

Public Access and Disturbance Theme Plan

A strategic approach to identifying and addressing significant effects on the features of Natura 2000 sites

'Improvement Programme for England's Natura 2000 Sites – Planning for the Future'



Preface

IPENS and theme plans

The Improvement Programme for England's Natura 2000 sites (IPENS), supported by European LIFE+ funding, is enabling Natural England, the Environment Agency, and other key partners to plan what, how, where and when to target their efforts on Natura 2000 sites and the areas surrounding them. As part of the IPENS programme, themed action plans are being developed. 'Theme plans' are high-level plans which aim to improve the way in which a key issue for the Natura 2000 network is managed. Theme plans can provide an over-arching direction, recommendations or outline approaches to achieve target conservation status of Natura 2000 sites in England, to complement work already underway on individual sites. The plans do not have a legal or political status and do not constitute a systematic evidence review. They are to inform action and initiatives of Natural England and its partners to help achieve the objectives of Natura 2000.

It is anticipated that Natural England and others, working with stakeholder and partners, will all play a role in implementing the theme plan. In the process of developing the theme plans Natural England has approached key partners and delivery bodies to seek input and agreement on the roles in delivering the improvements, although in some cases these discussions have not yet been concluded. Recommended actions and next steps identified in the theme plans are not necessarily committed or resourced but aimed at informing future resource decisions. Implementation of the theme plan recommendations will be via local prioritised delivery plans and coordinated through the IPENS After-Life Steering group, working with national and local delivery partner organisations.

Audience

The public access and disturbance theme plan is aimed at those who will play a key role in delivering the actions identified in the plan, in particular relevant Government Bodies and Departments (including Natural England and Defra), European Marine Sites Management Schemes, Non-Government Organisations with site management roles; and site user organisations and groups.

Executive summary

This document is the theme plan for Public Access and Disturbance, produced by the Improvement Programme for England's Natura 2000 sites (IPENS). It describes the importance of developing an improved, consistent understanding of the effects (both current and expected) of public access on the features of Natura 2000 sites and sets out Priority Actions to achieve this. This will enable the development and implementation of mechanisms to achieve objectives set by the EC Habitats and Birds Directives.

Appropriate recreational use of Natura 2000 sites which is consistent with sites' management objectives needs to be encouraged, to enable public enjoyment and appreciation of these important areas and to support the economy. The principle that people should have access to the natural environment (both terrestrial and marine) is supported by a sizeable legacy of legislation, often seeking to give legal effect to long-standing freedoms of access along particular routes or over particular types of land. However, legal protections for biodiversity and geodiversity, such as the Habitats Regulations and the Wildlife and Countryside Act, which operate alongside access legislation, must also be fully supported and adhered to. This requires particular care on sites which are important for both public access and biodiversity, including the Natura 2000 network.

Use of sites for public access, and the effect that this might have on features, has changed over time, because of a variety of social, economic and environmental factors. Public access which did not cause pressures, or where an issue was not yet identified, at the time of designation may now in some cases be having effects, or might be expected to in the future. The analysis of Article 12 (Birds Directive) and Article 17 (Habitats Directive) reporting and Site Improvement Plans (SIPs) carried out to date, has found that disturbance is reported to be a pressure or threat affecting many Natura 2000 sites and features in England. Some elements of the effect of public access on Natura 2000 features in some locations are known. However, where disturbance is observed or suspected, there is often a lack of clarity about whether the type or level of disturbance is significant enough to cause an adverse effect on the integrity of a Special Area of Conservation (SAC) or Special Protection Area (SPA). Therefore, in some instances it can be unclear whether any action to ensure the activity does not adversely affect the features is required at all. This is apparent in many of the SIPs, where an action is included to investigate the effects of the recreational use on the SACs or SPAs.

The responses to consultation have also highlighted that the possible causes and impacts of disturbance is an area of active debate; and that further investigation is needed to clarify the course of action required. Therefore, the priority actions in the theme plan seek to address these uncertainties; and provide a framework for more targeted future action to address the identified pressures and threats to feature condition. The most important area for implementation is to develop a prioritised plan of action centred around:

- disturbance related issues raised in SIPs (by end of 2015)
- filling identified evidence gaps (by 2018)
- improving sharing of information and communication between partner organisations (ongoing).

Where mitigation measures have been introduced to reduce the amount of disturbance to sensitive features, the success of the mitigation is also sometimes unknown, and the significance of ongoing observed disturbance for site condition is therefore not clear. Assessing the success of these interventions (and any unintended negative consequences of the intervention on the features) would help to guide effective management on the studied site. It will also provide important information to enable better informed management strategies to be implemented elsewhere.

The plan therefore sets out:

- a summary of trends in use of the natural environment for public access and how this can be related to effects on Natura 2000 sites and features;
- a summary of the main mechanisms currently available to address the effects, including examples of challenges to use of those and gaps in evidence to demonstrate their effect; and the knowledge and tools available specific to those mechanisms;
- possible gaps in evidence and knowledge of the issue in general and the mechanisms available to address it; and
- the priority actions that need to be undertaken to understand and address public access and disturbance effects on the Natura 2000 sites and features.

The Annexes include datasets extracted from Article 12 and Article 17 reporting which have informed the plan; and a list of relevant evidence sources, guidance, codes of practice and websites which have been used or recommended in developing it. This list of sources may also be of help to site managers developing management solutions at a site level.

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1. Theme Description

1.1 Scope of the theme plan

The Public Access and Disturbance Theme Plan is one of a suite of 11 Theme Plans (see Annex 5) which are being developed as part of the Improvement Programme for England's Natura 2000 Sites (IPENS) project. Recreation and Disturbance was identified in initial scoping as one of these several themes which are a priority for the IPENS project to address. Following feedback, the name was changed to Public Access and Disturbance, which is consistent with terminology used in SIPs. The scoping method is set out in the published report *Improvement Programme for England's Natura 2000 Sites (IPENS) Programme Scoping: identifying key issues affecting Natura 2000 sites and priorities for the IPENS project* (Rae, 2013).

This theme plan seeks to improve understanding of the impacts of disturbance as a result of public access for enjoyment and recreation, on or around Special Areas of Conservation (SAC) and Special Protection Areas (SPA); particularly where the effects are seen on multiple sites. It sets out actions required at national and multiple site level to better understand this; and to facilitate local solutions to tackle problems. The theme plan considers issues affecting the condition status of Natura 2000 features now; and those that threaten to do so in the future. The actions set out in this plan will also be applicable to Sites of Special Scientific Interest (SSSI), Marine Conservation Zones (MCZs) and biodiversity conservation in the wider environment.

The theme plan considers the disturbance effects of public access for enjoyment and recreation which are legally permitted, and is not restricted to particular types of public access or uses within this definition. It does not seek to address the effects of illegal access to sites or access for uses other than recreation; nor does it cover other potential causes of disturbance effects, such as civil or military aircraft or the direct disturbance effects of development.

1.2 Description of the situation and drivers for taking action

1.2.1 Understanding of the effects of recreational use on SAC or SPA features

The 10th UK report under Article 12 of the Birds Directive for the period 2008-2012 (JNCC, 2013a), or "Article 12 report"; and the UK General Implementation Report Annex A of the 2013 UK Article 17 EU Habitats Directive Report (JNCC, 2013b), or "Article 17 report", show that recreational disturbance is having or has the potential to have adverse impacts on the condition status of a variety of SAC and SPA features in both terrestrial and marine environments within the UK. Article 12 and Article 17 information is further supported by an analysis of the Site Improvement Plans (SIPs), which are being published for every Natura 2000 site in England as part of the IPENS Project. SIPs outline the actions required to achieve and maintain the site features in favourable condition; and can be viewed here: <http://publications.naturalengland.org.uk/category/5458594975711232>.

Published evidence about the effects of particular recreational activities on the features of certain SPAs and SACs exists in some cases, for example Teesmouth and Cleveland Coast European Marine Site (Linaker, 2012) and Solent European Marine Site (Stillman et al., 2009 and Stillman et al., 2012). 117 SIPs (44 % of the total number of SIPs) have recorded "Public Access/Disturbance" as having an impact on Natura 2000 site features or likely to impact in the future. SIPs show that disturbance of features has been observed on many SPAs and SACs where systematic research to investigate the issue has not yet taken place; and the significance of the disturbance effect on feature condition is not known. On some sites, wintering or breeding SPA bird numbers are lower than expected and public access-related disturbance is one of a number of possible reasons, so further investigation of the reasons behind the decline is needed to ascertain the action that needs to be taken.

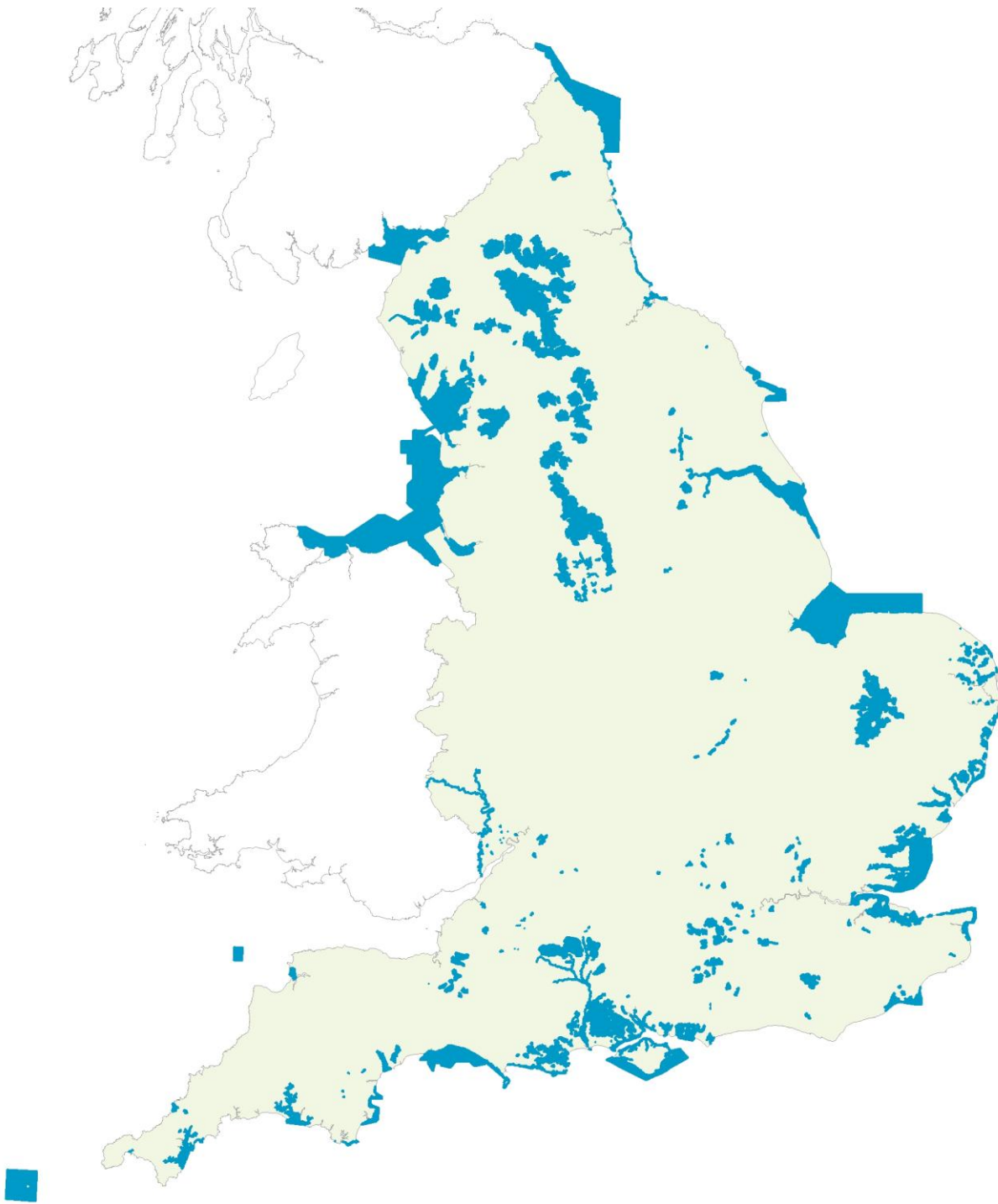


Figure 1 Site improvement plans which report issues with public access and disturbance

Article 12 and Article 17 reporting, along with an analysis of the SIPs, has described the variety of European features which are considered to be currently adversely affected by disturbance as a result of public access for recreation, or likely to be impacted in the future. 37 SAC features and 29 SPA features in England are reported as being affected by various recreational uses as part of Article 12 and 17 reporting. Of these, 19 SAC features have a high impact ranking for recreational activities. Three of these are priority SAC features for the UK: H2130 Fixed dunes with herbaceous vegetation (“grey dunes”), H2150 Atlantic decalcified fixed dunes (*Calluno-Ulicetea*) and H7130 Blanket bogs. In addition, three Annex 1 and one regularly occurring migratory SPA bird species have a high impact ranking for recreational activities.

There is a large amount of published evidence on disturbance of habitats and species by recreational activities, some of which is reviewed in Liley et al. (2010) Welsh Seasonality Habitat Review. This review did not however include

consideration of activities affecting the intertidal and subtidal (Liley et al., 2010); and this remains an area where the effects of recreational activities on features is not well understood.

1.2.2 Scale of the effects of disturbance from public access

Although some of the effects of public access on Natura 2000 features are known and well studied on certain sites, overall our knowledge is limited. Where disturbance is observed or suspected there is often a lack of clarity about whether the type or level of disturbance is significant enough to be causing the unfavourable condition of the features. It can therefore be unclear in some instances whether any remedial action is required. This is shown in many of the SIPs, which include actions to investigate the effects and causes of the disturbance.

Where mitigation measures have been introduced to reduce the amount of disturbance to sensitive features, the success of the mitigation is sometimes unknown, and the significance of ongoing observed disturbance for site condition is therefore not clear. A lack of accurate pre-intervention data also hinders accurate assessment of success. Assessing the success of these interventions would guide successful management on the studied site as well as providing important information to enable better informed management strategies to be implemented elsewhere. These assessments should include consideration of any unwanted consequences of management changes, such as a reduction in reporting of damaging antisocial behaviour, or shifting disturbance problems to other sensitive areas. The scale of the problem is therefore not fully understood and neither is the effectiveness of mitigation, so this is something that a number of the actions set out later in this theme plan seek to address.

Example: Water bird disturbance

During 2012, of the 1,545 million day visits within the UK, 9.5% (>146 million) were to the seaside/coast (Tourism Alliance UK, 2012). The considerable majority of UK's migratory and wintering water birds use coastal sites, with 52 of England's 81 SPAs being located on the coast. Human recreational activities that have the potential to cause disturbance to breeding and non-breeding water birds are widely studied and there is a large body of peer-reviewed, grey literature and expert opinion available on the subject. This theme plan does not represent a systematic review or synthesis of these evidence sources but does highlight that water birds are, as a group of birds, well studied.

Most research has focussed on measuring behavioural effects or changes to bird numbers or distribution as a result of various activities; for example, water-based recreation (Evans & Warrington, 1997; Fox *et al.* 1994), presence of landscape features such as roads (Burton, 2007), shooting (Owen, 1993) and walkers with or without dogs (Mitchell *et al.* 1988; Smith & Visser, 1993). This list is not exhaustive, includes causes outside the remit of this theme plan and does not aim to rank or quantify different activities in order of their potential for disturbance effects on birds. Furthermore, such effects, resulting impacts and mitigation options are usually highly site specific and it is beyond the scope of this theme plan to fully explore these. Some studies found no measurable relationship between the presence of shore-based human activity and negative effects on birds, for example, Gill *et al.* (2001). Other studies have suggested that refuges (i.e. areas where there are no anthropogenic disturbance effects) have a role to play in water bird conservation (Bregnballe, 2004; Fox & Madsen, 1997).

Water birds are susceptible to visual and audible disturbance, but to varying degrees according to species, age, season, weather, disturbance habituation and habitat carrying capacity (Cayford, 1993). Despite the variation across the country in both the level of evidence and degree of disturbance, there are clear risks on some estuaries. In a number of locations, work is well underway in developing the appropriate mitigation strategies for particular pressures.

Although difficult to relate repeated short-term disturbance effects to long-term impacts on non-breeding water bird populations, this can be inferred by estimation, for example, increases in wasted energy expenditure (Riddington *et al.*, 1996). There are cases where relating human disturbance to coastal breeding water bird impacts have been demonstrated more directly (Liley & Sutherland, 2007).

1.2.3 Encouraging access to the natural environment

The Environment Directorate General of the European Commission describes Natura 2000 as: “an EU wide network of nature protection areas established under the 1992 [Habitats Directive](#). The aim of the network is to assure the long-term survival of Europe's most valuable and threatened species and habitats. It is comprised of Special Areas of Conservation (SAC) designated by Member States under the Habitats Directive, and also incorporates Special Protection Areas (SPAs) which they designate under the 1979 [Birds Directive](#). Natura 2000 is not a system of strict nature reserves where all human activities are excluded. Whereas the network will certainly include nature reserves most of the land is likely to continue to be privately owned and the emphasis will be on ensuring that future management is sustainable, both ecologically and economically. The establishment of this network of protected areas also fulfils a Community obligation under the UN Convention on Biological Diversity.” (European Union, 2015).

Supporting appropriate access to Natura 2000 sites for recreation which is consistent with sites' management objectives needs to be encouraged, to enable public enjoyment and appreciation of these important areas, and to support healthy lifestyles and the economy. The principle that people should have access to the natural environment (both terrestrial and marine) is supported by a sizeable legacy of legislation, often seeking to give legal effect to long-standing freedoms of access along particular routes or over particular types of land. Legal protections for biodiversity and geodiversity, such as the Habitats Regulations and the Wildlife and Countryside Act, which operate alongside access legislation, must also be fully supported and adhered to. This requires particular care on sites which are important for both public access and biodiversity, including many sites in the Natura 2000 network.

The importance of access to the natural environment is reiterated in the Natural Environment White Paper *The Natural Choice: securing the value of nature* (Defra, 2011b). Likewise *Biodiversity 2020: A strategy for England's wildlife and ecosystem services* (Defra, 2011a) recognises the significance of physical access to nature as part of the aspiration to 'reconnect people with nature' (Natural England, 2013c). This theme plan is therefore written in the context that the principle of public access to the natural environment is fully supported.

Stakeholder feedback gathered in the process of developing this theme plan showed that there are a range of views about the relative priority that should be given to enabling access for recreation and protecting the natural environment; and how disturbance as a result of public access could be tackled. Some site user groups, and organisations which are responsible for upholding existing and providing new access rights, consider that there should be little or no change to the access rights already in place, or even that there should be consideration given to the lifting of restrictions, to uphold or increase access rights (although most of the stakeholders recognised a need to ensure that wherever possible, access for recreation should not be to the detriment of the natural environment). Other organisations feel very strongly that the level and/or types of access available on some sites are currently inconsistent with the conservation of the features for which they are designated. This view has been put forward by some of those bodies with responsibilities for managing sites for nature conservation. They have advised that these access rights need to be reviewed and additional protections for the features put in place on those specific sites and particular circumstances.

1.2.4 Changing society and the use of the natural environment for recreation

UK society has changed significantly since the mid-1900s, which has led to changes in the ways that people use the natural environment for recreation.

In 1950, the UK population was 50.6 million people and by mid-2013 had risen to 64.1 million people. Of this total, 53.9 million (84.0%) were in England. The UK population is projected to continue to increase (Office for National Statistics, 2014).

In 1955, 96% of manual labourers became entitled to 2 weeks' paid leave, compared to only 61% in 1951 (Hill, 1975). Statutory paid leave entitlement has since increased to the current amount of 5.6 weeks or 28 days (including Bank

Holidays) (*Terms and Conditions of Employment - The Working Time Regulations 1998, SI 1998/1833*). The number of UK cars rose from 19 million in 1971 to 31 million in 2007, and the proportion of households with a car rose from 44% in 1975/76 to 63% in 2007 (Liebling, 2008).

During the past 60 years therefore, the UK human population has increased by 13.5 million, the population has 3.6 additional weeks of paid leave and private vehicle ownership has increased with greater affordability through mass production. Combined with improved transport infrastructure, the pursuit of holidays and leisure activities post-War have contributed to making tourism the UK's sixth largest industry (Tourism Alliance UK, 2012). These effects combined could be expected to change the numbers of people visiting the natural environment during that time period.

There were an estimated 2.93 billion visits to the natural environment by the adult population in England between March 2013 and February 2014, according to Natural England's *Monitor of Engagement with the Natural Environment Survey* (MENE) (Natural England, 2015), with a statistically significant increase in visit frequency over the whole study period (from 2009 to 2014). The diversity of outdoor recreational activities has also broadened, with traditional activities now joined by the pursuit of sport orientated, motorised and wind-powered activities, particularly since the 1970s and 1980s with the introduction and rapid development of, for instance, jet-skis, kite-surfing and mountain biking. *Future trends for outdoor recreation* (Henley Centre Headlight Vision, 2005) sets out the drivers for change. The latest *Watersports Participation Survey* report (Arkenford, 2013) shows leisure time spend at the beach at the highest level since the start of the survey in 2002; and participation in watersports at its highest level since 2007 (Arkenford, 2013).

Housing development near to Natura 2000 sites has in some cases been a driver for increased use of these sites by recreational users. Research undertaken in areas such as the Solent has recognised the links between the number of houses and levels of recreation at nearby designated nature conservation sites (Solent Forum, 2015). It has also highlighted the complexity of the interaction and the challenge in understanding and addressing the issue.

Recreation on sites is expected to continue to change as climate change affects weather patterns in the UK. The evidence is clearest for rising temperatures globally (IPCC, 2014). Changes in precipitation are less clear and vary between locations, but models of the UK climate indicate a trend toward drier summers (IPCC, 2014). This may then bring about increases or changes to the recreational use of some locations, as has been shown in Natural England's MENE where the frequency of visits to the natural environment is greatest in the summer when the weather is warmest (Natural England, 2015); and in the recent increase in watersports activity perhaps being linked with an exceptionally warm summer (Arkenford, 2013), and may also increase England's popularity for summer holidays. Climate change may however also result in increased storminess (Marine Climate Change Impacts Partnership, 2015), leading to less suitable conditions for boating and increased damage to coastal facilities. There may therefore be a reduction in suitability for particular recreational uses, including watersports and boating, in some coastal areas.

The disturbance effects of public access may also alter as a result of climate change on some sites. For example, where coastal squeeze is causing a reduction in the area of habitat available for some features (such as is being seen with nesting habitat for little terns), disturbance effects may increase even if the number of people using a site does not change. This can be because use of the site may be concentrated in a reduced area.

1.2.5 Recreational use of SAC and SPA

Data from Natural England's MENE has shown an upward trend in the frequency of visits to the natural environment since 2009. Although the data also suggests a possible decrease in the frequency of visits to the countryside (with most visits being taken in parks in towns and cities) (Natural England, 2015), the data does not show whether there is a trend in visits to SACs and SPAs. It should not therefore be assumed that this decrease applies to the Natura 2000 sites network, particularly as these sites can be very popular with both local visitors and as part of a tourist experience.

Although public access to protected sites can occur with no ill-effects on the site features, there are instances where this use is considered to cause a pressure or a threat to them.

Disturbance effects can be physical, for example damage to habitats by erosion; indirect, for example presenting management challenges such as reluctance to graze sites due to concerns about stock safety; or causing changes to the behaviour of animals, such as disturbing birds at nest sites. Typically, disturbance of habitats and species is the unintentional consequence of people's presence, which can then for example lead to avoidance of certain areas by animals, which then can impact on breeding success and survival (Liley *et al.*, 2010). There can also be indirect effects, for example persistent problems with dogs worrying grazing animals, leading to graziers withdrawing stock from land where grazing management is needed to maintain site features in favourable condition. See the IPENS Grazing Theme Plan, linked in Annex 5, for more detail about this particular issue.

Where public access has the potential to impact on the features of European Sites, it needs to be managed in a way that is sustainable and is compatible with a site's conservation objectives. Natural England has a statutory duty to secure compliance with the Habitats and Wild Birds Directive (regulation 9 of the 2010 Habitats Regulations as amended), and when exercising their functions, all public bodies must take reasonable steps to further the conservation and enhancement of those Sites of Special Scientific Interest (SSSI) which underpin European Sites (section 28G of the 1981 Wildlife & Countryside Act as amended). For marine sites, a competent authority must exercise any of their functions which are relevant to marine conservation to secure compliance with the requirements of the Habitats Directive. Public bodies are obliged to adopt the precautionary principle where there is reasonable scientific doubt as to the likelihood of impacts from activities affecting Natura 2000 sites and features.

1.3 Priorities

1.3.1 Prioritised activities and sites for action

Analysis of SIPs shows a wide variety of activities generating a pressure or threat to European features. Activities cited in SIPs include dog walking (the most often reported activity), walking and running (without dogs), water sports, recreational fishing, cycling, off road vehicles, climbing, ghyll scrambling, aerial craft (such as model aeroplanes) and horse riding.

Although for some Natura 2000 sites the effect of public access on the sites' features is well studied, in many instances this is not the case and SIPs highlight a possible pressure or threat which requires investigation to address this knowledge gap. The relative priority for the sites and activities cannot therefore be understood by using only this data. Further analysis of the SIP data and other evidence, together with more detailed investigation, will be required to enable prioritisation of sites, features and activities to take place, and to target efforts to address any conflicts between public access and conservation of the European features. This theme plan therefore focusses on priority actions to address the investigation required at a multiple-site or national level; to enable use of this information to help with this prioritisation (see Section 4).

1.3.2 Natura 2000 features reported as impacted by public access and recreational uses

European features which are affected by public access and recreational uses have been identified from the Article 12 (SPA) and Article 17 (SAC) reporting, which set out which features have a high, medium or low impact ranking for effect of recreational activities on their condition ("Favourable Conservation Status"). High impact rankings are listed below and the complete list is shown in Annexes 3.1 and 3.2. Site managers can use Annexes 3.1 and 3.2, along with other more site-specific sources of evidence, to see which features on their sites might be most vulnerable to disturbance by public access; and to help focus the investigation of the significance of any effects and any necessary management interventions.

SAC features assigned a 'high' impact ranking for G01: Outdoor sports and leisure activities, recreational activities in Article 17 reporting (full data is given in Annex 3.1)

Marine, coastal and halophytic habitats:

- H1140 Mudflats and sandflats not covered by seawater at low tide
- H1210 Annual vegetation of drift lines
- H1220 Perennial vegetation of stony banks
- H1230 Vegetated sea cliffs of the Atlantic and Baltic coasts

Coastal sand dunes and continental dunes:

- H2110 Embryonic shifting dunes
- H2130 Fixed dunes with herbaceous vegetation ('grey dunes')
- H2150 Atlantic decalcified fixed dunes (*Calluno-Ulicetea*)
- H2150 Atlantic decalcified fixed dunes (*Calluno-Ulicetea*)
- H2170 Dunes with *Salix repens* ssp. *argentea* (*Salicion arenariae*)

Freshwater habitats:

- H3130 Oligotrophic to mesotrophic standing waters with vegetation of the *Littorelletea uniflorae* and/or of the *Isoëto-Nanojuncetea*
- H3140 Hard oligo-mesotrophic waters with benthic vegetation of *Chara* spp.
- H3150 Natural eutrophic lakes with *Magnopotamion* or *Hydrocharition*-type vegetation

Temperate heath and scrub:

- H4060 Alpine and Boreal heaths
- H4080 Sub-Arctic *Salix* spp. scrub

Raised bogs and mires and fens:

- H7130 Blanket bogs

Rocky habitats and caves:

- H8210 Calcareous rocky slopes with chasmophytic vegetation
- H8220 Siliceous rocky slopes with chasmophytic vegetation
- H8330 Submerged or partially submerged sea caves

Species:

- S1831 Floating water-plantain *Luronium natans*

Annex 1 and regularly occurring migratory SPA features assigned a 'high' impact ranking for Human intrusions and disturbances / outdoor sports and leisure activities, recreational activities in Article 12 reporting (full data, including medium and low impact rankings, is given in Annex 3.2)

Dartford warbler (breeding) (Annex 1)

Little tern (breeding) (Annex 1)

Nightjar (breeding) (Annex 1)

Ringed plover (breeding) (Regularly occurring migratory species)

Non-breeding waterfowl assemblage

Article 12 reporting assigned impact ranking to those individual Annex 1 and regularly occurring migratory birds classified as SPA interest features in their own right. Article 12 reporting did not require the inclusion of reporting

pressures and threats on the waterfowl assemblage, >20,000 individuals, which is an interest feature on 39 English SPAs.

A large number of both Annex 1 and regularly occurring migratory birds are species of waterfowl and are ecologically dependent upon wetlands. Taken individually, there is arguably no need for specific species of waterfowl to be deemed more vulnerable and assigned a high impact ranking. When these species are considered collectively as the waterfowl assemblage, however, the comparative potential for disturbance to affect the interest feature is elevated.

An impact of disturbance (such as a reduction in birds' fitness, or a population decline) is very difficult to demonstrate, however there are a number of published studies which detail the effects of disturbance upon SPA waterfowl and suggest disturbance as the likely cause of negative bird trends at certain sites.

2. Available Mechanisms

A wide variety of mechanisms are available to reduce the level of disturbance to sensitive features, by managing public access to sites. A summary of some of the main mechanisms (including some examples of where a mechanism is being used successfully), challenges to their use, and gaps in evidence, guidance and associated tools is set out below. Please note that the information below is not exhaustive.

In many cases, the chosen options to manage pressures and threats to the features of SACs and SPAs will be those which are voluntary. These can prove effective, but not in all cases, for example as set out in the RSPB report *Investigating the use of voluntary marine management in the protection of UK marine biodiversity* (Prior, 2011). If advice and voluntary mechanisms have failed or evidence shows they are likely to fail, it is therefore important to consider other mechanisms to resolve pressures and threats.

Observation of management of public access-related impacts on sites shows that a combination of mechanisms is often required to achieve success in addressing public access and disturbance issues, as the available mechanisms used alone are not always effective. There is a place for applying the mechanisms on a variety of scales from large-scale feature or issue based level to a site or local level. How they are used should be informed by a good understanding of the issue to be addressed.

2.1 Advice

This mechanism includes development and implementation of access strategies, education and awareness raising aimed at a wide variety of stakeholders, negotiation, signage, wardening and soft communication. Signage is most effective when used with “guiding fencing”, habitat management, providing good access to the least sensitive areas; and wardening. Wardens are an effective means of communicating with visitors, enthusing, informing and educating site users, as well as to enforce access management. A good example of effective wardening producing good results is the disturbance management by RSPB of a little tern nesting site at Pagham. Wardening in combination with fencing is used to improve the conditions for nesting little terns. This is part of the national Life+ Little Tern Project, being managed by RSPB <http://www.rspb.org.uk/whatwedo/projects/details.aspx?id=362308>.

Advice options should be chosen with a good understanding of the site user, and other mechanisms will sometimes be necessary either in addition to advice, or instead where advice options are unlikely to be successful. For example, off-lead access is the single most important amenity for 85% of dog walkers (Edwards and Knight, 2006), so dog walkers are unlikely to be educated out of doing this. Zoning and alternative provision can be more effective in this circumstance.

The importance of effective engagement

Site management changes to address legitimate nature conservation concerns can result in acute practical and political opposition from existing site users, especially with communities and user groups who are well able to co-operate and mount a concerted campaign (for example via traditional and social media). Thus long-term relationship building and maintenance with stakeholders must be properly resourced and implemented, as must developing inventions that also address local communities’ legitimate recreation aspirations in less sensitive locations. This is especially important as peer pressure can be very effective, especially when enforcement of restrictions is practically or politically difficult. It also needs to be remembered that when talking about restrictions on dogs, bikes, horses etc, these are actually restrictions on people and thus there will always be a social-political dimension to work with.

Working with regular site visitors to promote good behaviours by their peers can be the most effective way to influence users. For example, walkers with dogs are influenced most by advice from other dog walkers and their vets, rather than site staff, rangers or council officers (Edwards & Knight, 2006). Commercial dog walkers can see business benefits from becoming ambassadors for responsible dog walking (Jenkinson, 2015).

In some circumstances there will be opportunities to innovate, to tailor advice specifically to the needs of the site users. An example of an innovative advice tool is the recently developed Winter Climbing Information Project in Wales (developed by The British Mountaineering Council in partnership with Natural Resources Wales). Live information is made available on the weather and climbing conditions on a Natura 2000 site (Cwm Idwal National Nature Reserve) in order to ensure that climbers only climb when conditions are suitable, in order not to damage the protected alpine flora that is found on these climbing routes.

<https://www.thebmc.co.uk/winter-climbing-and-conservation-in-wales--new-information-service>

Challenges to use

There are several challenges to use, including:

- willingness of site users to act on advice;
- funding (where applicable);
- staff resources;
- risk of “message fatigue” (particularly in the case of signage);
- a lack of general support for the principle of wardening;
- targeting the audience for awareness raising/education activities in situations where the audience is not part of a particular group or organisation;
- vandalism of signage;
- the need to repair and update signs;
- maintaining the will and engagement of volunteer wardens; and
- convincing visitors/local residents of benefits to them, to create enduring engagement.

The success of education and awareness-raising activities is often dependent on whether the audience are people who belong to a specific activity club. Where this is not the case, it can be difficult to reach all of the relevant users.

It is difficult to keep track of the wide range of influences across many local council departments and other land managers to ensure that they understand their biodiversity duties. For example, Environmental Health departments do not tend to consider displacement effects when restricting access to beaches by dogs, presumably because of a lack of understanding of the statutory biodiversity duty under which they need to operate and where they can go to for advice on ensuring their decisions adhere to that duty.

Unwanted recreational activities can often be long-established and thus will take a long time to change, especially if behaviours have been legitimised by going unchallenged for many years. Accordingly, interventions to stop new behaviours being established, or existing ones intensifying, are more likely to be successful in the short-term.

Gaps in evidence, knowledge or implementation support/tools

A single, accessible location, where site managers can find good practice information and advice is required.

Monitoring will be needed, in association with informal management, to check that the measures are successful and to check for unwanted consequences, for example displacement of activity to other sensitive sites, or increased antisocial behaviour. An example of sites where various elements of this mechanism have been used and success monitored, are the little tern sites at Long Nanny, Northumberland and Winterton, Norfolk; however, time and resources to monitor are often lacking.

2.2 Designation strategy

Amendments to protected sites boundaries or changes to site conservation objectives where necessary can be a way of ensuring that the site features are protected. Natural England has mechanisms in place to enable this, where a need is identified.

Challenges to use

There are several challenges to use, including; potential resistance by the public to the potential for further restrictions as a result of designation changes, political will to carry out further site designation, funding and staff time.

Gaps in evidence, knowledge or implementation support/tools

Gaps include a lack of clarity on the circumstances in which designation amendment is an appropriate mechanism to address impact.

2.3 Local and National Projects and Partnership Agreements

This mechanism includes partnership agreements (including voluntary codes of conduct and codes of practice and partnership initiatives such as The Green Blue) and local projects such as Lake and River Restoration Projects.

An example of a national partnership project is The Green Blue, which is a joint initiative created by the Royal Yachting Association and British Marine Federation to raise awareness, conduct scientific research, identify environmentally friendly products and offer best practice advice, to enable boat users, boating businesses, sailing clubs and training centres to reduce their impact on coastal and inland waters (The Green Blue, 2010).

An example of a local project set up to resolve public access disturbance issues is the Solent Disturbance and Mitigation Project, now being implemented by the Solent Recreation Mitigation Strategy, which will design a funded planning framework. <https://www.portsmouth.gov.uk/ext/community-and-environment/environment/solent-recreation-mitigation-strategy.aspx>

Challenges to use

Challenges include some sites not having a relevant local project or the willingness of relevant partners to create one; partners sometimes being unwilling or unable to come to an agreement (in some cases those who do not engage with partnership projects are those who are the most important to reach); and the effectiveness of voluntary agreements in protecting features is unclear. Staff time and funding to develop initiatives are also challenges.

Gaps in evidence, knowledge or implementation methods

Gaps include a significant lack of consistency of presentation and messages for partnership schemes, voluntary codes and other products. A national guide, delivered across all sites, may be required, rather than a piecemeal approach.

2.4 Flood Risk Maintenance Programme: Flood Risk Management - Capital/Improvement Schemes

This is an example of a mechanism which has another purpose, but may also be used in particular circumstances to reduce public access disturbance as well as to fulfil its primary objective to manage flood risk. At Minsmere-Walberswick SPA a diversion of the river Dunwich using this mechanism has allowed natural rollback of the shingle beach. This has increased both potential little tern nesting habitat and the area of coastal strip available for recreation (mostly walking). The increased area available for public access has also enabled any disturbing effects to be reduced giving greater chance of a little tern colony returning to this site.

No challenges to use or gaps in evidence, knowledge or implementation support/tools specific to this mechanism have been raised (although this does not mean that there are none).

2.5 Habitat creation/restoration strategy

This mechanism includes creation of new habitat, habitat restoration and improvements to habitat connectivity to help mitigate the effects of public access disturbance. This mechanism links to the Designation strategy mechanism

because new habitat areas, for example managed realignment schemes, may benefit from designation to enable more effective long term management.

No gaps in evidence, knowledge or implementation support/tools specific to this mechanism have been raised (although this does not mean that there are none).

Challenges to use

This approach can be ineffective if not accompanied by long term habitat management, effective user management, funding and staff time.

2.6 Investigation/Research/Monitoring

This mechanism will predominantly be used to assess the effects of public access on features and the success of mitigation. It might also include investigations into offsite effects, such as identifying off-site management activity that could displace recreational activity onto Natura 2000 sites.

A site-based strategic example of an investigation to develop an evidence base regarding public access and disturbance is The Solent Disturbance and Mitigation Project, by the Solent European Marine Sites Management Scheme (SEMS), who are also carrying out ongoing monitoring.

Challenges to use

This approach can be ineffective if not followed by effective habitat and user management informed by the outcome of the investigations. Challenges can also include a lack of funding and/or staff time.

Gaps in evidence, knowledge or implementation support/tools

Gaps include a lack of published advice on visitor monitoring to enable land managers to implement a consistent approach to this; and evidence-based decisions and guidance on how much evidence is required in order to determine whether there is a significant impact on features and therefore to take action.

2.7 Management Plans

This mechanism includes National Nature Reserve (NNR) management plans, Estuary Management Plans and non-Natural England funded site management plans. An example of a management plan which includes measures to manage public access disturbance is Roydon Common NNR Management Plan. Management Plans can fulfil a similar role to an Access Strategy but with a wider remit. See "Advice".

Estuary Management Plans can address some public access-related issues by providing strategically guided recreation opportunities. An example would be the Solent Forum Strategic Guidance, which complements existing Solent European Marine Site work and the Solent Disturbance and Mitigation Strategy.

No gaps in evidence, knowledge or implementation support/tools specific to this mechanism have been raised (although this does not mean that there are none).

Challenges to use

The challenges include funding; ensuring actions listed in the management plan are carried out; and securing all relevant parties' agreement to taking responsibility for delivering actions.

2.8 The Planning System

This mechanism includes managing recreational pressure through strategic land use and marine planning and implementing the Marine Policy Statement (HM Government, 2011), for example to guide potentially disturbing

activity onto less sensitive sites; or to create new opportunities and locations for people to use for recreation to reduce pressure on sensitive sites.

No challenges to use have been raised (although this does not mean that there are none).

Gaps in evidence, knowledge or implementation methods

In some areas, there is a poor local evidence base available to inform strategic planning. There is also a need for a more consistent approach to Habitats Regulations Assessment of strategic plans and planning applications, to include consideration of changes to recreational use of Natura 2000 sites as part of assessing the potential effects of development. For example, 25% to 30% of new homes will have a dog, so factoring this statistic into all Habitats Regulations Assessments of proposals for housing development should be considered (see *Planning for Dog Ownership in New Developments* at www.hants.gov.uk/dogs).

2.9 Regulation and Enforcement

These mechanisms include the creation, amendment and enforcement of byelaws; issuing Site of Special Scientific Interest (SSSI) notices or consents and enforcing SSSI legislation; revoking or amending non-Natural England or Environment Agency licences; Traffic Regulation Orders and enforcing S34 of the Road Traffic Act/S28P (6); SSSI Diversion Orders; and the issuing and enforcement of marine licences.

Additional regulatory mechanisms given in the Habitats Regulations can also apply, such as byelaws, special nature conservation orders and stop notices.

Some organisations have internal or published guidance regarding the use of byelaws, for example Marine Management Organisation's *Understand Marine Conservation Byelaws* (Marine Management Organisation, 2014b) and Environment Agency's *Environment Agency statutory rod fishing byelaws (rules) for England* (Environment Agency, 2014).

Challenges to use

Challenges include:

- the risk of negative public perception of the imposition of additional restrictions and enforcement relating to recreational uses;
- funding;
- staff time;
- securing Secretary of State approval to implement byelaws;
- willingness of local highways authorities to use their Traffic Regulation Order powers;
- risk of public inquiry;
- political will to carry out enforcement proceedings;
- constraints on Police time; and
- level of evidence required to enforce.

Gaps in evidence, knowledge or implementation methods include

There is often a lack of clarity regarding the appropriate circumstances in which it is appropriate to apply byelaws and how to do this. There is also insufficient evidence to enable an understanding of whether/when enforcement is necessary and to support a prosecution; and the level of evidence required to bring a prosecution is often unclear. Some organisations have internal guidance but it is not widely available. Guidance on how local highway authorities should prioritise and resource regulatory action on protected sites is also lacking. The success of SSSI Diversion Orders is currently unknown.

2.10 Zonation

Zonation can be applied within the sensitive site or on adjacent land, to accommodate activities already taking place where it does not cause a significant effect on site features. For example, [Danebury Dog Project Evaluation](#) – Hampshire County Council at www.hants.gov.uk/dogs

Challenges to use

There can be difficulties associated with making the boundaries of different zones clear if they do not coincide with physical features such as walls or ditches.

Gaps in evidence, knowledge or implementation methods

There is no obvious mechanism for achieving zonation, although it may be a solution which could be included alongside other mechanisms, such as management plans or local projects.

3. Addressing Outstanding Issues

The following gaps in evidence, guidance and mechanisms represent our latest thinking, following consultation with stakeholders and Natural England staff. It builds on information gathered in IPENS stakeholder workshops in 2013 (see Natural England, 2013b and Natural England, 2014) and should be read alongside the mechanism-specific challenges and gaps included in section 4.

The lists below are also presented with the caveat that there is significant site by site variation in understanding of the effect (if any) of public access on features and the management required to address any effects across the Natura 2000 network. There are some specific locations where there is very good evidence and knowledge, and successful management in place; for example as a result of local partnership projects and other initiatives. The gaps identified below however are general and therefore will not apply to some locations and circumstances.

3.1 Existing gaps

3.1.1 Evidence/knowledge

The effects of public access on features

- A lack of baseline understanding of all recreational activities occurring on each SAC and SPA, including their intensity and frequency, to enable understanding of current significant effects on features; and/or anticipation or management of change.
- Insufficient evidence to understand the scale, frequency and intensity of public access related disturbance and significance on features (species, including birds, and habitats) in some cases. For example, there are still some significant evidence gaps in our understanding of disturbance distances and how disturbance events translate into population level effects. Likewise, habituation of birds to disturbance is not well understood. Where evidence does exist, it is found in individual research papers and grey literature, which needs to be brought together into a single source, in order for it to be fully accessible.
- Insufficient evidence to understand the cumulative disturbance effect of a number of water-based activities taking place in different parts of estuaries; and the in-combination effects of different types of public access on a site, and/or public access disturbance in combination with other effects on features.
- Insufficient evidence to quantify any predicted change in recreational use following the provision of the England Coast Path.
- The impact of recreational disturbance arising as a result of housing development is very difficult to assess. There is inconsistency in how the evidence base is used, and lack of clarity as to what extent remaining uncertainties can be addressed, given that modelling and research is costly. The biggest concern is about fully understanding the impacts which arise cumulatively and in combination.

Effectiveness of existing mechanisms

- A lack of monitoring and assessment of the effectiveness of existing mechanisms, leading to a paucity of evidence to inform decisions on whether mechanisms already in place are effective; or which management solutions are most likely to successfully address disturbance effects. This includes a particular gap in understanding whether existing mitigation to address recreational disturbance impacts on coastal birds is successful. A better understanding is needed of whether the current preference for soft, voluntary measures (e.g. communication, codes of conduct, signage) is successful in terms of achieving improved feature condition.
- The motivations of people accessing sites are often not sufficiently understood to enable successful mitigation tactics to be applied and those likely to be unsuccessful to be ruled out.

Priorities for action

- Insufficient understanding of which SACs and SPAs should be prioritised for action on public access related disturbance effects. SIPs have provided updated information which should assist with development of a common understanding of this.
- The level of evidence or burden of proof to effect management interventions or change has not been fully established.
- Liley (2007) set out the priorities for future research on bird conservation and access to the countryside in England to address evidence gaps that were recognised at that time. Some of the research recommended in that report may already have occurred but there is a need to review and update the outcomes of that work to inform priorities for future evidence gathering.
- Relative significance of the effects of public access related disturbance compared with other issues affecting site condition is not well enough understood on some sites to enable prioritisation of action and funding, where resources are not sufficient to enable all issues to be addressed.

3.1.2 Guidance

There is generally considered to be a lack of clear and available guidance on how to successfully integrate access and biodiversity interests to enable access without impact on SAC and SPA features. This includes a need for guidance on what evidence is required to justify taking action to manage access. The following more specific gaps in guidance have also been highlighted:

- A definition of “disturbance” as defined as under the Habitats Regulations, how to determine whether it is considered “deliberate”; and the evidence required to prove this in law.
- Managing access on coastal habitats to ensure favourability for SPA birds.
- When and how to apply some public bodies’ byelaw-making powers to address or avert impacts.
- How to remedy recreational pressures affecting SACs and SPAs, where levels of activity are equivalent to those experienced at the time of designation but there is now an apparent cumulative or changing effect on the features (as opposed to sites where levels of concern are linked to changes in type or level of recreational use).
- Mitigation of recreational disturbance impacts on both heathland and coastal sites arising from housing development has particular challenges. Impacts occur from a large number of small, piecemeal projects, each having a small impact, therefore the mitigation of these impacts needs to be done at a strategic scale. New guidance on strategic mitigation and avoidance schemes is therefore needed.

3.1.3 Mechanisms

- Many sites lack a strategy to address both pressures and threats to site and feature condition from public access and disturbance; and disturbance is often failing to be accounted for in the assessment of site feature condition.
- A number of SIPs had “No mechanism available” stated against the relevant actions required to address the public access/disturbance issues affecting the SAC/SPA features, therefore these actions will need further investigation to identify solutions, which may include new mechanisms.
- Insufficient human and financial resources for implementing best practice management techniques that have already found to be effective.

3.2 Action already being taken to address gaps

Actions already underway which need to be concluded to address some of the gaps identified above include:

- Procedures for screening new access projects affecting Natura 2000 sites are being developed and implemented by Natural England (see section 4.9 of Natural England, 2013a).
- *Housing development and estuaries in England: developing methodologies for assessing the impacts of disturbance to non-breeding waterfowl* and the follow up work *Assessing the Impact of Waterbird Disturbance:*

literature review and workshops will, once published, provide a proportionate approach to addressing the impacts of recreational disturbance on waterbirds arising from housing developments near the coast. This work will rank coastal sites supporting designated populations of non-breeding waterbirds according to their current vulnerability. It will also identify and rank possible mitigation measures according to their perceived efficacy. Finally, it will attempt to identify appropriate types and/or levels of mitigation for specific sites, dependent upon the site's vulnerability ranking.

- Draft guidance on setting up strategic mitigation and avoidance schemes to address cumulative and in-combination impacts of recreational activities on European sites, has been developed by the Department of Communities and Local Government, Defra and Natural England and is currently awaiting ministerial approval and publication.
- The Life+ Little Tern Recovery Project is implementing intensive, targeted monitoring and management actions to tackle threats to little terns, including human disturbance. This will be achieved by managing public access and raising awareness by erecting signs at key locations, distributing interpretation materials and carrying out national, regional and local media work.

4. Priority Actions

Priority Actions informed by the gaps in evidence, guidance and mechanisms detailed in earlier sections have been developed, and are set out below. Delivery of the Priority Actions will be led by Natural England in partnership with partners and stakeholders, involving organisations such as user groups, European Marine Site Management Schemes, NGOs, Government departments and Arms Length Bodies. Natural England will follow up the offers of joint working which have been received during the development of this theme plan, and facilitate sharing of information and best practice, as part of delivery of the Priority Actions.

4.1 Priority actions required

The analysis carried out to date has found that public access disturbance is reported to be a pressure, or threat, affecting a significant number of Natura 2000 sites and features in England. Responses to the consultation on this Theme Plan have highlighted that the possible causes and impacts of disturbance is an area of active debate; and that further investigation is needed to clarify the action(s) required.

The overarching aim is to ensure that all necessary actions required to address any significant impacts on SAC/SPA features are identified and fully implemented, whether at a national, multiple site or individual site level. This must include appropriate consideration of the cumulative and in-combination effects both within a site and across multiple sites. The priority actions set out in Table 1 therefore present a first step, to address the gaps in evidence and mechanisms. This initial work will then provide a framework for more targeted actions to address pressures and threats to feature condition.

Some detailed actions directly linked to the priority actions are included in the table below. Additional actions not currently included in the priority actions below have also been put forward during consultation on the theme plan (see Annex 4). Whether, how and by whom these additional actions might be taken forward will be informed by the outcomes of the priority actions, set out in Table 1.

Table 1 Priority Actions

Action no.	Priority Action	Delivery partners	Timescale
1.	<p>Further investigate where public access related disturbance has been reported in SIPs, to develop a prioritised list of SACs and SPAs where action is required, identify any national or multiple site scale approaches that are required; and to inform a programme of further action to be taken.</p> <p>Further detailed actions for consideration, as part of delivery of the Priority Action:</p> <p>a) Clarify the nature of site specific concerns as set out in SIPs; and develop and implement appropriate management solutions as necessary to address significant disturbance effects (Natural England Area Team and National staff and partners).</p> <p>b) Develop and facilitate effective flow of information between Natural England’s Area Team and National staff to ensure consistency of reporting for disturbance-related concerns within the SIPs and inform development of strategic responses within the national action plan.</p> <p>c) Using existing national data, further investigate the main drivers associated with disturbing activities and how these might be impacting on Natural 2000 sites (e.g. national trends in recreation; housing development).</p>	Natural England	By end 2015

Action no.	Priority Action	Delivery partners	Timescale
2.	<p>Review existing evidence about the possible impacts of disturbance on sensitive features and the effectiveness of existing mechanisms. Where evidence gaps are identified, commission further work to address these. Where mechanism gaps are identified, develop new or refined mechanisms and test these in pilot projects.</p> <p>Further detailed actions for consideration, as part of delivery of the Priority Action:</p> <p>a) Develop an evidence summary for disturbance related issues, including the success of mitigation: what we know; areas that are subject to active research and debate; and what we do not yet know.</p> <p>b) Develop strategic priorities for research to fill gaps in understanding of the impacts of disturbance and the effectiveness of the range of mechanisms available to reduce disturbance. Work with partners to deliver a coordinated programme of research, to include development of recommendations for protected sites management informed by the research undertaken.</p> <p>c) Where local studies are underway, facilitate the sharing of information.</p>	Natural England, experts from other organisations as appropriate to the further work required.	2016-2018
3.	<p>Review available national guidance and support and identify how these could be improved and made more accessible to all interested parties. This review and any updates to guidance should be informed by the outcomes of the other Priority Actions and be carried out consistently with the requirements of the UK Government's Smarter Guidance initiative (see Defra's <i>Smarter Guidance and Data</i> website for more information, Defra 2015).</p> <p>Further detailed actions for consideration, as part of delivery of the Priority Action:</p> <p>a) Facilitate sharing of existing guidance and best practice, such as guidance held by byelaw-making bodies, such as Local Authorities, Inshore Fisheries and Conservation Authorities (IFCAs), Marine Management Organisation (MMO), Harbour Authorities, National Trust, Environment Agency.</p> <p>b) In discussion with partners and informed by the outcomes of other Priority Actions, explore the need for new, updated/improved or more accessible guidance, evidence and best practice advice. Consideration should be given to the following:</p> <ul style="list-style-type: none"> ■ identify a suitable accessible location to store guidance and best practice information, to promote the integration of public access and nature conservation and enable relevant information to be easily accessible by all in one location. ■ develop Apps and other technology; ■ provide advice to Public Bodies to clarify the legal framework, particularly how the various relevant legislation covering nature conservation and access/rights of way and legal rights should work together, including how Public Bodies jointly resolve conflicts of legal rights/processes; ■ publish new Natural England operational guidance on European Site, NNR and SSSI Byelaws to help Natural England staff to use this mechanism where it is appropriate; ■ provide further information to local highways authorities to clarify when and how to exercise their rights of way regulation and enforcement powers on protected sites and elsewhere, where this could result in displacement of activity onto protected sites; and ■ develop best practice guidance for plan making bodies on how to minimise recreational pressure on European Sites through spatial planning. <p>c) Identify ways of improving communication and sharing of information between partners.</p>	Natural England, relevant partners dependent on topic.	By end 2020

Annex 1. References, existing guidance and key evidence sources

Reference	Summary of content
Arkenford Ltd., 2013. <i>Watersports Participation Survey</i> . < http://www.rya.org.uk/SiteCollectionDocuments/sportsdevelopment/Watersports_survey_Market_Review_2013_Executive_Summary_.pdf >	An ongoing study which seeks to benchmark participation rates and monitor trends in watersports activity in the marine environment. This is done by repeating the research year-on-year and 2013 is the twelfth year in which this work has been conducted. The collaborative research group consists of representatives of the Royal Yachting Association, the British Marine Federation, Royal National Lifeboat Institution, Maritime & Coastguard Agency, British Canoe Union and Marine Management Organisation.
Austin, G.E., Calbrade, N.A., Mellan, H.J., Musgrove, A.J., Hearn, R.D., Stroud, D.A., Wotton, S.R. and Holt, C.A. 2014. <i>Waterbirds in the UK 2012/13: The Wetland Bird Survey</i> . BTO/RSPB/JNCC, Thetford. Viewed 16 December 2014. < http://www.bto.org/volunteer-surveys/webs/publications/webs-annual-report >	
Banks, P. and Bryant, J. (2007) <i>Four-legged friend or foe? Dog walking displaces native birds from natural areas</i> . <i>Biology Letters</i> , August 2007 (doi:10.1098/rsbl.2007.0374).	While fewer birds were seen along trails where dog walking took place, authors found “no net difference in biodiversity or abundance between areas with and without regular dog walking...suggesting that long term impacts in this area may be small.”
The British Mountaineering Council, 2015. <i>Regional Access Database</i> . https://www.thebmc.co.uk/modules/RAD/	This website lists all known climbing sites in England & Wales where there are known access or conservation issues. The database is updated daily and is also available as a free App for smartphones.
Burton N.H.K., 2007. <i>Landscape approaches to studying the effects of disturbance on waterbirds</i> . <i>Ibis</i> . 149 : (Suppl. 1), 95-101.	
Cayford, J. T. 1993. <i>Wader disturbance: a theoretical overview</i> . <i>Wader Study Group Bull.</i> 68 :3-5. < https://sora.unm.edu/sites/default/files/journals/iws/n005/p00003-p00005.pdf >	
Defra, 2011a. <i>Biodiversity 2020: A strategy for England's wildlife and ecosystem services</i> .	The Biodiversity strategy for England, which builds on the Natural Environment White Paper and sets out how England is implementing international and EU commitments.
Defra, 2011b. <i>The Natural Environment White Paper The Natural Choice: securing the value of nature</i> . London: The Stationery Office.	Outlines the government's vision for the natural environment over the next 50 years and the actions that will be taken to deliver this.
Defra, 2015. <i>Smarter Guidance and Data website</i> . http://guidanceanddata.defra.gov.uk/smarter-guidance/	
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Edwards, V. and Knight, S. (2006) <i>Understanding the psychology of walkers with dogs: new approaches to better management</i> . University of Portsmouth, Portsmouth. Available at www.hants.gov.uk/dogs	
English Nature, 2005. <i>Management of bare ground</i> . < http://publications.naturalengland.org.uk/publication/86028 >	Benefits of some recreational disturbance to management of some bare ground habitats. Being reviewed as part of Smarter Guidance (Defra, 2015)
Environment Agency, 2014. <i>Environment Agency statutory rod fishing byelaws (rules) for England</i> . https://www.gov.uk/government/collections/local-fishing-byelaws	Information about the application of byelaws.

Reference	Summary of content
European Union, 2015. http://ec.europa.eu/environment/nature/natura2000/index_en.htm	Information about what the EU is doing to protect its environment.
Evans D.M & Warrington S., 1997. The effects of recreational disturbance on wintering waterbirds on a mature gravel pit lake near London. <i>International Journal of Environmental Studies</i> Vol. 53:3.	
Fox A.D., Jones T.A., Singleton R. & Agnew A.D.Q., 1994. <i>Food supply and the effects of recreational disturbance on the abundance and distribution of wintering Pochard on a gravel pit complex in southern Britain</i> . <i>Hydrobiologia</i> Vol. 279-280:1, 253-261.	
The Green Blue, 2010, Green Blue website and resources, viewed 25 February 2015. < http://www.thegreenblue.org.uk/boat_users/wildlife/boaters_best_practice_wildlife.aspx >	The Green Blue is the joint environment programme created by the <u>British Marine Federation</u> and <u>Royal Yachting Association</u> to help boat users, boating businesses, sailing clubs and training centres to reduce their impact on coastal and inland waters.
Gill J.A., Norris K., Sutherland W.J., 2001. <i>The effects of disturbance on habitat use by black-tailed godwits Limosa limosa</i> . <i>Journal of Applied Ecology</i> 38 :846-856.	
Hale, J (2008) <i>Taking the lead: managing walkers with dogs on your site</i> . Hampshire County Council. Available at www.hants.gov.uk/dogs	Practical guide with case studies for public sector land managers on why walkers with dogs do what they do and how best to influence this.
HM Government (2011). <i>UK Marine Policy Statement</i> . London: The Stationery Office.	
Henley Centre Headlight Vision, 2005. <i>Future trends for outdoor recreation (Natural England TP1680)</i> . http://publications.naturalengland.org.uk/publication/210115	In 2005 a strategic futures consultancy firm, the Henley Centre, were commissioned to undertake an independent assessment of the main factors that would influence the future of outdoor recreation. The Henley Centre consulted widely among key organisations with an interest in the outdoors and looked at the trends that they expected would have implications for outdoor recreation between 2005 and 2015. The report includes a paper introducing the research and five discussion papers. Each of the discussion papers focuses on a different aspect of outdoor recreation.
Hill, C.P. (1975) <i>British Economic and Social History 1700-1964</i> . Edward Arnold & Co. London.	
Intergovernmental Panel on Climate Change, 2014 <i>Climate Change 2014 Synthesis Report Summary for Policymakers</i> (IPCC Fifth Assessment Synthesis Report). Viewed 22 December 2014. IPCC, Switzerland. < http://www.ipcc.ch/pdf/assessment-report/ar5/syr/SYR_AR5_SPMcorr1.pdf >	
Jenkinson, S. (2013). <i>Planning for dog ownership in new developments</i> . Hampshire County Council / East Hampshire District Council / Whitehill Bordon Eco-town / Kennel Club. www.hants.gov.uk/dogs	Explains how to anticipate the prevalence of dog ownership in new homes and how to plan mitigation for consequential access needs to minimise impacts on nearby sensitive sites.
Jenkinson, S (2015). <i>Creating positive opportunities to engage with commercial dog walkers</i> . Scottish Natural Heritage. Available from www.outdooraccess-scotland.com	Practical advice on how to influence access-taking by commercial dog walkers and how to engage them as ambassadors for responsible behaviour; based on 6 workshops with commercial dog walkers in 2013/4.
Joint Nature Conservation Committee, 2005. <i>Assemblages of Waterbirds</i> . http://jncc.defra.gov.uk/page-1421	
Joint Nature Conservation Committee, 2012 <i>The Birds Directive - Selection guidelines for Special Protection Areas</i> . Viewed 16 December 2014. JNCC, Peterborough. < http://jncc.defra.gov.uk/page-1405 >	

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Joint Nature Conservation Committee, 2013a. <i>10th Report by the United Kingdom under Article 12 on the implementation of the Directive on the conservation of wild birds (2009/147/EC) from January 2008 to December 2012</i> . JNCC, Peterborough.	General Report on the implementation of the Birds Directive, and a Bird Species Status and Trends Report containing individual assessments for all relevant bird species.
Joint Nature Conservation Committee, 2013b. <i>UK General Implementation Report Annex A of the 2013 UK Article 17 EU Habitats Directive Report</i> . JNCC, Peterborough.	The 3 rd UK Habitats Directive Report considered the conservation status of all terrestrial and marine habitats listed under Annex I of the Directive that were present within the UK during the reporting period (2007-2012).
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Liley, D., Morris, R.K.A., Cruickshanks, K., Macleod, C., Underhill-Day, J., Brereton, T. & Mitchell, J. 2012. <i>Identifying best practice in management of activities on Marine Protected Areas</i> . Footprint Ecology/Bright Angel Consultants/MARINELife. Natural England Commissioned Reports, Number 108. http://publications.naturalengland.org.uk/publication/38002	Chapter 3 on recreation includes case studies and a review of best practice management examples.
Linaker, R., 2012. <i>Recreational Disturbance at the Teesmouth and Cleveland Coast European Marine Site. Bird disturbance field work Winter 2011/2012</i> . University of York. Viewed 22 December 2014. http://www.teescoast.co.uk/wp-content/uploads/2013/02/Tees-EMS-1112-disturbance-report-FINAL-VERSION-0313.pdf	
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Marine Climate Change Impacts Partnership website, 2015. Viewed 25 February 2015. http://www.mccip.org.uk/	MCCIP synthesises broad based evidence on how climate change is affecting the UK coast and seas and its impacts on marine ecosystems, cleanliness and safety and commercial activities.
Marine Climate Change Impacts Partnership <i>Climate Change and the UK Marine Leisure Industry: Adapting to a Changing World</i> . Viewed 25 February 2015. http://www.mccip.org.uk/media/22226/interactive_csw_2014.pdf	A summary of the potential impacts of climate change on the UK Marine Leisure Industry, including helpful references for further information.

Reference	Summary of content
Marine Management Organisation, 2012. <i>Compilation of spatial data on marine recreation activities MMO Project No: 1013.</i>	The report covers national recreation activities and those in the East marine plan areas and builds on data and evidence gathered as part of the regional marine conservation zone projects. It identifies key gaps, summarises current evidence, key findings and makes some recommendations for future data gathering in the marine recreation sector.
Marine Management Organisation, 2013. <i>Compilation of spatial data on marine recreation activities MMO Project No: 1043.</i> < http://webarchive.nationalarchives.gov.uk/20140108121958/http://www.marinemanagement.org.uk/evidence/1043.htm >	Related to Marine Management Organisation, 2012.
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Marine Management Organisation, 2014b. <i>Understand Marine Conservation Byelaws.</i> https://www.gov.uk/marine-conservation-byelaws	Information about the application of byelaws.
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Natural England, 2009b. <i>Access and Nature Conservation Reconciliation: Supplementary Guidance for England (NECR013)</i> (Footprint Ecology).	This report is an update to Natural England, 2009a, using research undertaken up to 2008 and having a specific focus on coastal habitats and species. Being reviewed as part of Smarter Guidance (Defra, 2015)
Natural England, 2013a. <i>Coastal Access - Natural England's Approved Scheme, 2013 (NE446).</i> < http://publications.naturalengland.org.uk/publication/5327964912746496 >	Being reviewed as part of Smarter Guidance (Defra, 2015)
Natural England, 2013b. <i>Improvement Programme for England's Natura 2000 Sites (IPENS): Launch event report and presentations (IPENSLE01).</i> < http://publications.naturalengland.org.uk/publication/662587774881792?category=6548325943738368 >	The Improvement Programme for England's Natura 2000 Sites (IPENS), held a launch workshop with key stakeholders on 24 April 2013. The project's initial findings on the key 'issues' (i.e. pressures and threats) affecting the condition of Natura 2000 sites were shared and discussed and the project team's thinking tested.
Natural England, 2013c. <i>Natural England Standard: Strategic standards for 'why we do what we do' Access (NESTND011).</i> < http://publications.naturalengland.org.uk/publication/6460035?category=3769710 >	Natural England has a set of standards for 'why we do what we do' for each of the main areas of work to help deliver environmental outcomes. They describe the relevant legislation and Government policy, Natural England's role, and the principles that are applied to the work. Being reviewed as part of Smarter Guidance (Defra, 2015)

Reference	Summary of content
<p>Natural England, 2014. <i>Improvement Programme for England's Natura 2000 Sites (IPENS): Recreation and disturbance workshop notes (IPENSTP009)</i>. http://publications.naturalengland.org.uk/publication/5927497937977344?category=6285310547722240</p>	<p>A technical workshop was held on 27 August 2013, to discuss the recreational activities that are issues for Natura 2000 sites and mechanisms that could be put in place to address them.</p>
<p>Natural England, 2015. <i>Monitor of Engagement with the Natural Environment: 2013 to 2014</i>. http://publications.naturalengland.org.uk/publication/6579788732956672?category=47018</p>	<p>Results for the fifth year of the MENE survey which provides data on how people use the natural environment in England (most recent results). In addition to providing descriptive statistics on people's use and enjoyment of the outdoors, new analysis of the survey findings was undertaken to look deeper at several key topics such as health and wellbeing, expenditure, and the gap between valuing the natural environment, and taking action to conserve it.</p>
<p>Natural Environment and Rural Communities Act 2006. http://www.legislation.gov.uk/ukpga/2006/16/contents</p>	
<p>Office for National Statistics, 2014. <i>Population and Migration</i>. Viewed 16 December 2014.<http://www.ons.gov.uk/ons/guide-method/compendiums/compendium-of-uk-statistics/population-and-migration/index.html></p>	
<p>Owen M. 1993. <i>The UK shooting disturbance project</i>. Wader Study Group Bulletin. 68: 35-46.</p>	
<p>Portsmouth City Council, 2015. <i>Interim Solent Recreation Mitigation Strategy</i>. https://www.portsmouth.gov.uk/ext/documents-external/env-srmp-interim-mitigation-strategy.pdf</p>	<p>An interim framework to mitigate the impact on the Solent Special Protection Areas of increased visitor pressure arising from house building.</p>
<p>Prior, S., 2011. <i>Investigating the use of voluntary marine management in the protection of UK marine biodiversity</i>. Report to The RSPB, Sandy, UK. Viewed 4 January 2015 <http://www.rspb.org.uk/Images/RSPB_Voluntary_Marine_Management_2011_tcm9-291744.pdf></p>	<p>A report which draws on a range of case studies and professional experience, to identify lessons from the successes and challenges associated with voluntary management.</p>
<p>Rae, H. 2013. <i>Improvement Programme for England's Natura 2000 Sites (IPENS) Programme Scoping: identifying key issues affecting Natura 2000 sites and priorities for the IPENS project</i> (Natural England Research Reports, Number 053). Viewed 8 January 2015. http://publications.naturalengland.org.uk/publication/5682306693988352?category=7005</p>	<p>This report describes the approach taken to scoping and prioritising issues to be addressed within the Improvement Programme for England's Natura 2000 Sites (IPENS), which is a project part funded by the European Union LIFE+ fund. The objectives of programme scoping were to:</p> <ul style="list-style-type: none"> • Identify key pressures and threats to England's Natura 2000 series. • Confirm the status of mechanisms available to address these and identify gaps and blockages to progress. • Determine which risks, issues and mechanisms will be considered by the programme and the nature of the work required.
<p>Riddington, R., Hassall, M., Lane, S.J., Turner, P.A. and Walters, R., 1996. <i>The impact of disturbance on the behaviour and energy budgets of Brent Geese <i>Branta b. bernicla</i></i>. Bird Study 43(3): 269-279. http://www.ingentaconnect.com/content/tandf/bird/1996/00000043/00000003/433269></p>	
<p>Royal Yachting Association website. Viewed 25 February 2015. http://www.rya.org.uk/Pages/Home.aspx</p>	<p>Britain's national body for all forms of boating, including dinghy and yacht racing and sailing, motor and sail cruising, RIBs and sports boats, powerboat racing, windsurfing, inland cruising, narrowboats and personal watercraft. Administers the internationally recognised RYA training programme for leisure boaters. Includes good practice guidance for boat users to reduce environmental impact.</p>
<p>Solent Forum, 2015. <i>Solent Disturbance and Mitigation Project</i>. Viewed 5 January 2015. http://www.solentforum.org/forum/sub_groups/Natural_Environment_Group/Disturbance_and_Mitigation_Project/</p>	

Reference	Summary of content
Smit C.J. and Visser J.M. 1993. <i>Effects of disturbance on shorebirds: a summary of existing knowledge from the Dutch Wadden Sea and Delta area</i> . Wader Study Group Bulletin 68 : 53-58.	
Sport and Recreation Alliance, 2008. <i>Best of Both Worlds</i> . Viewed 19 November 2014. < www.bobw.co.uk >	Originally established by Natural England in partnership with the Countryside Council for Wales (CCW) and the Central Council for Physical Recreation (CCPR), the Best of Both Worlds (BoBW) is about promoting recreational use and managing our natural resources. Its primary focus is to provide recreationalists and nature conservationists with practical guidance and examples of managing a range of leisure activities on the ground, on water and in the air, to resolve any potential conflict between them, with benefits to both parties.
Sport Industry Research Centre (2008) Assessment of perceptions, behaviours and understanding of walkers with dogs in the countryside. SIRC, Sheffield. Available from www.hants.gov.uk/dogs	Complementary subsequent work to Edwards and Knight (2006).
Stillman, R.A., Cox, J., Liley, D., Ravenscroft, N., Sharp, J. and Wells, M., 2009. <i>Solent disturbance and mitigation project: Phase 1 report. Report to the Solent Forum</i> . Viewed 22 December 2014. http://www.solentforum.org/resources/pdf/natconsv/solent_disturbance_phase1.pdf	
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Tourism Alliance, 2012. <i>UK Tourism Statistics 2012</i> . http://www.tourismalliance.com/downloads/TA_327_353.pdf	
UK CEED, 2000. <i>A review of the effects of recreational interactions within UK European marine sites</i> . Countryside Council for Wales (UK Marine SACs Project). < http://www.ukmarinesac.org.uk/pdfs/recreation_report.pdf >	Includes management tools and techniques.
The UK Marine SACs Project, 2001. Viewed 5 January 2015. < http://www.ukmarinesac.org.uk/ >	General resource website for management of activities (including recreation) in UK marine SACs.
The Wash and North Norfolk Coast European Marine Site Management Scheme and the Norfolk Coast AONB, 2009. <i>Coastal Disturbance Study Interim Report on Stage #2.b April - September 2009: Launching and testing the viability of the 'Share – with care' theme</i> . < http://wnncems.co.uk/downloads/PDF/Stage2.bReportTxtFinal.pdf >	Addressing practical ways of reducing the impact of dogs on coastal wildlife.
Wetlands International, 2010. <i>Guidance on waterbird monitoring methodology: Field Protocol for waterbird counting</i> . < http://www.wetlands.org/Portals/0/Black%20Sea/Protocol%20for%20waterbird%20counting_En.pdf >	
WiSe, 2015. Viewed 5 January 2015 http://www.wisescheme.org/	Code of conduct for wildlife watching.

Reference	Summary of content
<p>York, C. and Morris, T. 2013. <i>Visitor behaviour in sensitive woodland habitats – repeat photographic survey at Boat of Garten Woods</i>. Scottish Natural Heritage Commissioned Report No. 634.</p>	<p>Detailed photographic study of behaviour change by dog walkers to evaluate the effect of interventions to reduce disturbance by increased lead use.</p>

Annex 2. Theme Plan Contributors

Name	Organisation
Alex Banks	Natural England
Emma Barton	Royal Yachting Association
Stella Baylis	Natural England
Sue Beale	Natural England
Sharron Bosley	The Wash and North Norfolk Coast European Marine Site
Rob Cameron	Natural England
Clive Chatters	Hampshire and Isle of Wight Wildlife Trust
Steve Clifton	Natural England
Christina Cork	Natural England
Bruce Cutts	Natural England
Tanya Davy	Humber Estuary European Marine Site
Mike Downey	Natural England
Allan Drewitt	Natural England
Rob Enever	Natural England
Carolyn Francis	Solent European Marine Sites
Stephen Jenkinson	The Kennel Club
Paul Johnson	Natural England
Elfyn Jones	British Mountaineering Council
Rob Keane	Natural England
Jennifer Kelly	Natural Resources Wales
John Kilner	Defra
Louisa Knights	Natural England
Ivan Lakin	Natural England
Emily Ledder	Natural England
Tony Laws	Natural England
Durwyn Liley	Footprint Ecology
Andy Mackintosh	Natural England
Jan MacIennan	Natural England
Helen MacVicker	Natural England
Stuart Masheder	Natural England
Karen McHugh	Solent Forum
Chris McMullon	Natural England
Mike Meadows	Natural England
Victoria Metheringham	Marine Management Organisation
Petronella Natrass	Countryside Access Development Officer, CCBS, Hampshire County Council
Ewan Nugent	Natural England
Charlotte Owen	The Wildlife Trusts
Joanna Ramsay	Natural England
Frances Randerson	Natural England
Susan Rendell-Read	Royal Society for the Protection of Birds
John Richardson	Land Access and Recreation Association
Richard Saunders	Natural England

Tammy Smalley	Natural England
Rebecca Smith	Natural England
Sam Somers	Natural England
Gavin Stark	Natural England
Leanne Stockdale	Marine Management Organisation
Des Sussex	Natural England
Ginny Swaile	Natural England
Carrie Temple	Royal Society for the Protection of Birds
Dave Tilbury	Land Access and Recreation Association
Andy Tully	Defra
Wilbert van Vliet	Natural England
Duncan Vaughan	Natural England
Graham Weaver	Natural England
Sue Wells	Natural England
Carolyn Worfolk	Natural England

Annex 3. Other Supporting Information

3.1 Data from Article 17 2013: SAC features recording G01 Outdoor sports and leisure activities, recreational activities as a pressure or threat

Feature	Pressure/Threat	Ranking
H1140 Mudflats and sandflats not covered by seawater at low tide	Pressure	High
H1210 Annual vegetation of drift lines	Pressure/Threat	High
H1220 Perennial vegetation of stony banks	Pressure/Threat	High
H1230 Vegetated sea cliffs of the Atlantic and Baltic coasts	Pressure/Threat	High
H2110 Embryonic shifting dunes	Pressure/Threat	High
H2120 Shifting dunes along the shoreline with <i>Ammophila arenaria</i> ('white dunes')	Pressure/Threat	High
H2130 * Fixed dunes with herbaceous vegetation ('grey dunes')	Pressure/Threat	High
H2150 * Atlantic decalcified fixed dunes (<i>Calluno-Ulicetea</i>)	Pressure/Threat	High
H2170 Dunes with <i>Salix repens</i> ssp. <i>argentea</i> (<i>Salicion arenariae</i>)	Pressure	High
H3130 Oligotrophic to mesotrophic standing waters with vegetation of the <i>Littorelletea uniflorae</i>	Pressure/Threat	High
H3140 Hard oligo-mesotrophic waters with benthic vegetation of <i>Chara</i> spp.	Pressure/Threat	High
H3150 Natural eutrophic lakes with Magnopotamion or Hydrocharition-type vegetation	Pressure/Threat	High
H4060 Alpine and Boreal heaths	Pressure/Threat	High
H4080 Sub-Arctic <i>Salix</i> spp. Scrub	Pressure/Threat	High
H7130 * Blanket bogs	Pressure/Threat	High
H8210 Calcareous rocky slopes with chasmophytic vegetation	Pressure/Threat	High
H8220 Siliceous rocky slopes with chasmophytic vegetation	Pressure/Threat	High
H8330 Submerged or partially submerged sea caves	Pressure/Threat	High
S1831 Floating water-plantain <i>Luronium natans</i>	Pressure/Threat	High
H2190 Humid dune slacks	Pressure/Threat	Medium
H3160 Natural dystrophic lakes and ponds	Pressure/Threat	Medium
H6150 Siliceous alpine and boreal grasslands	Pressure/Threat	Medium
H6230 * Species-rich <i>Nardus</i> grassland, on siliceous substrates in mountain areas (and submountain	Pressure/Threat	Medium
H6430 Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels	Pressure/Threat	Medium
H7140 Transition mires and quaking bogs	Pressure/Threat	Medium
H7150 Depressions on peat substrates of the Rhynchosporion	Pressure/Threat	Medium
H7220 * Petrifying springs with tufa formation (<i>Cratoneurion</i>)	Pressure/Threat	Medium
H7230 Alkaline fens	Pressure/Threat	Medium
H8110 Siliceous scree of the montane to snow levels (<i>Androsacetalia alpinae</i> and <i>Galeopsietalia</i>	Pressure/Threat	Medium
H8120 Calcareous and calcshist screes of the montane to alpine levels (<i>Thlaspietea rotundifolii</i>)	Pressure/Threat	Medium
H8310 Caves not open to the public	Pressure/Threat	Medium
S1390 * Western rustwort <i>Marsipella profunda</i>	Pressure/Threat	Medium
S4035 Fisher's estuarine moth	Pressure/Threat	Medium
S1029 Freshwater pearl mussel <i>Margaritifera margaritifera</i>	Pressure/Threat	Low
S1303 Lesser horseshoe bat <i>Rhinolophus hipposideros</i>	Pressure/Threat	Low
S1304 Greater horseshoe bat <i>Rhinolophus ferrumequinum</i>	Pressure/Threat	Low
H3110 Oligotrophic waters containing very few minerals of sandy plains (<i>Littorelletalia uniflorae</i>)	Pressure/Threat	Not given

Note: * indicates Priority feature

3.2 Data from Article 12 (2008-2013): Human intrusions and disturbances / outdoor sports and leisure activities, recreational activities affecting SPA birds

Species (Breeding [B]/non-breeding [NB])	Pressure/Threat	Pressure/Threat name	Impact
Dartford Warbler (B)	Pressure and Threat	Human intrusions and disturbances / outdoor sports and leisure activities, recreational activities	High
Little Tern (B)	Pressure and Threat	Human intrusions and disturbances / outdoor sports and leisure activities, recreational activities / walking, horse riding and non-motorised vehicles	High
Nightjar (B)	Threat	Human intrusions and disturbances / outdoor sports and leisure activities, recreational activities / walking, horse riding and non-motorised vehicles	High
Ringed Plover (B)	Pressure and Threat	Human intrusions and disturbances / outdoor sports and leisure activities, recreational activities / walking, horse riding and non-motorised vehicles	High
Bar-tailed Godwit (NB)	Threat	Human intrusions and disturbances / outdoor sports and leisure activities, recreational activities	Medium
Curlew (B)	Pressure and Threat	Human intrusions and disturbances / outdoor sports and leisure activities, recreational activities	Medium
Curlew (NB)	Pressure and Threat	Human intrusions and disturbances / outdoor sports and leisure activities, recreational activities	Medium
Little Tern (B)	Pressure and Threat	Human intrusions and disturbances / outdoor sports and leisure activities, recreational activities / nautical sports	Medium
Little Tern (B)	Pressure and Threat	Human intrusions and disturbances / outdoor sports and leisure activities, recreational activities / motorised vehicles / off-road motorised vehicles	Medium
Red-throated Diver (NB)	Threat	Human intrusions and disturbances / outdoor sports and leisure activities, recreational activities / nautical sports	Medium
Roseate Tern (B)	Pressure	Human intrusions and disturbances / outdoor sports and leisure activities, recreational activities / nautical sports	Medium
Stone Curlew (B)	Pressure and Threat	Human intrusions and disturbances / outdoor sports and leisure activities, recreational activities	Medium
Woodlark (B)	Threat	Human intrusions and disturbances / outdoor sports and leisure activities, recreational activities / walking, horse riding and non-motorised vehicles	Medium
Avocet (B)	Threat	Human intrusions and disturbances / outdoor sports and leisure activities, recreational activities	Low
Avocet (NB)	Threat	Human intrusions and disturbances / outdoor sports and leisure activities, recreational activities	Low
Bean Goose (NB)	Threat	Human intrusions and disturbances / sport and leisure structures / wildlife watching	Low
Dark-bellied Brent Geese (NB)	Threat	Human intrusions and disturbances / outdoor sports and leisure activities, recreational activities	Low
Dunlin (race alpina) (NB)	Threat	Human intrusions and disturbances / outdoor sports and leisure activities, recreational activities	Low
Golden Plover (B)	Pressure and Threat	Human intrusions and disturbances / outdoor sports and leisure activities, recreational activities	Low
Great Crested Grebe (B)	Threat	Human intrusions and disturbances / outdoor sports and leisure activities, recreational activities / nautical sports	Low
Grey Plover (NB)	Pressure and Threat	Human intrusions and disturbances / outdoor sports and leisure activities, recreational activities	Low
Herring Gull (B)	Threat	Human intrusions and disturbances / outdoor sports and leisure activities, recreational activities	Low
Knot (NB)	Threat	Human intrusions and disturbances / outdoor sports and leisure activities, recreational activities	Low
Lesser Black-backed Gull (B)	Pressure and Threat	Human intrusions and disturbances / outdoor sports and leisure activities, recreational activities	Low
Mediterranean Gull (B)	Threat	Human intrusions and disturbances / outdoor sports and leisure activities, recreational activities	Low
Peregrine (B)	Pressure and Threat	Human intrusions and disturbances / outdoor sports and leisure activities, recreational activities	Low

Species (Breeding [B]/non-breeding [NB])	Pressure/Threat	Pressure/Threat name	Impact
Ringed Plover (B)	Pressure and Threat	Human intrusions and disturbances / outdoor sports and leisure activities, recreational activities / motorised vehicles / off-road motorised vehicles	Low
Sanderling (NB)	Threat	Human intrusions and disturbances / outdoor sports and leisure activities, recreational activities	Low
Shelduck (NB)	Threat	Human intrusions and disturbances / outdoor sports and leisure activities, recreational activities	Low
Shoveler (B)	Pressure and Threat	Human intrusions and disturbances / outdoor sports and leisure activities, recreational activities	Low
Whimbrel (NB-Passage)	Threat	Human intrusions and disturbances / outdoor sports and leisure activities, recreational activities	Low

Annex 4. Ideas for Further Action

The following suggestions for further action have been put forward during the development of this Theme Plan. These should be reviewed, considered and taken forward by appropriate stakeholders as necessary, as part of the implementation of the Priority Actions. Actions relating to guidance and best practice should be considered with due regard to the requirements of the UK Government's Smarter Guidance initiative (see Defra's *Smarter Guidance and Data* website for more information, Defra 2015).

Improve understanding of the effects of public access on European features

In order to improve the understanding of recreational impacts and the evidence base for decision-making, specific existing internal/draft guidance and the outcomes of research already undertaken could be published, including:

- Open Access National Monitoring Programme between 2006 and 2008 to understand the effect of the new public open access rights that commenced in 2004 and 2005 under Part 1 of the Countryside and Rights of Way Act (CRoW) 2000.
- Natural England's Sensitive Features Assessment, which has been piloted on NNRs, but needs to be published to enable it to be applied more widely to existing recreational uses as well as to proposed changes to uses (as it is presently).
- Updated Natural England guidance (which is currently unavailable pending review): Access Assessment Process: Procedure Overview (TIN073), Access Assessment Process: Initial Review (TIN074) and Access Assessment Process: Detailed Assessment (TIN075)

Undertake further studies to gain a deeper understanding of the effects of particular activities on site features and to develop recommendations for actions to address these effects. These studies could include:

- Scope a review of the relevant published literature, to better understand the effects of recreational uses on sensitive features (both marine and terrestrial), with a view to identifying priority areas of concern for further review. Similar work to that undertaken by Liley *et al.* (2010). Include habituation of waterbirds to disturbance, for example with regard to the potential effects of the England Coastal Path. Map the outcomes of reviews to show the seasonal vulnerability of different areas of England, as recommended for Wales by Liley *et al.* (2010).
- A specific study to understand refuges in the SPA network.
- A recreational mapping project at The Wash and North Norfolk Coast EMS, to:
 - obtain a clear understanding of the key recreational activities within the site
 - to determine the scale and distribution of key activities and their interaction with conservation features
 - to ascertain actual and perceived negative impacts of activities within the site in terms of the environment, community and human safety and identify conflicts between users and user groups
 - to identify the greatest pressures on the resource including impacts on conservation features/interests
 - to provide an indication of likely future trends
 - to identify opportunities for recreation e.g. zoning

Update good practice advice for site managers

Update Countryside and Rights of Way Act, 2000 Part I: Access to the Countryside (NECR012) (Natural England, 2009a) and Access and Nature Conservation Reconciliation: Supplementary Guidance for England (NECR013) (Natural England, 2009b) to reflect new evidence which has become available since last publication in 2008.

Complete piloting and publish Natural England's draft Standards for On-site Access and Engagement Monitoring and associated methodologies. Bring into use on SACs and SPAs where public access/disturbance has been identified as an "issue" on the SIP.

Develop and publish an Access and Biodiversity good practice guide, including development of Apps and other technology and a mechanisms flow chart to guide the sequential use of the available mechanisms, by both type of use and feature affected. Include a decision tree to help site managers to resolve conflicts, using an existing good practice example. Develop in partnership with organisations including The Wash and North Norfolk Coast EMS.

Work with the Royal Yachting Association and other appropriate partners to review effects relating to moorings, investigate the need for new mechanisms to address any impacts and develop these as needed, and promotion of alternative technology to minimise any impacts.

Develop guidance on influencing user behaviours.

Legal and Policy advice/influencing

Sign off and publish existing draft guidance on setting up strategic mitigation and avoidance schemes to address cumulative and in-combination effects of recreational activities on European sites.

Annex 5. List of IPENS Theme Plans

IPENS has produced several thematic action plans or 'Theme Plans', some of which relate to issues discussed in this Theme Plan. The full list of Theme Plans can be found below:

Theme plan	Weblink
Atmospheric nitrogen	http://publications.naturalengland.org.uk/publication/6140185886588928?category=5605910663659520
Climate change	http://publications.naturalengland.org.uk/publication/4954594591375360?category=5605910663659520
Diffuse water pollution	http://publications.naturalengland.org.uk/publication/5848526737113088?category=5605910663659520
Grazing	http://publications.naturalengland.org.uk/publication/4839898496368640?category=5605910663659520
Habitat fragmentation	http://publications.naturalengland.org.uk/publication/5004101806981120?category=5605910663659520
Hydrological functioning	http://publications.naturalengland.org.uk/publication/6400975361277952?category=5605910663659520
Inappropriate coastal management	http://publications.naturalengland.org.uk/publication/6371629661683712?category=5605910663659520
Invasive species	http://publications.naturalengland.org.uk/publication/6130001713823744?category=5605910663659520
Lake restoration	http://publications.naturalengland.org.uk/publication/5583022327857152?category=5605910663659520
Public access and disturbance	http://publications.naturalengland.org.uk/publication/6621454219083776?category=5605910663659520
River restoration	http://publications.naturalengland.org.uk/publication/5478339747774464?category=5605910663659520

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