Report

footprint ECOLOGY

Exe Estuary SPA & Dawlish Warren SAC

Interim report relating to strategic planning and impacts from recreation

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Summary

This report provides interim guidance for three local planning authorities (East Devon District Council, Exeter City Council and Teignbridge District Council) with respect to the implications of new development for the following European wildlife sites; Exe Estuary Special Protection Area (SPA) and Ramsar Site, and Dawlish Warren Special Area of Conservation (SAC).

Recreation has the following impacts to Dawlish Warren SAC:

- Trampling, which in some places is leading to significant erosion problems
- Dog fouling, with nutrient enrichment, presumably from dog faeces, evident near access points in the fixed dune grassland.
- Increased fire risk (for example through the use of bar-b-ques),
- Management of the golf course, which is within the SAC and where management such as fertilizer application is damaging to the flora

Impacts on the Exe Estuary SPA are from disturbance to the wintering waterfowl. The presence of people can cause disturbance, resulting in a reduction in time spent feeding, increased energetic costs, avoidance of otherwise suitable habitat and increased stress.

We highlight the following as activities in particular locations where impacts to the Natura 2000 interest may occur or currently gives cause for concern:

- Access within the dunes at Dawlish Warren. 'Footfall', dog fouling and fire risk particular issues.
- Disturbance to roosting waders at Dawlish Warren, between August and March. Golfers, walkers, fishermen and watersports users all flush roosting waders.
- Dog walking, bait digging at Exmouth in the Duck Pond/LNR area, during August-March (October –December likely to be particularly important for wildfowl).
- Kite surfing and windsurfing inside the estuary, if occurring when areas of mud exposed and if taking place in upper parts of estuary or in the Bight. August-March the key time.
- Jet skis, if within the estuary. August-March the key time.
- Dogs off leads on the intertidal anywhere within the estuary (particularly Duck Pond, Lympstone, Topsham, Powderham). August-March the key time.
- Powerboats around the mouth of the Clyst. August-March the key time.

Visitor and household survey data indicates that there is a clear relationship between the distance people live from estuary and how often people visit, i.e. people living near the estuary visit it the most (for example people living within 5km accounted for 70% of the people interviewed at the estuary during winter visitor surveys).

Such figures provide guidance on where development may have particular implications for the SPA/SAC. The estuary is a particularly small site and taking into account the length of shoreline the estuary has a comparatively high level of existing development surrounding it. There is evidence that recreation is currently having a negative impact on the European Sites, however the research is complex and it is not possible to provide particular thresholds of visitor numbers that should not be exceeded. New development will increase the number of people in the vicinity and therefore clearly potentially exacerbate existing problems and increase visitor pressure. We discuss in detail the range of mitigation measures that could be instigated to reduce impacts and the implications for Habitat Regulations Assessments for LDF documents. In addition to developing measures to counteract the effects of new recreational pressure there is a particular need to thoroughly assess the allocations for development in close proximity to the European sites. It is advised that there may be a need to minimise allocations for growth that would result in significant increases in use of the SPA/SAC for local and daily greenspace needs.

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Acknowledgements

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We draw extensively on the results of other pieces of work on the Exe and at Dawlish Warren, in particular the initial phase of the Exe Disturbance Study. This disturbance study has been commissioned by the Exe Estuary Management Partnership with funding from the Environment Agency, Natural England and the RSPB. We are grateful to these organisations for their support. The results presented here are interim results and Phase 2 of the Exe Disturbance study is yet to be completed.

There are also strong links with work Footprint Ecology has been undertaking on other Natura 2000 sites. In particular we have drawn on our work on the Dorset Heaths, the Thames Basin Heaths, the Brecks, the Solent and North Kent, and a review for Natural England on the management of disturbance on Marine Protected Areas. We are grateful to many for thought provoking discussion, information and advice.

1. Introduction

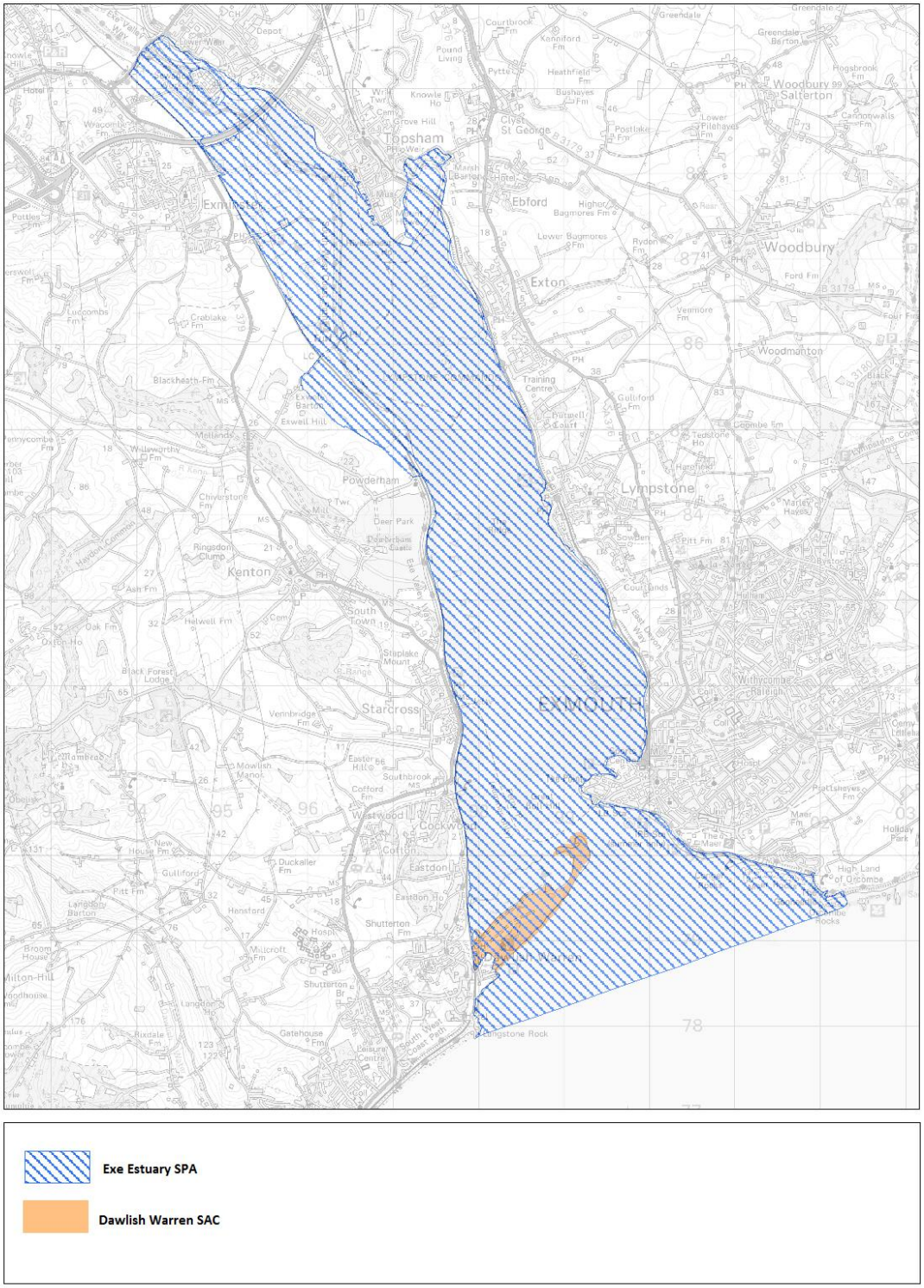
1.1 This report provides interim guidance for three local planning authorities (East Devon District Council, Exeter City Council and Teignbridge District Council) with respect to the implications of new development for the following European wildlife sites; Exe Estuary Special Protection Area (SPA) and Ramsar Site, and Dawlish Warren Special Area of Conservation (SAC). The Exe Estuary SPA is also a European Marine Site because part of the SPA is within the marine area, i.e. it is either intermittently or continuously covered by tidal waters.

1.2 It is particularly important for the three authorities to gather further information relating to potential impacts upon the European sites arising from new development, because each is progressing with their Core Strategies, the overarching documents in their Local Development Frameworks (LDFs).

1.3 The three local authorities all encompass the Exe Estuary, which is internationally important for its wildfowl and waders, particularly overwintering species. Exeter City lies at the top of the estuary, which runs out to the English Channel alongside Teignbridge District to the west and East Devon District to the east. The estuary area is highly valued and regularly used for recreation by local people, and is also widely promoted for tourist use, where visitors can enjoy relaxing walks and wildlife watching, or more adventurous activities such as boat trips, cycling and water sports such as wind and kite surfing.

1.4 Dawlish Warren is an area of sand dunes on the south west edge of the estuary that falls within the SPA boundary and provides an important bird roosting area, and this small site is itself also a European wildlife site for its habitats of European importance. The Dawlish Warren area is popular holiday destination and in close proximity to the SAC are numerous campsites, a holiday village and various other tourist infrastructure.

1.5 The objective of this Interim Report is to begin to inform decision-making on the scale and location of development allocations over the extent of the administrative areas of Exeter City, East Devon and Teignbridge District Councils in relation to impacts on the Exe Estuary SPA and Dawlish Warren SAC, considering both individual impacts and those that may act together in-combination. Additionally, this Interim Report should start to provide necessary information to guide the testing of the likely impact of individual planning applications on the European-protected sites.



Map 1: Exe Estuary SPA and Dawlish Warren SAC: site boundaries of the two Natura 2000 sites. ©Crown copyright and database right 2011. All Rights Reserved. Licence Number 100026380.

1.6 As well as their European importance, both the Exe Estuary and Dawlish Warren are recognised for their national importance and are both notified as Sites of Special Scientific Interest (SSSI's). The publicly accessible areas of Dawlish Warren SAC form part of a National Nature Reserve and the golf course area of the Warren is also a Local Nature Reserve. Species protected under both European and UK legislation occur here, as do other rare and threatened species. This report focuses upon the European site designations and the habitats and species that form the special interest features of the sites. Impacts on other habitats and species will need to be considered separately.

1.7 Importantly, the SPA is classified for its bird interest, and as mobile species it is necessary to consider impacts upon bird interest features whether the birds are inside or outside the SPA, in order to fully meet the requirements of legislation.

1.8 This Interim Report is a concise guidance document, drawing together the current evidence base to assist local authorities with the immediate decisions to be made regarding the content of Core Strategies and determination of development proposals, until a more in-depth 'Detailed Report' is produced later in 2011. The Detailed Report awaits essential evidence from Phase2 of the Exe Disturbance Study, which is in the process of being completed. The Exe Disturbance Study will collect and analyse a significant data set on the use of the estuary for recreation, and also the use of the estuary by the SPA birds. With this research complete, the Detailed Report to follow this Interim Report will provide a much more comprehensive evidence based guidance document, with more detailed recommendations and prescriptions to ensure that LDF documents for the three authorities continue to adequately protect the European sites and planning decisions are appropriately informed and legally sound.

Overview of relevant legislation and policy

1.9 The following section provides an overview of the legislation relating to European wildlife sites, and its implications for both Local Development Frameworks and development management, as a result of the duties placed upon the three local planning authorities to ensure the continued ecological viability of the nature conservation interest of the European sites.

1.10 The Conservation of Habitats and Species Regulations 2010, is a new piece of legislation that replaces the previous Conservation (Natural Habitats &c.) Regulations 1994 normally referred to as the 'Habitats Regulations.' The original Habitats Regulations have had numerous amendments between 1994 and 2010. The bringing into force of the new 2010 Habitats Regulations has provided a consolidation of the original Regulations and all subsequent amendments made to the original legislation. When the Habitats Regulations originally came into force in the UK their purpose was to provide the UK interpretation of the European legislation relating to the protection of European wildlife sites and this continues to be the case with the new 2010 Regulations.

1.11 The relevant elements of European legislation, which is transposed into the UK Habitats Regulations, are the European Birds Directive 1979[1], which was recently updated in 2009[2], and the European Habitats Directive 1992[3]. The European Birds Directive was introduced into Europe to protect rare and threatened birds and their habitats, and requires all Member States to classify 'Special Protection Areas' (SPA) for birds where such areas are found to be important for particular bird species or assemblages of species listed within the legislation. This may include areas that are important as stop off points for migratory birds, such as large assemblages of waterfowl.

1.12 The Habitats Directive came into force in Europe in 1992, and this Directive sought to ensure the protection of plants, habitats and animals other than birds, through particular controls with regard to the harm and disturbance of species and also by the creation of 'Special Areas of Conservation' (SAC). Each European member state is required to designate areas for habitats and species listed in the legislation due to their rare or vulnerable nature within a European wide context. Article 7 of the Habitats Directive links back to the earlier Birds Directive, and imposes a more uniform set of procedures that relate to the protection of SPAs and SACs[4], even though the two different types of European sites are required by separate Directives.

1.13 The European Directives and their requirements to classify or designate, and then protect, restore and maintain SPAs and SACs are now all taken forward into our domestic legislation in the form of the new Habitats Regulations 2010. It should be remembered however, that the European Directives continue to be directly applicable to every European member state. It is sometimes beneficial to refer back to the parent Directives for clarification on particular points. For example, it is most important to note that there are legislative duties[5] on each member state to establish the necessary measures to avoid the deterioration of habitats and the disturbance of species for which a European site has been designated. There is therefore a general duty in place to rectify any deterioration in European sites. It is particularly important to distinguish between duties to rectify existing deterioration and duties to prevent further harm arising from new plans or projects.

1.14 The UK is also a contracting party to the Ramsar Convention[6]. This is a global convention to protect wetlands of international importance, especially those

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[1] Council Directive on the conservation of wild birds of 2nd April 1979 (70/409/EEC)
[2] Council Directive on the conservation of wild birds of 30th November 2009 (2009/147/EC)
[3] Council Directive on the conservation of natural habitats and of wild fauna and flora of 21st May 1992 (92/43/EEC)
[4] Article 7 of the Habitats Directive supersedes the previous requirements of the first sentence of Article 4(4) of the Birds Directive.
[5] Article 6.1 and 6.2 of the Council Directive on the conservation of natural habitats and of wild fauna and flora of 21st May 1992 (92/43/EEC) (the 'Habitats Directive')

[6] Convention on wetlands of international importance especially as waterfowl habitat, Ramsar, Iran, 2/2/71 as amended by the Paris protocol of 3/12/92 and the Regina amendments adopted at the extraordinary

wetlands utilised as waterfowl habitat. In order to ensure compliance with the requirements of the Convention, the UK Government expects all competent authorities to treat listed Ramsar sites as if they are part of the suite of designated European sites, as a matter of policy[7]. Most Ramsar sites are also an SPA or an SAC, but the Ramsar features and boundary lines may vary from those for which the site is classified as an SPA or designated as an SAC.

1.15 The Habitats Regulations incorporate particular duties for public bodies that permit activities or give effect to plans that may affect a European site, or implement activities themselves that may affect a European site. This includes local planning authorities as decision makers on both plans and development projects.

1.16 Part 6 of the Habitats Regulations 2010 relates to the assessment of plans and projects for their effects upon European sites, their interest features and conservation objectives, and takes a stepwise approach to the consideration of potential effects and the decisions made with regard to whether plans and projects can proceed. Local planning authorities are 'competent authorities' to which the requirements of the Habitats Regulations apply. Before undertaking a project, giving permission for a project, or giving effect to a plan, Regulation 61(1) requires competent authorities, including local planning authorities, to consider whether the plan or project is likely to have a significant effect upon a European site. Any plan or project that is likely to have an effect upon a European site, or where effects are uncertain, should be the subject of a more detailed 'appropriate assessment' in order to assess the implications of the plan or project for the European site, particularly in view of the conservation objectives for the European site. Natural England is a statutory consultee on appropriate assessments of plans and projects.

1.17 Regulation 61(5) advises that a competent authority can only agree to the plan or project if it can be ascertained through the appropriate assessment that it will not adversely affect the integrity of any European site, taking into account any conditions or restrictions that could be put in place. This therefore ensures that the precautionary principle is applied, i.e. it has to be ascertained that there will be no adverse effect on the integrity of the site.

1.18 Regulation 62 sets out the exceptional circumstances in which a plan or project could be given effect, which are when there are no alternative solutions to the plan or project that can be taken forward with a lesser effect, and also where the reasons for the plan or project are imperative reasons of overriding public interest. Such cases are rare, and the outstanding reasons must be of outstanding public benefit, not private interests.

1.2

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conference of contracting parties at Regina, Saskatchewan, Canada 28/5 – 3/6/87, most commonly referred to as the 'Ramsar Convention.'

[7] Office of the Deputy Prime Minister, 2005, *Planning Policy Statement 9, Biodiversity and Geological Conservation*, paragraph 6.

1.19 Further even more stringent tests apply where a site hosts a 'priority habitat or species.' In these circumstances, the imperative reasons of overriding public interest must only be those relating to human health, public safety or beneficial consequences of primary importance for the natural environment, or a reason agreed by the European Commission. Ordinarily, in the absence of a priority habitat or species, the imperative reasons can be of a social or economic nature.

1.20 As noted in the European site descriptions below, Dawlish Warren SAC interest features include fixed dunes with herbaceous vegetation, which is a priority feature. Should a plan or project ever be presented that cannot adequately mitigate for its potential effects on this priority feature, in the absence of any alternative solutions the more restricted imperative reasons of overriding public interest would need to apply before the plan could be given effect or the project given permission.

European sites

Exe Estuary SPA and Ramsar site

1.21 The Exe Estuary Special Protection Area (SPA) lies between Teignbridge District to the West, the East Devon District to the East and Exeter City to the north. The SPA includes the estuary waters, foreshore, saltmarsh and the sand dunes of Dawlish Warren with the double spit across the estuary mouth. The invertebrate rich sand and mudflats, provide the feeding grounds that are essential to the overwintering and migratory birds. A number of roost sites at the top (northern) end of the estuary are freshwater grazing marsh and lagoons at Bowling Green Marsh and Exminster Marshes that lie within the SPA and are RSPB reserves.

1.22 The Exe Estuary qualifies under Article 4.1 of the Birds Directive by supporting overwintering populations the following species listed on Annex I of the Directive:

- Avocet *Recurvirostra avosetta* (at least 28.3% of the wintering population in Great Britain). The majority of British avocets move from their East Anglian breeding grounds to coastal estuary sites, either East Anglia or the south coast. The Exe Estuary is one of only three SPAs classified for non-breeding avocets, with the majority being on the East Anglian coast.

- Slavonian Grebe *Podiceps auritus* (at least 5.0% of the wintering population in Great Britain) – The Exe Estuary is one of only three sites in the UK classified as an SPA for non-breeding Slavonian Grebe, with the other two sites being in Scotland. The Exe Estuary is therefore a critical overwintering ground for this species in the UK.

1.23 The Exe Estuary qualifies under Article 4.2 of the Birds Directive for regularly supporting the following migratory species over winter: Dark-bellied Brent Goose *Branta bernicla bernicla,* Dunlin *Calidris alpina alpina,* Oystercatcher *Haematopus ostralegus,* Black-tailed Godwit *Limosa limosa islandica, and* Grey Plover *Pluvialis squatarola*.

1.24 The area also qualifies under Article 4.2 of the Directive as it regularly supports an assemblage of at least 20,000 waterfowl, including: Black-tailed Godwit *Limosa limosa islandica*, Dunlin *Calidris alpina alpina*, Lapwing *Vanellus vanellus*, Grey Plover *Pluvialis squatarola*, Oystercatcher *Haematopus ostralegus*, Red-breasted Merganser *Mergus serrator*, Wigeon *Anas penelope*, Dark-bellied Brent Goose *Branta bernicla bernicla*, Cormorant *Phalacrocorax carbo*, Avocet *Recurvirostra avosetta*, Slavonian Grebe *Podiceps auritus* and Whimbrel *Numenius phaeopus.* This list is taken from the site citation where a range of assemblage species is normally quoted, but not the entire assemblage species list. Other species therefore also form part of the assemblage.

1.25 It should be noted that the Article 4.2 migratory species are not listed as qualifying features in the SPA Review of 2001. That review is still being progressed, and the Natura 2000 data form is therefore referred to for a current list of qualifying features, which includes the Article 4.2 migratory species.

1.26 The Exe Estuary is also listed as a Ramsar site, due to its estuarine habitats and its overwintering and on passage waterbirds.

Dawlish Warren SAC

1.27 Dawlish Warren is Special Area of Conservation (SAC) is a small site towards the south west end of the Exe Estuary. It is essentially a sand spit extending out across the southern mouth of the estuary, partially enclosing the estuary and therefore contributing to its calmer waters as a result. As well as providing important roosting habitat for some of the SPA birds, this 59 ha site is itself internationally important for its dune and grassland habitats, supporting significant botanical interest.

1.28 The classification of the site includes humid dune slacks, which is an Annex I habitat that forms the primary reason for selection of this site. Additionally, there are further Annex 1 habitats that are present as a qualifying feature, but that do not form a primary reason for site selection, which are the shifting dunes along the shoreline with European marram grass *Ammorphila arenaria* (i.e. white dunes) and fixed dunes with herbaceous vegetation (i.e. grey dunes). The latter is also a Priority Feature. Additionally, Dawlish Warren SAC supports a large population of petalwort Petalophyllum ralfsii, an Annex 2 species that is the primary reason for the selection of the site.

1.29 It should be noted that the Joint Nature Conservation Committee Website advises that when undertaking an appropriate assessment of impacts at a site, all features of European importance (both primary and non-primary) need to be considered in that assessment.

1.30 The Natura 2000 data form for this site emphasises that Dawlish Warren is subjected to considerable visitor pressure. A number of impacts are listed, including erosion of shifting dunes and the fixed dune grasslands being under pressure from wear, with much of this habitat forming a golf course.

This Interim Report provides guidance to three local planning authorities; East Devon District Council, Exeter City Council and Teignbridge District Council, to assist with their application of the Habitats Regulations 2010 to forthcoming development projects and emerging LDF documents. The authorities need to have due regard for the interest features and conservation objectives for the Exe Estuary SPA and Ramsar site and Dawlish Warren SAC. The Habitats Regulations place specific duties upon local planning authorities as competent authorities, giving effect to or permission for plans and projects. Stringent tests must be met and a precautionary approach applied to any decision making.

2. Work undertaken to date and on-going

2.1 There are a number of pieces of work that have been undertaken to date or are on-going that build up the evidence base and assessment of potential impacts upon the two European sites. Relevant work is summarised here.

Advice to Natural England on the approach to the Exeter PUA assessment of recreational impacts upon N2K sites

2.2 Natural England commissioned David Tyldesley and Associates to consider how the three local authorities should respond to planning applications with a likelihood of significant effects upon the European sites, by appraising the process undertaken by one of the authorities; Teignbridge District Council. David Tyldesley and Associates considered whether the approach to two particular development proposals, presented a legally sound approach, i.e. whether the Appropriate Assessments prepared by the District Council are in accordance with the requirements of the Habitats Regulations.

2.3 The advice document produced by David Tyldesley and Associates in June 2010 raises a number of issues that should inform the future approach taken by all three authorities when considering development proposals. In appraising the two Appropriate Assessments, David Tyldesley and Associates identify that both make assumptions about the effects of the developments on the European sites. There is a need for clear links to evidence and better justifications for the conclusions drawn.

2.4 It is clearly important therefore to establish a robust evidence base to inform the decisions made. The evidence base for any Appropriate Assessment normally encompasses two types of information wherever possible; wider evidence relevant to the situation, and specific information on the site and/or development in question. This Interim Report starts to draw together these two types of evidence, and this will continue into the more in depth Detailed Report, drawing upon the research undertaken to date, and highlighting where further evidence would be beneficial. The evidence base will be significantly improved by the recent studies and reports undertaken and further information will be provided by the Exe Disturbance Study when it is finalised in summer 2011.

2.5 David Tyldesley and Associates advise that “a clear position is required as to the current situation at the site in terms of the existing amenity pressure, only then can judgements be made about the potential implications of further development.” It is therefore acknowledged that a good understanding of the current environmental condition of the European sites, and the existing pressures they are under is an important element of assessing the potential for further impacts to affect the European sites. This enables decisions to be made with regard to the impacts upon ecological integrity of the site. Ecological judgements need to be made and whilst the precautionary principle prevails, it is essential that conclusions are given context and relevance to the specific site and its current condition.

2.6 A further point from the David Tyldesley and Associates advice to be taken forward into the approach for spatial plans and development proposals is the need for a clearer understanding of the scale and magnitude of potential effects. In assessing potential impacts arising from plans and projects, it is necessary to understand the parameters of the plan or project in question in addition to an ecological understanding of the European sites. Again this advice will be taken forward into the approach proposed via the Interim Report and then in greater depth in the Detailed Report.

2.7 David Tyldesley and Associates also provide advice on what constitutes a suitable mitigation measure, and the need for specific measures that are capable of implementation will be critical to the approach taken forward by the three authorities. Importantly the type of mitigation measure, its target 'impact' and predicted effectiveness in light of experience elsewhere will be relevant to the development of measures in this interim period and then in more depth in the Detailed Report.

Exe Visitor Study

2.8 Recognising the importance of visitor impact information for the development of a robust approach to assessing the impact of development upon the European sites, Footprint Ecology was commissioned to undertake a face to face visitor survey of Dawlish Warren and the Exe (Liley & Cruickshanks 2010). The survey was undertaken during the winter, when the SPA interest features are present. A total of 586 interviews were conducted with a random sample of visitors at different locations around the estuary. Local residents accounted for 69% of the interviews (with 31% of interviews involving East Devon residents, 18% involving Exeter residents and 19% from Teignbridge District). Dog walking was the most popular activity (39% of people interviewed), and walking was also popular (38% of interviews). Other activities included boating, birdwatching, cycling, kite surfing, family outings, windsurfing, fishing and jogging. A significantly higher proportion of Teignbridge and East Devon residents were visiting to walk their dog compared to Exeter residents (for which the most commonly recorded activity was cycling). Around a third of those interviewed visited most days. The majority of visitors (60%) arrived by car, with most (51% of those arriving by car) travelling from within a 10km radius of the estuary. The survey highlights a pattern of frequent use by people living relatively local to the estuary.

Assessment of recreational impacts on Dawlish Warren Special Area of Conservation

2.9 Teignbridge District Council commissioned Footprint Ecology to specifically consider the impacts of recreation on Dawlish Warren SAC (Lake 2010). Although the site has a high level of visitor use and the resultant impacts are widely recognised, an assessment of the extent to which access is currently affecting the site interest features had not previously been documented.

2.10 The report shows that the impact of recreational pressure on Dawlish Warren is closely intertwined with other factors operating on the site, most notable coastal

erosion, the presence of sea defences, the naturally dynamic state of the sand dune habitats present and management practices. There is evidence within the SAC that current visitor levels are impacting upon both the embryonic shifting dunes and the mobile dunes. The fixed dunes within the golf course have some localised patches of wear, with deterioration also exacerbated by inappropriate management.

Exe Disturbance Study

2.11 Footprint Ecology are currently undertaking a study exploring the disturbance effects of recreational activities (with a focus on water-based activities) on the interest features of the Exe Estuary SPA. The disturbance study was commissioned by the Environment Agency and Natural England, in partnership with RSPB and the Exe Estuary Partnership, and commenced in 2009. Fieldwork ran through the winter 2009/10. The disturbance study report was due in winter 2010/11, but the study was then extended, and has continued undertaking fieldwork through the winter 2010/11. Fieldwork will end in March 2011 and the report is now due in the summer 2011.

2.12 The study has been undertaking detailed behavioural work on the birds, in a range of weather conditions, tides and times of year. While focusing primarily on feeding areas on intertidal habitats, the study has also encompassed the roost sites at Dawlish Warren. In combination with the ornithological work, detailed counts of the levels of recreational use have been undertaken and different watersports users have been taking GPS units out with them, allowing detailed data to be gathered on how people use the estuary and where they go while on the water. To date interim results are available and the work will be finalised in the summer of 2011.

Devon Household Survey

2.13 A household survey was mailed to 5000 residents across the three local authorities during the autumn 2010. The survey asked respondents to identify countryside sites that they visit and other information such as frequency of visit, mode of transport used to reach sites and activities undertaken. This survey is currently being analysed, and the results should provide further detail on how far people travel to sites and where development within the relevant districts may lead to increased recreational use of Natura 2000 sites.

The three local planning authorities, Natural England and other partners have been proactive in commissioning and gathering evidence to support their application of the Habitats Regulations 2010 to forthcoming development projects and emerging LDF documents. The evidence base includes advice from David Tyldesley and Associates that gives a steer on the need to focus upon effective use of evidence to justify conclusions drawn, the need for clearly identifying the difference between existing and potential new effects, and the importance of relating assessments specifically back to the sites in question.

Specific consideration of Dawlish Warren SAC has revealed that the site is under pressure from tourism and recreation, and that the embryonic shifting dunes and the mobile dunes are beginning to be affected, with localised impacts also taking place on the fixed dune feature.

An evidence base of visitor information is being built up from the visitor study and household survey, with the latter yet to report its findings. Thus far it is apparent that the majority of visitors are local, travel by car, and the main activity is dog walking, although a wide range of other activities, particularly water sport related, are undertaken.

The Disturbance Study will provide much more extensive and detailed information on the nature of disturbance and behavioural responses from the bird interest features.

3. Recreational use and impacts of recreation on the Exe and Dawlish Warren.

3.1 In this section we consider the impacts of recreation to the relevant European sites and the types of activity associated with the impacts. We draw on the interim results of the Exe Disturbance Study, and also the Dawlish Warren SAC work and the Exe Visitor Survey.

Impacts of Recreation at Dawlish Warren SAC

3.2 Impacts from recreation to Dawlish Warren SAC are identified by Lake (2010), in the report commissioned by Teignbridge District Council, as:

- Trampling, which in some places is leading to significant erosion problems, with embryonic shifting dunes and mobile dunes particularly impacted. By contrast, in the more stable areas of the site, over-stabilisation of the mobile dunes is a problem and in these areas trampling may be beneficially increasing the mobility of sand in the system.
- Dog fouling, with nutrient enrichment, presumably from dog faeces, evident near access points in the fixed dune grassland. The enrichment results in the characteristic dune grassland flora being replaced by coarser vegetation.
- Increased fire risk (for example through the use of bar-b-ques), which can result in damage to dune vegetation.
- Management of the golf course, which is within the SAC and where management such as fertilizer application is damaging to the flora.

Activities associated with the impacts

3.3 Walking and other activities that result in people on the mobile and embryo dunes are causing damage.

3.4 Dog fouling is of course related to dog walking, an activity currently limited by by-laws to the area between the car-park and groyne 9. Dog walkers therefore do not tend to occur in the embryo dunes around the tip of the warren. The incidence of accidental fires is likely to be linked to bar-b-ques, parties/gatherings etc. Deliberate fire starting does also occur on some more urban sites, with school children often responsible.

Impacts of Recreation on the Exe: Disturbance

Disturbance

3.5 Impacts on the Exe Estuary SPA are from disturbance. Recent work reviewing risks to European Marine Sites in England by Natural England has identified disturbance as a generic issue across many sites, including the Exe Estuary (see Coyle & Wiggins 2010).

3.6 Disturbance to wintering 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, Rehfisch, & Clark 2002; Burton et al. 2002)
- Increased stress (Regel & Putz 1997; Weimerskirch et al. 2002; Walker, Dee Boersma, & Wingfield 2006; Thiel et al. 2011)

3.7 It is difficult to determine the extent to which these impacts result in an adverse effect on integrity. Research from other sites clearly demonstrates that the impacts of disturbance are related to site conditions such as weather conditions or prey abundance, conditions that vary in time (Goss-Custard et al. 2006). Birds may only be vulnerable at particular times, such as staging during migration (Bechet, Giroux, & Gauthier 2004; Yasué 2005). Disturbance impacts may therefore occur only when particular circumstances coincide and therefore be difficult to pick up. It is also hard to record disturbance impacts and there is contention about the best approaches (Gill, Norris, & Sutherland 2001; Gill 2007). Whether birds take flight or not, or how often they are flushed, may not necessarily indicate vulnerability to disturbance (Beale & Monaghan 2004).

3.8 There is a body of previously published work relating to waterbirds on the Exe, much of which addresses disturbance issues. Goss-Custard and Verboven (1993) review disturbance and feeding shorebirds, focusing particularly on oystercatchers feeding on mussel-beds. While now dated, they identified that disturbance levels had increased over the previous 10-15 years, yet while there may have been some redistribution of the birds, there was no detectable change in bird populations, with oystercatcher numbers over the same period increasing in line with the national population. More recent analysis of count data on the Exe Estuary has considered 11 species that are interest features of the SPA, of which alerts[8] have been triggered for five (oystercatcher, grey plover, red-breasted merganser, dunlin and lapwing). Of these, only those for Oystercatcher were considered to be underpinned by a decline driven by site-specific pressures (see Thaxter et al. 2010 for details).

3.9 Other more recent work (West *et al.* 2002)used a behaviour-based model to predict the impact of human disturbance on oystercatchers on their intertidal feeding

[8] Waterbirds are counted as part of the national WeBS scheme, with sites counted monthly. The alerts system uses WeBS data and analyses trends on individual sites. Trends are assessed over the short-, medium-, and long-terms (5, 10 and up to 25 years respectively) and also since site-designation. If declines exceed 50%, then a High Alert is issued and if declines exceed 25% then a Medium-Alert is issued.

grounds in the Exe Estuary in winter. The modelling showed that disturbance had the potential to be more damaging than actual habitat loss, but that at the levels of access currently occurring on the Exe, disturbance was not predicted to result in increased mortality. The work also suggested that preventing disturbance during late winter, when feeding conditions were harder, would practically eliminate any predicted population consequences.

3.10 The national cycle trail around the Exe was subject to a detailed appropriate assessment (Goss-Custard 2007) which summarises disturbance data for the Exe, including flight distances. Based on the author's considerable data set and experience, the work suggests distances at which activities on the shoreline are considered to have no impact on birds present on the Exe. These distances are 200m for sections of shoreline where the people are not on the skyline and people are simply cycling/walking along a path. For sections on the skyline and for activities that are more irregular a distance of 400m is suggested.

Exe Disturbance Study

3.11 At the time of writing fieldwork for the Disturbance Study is just coming to an end and complete analysis has not taken place. Partial analysis of some of the data has taken place and the provisional results provide an indication of disturbance levels and impacts.

3.12 The study has conducted fieldwork at nine locations around the estuary. At these locations the surveyors have recorded birds within a 500m radius of the survey point, and within this 500m radius determined how frequently birds are flushed, and which activities disturb the birds present. The distance the birds are flushed, the time lost feeding and where the birds go if flushed was recorded. Considering the data collected up until October 2010, 1197 species specific observations had been collected, where people were present within 200m of birds of a single species in the 500m recording area. One in five (20%) of these events resulted in the birds taking flight, with 6% involving a short flight (less than 50m) and the other 14% involving a major flight of more than 50m. A further 13% of observations resulted in the birds responding to disturbance, but not taking flight – i.e. stopping feeding, being alert and/or walking or swimming away from the source of disturbance.

3.13 A summary of the instances of major flight is given in Table 1 below. It can be seen that the majority of major flight instances were associated with activities taking place on intertidal habitat. The table lists six types of activity which together accounted for 83% of all the major flights recorded. Activities on the intertidal clearly result in the most major flights.

Table 1: Instances of major flight recorded at nine different survey locations around the Exe. The grey section (top part of the table) shows all events, grouped as to whether they took place solely on the shore-based (walking, cycling, dog walking etc), or occurred on the intertidal (dog-walking, bait-digging, walking etc) or were water-based (windsurfing, boating, kite surfing etc). Data for selected activities are shown below (green shading). All activities where at least 5 major flights were observed are listed.

	Total No. Observations	No (%) resulting in major flight	% of all major flights
ALL ACTIVITIES			
All shore-based events	677	38 (1)	22
All intertidal	428	118 (28)	70
All water based	92	13 (14)	8
TOTAL	1197	169 (14)	100
SELECTED ACTIVITIES			
Dog walker (dog off lead) intertidal	161	47 (29)	28
Walking on intertidal	96	31 (32)	19
Bait digging/Crab-tiling/Shellfishing	103	31 (30)	19
Walking on shore	387	19 (5)	11
Dog walking (dog on lead) on shore	51	5 (10)	3
Motor vehicle on intertidal	18	5 (28)	3

3.14 While the data in Table 1 allows us to focus on particular activities, it is important to recognise that the results are for the specific areas surveyed, rather than the estuary as a whole. We therefore are cautious about focusing solely on these activities. For example kite surfing was observed to result in just one major flight instance within the survey boundaries. Surveyors did however anecdotally record instances of kite surfing causing disturbance outside the survey area. For example in early march 2011 surveyors were recording simultaneously at Exmouth and Topsham, a little after high tide. Two kite surfers were observed to walk out onto the intertidal area at Exmouth, and no disturbance was recorded in the 500m recording area at the Exmouth survey location. The two individuals set up their equipment on a sandbank about 1km from the shore, and when the kites were opened, a roost of oystercatchers and curlew on a neighbouring sandbank took flight. The kite surfers then zig-zagged up the estuary and walked ashore at Topsham. Virtually all the waders, including large numbers of curlew, that were feeding in the upper estuary were seen to leave and had not returned within an hour of the disturbance event.

3.15 The Exe Disturbance Study analysis will use the data on individual activities to extrapolate to the whole estuary, but as that analysis is yet to be completed we therefore list the following additional (to those in Table 1) activities where disturbance impacts may sometimes occur:

- Kite surfing
- Windsurfing

- Jetskiing
- Water-skiing
- Powerboating

3.16 The fieldwork recorded the distance at which birds responded to each potential disturbance event. These data will be used to extrapolate the disturbance impacts recorded at the individual survey locations to other parts of the estuary. Results for a selection of species are shown in Figure 1 . It can be seen that the distances at which birds respond to potential disturbance events are typically well within 200m. These distances appear to support the suggested distances provided by Goss-Custard (2007) (see para 3.10).

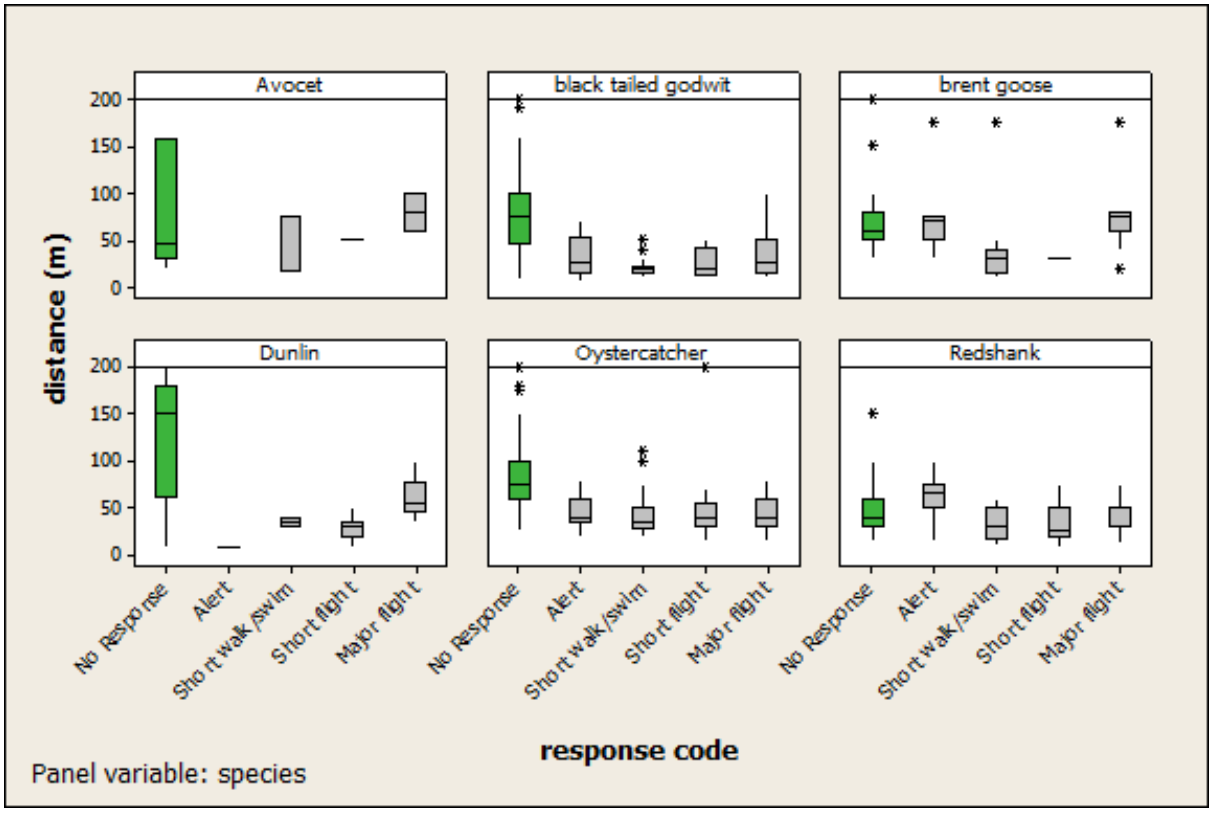


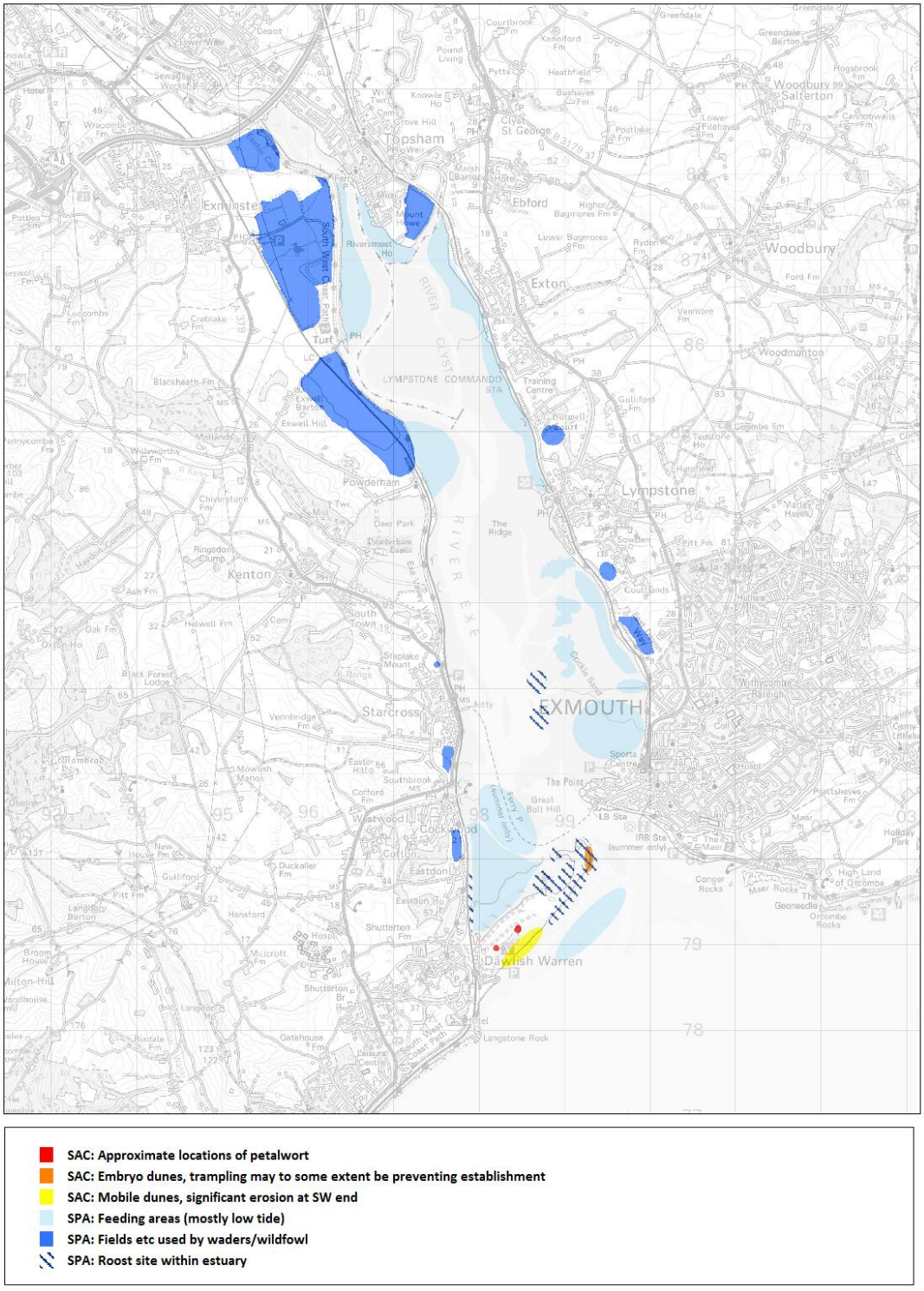
Figure 1: Distances at which birds responded to potential disturbance events. Data grouped from nine locations within the estuary. Plots are shown for a selection of species only, and for all activities. Interim results only.

3.17 The disturbance work and visitor surveys also highlight that the Exe is a busy estuary. It is also particularly small. In Appendix 1 we summarise data on English estuary SPAs showing the size of the sites, the perimeter and the number of residential properties (extracted using Postcode data) around their perimeter. It can be seen that there are only two sites (Breydon Water and Pagham Harbour) with less perimeter that the Exe. Looking at the number of residential properties around the site, the Exe is ranked second in England for the number of properties per km of shoreline. The implications of this are that there are less opportunities for birds to move around the site to avoid disturbance. The cumulative impacts of activities

taking place simultaneously in different parts of the estuary is difficult to determine and may have particular impacts.

Locations that are potentially sensitive

3.18 In Map 2 we highlight areas that are particularly important within the two Natura 2000 sites. The map is adapted from that produced by Goss-Custard (2007) for his assessment of the cycle trail. The map highlights areas that can or do hold marked concentrations of birds or key habitats/species that are sensitive to access within the SAC. It is important to recognise that the two European site boundaries encompass the important areas for the site interest features, that interest features can occur anywhere within the site boundaries, and therefore that anywhere within the site can be considered important for the interest features. The areas highlighted in the map are simply those areas of particular importance. Over time different locations may well become important. Furthermore, there are important areas outside the SPA/SAC boundaries that can support the interest features, for example roost sites or grassland areas used by feeding brent geese.



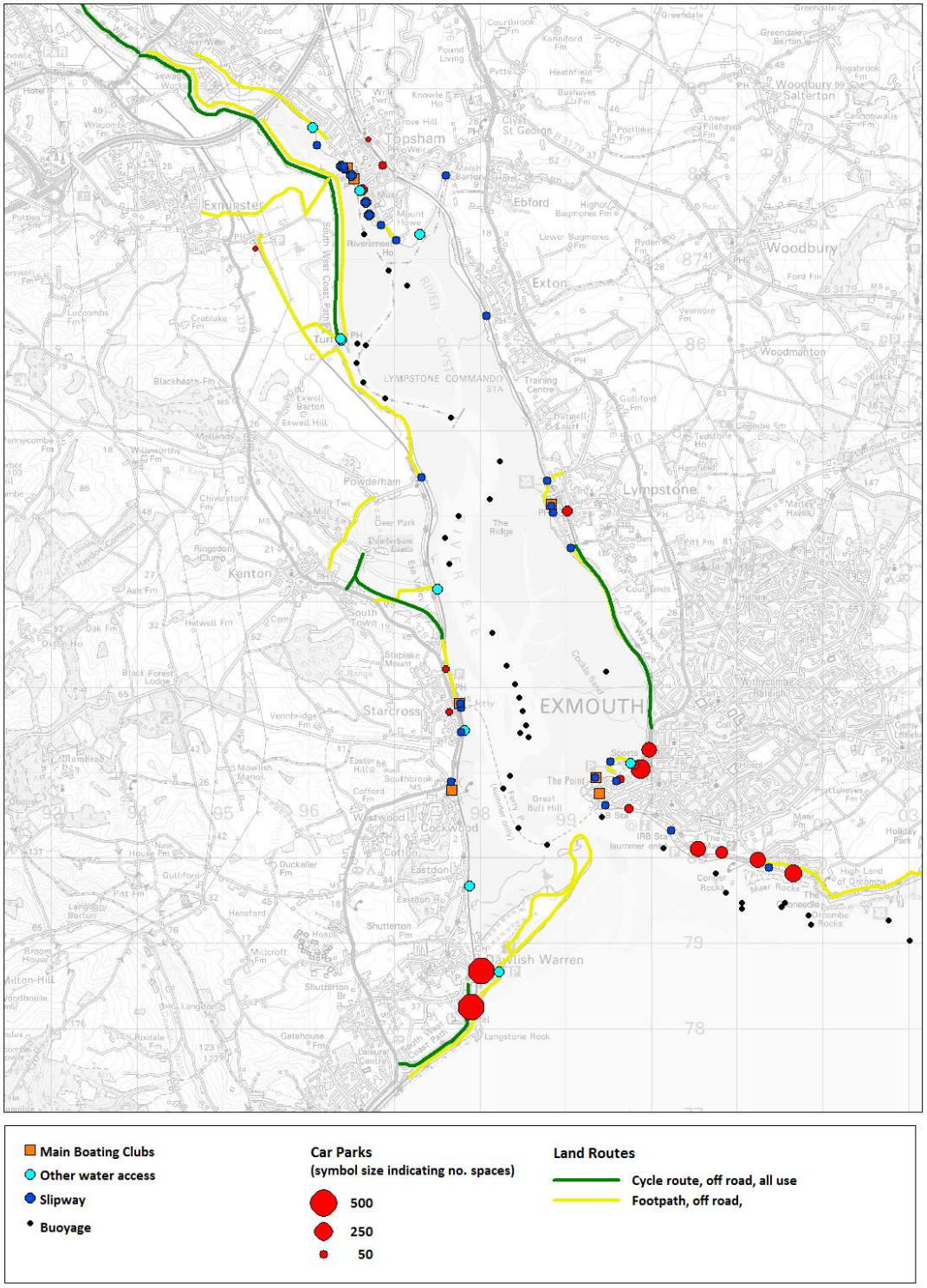
Map 2: Particular locations within the SAC and SPA where interest features are concentrated or might be considered particularly sensitive to recreation impacts. SPA data expanded from that given by Goss-Custard (2007). ©Crown copyright and database right 2011. All Rights Reserved. Licence Number 100026380.

Current Access and Access Infrastructure

3.19 Map 3 shows current access infrastructure, in the form of car-parking, shoreline paths, cycle routes, slipways etc. In Map 4 we summarise the totals of people counted during the Exe Disturbance work at the different locations where detailed bird fieldwork was conducted. The data are adjusted for survey effort, so that the size of the symbols indicates relative levels of use for each activity. Key locations for access are:

- **Exmouth Seafront**: popular for beach walks, families, dog walking in the winter and beach activities during the summer. Kite surfers and wind surfers launch from the area in front of the Maer. The slipway at the western end of the beach is used to launch jet skis. Ferries run to Dawlish Warren and Starcross, plus cruises up and down the estuary.
- **Exmouth estuary shore/Duck Pond/LNR**: popular area for dog walking, kite surfing, wind surfing and bait digging. Parking at the recreation ground and some vehicles drive down the slipway onto the beach. Much of the mudflats here are sandy and firm to walk on. Sailing Club.
- **Lympstone**: Shore popular with families and dog walkers. Sailing club.
- **Exton:** Access onto shore under railway bridge.
- **Topsham**: Goat Walk provides a popular walk, used by families, dog walkers, bird watchers and others. Access to Bowling Green Marsh RSPB Reserve.
- **Turf**: Pub with garden on shore. Adjacent to canal. Access largely on foot, by boat or bicycle.
- **Powderham**: Walking and cycling along river wall.
- **Starcross**: Ferry to Exmouth. Shoreline access over railway, mud here soft and access onto intertidal mainly crab tillers. Sailing Club to north of village.
- **Cockwood**: lay-by and railway crossing provides access to mudflats. No facilities.
- **Dawlish Warren**: holiday village and tourist infrastructure. Two large car-parks, visitor centre for the nature reserve. Access to beach, dunes and estuary shore.

3.20 The face to face visitor work shows that around two-thirds of the people interviewed had travelled by car and around a third had walked to the estuary. Only a small proportion of visitors had cycled or travelled by public transport. Infrastructure for both is excellent, with trains, ferries and the cycle trail providing various options for visitors without a car to move around the estuary.



Map 3: Access infrastructure and access points. Adapted from the Exe Explorer leaflet (http://www.exe-estuary.org/exe_explorer_2010_map.pdf) ©Crown copyright and database right 2011. All Rights Reserved. Licence Number 100026380.

Map 4: Levels of use at different locations. Each symbol represents a location where detailed fieldwork was undertaken within the Exe Disturbance study, targeted at low tide feeding times. Activities included are ones that were recorded at least 50 times across all survey points or at least 20 times at any one survey point. Interim results for the period to October 2010. ©Crown copyright and database right 2011. All Rights Reserved. Licence Number 100026380.

Key Points

3.21 Drawing together the work on disturbance and visitor work, we can highlight the following as activities in particular locations where impacts to the Natura 2000 interest may occur or currently gives cause for concern:

- Access within the dunes at Dawlish Warren. 'Footfall', dog fouling and fire risk particular issues.
- Disturbance to roosting waders at Dawlish Warren, between August and March. Golfers, walkers, fishermen and watersports users all flush roosting waders.
- Dog walking, bait digging at Exmouth in the Duck Pond/LNR area, during August-March (October –December likely to be particularly important for wildfowl).
- Kite surfing and windsurfing inside the estuary, if occurring when areas of mud exposed and if taking place in upper parts of estuary or in the Bight. August-March the key time.
- Jet skis, if within the estuary. August-March the key time.
- Dogs off leads on the intertidal anywhere within the estuary (particularly Duck Pond, Lympstone, Topsham, Powderham). August-March the key time.
- Powerboats around the mouth of the Clyst. August-March the key time.

3.22 We also highlight the following as areas within the SPA where disturbance is unlikely to occur and therefore increased access is not likely to be of concern.

- There may be relatively little current impact from watersports taking place off-shore, particularly if launching from the Maer and heading out to the open sea. Where kite surfers or windsurfers drift close to Dawlish Warren, and are forced to land on the beach, this can result in the roosting waders being displaced.
- The beach front at Exmouth is of relatively low importance for birds and low numbers of SPA interest features occur here.

3.23 The Disturbance Study will provide more detailed information on disturbance impacts, and with this additional evidence, it is anticipated that a clearer picture can be established with regard to the current levels, types and locations of disturbance. For this Interim stage, with the evidence to date, it is apparent that some levels of disturbance are taking place, and some locations are particularly susceptible to disturbance activities. Specific locations such as within Dawlish Warren SAC are already identified as suffering from recreational pressure, however the effects of disturbance on the Exe Estuary SPA with mobile interest features are inevitably more complex and more difficult to identify. A precautionary approach is advised prior to the finalisation of the Disturbance Study, particularly when taking into account the significant access and infrastructure around the estuary.

Consideration of current use and the nature of current recreational impacts on the SPA and SAC is essential to inform the mitigation and/or restriction measures necessary for potential future impacts.

We highlight the following areas of concern:

- **Access within the dunes at Dawlish Warren. All access types will lead to trampling. Dog walking and bar-b-ques have particular additional risks (fouling and increased fire risk).**
- **The golf course at Dawlish Warren, where the use of fertilizer and other management is damaging the SAC.**
- **Disturbance to roosting waders at Dawlish Warren (golfers, walkers, fishermen and watersports users).**
- **Activities (e.g. dog walking, bait digging) taking place on the intertidal at the Duck Pond/LNR area at Exmouth**
- **Kite surfing and windsurfing within the estuary, if occurring when areas of mud are exposed or near roost sites.**
- **Jet skis within the estuary**
- **Dogs of leads on the intertidal**
- **Powerboats around the mouth of the Clyst.**

4. The emerging Local Development Framework documents

Exeter City Council

4.1 Exeter City Council has prepared its Core Strategy, which will provide the overarching strategy for the City up to 2026. The Core Strategy has just been submitted to the Secretary of State (February 2011) for consideration by the appointed Planning Inspector at the Examination in Public, currently programmed for June 2011. Along with the submission document[9], a number of supporting documents have also been submitted for the forthcoming Examination, including the Habitats Regulations Assessment of the Core Strategy[10].

4.2 Exeter is one of the UK's fastest growing cities and as such is critically important to economic prosperity, both regionally and nationally. It was recognised by the previous Government as a New Growth Point, and high levels of further growth and housing were therefore anticipated.

4.3 The Exeter Core Strategy plans for growth equating to 12,000 new dwellings up to 2026. Whilst still significant, this level of housing is lower than the Draft Regional Spatial Strategy SOS Proposed Changes required, prior to the pending revocation of Regional Spatial Strategies (as part of the Decentralisation and Localism Bill, currently before Parliament). The Core Strategy is supported by strategic level Green Infrastructure work undertaken in response to the allocation of Exeter as a New Growth Point.

4.4 The Habitats Regulations Assessment identifies that the key impacts from the additional development over the lifetime of the Core Strategy are mainly associated with increased recreational pressure. Other issues highlighted include the impacts upon surrounding greenfield land as supporting habitat for the SPA birds, impacts upon water quality and water resources in the estuary arising from abstractions and discharges, with the increased demand for water supply and waste water facilities as a result of the proposed growth.

4.5 The Exeter Core Strategy Habitats Regulations Assessment recommends the provision of alternative greenspaces to reduce pressure on the Exe Estuary and Dawlish Warren. It also recommends that a developer contributions mechanism is set up in order to fund some of the management works set out within the Exe Estuary Management Plan. Further minor modifications to Core Strategy text are also recommended.

4.6 The Habitats Regulations Assessment provides general principles for mitigating the effects of development, but does not provide any specific proposals. Its evidence, conclusions and relevance to specific sites, their current environmental condition

[9] Exeter Core Strategy Submission Document, February 2011
[10] Exeter Core Strategy Habitats Regulations Assessment, July 2010.WSP for Exeter City Council.

and existing activities could be enhanced by the Detailed Report, with key suggestions made at this interim stage.

Teignbridge District Council

4.7 Earlier work on the Teignbridge District Local Development Framework was withdrawn due to a number of issues that needed to be addressed. Teignbridge District Council has revisited the earlier work and in re-preparing the Core Strategy the Council has particularly focused upon the establishment of a comprehensive evidence base upon which the Core Strategy and other LDF documents can be taken forward. The District Council published a new Core Strategy Issues and Options document in 2010[11], with a proposed plan period of 2010 to 2031. The evidence base commissioned and collated by the District Council includes the Teignbridge Outline Water Cycle Study, and the Strategic Housing Land Availability Assessment.

4.8 Teignbridge has a considerable housing need with a significant shortage of affordable housing and an inward migration of people to the District. This may be an effect of the economic expansion of Exeter, with high numbers of people living in Teignbridge and commuting into Exeter for work. The Core Strategy Issues and Options document proposes a figure of 740 houses per year over the plan period (equating to 16,280 from 2010 to 2031 inclusive). The Strategic Housing Land Availability Assessment (SHLAA), of which the most recent version was published in 2010, is based upon a calculated housing requirement 18,500 dwellings between 2010 and 2031 for the Teignbridge plan area. The final housing figures may be subject to some change as the LDF develops in light of new legislation and policy emerging from the new coalition government. A large proportion of the required housing is likely to be accommodated at Newton Abbot, where between 8,000 (Issues and Options figure) and 10,900 (SHLAA figure) houses may be built. A further key location for new housing will be the south west of Exeter area. Both key housing locations will be the subject of specific Area Action Plans. A smaller proportion of growth will be directed to Teignmouth and Dawlish, but the close proximity of these towns to the Exe Estuary is an important consideration for local greenspace needs in the context of the SPA. Any allocations at Dawlish Warren village, Cockwood, Starcross, Kenton and Exminster, even if small numbers, will needs to be carefully assessed due to their close proximity to the SPA and SAC.

4.9 Teignbridge District Council is currently engaged in the process of an iterative Habitats Regulations Assessment for their LDF. The Council has commissioned the gathering of evidence on recreational use of the SPA and SAC (via an on-site visitor questionnaire and a postal questionnaire) and on recreational impacts at Dawlish Warren, all discussed within this report. This report also forms part of the HRA process for all three authorities. The draft Sustainability Appraisal Scoping Report produced in 2009 clearly identifies that this will be essential to influence and guide LDF documents, and the 2010 Core Strategy Issues and Options document also

[11] Teignbridge Core Strategy Issues and Alternative Options, Summer 2010.

recognises the Council's duty to prepare a Habitats Regulations Assessment of the emerging Core Strategy.

4.10 The Teignbridge Core Strategy Issues and Options document has already established a focus upon the provision of green infrastructure, and the need to seek opportunities to create new green infrastructure through future development. The document advises that developer contributions are likely to be a key source of financial support for green infrastructure in the future. Green infrastructure is an integral theme running throughout the Issues and Options document.

East Devon District Council

4.11 East Devon District Council finished the consultation on its 'Preferred Approach' for its Core Strategy[12] in Autumn 2010. Overwhelming comments relate to the need to reduce the proposed growth, and not proceed with the recommendations made in the Regional Spatial Strategy. The District Council now needs to consider how consultation responses may inform the Core Strategy as it progresses towards submission.

4.12 In 2010 the Preferred Approach advocated an overall housing figure of 16,400 new homes over the plan period of 2006 to 2026, with about 3,000 coming forward as windfall sites. These figures are currently under review. As with Teignbridge District, East Devon District Council recognises the importance of areas on the periphery of Exeter in supporting the growth of the city. The 'West End' will include Cranbrook, its proposed new 'eco-town.' In the Preferred Approach some 8,000 of the total housing provision will be directed to the West End on the periphery of Exeter, where 5,000 may be provided in the new town of Cranbrook (currently subject to review).

4.13 As the largest settlement in East Devon, it is expected that Exmouth will also be a major focus for both housing and employment growth. The Preferred Approach sets out proposals for 2820 homes (of which 970 are already committed). Even with this level of growth being subject to review, the close proximity of this town to the estuary leads to the need for specific consideration of local greenspace needs that do not conflict with the SPA. East Devon District Council is also likely to promote housing growth at other towns within the District, the level of which is subject to the current review of the overall housing targets.

4.14 The Preferred Approach for the West End includes policy proposals for the development of a green infrastructure strategy that complements approaches in Exeter city, and indicates that the strategy will link into future strategic planning and ensure that major development in the West End contributes to the provision and maintenance of the green infrastructure network.

[12] East Devon Full Preferred Approach Report, September 2010.

4.15 The Preferred Approach also includes policy proposals for green infrastructure in the wider District, with a commitment to developing a district wide Green Infrastructure Strategy as a supplementary planning document. Policy wording indicates that this will include specific sections for each town.

4.16 Work on the Habitats Regulations Assessment of the emerging Core Strategy has commenced, but any draft work has not yet been published. The Core Strategy Preferred Approach refers to the Habitats Regulations Assessment work identifying the need for appropriate mitigation where development could adversely affect European sites, and this is incorporated into Preferred Approach policy wording at Policy CS34, albeit in very general terms currently.

Exeter City Council has submitted its Core Strategy for Examination. This Interim Report suggests that the Council could make further submissions to improve the Habitats Regulations Assessment and its reflection in the Strategy, with minor amendments to improve reference to the growing evidence base, more site specific conclusions and proposals for measures to protect the European sites, with a better understanding of current environmental condition and bird interest feature reactions to disturbance. Housing allocations should be checked in light of emerging evidence from the Disturbance Study.

East Devon District Council and Teignbridge District Council are still developing their Core Strategies in line with public consultation and iterative assessment. This now provides an opportunity to undertake further assessment of housing allocations and the necessary measures and restrictions, and build strong policies relating to the provision of alternative recreational space.

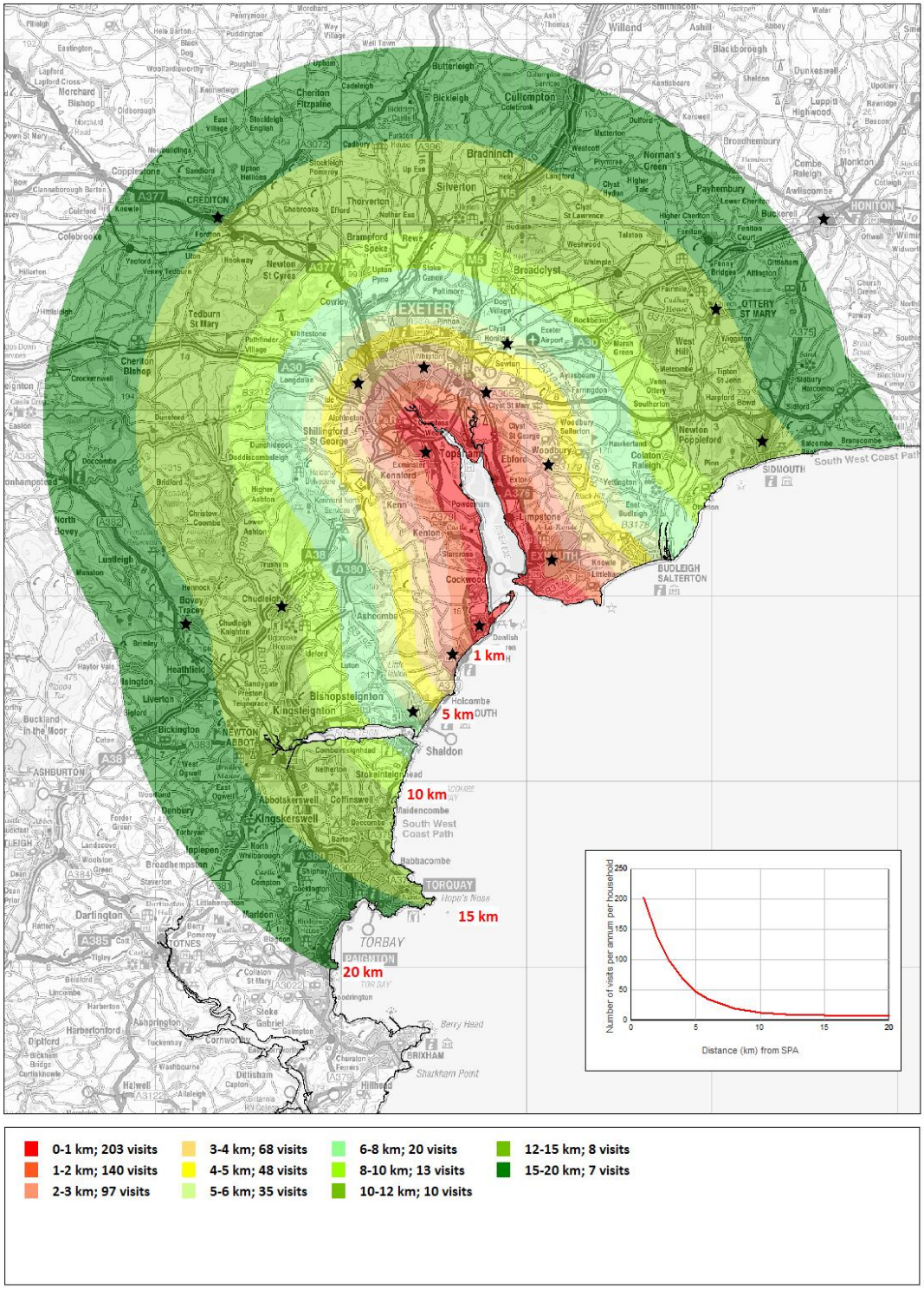
5. Relating future growth to potential impacts upon the European sites

5.1 The data from the face to face visitor work and the household survey provide information on people's home postcodes.

5.2 In the face to face visitor report, in order to assess the effect of distance from estuary on visitor rates (and therefore the relative impact of development at different distances), we generated a series of concentric bands around the estuary using the GIS. We then calculated the number of residential properties within each band and also the number of interviewees whose home postcode fell within the band. Using these two figures it is possible to determine the number of people interviewed within the survey as a proportion of the number of residents. The resulting plot (Figure 11 in that report) would indicate that visit rates do clearly decline with distance. The proportion of residents interviewed drops quite markedly within a distance of 0 to 5km, with only approximately 30% of people travelling over 5km. A steady, but less severe decline occurs between 5 and 10km, with 10% of people travelling 10km or more. Notably there is a clear tail off somewhere between 10 and 15km, as for these greater distances it appears that there is relatively little change in visitor rates, and with a very small proportion of residents captured within the survey at distances above 15km.

5.3 Preliminary results from the household survey indicate a similar pattern. These are shown graphically in Map 5. For each respondent in the survey, the number of visits per year that they made to the Exe was estimated, based on their response to a question on how frequently they visited the estuary [13]. Taking all the respondents within a given distance band it is possible to determine the typical frequency with which a household might be expected to visit the estuary. In Map 5 we show the distance bands, and the graph of how visitor rate declines with distance. The bands are shaded to indicate visit rate and are derived using the edge of the SPA boundary as the starting point for the bands, and we have grouped all activities. Using the bands and visit rates in Map 5 we can estimate the number of visits that might be expected to occur as a result of development in different locations around the estuary. These are given in Table 2. These estimates are of course relatively simplistic, as they do not take into account the travel network and other differences between locations. The estimates are therefore indicative but enable direct comparison between locations.

[13] i.e. those who stated they visited most days were assumed to visit 250 times per annum, most weeks 40 visits p.a.; most months 12 visits p.a.; a few times a year or less 4 visits p.a.



Map 5: Estimated visitor rates to the Exe – annual visits to the Exe (all sites combined, including Dawlish Warren) per household. Visitor rates are predicted using a line fitted to a plot of actual visitor rates from the household survey. Shading represents the different distance bands. ©Crown copyright and database right 2011. All Rights Reserved. Licence Number 100026380.

Table 2: Simple estimates of the number of visits per household per annum to the Exe, as a result of development in different locations. The central point of each village/town was used and the data are as shown in Map 5.

Location	Distance from SPA (distance bands (m) as in Map 5, number given below is the outer limit of band)	Estimated number of visits per household to the Exe per annum
Exmouth	2	140
Woodbury	4	68
Ottery St. Mary	15	8
Honiton	25	7
Clyst St. Mary	3	97
Clyst Honiton	6	35
Exeter: Heavitree	3	97
Exeter: St. Thomas	4	68
Exminster	1	203
Teignmouth	6	35
Dawlish	3	97
Dawlish Warren	1	203
Chudleigh	12	10
Bovey Tracey	20	7
Sidmouth	15	8
Crediton	20	7

Visitor and household survey data is indicating that there is a clear relationship between distance travelled to the SPA and number of visits undertaken. People living in close proximity to the SPA appear to make more visits. Proportion of visitors from the survey sample is highest for those living within 0 to 5 km (approximately 70% of visits). Approximately 20% of visits are made by those living 5 to 10km away and the remaining 10% travel 10km or more.

6. Exploration of mitigation options and their application elsewhere

6.1 In this section we consider potential mitigation measures that may give confidence that any increase in development will not lead to adverse effects to the SPA and SAC. First we consider existing management measures that are in place to control access and then we consider the extent to which additional measures may ensure no additional impacts.

Current management

6.2 The Exe Estuary area benefits from combined partnership working to ensure its sustainable management and use. The Exe Estuary Management Partnership includes the relevant local planning authorities, the County Council, Natural England and the RSPB. The partnership produces a management plan for the estuary, with the current plan running from 2006 to 2011

6.3 The plan currently does not go into specific detail with regard to measures to prevent impacts arising from tourism and recreation, but the plan does set out a number of proposals that can be complemented by the approach taken forward to prevent additional development adversely affecting the European site interest features and developed in further detail through the Habitats Regulations Assessment process for the emerging LDF documents. These include the education of various users, working with specific recreation groups, activity zoning, promotion of 'out of season' tourism (where this can reduce and not exacerbate impacts), and support for more sustainable tourist development.

6.4 The Partnership already produces a range of literature including leaflets and maps that highlight key locations for activities. There are also codes of conduct in place for kite surfing, crab collecting and a generic 'shore and water' code.

6.5 Navigation by-laws for the estuary include a 10 knot speed limit, and defined areas for personal water craft, powerboats and water skiing. During the summer 2011 a patrol boat is proposed to help enforce the bylaws and promote responsible behaviour by water-based users.

6.6 Dawlish Warren Local Nature Reserve is managed by Teignbridge District Council. Wardens are present near the key roost locations at high tide periods during Sept-March to minimise disturbance. Boardwalks, marked routes and education/awareness raising help to reduce impacts to the SAC. A by-law limits access for dog walking to the first half of the Warren (up to groyne 9) and users are also required to pick-up after their dog anywhere on the site. Dogs must also be on short leads at all times within the main dune area. There is a code of conduct for water use, this includes a voluntary no landing zone.

6.7 Bowling Green Marsh and Exminster Marshes are managed by the RSPB. Hides and other infrastructure are in place and various education programmes etc. are in place.

Options to reduce or manage disturbance in the future

6.8 There is a range of different options that could potentially provide measures to reduce disturbance and impacts to the Exe Estuary SPA and Ramsar site and Dawlish Warren SAC from recreation. These are discussed in turn below and some of these could form elements of mitigation to ensure no impacts from increased development around the Exe.

6.9 We focus on measures that we consider likely to be successful. New development will result in a general increase in recreational use, with the types of access and level of increase varying according to the location and scale of development. One important issue with mitigation is to ensure that it is appropriate to the impact and is proportional to impacts from the new development. Whilst it is difficult to simply divide impacts from existing and new development, and it is inevitable that measures applied for new development and those applied to reverse deterioration from existing development will have a positive effect in reducing the impact of both. However, it is proportionality that is key, and measures for new development should seek to prevent an increase in recreational impact that equates to the potential increase that may occur as a result of the new proposal, whilst still taking a precautionary rather than minimal approach. This is potentially difficult given that the increase in use will take place on already busy sites, and where a proportion of the disturbance is likely to be attributable to both general informal recreation, and a potentially more significant level of impact from a few visitors who behave in a particular fashion, such as kite surfing close to roosting waders or allowing a dog to run across the mudflats. When the results of the Exe Disturbance Study are finalised it will be easier to clarify the extent to which increased use will result in increased disturbance.

Location and scale of development

6.10 From considering the visitor and household survey data it is clear that the highest proportion of visits are made by those living in very close proximity to the SPA/SAC, although it is apparent that a significant number of visits are made by those living up to 10km away. The significant draw of the sites to local people, for use as their local greenspace, is of concern, and proposed options for growth in very close proximity need to be carefully checked to ensure that adequate and appropriate measures can be implemented to prevent an increase in recreational pressure causing further harm to European sites. At this point in time, whilst suggestions for measures to prevent effects are made, it is not certain that the measures will be effective when growth is in such close proximity to the SPA/SAC that the sites are almost on the doorstep of new residents. In particular, it is suggested that options for growth around Exeter, Dawlish, Exmouth and a number of the larger villages in close proximity, particularly Dawlish Warren, Cockwood, Starcross, Kenton and Exminster, should be assessed in detail. Taking a precautionary approach, and considering the findings of the visitor survey work, it is suggested that there may be a need for restrictions to be placed on development in close proximity to the most sensitive parts of the European sites, to help prevent further daily usage as local greenspace resulting in damage to the European sites. In addition to those locations in close

proximity to the European sites, further consideration needs to be given to whether large scale growth can be accommodated elsewhere within the 10km zone, and how effectively development within the zone can be adequately mitigated for.

Alternative recreation sites

6.11 The creation of alternative sites to divert visitors from sensitive sites has been widely promoted as a means to resolve issues relating to new development and impacts from access. It would seem intuitive that increasing the amount of green infrastructure, the levels of visitor use on nearby sensitive sites such as SPAs would decrease. In the Thames Basin Heaths and the Dorset Heaths these alternative sites are referred to as SANGs ('Suitable Alternative Natural Greenspace') and have become a key component in a suite of mitigation measures designed to ensure no adverse effect on the integrity of the European Sites as a result of new development (Liley et al. 2006; Burley 2007; Thames Basin Heaths Joint Strategic Partnership Board 2009).

6.12 Such alternative sites are as yet untested, but guidelines and recommendations for site design are available (Liley, Mallord, & Lobley 2006; Liley et al. 2009). The issues are however complex. With highly attractive sites like the Exe Estuary it is difficult to imagine how green infrastructure may serve as a viable alternative for many activities. The presence of green infrastructure to serve new development would need to be carefully planned and located so that it did not have the effect of linking into the SPA/SAC to create even more attractive and longer walking or dog walking routes. Rather the alternative sites should be an attractive and viable alternative in their own right, adequately ensuring no net increase in recreational pressure on the European sites.

6.13 In terms of visitors to the Exe, alternative sites and green infrastructure are not likely to be effective alone. They may be effective if combined with on-site management measures that may serve to deter visitors to the Exe (e.g. changes to parking or dog control orders in certain areas). The following may have merit and perhaps warrant further work to explore potential:

6.14 **Provision of new dog walking areas**. Dog walkers interviewed during the face to face work were typically walking around 1.6km during their visit. The face to face survey included a question about what factors would draw users to other sites. Nearly one-third (30%) of dog walkers indicated that no change was possible (i.e. an alternative site would be unlikely to work). Many (38% of all dog walkers) who did identify features suggested making other sites more dog friendly. Comments relating to 'dog-friendliness' help to define what aspects are important: comments included more space, enclosed space (i.e. safe areas to let dogs off leads, with roads etc. fenced), dog bins, presence of a dog warden, less wildlife, less mud, ability to let dogs off leads, longer walks and no restrictions. In terms of locations, alternative sites that were aimed at drawing dog walkers away from Exmouth and from Dawlish Warren would be ideal. There are case studies and a range of studies that discuss the importance of 'dog-friendliness' and provide case studies for how such features

can be enhanced (Edwards & Knight 2006; Barlow & Hart 2008; Hale 2008; Jenkinson 2009, 2010; Hampshire County Council)

6.15 **Enhancement of existing areas for dog walking**. There may be existing areas that could be enhanced or promoted for dog walking.

6.16 **Enhancement/new facilities for water sports**. There may be opportunities to provide areas for launching etc. away from the estuary, for example along the coast. Locations where trailers etc. can be parked will draw jet ski users and others. Washdown facilities, changing areas, safe storage for keys/valuables, and dedicated areas where kites/boards/windsurf sails etc can be set-up may serve to draw particular users.

On-site access management

6.17 **Wardening** of sensitive locations is effective in reducing disturbance, particularly if the wardens are able to refer users to by-laws and other statutory measures (e.g. SSSI legislation). There is already wardening in place at Dawlish Warren, however as visitor numbers increase existing wardens are likely to become more stretched and additional staffing at busy times, including August (when there is no direct wardening of the wader roost) would be effective at reducing disturbance. Increased wardening would also help to reduce fire risk and ensure quick response to any fires on the site. In addition a greater warden presence would help with the enforcement of the existing byelaws relating to dogs.

6.18 **The patrol boat** will potentially help to reduce disturbance, but there is potential to extend the amount of time this is on the water. The boat would be most effective at reducing disturbance if backed up by new zoning and by-laws aimed at ensuring reduced disturbance to key locations. It would also be necessary for the boat to be operative during the winter. Key times would be when the weather was suitable for water sports, and when, for example kite surfers and windsurfers are at risk of being blown onto Dawlish Warren. It will be important to establish how those operating the patrol boat could be most effective.

6.19 **Mitigation relating to dog walking** could be targeted at Exmouth (Duck Pond area), and also possibly at Lympstone, Powderham and Topsham. Options for managing dog walking would include dog control orders. The Dog Control Orders Regulations provide for five offences which may be prescribed in a Dog Control Order: failing to remove dog faeces; not keeping a dog on a lead; not putting, and keeping, a dog on a lead when directed to do so by an authorised officer; permitting a dog to enter land from which dogs are excluded; and taking more than a specified number of dogs onto land. A Dog Control Order can be made in respect of any land which is open to the air and to which the public are entitled or permitted to have access (with or without payment). Orders to keep dogs on leads would potentially be effective at reducing disturbance at Topsham (Goat Walk), Powderham and Lympstone. At Exmouth excluding dogs from the Duck Pond area entirely would be necessary. Dogs could also be banned from Dawlish Warren entirely.

6.20 For water sport users a range of measures could be put in place to help reduce disturbance. There is potential to enhance the existing guidance and information provision, with the following as potential options:

6.21 **Clear zoning for where activities can take place and when**. This requires detailed consideration and further analysis of the Exe Disturbance Study data in order to ensure zones that work for users and work in terms of reducing disturbance. Zoning options could include a kite surfing zone such that kite surfing is restricted to a defined area inside the estuary during the period September-March (inclusive). The area highlighted for powerboating in the existing navigation byelaws could be relocated (potentially outside the estuary) away from the main feeding areas.

6.22 Zoning should ideally be backed-up by byelaws and designed through work with local user groups and stakeholders. In some parts of the UK kite surfers and other water users are issued with annual permits. An example of such a system is given in Appendix 2, from the Sefton coast. This system, established through working with local groups is accompanied by a clear map showing the areas that are important for birds. We do not recommend that this system is copied entirely on the Exe, but there is potential to adapt some elements, and the use of a similar system is supported by the warden staff at Dawlish Warren.

6.23 **Fencing/Screening etc and landscaping works** provide opportunities to direct visitors and screen people. Two areas where this might be effective are the golf course at Dawlish Warren where fencing near the eastern end of the course could prevent golfers from straying onto the mudflats to retrieve golf balls and at Exmouth near the Duck Pond, where low vegetation or fencing around parts of the car-park may help stop dogs and people from walking onto the mudflats.

6.24 **Exclusion zones;** i.e. dedicated areas where access is not permitted – with the areas within these zones potentially enhanced for the nature conservation interest, for example the creation of a dedicated areas for waders to roost. Such options are potentially expensive and suitable locations are limited.

Communication and awareness raising

6.25 Informal discussion with many recreational users around the estuary suggests that they value the estuary and its wildlife, yet don't appreciate the impact of their activity. Conversation with dog walkers at Exmouth, for example, suggests that they choose to walk on the mud flats because the dogs are able to run free, there is lots of space and no requirement to pick up. There is clear scope for guidance, interpretation and better communication with users. Open communication and dialogue is likely to be necessary to ensure successful implementation of measures without local hostility or opposition. There are various ways that this can be achieved:

- Direct contact with local groups, including work to design effective zoning, codes of conduct etc.

- Face to face contact on site with access users, for example by rangers, wardens or countryside officers.
- Websites, for example in Dorset there is a Dorset Dogs website[14] which provides information for dog walkers. The site gives codes of conduct, provides a noticeboard and general information and also maps sites to walk. The map/gazetteer includes a traffic light system which indicates for that day which sites welcome dogs without leads (green), sites where dogs are welcome but required to be on leads (amber) and sites where dogs are not allowed (red).
- **Direct contact with clubs and groups**: for example through attending club meetings and events (e.g. sailing clubs) or participating in discussion groups.
- **Interpretation and signage**
- **Articles in the local press and media**
- **Leaflets**

6.26 Many of the above already take place and the Exe Estuary Partnership fulfils an umbrella role, organising events such as the annual estuary festival and the Exe Forum. There are opportunities to enhance communication and potentially ensure a more coherent approach, for example through consistent branding etc. The Partnership would be ideally placed to ensure this consistency.

Monitoring

The key locations for the nature conservation interest and the status of those species will change over time. Recreation patterns will also vary over time, with factors such as climate, coastal erosion and the popularity/trends of different activities likely to influence access. Monitoring will therefore be an important element within any package of measures. Monitoring should be tailored to pick up 'early-warning' of any new issues and should ensure that measures that are in place are working effectively.

Management measures need to be developed that are over and above those already in place. Measures to offset the effects of development need to ensure no net increase in recreational impacts, and measures put in place should be proportional to the potential effect, even if the measures implemented have beneficial consequences for the removal of a proportion of both existing and new recreational pressure.

In addition to developing measures to counteract the effects of new recreational pressure, that may most significantly be seen within 10km of the European sites, there is a particular need to thoroughly assess the allocations for development in close proximity to the European sites. It is advised that given the significant draw of the estuary, there may be a need to minimise allocations for growth that would result in significant increases in use of the SPA/SAC for local and daily greenspace needs.

Acknowledging the specific experience of the coast, and the range of water sporting activities available, any mitigation package needs to give great weight to on-site access management, along with education of visitors.

7. Incorporating recommendations into LDFs and their HRAs

7.1 In considering the potential effects of additional residential development, and the nature and proximity of the Exe Estuary SPA and Dawlish Warren SAC, it is clear that each Core Strategy should conclude that there is a likelihood of significant effects arising from additional recreational pressure relating to the growth proposed. In terms of how the Core Strategies should then take this assumption forward, it is necessary to return to the advice given by David Tyldesley and Associates, summarised above. The advice stressed the need for a robust evidence base in any assessment of impacts upon European sites. The work undertaken to date is now establishing a suite of evidence documents that provide the necessary evidence to justify the need for measures to be put in place within the Core Strategies to mitigate for the effects of development. The evidence base, outlined in this Interim Report, and soon to also include the Exe Disturbance Study, needs to be included in the evidence base for each of the LDFs.

7.2 There needs to be recognition of the potential effects of future development in the context of existing recreational pressure. Habitats Regulations Assessments being progressed within each LDF need to clearly identify existing impacts, the effect of those impacts on the current environmental condition of the European sites, and then consider whether new pressures will add to those impacts. For the Exe Estuary, current condition assessments (undertaken by Natural England for the Exe Estuary Site of Special Scientific Interest) indicate that habitats are favourable, although declines are noted across the estuary for some species, in particular oystercatcher. The Exe Disturbance Study will provide much more comprehensive information on the locations, extent and duration of impacts from recreation. It is this more detailed site specific context and ecological data that was highlighted by David Tyldesley and Associates as lacking from initial project level assessment work.

7.3 The face to face visitor survey and the disturbance study results indicate extensive use of the estuary sand and mudflat areas for walking and dog walking, with much of this use being related to the open sandy parts of the estuary providing local 'greenspace'. The disturbance from more active sporting activity will be clearer when the Exe Disturbance Study is completed. The Dawlish Warren assessment identifies damage that is already occurring, and a clear need for current pressures, and for the golf course, current management, to be addressed. The Dawlish Warren condition assessment (again undertaken by Natural England for the Dawlish Warren Site of Special Scientific Interest) identifies impacts on the high tide roost at Dawlish Warren resulting in declines in roosting SPA birds at this location. The condition assessment also highlights a number of issues for the dune habitats, including the extent of invasive species. Reference is made to a management plan for the fixed dune units, and it will be important for this to feed into the Detailed Report.

7.4 In conclusion, and taking into account the wider body of evidence relating to the impacts of human disturbance on birds, it is advised that there is enough evidence for the interim approach to be precautionary and to proceed with Core Strategy

documents on the basis that adverse effect arising from additional recreational pressure is extremely likely, and measures to prevent such effects are therefore necessary. Further evidence is being gathered through the Exe Disturbance Study.

7.5 The Exe Estuary Visitor survey identifies that 69% of visitors to the estuary are local people, coming from homes within one of the three administrative areas of Exeter, Teignbridge or East Devon. This is a critical piece of information for the LDFs and highlights the potential for considerable additional recreational pressure from growth proposed in the three areas over the coming plan period. Based upon figures currently proposed within the Core Strategy documents, between 45,000 and 50,000 new homes could be built across the three areas in the next 20 years or so.

7.6 In similar situations across the country, varying approaches have been taken to provide adequate measures to mitigate for the effects of recreational pressure. For the Thames Basin Heaths, although 'on site' access management was important, the provision of alternative greenspace was a fundamental element of the mitigation strategy. For the New Forest, greenspace remained an important element, but 'on site' management of visitors was of greater importance given the draw of the National Park. For coastal and estuary sites, the draw of the coast becomes increasingly difficult to compensate for on alternative attractive sites. Additionally, an increasing level of specialised activities is found in comparison to 'in land' sites. The 'on site' management of access, and control of specific activities becomes an ever more critical element of any mitigation package.

7.7 LDF documents incorporate a significant focus upon the importance of green infrastructure in areas of growth, which will provide a good foundation upon which more specific mitigation measures can be developed. Each document could now expand this theme further to be more specific about the part played by green infrastructure to reduce pressure on the European sites, and the role of on-site measures such as access management.

7.8 The LDF documents incorporate policy wording relating to the need for development to contribute to the expansion and enhancement of the green infrastructure network. Again each document could now take this policy wording further, to specifically identify the importance of green infrastructure to deter recreation from the European sites.

7.9 The documents currently pay regard to the presence of the European sites and their importance, but do not use the evidence now available to highlight key concerns; for example the existing recreational pressure, the relevance of the European sites as local greenspace (and also for a range of other sporting and recreation activities) and the role that tourism needs to play to prevent damage, particularly at Dawlish Warren. Each document and their associated Habitats Regulations Assessment therefore needs to be more specific about the potential impacts of growth, in order to set the case for specific mitigation measures to be applied.

7.10 The Core Strategy documents should therefore recognise the part that each needs to play in 'on site' management of recreational pressure. As noted above, experience in other coastal areas with internationally important wildlife sites indicates that it is not possible to attract enough people away from the unique experience of walking by the sea to fully offset the recreational pressure posed by new residential development. Funding the management of recreational use around the estuary is likely to include wardening to ensure compliance with any new restrictions or zoning that need to be put in place. The Detailed Report will seek to establish a specific suite of measures for 'on site' management of recreational pressure, following the initial list outlined in the previous section above.

7.11 Over and above greenspace needs, the specific and wide ranging recreational use of the estuary with activities such as boating and kite surfing is also likely to increase and the Core Strategies will need to recognise responsibility for the sustainable management of these activities, and the potential for zoning and restrictions to be required. David Tyldesley and Associates have quite rightly advised in their guidance summarised above that what constitutes a 'mitigation measure' needs careful thought. Mitigation should offset impacts from development, and developer contributions should not simply fund action that is programmed to take place in any event. Contributions should also target the additional impacts of new development, rather than purely focusing on effects already occurring. Existing effects should be targeted by all relevant authorities, including Natural England and the local planning authorities, and the Core Strategies may be an appropriate place to put actions in place, but the existing situation is not the responsibility of the new developer. With activities such as some of the watersports it seems that a single user can have a considerable impact if behaving in a particular fashion, and that occasional events or small numbers of individuals could be responsible for a disproportionate amount of disturbance. The full analysis of the Exe Disturbance Data should provide clarification of these issues.

7.12 In addition, it is reiterated that some current options in very close proximity to the SPA/SAC will require specific and detailed assessment and the application of a precautionary approach.

7.13 Given the complexity of the recreational use of the estuary, and the movement of people around the estuary from each of the three administrative areas, it is apparent that the most effective means of mitigating for the effects of additional growth is likely to be through a joint or complementary mitigation strategy. This is already recognised by the three authorities, in their considerable work to date taking a partnership approach, as well as their joint involvement in wider initiatives such as the Exe Estuary Management Partnership. A joint strategy is already being progressed to some extent with the commissioning of work towards a Detailed Report, and the preparation of this Interim Report. Decisions need to be made on the practical implementation of measures identified. The three authorities will need to decide whether they will adopt complementary strategies and how these will be funded, whether as individual 'projects' or collectively across the three authorities.

The primary mechanism for funding will be through the Community Infrastructure Levy. This enables funds raised from developers to be spent on appropriate infrastructure, projects and facilities. The Levy will be based on the local authority's Infrastructure Delivery Plan. This Plan identifies what projects are needed in the plan area, when they will be delivered and how they will be funded. It will therefore be important for the authorities to include such projects or appropriate elements of joint strategies within their Infrastructure Delivery Plans.

7.14 Reference to a joint approach between the three authorities to ensure that new growth does not adversely affect the European sites should therefore be incorporated into Core Strategy wording to enable a level of joint working to proceed, which may lead to specific LDF documents that are either shared or complementary, setting out the means of mitigating each development through particular criteria for greenspace provision and developer contributions to onsite management.

7.15 For East Devon and Teignbridge Districts, these recommendations can be more easily incorporated into Core Strategy work, as both are only part way through the development of their Core Strategy documents. Firm commitments at this stage can then be developed further as the Detailed Report comes forward. Exeter City Council will need to carefully consider what amendments to the Core Strategy could be presented to the Inspector as minimal changes, to reflect the identification of potential impacts upon the European sites, and the need for considerable and targeted mitigation measures though a mitigation strategy that will form part of future LDF work. Habitats Regulations Assessments of plans can only take account of currently available information, and the incorporation of minimal changes to reflect current progress towards a more comprehensive mitigation strategy should hopefully be seen as a positive change to the Core Strategy by the Inspector.

Habitats Regulations Assessments supporting LDF documents need to respond to the evidence base and indications of declines starting to occur from existing pressure. Approaches will need to be refined further with the outcomes of the Disturbance Study.

Habitats Regulations Assessments should recognise the likelihood of significant effects arising from new development with the potential to result in additional recreational pressure, and with the current allocations equating to 45,000 to 50,000 homes across the three administrative areas, and the wide ranging and complex use of the SPA and SAC, a need for a joint or complementary approach is apparent. Allocations for each town need to be carefully assessed and fully justified. It may be necessary to take a precautionary approach and current options may need to be amended.

An approach needs to develop considerable and targeted mitigation measures, with alternative greenspaces wherever possible but a main focus upon on site measures and restrictions.

8. Incorporating recommendations into development management

8.1 In accordance with the Habitats Regulations, each development project with a likelihood of significant effects upon a European site should be the subject of a more detailed appropriate assessment of the implications of the project for European sites, in light of their conservation objectives. The three authorities are responsible for undertaking appropriate assessments of any development proposals to inform whether permission can be given, and what measures may need to be added to the proposal in order to ensure that European sites are not adversely affected.

8.2 At this point in time, a strategic approach to mitigation is not yet established, which leaves the only option of assessing each proposal on a case by case basis. For larger developments, alternative greenspace will be more easily provided, and should certainly be pursued. For smaller developments, and the on site management element of larger developments, the absence of a mitigation strategy at this stage makes it more difficult to require contributions at the right level to adequately provide appropriate mitigation, although the precautionary approach must always be applied in the absence of further information.

8.3 An interim approach could therefore be to identify particular projects, in partnership with Natural England, that are costed and capable of implementation, and equate to a per house contribution that meets the anticipated level of housing growth within a given period, until a longer term strategy can be put in place. These projects could be a range of alternative greenspace, enhancement of greenspace, on-site access management projects or the funding of wardening staff to start to plan and put in place some of the longer term on site work that staff on the ground would implement.

8.4 It has been recognised by Natural England and Habitats Regulations practitioners that once the need for a large scale and comprehensive mitigation strategy has been identified, an initial approach can be implemented, having full regard of the precautionary principle in the absence of a more refined approach, until a longer term and more comprehensive approach can be developed. This was the approach taken in the Dorset Heathlands, where an 'Interim Planning Framework' was put in place by a consortium of local authorities, with funding allocated to a set of specific projects, until a more comprehensive approach was embedded into the relevant LDFs.

8.5 Given that it is anticipated that an interim approach would need to be in place for a shorter timescale than that for the Dorset Heathlands, a simple and relatively straightforward project or set of projects should be identified. This approach still recognises the need for a case by case assessment, and there may be some development proposals for which adverse effects cannot be ruled out, due to the proximity or nature of the development, and the interim approach does not provide the necessary certainty. With this interim approach suggested, it is now necessary

to obtain further input from Natural England as to whether this represents an appropriate and achievable interim solution.

An initial and interim approach could include the identification of projects, in partnership with Natural England, that are costed and capable of implementation, and equate to a per house contribution that meets the anticipated level of housing growth within a given period, until a longer term strategy can be put in place. These projects could be a range of alternative greenspace, enhancement of greenspace, on-site access management projects or the funding of wardening staff to start to plan and put in place some of the longer term on site work that staff on the ground would implement. It is advised that the latter may represent the most effective way of implementing an interim approach, and may be of greatest benefit to the longer term strategy.

With this interim approach suggested, it is now necessary to obtain further input from Natural England as to whether this represents an appropriate and achievable interim solution..

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Appendix 1: Comparison of housing levels with other SPAs

Number of residential delivery points within 5km of the SPA boundary for estuarine SPA sites in England. Sites are ranked according to the number of delivery points per km of shoreline.

SPA name	SPA area (hectare)	SPA perimeter length (km)	Delivery points within 5km of SPA boundary		
			Number of residential delivery points	Number of residential delivery points per km of shore	Number of residential delivery points per ha of estuary
Portsmouth Harbour	1246	52	162036	3116	130
Exe Estuary	**2360**	**43**	**76047**	**1769**	**32**
Chichester and Langstone Harbours	3722	94	159034	1692	43
Ribble & Alt Estuaries	12408	148	205570	1389	17
Mersey Estuary	5007	212	265512	1252	53
Breydon Water	1198	34	35858	1055	30
Stour and Orwell Estuaries	3658	94	98464	1047	27
The Dee Estuary	11990	72	74013	1028	6
Pagham Harbour	636	36	36840	1023	58
Tamar Estuaries Complex	1939	114	96090	843	50
Humber Estuary	37494	284	231315	814	6
Solent and Southampton Water	5387	433	303880	702	56
Deben Estuary	977	46	30786	669	32
Thames Estuary & Marshes	4785	144	92003	639	19
Crouch and Roach Estuaries	1739	196	113924	581	66
Medway Estuary and Marshes	4670	214	113005	528	24
The Swale	6486	133	69503	523	11
Severn Estuary	17550	360	150479	418	9
Duddon Estuary	6756	95	38461	405	6
Morecambe Bay	36859	461	169233	367	5
The Wash	61817	122	43889	360	1
Poole Harbour	2308	272	91836	338	40
Colne Estuary	2709	160	44044	275	16
Upper Solway Flats & Marshes	43494	188	26975	143	1
Dengie	3122	43	5706	133	2
Foulness	10901	280	34953	125	3
Alde-Ore Estuary	2393	99	9617	97	4

Appendix 2: Kite surfing permit requirements at Ainsdale.

Copied from http://www.westcoastkiteboarding.co.uk/Ainsdale.htm

1. Any user of the beach kite surfing zone at Ainsdale-on-Sea must agree to follow all the regulations that are set out below. This agreement has been reached after consultation between Sefton Council and Kite-Zone users.
2. Sefton Council has identified a zone at Ainsdale for the use of Kitesurfing. No other part of the Sefton foreshore owned by Sefton Council or other by other agencies in the Sefton Coast Partnership can be used for this activity. Winter kiting use of the beach will be set by the Council each year, but will generally be recognised from 1st October to 1st April.
3. A risk assessment has been carried out in conjunction with users and Sefton Councils' Health and Safety Section. Based on an agreed operational plan, the activity will be allowed to continue, but will be reviewed on an annual basis.
4. To use the designated area, a permit is required from Sefton Council. To acquire a permit, you must first purchase a rash vest from the Club and bring it with your proof of relevant insurance for at least £5 million to the Coast and Countryside Office. You will also be required to complete an indemnity form, and sign to confirm receipt of these rules and regulations and the summer and winter map of zones. The permit is only valid when held in conjunction with a current relevant insurance policy.
5. The permit does not allow cars to be driven on any part of the foreshore not designated for public parking.
6. Users will not enter a zone north of a point immediately adjacent to the Ainsdale Discovery Centre AT ANY TIME. This may result in loss of permit and in the event of an accident, could render your insurance invalid.
7. Kitesurfing users will be aware that this area is not set aside for their exclusive use and must take note of public, fishermen's access, horse riding and other activities. This area may not be available all year and at times will be closed to use due to other events that may take place.
8. Kitesurfing users will at all times be aware of public use of this area of the beach and will give way to all other users at all times.
9. Dangerous flying will not be tolerated. Any dangerous flying will result in the offender being prohibited from the using the beach for any related activity and in loss of permit.
10. Kitesurfing is only allowed where you have been given permission to do so. Kitesurf activity outside of the designated area may result in loss of permit and in the event of an accident, could render your insurance invalid.
11. Follow all environmental codes and place litter in the bins provided.
12. Observe BKSA and BPKA guidelines.
13. The wearing of protective headgear is strongly advised. Appropriate personal protective equipment (PPE) is also recommended for all Kitesurfing activities.
14. Do not use Kevlar lines.
15. Never use any captive harness systems unless supported by a quick release system. E.g. Wichard Shackle.
16. Do not overfly any pedestrians or animals with your kite.
17. Kite tethering is not permitted.

18. Always look before behind and downwind before you turn/jump. The upwind/downwind rule is always in operation. The upwind pilot keeps their kite high and the downwind pilot keeps their kite low, this helps in avoiding a tangle.
19. If a head to head collision is imminent, both pilots must stop. The more skilled/experienced kiter should be the one to take evasive action if necessary.
20. Never inflate, deflate, leave or launch kites in the car park (or in front of the winter car park) or in such a way as to cause an obstruction to other users. All parked/unused kites should have their bar and lines packed.
21. While launching, allow appropriate distance between yourself and any obstacles, allow three lines length from any obstruction. During winter, kite surfers must not set up in front of the car parking zone.
22. No permits will be issued to persons under the age of 16 years without the written approval of a parent/guardian. Users under the age of sixteen will adhere to the same rules as all other users.
23. No persons under the age of 16 years to Kitesurf without a responsible adult in attendance.
24. Jumping on land is expressly prohibited and will be seen as a “dangerous activity”.
25. No tethered or suspended jumping is to be tolerated at anytime.
26. No static flying within the buggy, landboard, blokart area unless in transition to or from launch.
27. No entering the training zone if training is taking place.
28. The use of ‘kite-leashes’ is compulsory.
29. All kitersurfers must assess the risks and hazards prior to each launch. Consider wind speed and direction, weather conditions and therefore appropriateness of kite size. Kites, lines and boards should be inspected for damage regularly; the user must have a continuous awareness of the tides; obstacles; other beach users and their own level of skill. Inexperienced kite surfers should always exercise extreme caution.
30. Anyone who intentionally causes nuisance, brings the use of the beach into disrepute, causes problems outside of Kite-Zone through the static flying of kites, or through driving at excessive speed on the beach may have their permits rescinded.
31. Any users of Kite-Zone who trade or tout for trade on the beach, other than the Council’s authorised Licensee’s, will have their permits rescinded and will be reported to the Council’s Legal Department and other relevant bodies and may result in legal action. The Councils’ Seashore Byelaws are in force on this area.
32. Have an emergency action plan for yourself and others e.g. contact Coastguard 999.
33. During high tide conditions, when the beach at Ainsdale-on-Sea is closed, there should be no kite surf activity until 1 hour after highwater.