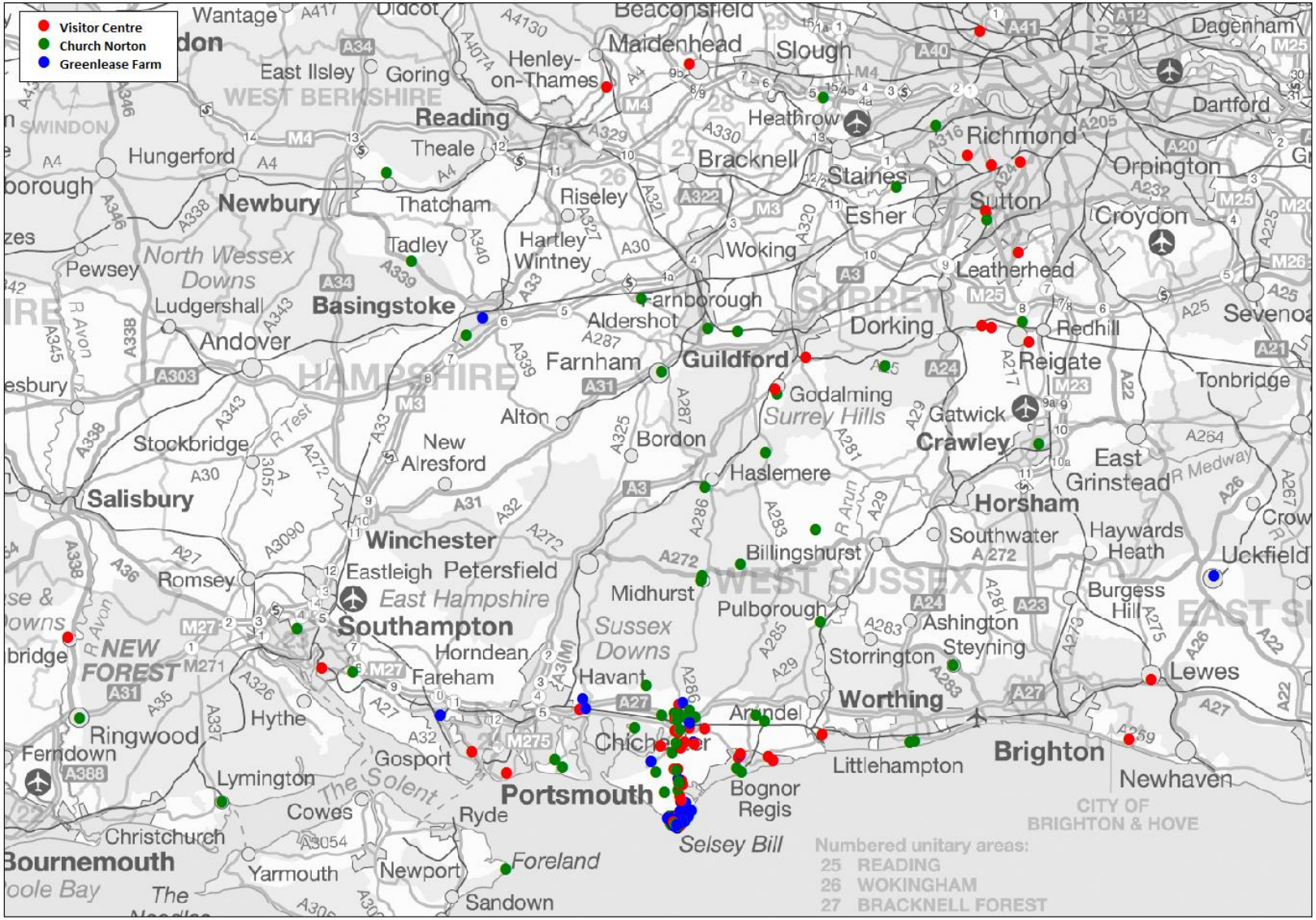


Figure 3: Linear distance from home postcodes to the survey location where visitors were interviewed in the SUMMER survey. The figure only includes data from visitors who stated that they were visiting from home (n=110). These plots show the median (i.e. the midpoint value of the data – represented by a horizontal line), the interquartile range (i.e. 25%-75% of the data – represented by the box, while the vertical lines show the upper and lower limits of the data, with the outlying values represented by asterisks.



Map 7: Visitor postcodes linked to the survey location where they were interviewed (includes winter and summer visitors). Contains Ordnance Survey data © Crown copyright and database right 2012.

Distance and activities

3.40 Across both survey periods, the main activities undertaken by interviewees were dog walking, walking and wildlife watching. Looking at the winter visitors, the median distance travelled to the site differs significantly between the three main activities (Kruskal Wallis H=52.65 2df, p<0.001) (Figure 4). Wildlife watching attracts people from further afield than both walking and dog walking (Table 15, Map 8). Specifically 75% of dog walkers in the winter live within 3.3km of the site whilst 75% of wildlife watchers live within 74.7km of the site (Figure 4). These figures demonstrate the obvious attractiveness of the site to bird watchers in the wintering period. The linear distances to home postcodes for different activities show a very similar pattern in the summer with wildlife watching having the greatest catchment (H = 10.54, 2df, p<0.01) and 75% of dog walkers living within 5.4km (Figure 5).

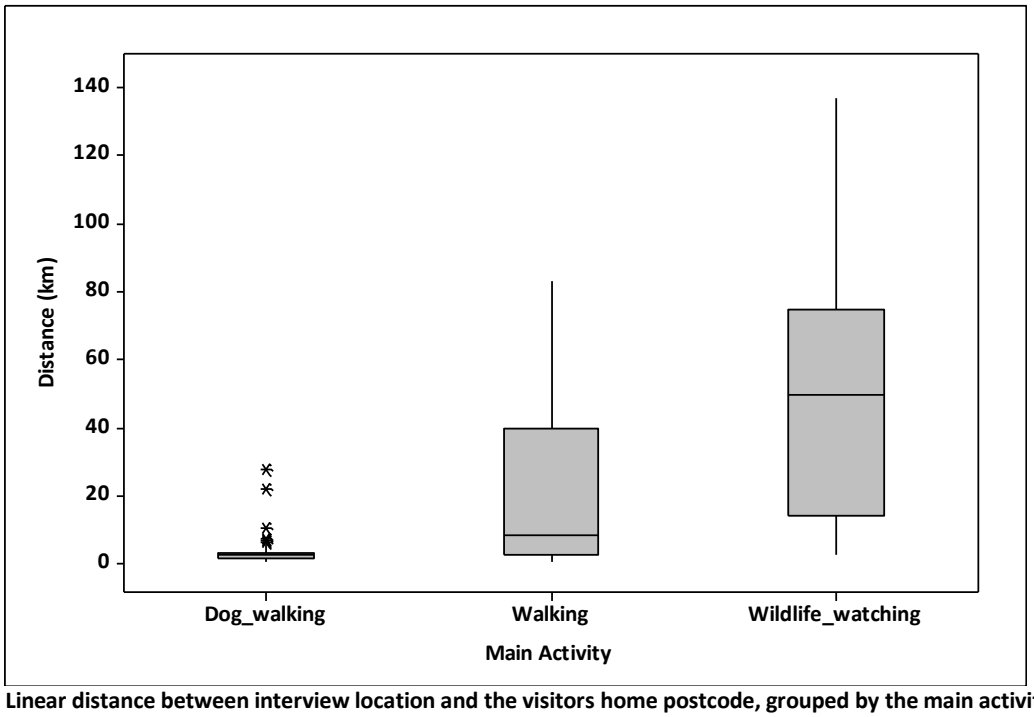


Figure 4: Linear distance between interview location and the visitors home postcode, grouped by the main activity undertaken during their visit in the WINTER (only activities undertaken by at least 5 interviewees are shown). The graph has been truncated at 150km. These plots show the median (i.e. the midpoint value of the data – represented by a horizontal line), the interquartile range (i.e. 25%-75% of the data – represented by the box, while the vertical lines show the upper and lower limits of the data, with the outlying values represented by asterisks.

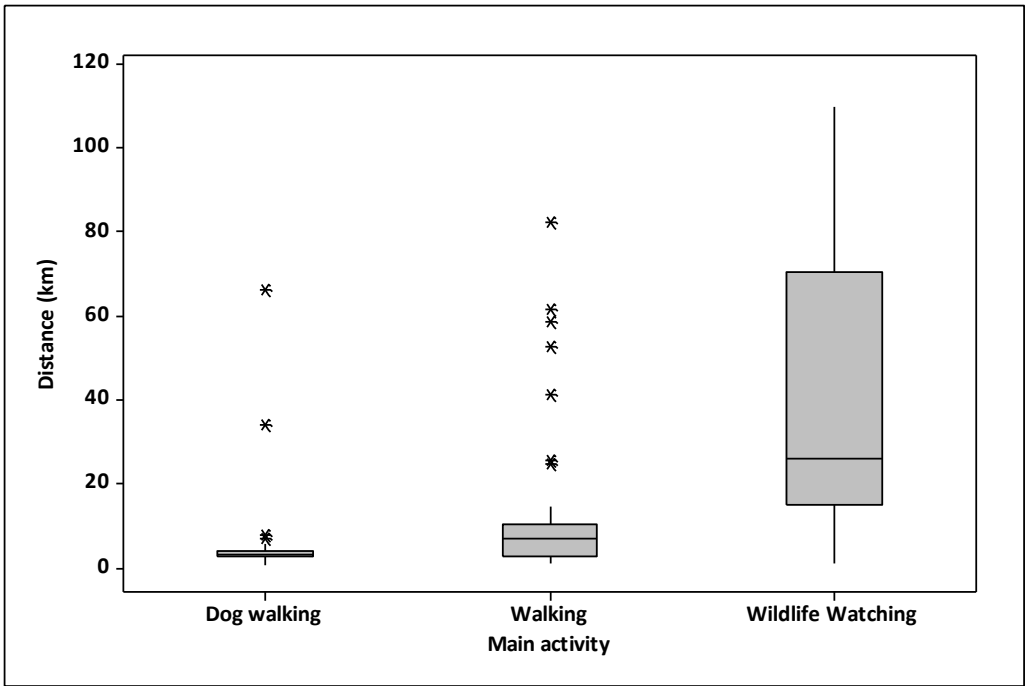
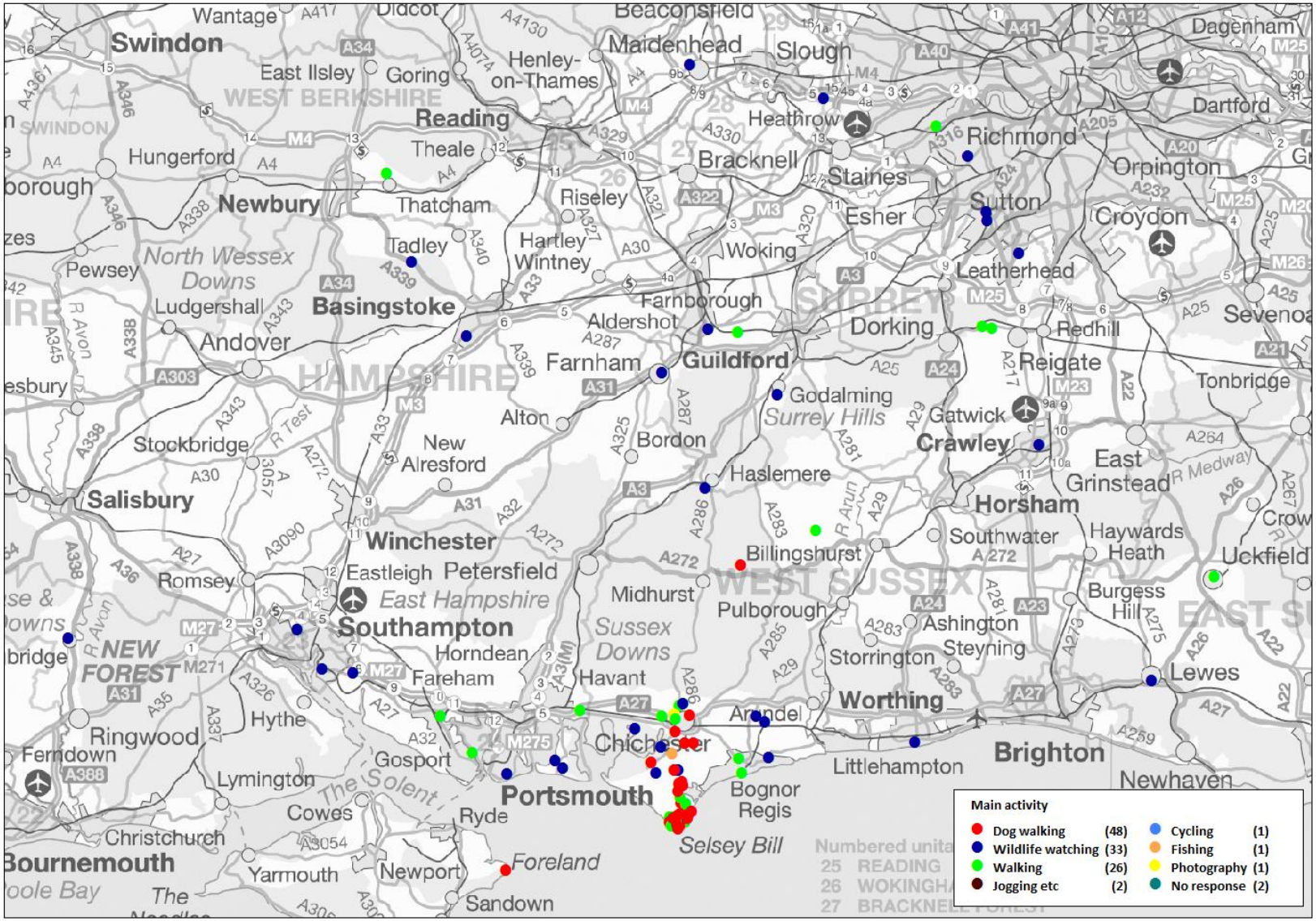


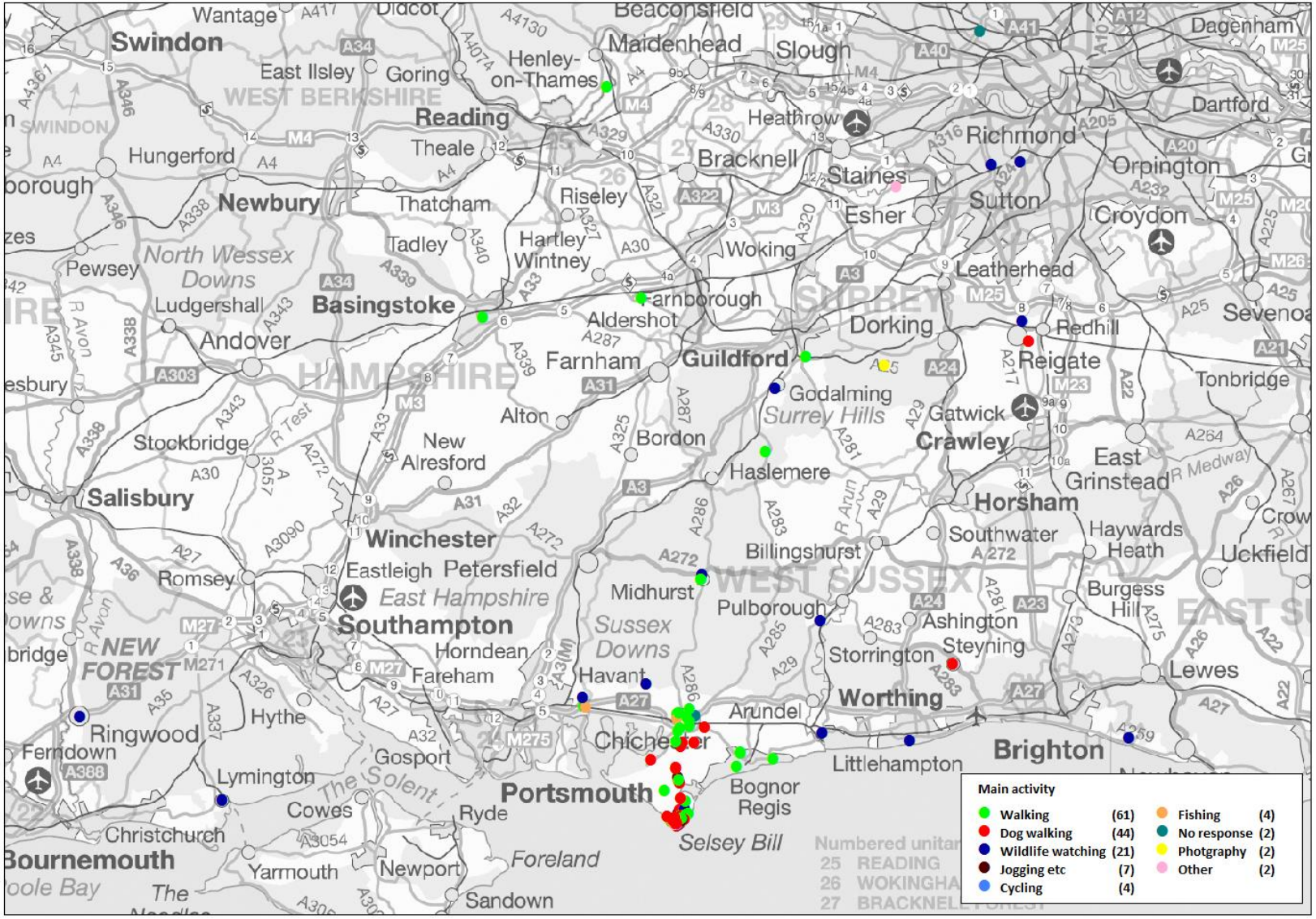
Figure 5: Linear distance between interview location and the visitors home postcode, grouped by the main activity undertaken during their visit in the SUMMER (only activities undertaken by at least 5 interviewees are shown). These plots show the median (i.e. the midpoint value of the data – represented by a horizontal line), the interquartile range (i.e. 25%-75% of the data – represented by the box, while the vertical lines show the upper and lower limits of the data, with the outlying values represented by asterisks.

Table 15: Linear distance (km) from visitors home postcode to survey location grouped by main activity undertaken (all visitors included).

Main activity	Winter				Summer			
	Median distance (km)	Minimum distance (km)	Maximum distance (km)	Number of postcodes	Median distance (km)	Minimum distance (km)	Maximum distance (km)	Number of postcodes
Dog walking	2.6	0.6	27.8	48	3.1	0.7	66.1	36
Walking	8.2	0.6	83.2	26	6.5	0.9	82.2	40
Jogging etc	2.7	2.2	3.1	2	2.6	2.3	3.6	6
Cycling	1.3	1.3	1.3	1	1.9	1.9	3.5	3
Wildlife watching	49.8	2.5	246.9	33	26.1	1.1	110.0	17
Fishing	5.9	5.9	5.9	1	6.2	2.5	16.8	4
Photography	10.1	10.1	10.1	1	29.1	3.3	55.0	2



Map 8: Winter visitor postcodes and the main activity that they were undertaking. Contains Ordnance Survey data © Crown copyright and database right 2012.



Map 9: Summer visitor postcodes and the main activity that they were undertaking. Contains Ordnance Survey data © Crown copyright and database right 2012.

Transport mode and distance to survey locations

3.42 The methods of transport used to travel to the survey locations and the distance of the visitors' home postcode was investigated. Figure 6 shows the distance between the visitors' home postcode and the interview location categorised by transport mode for the winter survey and the summer data are displayed in Figure 7. In both survey periods, visitors who arrived by car/van travelled a greater distance to visit their chosen location in comparison to those who arrived by foot (Kruskal Wallis H=91.51, 1df, p<0.001). Summer visitors travelling on foot tend to walk further than winter foot visitors (H=9.33, 1df, p=0.002). There was no significant difference between the distances travelled by car in the summer and winter.

3.43 Visitors travelled smaller distances on foot mainly from the north eastern side of Selsey to Greenlease Farm (Map 10; Map 11). The furthest visitor travelling by foot went to the visitor centre to bird watch and they had walked from their home to the north of Sidlesham.

3.44 Map 10 and Map 11 combined with the cumulative frequency curves for visitors arriving by car (Figure 8) and on foot (Figure 9) show the localised use of the sites by residents arriving on foot compared to the distances between home postcode and visit location of interviewees arriving by car. Ninety percent of winter visitors by car and 66% of summer visitors by car lived within 75km of their visit location (Figure 8). For visits on foot, 90% of winter visitors lived within 2.7km and for summer visitors this was further at 3.5km (Figure 9).

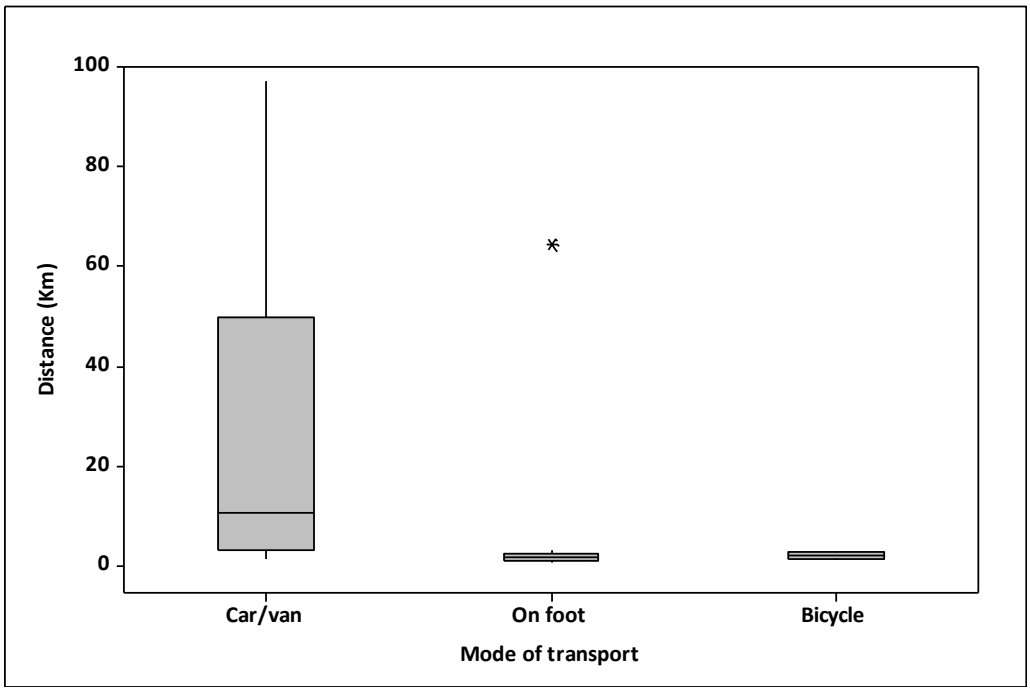


Figure 6: Linear distances travelled by different transport modes from visitors home postcodes to the interview location in the WINTER survey. Data have been truncated at 100km. These plots show the median (i.e. the midpoint value of the data – represented by the horizontal line), the interquartile range (i.e. 25%-75% of the data – represented by the box, while the vertical lines show the upper and lower limits of the data, with the outlying values represented by asterisks.

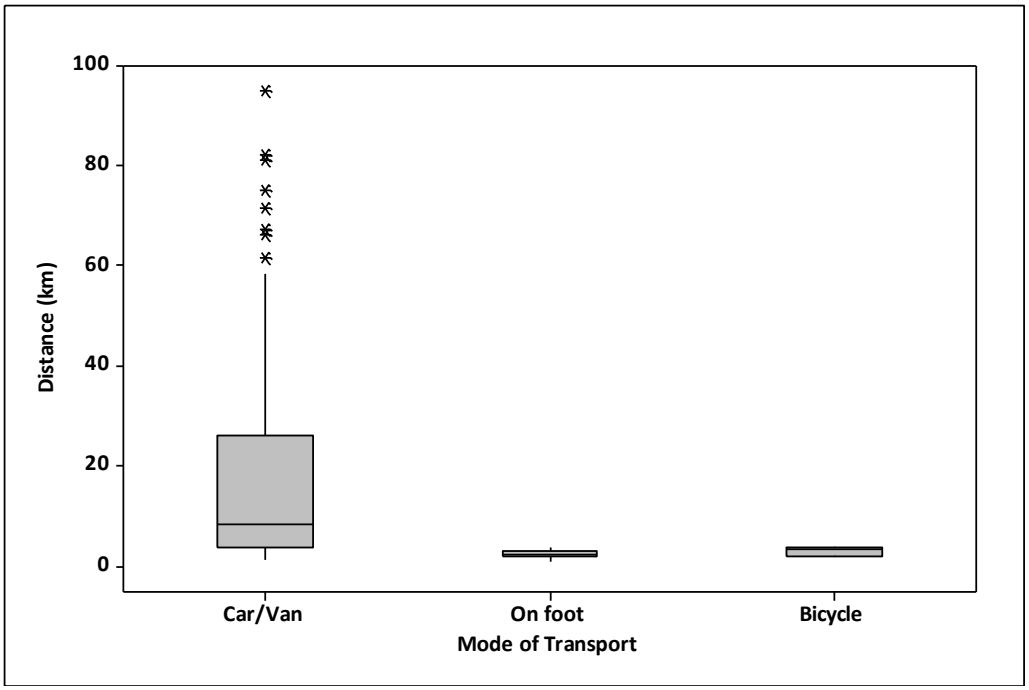


Figure 7: Linear distances travelled by different transport modes from visitors home postcodes to the interview location in the SUMMER survey. Data have been truncated at 100km. These plots show the median (i.e. the midpoint value of the data – represented by the horizontal line), the interquartile range (i.e. 25%-75% of the data – represented by the box, while the vertical lines show the upper and lower limits of the data, with the outlying values represented by asterisks.

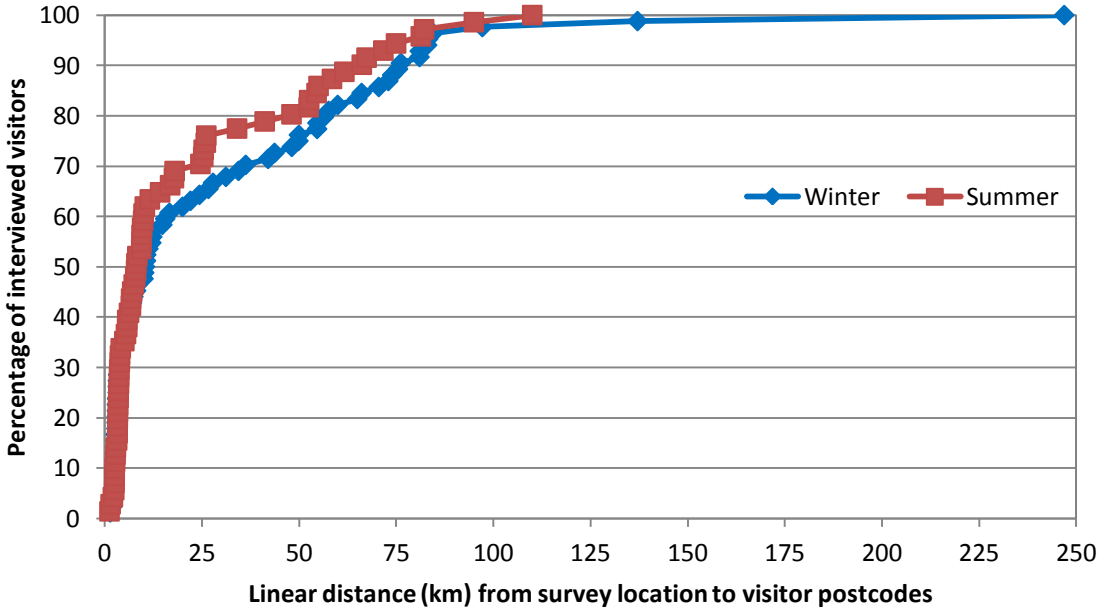


Figure 8: Cumulative frequency distribution of the linear distance travelled by visitors by car from their home postcode to the survey location.

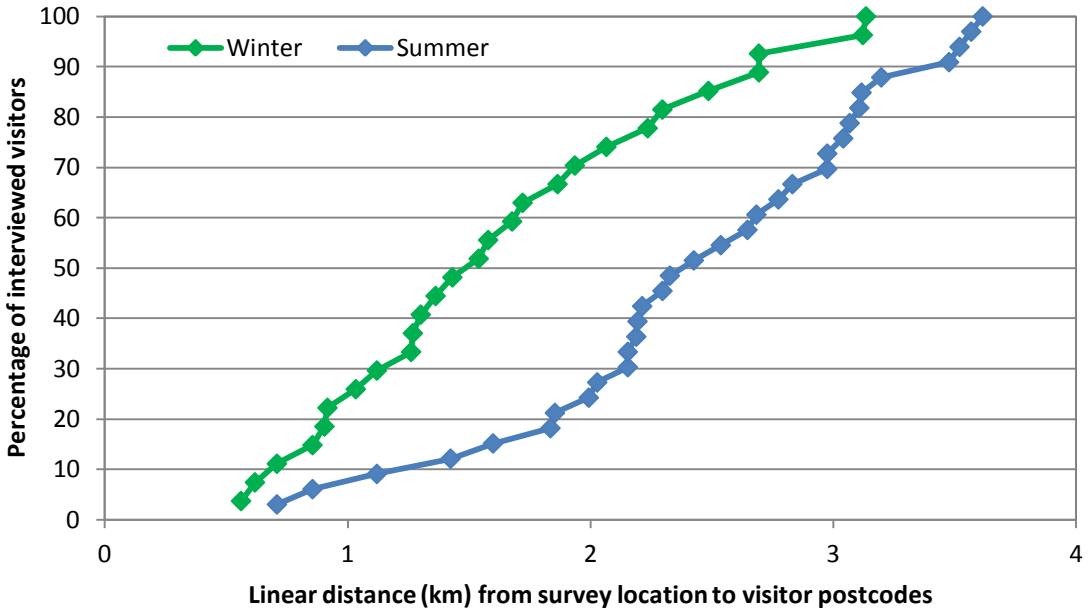
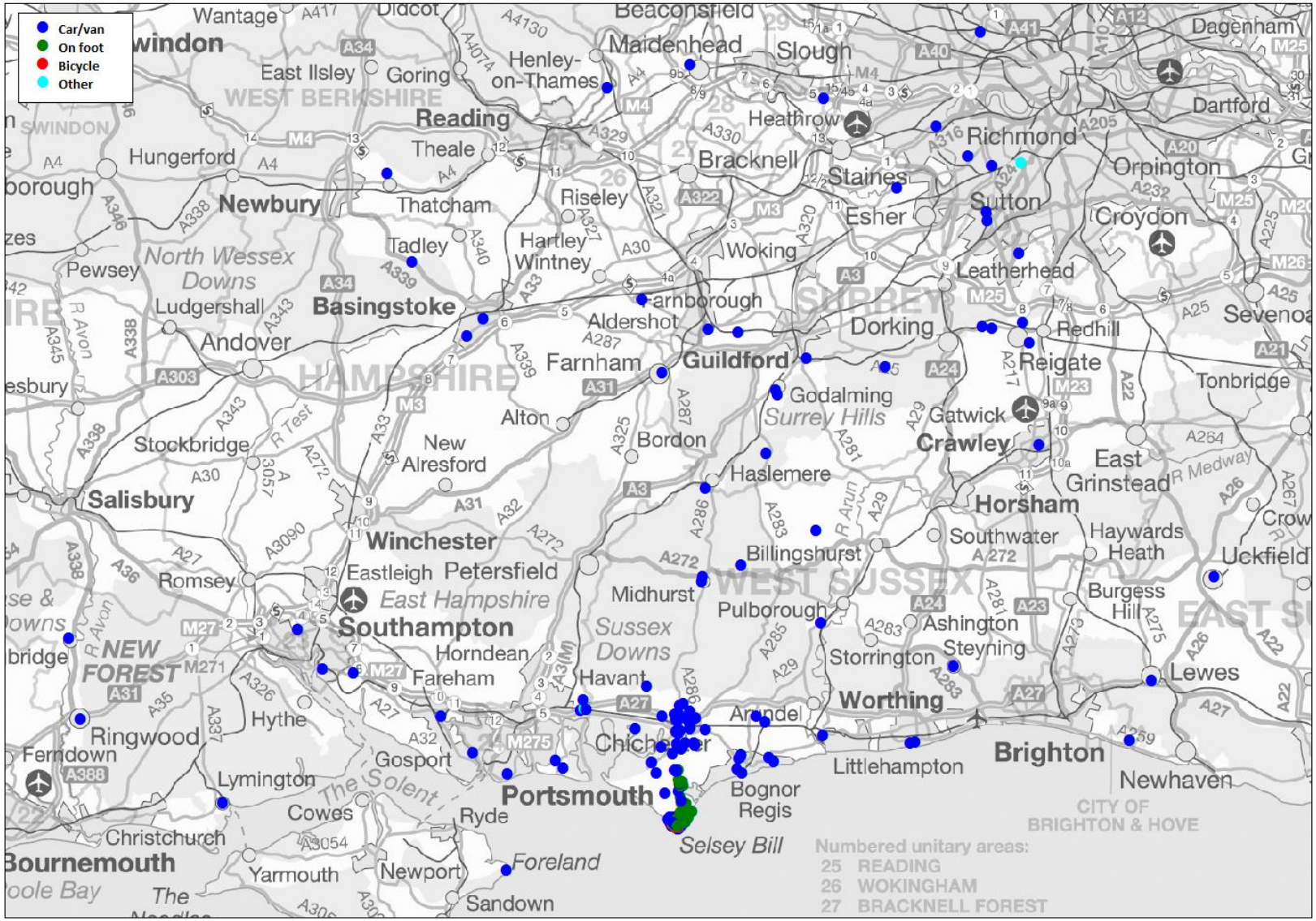


Figure 9: Cumulative frequency distribution of the linear distance travelled by visitors on foot from their home postcode to the survey location. This figure excludes visitors who were on holiday in the area and had travelled on foot from their holiday accommodation.

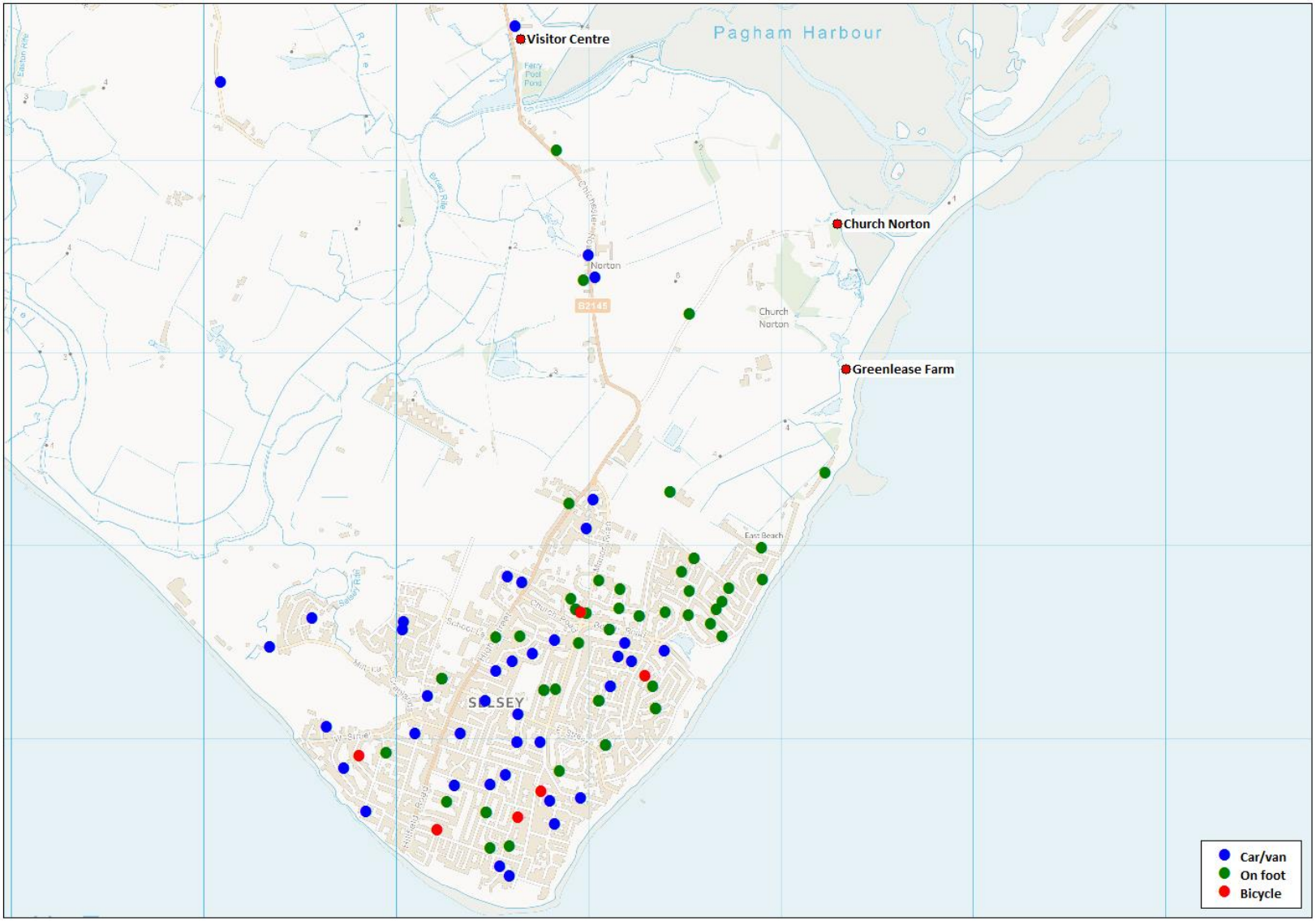
3.45 More than 60% of winter visitors on foot visit the harbour most days or daily whereas 15% of frequent winter visitors travel by car (Table 16). In the summer these figures fall to 11% of people who travel by car visiting at least most days and 47% of foot visitors visiting at least most days. The majority of visitors which visit the site less frequently travel by car (70% in winter and 64% in summer).

Table 16: Number of interviewed visitors by visit frequency and transport type. Percentage of visitors in each visit frequency category per transport type shown in brackets.

Transport	Winter				Summer			
	Visit at least most days	Visit less frequently than most days	Don't know/first visit/blank	Total	Visit at least most days	Visit less frequently than most days	Don't know/first visit/blank	Total
Car/van	14 (15)	**64 (70)**	14 (15)	92	10 (11)	**61 (64)**	24 (25)	95
On foot	**19 (61)**	11 (35)	1 (3)	31	**20 (47)**	18 (42)	5 (12)	43
Bicycle	**2 (100)**			2	1 (14)	**5 (71)**	1 (14)	7
No response			**1 (100)**	1		**2 (100)**		2
Total	**35**	**75**	**16**	**126**	**31**	**86**	**30**	**147**



Map 10: Visitor postcodes and the mode of transport used to visit Pagham Harbour (include winter and summer visitors). Contains Ordnance Survey data © Crown copyright and database right 2012.



Map 11: Local visitor postcodes and the mode of transport used to visit Pagham Harbour (include winter and summer visitors). Contains Ordnance Survey data © Crown copyright and database right 2012.

Visitor Routes

3.47 A total of 266 useable routes were gathered from the 273 interviewed visitors, therefore routes were gathered for 97% of all groups interviewed (96% summer and 98% winter). Just over 7% of visitor routes (19 routes; 13 winter and 6 summer) were collected using GPS units and the remaining routes were mapped onto paper. Both sets of routes were digitised as described in the methods section and Map 12 and Map 13 show all the mapped visitor routes according to the survey location where they were interviewed for the two survey periods separately. We considered whether route length varied according to main visitor activity and also with location. There was no significant difference in the overall median route lengths recorded between the two survey periods when location and activity were not taken into account (Kruskal-Wallis test).

Route length by location

3.48 There was no significant difference between route lengths at the different survey locations in the winter but a highly significant difference was found in the summer survey (Kruskal-Wallis test; $H=28.97$, 2df, $p<0.001$), (Figure 10 and Table 17). Summer routes were shortest at the Visitor Centre and longest at Greenlease Farm whereas the opposite pattern (although not significant) is observed in the winter whereby routes were longest at the Visitor Centre and shortest at Greenlease Farm (Figure 10, Figure 11, Table 17). In the winter visitors to the Visitor Centre went further around the site with some longer routes incorporating the surrounding farmland and the eastern side of the harbour (Map 12). Summer routes show that visitors to Greenlease and Church Norton are taking longer routes out into the adjacent farmland north of Selsey (Map 13).

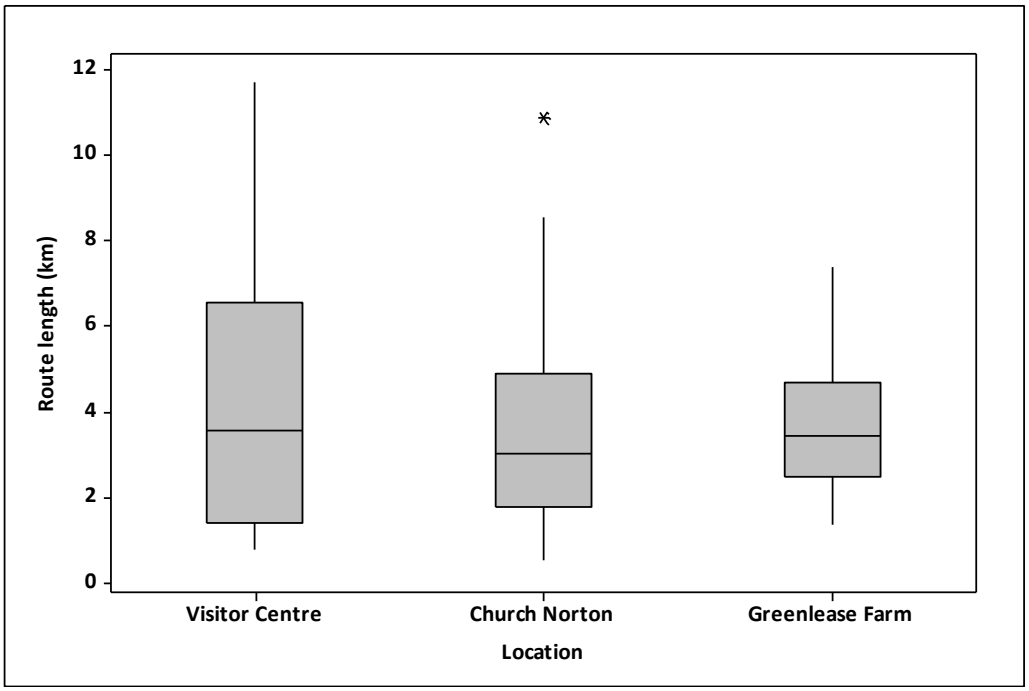


Figure 10: Route length (km) of WINTER visitors per survey location. These plots show the median (i.e. the midpoint value of the data – represented by a horizontal line), the interquartile range (i.e. 25%-75% of the data – represented by the box, while the vertical lines show the upper and lower limits of the data, with the outlying values represented by asterisks.

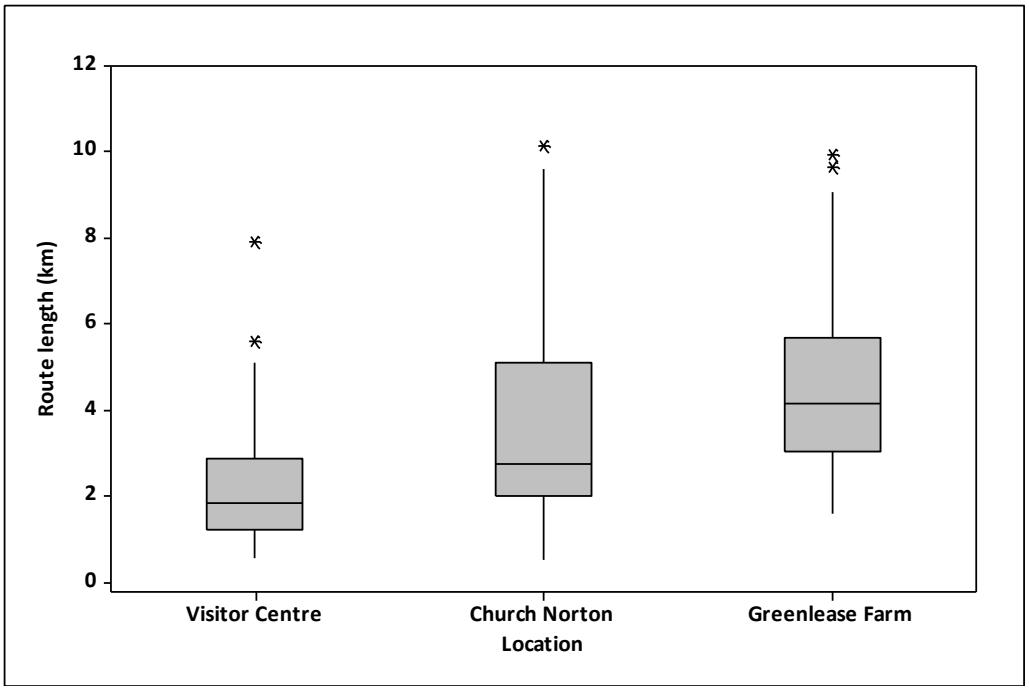


Figure 11: Route length (km) of SUMMER visitors per survey location. These plots show the median (i.e. the midpoint value of the data – represented by a horizontal line), the interquartile range (i.e. 25%-75% of the data – represented by the box, while the vertical lines show the upper and lower limits of the data, with the outlying values represented by asterisks, the data have been truncated at 12km.

Table 17: Visitor route length (km) per survey location where N= number of interviewed visitors.

Location	Winter					Summer				
	N	Mean	Minimum	Median	Maximum	N	Mean	Minimum	Median	Maximum
Visitor Centre	44	4.2	3.6	0.8	11.7	43	2.8	0.5	1.8	15.2
Church Norton	45	3.6	3.0	0.5	10.9	56	4.0	0.5	2.8	25.1
Greenlease Farm	33	3.6	3.4	1.3	7.4	45	4.7	1.6	4.2	12.8

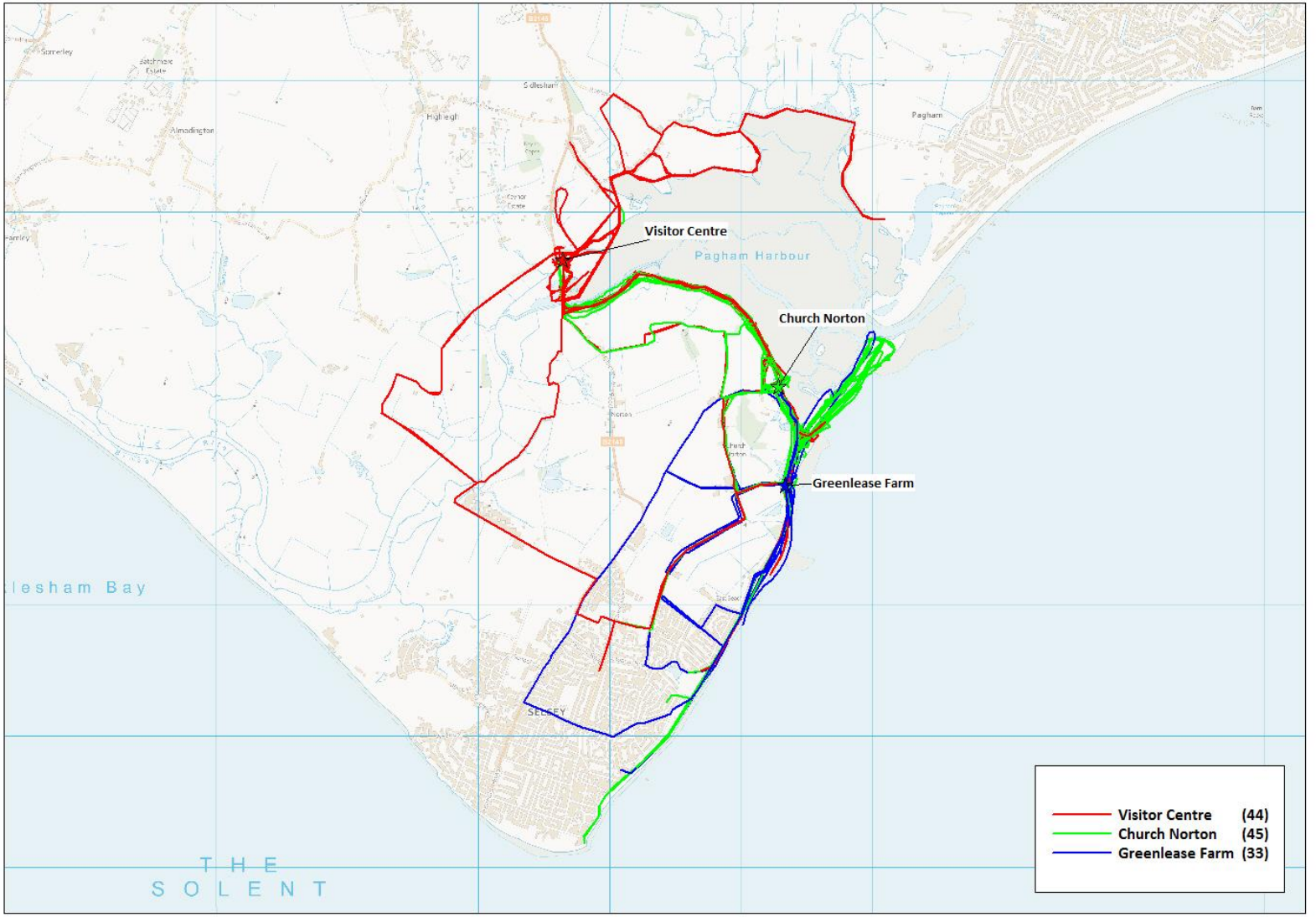
3.50 Combining the responses from both survey periods, 33% of visitors stated they walked off the paths and onto the mudflats or open beach, 64% of visitors stated they stayed on the paths and 3% provided no response (Table 18). However there was a significant difference between the two survey periods in terms of the number of people walking on the intertidal area. Specifically, more people walk on the mudflats in the winter compared to the summer (χ^2= 58.45, 1df, p<0.001). Winter visitors were most likely to remain on paths when visiting the Visitor Centre whilst visitors to Greenlease Farm were most likely to leave paths as the access point leads straight on to the beach.

3.51 Of the 56% of interviewed visitors in the winter whose route took them onto the mudflats or open beach 42% had at least one dog with them and 58% were not accompanied by a dog. In the summer only 20 visitors stated that they walked on to

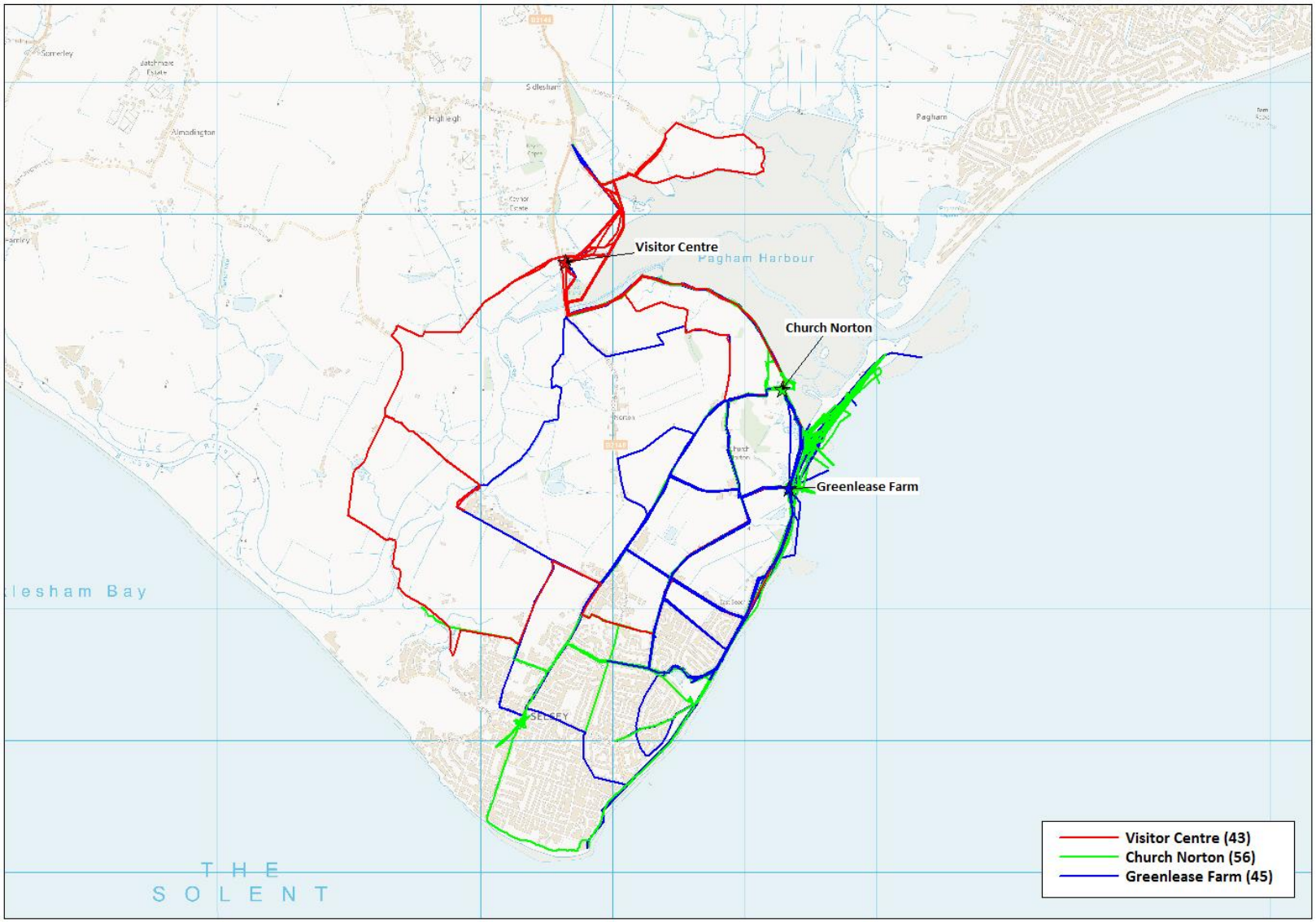
the intertidal and of those 20 (14%) and 40% of these visitors (8) had dogs with them.

Table 18: The number and percentage (in brackets) of visitors who stated that their routes did or would involve leaving footpaths to walk on the mudflats or open beach. The most common answer at each location is shown in bold.

Location	Winter				Summer			
	Walked on mudflats or open beach	Stayed on paths	No response	Total	Walked on mudflats or open beach	Stayed on paths	No response	Total
Visitor Centre	11 (23)	**36 (77)**		47	3 (7)	**37 (86)**	3 (7)	43
Church Norton	**31 (67)**	13 (28)	2 (2)	46	11 (20)	**45 (80)**		56
Greenlease Farm	**29 (88)**	3 (9)	1 (3)	33	6 (13)	**41 (85)**	1 (2)	48
Total	**71 (56)**	52 (41)	3 (2)	126	20 (14)	**123 (84)**	4 (3)	147



Map 12: The digitised routes of winter visitors (n=122) coded by survey location. Contains Ordnance Survey data © Crown copyright and database right 2012.



Map 13: digitised routes of summer visitors (n=144) coded by survey location. Contains Ordnance Survey data © Crown copyright and database right 2012.

Route length by activity

3.53 When considering the three main winter activities (with more than 5 responses) including dog walking, walking and wildlife watching, there was no significant difference in route length when categorised by main activity (Kruskal Wallis H=2.53 2df, p=0.282) (Figure 12). The longest routes were observed for the few visitors which were jogging etc or cycling (Table 19). Wildlife watchers exhibited the widest range of route length from 0.5km to 10.4km in the winter survey.

3.54 There was a highly significant difference between route lengths for dog walking, walking, jogging and wildlife watching in the summer survey with the longest routes recorded for joggers and walkers and the shortest routes recorded for wildlife watchers (Kruskal Wallis H=20.44, 3df, p<0.001; Table 19, Figure 13).

3.55 Map 14 and Map 15 show the routes of different users by activity type around the Church Norton Spit area where some of the most sensitive parts of the harbour are located as described in (Hoskin et al. 2011). On the spit there are two important locations for vegetated shingle, nesting birds (little tern) and Childing Pink. On the harbour side of the spit there are nesting terns and waders (ringed plover, oystercatcher) and Childing Pink on Tern Island and to the north of the base of the spit there are breeding redshank. Access is not allowed on the harbour side of the spit during the breeding season.

3.56 Whilst not as intensively used as the areas surrounding the survey locations, a number of routes were recorded on the spit during both survey periods. No routes were recorded in the area without access during the breeding season (Map 14). Fifteen summer routes were recorded on the spit, one did not have a specific activity recorded but the recorded activities were dog walking (N=4), walking (N=8), metal detecting (N=1) and fishing (N=1) (Map 15). In the winter 17 routes were recorded on the spit and the activities were wildlife watching (N=8), walking (N=5), dog walking (N=2) and fishing (N=1) and 'exercise' (N=1) (Map 14).

Table 19: Visitor route length (km) per main activity category where N= number of interviewed visitors.

Main activity	Winter					Summer				
	N	Mean	Minimum	Median	Maximum	N	Mean	Minimum	Median	Maximum
Dog walking	49	3.3	2.6	1.1	7.7	43	3.3	1.2	2.9	9.6
Walking	28	4.2	3.3	1.1	10.9	60	4.3	0.9	3.1	25.1
Jogging etc	3	7.7	5.7	5.7	11.7	7	7.1	3.1	6.3	10.0
Cycling	1	7.4	7.4	7.4	7.4	3	7.3	3.2	5.8	12.8
Wildlife watching	36	4.1	3.2	0.5	10.4	21	2.3	0.5	1.8	9.0
Fishing	1	2.5	2.5	2.5	2.5	4	2.2	1.5	2.1	3.1
Photography	1	1.6	1.6	1.6	1.6	2	4.6	1.8	4.6	7.4

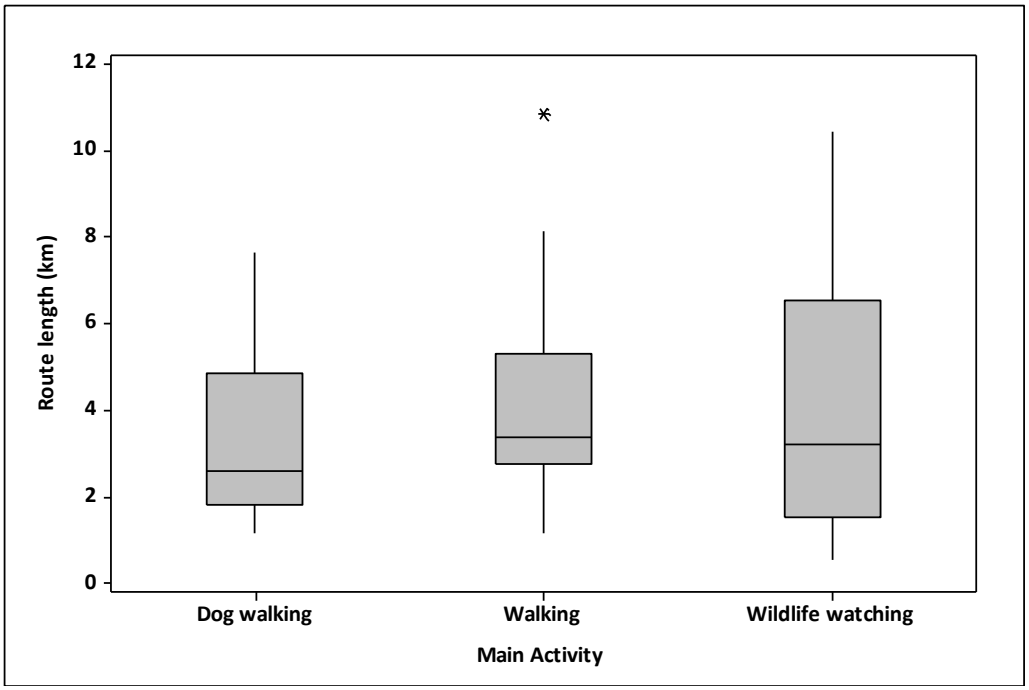


Figure 12: Route length (km) of WINTER visitors per main activity category. These plots show the median (i.e. the midpoint value of the data – represented by a horizontal line), the interquartile range (i.e. 25%-75% of the data – represented by the box, while the vertical lines show the upper and lower limits of the data, with the outlying values represented by asterisks. Activities with fewer than 5 responses were excluded.

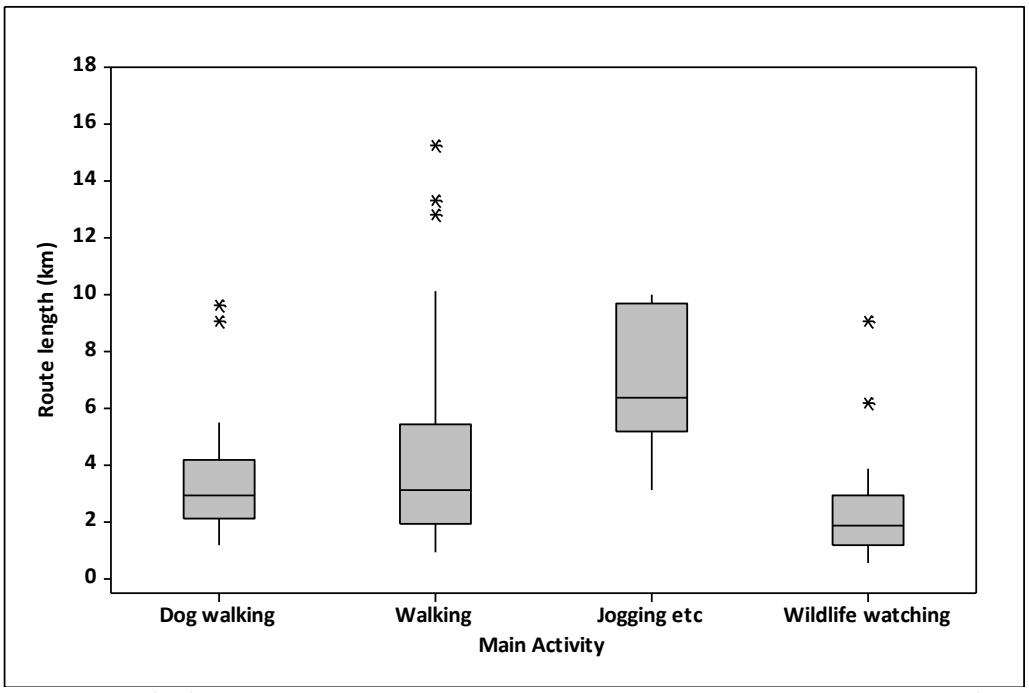
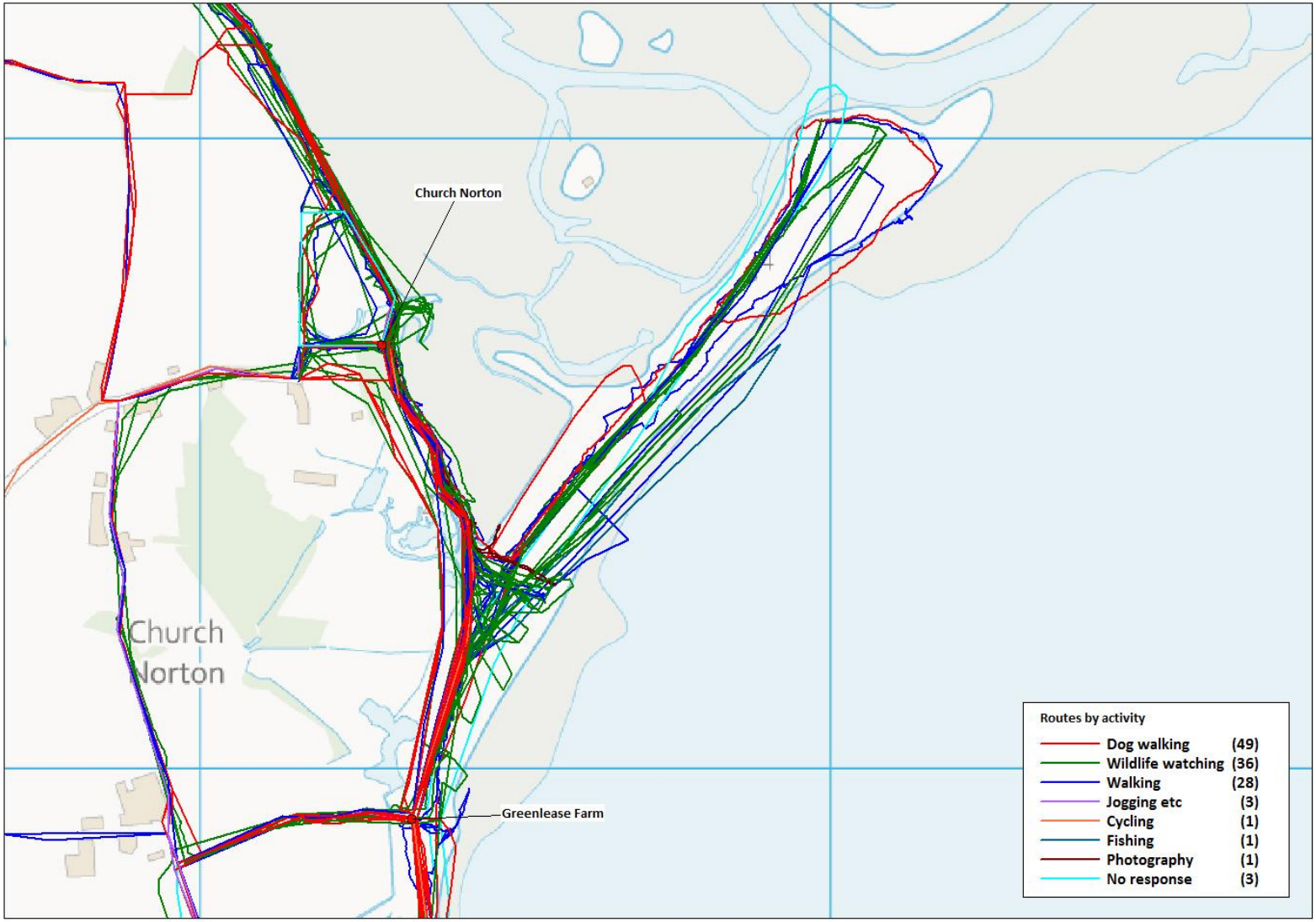


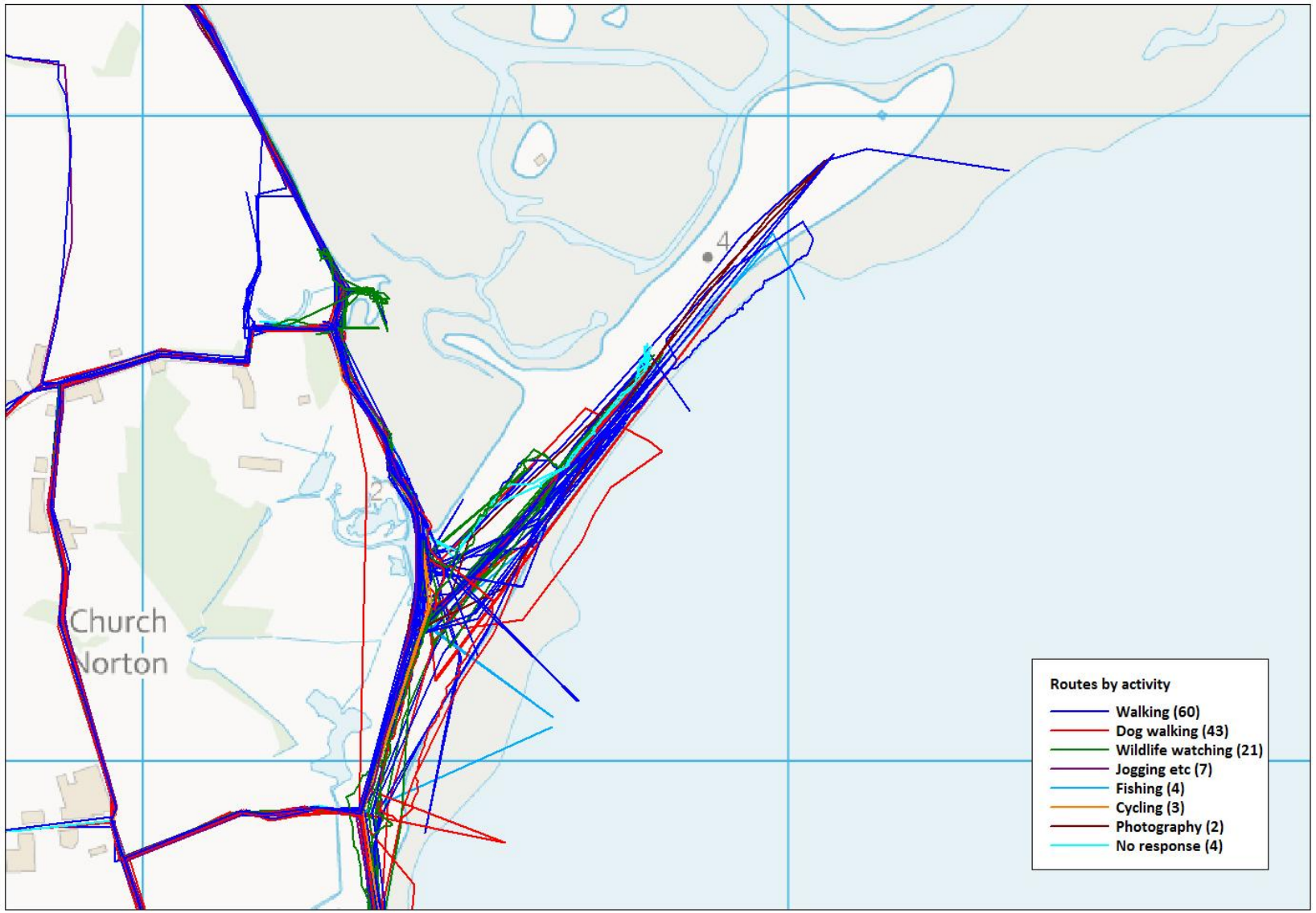
Figure 13: Route length (km) of SUMMER visitors per main activity category. These plots show the median (i.e. the midpoint value of the data – represented by a horizontal line), the interquartile range (i.e. 25%-75% of the data – represented by the box, while the vertical lines show the upper and lower limits of the data, with the outlying values represented by asterisks, the data were truncated at 18km. Activities with fewer than 5 responses were excluded.

3.58 The route data collected was used to generate a visitor use intensity map (Map 16; Map 17). The total number of people passing through each 50m x 50m grid square was counted using the group size information gathered in the questionnaire. Each grid cell in a matrix which was generated over the Pagham Harbour area was given a score based on the total number of people passing through as determined by the

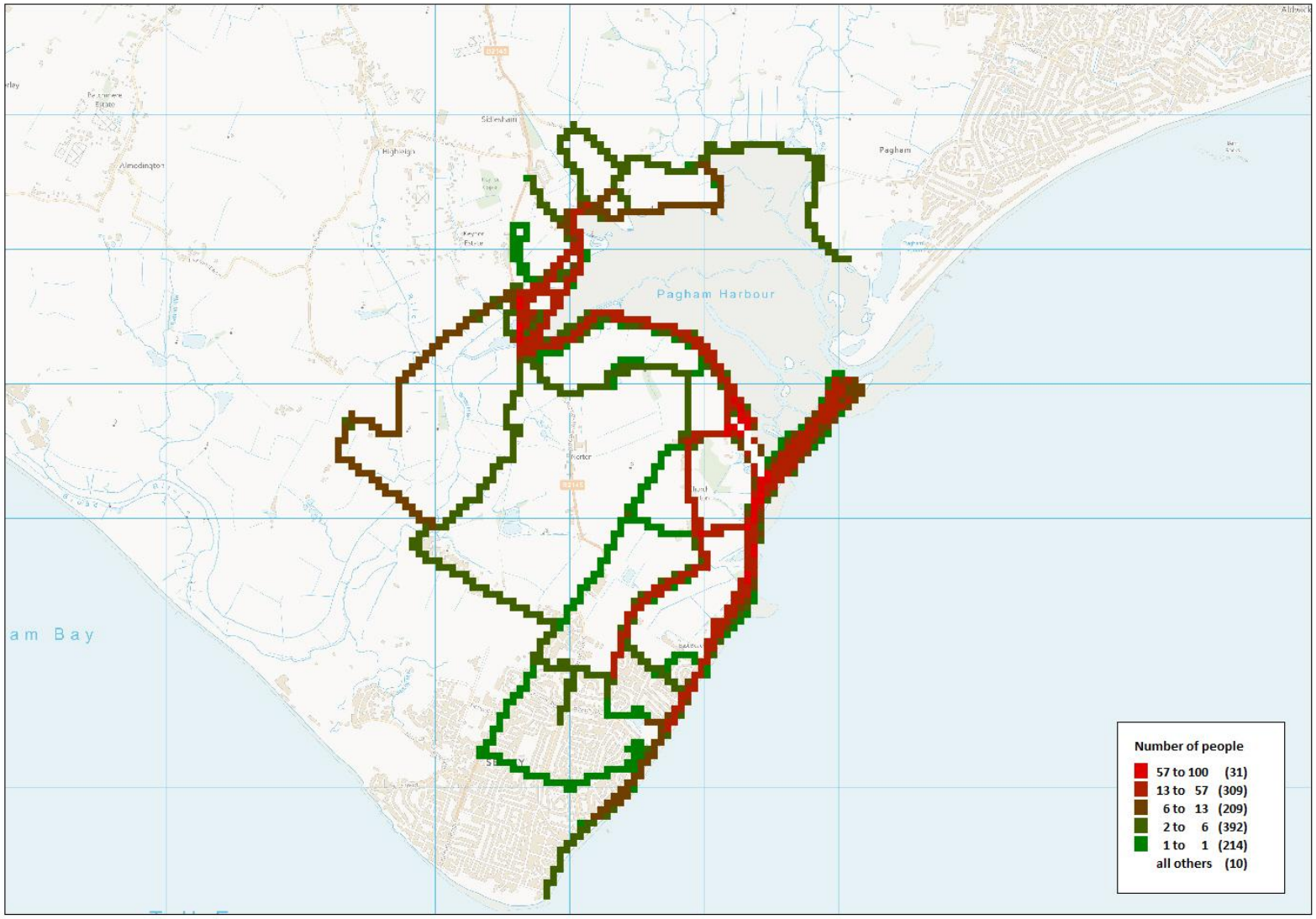
route information. The maps demonstrate that the busiest areas used by interviewees were around the Visitor Centre and Church Norton and the stretch of coastline between these two survey locations. Other busy areas are the paths which link Church Norton and Greenlease Farm to Selsey. The small loop from Church Norton car park which takes in the coast at the base of the spit is particularly popular. The actual coastline appears to be more heavily used than the spit.



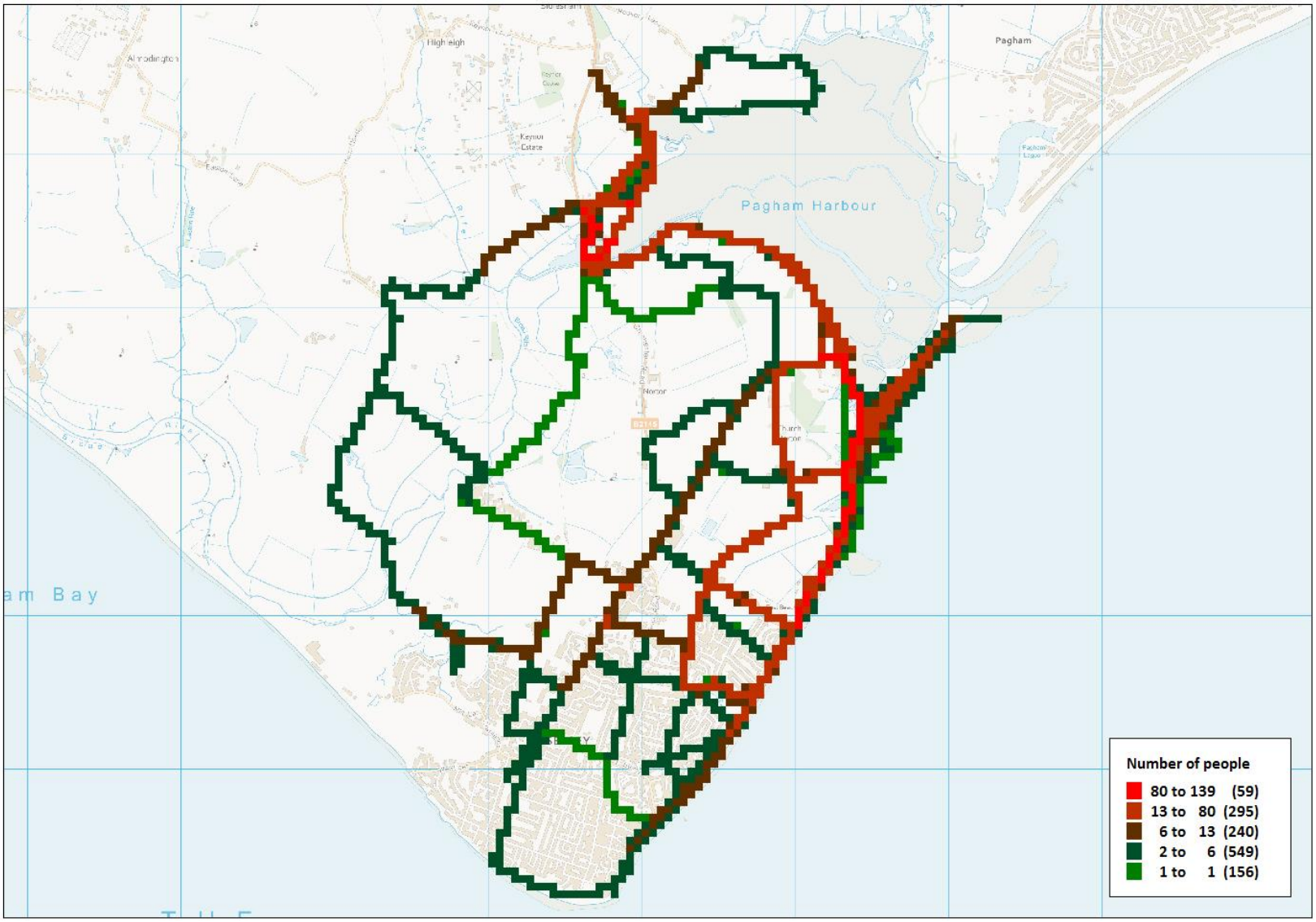
Map 14: The digitised routes of winter visitors coded by activity undertaken showing a limited area around the spit. Contains Ordnance Survey data © Crown copyright and database right 2012.



Map 15: The digitised routes of summer visitors coded by activity undertaken showing a limited area around the spit. Contains Ordnance Survey data © Crown copyright and database right 2012.



Map 16: Visitor use of Pagham Harbour in the winter (the number of people passing through each 50m x 50m square) as determined by the group size associated to each route. Contains Ordnance Survey data © Crown copyright and database right 2012.



Map 17: Visitor use of Pagham Harbour in the summer (the number of people passing through each 50m x 50m square) as determined by the group size associated to each route. Contains Ordnance Survey data © Crown copyright and database right 2012.

4. Discussion

4.1 The data presented in this report provide an overview of the winter and summer recreational use of the north and western sides of Pagham Harbour SPA. The three survey locations selected provide a representative sample of access types along the western side of the harbour including the Visitor Centre with car parking for 18 cars (plus an overflow area), Church Norton car park with 15 spaces and Greenlease Farm with foot access only. The visitor work was conducted at the end of January and beginning of February 2012 and this was followed up by a summer survey in June and July 2012 to provide a more complete picture of visitor patterns and pressures. This addition to the initial survey was particularly important given that the SPA interest features include breeding species and summer visitors will be attracted to the site for different reasons.

4.2 The fieldwork was limited to a selection of locations on the western side of the SPA only. A previous visitor survey conducted in January 2009 (Ecological Planning and Research 2009) included seven survey locations around the harbour with two locations at Pagham. 134 groups were interviewed in this survey and it would be worthwhile considering extending any further surveys to include the additional survey locations near Pagham.

4.3 The site was marginally busier in the summer with an increase of 11% in the number of people recorded entering the site. The main activities undertaken at Pagham Harbour are dog walking (35%), walking (33%) and wildlife watching (22%). In the winter, wildlife watching is twice as popular compared to the summer. In the summer, the main activity was walking. Over 80% of all interviewed groups stated that they were visiting from home. The site clearly has a local catchment with 34% of summer visitors and 27% of winter visitors arriving by foot or bicycle. The site does attract visitors from a wide area in the winter with a median travel distance for birdwatchers' of 49.8km.

4.4 When asked why they chose this site over any other, the most popular response in the winter was for a particular wildlife interest (27%) this was closely followed by 'closeness to home' (25%). The results indicate that Pagham Harbour attracts two main kinds of winter visitors: local dog walkers and walkers and also wildlife watchers (birdwatchers) who travel primarily from further afield. Comparing the results to the survey carried out in 2009 (Ecological Planning and Research 2009)the picture is similar with the main activities remaining the same with 34% of visitors stating dog walking as their activity and birdwatchers travelling the furthest to reach the site.

4.5 In the summer the main reason influencing the choice of site is closeness to home (45%) indicating that a higher proportion of local visitors use the site in the summer in addition to holiday makers (19% in the summer compared to 3% in the winter).

4.6 During the winter period of survey work a paddyfield warbler, a considerable rarity, was present on the site and drawing birdwatchers from a wide area. The presence of this wintering rarity may account for the particularly high numbers of birdwatchers and would of course, to some extent skew the data relating to distances from which people travelled, as the data may not necessarily be typical. However it is worth considering the results from the visitor survey undertaken in 2009 which show that birdwatching was the most popular activity with visitors (45%) (Ecological Planning and Research 2009).

4.7 Comparing the results to the visitor monitoring at Chichester Harbour (Cruickshanks & Liley 2011), Pagham Harbour has a larger catchment for infrequent visitors in the winter (mainly bird watchers and walkers) . Specifically a high proportion of visitors to Chichester Harbour live within Chichester or in the settlements to the west along the A27. Only 6% of the groups interviewed at Pagham Harbour in the winter and 10% in the summer were residents of Chichester (living within the settlement boundary). It is important to note that a high proportion of visitors lived south of Chichester. Indeed across the whole survey at Pagham, 96% of dog walkers lived in the settlements and small villages south of Chichester.

4.8 When looking at winter visitor rates to Pagham Harbour the peak is at 1km i.e. the greatest proportion of visitors live in dwellings between 0.5 and 1km of the survey locations. In the summer, Pagham Harbour is used by visitors from a wider local area as the visit rate is generally lower close to the site but levels off more slowly with a drop off in visit rates at around 3.5km. The difference in visit rates indicates high levels of use close to the site in the winter but visitors from a wider field who visit less frequently are present in the summer. Across the whole survey period, frequent visitors to the harbour live locally and a large number (41%) of all visitors interviewed live within Selsey.

4.9 The A27 creates a barrier to local visitors travelling from home whilst the remaining visitors travelling from home came from the surrounding counties as far north as Maidenhead and as far east as Crawley in the winter and east of Brighton in the summer. Given that people travel relatively long distances from home to visit the site, the average distance to the site by home visitors is 18.9km. Whereas in both survey periods, the majority of dog owners live south of the A27 and 75% live within 3.3km (winter) and 5.4km (summer) further demonstrating that visitors from further afield are visiting particularly for wildlife and walking. Interestingly the distribution of home visitors in the winter shows that many people are interviewed from the A27/M27 corridor (Portsmouth and Southampton) to the west of the Pagham /Chichester area whilst few visitors interviewed in the summer live in this area.

4.10 Some differences were observed in visitor patterns between the three survey locations in both survey periods. Particularly the survey location closest to Selsey (Greenlease Farm) attracted the most local visitors and the most visitors on foot. Given that the site is foot access only, it is likely that some groups interviewed at Greenlease parked either within Selsey or at one of the other access points. Church

Norton attracted visitors from the furthest distances in the winter whereas the Visitor Centre had the largest catchment in the summer which most likely explained by the fact that Church Norton attracts winter bird watchers whereas the Visitor Centre is more of a focal point for holiday makers and people on day trips..

4.11 More than 60% of winter visitors to the site on foot visit daily or most days and 73% of all winter visitors state that they visit equally all year. In the summer, these figures fall with the increase in holiday makers to 47% of visitors on foot visiting daily and only 43% stated that they visit the site equally all year. In terms of strategic planning it is important to note that there is an area of the north eastern side of Selsey which particularly attracts visitors on foot and a high proportion of them are dog owners and stated their main activity as dog walking.

4.12 The route data was collected to show where people went during their visit. Whilst there was no difference in route length between survey location or activity in the winter, the intensity use maps shows the most well walked areas. The longest routes were observed for the visitors which were jogging etc or cycling although too few interviews were conducted with visitors in these categories to include them in the winter analysis. In the summer analysis, walking stood out as the activity which generated the longest routes. In the winter, wildlife watchers exhibit the widest range of route length from 0.5km to 10.4km with some using the hides only and others spending more time at the site.

4.13 It is important to note that the routes of visitors who arrive by foot was mapped from their home location and the routes of visitors who took a GPS unit and those who arrive by car or bicycle were mapped from the access location. Therefore the route lengths of those who have walked from home will encompass the 'travel' distance to and from the survey location, this make direct comparison of visitor route lengths solely by activity more complex. However, the routes show that the busiest areas are around the visitor centre and along the coastline towards Church Norton. The base of the Church Norton spit, the actual spit and the loop through the village were also particularly busy. The high local use by Selsey residents is demonstrated in the high use of the connecting footpaths to the town.

4.14 In the winter survey, more than half of the routes were accompanied by the information that visitors did leave the paths to walk on the beach or open mudflat. Of those routes which left the paths, 42% of groups were accompanied by at least one dog. Routes recorded on the sensitive areas of Church Norton Spit include dog walking, walking, wildlife watching and fishing. From the repeat survey in the summer months 144 routes were collected but only 14% of respondents stated that they left the paths and went on to the intertidal areas. The route data from the summer shows a similar level of activity on the spit as it is clearly an attraction of the site. There is no evidence to suggest that visitors were entering the sensitive area of the spit in the breeding season and only four dog walking routes were recorded on the spit in the summer.

4.15 The visitor monitoring has helped us identify where visitors come from to visit the harbour, what activities they undertake, their motivation for visiting, how frequently they visit and what underlies people's choice of where they go. This understanding of visitor patterns is important to underpin access management and green infrastructure provision in the future. Specific to Pagham Harbour, the data provided here can be used to inform the Habitat Regulations Assessment of the new Local Plan.

4.16 The understanding of visitation patterns generated from this survey is fundamental to underpin access management and green infrastructure provision in the future. Such measures are important in order to ensure any impacts from recreation to Pagham Harbour are avoided or effectively mitigated. European sites are protected through the provisions of the Conservation of Natural Habitats and Species Regulations 2010 (SI no. 490), which transpose both the Habitats Directive (Council Directive 92/43/EEC) and the Wild Birds Directive (Council Directive 79/409/EEC) into UK law.

4.17 With respect to the impacts of access on relevant sites, Regulation 61 ensures that competent authorities can only agree to a plan/project which is likely to have a significant effect (alone or in-combination) after having determined that it will not adversely affect the integrity of any European site (subject to imperative reasons of over-riding public interest and consideration of alternative solutions). Impacts associated with recreational activities that can be linked to plans or projects should therefore be avoided through the correct application of Regulation 61 by competent authorities. Regulation 61 applies to all European sites and therefore covers both SACs and SPAs (listed Ramsar features are also protected as a matter of government policy). New development and strategic development plans must therefore address any impacts of increased recreation to European sites.

4.18 Also relevant is Article 6(2) of the Habitats Directive, which requires Member States to take appropriate steps to avoid, in the SACs and SPAs, the deterioration of natural habitats and the habitats of species as well as disturbance of the species for which the areas have been designated. Article 6(2) states that "member states shall take appropriate steps to avoid..... deterioration of natural habitats.... as well as disturbance of the species..."; the wording therefore puts a responsibility on the member state to address such issues where they arise.

4.19 A key issue to be taken into account in respect of recreational impact strategies associated with any new development is whether a credible link can be made between the potential impacts and development per se (and hence with a 'plan or project' as identified in regulation 61). It is not simply a matter of how far away visitors are drawn from on a regular basis; it is important to understand how access levels relate to disturbance and is this disturbance resulting in any population impacts wintering bird assemblages.

4.20 We have established the majority of visitors to the area come to dog walk, walk and bird watch. In the winter visitors are travelling from further afield for wildlife

watching as well as local people using the site for dog walking. In the summer, holiday makers increase slightly, there are fewer wildlife watchers and local people from a slightly larger area use the site for walking and dog walking. It appears that two main types of visitor need to be considered when making provisions for the protection of the site within the local plan – local walkers /dog walkers and also bird watchers and walkers (also on holiday) travelling from further afield. It is likely that the popularity of the site to wildlife watchers, particularly with the RSPB taking over management of the site will increase over time due to the growth in such activities and potential changes in how the site is promoted by the RSPB. It is usually the case that these visitors are aware of the sensitivity of the site and would be receptive to information and measures to maintain the site for wildlife conservation.

4.21 An increase in the number of people living close to the shoreline, particularly around Selsey, will be expected to result in an increase in regular visitors and dog walkers to the harbour throughout the year. The results from the two surveys show that the site is used most regularly by local people but that the catchment increases in the summer with less frequent visits and more walkers compared to the winter when regular dog walkers are using the area.

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Appendices

Pagham Visitor Survey

Good am / pm. Please could you spare me a few minutes to take part in a short survey about your visit today. The survey is being conducted for Chichester District Council to look at current recreational use of the area.

Q1 Which of the following best describes your situation today? *Read list. Tick one only.*

	1 On a daytrip/short visit and travelled from home
	2 On a day trip/short visit & staying with friends or family
	3 On holiday in the area, staying away from home
	4 Other: [note details below]:

Main	Other	**Q2 What is the main activity you are undertaking today?** *Do not prompt.* ***Tick only one main activity and*** *tick as many other activities as visitor gives*
		1 Dog walking
		2 Walking
		3 Jogging/power walking/Nordic walking
		4 Outing with children/family
		5 Cycling
		6 Wildlife watching/Bird watching
		7 Fishing
		8 Enjoy scenery
		9 Photography
		10 Meet up with friends
		11 Other/further detail:

Q3 How long have you spent / will you spend in the area today? *Tick one only.*

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

Q4 Over the past year, roughly how often have you visited this part of the coast? *Tick closest answer. Tick one only. Only prompt if interviewee struggles.*

	1. Daily
	2. Most days (180 + visits)
	3. 1 to 3 times a week (40—180 visits)
	4. 2 to 3 times per month (15-40 visits)
	5. Once a month (6-15 visits)
	6. Less than once a month (2-5 visits)
	7. Don't know/First visit

Q5 Do you tend to visit this area at a certain time of day? *Tick closest, multiple answers ok*

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

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

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

Q7 How did you get here? What form of transport did you use? *Tick one only. Do not prompt.*

	1 Car/Van		4 Bicycle
	2 On Foot		5 By water (boat, canoe)
	3 Public transport		6 Other (please detail)

Q9 What makes you come here, specifically, rather than another local site? *Tick all responses given by visitor in 'other' column. Do not prompt. Tick closest answers then ask* **'Which would you say had the most influence over you choice of site visit today?** *Tick only one in the 'main' column. Tick closest answers. Use text box to detail reasons that didn't fit with categories/extra detail.*

Main	Other		Main	Other	
		1 Don't know/others in party chose			11 Right place for activity (eg kite surf/fishing/good for kids)
		2 Close to home			12Particular wildlife interest
		3 Quick and easy travel route from home/accommodation			13Substrate type (e.g. Sandy beach)
		4 Good/easy parking			14 Good for dog /dog enjoys it
		5 Feel safe here			15 Ability to let dog off the lead
		6 Particular facilities here (provide detail in other text box about facilities)			16 Suitability of area given weather conditions
		7 Choice of routes/ability to do different circuits			17 Quiet with no traffic noise
		8 Quality of this area of coast			18 Refreshments/Cafe/Pub nearby
		9 Rural feel/wild landscape			19 Closest coast to home
		10 Habit / Familiarity			20 Not many people
		Other / Extra details			

Q8 Aside from this location, do you visit any other places for similar purposes as you visited here today? *IF YES:* **which locations do you visit most often?** *Do not prompt. Please ask visitor to spell place names as these will be mapped and prompt to elicit whether place is coastal or inland*

Name of location	Coastal or inland?

Now I'd like to ask you about your route today. Looking at the area shown on this map, can you show me where you parked (if travelling by car) and where you started your walk or visit today. And the finish point. And your route please ? *Probe to ensure route accurately documented. Use* **P** *to indicate where visitor parked,* **E** *to indicate start point and* **X** *to mark exit and mark route with a line. Use solid line for actual route and dotted line for expected / remaining route. Add tideline. Probe whether the route was along shore, seawall, paths, mudflats, on the water please reflect this on the maps with labels to indicate where the visitor walked especially below the tideline.*

GPS USED: Y / N ***GPS Number:*** ***START TIME:***

Q10 Is/was your route today reflective of your usual route when you visit here for [*insert activity***] .** *Tick one, do not prompt.*

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

Q11 Will/has your visit today involved you walking off paths onto mudflats or open beach? *Tick one*

	1 Yes		2 No		3 Not sure

Q12 What (if anything) influenced your choice of route here today? *Multiple answers ok. Do not prompt. Tick closest answers . Use free text box additional influences or/and detail.*

	1 Weather		7 Followed marked trail
	2 Daylight		8 Tide
	3 Time		9 Activity undertaken (e.g. presence of dog)
	4 Other people		10 Access to hides
	5 Group members (kids, less able)		11 Information about reserve/leaflets etc
	6 Muddy tracks/paths		12 Other (please detail in free text)
Free Text: other reasons / detail:			

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

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

Q14 Do you have any other comments about your visit and access to this area?

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

Q15 What is your full home postcode? *(this is the most important piece of information required from the survey, please make every effort to record correctly)*
If visitor unable/refusal to give postcode:
What is the name of the nearest village/town? *(Please ensure correct spelling)*

Q16b If visitor is on holiday ask:
Which town/village are you staying in?

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

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

THANK YOU VERY MUCH FOR YOUR TIME

To complete once interview has finished. Questionnaire Number : Map ? Y / N

Date:	Number of dogs:	Route Mapped Y / N	Group size (total people):	Location :
Time:	Dog(s) seen off leads? Y/N	Gender of respondent (M / F):	Surveyor	Interview conducted part way through route (tick if yes)