



Lydney Severn Estuary Visitor Survey and Recreation Strategy

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Summary

This report has been commissioned by Forest of Dean District Council to address any risks of new development in Lydney having an impact on the Severn Estuary Special Protection Area (SPA), through increased recreational disturbance. Proposed development in Lydney could double the number of houses in the town, and there is potential to redevelop areas around the Harbour, which is an obvious potential destination for local residents and visitors to undertake a range of activities. We conducted visitor surveys to consider the current recreational use; summarised bird data to identify areas that could be vulnerable and we make recommendations for future management of access to address any concerns.

Visitor surveys were undertaken following a standard methodology during March 2017; survey locations included the Harbour and three other nearby locations with access to the estuary shoreline. Results showed:

- In total 153 people were counted, giving an hourly visit rate of 9.6 people entering per hour. Roughly two-thirds (64%) of people were encountered at the Harbour survey location.
- Group size was on average 1.8 people per group and approximately one in three groups had a dog with them.
- 83 interviews were conducted. Of these, 71% were visiting directly from home and 10% (eight interviewees) were on holiday.
- The most common activity was dog walking (43% of interviewees), followed by walking (17%), enjoying the scenery (12%), outing with family (7%) and boating (6%).
- Time spent at the locations was very short, with most (63% of interviewees) spending less than an hour in the area.
- The frequency with which interviewees visited was typically 1 to 3 times a week (25% of interviewees), but this varied greatly by activity. The majority of those visiting to enjoy the scenery were on their first visit. These are perhaps a group where interpretation and signage are likely to work well as, with no prior experience of the site, they are likely to be looking for information on where they can go.
- The most common reason given by interviewees for visiting the location was that it was close to home (cited by 45% of interviewees). Other less frequently cited reasons included scenery/views (39%) and proximity to water (23%).
- Around one third of interviewees were aware of the conservation designations applied to area.
- Interviewee's routes were focused around the Harbour, with almost all walking to the Harbour mouth. Around a fifth (19%) of those interviewed continued their route for any considerable distance alongside the Severn Estuary.

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- Postcode data showed the mean distance between the interviewees home postcode and the survey location was 18.4 km and half of all interviewees lived within a 2.6 km radius.

Key areas for birds are the New Grounds and the area south-west of the Harbour towards Aylburton.

The overarching aim for a mitigation strategy is:

To provide for recreation such that ample opportunities exist for visitors and residents (including new residents in the future) to enjoy the Harbour area for quiet recreation, without increased disturbance to the SPA interest features. In particular, to ensure limited access to New Grounds and the area along the estuary to the south of the Harbour towards Aylburton, such that few people walk that way and it does not become focal area for people to let dogs off lead.

Secondary aims are to enhance the area for recreation, bringing social and economic benefit; and enhance the area for biodiversity and nature conservation.

These aims can be achieved through the following broad objectives:

- Promote the Harbour area as a destination in its own right, easily accessible on foot or bike from new development via a range of circular routes (as opposed to the Harbour being a destination to drive to and then the start for a walk)
- Direct access to north of Harbour, enhancing the existing path network to creating range of attractive circular routes that can be accessed easily from the new development, such that people are less likely to walk further south
- Promote views of estuary and sense of space at locations away from New Grounds, ensuring that the draw of New Grounds is not unique
- Ensure New Grounds and the shoreline towards Aylburton remains remote and relatively inaccessible
- Create space for dogs to be off-lead and with space to run in locations that are not sensitive.

We suggest ways in which these objectives can be achieved, making a series of recommendations that could form the basis of a strategy. However some of our recommendations are dependent on more detailed feasibility studies and discussion with landowners and other stakeholders. Such discussions should form the next stage in the development of the strategy. As such our recommendations are in outline and simply provide an example and overview of how mitigation could be achieved.

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Visitor survey fieldwork was undertaken by Deborah Blake and Chris Sadler (Footprint Ecology). Routes were digitized by Deboroah. Ideas for management of recreation were developed following a site visit and meeting and we are grateful to Alastair Chapman, Wendy Jackson (Forest of Dean District Council) Barrie Mills, Mike Smart and Alisa Swanson (Natural England) for useful discussion.

We are grateful to all those who agreed to be interviewed and took time out of their visit to answer questions as part of the visitor survey.

1. Introduction

- 1.1 This report is focussed on potential bird disturbance issues around Lydney. The need for such work has been identified through Habitats Regulations Assessment (HRA) work undertaken for the Forest of Dean District Allocations Plan. The HRA identified a risk relating to development in Lydney and the Severn Estuary European Site and highlighted that proposals for development in the Lydney Harbour Area will need to demonstrate no adverse impact on integrity prior to development being approved.
- 1.2 The Forest of Dean District Council is keen to support development, consistent with the local plan, and has therefore commissioned this study which collects information on the current levels of recreational use and potential disturbance issues in relation to the Severn Estuary SPA/Ramsar interest features in the Lydney area. The authority also wants to identify appropriate monitoring and potential mitigation measures that developers could incorporate, should such measures be necessary.

The Severn Estuary European Site

- 1.3 The Severn Estuary qualifies as a Special Protection Area (SPA) for its wintering waterbird assemblage, and for the presence of wintering:
- Greater White-fronted Goose *Anser albifrons albifrons*,
 - Bewick Swan *Cygnus bewickii*,
 - Common Shelduck *Tadorna tadorna*,
 - Gadwall, *Anas strepera*,
 - Dunlin *Calidris alpina alpina*, and
 - Common Redshank *Tringa tetanus*.
- 1.4 The site is also a Special Area of Conservation (SAC), designated for a range of estuary habitats and fish species and a Ramsar site.
- 1.5 The SPA Boundary in relation to Lydney is shown in Map 1.

Disturbance

- 1.6 Nationally, there is now a strong body of evidence showing how increasing levels of development, even when well outside the boundary of protected wildlife sites, can have negative impacts on the sites and their wildlife interest. 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; Clarke & Liley 2013; Clarke et al. 2013) and coastal sites (Saunders et al. 2000; Randall 2004; Liley & Sutherland 2007; Clarke, Sharp & Liley 2008; Liley 2008; Stillman et al.

2009) demonstrates links between housing, development and nature conservation impacts.

- 1.7 The nature conservation impacts of development are varied (e.g. Underhill-Day 2005). One particularly difficult and challenging impact relates to the use of sites to meet recreational needs, and the resultant disturbance to waterfowl on coastal sites. Disturbance has been identified by Natural England as a generic issue across many European Marine Sites (see Coyle & Wiggins 2010), and can be an issue for a range of species. This report focuses on the recreational disturbance of waterfowl at estuarine sites.
- 1.8 Disturbance to wintering and passage waterfowl can result in:
- A reduction in the time spent feeding due to repeated flushing/increased vigilance (Fitzpatrick & Bouchez 1998; Stillman & Goss-Custard 2002; Bright et al. 2003; Thomas, Kvitek & Bretz 2003; Yasué 2005)
 - Increased energetic costs (Stock & Hofeditz 1997; Nolet et al. 2002)
 - Avoidance of areas of otherwise suitable habitat, potentially using poorer quality feeding/roosting sites instead (Cryer et al. 1987; Gill 1996; Burton et al. 2002; Burton, Rehfish & Clark 2002)
 - Increased stress (Regel & Putz 1997; Weimerskirch et al. 2002; Walker, Dee Boersma & Wingfield 2006; Thiel et al. 2011)
- 1.9 For the River Severn SPA disturbance is identified as a current threat and future pressure in the Severn Estuary European Site Improvement Plan¹ (IPENS).

Lydney

- 1.10 The Forest of Dean District Allocations Plan allocates around 2,000 dwellings to Lydney². This represents an increase of housing within the town of around 50%. Alongside the housing the Plan also includes new retail and town centre changes and enhancements relating to recreation provision and tourism, focussed around the Harbour.
- 1.11 The historic harbour at Lydney is an attractive feature of the town. The Harbour is a scheduled ancient monument and listed building, and is the focus of the Lydney Coastal Communities Team³ which is currently working to secure funding for a range of projects in connection with the harbour and the estuary. This could provide a means to enhance the Harbour area with new lighting, footpaths and other facilities.

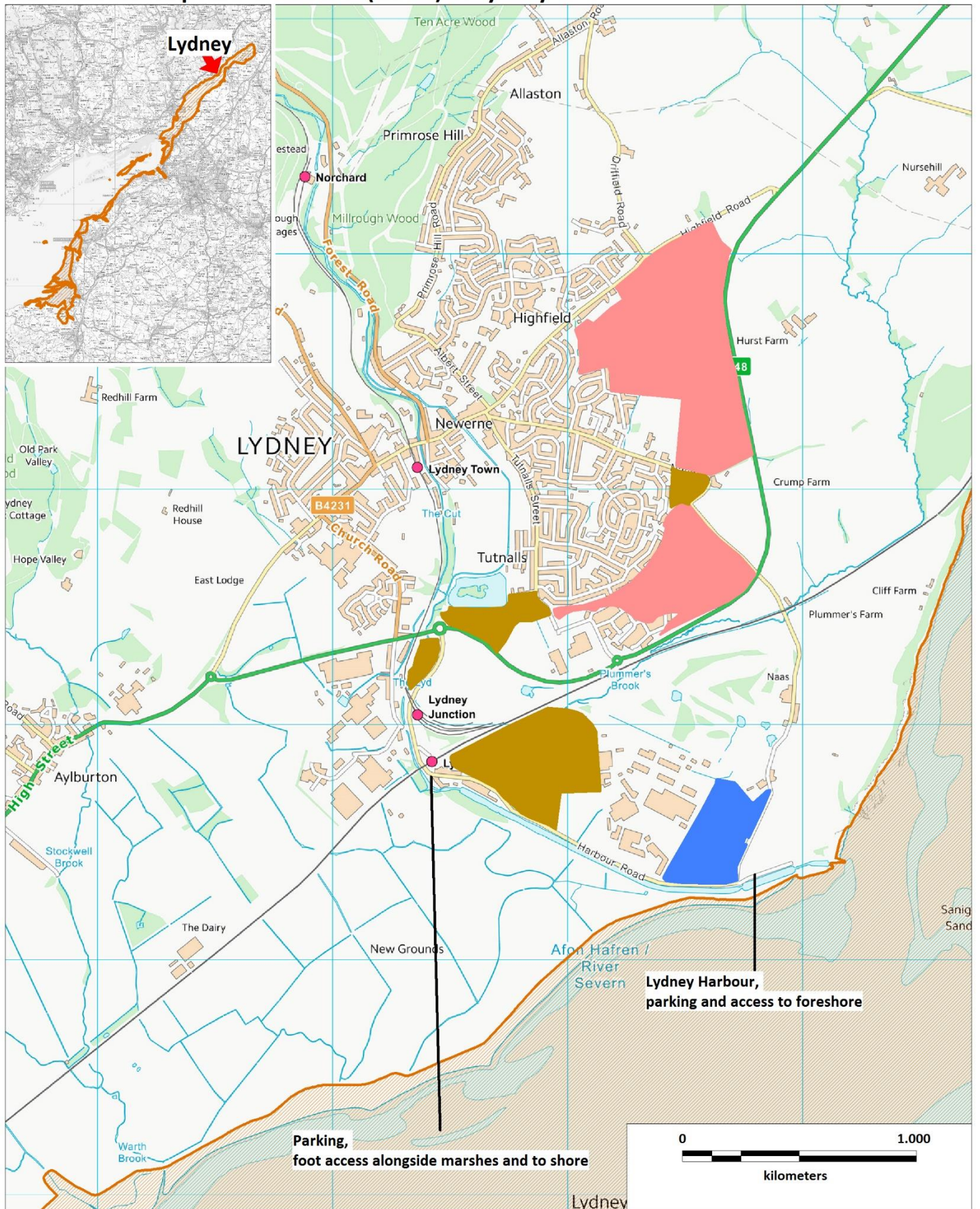
¹ See [Natural England website](#) for details

² See page 84-111; [Submission draft, Aug 2015](#)

³ See [Lydney Coastal Team](#) website for details

- 1.12 Given the proposed marked change in local housing levels close to the estuary and the access facilities available along the shoreline at Lydney there is a potential risk to the European site. There is a an opportunity to resolve any disturbance issues through mitigation measures that could be established locally. By identifying these in advance and setting out a broad approach, a suitable package of mitigation measures can be secured. Options for mitigation could include measures such as improved signage, interpretation, screening and other infrastructure. To understand the scale of the issue, visitor survey work is necessary to indicate how far local people travel to the Harbour, why they visit and where they go during their visit. Alongside the visitor survey results, consideration of the SPA interest is necessary. A separate report (Barrie and Mills 2017) was commissioned by Forest of Dean District Council to summarise the use of the area by wintering waterbirds, with specific reference to the SPA interest. Barrie & Mills in particular consider the use of New Grounds in terms of the SPA interest. Drawing on the results of the visitor survey and the bird report findings is is then possible to make recommendations for mitigation measures.

Map 1: Approximate locations of key elements from the Allocations Plan and main access points to the SPA (labels) at Lydney



Selected features from the Allocations Plan
(approximate locations only)

- Housing Allocation
- New Recreation Space
- Mixed Employment Recreation and Tourism

Severn Estuary SPA

2. Methods

Visitor Survey

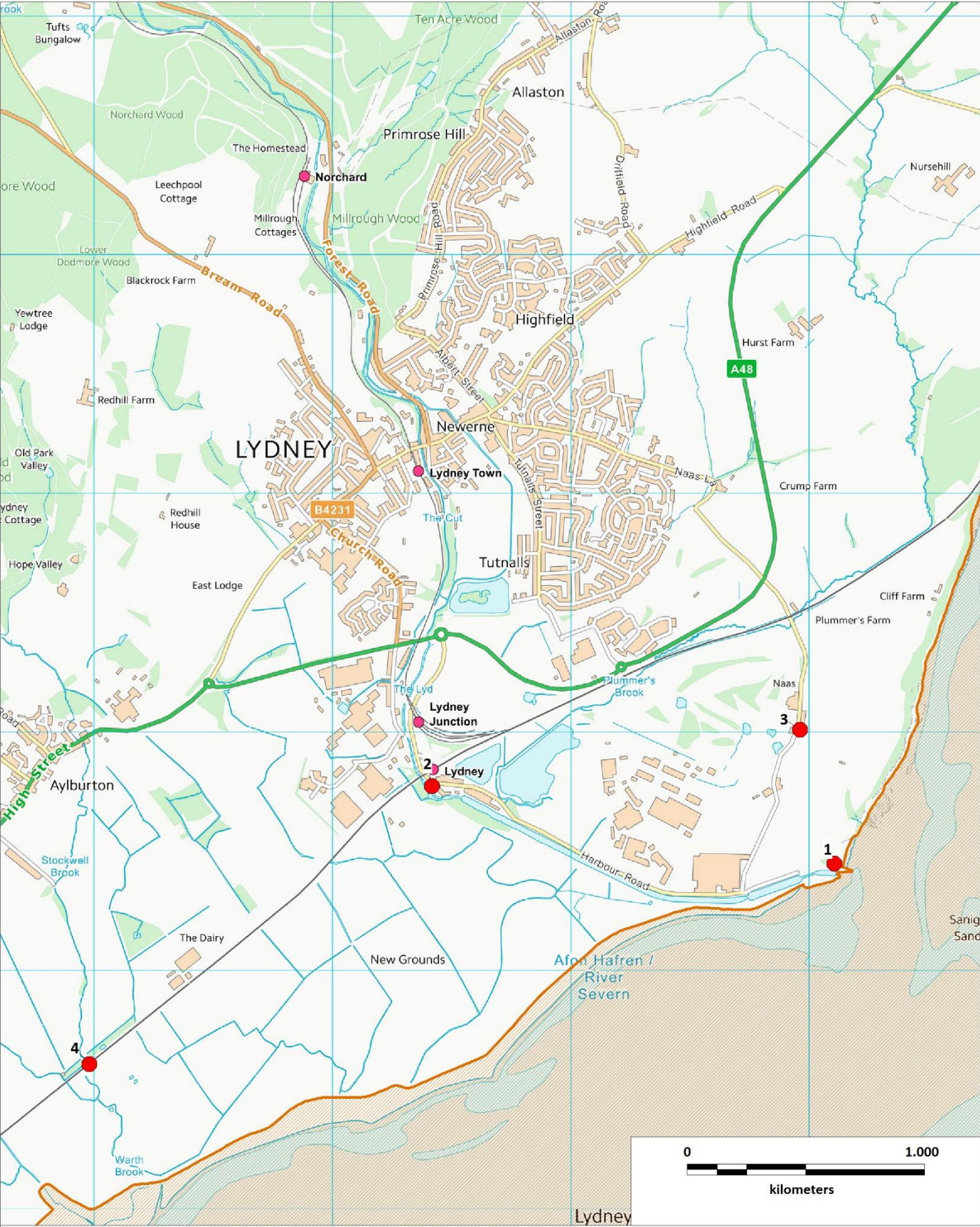
- 2.1 On-site visitor surveys involved interviews with a random sample of visitors and counts of the people seen passing. Four survey points were selected, chosen to record people using the key areas and the existing path network. These points are shown in Map 2 and included:
- Location 1: Lydney Harbour, main parking area and access to shoreline paths. Surveyor positioned on estuary side of car-park.
 - Location 2: Small parking area on east of railway line. Surveyor positioned on the estuary side of the parking area, interviewing & counting people heading down the track towards the marshes and the estuary.
 - Location 3: End of Naas Lane, by the golf club entrance. A number of footpaths converge here.
 - Location 4: At railway crossing on public footpath. Surveyor was positioned on east side of crossing.
- 2.2 Fieldwork was undertaken within fixed time periods (0730-0930; 1000-1200; 1230-1430; 1500-1700) and all survey periods were covered on a weekday and weekend day during March 2017 for each of the 4 survey points, giving a total of 64 hours of fieldwork.
- 2.3 The questionnaire (Appendix 1) included face-face interviews, with questions relating to:
- Activities undertaken
 - Mode of transport
 - Temporal visiting patterns (frequency of visit, time of day, time of year)
 - Reasons behind site choice
 - Route taken
 - Other sites visited
 - Information used to plan visit
 - General awareness of environmental designations/protection in the area
 - Home postcode
- 2.4 Route data were recorded in the field as part of the questionnaire process, with surveyors asking interviewees about their route and the interviewee describing and indicating where they walked/planned to walk on a map. Route data were subsequently digitised into GIS (QGIS 2.18.2) and route lengths extracted. Visitor density (based on interviewee routes) was plotted using a grid of 20m hexagonal cells.

- 2.5 Home postcodes were georeferenced using Royal Mail Postzon data to show visitor origins. Distances (Euclidean, 'as the crow flies') between the home postcode and interview location were extracted.
- 2.6 During the fixed survey periods the surveyors maintained a tally of all people passing, recording groups, individuals and dogs. These counts allowed direct comparison between survey points in terms of visitor volume/footfall.

Recommendations for visitor management

- 2.7 Options for visitor management on estuary sites have been reviewed and summarised by Ross *et al.* (2014). Drawing on the long list of possible measures, we selected options for Lydney based on the following sources of information:
- Visitor survey results, indicating where people currently walk;
 - Our understanding of the likely changes at Lydney, including potentially 2000 new homes in the town and redevelopment of the harbour area;
 - A summary of bird use of the area around Lydney, focussed on SPA interest features and use of the marshes and estuary shoreline around Lydney. This summary was provided by local bird watchers and surveyors and provided to us by Forest of Dean District Council.
 - Discussion with planning officers at the Forest of Dean District Council, Natural England and other stakeholders; this discussion taking place primarily during a site visit and walkover in April 2017.

Map 2: Survey locations



Survey points



Severn Estuary SPA

3. Results

Tally data: visitor numbers

- 3.1 Survey point 1, by the Harbour was by far the busiest survey point with the majority of people counted here (Table 1). No one was recorded at survey point 4, the railway crossing and only very low numbers of people were counted at location 3, by the Golf Club.
- 3.2 Across all survey points and all time periods the total number of people counted was 153, giving an hourly visit rate (based on 16 hours of survey) of 9.6 people entering the whole area per hour. There was a total of 53 dogs counted entering, giving a ratio of approximately 1 dog to every 3 people entering. Weekends were busier than weekdays in terms of the number of people (but not the number of dogs) counted. There were nearly twice as many people counted at the weekend compared to weekdays but only around 30% more groups, indicated larger groups (visiting with children) at the weekend.

Table 1: Totals for visitor numbers counted at the four survey points over 16 hours of survey at each location.

Location	Data	Weekday	Weekend	Total
1 (Harbour)	Groups entering	19	29	48
	People entering	31	67	98
	Dogs entering	14	15	29
	Minors entering	3	18	21
2 (Parking by railway)	Groups entering	17	15	32
	People entering	20	30	50
	Dogs entering	10	8	18
	Minors entering	0	11	11
3 (Golf Club)	Groups entering	1	4	5
	People entering	1	4	5
	Dogs entering	3	3	6
	Minors entering	0	0	0
4 (Railway crossing)	Groups entering	0	0	0
	People entering	0	0	0
	Dogs entering	0	0	0
	Minors entering	0	0	0
Total	Groups entering	37	48	85
	People entering	52	101	153
	Dogs entering	27	26	53
	Minors entering	3	29	32

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3.3 Tally data (total people) are summarised by survey point, time period and day in Figure 1. In general, late morning was the busiest survey period and the Harbour weekend late morning was the time period with the most people present.

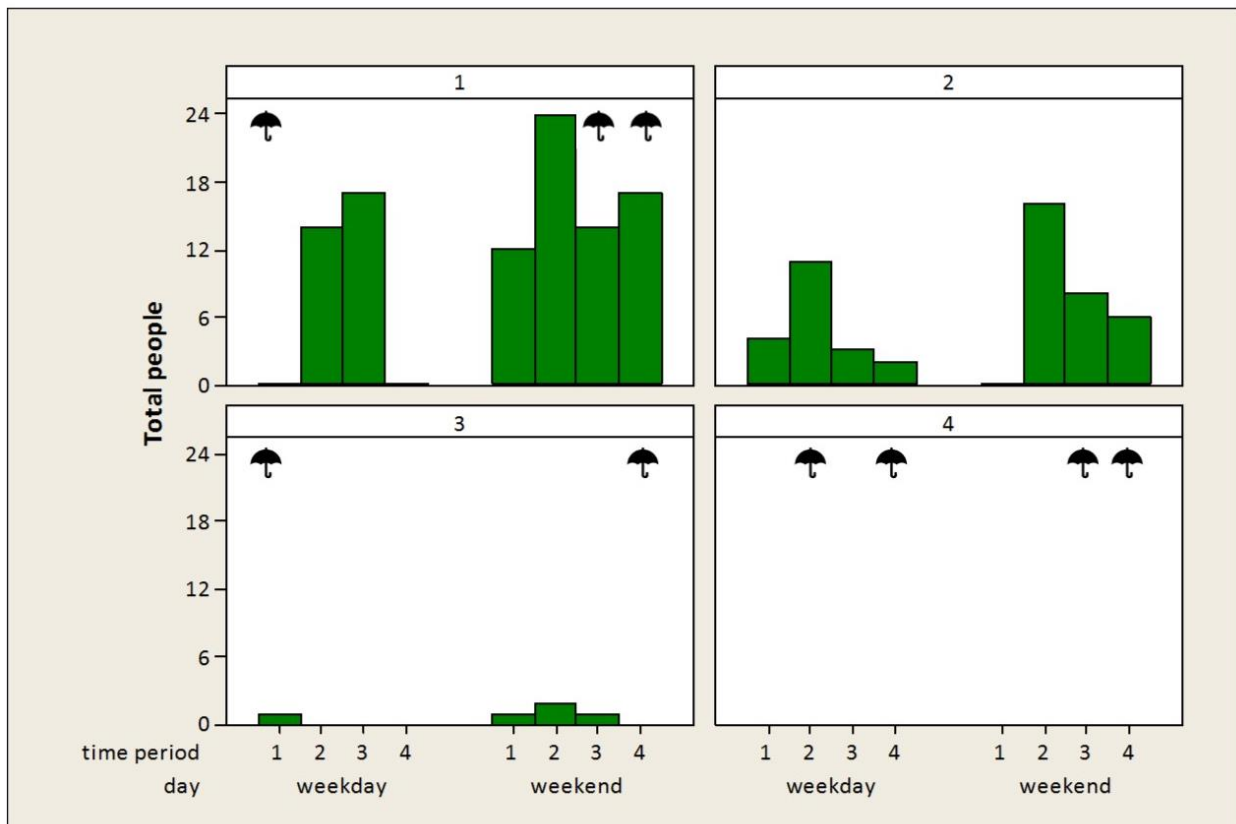


Figure 1: Tally counts by survey point (the four different panels), time period (1 being early morning and 4 late afternoon/evening) and day. Umbrellas indicate sessions with at least some rain (note one session, the 4th session on the weekday at location 4) involved continuous rain during the whole two hour survey period.

Interview data

Overview

- 3.4 A total of 83 interviews were conducted. The majority (70, 84%) of interviewees were on a short visit directly from home; in addition, five interviewees (6%) were on a day trip/short visit and staying away from home with friends/family and eight interviewees (10%) were on holiday, staying away from home (e.g. second home, mobile home, hotel etc.).
- 3.5 A total of 51 of the interviewees (61%) were males. Group size (i.e. interviewee and others in party) ranged from 1 to 7, with the majority (53%) of interviewees visiting on their own. Around half (49%) of interviewees were accompanied by dogs and the total number of dogs in the interviewed groups was 47, a ratio of 1 dog to 1.7 people.
- 3.6 The majority (59%) of interviews were conducted at Lydney Harbour (survey point 1) and just over a third (36%) were at point 2, the parking area by the railway (Table 2)

Table 2: Breakdown of interviews by survey point

Survey point	No. (%) of interviews
1 (Harbour)	49 (59)
2 (Parking by railway)	30 (36)
3 (Golf Club)	4 (5)
4 (Railway crossing)	0 (0)
Total	83 (100)

Activities

- 3.7 Dog walking was the main activity recorded, with 43% of interviewees indicating that their main activity was dog walking (Figure 2). Walking (without a dog) was the next most common activity, particularly at survey point 2, the parking area near the railway (see Table 3). Boating and cycling were only recorded among interviewees at the Harbour.
- 3.8 For four interviewees, the activity did not fit into the pre-defined categories used in the questionnaire and these 'other' activities included 'checking out the harbour', 'stopping for tea', 'visiting the yacht club' and 'railway'.

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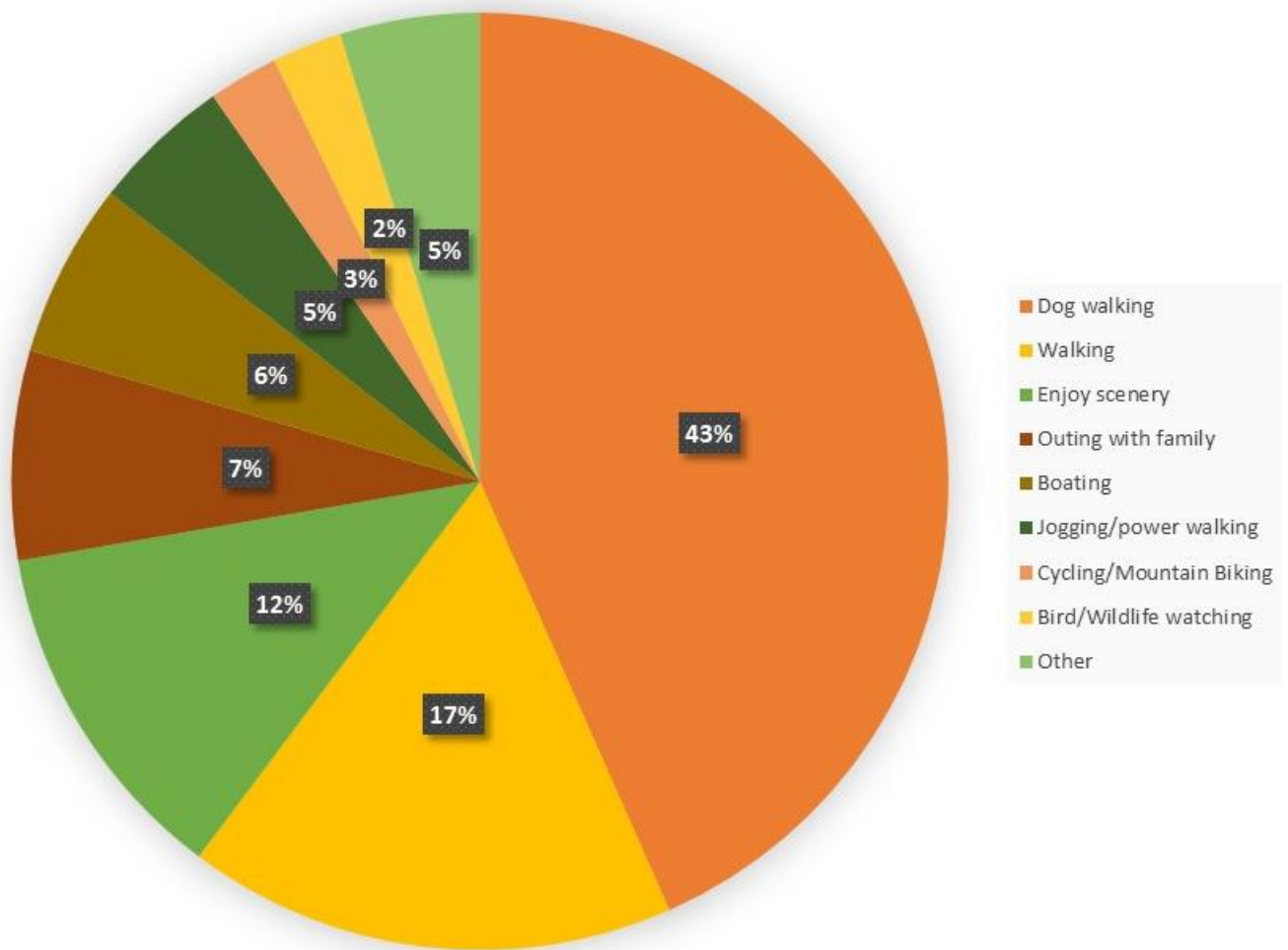


Figure 2: Relative proportions of interviewees undertaking different activities, data pooled from all survey sites and all interviewees. From Q2.

Table 3: Number (%) of interviewees undertaking different activities, by survey point. From Q2.

Activity	1	2	3	total
Dog walking	21 (43)	13 (43)	2 (50)	36 (43)
Walking	4 (8)	8 (27)	2 (50)	14 (17)
Enjoy scenery	8 (16)	2 (7)	0 (0)	10 (12)
Outing with family	4 (8)	2 (7)	0 (0)	6 (7)
Boating	5 (10)	0 (0)	0 (0)	5 (6)
Jogging/power walking	2 (4)	2 (7)	0 (0)	4 (5)
Cycling/Mountain Biking	2 (4)	0 (0)	0 (0)	2 (2)
Bird/Wildlife watching	1 (2)	1 (3)	0 (0)	1 (1)
Other	2 (4)	2 (7)	0 (0)	5 (6)
Total	49 (100)	30 (100)	4 (100)	83 (100)

Temporal visiting patterns

- 3.9 Most (63%) of the interviewees would spend or had spent less than an hour in the area, with 30 minutes to an hour being the most frequent category of visit length (51% interviewees). Visit lengths were therefore typically short. There was relatively little variation with activity type (Table 4), however those bird/wildlife watching and those whose visit was linked to boating appeared to spend the longest (note the small sample size for these activities).
- 3.10 Dog walkers were the only types of visitors who visited daily (Table 5), while the majority (80%) of those where were visiting to enjoy the scenery were on their first visit. Such visitors are perhaps more likely to read interpretation, signage etc. as they have no prior experience of the site. Overall, most people were either visiting 1 to 3 times per week (25% interviewees) or 2-3 times per month (22% interviewees).
- 3.11 For most interviewees, there was no typical time of day when visits took place, or people were on their first visit Figure 3. For those who did give a time of day, late morning was the time most indicated they visited, followed by early morning. The early afternoon period (between 12 and 2pm) was the period least frequently cited, with only 2 interviewees (6%) indicating they tended to visit at this time. During the early afternoon and evening (after 4pm) periods all interviewees were dog walkers.
- 3.12 Few interviewees indicated that they tended to visit at a particular time of year (Q6), with 78% of interviewees indicating they tended to visit equally all through the year (and a further 13% indicating they didn't know or were visiting for the first time).

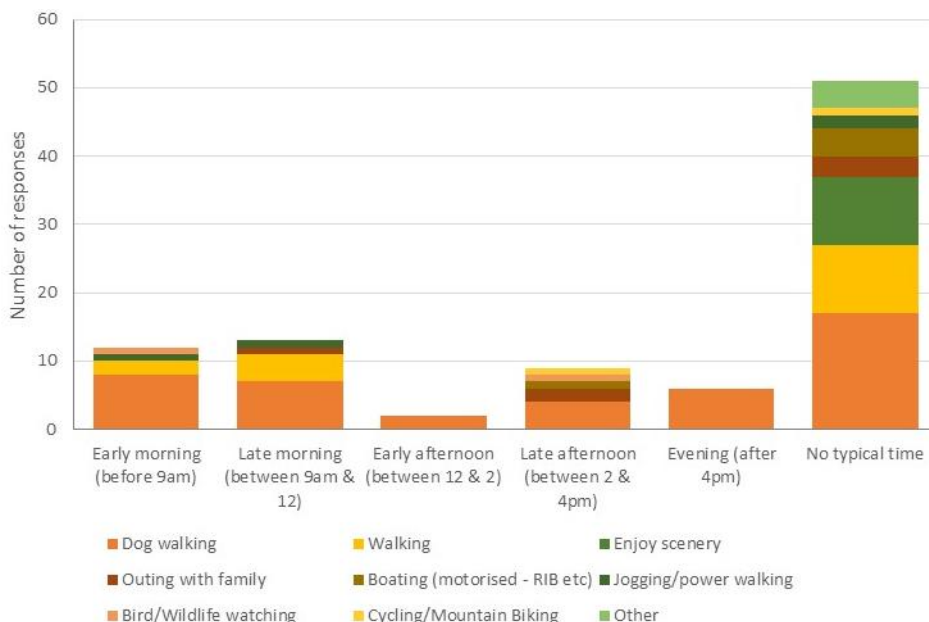


Figure 3: Typical time of day to visit (from Q5) by activity. Graphs plots the number of responses (n=93) rather than number of interviewees, as interviewees could give more than one answer.

Table 4: Number (row %) of interviewees and length of time spent in area on day of interview (Q3). Grey shading indicates the cell with the highest value in each row.

Activity	Less than 30 minutes	Between 30 minutes and 1 hour	1-2 hours	2-3 hours	4 hours +	Total
Dog walking	6 (17)	23 (64)	7 (19)	0 (0)	0 (0)	36 (100)
Walking	0 (0)	6 (43)	6 (43)	2 (14)	0 (0)	14 (100)
Enjoy scenery	1 (10)	5 (50)	3 (30)	1 (10)	0 (0)	10 (100)
Outing with family	0 (0)	3 (50)	3 (50)	0 (0)	0 (0)	6 (100)
Boating	0 (0)	1 (20)	2 (40)	0 (0)	2 (40)	5 (100)
Jogging/power walking	0 (0)	2 (50)	2 (50)	0 (0)	0 (0)	4 (100)
Bird/Wildlife watching	0 (0)	0 (0)	0 (0)	2 (100)	0 (0)	2 (100)
Cycling/Mountain Biking	2 (100)	0 (0)	0 (0)	0 (0)	0 (0)	2 (100)
Other	1 (25)	2 (50)	1 (25)	0 (0)	0 (0)	4 (100)
Total	10 (12)	42 (51)	24 (29)	5 (6)	2 (2)	83 (100)

Table 5: Number (row %) of interviewees and visit frequency (Q4). Grey shading indicates the cell with the highest value in each row.

Activity	Daily	Most days (180+ visits)	1 to 3 times a week (40-180 visits)	2 to 3 times per month (15-40 visits)	Once a month (6-15 visits)	Less than once a month (2-5 visits)	First visit	Total
Dog walking	7 (19)	8 (22)	9 (25)	6 (17)	4 (11)	2 (6)	0 (0)	36 (100)
Walking	0 (0)	0 (0)	5 (36)	4 (29)	2 (14)	2 (14)	1 (7)	14 (100)
Enjoy scenery	0 (0)	0 (0)	0 (0)	2 (20)	0 (0)	0 (0)	8 (80)	10 (100)
Outing with family	0 (0)	0 (0)	0 (0)	2 (33)	1 (17)	3 (50)	0 (0)	6 (100)
Boating (motorised - RIB etc)	0 (0)	1 (20)	3 (60)	1 (20)	0 (0)	0 (0)	0 (0)	5 (100)
Jogging/power walking	0 (0)	0 (0)	2 (50)	1 (25)	1 (25)	0 (0)	0 (0)	4 (100)
Bird/Wildlife watching	0 (0)	0 (0)	1 (50)	1 (50)	0 (0)	0 (0)	0 (0)	2 (100)
Cycling/Mountain Biking	0 (0)	0 (0)	0 (0)	1 (50)	0 (0)	1 (50)	0 (0)	2 (100)
Other	0 (0)	0 (0)	1 (25)	0 (0)	0 (0)	2 (50)	1 (25)	4 (100)
Total	7 (8)	9 (11)	21 (25)	18 (22)	8 (10)	10 (12)	10 (12)	83 (100)

Mode of transport

- 3.13 Around three-quarters (76%) of interviewees had travelled by car (Table 6) and around a fifth (19%) had travelled on foot (i.e. walked from home). At survey point 3 (by the golf club) three people had walked and only one had arrived by car, indicating that people do walk here directly as well as drive. At survey point 2 (parking by railway) 16 interviewees had arrived by car and parked at the survey point, while 12 walked, indicating a relatively equal balance between the two modes of transport. By contrast only one person had walked to the Lydney Harbour survey point, suggesting that people tend to drive here and then walk.

Table 6: Number (%) of interviewees and mode of transport (from Q7), by activity.

Activity	Car/van	On foot	Bicycle	Public transport	Total
Dog walking	30 (83)	6 (17)	0 (0)	0 (0)	36 (100)
Walking	7 (50)	7 (50)	0 (0)	0 (0)	14 (100)
Enjoy scenery	9 (90)	0 (0)	0 (0)	1 (10)	10 (100)
Outing with family	6 (100)	0 (0)	0 (0)	0 (0)	6 (100)
Boating (motorised - RIB etc)	5 (100)	0 (0)	0 (0)	0 (0)	5 (100)
Jogging/power walking	2 (50)	2 (50)	0 (0)	0 (0)	4 (100)
Bird/Wildlife watching	2 (100)	0 (0)	0 (0)	0 (0)	2 (100)
Cycling/Mountain Biking	0 (0)	0 (0)	2 (100)	0 (0)	2 (100)
Other, please detail:	2 (50)	1 (25)	0 (0)	1 (25)	4 (100)
Total	63 (76)	16 (19)	2 (2)	2 (2)	83 (100)

Reasons for site choice

- 3.14 Reasons that the interviewee chose to visit the location interviewed, rather than another local site, are summarised in Figure 4. Responses were categorised by the surveyor and multiple responses could be recorded for each interviewee. Close to home was the most frequently given reason (cited by 45% of interviewees), and was by far the most common single main reason, given by interviewees. Scenery/views (39% interviewees) and proximity to water (23% interviewees) were other factors commonly cited factors.
- 3.15 Other reasons (i.e. ones that didn't fit into the predefined categories) included boat ownership/mooring (four interviewees), 'getting to know area', 'recommendation', 'visit to bus station' and 'history and sailing'.

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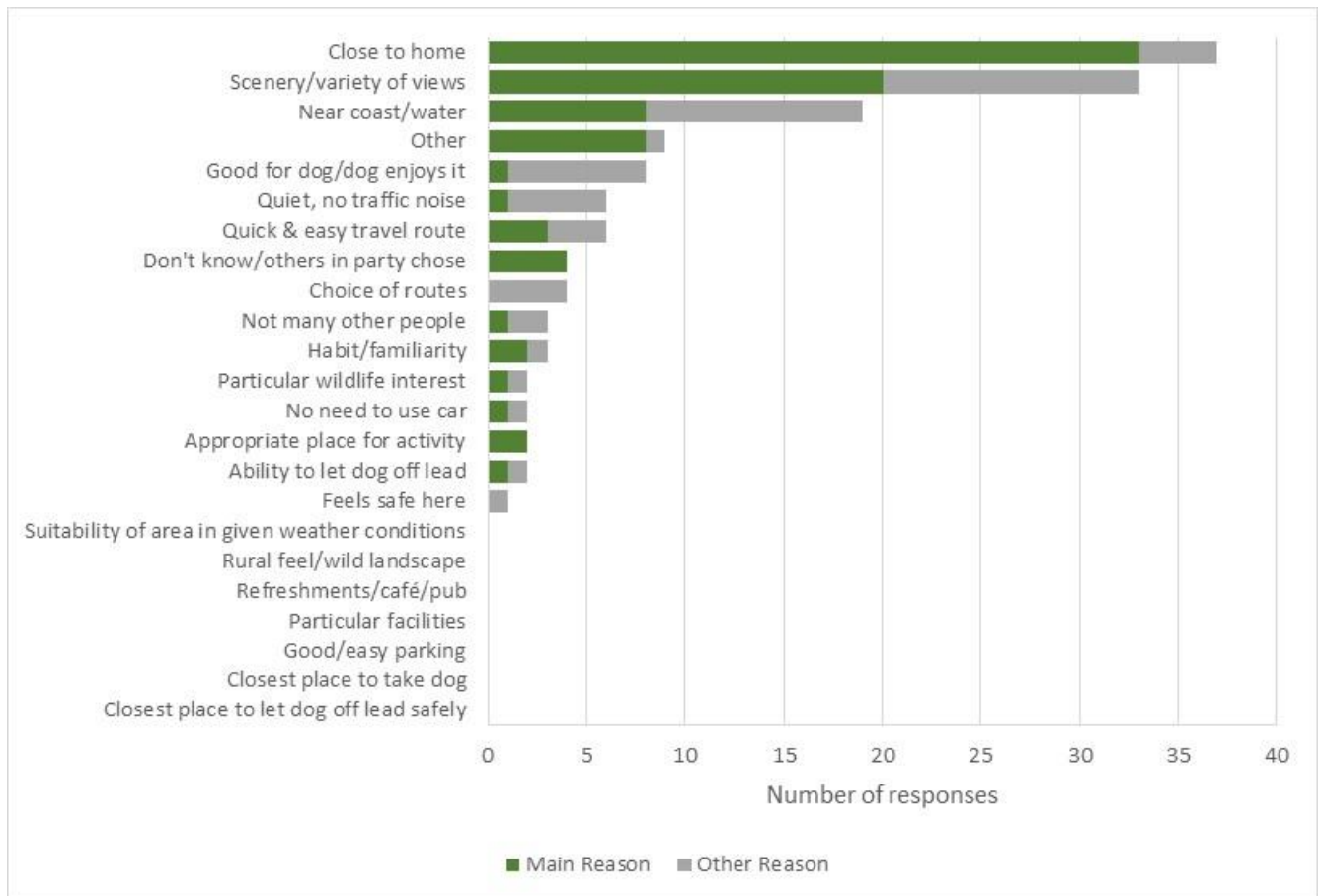


Figure 4: Reasons for site choice (from Q10). Responses were categorised by the surveyor based on the interviewee's response. Multiple responses could be assigned to each interview.

Visits to other sites

3.16 Interviewees tended to use a range of sites (i.e. not just Lydney Harbour and surrounds) for the activity being undertaken when interviewed. A reasonably high proportion of visits however do seem to be to the Harbour and surrounds as around 38% of interviewees indicated that at least 75% of their visits for the given activity were to Lydney Harbour (Table 7).

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Table 7: Number (row %) of interviewees and the percentage of visits for given activity that take place at the location where interviewed, split by activity (from Q14). Grey shading indicates the highest value in each row.

Activity	less than 25%	25-49%	50-74%	75% or more	All take place here	Not sure/don't know/first visit	Total
Dog walking	5 (14)	9 (25)	5 (14)	17 (47)	0 (0)	0 (0)	36 (100)
Walking	3 (21)	2 (14)	0 (0)	5 (36)	2 (14)	2 (14)	14 (100)
Enjoy scenery	1 (10)	0 (0)	1 (10)	0 (0)	0 (0)	8 (80)	10 (100)
Outing with family	4 (67)	2 (33)	0 (0)	0 (0)	0 (0)	0 (0)	6 (100)
Boating (motorised - RIB etc)	0 (0)	0 (0)	0 (0)	1 (20)	2 (40)	2 (40)	5 (100)
Jogging/power walking	0 (0)	0 (0)	1 (25)	1 (25)	1 (25)	1 (25)	4 (100)
Bird/Wildlife watching	0 (0)	1 (50)	1 (50)	0 (0)	0 (0)	0 (0)	2 (100)
Cycling/Mountain Biking	0 (0)	0 (0)	0 (0)	1 (50)	0 (0)	1 (50)	2 (100)
Other	0 (0)	0 (0)	0 (0)	1 (25)	1 (25)	2 (50)	4 (100)
Total	13 (16)	14 (17)	8 (10)	26 (31)	6 (7)	16 (19)	83 (100)

3.17 Interviewees could name up to three other locations they visited besides the location where interviewed. In total 134 site names were recorded from the 83 interviews, with some interviewees naming multiple locations. All names were checked on the internet to check for spelling and where locations clearly referred to the same location they were grouped together, for example "Boating Park" and "Boating Lake" were treated as the same location, "Taurus Craft" and "Old Park" were also grouped.

3.18 Named sites are summarised in which indicates a wide use of other sites including many within the Forest of Dean.



Figure 5: Word cloud summarising other sites visited by interviewees. Size of words reflects the number of times site was named. Word cloud generated using the [Wordle](#) website.

Information sources and awareness

- 3.19 Interviewees were asked to consider what information sources they had used to plan their visit. The majority of interviewees (73%) had not used any information sources ahead of visiting. Those who did most commonly had done so through word of mouth with other people (14%). Other resources used were: websites (7%), leaflets (5%), maps (4%), and social media (1%). Those who accessed resources included all those respondents who were staying with friends/family in the area, and all but one of those interviewees who were on holiday. In comparison, for interviewees who had travelled directly from home, just 14% had accessed any information sources ahead of visiting.
- 3.20 Surveyors also asked if interviewees were aware of any conservation designations applying to the area. Overall, 31% of interviewees said that they were aware of a conservation designation/environmental protection. There were some apparent differences between activities, for example most (four out of five) of those boating aware of conservation designations yet neither of the two cyclists indicated they were aware of any designation or protection.

Routes

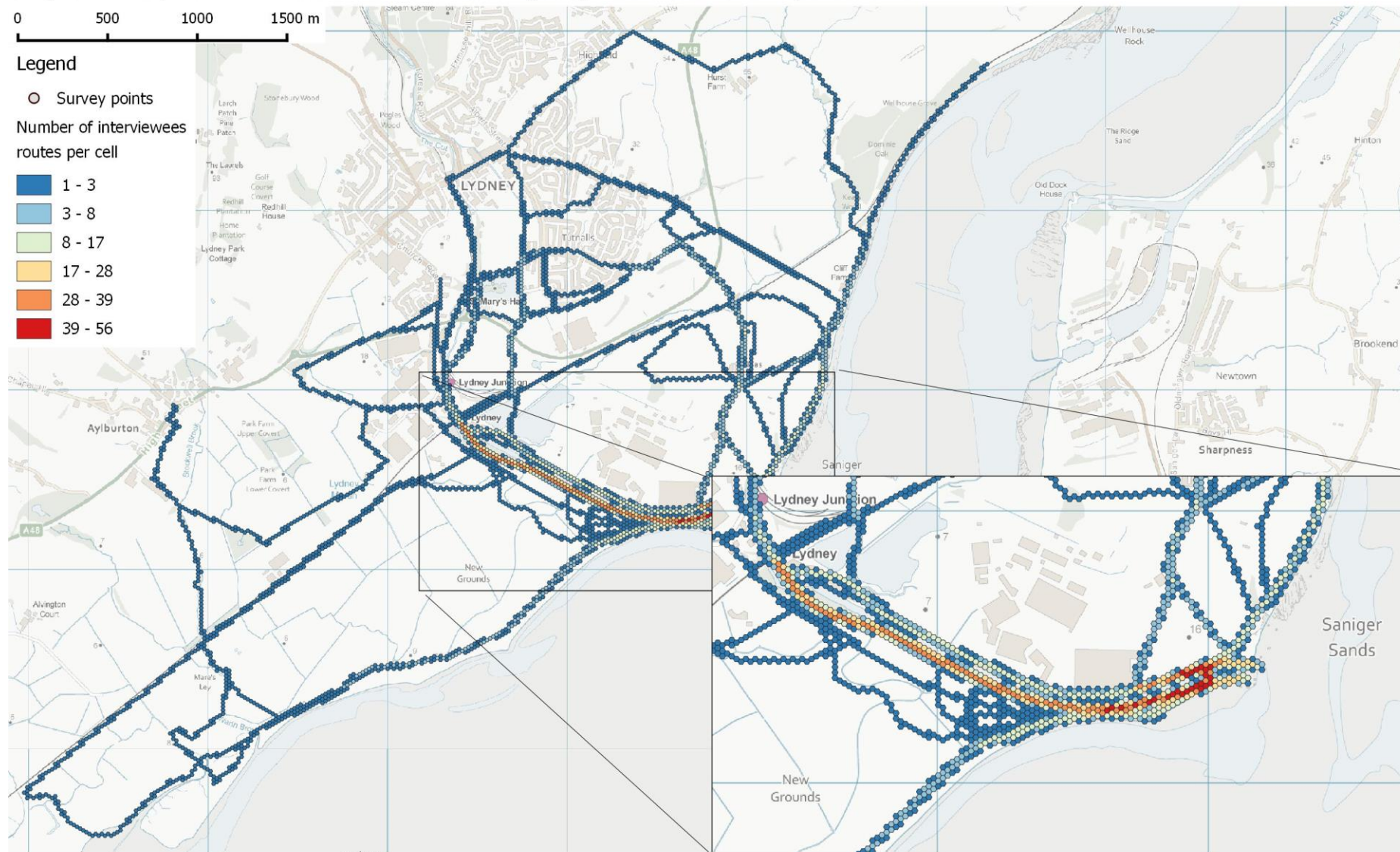
- 3.21 The route of the interviewees was mapped as part of the survey. Map 3 shows the distribution and density of interviewees routes around the area. The density of routes was created using a 20m hexagonal grid and the number of routes through each cell calculated. The fine scale of grid allows differences between the north and south side of the harbour cut to be shown.
- 3.22 Routes were concentrated along the southern side of the Harbour channel, alongside Lydney Marsh. 38 routes ran alongside the southern side, compared to 12 on the northern side, along Harbour road. A total of 10 routes were recorded along the estuary north of survey point 1 (past Saniger Sands), and 6 routes heading south from survey point 1 along the estuary (by New Grounds). Other paths were used infrequently and dispersed widely in and around Lydney.
- 3.23 The length of individual's routes were calculated and average route length was estimated to be 3.6 km (median 3.3 km, maximum 9.3km).
- 3.24 Interviewees were asked if their route was typical of their visit, and three quarters felt this was typical. Remaining interviewees were either on their first visit and therefore did not have a typical visit (11%), not sure (3%) or felt their route was shorter than normal (11%). No interviewees suggested their route was longer than normal.
- 3.25 Factors affecting routes were varied (Table 8). Most felt their route was influenced by following the marked trail (22%), the activity being undertaken (20%), or the weather (19%).

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Table 8: List of factors interviewees said influenced their route on their visit. Factors given by just one interviewee not shown (12 interviewees).

Factor	Number of interviewees
Followed a marked trail	18
Activity undertaken (e.g. presence of dog)	17
Weather	16
Previous knowledge of area / experience	6
Viewpoint/Headland/Feature	4
Daylight	2
Time	2
Group members (e.g. children, less able)	2
Tide	2
Boats	2
Somewhere quiet	2

Map 3: Density of routes recorded in and around Lydney from the four survey locations.



Postcodes

- 3.26 Of the 83 interviewees, 79 interviewees provided valid georeferenced postcodes. Three interviewees declined to give a full postcode and one interviewee was visiting from Australia, so did not have a UK postcode. Using home postcodes we were able to calculate the linear (Euclidean) distances between postcodes and the survey location.
- 3.27 The distribution of all postcodes across the UK is shown in Map 4 (inset map). A number of interviewees had travelled large distances, with the furthest distances for interviewees from Orpington, Greater London and Haverfordwest, Pembrokeshire. Table 9 shows the typical distances for interviewees on holiday were largest, while the distance for those travelling from home were small. The average distance for an interviewee from home was 6.2 km, and half of all interviewees from home lived within a 2.3 km radius.

Table 9: The average (mean and median) distances travelled for the three different visit types.

Visit type [n]	Mean distance (km)	Median distance (km)
Day trip/short visit & staying with friends or family [5]	67.1	25.5
Travelled directly from your home [68]	6.2	2.3
Staying away from home (e.g. on holiday) [6]	116.7	113
Overall [79]	18.4	2.6

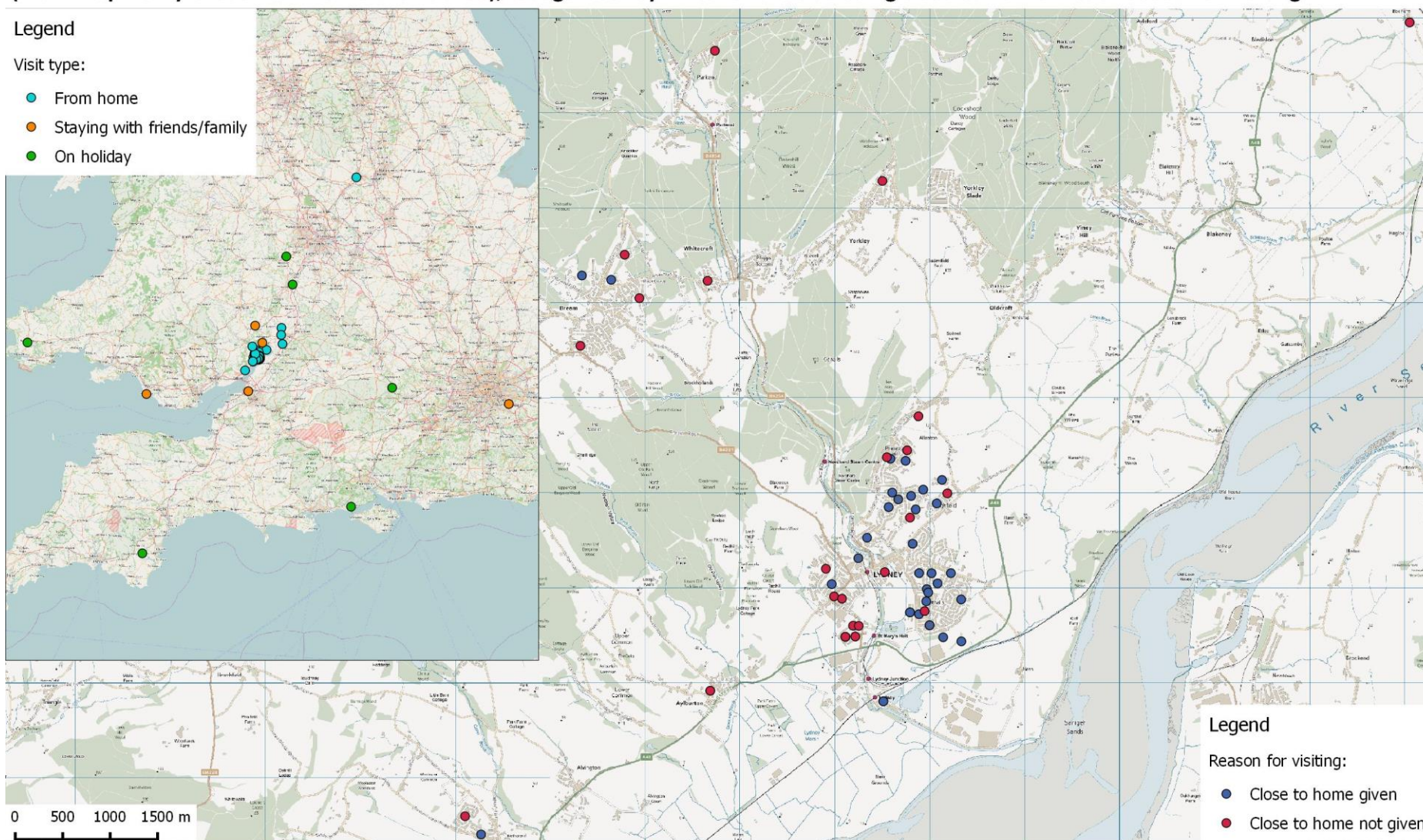
- 3.28 Map 4 also shows the distribution of postcodes in and around Lydney, with 61% (48 interviewees) of the interviewees living in Lydney. Postcodes in Map 4 have been labelled to indicate whether the interviewee reported that “close to home” was one of the reasons they visited the area. These interviewees are all located within the area shown in Map 4, and the mean distance between home postcode and survey point for these interviewees was 2.2 km (median 1.9 km). Home postcodes were also examined by how frequently interviewees visited the area, as shown in Map 5. Those visiting daily all lived in within Lydney.
- 3.29 The activities being conducted are often an important factor as to how far an individual is likely to have travelled to visit the area. Table 10 shows a summary of the distances travelled by interviewees for each of the different activity types recorded.

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Table 10: Summary of the linear distance between home postcode and survey location for interviewees categorised by the activity they were undertaking.

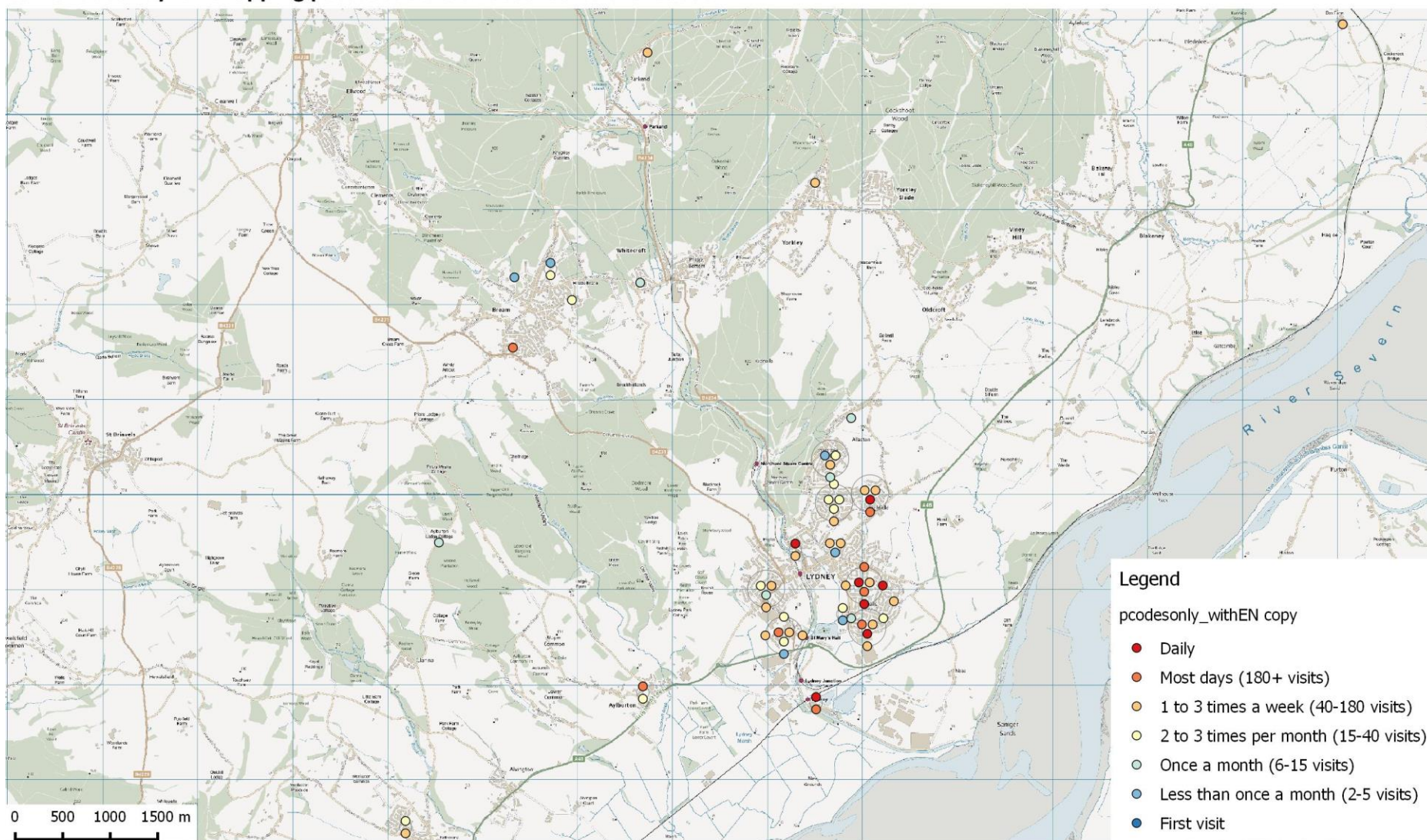
Activity [n]	Mean distance (km)	Median distance (km)	Maximum distance (km)
Enjoy scenery [9]	92.1	87.2	185.3
Boating (motorised - RIB etc) [4]	44.6	5.3	165.4
Other [4]	19.1	7.7	60.2
Outing with family [6]	11.6	5.8	27.9
Walking [13]	10.8	2.2	99.5
Bird/Wildlife watching [2]	4.1	4.1	5.5
Dog walking [36]	4	2.3	24.5
Cycling/Mountain Biking [2]	2	2	2.2
Jogging/power walking [3]	1.8	1.7	2.5
Total [79]	18.4	2.6	185.3

Map 4: The distribution of interviewees home postcodes from across the UK (inset map), categorised by visit type, and around Lydney (main map - only those from home in this area), categorised by whether the site being close to home was a reason for visiting.



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Map 5: The distribution of interviewees home postcodes around Lydney categorised how frequently they visited the area for their current activity. Overlapping postcodes are offset around the location.



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4. Implications of the visitor survey results for the mitigation strategy

- 4.1 The survey took place during March, with the survey timing deliberate to capture use potentially typical of the winter period, reflecting the time of year when disturbance impacts to the SPA are possible. Visitor surveys during the summer may well pick up different visitor volumes and different access patterns.
- 4.2 Visitor data shows that people from Lydney use the Harbour area and proximity to home is a key factor influencing choice of site. While there is clearly much overlap with recreational use of other nearby sites, particularly within the Forest of Dean, the Harbour area is likely to always have a draw given the estuary-side location. Access levels were relatively low, but the postcode data would suggest that new development in Lydney, of the scale proposed, is likely to result in increased levels of recreational use of the area.
- 4.3 Route data, while indicating people tend to remain around the Harbour, does show low levels of use along the shoreline to the south of the town and circular routes around the marshes. Access in this area has the risk of causing disturbance, overlapping with roosting and feeding sites for a range of species including Curlew, Lapwing and Shelduck. If access levels to the Harbour area increased, then the route data provides evidence that access is likely to encompass areas important for birds and there is a risk of increased disturbance to birds. Measures within the strategy should therefore focus on directing access away from the sensitive locations to the south and focussing access in other areas.
- 4.4 Dog walking is potentially an activity of particular concern, given the increased risk of disturbance from dogs (Banks & Bryant 2007; Liley, Stillman & Fearnley 2010; Liley & Fearnley 2012). Reasons for site choice that related to dogs, such as “site being good for dog/dog enjoys it”, were not recorded as main reasons for many interviewees and were cited by relatively few interviewees, potentially indicating that the area is not viewed as ideal for their pet (see Figure 4). This is perhaps supported by the fact that the proportion of dog walkers using the location where interviewed for their daily dog walk (19%, see Table 5) was relatively low. Improvements that provide enhancements or draw for dog walking should be a key element for the strategy, as a means to draw dog walkers to less sensitive areas.
- 4.5 Following a marked trail was a key factor in determining many visitors’ routes, and suggests appropriate signage could be effective to influence people’s behaviour. It would appear few local residents used particular sources of information (websites, apps etc.) to plan their visit, and this would suggest that such approaches perhaps

have little merit as mitigation. Mitigation should therefore include a range of marked routes and ensure these are well promoted and easy to follow.

5. Summary of Bird Data

- 5.1 The importance of the area around Lydney for birds, with particular focus on the SPA interest, are summarised by Mills & Smart (2017). Both authors have been visiting and undertaking bird surveys in the area for many years and they were therefore able to directly on many years of experience. They focussed on the area around New Grounds and south from Lydney to Aylburton as this is the area outside the SPA but known to be of some importance for birds and functionally-linked to the SPA. North of Lydney, there is little or no important habitat outside the SPA boundary and therefore this area is much less sensitive.
- 5.2 Mills and Smart identify that the most important area for waders and wildfowl is Aylburton Warth and they suggest it is important to make sure recreational disturbance does not increase in that area. They also highlight the area of New Grounds and map four areas as being of importance to roosting/ feeding Curlew, Shelduck, Lapwing during the winter and Whimbrel on passage (April -May , July Sept). Of these species Curlew are considered the most significant in the context of the SPA. The areas mapped as important include the saltmarsh between the embankment and the estuary and the marshes inland of the seawall.
- 5.3 For four species, counts in the New Grounds are approaching or have exceeded the 1% of the estuary designated populations. These are Mallard, Lapwing, Curlew and Whimbrel. Mills & Smart also highlight notable counts of Tufted Duck (on the Lydney Pools near the railway station), Common Snipe and Golden Plover. The New Grounds could be considered to be an important area for Lapwing (and Golden plover) in the winter (see above) and would be susceptible to any increased disturbance which would have the effect of pushing the birds either further away or off the area all together.
- 5.4 Mills and Smart note that there are no significant wader breeding sites within the study area. There are historic records for individual breeding pairs of Lapwing but nothing in the last 10 years. They specifically mention the permissive path recently opened and raise concerns regarding the risk of increased disturbance to the SPA interest as a result of increased recreation along this route.

6. Recommendations for management of recreation and mitigation at Lydney

Introduction

6.1 In this section, we draw on the results from the previous sections and make recommendations for mitigation measures around Lydney. The visitor data reflect current use of the area; that use will change with the new housing and potential redevelopment of some of the Harbour side areas. Mitigation measures must to some extent anticipate these changes and ensure the area is able to absorb additional recreation pressure without adverse effects on the European site interest. Our approach is therefore to set out an overall approach in terms of broad aims and objectives. We then set out a range of measures that will make the area more robust and will enhance the area, both for access and for nature conservation, many of these measures require further liaison and discussion with key stakeholders and will dependent on those stakeholders for implementation.

Aims

6.2 The overarching aim for the strategy is to:

1. *Provide for recreation such that ample opportunities exist for visitors and residents (including new residents in the future) to enjoy the Harbour area for quiet recreation, without increased disturbance to the SPA interest features. In particular, to ensure limited access to New Grounds and the area along the estuary to the south of the Harbour towards Aylburton, such that few people walk that way and it does not become focal area for people to let dogs off lead.*

6.3 Secondary aims are to:

2. *Enhance the area for recreation, bringing social and economic benefit; and*
3. *Enhance the area for biodiversity and nature conservation*

Objectives

6.4 These aims can be achieved through the following objectives:

1. Promote the Harbour area as a destination in its own right, easily accessible on foot or bike from new development via a range of circular routes (as opposed to the Harbour being a destination to drive to and then the start for a walk)
2. Direct access to north of Harbour, enhancing the existing path network to creating range of attractive circular routes that can be accessed easily from the new development, such that people are less likely to walk further south

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3. Promote views of estuary and sense of space at locations away from New Grounds, ensuring that the draw of New Grounds is not unique
4. Ensure New Grounds and the shoreline towards Aylburton remains remote and relatively inaccessible
5. Create space for dogs to be off-lead and with space to run in locations that are not sensitive

Current Issues and Opportunities

- 6.5 We summarise some current issues and opportunities in Figure 6 and show some examples of existing features that could be enhanced in Figure 7.

Figure 6: Images 1-5, Current Issues and Opportunities

1



2



3



4



5



Permissive Path onto New Grounds (target notes 3-5)

The path junction here is such that any visitor has a sense of a wide, open area with much space for access, potentially stepping through the gate (image 1) into a space that is ideal for dogs to be off-lead. Image 2 shows the same gate as image 1, but looking towards the estuary. The sense of the area opening out is clear from this second image. There is an opportunity here to potentially move the fence-line perpendicular to the estuary to widen the area around the bank, and plant with scrub inside the fence. This would mean visitors do not have a sense of a large open space where they can roam towards New Ground. The route towards Aylburton should become the narrow route and the main path running from the Harbour towards the Station could be improved to feel wider, more expansive and open. Changes to the interpretation alongside new waymarking should aim to create a sense of a main route running from the Harbour towards the station, with viewpoints, features and links to other paths. In contrast, the route along the estuary towards Aylburton should be not promoted, clear wording that dogs must be on leads and access directed along the bank.

Challenges to reaching the Harbour on Foot (target notes 26 & 13)

Access to the Harbour area on foot, from Lydney is not currently particularly easy. Nass Lane (image 3) is narrow and there is no path on the side, meaning there is no room for pedestrians and vehicles. Some of the other paths have difficult styles (image 4). Routes (as illustrated) are not appealing to those with dogs in particular. Opportunities exist to enhance pedestrian access from Lydney, creating the Harbour as a destination rather than a place to drive to and then walk.

Paths to north of Harbour (target notes 17-19).

Public footpaths running to the north of the harbour are mostly narrow and run alongside intensively managed arable fields. Trees and scrub mean that views of the estuary are limited. The area to the north is therefore relatively unappealing for walking. There are opportunities here to create wider routes, perhaps even more amenity space (i.e. non-linear areas where dogs can be safely off-lead, and to create gaps/vantage points to provide open views across the estuary. Wider field margins would have potential for biodiversity benefits too.

Figure 7: Images 6-9, Existing features that could be enhanced

6



Pill Box (target note 6)

There is a pill box on the bank near New Ground. This could be enhanced as more of a feature, potentially helping to draw visitors along the bank rather than out onto New Grounds. Enhancements could involve using the roof as a platform, with steps up and screening/barriers, providing panoramic views across the marshes and out towards the estuary. Should the structure not work as a viewing platform, there could be options for such platforms further along the path.

7



Lime Kiln (target note 20)

This could be made into a feature, possibly with interpretation and could add an extra draw and interest to the routes running north of the harbour. Any works here would need to be subject to heritage/nature conservation interest assessment.

8



Pond (target note 20)

In the woods to the north of the Harbour there is an old pond, possibly a decoy? This could be opened up and enhanced to add an extra element to the area to the north. Access to the water for dogs may work well for dog walkers.

9



The Harbour (target notes 15 & 16)

There is ample, good parking in the Harbour area for day-day use, and as such it is perhaps obvious for people to drive to the Harbour rather than walk. There are pleasant views of the estuary and the Harbour, but people are likely to soon drift away, and the obvious direction is towards New Grounds. Opportunities exist to create more of a feature at the Harbour, potentially with a small café and to create better walking and cycling routes between Lydney and the Harbour. The routes to the north could be signposted and much better promoted.

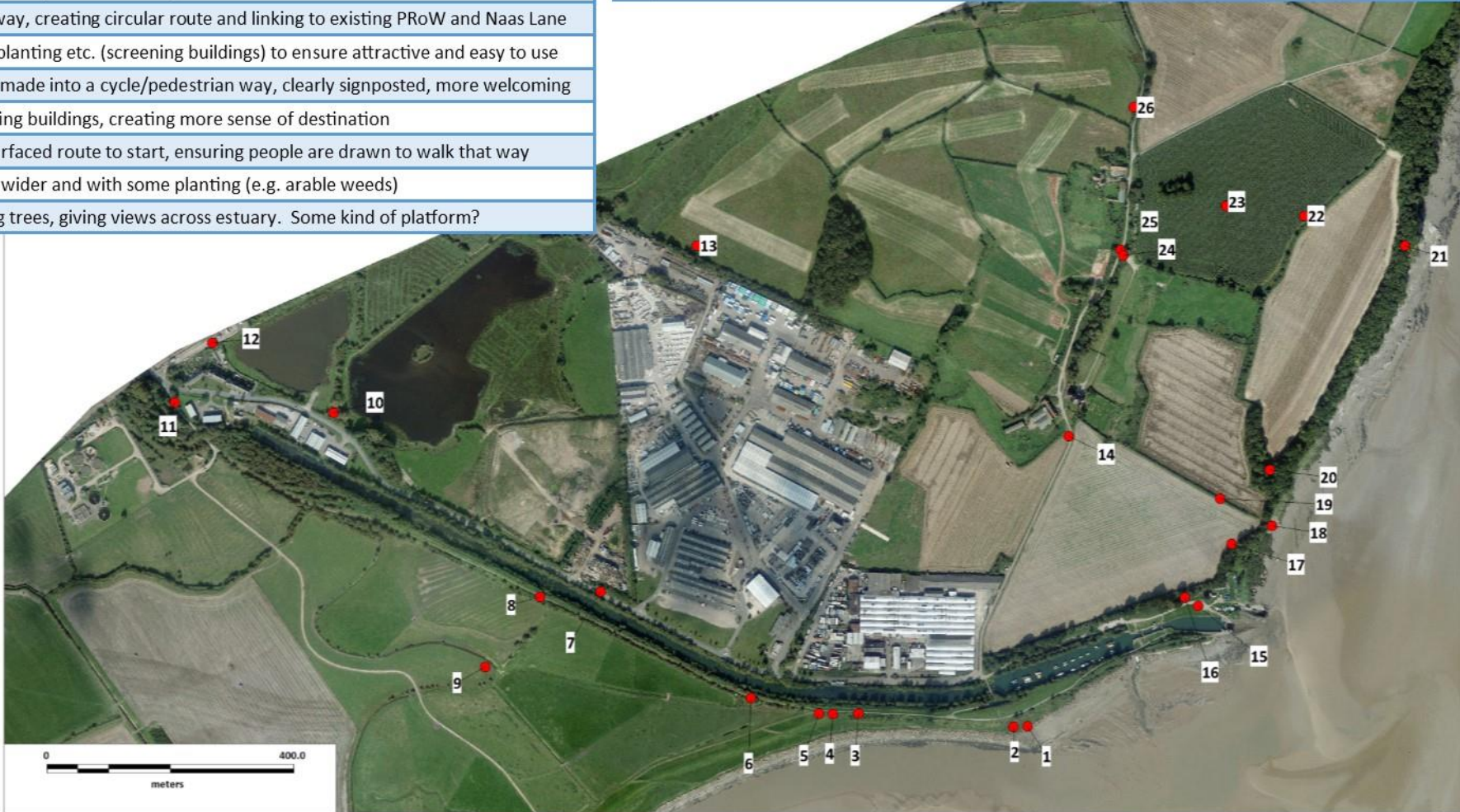
Detailed recommendations

- 6.6 The aims and objectives could be achieved in a variety of ways. At this stage, our suggestions are broad and strategic, setting out a package of measures that can be used by the relevant planning authority and other stakeholders. Our recommendations have not involved detailed discussion with landowners/stakeholders and they have not been costed in detail. For many of the recommendations there are different options that could deliver the same end-point. As such the recommendations can be adapted as circumstances change and opportunities arise. A range of different delivery mechanisms are also possible. Indeed, it is perhaps beyond the scope of developers to fund and deliver all the measures we set out, and some elements could be funded through other sources, for example as part of grant schemes or directly by the local authorities.
- 6.7 As such we present some detailed recommendations that could form the basis of a strategy, however some are dependent on more detailed feasibility studies and discussion with landowners and other stakeholders. Such discussions should form the next stage in the development of the strategy. As such our recommendations are in outline and simply provide an example and overview of how mitigation could be achieved.
- 6.8 We summarise our recommendations in Map 6, which shows an aerial image of the Harbour area and all recommendations listed. Map 7 provides a more detailed overview, showing the existing footpath network and numbered target notes (same as Map 6) which cross-reference to Table 11, which lists all the recommendations and provides further detail on the aim, priority, stakeholders and indicative costs.

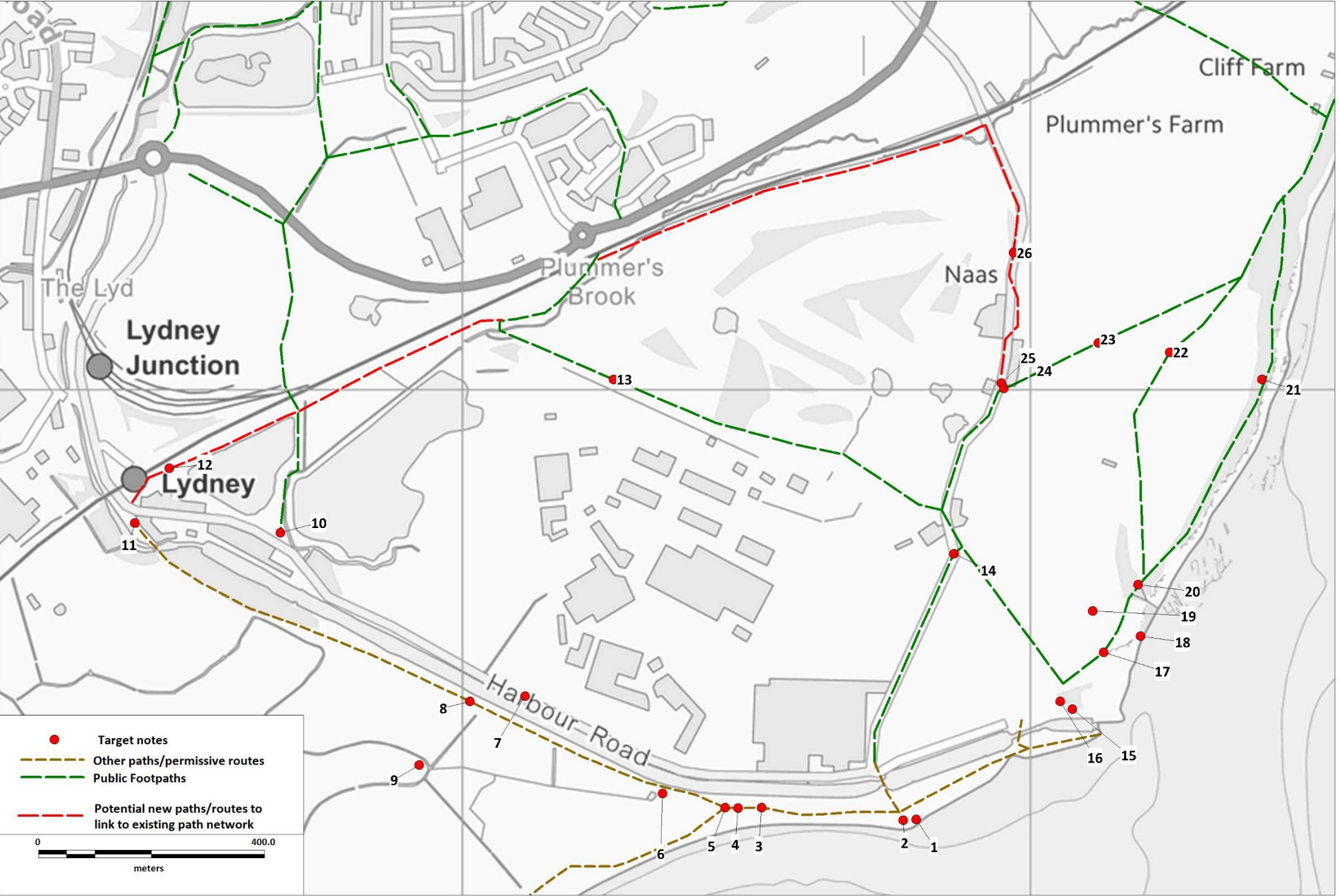
Map 6: Recommendations summary

- | | |
|----|--|
| 1 | Provision of steps to provide access below bank and careful planting/scrub management to provide space for |
| 2 | Current interpretation updated |
| 3 | Move fence to create wider space on bank and open to water's edge. |
| 4 | Signage and interpretation updated. Dogs on leads only as clear message for permitted path users |
| 5 | Scrub planting to screen marshes from view and sense of barrier |
| 6 | Pillbox made a feature with potential to create viewing area (screen) on top |
| 7 | Create cycle lane or clear cycle route along Harbour Road |
| 8 | Scrub along w. side of path retained as thick and tall but opened more on e. side to widen, with access to water |
| 9 | Potential for enhancements for wildlife, scrape creation etc., |
| 10 | Improvements to path to allow route variation |
| 11 | Improvements to parking to provide more spaces and more pleasant. Litter and rubbish removed. |
| 12 | Potential new path along south of railway, creating circular route and linking to existing PRow and Naas Lane |
| 13 | Improvements to footpath, surfacing, planting etc. (screening buildings) to ensure attractive and easy to use |
| 14 | Route from Naas Lane to swing bridge made into a cycle/pedestrian way, clearly signposted, more welcoming |
| 15 | Cafe and toilets, potentially using existing buildings, creating more sense of destination |
| 16 | Path up bank clearly signposted and surfaced route to start, ensuring people are drawn to walk that way |
| 17 | Route along field enhanced by making wider and with some planting (e.g. arable weeds) |
| 18 | Potential for view point created among trees, giving views across estuary. Some kind of platform? |

- | | |
|----|---|
| 19 | Potential for corner of field or even whole field to be created as open space for dogs off-lead |
| 20 | Lime kiln and pond (old decoy) potentially opened up slightly and made more of a feature, some |
| 21 | Path through woods enhanced with boardwalk sections, vegetation management, views of estuary |
| 22 | Path clearly signposted, route enhanced to make more welcoming and attractive to use (widen) |
| 23 | Path clearly signposted, route enhanced to make more welcoming and attractive to use (widen) |
| 24 | Interpretation and map here of routes |
| 25 | Small parking area created at end of Naas Lane, allowing space to turn and for some cars to park |
| 26 | Naas Lane made safe for pedestrian access e.g. with path alongside (potentially along field edge) |



Map 7: Recommendations, target notes and existing path network



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Table 11: Recommendations for measures within mitigation strategy. Priority measures are those that are most important in terms of mitigation. Costs are indicative/guide only (and are ex Vat and rounded up); they are not based on actual quotes. We recommend a contingency is added to the overall total to provide flexibility.

Map Ref	Description	Aim	Priority	Implementation body/ key stakeholders	Cost	Options	Notes
1	Provision of steps to provide access below bank and careful planting/scrub management to provide space for picnics etc.	To create more space and sense of open area by estuary, with access to foreshore. An alternative to New Ground. Planting to increase attractiveness and variety.	Medium	Environment Agency	£1000; (5m steps at £150 per m, see Paths for all (2014); plus £450 for planting)	Range of options in terms of design. £150 per m allows for steps with timber boards and aggregate.	Planting with native species, e.g. Hawthorn, Blackthorn. See also 5.
2	Current interpretation updated.	To provide interest and draw people to locations and to communicate nature conservation importance of site	High	Environment Agency (current interpretation); landowners, Natural England	£16,500. Calculated as 5 boards (at £2,700 per board, drawn from HLF guidance, Heritage Lottery Fund 2013) and £3000 for research and graphics	Range of options in terms of style, design, materials etc.	Existing interpretation faded and in need of updating. Would be ideal if all signage/interpretation matched with similar branding, creating better sense of destination. Relevant for multiple locations.
3	Move fence to create wider space on bank and open to water's edge.	Create open area near estuary, ensuring visitors do not feel they need to walk to New Ground to have open space directly by estuary	High	Environment Agency; landowners, Natural England	£600. Calculated as 100m of fencing at £6 per m.	Range of options for route for fence	Aim to create open space on estuary shore where no risk of disturbance.
4	Signage and interpretation updated. Dogs on leads only as clear message for permitted path users	To deflect access north rather than across New Grounds. Clear message that access onto New Grounds long walk and difficult circuit. Dogs must be on leads.	High	Landowners, Natural England	Included in 2 above		Would be ideal if all signage/interpretation matched with similar branding, creating better sense of destination.

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Map Ref	Description	Aim	Priority	Implementation body/ key stakeholders	Cost	Options	Notes
							Relevant for multiple locations.
5	Scrub planting to screen marshes from view and sense of barrier	To deflect access north rather than across New Grounds. Scrub creates sense that New Grounds is not expansive area ideal for dogs to be off leads.	High	Landowners, Natural England			Mixed scrub, hawthorn and blackthorn predominantly. Sea buckthorn may be an option (but note can be difficult to control)
6	Pillbox made a feature with potential to create viewing area (screen) on top	Creating a destination along path and drawing access	Medium	English Heritage, Natural England	Dependent on structural integrity of pillbox and options, requires specific quotes and design	Range of options, but simple wooden steps to roof, barrier and some interpretation not necessarily too costly.	Lower part could be sealed off for access and turned into bat hibernacula.
7	Create cycle lane or clear cycle route along Harbour Road	Providing for cyclists with a marked circular route possible from Lydney, i.e. joining up with Naas Lane. Marked cycle route would ensure cyclists not using bankside path (with potential for conflict with dog walkers)	Low	Highways Agency		Could be line on road	From station to harbour is 1.8km. A cycle route here will enhance area for access and potentially result in increased access. Low priority and not necessarily a mitigation measure directly funded by developers.
8	Scrub along w. side of path retained as thick and tall but opened more on e. side to widen path, with access to water (e.g. for dogs)	To create wider, more attractive (and varied) route along bank. Access to water at certain points for dogs draws dog walkers to use path.	Medium	Landowner	£4000 one-off cost estimated for contractors to cover vegetation management,		Approximately 1km of bank

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Map Ref	Description	Aim	Priority	Implementation body/ key stakeholders	Cost	Options	Notes
					creation of points with access to water side.		
9	Potential for enhancements for wildlife, scrape creation etc.,	Creating areas for wildlife would provide more interest for visitors using bankside path and by setting back from seawall would mean area for wildlife well away from access routes	Low	Landowner, Natural England	£1000		A series of scrapes could be possible ⁴ .
10	Improvements to path to allow route variation	To create footpath link to Harbour Road directly into Lydney, linking up other green space	Low	Landowners.	£1500 (based on 230m at £6 per m)		230m of existing PRow from road to railway
11	Improvements to parking to provide more spaces and more pleasant. Litter and rubbish removed.	Parking area here with range of routes possible, potentially reducing traffic along Harbour Road. Important this area is attractive so as not to deter visitors.	Medium	Landowners, cottage residents.	£2000	Range of options possible in terms of railings, marked bays etc.	Risk of parking being used for train access only.
12	Potential new path along south of railway, creating circular route and linking to existing PRow and Naas Lane	To provide circular route that is well-marked and promoted and acts as the default walk rather than out onto New Grounds.	High	Landowners.	£26,000. Cost estimated at 1400m of path at £15 per m, plus an extra £5000 for drainage and other infrastructure.		Cost for granite dust path, in tray (see Paths for all 2014 for guidance). May be a challenge to acquire land/permissive route.

⁴ See http://www.rspb.org.uk/Images/Scrape_creation_tcm9-255102.pdf for guidance

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Map Ref	Description	Aim	Priority	Implementation body/ key stakeholders	Cost	Options	Notes
					Cost does not include purchase of land/ payment for permissive access.		
13	Improvements to footpath, surfacing, planting etc. (screening buildings) to ensure attractive and easy to use	To create attractive circular walk and draw users.	High	Landowners.	£6,500 (based on £6m per m to upgrade existing path (see Paths for all 2014) and around £1500 for planting etc.		860m of existing PRow.
14	Route from Naas Lane to swing bridge made into a cycle/pedestrian way, clearly signposted, more welcoming.	To create attractive route down Naas Lane to harbour for pedestrians and cyclists.	Medium	Landowners, residents.	£5000; (£1800 for 2 finger posts at either end plus additional £3200 for enhancement of track)		730m of existing PRow (already a track)
15	Cafe and toilets, potentially using existing buildings, creating more sense of destination	To create a destination at the Harbour and an area where people will linger. Good location for interpretation and intercepting visitors.	Low	Yacht Club.	May need initial funding but could become self-financing?	Café could use existing buildings and could be a small hut or pod or something more permanent/fixed.	
16	Path up bank clearly signposted and surfaced route to start, ensuring people are drawn to walk that way	Create a default route for visitors to NE rather than W. Current layout means people at Harbour most likely to walk west.	High	Landowners, Natural England.	£10,000. 10m of stone steps at £420 per m (see Paths for all 2014); £900 for wooden finger post;	Wooden steps and metal/plastic posts would be cheaper.	Important to create obvious and easy route, wide and signposted so visitors realise path is along estuary.

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Map Ref	Description	Aim	Priority	Implementation body/ key stakeholders	Cost	Options	Notes
					additional cost for vegetation clearance and path at base.		
17	Route along field enhanced by making wider and with some planting/unsprayed strip (e.g. arable weeds)	Create a default route for visitors to NE rather than W. Current path narrow, along field edge, not attractive.	High	Landowners, Natural England.	£1500+?; 250m of path at £6 per m to upgrade (see Paths for all 2014); cost for 5m strip would require negotiation.	Strip ideally minimum of 5m wide. Could be laid to grass and left (mown some years) or planted to arable weeds (note would require spraying).	Would bring benefits for both biodiversity and access. 250m of path from Harbour to far side of wood. A 5m margin would mean 0.125ha total area taken out of production. Dependent on landowner. Would require annual payment or similar.
18	Potential for view point created among trees, giving views across estuary. Some kind of platform?	Create a feature along this route and draw access this way, deflecting away from New Grounds.	Medium	Landowners, Natural England.	£15,000 (very approx. estimate, would require quote)	Various options for design. Could be as simple as some vegetation clearance and a hand rail.	Bluff lends itself to good view as high. Needs to fit with measures 19 and 17.
19	Potential for corner of field or even whole field to be created as open space for dogs off-lead	Create an area for dogs to run free and off lead. Key users to deflect away from New Grounds.	Medium	Landowners.	£20,000 (assuming 0.9ha at roughly £20,000 per ha, plus legal fees etc.)	Range of options. Could be corner of field or whole field. Other options would work; this area ideal as could be fenced, is directly	Entirely dependent on landowner and a range of options. The southern corner of the field is around 0.9ha.

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Map Ref	Description	Aim	Priority	Implementation body/ key stakeholders	Cost	Options	Notes
						accessible from Harbour and would draw dog walkers away from New Grounds.	
20	Lime kiln and pond (old decoy) potentially opened up slightly and made more of a feature, some interpretation	To enhance the route running NE from the Harbour, drawing access this way.	Medium	Landowners, English Heritage.	£5000 very approximate estimate to cover vegetation clearance, pond clearance, some restoration.		
21	Path through woods enhanced with boardwalk sections, vegetation management, views of estuary	To enhance the route running NE from the Harbour, drawing access this way.	Medium	Landowners, Natural England.	£6,500 (based on £6m per m to upgrade existing path (see Paths for all 2014) and around £2000 for boardwalk sections, vegetation management etc.		730m of path (existing PRoW) between two path junctions.
22	Path clearly signposted, route enhanced to make more welcoming and attractive to use (widen)			Landowners, Natural England.	£4,000 (based on £6m per m to upgrade existing path (see Paths for all 2014)	Range of options for signposts and design	660m of path (existing PRoW)
23	Path clearly signposted, route enhanced to make			Landowners, Natural England.	£3000 (based on £6m per m to upgrade existing	Range of options for signposts and design	470m of path (existing PRoW)

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Map Ref	Description	Aim	Priority	Implementation body/ key stakeholders	Cost	Options	Notes
	more welcoming and attractive to use (widen)				path (see Paths for all 2014)		
24	Interpretation and map here of routes	Allowing visitors to orientate themselves and choose most appropriate path; access spread across area and away from New Grounds.		Landowners.	Included in 2 above		
25	Small parking area created at end of Naas Lane, allowing space to turn and for some cars to park	To draw visitors to use Naas Lane for access, ensuring the lane is well used by residents in new housing.	Medium	Landowners, Golf Club	Depends on potential to allow parking here and options for space.	Different locations, design etc. possible	Potentially need to minimise traffic on Naas Lane so parking needs to be low key, Advantage of small formal parking area here would ensure use contained and not infringe on residents/golf club.
26	Naas Lane made safe for pedestrian access e.g. with path alongside (potentially along field edge)	Nass Lane is made safe for pedestrian access to people will walk from new development to Harbour, rather than drive. New Grounds then less likely to be visited as much further to walk.	High	Landowners	£15,500. Cost estimated at 700m of path at £15 per m, plus an extra £5000 for drainage and other infrastructure. Cost does not include purchase of land/ payment for permissive access.	Access could be on verge or a strip along field edge	Lane is 690m long from bypass to golf-club.
	Dog ambassador scheme	Face-face engagement with dog walkers to help communicate key messages	Medium		Dependent on delivery options	Could be undertaken by volunteers.	Face-face engagement likely to work well in helping reinforce key

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Map Ref	Description	Aim	Priority	Implementation body/ key stakeholders	Cost	Options	Notes
		regarding disturbance, dogs on leads etc.					messages. If involving local dog walkers as volunteers this would require considerable support and staff-time.

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Appendix 1: Visitor Survey Questionnaire



Good morning/afternoon. I am conducting a visitor survey on behalf of the Forest of Dean District Council. The survey is to find out more about access around Lydney Harbour and will help to consider how the area may be managed in future. Can you spare me a few minutes please?

Q1 ...

- ☐ Are you on a day trip/short visit and travelled directly from your home ... *if no*
- ☐ Are you on a day trip/short visit & staying away from home with friends or family ... *if no*
- ☐ Staying away from home, e.g. second home, mobile home or on holiday
- ☐ If none of the above, How would you describe your visit today?

Further details

Q2 **What is the main activity you are undertaking today?** *Tick closest answer. Do not prompt. Single response only.*

- ☐ Dog walking
- ☐ Walking
- ☐ Jogging/power walking
- ☐ Outing with family
- ☐ Cycling/Mountain Biking
- ☐ Bird/Wildlife watching
- ☐ Fishing
- ☐ Enjoy scenery
- ☐ Photography
- ☐ Meet up with friends
- ☐ Sailing (non-motorised)
- ☐ Boating (motorised - RIB etc)
- ☐ Other, please detail:

Further details

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

- ☐ Less than 30 minutes
- ☐ Between 30 minutes and 1 hour
- ☐ 1-2 hours
- ☐ 2-3 hours
- ☐ 3-4 hours
- ☐ 4 hours +

Q4 **Over the past year, roughly how often have you visited this site?** *Tick closest answer, single response only. Only prompt if interviewee struggles.*

- ☐ Daily
- ☐ Most days (180+ visits)
- ☐ 1 to 3 times a week (40-180 visits)
- ☐ 2 to 3 times per month (15-40 visits)
- ☐ Once a month (6-15 visits)
- ☐ Less than once a month (2-5 visits)
- ☐ Don't know
- ☐ First visit
- ☐ Other, please detail

Further details:

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

- ☐ Early morning (before 9am)
- ☐ Late morning (between 9am and 12)
- ☐ Early afternoon (between 12 and 2)
- ☐ Late afternoon (between 2 and 4pm)
- ☐ Evening (after 4pm)
- ☐ Varies / Don't know
- ☐ First visit

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

- ☐ Spring (Mar-May)
- ☐ Summer (Jun-Aug)
- ☐ Autumn (Sept-Nov)
- ☐ Winter (Dec-Feb)
- ☐ Equally all year
- ☐ Don't know
- ☐ First visit

Q7 How did you get here today? What form of transport did you use? Do not prompt. Single response only.

- ☐ Car / van
- ☐ On foot
- ☐ Public transport
- ☐ Bicycle
- ☐ Other, please detail

Further details:

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 started your visit today, the finish point and your route please. Probe to ensure route is accurately documented. Use P to indicate where the visitor parked, E to indicate the start point and X to indicate the exit. Mark the route with a line; a solid line for the actual route and a dotted line for the expected or remaining route.

Q8 Is / was your route today the normal length when you visit here for [insert given activity]? Tick closest answer, do not prompt. Single response only.

- ☐ Yes, normal
- ☐ Much longer than normal
- ☐ Much shorter than normal
- ☐ Not sure / no typical visit
- ☐ First visit

Q9 What, if anything, influenced your choice of route here today? Tick closest answers, do not prompt. Multiple responses ok.

- ☐ Weather
- ☐ Daylight
- ☐ Time
- ☐ Other users (avoiding crowds etc)
- ☐ Group members (eg kids, less able)
- ☐ Muddy tracks / paths
- ☐ Followed a marked trail
- ☐ Previous knowledge of area / experience
- ☐ Activity undertaken (eg presence of dog)
- ☐ Interpretation / leaflets / promotion
- ☐ Wanting to be near water
- ☐ Viewpoint/Headland/Feature
- ☐ Tide
- ☐ Other, please detail

Further details:

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Q10 Why did you choose to visit here, rather than another local site? Tick all responses given by visitor in the 'other' column. Do not prompt, tick closest answers. Then ask **Which single reason would you say had the most influence over your choice of site to visit today?** Tick only one main reason. Use text box for answers that cannot be categorised and for further information.

	Other	Main
Don't know / others in party chose	<input type="radio"/>	<input type="radio"/>
Close to home	<input type="radio"/>	<input type="radio"/>
No need to use car	<input type="radio"/>	<input type="radio"/>
Quick & easy travel route	<input type="radio"/>	<input type="radio"/>
Good / easy parking	<input type="radio"/>	<input type="radio"/>
Particular facilities	<input type="radio"/>	<input type="radio"/>
Refreshments / cafe/ pub	<input type="radio"/>	<input type="radio"/>
Choice of routes	<input type="radio"/>	<input type="radio"/>
Feels safe here	<input type="radio"/>	<input type="radio"/>
Quiet, with no traffic noise	<input type="radio"/>	<input type="radio"/>
Not many people	<input type="radio"/>	<input type="radio"/>
Scenery / variety of views	<input type="radio"/>	<input type="radio"/>
Rural feel / wild landscape	<input type="radio"/>	<input type="radio"/>
Particular wildlife interest	<input type="radio"/>	<input type="radio"/>
Habit/familiarity	<input type="radio"/>	<input type="radio"/>
Good for dog / dog enjoys it	<input type="radio"/>	<input type="radio"/>
Ability to let dog off lead	<input type="radio"/>	<input type="radio"/>
Closest place to take dog	<input type="radio"/>	<input type="radio"/>
Closest place to let dog safely off lead	<input type="radio"/>	<input type="radio"/>
Appropriate place for activity	<input type="radio"/>	<input type="radio"/>
Suitability of area in given weather conditions	<input type="radio"/>	<input type="radio"/>
Near coast / water	<input type="radio"/>	<input type="radio"/>
Other, please detail	<input type="radio"/>	<input type="radio"/>
Further details:	<input type="text"/>	

We would now like to ask about other local sites that you visit for [given activity].

Please could you tell us the name of up to 3 other locations you visit most often for [given activity]? Please list them in order, starting with the one you visit most. Record names as accurately as possible, checking for spelling etc if necessary. Do prompt for site names rather than general description (e.g. avoid responses such as "local park")

Q11 Name of Site 1

Q12 Name of Site 2

Q13 Name of Site 3

Q14 What proportion of your weekly visits for [given activity] take place at Lydney compared to other sites. Can you give a rough percentage? Do not prompt unless interviewee struggles.

- ☐ All take place here
- ☐ 75% or more
- ☐ 50-74%
- ☐ 25-49%
- ☐ less than 25%
- ☐ Not sure/don't know/first visit

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I'd now like to ask about how you plan your visit.

Q15 We'd like to know which information sources you use to plan your visit. Thinking of your visit today:

	Yes	No	Don't know/unsure
Did any website influence your choice to come here today?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Did any social media influence your choice to come here today?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Did any smartphone app influence your choice to come here today?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Did any maps (online or paper) influence your choice to come here today?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Did any leaflets influence your choice to come here today?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Did word of mouth influence your choice to come here today?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q16 Are you aware of any designations or environmental protection that apply to this part of the coast. *Single response only.*

- ☐ Yes
☐ No
☐ Unsure

Q17 If yes, can you name the designation? *Do not prompt. Multiple responses ok.*

- ☐ SSSI mentioned
☐ SPA/SAC/European site mentioned
☐ AONB mentioned
☐ General comment about importance for birds
☐ No clear response / not able to name

Other/further details:

Q18 Are there any changes you would like to see here with regards to how this area is managed for access?

Q19 What is your full home postcode? *This is an important piece of information, please make every effort to record correctly.*

Q20 If visitor is unable or refuses to give postcode: What is the name of the town or village where you live?

Q21 If visitor is on holiday ask: Which town / village are you staying in?

Q22 Do you have any further comments or general feedback about your visit and access to this area?

That is the end. Thank you very much indeed for your time.

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Q23 TO BE COMPLETED AFTER INTERVIEW FINISHED.

Surveyor initials	
Survey location code	
Map Reference Number	
Gender of respondent	
Total number in interviewed group	
Total males	
Total females	
Total minors	
Number of dogs	
Number of dogs off lead	

Q24 Surveyor comments. *Note anything that may be relevant to the survey, including any changes to the survey entry that are necessary, eg typos/mistakes/changes to answers/additional information.*