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Habitats Regulations Assessment
Recreational Disturbance Avoidance and
Mitigation Strategy for Ipswich Borough,
Babergh District, Mid Suffolk District and
East Suffolk Councils – Technical Report

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Recreational Disturbance Avoidance & Mitigation Strategy for
Ipswich Borough, Babergh District, Mid Suffolk District and
East Suffolk Councils



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We have drawn some of the content of this strategy from the results of a workshop held in November 2016 in Ipswich and attended by people from a wide range of organisations. We are grateful to all who attended for their contribution. Additional information was also received via a questionnaire and a consultation circulated to workshop attendees, and our thanks to the respondents who provided additional thoughts and information. We offer thanks to Mick Wright, who has provided his personal accounts and experiences from over 50 years of wardening, surveying and volunteering within the Strategy area.

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Summary

The Habitats Regulations Assessment Recreational Avoidance and Mitigation Strategy (HRA RAM Strategy), hereafter referred to as 'the Strategy' is a means by which sustainable housing growth can be delivered in Ipswich Borough, Babergh District, Mid Suffolk District and East Suffolk Councils, facilitating development whilst at the same time adequately protecting European wildlife sites from harm that could otherwise potentially occur because of increased recreation pressure arising from the new housing growth.

Assessment at the plan level does however pose difficulties for the competent authority, because there is often a lack of detail in terms of the projects that the plan is supporting or promoting, and consequently the extent to which a European site would be affected. Furthermore, the absence of detail can make it difficult to design suitable mitigation. However, collaborative work between Natural England as the statutory nature conservation body and Local planning authorities over recent years has led to innovative solutions to protect European sites whilst still enabling sustainable development. Evidence gathering is critical to the success of approaches being developed, and local strategies are drawing on the growing examples of best practice across the country, and the ecological and social evidence being gathered.

This Technical Report provides clear parameters for a mechanism by which pressure from increased recreation can be avoided and mitigated for, thus enabling rather than stalling the progression of planned growth within Local Plans. This Technical Report includes a range of measures that are tested against available evidence, reflect best practice elsewhere, are the most optimal approaches for individual site needs and are informed by stakeholder input.

European site mitigation strategies should be based on evidence and be precautionary where uncertainties remain. They should be solutions focussed, seeking to find robust means of mitigating for impacts to allow development to proceed, incorporating such mitigation at the plan level wherever possible so that those requirements are clear to developers, and are consistently applied. This Strategy has therefore been developed through evidence, analysis, stakeholder engagement and expert opinion. It presents recommendations and tools that will be used by development management planners in determining planning applications, by developers to inform planning proposals, and by those managing European sites to ensure a co-ordinated approach to access management.

As competent authorities under the Habitats Regulations, the Local planning authorities need to ensure that plans and projects under their jurisdiction do not lead to adverse effects on the integrity of European sites. The authorities have commissioned previous HRA work in relation to their spatial planning documents. The plan level HRAs identified risks to European sites as a result of increased housing, which could lead to additional recreation pressure on the European sites. This Strategy therefore builds on the initial assessment work undertaken for the Local Plans, and the interim approach to mitigating for potential impacts through locally focussed individual projects. It is now recognised that a co-ordinated and consistent approach to delivering the measures at a strategic level is required. The measures promoted within this Strategy are a combination of those that avoid effects and those which mitigate for effects.

Measures applied for European site protection through development should be those that are essential for planning permission to be granted, relevant to the planning permission being given, provide certainty that development can proceed without adverse effects on the European sites, proportionate to the potential impact that may be generated, evidence based, and cost effective in

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terms of management, collection, fund-holding, distribution and accounting. Requirements should be fairly and reasonably related in scale and kind to the development, as required by the National Planning Policy Framework. A strategy should be implementable with a good degree of certainty that the required measures can be delivered and robust enough to give certainty that European site interest will be protected.

A Strategy does not need to have a Technical Report or SPD to be in place to enable delivery, rather these can be developed to assist with delivery. The need for avoidance and mitigation delivery is set out in plan level HRAs and the authorities have until now had regard for this where required at the development project level through project level HRAs and securing mitigation on a case by case basis, and then developing an interim approach until the further development of the Strategy at a strategic level across all of the Local planning authorities.

Natural England has provided interim advice on developing a strategic approach, and has advised that in addition to mitigation for recreational disturbance effects on designated sites, green infrastructure at the development site may also be required, depending on the size and location of the development. Natural England is currently preparing a local guidance note on this, which will inform the approach taken by the Local planning authorities in securing additional green infrastructure through development.

This Technical Report seeks to meet these principles and provides a set of mitigation measures that are locally relevant whilst adhering to national good practice. The Strategy proposes the following measures, to be primarily funded via developer contributions as part of planning permissions given for residential development; a delivery officer, wardens, and audit of access points, new signs and interpretation, codes of conduct packs, an audit of car parking, several dog related measures and a range of targeted projects for the longer term. It is also recognised that in addition to these measures that are focussed on the sites, large scale developments should also seek to incorporate good practice principles in the delivery of green infrastructure that provides viable alternatives to the recreation experience at the sites.

Zones of influence are established in response to evidence to provide an indication of the geographical extent to which recreation pressure may be relevant for each European site, i.e. the geographical zone around each European site, within which new housing may pose a risk in terms of additional recreation pressure. The total cost of delivering measures necessary to prevent adverse effects on the European sites has been estimated as approximately £3.7 million. Implementation of the measures to protect European sites will predominantly be through developer contributions, applied to planned growth coming forward. Other mechanisms may be considered as the Strategy is reviewed in future. The zones of influence are used to determine the contribution that needs to be made for each new home being built. The tariff as currently calculated is £121.89 per dwelling for zone A and £321.22 per dwelling for zone B.

This Technical Report recommends a package of avoidance and mitigation measures for the Strategy that can be summarised as follows under six key headings:

Staff resources

- A DELIVERY OFFICER: a dedicated post is required to initiate the elements of the Strategy, manage the initial delivery of the mitigation and ensure the necessary procedures, reporting and monitoring is in place.
- A TEAM OF WARDENS/RANGERS: a small, mobile team of wardens is required to provide an on-site presence, talking to visitors, showing people

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birds and wildlife, helping with the delivery of other elements of the Strategy and undertaking monitoring.

- DOG PROJECT STAFFING: as discussed for the Dog Project below

Signage, Interpretation and awareness raising

- AN AUDIT OF ACCESS POINTS: a review of access locations, current signage and interpretation across each European site.
- NEW SIGNS AND INTERPRETATION: Branding and installation.
- CODES OF CONDUCT PACK: This would provide clear general guidance and would cover water sports and shore based activities (including dog walking).

Car parking

- AN AUDIT OF CAR PARKING: a review of parking in relation to access points, both formal and informal.

Dog related measures

- A SUFFOLK COAST AND HEATHS DOG PROJECT: a dog project to engage with dog walkers, promoting sites for dog walking, providing information on dog walking on the heaths and coast, highlighting issues at sites and ensuring positive engagement with dog walkers. This project would include a member of staff on a part time basis to initially set up the project and establish the necessary promotion, website and liaison with local dog walkers.

Site specific projects and longer-term measures

- TARGETED PROJECTS: In line with the reviews and close working with user groups set out above, a series of site specific projects would then be implemented relating to both shore based and water-based access. These would include (but not necessarily be limited to) the following projects-
- PATHS: path re-routing where feasible, creation of new paths.
- DOG WALKING LOCATIONS: on high risk areas confining dogs to on lead only or excluding dogs, combined with the promotion of high quality dedicated areas for dog walking in other locations.
- WATERSPORTS: measures such as marking of dedicated water sport zones and codes of conduct with maps.
- CAR PARKING: changes to car parks (improving, reducing and/or expanding in specific locations) and changes to charging.
- RESTRICTIONS: for example, bye laws and Public Space Protection Orders, and other restrictions where required.
- FACT FINDING STUDY: a targeted research project for Minsmere-Walberswick to establish the measures necessary or not necessary to protect the peripheral areas outside the RSPB reserve, focussing on access management staff interviews and on the ground fact finding.
- INFRASTRUCTURE: Fencing for Little Tern nesting sites every year.
- NEW VISITOR SURVEY WORK: A new single survey of visitors designed to fill evidence gaps across the European sites and the Local planning authority areas. This would then inform future strategy review. This would then be supplemented in future by further targeted interviews to check that mitigation measures are working adequately.
- MONITORING AND DATA GATHERING: Bird, vegetation and future visitor monitoring

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In accordance with the plan level HRAs for the Local planning authorities, the Strategy is a mechanism to deliver mitigation for the residential development set out in the Local Plans. This must therefore include all net increases of one dwelling or more, and must include all residential dwelling types. This would therefore include houses, flats, gypsy and traveller pitches, student accommodation, warden controlled accommodation and residential homes, for example.

This report makes recommendations for determining the most optimal approach to the governance of Strategy delivery and hosting of staff, and advises that an Executive Group should be established to provide the necessary authority and decision making.

There is a clear need to dovetail the Strategy in to existing very positive initiatives that are currently in place. The Strategy needs to fill access management gaps, enhance existing work and ensure that new measures do not conflict with current projects. Stakeholder engagement is therefore a critical part of Strategy development and implementation, and it is recommended that a Stakeholder Group is also established as a forum for ideas generation.

Strategy monitoring and review is essential for the successful future delivery of the Strategy and recommendations have therefore been made for including this as part of the suite of measures to be funded. There are some additional evidence gaps that the Delivery Officer must consider in terms of future funding priorities or alternative means of evidence gathering. The future of the Strategy needs to be informed by the changes afoot in relation to planning service delivery, and a review of the Strategy within 18 months of its finalisation is therefore recommended.

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Part 1

Background evidence and analysis

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1. The Purpose and Objectives of the Strategy

Explaining the Strategy

- 1.1 This document is the Technical Report that informs the Suffolk Coast Habitats Regulations Assessment Recreational Disturbance Avoidance and Mitigation Strategy, which is simplified to the 'Strategy' throughout this report. The preparation of the Strategy has evolved over time, and it should be noted that those who are referring to the Strategy regularly have adopted the term 'HRA RAMS' or 'RAMS' as an abbreviation.
- 1.2 The Strategy is a means by which sustainable housing growth can be delivered in Ipswich Borough, Babergh District, Mid Suffolk District and East Suffolk Councils, facilitating development whilst at the same time adequately protecting Suffolk's coastal, estuarine and heathland European wildlife sites from harm that could otherwise potentially occur because of increased recreation pressure arising from new housing growth.

The Strategy sets clear parameters, providing a mechanism by which pressure from recreation can be avoided and mitigated for, thus enabling rather than stalling the progression of planned growth within Local Plans.

The Strategy is forward looking, with a long-term approach that is adaptable over time, with regular review in timely response to monitoring.

- 1.3 The need for the Strategy was established at the adoption of the Local Plans for Ipswich Borough, Babergh District and Suffolk Coastal District Councils. When evidence gathering commenced, and the extent and geographical origins of potential recreation pressure became apparent, Natural England advised that both Mid Suffolk and Waveney Districts should also recognise the potential recreation impacts in their spatial planning and development management functions and join the strategic approach. The Strategy is being referred to in emerging Local Plan reviews and supporting Habitats Regulations Assessments (HRAs).
- 1.4 In response to the identification of a need for the Strategy, and the current references to the Strategy within plan level HRAs, the Local planning authorities have already been implementing measures to avoid and mitigate for recreation pressure arising from new growth, following the recommendations of the plan level HRAs on a development by development basis. The Strategy has now progressed to a coordinated approach for the Local planning authorities at a strategic level.
- 1.5 The strategic approach to delivering the Strategy is explained within and justified by this Technical Report and is necessarily comprehensive and detailed. It provides background, evidence, technical explanations and justifications.

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- 1.6 This Technical Report has been prepared by Footprint Ecology, commissioned by the Local planning authorities. Representatives from each of the authorities have provided a Steering Group for the preparation of this technical report. This report has been developed through interrogation of evidence, detailed analysis, stakeholder engagement; such as with local nature conservation organisations and partnerships, and through expert opinion; such as that of Natural England.

Taking forward the Strategy objectives

- 1.7 The objectives of the Strategy relate to the delivery of avoidance and mitigation measures in accordance with the need for the Strategy identified in the Local Plan HRAs. This Technical Report provides objectives in terms of background and need, establishing what mitigation measures are required and where, when and how they could be delivered.

- 1.8 The objectives of this Technical Report are:

- To build on the interim approach taken by the Local planning authorities to avoid and mitigate for recreation effects arising from new residential growth to develop a strategic approach across the relevant zones.
- To provide a mechanism that effectively meets the requirements of the legislation and the high-level recommendations of the Local Plan HRAs.
- To provide a justified and appropriate suite of avoidance and mitigation measures that can be implemented by the locally available administrative bodies and wider stakeholders and organisations involved in site/access management.
- To secure an approach that delivers timely implementation alongside growth, so that mitigation keeps pace with housing growth.
- To provide a means by which the need for individual project level HRAs is streamlined, thus preventing delays at project determination.
- To direct avoidance and mitigation measures to the locations where increased recreation would otherwise pose risks to European site interest, dovetailing the measures within existing access management approaches in a way that compliments and enhances existing measures, rather than conflicting with them.
- To recommend suitable approaches for recording progression of the Strategy to ensure that it is auditable in terms of a clear connection to developments, ensuring adequate implementation of measures and that the Strategy is fairly applied in proportion with the potential risk to European sites.
- To provide calculations of costs for avoidance and mitigation measures to identify a per dwelling contribution, which may be reviewed and refined once the Strategy is embedded and resourced with staff.
- To provide a framework for continued monitoring and review of the Strategy, to make the most of new information to inform planning documents and ensure that the Strategy is adaptable in light of future requirements.

- 1.9 Section 11 makes recommendations for future review. Administration of the Strategy by the local authorities and/or identified partnerships should itself be reviewed over time

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to ensure that Strategy delivery is effective and timely, but also cost-effective. This should not compromise the Strategy or its ability to fully deliver the necessary avoidance and mitigation measures.

What the Strategy does not cover

- 1.10 The Strategy has been prepared to specifically resolve the need to avoid and mitigate for additional recreation pressure on estuary, coastal and heathland European sites that might otherwise result from housing growth in Ipswich Borough, Mid Suffolk District, East Suffolk and Babergh District. It does not currently provide a strategic approach for other local authority areas that may need to avoid and mitigate for additional recreation pressure on the same sites.
- 1.11 The Strategy does not cover additional potential effects that may occur because of residential development, such as changes to air and water quality and water resources. The Strategy also does not cover potential effects arising from non-residential development, employment growth or infrastructure improvements.
- 1.12 Adherence to the Strategy ensures that recreation pressure from new residential growth is adequately resolved in accordance with the Habitats Regulations, but further assessment may be required to understand the extent of other, non-recreation impacts and the mitigation that may be required for such impacts. Project level HRAs will still be required. The Strategy streamlines these HRAs to reduce the project level burden but does not negate the need for a project level record of compliance with the legislation.
- 1.13 Other projects that may cause recreational disturbance will need to undertake their own HRAs and provide avoidance and mitigation measures accordingly. Such projects should ideally be closely aligned with the Strategy, in order to ensure that measures are complementary and not conflicting.
- 1.14 Implementation of the measures to protect European sites will predominantly be through developer contributions, applied to planned growth coming forward. Where SANGs are required, these will form part of a development proposal. Other mechanisms may be considered as the Strategy is reviewed in future. Contribution requirements cannot be retrospectively applied to existing full planning consents. These will have previously been considered on a case by case basis, and mitigation needs identified and secured where necessary at the project level.
- 1.15 The Strategy does not provide advice for individual developers who do not wish to adhere to the Strategy in order to demonstrate that their project is compliant with the Habitats Regulations. The Strategy provides a means by which developers can demonstrate compliance, but it is not mandatory. If a developer chooses to present a proposal with individual measures to avoid and mitigate for recreation pressure, they will need to provide enough evidence to enable the relevant Local planning authority to conclude that adverse effects on European site integrity have been prevented.

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Structure of this technical report

1.16 This Technical Report is divided into three main parts:

Part 1 - Background, evidence and analysis

Part 2 - Appraisal of mitigation options

Part 3 – Strategic delivery of the Strategy.

1.17 This report can be read in full to gain an understanding of the Strategy as a whole, or particular areas can be referred to for specific requirements. Each section is marked with a page tab to enable navigation through the document.

1.18 Development Management officers will apply the Strategy requirements in their consideration of development proposals, and Part 3, Strategic delivery of the Strategy is therefore most relevant. However, an understanding of the earlier two sections will be beneficial in applying the third section relating to Strategy delivery.

Part 1 - Background evidence and analysis

1.19 Sections 2 to 6 of this Technical Report provide the background and context for the Strategy, and importantly the evidence and analysis that underpin and justify the approach taken to mitigate for recreation pressure.

- Background and context – the evolution of plan level HRA work and the emerging need for the Strategy – Section 2
- Evidence relating to European sites – a review of European sites and the impact pathways, including consideration of information from elsewhere that is applicable to the local area, and that which has been derived locally – Section 3
- Assessing current and future housing – Section 4
- Establishing which European sites are relevant in light of information gathered – Section 5
- Assessing data to determine the zones within which development poses a risk – Section 6

Part 2 - Appraisal of mitigation options

1.20 Sections 7 to 8 of this report provide a discussion on avoidance and mitigation options, and how evidence and stakeholder discussion has been used to narrow down the options to those that are most applicable to the requirements for the European sites in question.

- Avoidance and mitigation options - Section 7
- Recommended avoidance and mitigation measures – Section 8

Part 3 - Strategy delivery

1.21 Sections 9, 10 and 11 of this report provide the recommendations for how to deliver the Strategy, particularly focusing on immediate priorities and the structure of a developer contribution tariff in light of costings allocated to the avoidance and mitigation measures.

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- Implementation - Section 9
- Monitoring and review – Section 10
- Further considerations – Section 11

This Strategy Technical Report has been developed over a period of time within which Waveney District Council and Suffolk Coastal District Council merged to form East Suffolk Council from the 1st April 2019. Both local planning authorities had prepared Local Plans that were ready for adoption at the time of the merger. The individual Local Plans are therefore retained to inform development management decisions in the respective geographical areas until such time that a new East Suffolk Local Plan is prepared.

Housing figures used within this Technical Report originate from the individual Local planning authorities and their respective plans, which remain in place. For these reasons, where the maps throughout this report show local planning authority boundaries, a dotted line is included to indicate the geographical areas of the Waveney and Suffolk Coastal Local Plans.

The current planning policy situation and need for updated maps should be reviewed when the Strategy is reviewed.

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2. Introduction and Background

Context

- 2.1 The coast, heaths and estuaries of Suffolk are internationally recognised wildlife assets. These habitats and the species they hold are protected by UK and European legislation and the international Ramsar Convention. Their management is undertaken by a number of public bodies and wildlife organisations, enabling their stunning wildlife to be enjoyed by local residents and visiting tourists. Allowing recreation at these sites has numerous benefits; raising awareness, bringing revenue and improving health and wellbeing. Recreation can however bring pressure to sensitive wildlife features and if not managed appropriately, can result in habitat deterioration and population declines. Intensive recreation pressure can cause fragmentation of habitats and isolate populations of the species for which the sites are designated, including a number of internationally important wildfowl and waders. European site interest features are described in Section 3 of this Strategy.
- 2.2 New residential growth brings new residents to the local area, and if those residents use the European sites for recreation, which evidence suggests, this then increases the pressure on European sites as a consequence. Assessing, avoiding and managing recreation pressure is therefore an important part of planning for growth. This Strategy builds upon initial work to assess, avoid and manage the risks that residential growth poses for internationally important wildlife sites, providing a collaborative and strategic way forward through the Local Plan period.
- 2.3 This Technical Report seeks to predict the level and nature of recreation pressure that may arise as a result of growth, and the mechanisms to avoid or mitigate for the recreation pressure, in order to ensure that recreation does not lead to adverse effects on the integrity of the sites. The Strategy is about embedding nature conservation within sustainable development, so that planning for growth and planning for the long-term maintenance of wildlife assets are fully integrated.
- 2.4 The wildlife sites are protected by the Conservation of Habitats and Species Regulations 2017, as amended, which are normally referred to as the Habitats Regulations. The Habitats Regulations transpose the requirements of European Directives; the Habitats Directive 1992 and the Wild Birds Directive 2009. Additionally, the UK is a signatory on the international Ramsar Convention, which seeks to conserve wetlands of international importance. The UK government has made a policy commitment to treating Ramsar sites as if they are European sites, in terms of the legislative protection and assessment processes.¹ Collectively, the sites designated in accordance with the European Directives and the sites listed under the Ramsar Convention are normally referred to as 'European sites.'

¹ In accordance with Paragraph 176 of the National Planning Policy Framework 2018, which is national planning policy produced by the Department for Communities and Local Government.

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The need for a Strategy

- 2.5 The Habitats Regulations set out the processes and requirements in relation to selecting, designating, restoring and maintaining European sites. They also stipulate a process that public bodies must apply when they are proposing or approving plans or projects that pose a risk to European sites. Habitats Regulations Assessment (HRA) is a step by step process, undertaken in order to determine whether a plan or project can proceed without adversely affecting any European wildlife site. HRA is a legal requirement under the Habitats Regulations and the parent European Directives.
- 2.6 HRA is a process undertaken by a public body, referred to as a competent authority in the legislation, assisted where required or necessary by Natural England as the statutory nature conservation body. A competent authority is any public body or individual holding public office. The local planning authorities who are progressing the Strategy are competent authorities, and the need for a Strategy had been identified as a result of the HRA of the Local Plans of Ipswich Borough Council, Babergh District Council and Suffolk Coastal District Council, and subsequently by the currently emerging HRA work and Natural England's advice in relation to Waveney and Mid Suffolk District Councils.
- 2.7 An issue for nature conservation in England is how to accommodate increasing demand for new homes and other development without compromising the integrity of protected wildlife sites. There is now a strong body of evidence showing how increasing levels of development, even when well outside the boundary of protected wildlife sites, can have negative impacts on the sites and their wildlife interest. The issues are particularly acute in southern England, where work on heathlands (Mallord 2005; Underhill-Day 2005; Liley & Clarke 2006; Clarke, Sharp & Liley 2008; Sharp *et al.* 2008; Clarke & Liley 2013; Clarke *et al.* 2013) and coastal sites (Saunders *et al.* 2000; Randall 2004; Liley & Sutherland 2007; Clarke, Sharp & Liley 2008; Liley 2008; Stillman *et al.* 2009) demonstrates links between housing, development and nature conservation impacts.
- 2.8 The legislation requires competent authorities to consider potential effects at both the plan and project level, and, *inter alia*, a plan can set the direction for projects, can set in place an approach to projects that could include inter-reliance, and could give weight to one particular project over others. HRA at the plan level is therefore essential to make sure that the plan does not set in place a framework for the progression of projects and activities that could lead to adverse effects on European sites, and yet to retract on the framework in place could have considerable implications for plan/framework led sectors such as planning.
- 2.9 Assessment at the plan level does however pose difficulties for the competent authority, because there is often a lack of detail in terms of the projects that the plan is supporting or promoting, and consequently the extent to which a European site would be affected. Furthermore, the absence of detail can make it difficult to design suitable mitigation. However, collaborative work between Natural England and Local planning authorities over recent years has led to innovative solutions to protect European sites

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whilst still enabling sustainable development. Evidence gathering is critical to the success of approaches being developed, and local strategies are drawing on the growing examples of best practice across the country, and the ecological and social evidence being gathered.

- 2.10 The nature conservation impacts of development are varied (e.g. Underhill-Day 2005). One particularly difficult and challenging impact relates to the use of sites to meet recreational needs, and the resultant disturbance to waterfowl on coastal sites. Disturbance has been identified by Natural England as a generic issue across many European Marine Sites (see Coyle & Wiggins 2010), and can be an issue for a range of species.
- 2.11 As with any aspect of spatial planning, a plan level HRA and the mitigation approaches that stem from the HRA should be based on evidence and be solutions focused. In meeting this challenge, this Technical Report seeks to present an approach that is evidence based and justified, proportionate, fair and workable. A Strategy that builds in flexibility to respond to new information, is adaptable to monitoring results, but is long term focused and applicable to future plans, is going to provide the most optimal and beneficial approach for the local planning authorities.

A Strategy within a hierarchical approach to HRA

- 2.12 HRA should follow a hierarchical approach wherever possible; plan level assessment provides a means for ensuring that a plan is only comprised of proposals that can proceed without adverse effect on European sites, and where measures will be necessary to avoid or mitigate potential impacts, they are adequately built into the plan. Whilst project level assessment is still required and is the means by which much of the detail is assessed, the work undertaken at the plan level should ensure that projects are developed with a clear understanding of the constraints and the necessary measures to protect European sites.
- 2.13 This tiered approach to HRA enables Local planning authorities to develop overarching and coordinated approaches to European site protection, rather than resorting to piecemeal individual schemes. The option for individual project level approaches remains, but a strategic approach prevents delay at the project level, and should secure better outcomes for the European sites, therefore enabling local planning authorities to better meet their duties in relation to conserving and enhancing biodiversity.
- 2.14 HRAs should be solutions focused, seeking to find robust means of mitigating for impacts to allow development to proceed, incorporating such mitigation at the plan level wherever possible so that those requirements are clear to developers, and are consistently applied. Plan level HRA can identify mechanisms for the protection of European sites that, whilst providing certainty in effectiveness, cannot be developed in detail until after the Local Plan has been adopted.

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HRA work to date at the plan and project level

- 2.15 As competent authorities under the Habitats Regulations, the Local planning authorities have all undertaken or commissioned HRA work in relation to their Local Plans, and also as competent authority for any Neighbourhood Plans. For the three Local planning authorities initially developing the Strategy, the plan level HRAs undertaken identified risks to European sites as a result of increased housing, which could lead to additional recreation pressure on the European sites. The inclusion of Mid Suffolk District Council and Waveney District Council was triggered by the advice of Natural England, and their own HRAs are now including assessment of recreation pressure and the risks to the coastal and heathland European sites.
- 2.16 This Strategy builds on the initial assessment work undertaken for the Local Plans, which for the three founding authorities initially progressed to an interim approach focusing on project level HRAs, prior to the development of a strategic approach. This Technical Report therefore briefly revisits the plan level HRA work below, to provide a record that the Strategy is consistent with previous findings and recommendations.

Babergh District Council Local Plan and HRAs at the plan and project level

- 2.17 Babergh District Council adopted its Core Strategy Part 1 of the new Local Plan in 2014. Within the Natural Environment and Biodiversity Section of the Core Strategy, the plan highlights at Paragraph 3.3.2.2 that the main source of potential effects on European sites over the plan period is likely to be recreation.
- 2.18 *“The main effect which could arise as a result of proposed development over the next 20 years is from increased population growth in the district, and the allocation of land for additional jobs and housing, which in turn may result in increased recreational pressures on the European sites through rises in visitor numbers. These sites support species which are susceptible to disturbance, and without appropriate measures in place there is a risk of degradation to these sites.”*
- 2.19 Core Strategy Policy CS15: Implementing Sustainable Development in Babergh, states that *“with regard to the SPAs, SACs and RAMSAR sites any development that would have an adverse effect on the integrity of a European Site including candidate/ proposed sites either alone or in combination with our plans or projects will be refused”*.
- 2.20 Policy CS22: Monitoring, includes the review of impacts on European sites as required by the Habitats Regulations and will provide evidence for any future reviews as part of the Local Plan.
- 2.21 The plan commits to considering the location of development in relation to European sites, providing adequate Suitable Alternative Natural Greenspace (SANG), securing and implementing monitoring of recreation activity and putting in place additional mitigation measures in response to monitoring. The HRA accompanying the Core Strategy raised the issue of recreation pressure and recommended the plan wording now incorporated. The HRA indicates that the additional mitigation measures could include raising awareness through signage, footpath diversion, additional site warden

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resources, enforcement of dogs on leads in sensitive locations and the production of visitor management plans.

- 2.22 Babergh District Council is now embarking on a new joint Local Plan with Mid Suffolk District Council, which will replace the individual Local planning documents for each authority. This will include a joint Development Management Policy for biodiversity, which will support the delivery of the Strategy.
- 2.23 In response to plan level HRA and advice from Natural England, Babergh District Council has undertaken project level HRA, with the support of Essex County Council ecological consultancy services and other partners such as other Local planning authorities, Natural England, the RSPB and Suffolk Wildlife Trust on relevant planning applications, and secured a number of mitigation projects, focusing on delivering projects around the Stour and Orwell Estuaries, and working in partnership with the AONB Unit to design and implement the measures. These interim strategy measures complement the strategic approach set out within this Technical Report.

Ipswich Borough Council Local Plan and HRAs at the plan and project level

- 2.24 Ipswich Borough Council adopted its Local Plan 2011 – 2031 in February 2017. Policy CS1: Delivering Infrastructure, states that *“the Council will seek contributions to ensure that the mitigation measures identified in the Habitats Regulations Assessment and in the Recreational Avoidance and Mitigation Strategy can be addressed and delivered, including for any measures not classified as infrastructure.”*
- 2.25 Within the supporting text for Policy CS17, Paragraph 8.178 advises that the HRA for the plan has identified a number of measures to mitigate for increased recreation pressure as a result of the cumulative effect of housing growth across the Ipswich Borough and adjoining Districts:
- “The Habitats Regulations Assessment identifies measures to ensure that potential impacts of increased recreational disturbance within Special Protection Areas and Special Areas of Conservation within and outside of Ipswich Borough are mitigated. This relates to mitigating the cumulative effect of housing growth across Ipswich Borough, in combination with housing growth in Suffolk Coastal District. The measures include the provision of the Country Park or similar high-quality provision to the north of Ipswich, delivering parts b, d, e, g and h of policy CS16, production and implementation of visitor management plans at key sites and a monitoring programme to assess visitor impact over time. The Council will produce a Recreational Avoidance and Mitigation Strategy by March 2017, which will specify the measures required and how these will be delivered.”*
- 2.26 In response to plan level HRA and advice from Natural England, Ipswich Borough Council has undertaken project level HRAs on relevant planning applications, as with Babergh District Council, utilising the specialist support of Essex County Council ecological consultancy services, and has secured a number of mitigation projects that are similar to and complement the HRA measures being taken forward for Babergh District developments, focusing on delivering projects around the Stour and Orwell Estuaries,

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and working in partnership with the AONB Unit to design and implement the measures. As for the Babergh District, these interim strategy measures will now complement the strategic approach set out within this Technical Report.

Suffolk Coastal District Council Local Plan and HRAs at the plan and project level

- 2.27 Upon commencement of the Strategy, Suffolk Coastal District and Waveney District Councils were separate Local planning authorities. The two authorities amalgamated in 2019. Suffolk Coastal District Council adopted its Core Strategy and Development Management Policies Document in 2013. It includes generic policy wording in relation to the protection of European sites within Policy DM27.
- 2.28 HRA work has been undertaken on the Core Strategy and Development Management Policies Document, and also the Site Allocations Document and the Area Action Plan for Felixstowe Peninsula. The latter did not particularly raise recreation impacts as an issue. However, both the Core Strategy and Development Management Policies Document HRA and the Site Allocations Document HRA identified recreation pressure as a potential risk.
- 2.29 The Core Strategy and Development Management Policies Document HRA identified the following potential impacts to European sites relating to strategic allocations (east of Ipswich/Felixstowe) and/or cumulative housing totals across Ipswich and Suffolk Coastal as a whole (see paragraph 7.2 of Sibbett 2011):
- *“New large-scale usage of European sites as convenient local greenspace for routine use, causing harm to features of European interest.*
 - *New large-scale increase in car borne trips for recreation on European sites causing harm to features of European interest; primarily for sites with car parking, located within 8km of a European site.*
 - *Harm to features on European sites (such as trampling, disturbance to birds etc.) from a residual increase of visitors to the proportion of European sites sensitive to a small increase in visitor numbers.”*
- 2.30 The Core Strategy and Development Management Policies Document HRA concluded that mitigation measures needed to be secured in order to prevent adverse effects on European sites arising from recreation. Paragraph 7.2.9 advises that:
- 2.31 *“Mitigation for an increase in visitors to European sites is based on providing alternative recreational choices for residents (existing and proposed) of Ipswich Borough and Suffolk Coastal District, and managing visitors on existing European sites. Alternative recreation options should be located at convenient points for many users, and offer facilities sufficient to attract some people from European sites.”*
- 2.32 The HRA goes on to advise that the provision of a country park to the north or north-east of Ipswich should be provided to include areas for dog walking, children’s play etc. and with a mixture of grassland, woodland and open water to make it attractive. A free car park should be provided and visitor facilities such as a café, toilets, staffed information point, marked routes, wildlife viewing areas and dogs off leads areas would all be beneficial. The HRA further advises that the offsite provision should be combined

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with on site management of visitors at European sites, including additional wardening and the provision of a visitor management plan, visitor monitoring and ecological monitoring. The HRA also recommends a number of targeted visitor surveys to increase the evidence base.

- 2.33 In addition to the growth proposed for Ipswich and surrounding areas that lie within the Suffolk Coastal District, the Core Strategy and Development Management Policies Document HRA notes that Natural England has raised concerns in relation to additional housing at Leiston and the recreation pressure that this might lead to on the Minsmere-Walberswick SPA/SAC/Ramsar and the Sandlings SPA.
- 2.34 The Suffolk Coastal District Site Allocations and Area Specific Policies Document forms part of the Local Plan alongside the Core Strategy and Development Management Policies Document, which was adopted in January 2017. The Site Allocations Document HRA, undertaken in 2015 concluded that two allocations; SSP3 land to the rear of Rose Hill, Saxmundham Road, Aldeburgh and SSP31 Snape Maltings, required further information gathering in relation to visitor impacts, before it could be concluded that adverse effects on European sites could be ruled out. In response to this, the policies have been modified to provide clarity on their implementation in accordance with the Habitats Regulations.
- 2.35 Policy SSP3 now includes the statement that *“Applications for development of this site will need to be subject to a Habitat Regulations Assessment screening. Any development which would result in significant adverse effects upon the nearby European site, which could not be appropriately mitigated will not be permitted.”*
- 2.36 The former maltings, known as Snape Maltings, currently provide a variety of uses as a music and arts venue and with restaurant/café/bar development and some building conversion to residential. There are still opportunities for a range of development at this site. However, the close proximity of the site to the Alde-Ore Estuary was identified in the 2015 HRA for the Site Allocations and Area Specific Policies Document as posing a risk in terms of increased disturbance to SPA birds.
- 2.37 Policy SSP33 highlights the potential use of the site for further development, such as for arts, recreation, and tourism-related uses with associated retail and craft activities and accommodation. The supporting text now notes that an increase in residential accommodation could result in an increase in the local cat population as well as disturbance from dog walking. Whilst the policy currently leaves the range of potential uses for the site open, Natural England have advised that project level HRA must ensure that only options that can demonstrate no adverse effects on the SPA/SAC/Ramsar site can be given approval. Consequently, the final policy now includes *“Applications for development of this site will need to be subject to an HRA screening. Any development which would result in significant adverse effects which could not be appropriately mitigated will not be permitted.”*

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- 2.38 Whilst the Snape Maltings development will need to conform with this Strategy, it is recognised that the close proximity and access to the Estuary may necessitate additional measures in order to have certainty that recreation pressure has been fully mitigated for, and also that any other potential impacts have been considered. Project level HRA should therefore identify the need for contributing to the Strategy, but also checking whether any additional measures need to be incorporated into the development design.
- 2.39 In response to plan level HRA and advice from Natural England, the Council has undertaken project level HRA on relevant planning applications and has secured funding from relevant development projects that will be used to fund some of the avoidance and mitigation measures set out within this Strategy document at Section 8.
- 2.40 After the merger of Suffolk Coastal District Council and Waveney District Council on the 1st April 2019, the adopted Local Plans for each authority continue to provide the policy framework against which planning applications will be determined for the respective geographical areas, until the new East Suffolk Council progresses with a new Local Plan. The Suffolk Coastal District Local Plan is likely to be adopted in 2019.

Waveney District Council Local Plan and HRAs at the plan and project level

- 2.41 As above, Waveney is now part of the new East Suffolk Council, but will continue to use its Local Plan until a future East Suffolk Plan is prepared. Waveney District Council has now adopted its new Local Plan. The new Local Plan is supported by a HRA report that has responded to Natural England's advice in relation to the need to adequately provide mitigation for the impact of recreation pressure on European sites arising from new housing growth proposed within the plan. The HRA supporting the plan has full regard for this Strategy, and is reliant on it to enable a conclusion of no adverse effects on European site integrity.

Mid Suffolk District Council Local Plan and HRAs at the plan and project level

- 2.42 Mid Suffolk District Council's Core Strategy was adopted in 2008, with a focused review subsequently undertaken in 2012 to update key parts of the Local Plan in line with the NPPF and up to date information on growth needs. At that point in time, the HRA concluded that the focused review of the Core Strategy would not lead to any likely significant effects on European sites.
- 2.43 As noted above for Babergh's Local Plan, Mid Suffolk and Babergh Districts are now working together to produce a Babergh and Mid Suffolk Joint Local Plan. The first consultation on the draft joint plan took place in August 2017, referring to this emerging Strategy as key evidence to inform the Joint Plan, and sets out policy options that would provide protection for European sites and also seek enhancements for biodiversity.

Progressing from plan level and individual project HRA to a co-ordinated Strategy

- 2.44 The HRAs for the local planning documents within the local planning authority areas are now each identifying the risks to European sites. The plan level HRAs note the key elements of mitigation, such as the provision of SANGs where large-scale development

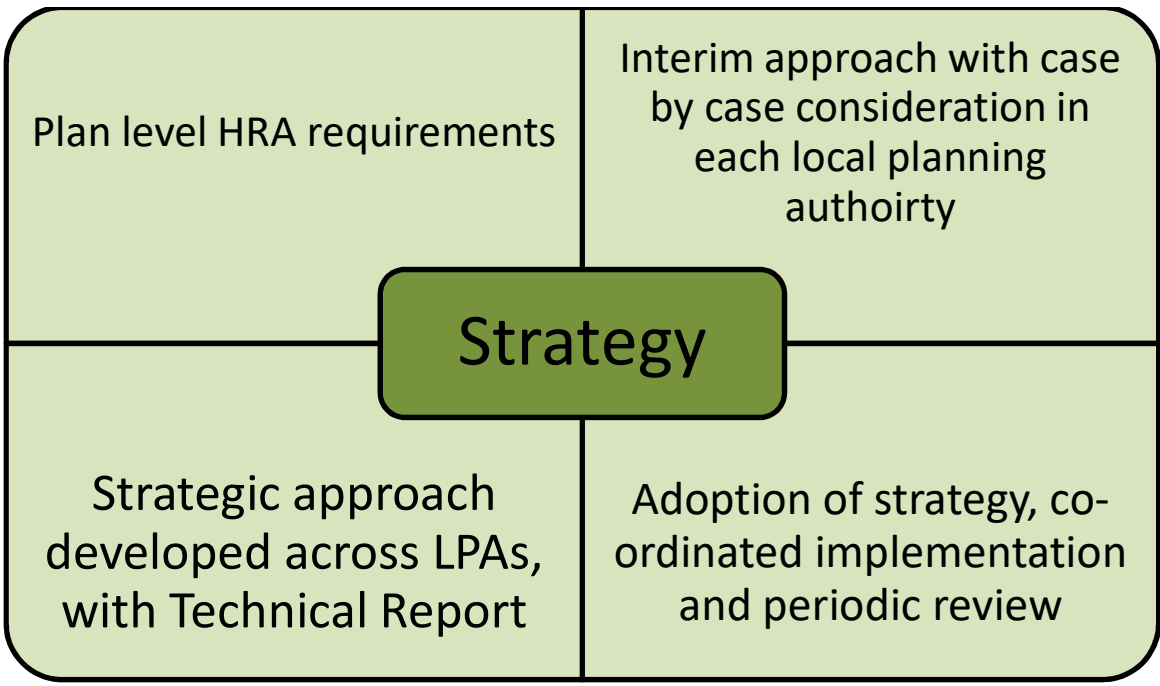
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will be focused. The HRAs highlight the need for further consideration and information gathering, particularly in relation to measures on the European sites to manage access. In light of the Local Plan policy and plan level HRA findings, residential development coming forward in accordance with the Local Plans must adequately avoid and mitigate for recreation impacts. This requirement has been implemented by an interim approach within each Local planning authority before now being taken forward in a coordinated way by the preparation of this Technical Report.

- 2.45 Building on the evolution of the avoidance and mitigation approach to date, the strategic approach provides a detailed and comprehensive way forward for the Strategy to deliver the high-level commitments set out in plan policy, supporting text and the plan level HRAs. This Technical Report takes the HRA work to a more detailed level and progresses through the necessary stages of Strategy development; a review of the evidence base, analysis of the extent and nature of current recreation pressure, and then an analysis of the nature and extent of additional recreation pressure that could arise because of the growth within the Local Plans. This progression through evidence analysis then informs and re-asserts the justifications for the avoidance and mitigation measures required. This Technical Report seeks to test the appropriateness of various mitigation options, and then advise how that mitigation can be delivered, monitored and reviewed. The Strategy has therefore evolved through a logical progression of refinement to its final form for cross authority implementation and will continue to be checked under future Strategy reviews that will similarly be informed by new evidence and the analysis.
- 2.46 The Plan level HRAs for the Local planning authority areas recommend the following measures are explored further as avoidance and mitigation options for recreation pressure:
- Site allocations to be made in light of proximity to European sites.
 - Enhancement of local greenspace provision to meet local recreation needs.
 - The development of two new large scale green spaces to meet recreation needs in areas where the highest levels of growth are proposed, and to include adequate visitor infrastructure (such as car parking, visitor facilities, dog bins, dogs off leads areas etc.).
 - A range of other mitigation measures focussed on the European sites, to potentially include wardening and visitor management measures, visitor management plans, additional monitoring, and a capital works programme.
- 2.47 In response to these initial suggestions, and building on the bespoke project by project measures agreed as part of the interim approach to the Strategy, the development of more strategic avoidance and mitigation options is now detailed in Sections 7 and 8 of this report.
- 2.48 It is important to remember therefore that the Strategy encompasses the approach to European site protection throughout its stages of progression and delivery mechanisms. Money collected during the interim phase was either pooled in preparation for the

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strategic approach or in some instances was initially targeted as specific projects that are consistent with the measures set out within this report. As the strategic approach neared finalisation, financial contributions collected have all been pooled in readiness to support the immediate priorities of the strategic approach, with the recruitment of staff being one such priority.



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3. European sites and review to identify which are relevant to the Strategy

Overview of Potentially Relevant European Sites

3.1 European sites within and around the local planning authority boundaries are shown in Maps 1-3. As a precaution, this includes sites to a 10km radius outside each of the authority boundaries. The interest features of the sites are summarised in Table 1.

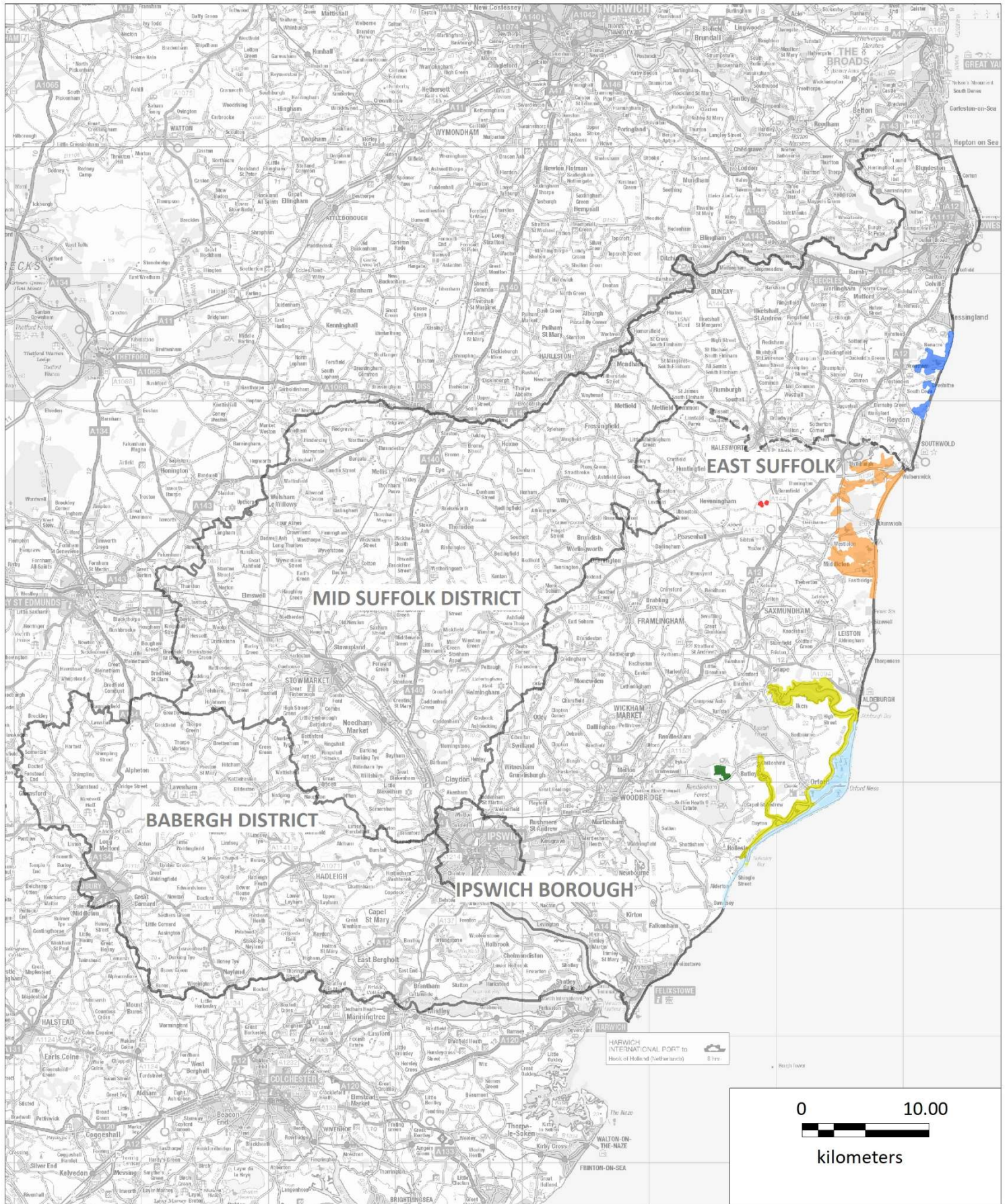
Table 1: Summary of European sites their interest features and other relevant information. Links are to the conservation objectives and citation (SAC or SPA) or citation (Ramsar sites).



European site	Area (ha)	Interest Features
Alde-Ore Estuary SPA	2417	<ul style="list-style-type: none"> • Ruff • Avocet • Marsh Harrier • Redshank • Lesser Black-Backed Gull • Sandwich Tern • Little Tern
Alde-Ore & Butley Estuaries SAC	1562	<ul style="list-style-type: none"> • H1330 Atlantic salt meadows • H1130 Estuaries • H1140 Mudflats and sandflats
Alde-Ore Estuary Ramsar	2547	<ul style="list-style-type: none"> • Ramsar criterion 2: The site supports a number of nationally-scarce plant species and British Red Data Book invertebrates • Ramsar criterion 3: The site supports a notable assemblage of breeding and wintering wetland birds • Ramsar criterion 6: Bird species/populations occurring at levels of international importance (Lesser Black-backed Gull, Avocet, Redshank)
Benacre to Easton Barents Lagoons SAC	367	<ul style="list-style-type: none"> • H1150 Coastal lagoons
Benacre to Easton Barents SPA	517	<ul style="list-style-type: none"> • Little Tern • Bittern • Marsh Harrier
Deben Estuary SPA	979	<ul style="list-style-type: none"> • Dark-Bellied Brent Goose • Avocet
Deben Estuary Ramsar	979	<ul style="list-style-type: none"> • Ramsar criterion 2: Supports a population of the mollusc <i>Vertigo angustior</i> • Ramsar criterion 6: Species/populations occurring at levels of international importance (Dark-bellied Brent Goose)
Dew's Ponds SAC	7	<ul style="list-style-type: none"> • Great crested newt
Minsmere-Walberswick Heaths & Marshes SAC	1266	<ul style="list-style-type: none"> • H4030 European dry heaths • H1210 Annual vegetation of drift lines • H1220 Perennial vegetation of stony banks

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European site	Area (ha)	Interest Features
Minsmere – Walberswick SPA	2019	<ul style="list-style-type: none"> • Teal • Bittern • Marsh Harrier • Hen Harrier • European Nightjar • Northern Shoveler • Gadwall • Avocet • Little Tern • White-Fronted Goose
Minsmere-Walberswick Ramsar	2019	<ul style="list-style-type: none"> • Ramsar Criterion 1: The site contains a mosaic of marine, freshwater, marshland and associated habitats, complete with transition areas in between. Contains the largest continuous stand of reedbeds in England and Wales and rare transition in grazing marsh ditch plants from brackish to fresh water. • Ramsar criterion 2: This site supports nine nationally scarce plants and at least 26 red data book invertebrates, including the mollusc <i>Vertigo angustior</i>. • An important assemblage of rare breeding birds associated with marshland and reedbeds.
Orfordness-Shingle Street SAC	902	<ul style="list-style-type: none"> • H1210 Annual vegetation of drift lines • H1220 Perennial vegetation of stony banks • H1150 Coastal lagoons
Sandlings SPA	3391	<ul style="list-style-type: none"> • European nightjar • Woodlark
Staverton Park & The Thicks, Wantisden SAC	82	<ul style="list-style-type: none"> • H9190 Old acidophilous oak woods with <i>Quercus robur</i> on sandy plains
Stour and Orwell Estuaries SPA	3677	<ul style="list-style-type: none"> • Black-tailed godwit • Knot • Dunlin • Waterbird assemblage • Redshank • Grey plover • Dark-bellied brent goose • Northern pintail • Pied avocet
Stour and Orwell Estuaries Ramsar	3677	<ul style="list-style-type: none"> • Ramsar criterion 2: Contains seven nationally scarce plants: stiff saltmarsh-grass; small cord-grass; perennial glasswort; lax-flowered sea lavender and the eelgrasses <i>Zostera angustifolia</i>, <i>Z. marina</i> and <i>Z. noltei</i>. • Ramsar criterion 2: Contains five British Red Data Book invertebrates: the muscid fly <i>Phaonia fusca</i>; the horsefly <i>Haematopota grandis</i>; two spiders, <i>Arctosa fulvolineata</i> and <i>Baryphema duffeyi</i>; and the endangered swollen spire snail <i>Mercuria confusa</i>. • Ramsar criterion 5: Wintering waterfowl assemblage • Ramsar criterion 6: Species/populations occurring at levels of international importance (Redshank, Dark-bellied Brent Goose, Pintail, Grey Plover, Knot, Dunlin, Black-tailed Godwit)

Map 1: SAC Sites

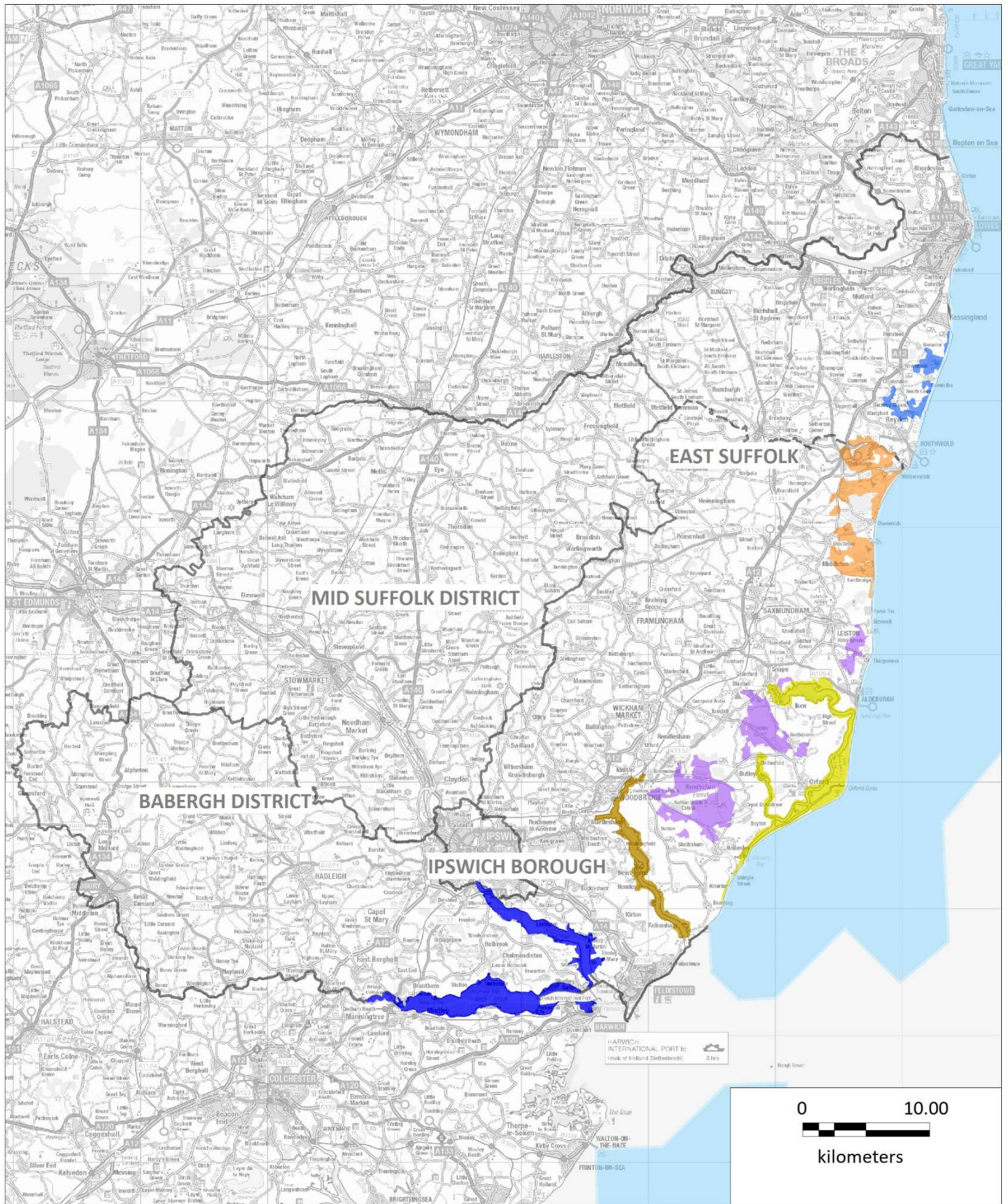




 Relevant local authority boundary
 Historic boundary

SAC Sites

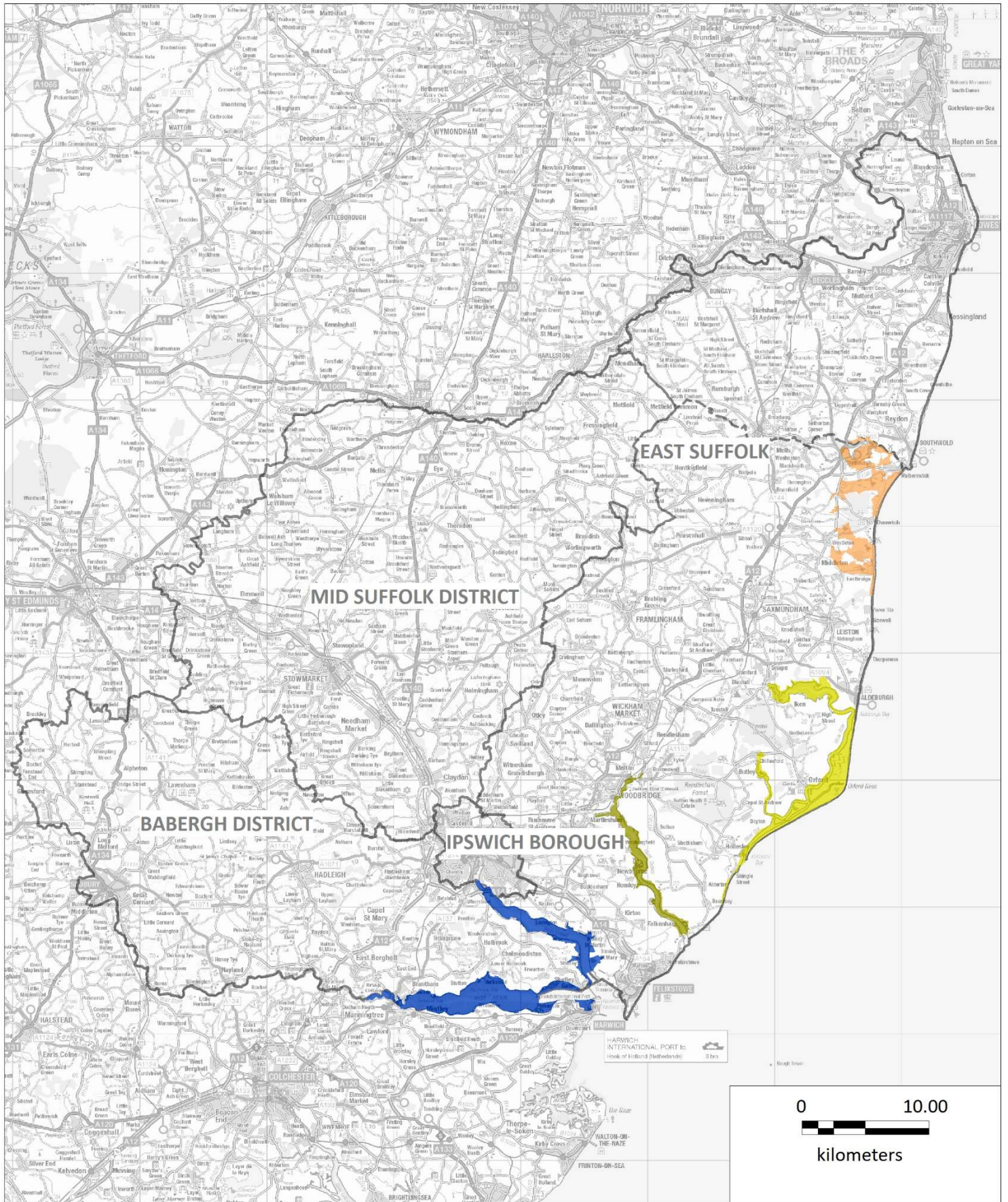
-  Alde-Ore & Butley Estuaries
-  Benacre to Easton Bavents Lagoons
-  Minsmere to Walberswick Heaths & Marshes
-  Orfordness-Shingle Street
-  Staverton Park & The Thicks, Wantisden
-  Dew's Ponds







Map 2: SPA Sites



 Relevant local authority boundary
 Historic boundary

Map 3: Ramsar Sites



-  Relevant local authority boundary
-  Historic boundary
-  Aide-Ore Estuary
-  Deben Estuary
-  Minsmere-Walberswick
-  Stour and Orwell Estuaries

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Potential Pathways: links between recreation and European site interest

- 3.2 There is a range of ways in which the sites/interest features summarised in Table 1 might be vulnerable to recreation impacts.

Disturbance to wintering birds

- 3.3 Disturbance to wintering and passage waterbirds can result in:
- A reduction in the time spent feeding due to repeated flushing/increased vigilance (Fitzpatrick & Bouchez 1998; Stillman & Goss-Custard 2002; Bright *et al.* 2003; Thomas, Kvitek & Bretz 2003; Yasué 2005)
 - Increased energetic costs (Stock & Hofeditz 1997; Nolet *et al.* 2002)
 - Avoidance of areas of otherwise suitable habitat, birds potentially using poorer quality feeding/roosting sites instead (Cryer *et al.* 1987; Gill 1996; Burton *et al.* 2002; Burton, Rehfish & Clark 2002)
 - Increased stress (Regel & Putz 1997; Weimerskirch *et al.* 2002; Walker, Dee Boersma & Wingfield 2006; Thiel *et al.* 2011)
- 3.4 The impacts of disturbance can relate to site conditions that vary temporally such as weather or prey abundance (Goss-Custard *et al.* 2006). Birds may also be more sensitive at particular times, such as staging during migration (Bechet, Giroux & Gauthier 2004; Yasué 2005). As such, disturbance impacts may therefore occur only at certain times or when particular circumstances coincide. Impacts of disturbance may therefore be difficult to detect.
- 3.5 There is a wide range of studies of disturbance impacts for estuary birds. One particularly relevant study relates to the Solent, where visitor surveys (Fearnley, Clarke & Liley 2010, 2011), bird fieldwork (Liley, Stillman & Fearnley 2010) and modelling (Stillman *et al.* 2012) were undertaken to inform the Habitats Regulations Assessments undertaken by local authorities. Models of access predicted an increase in visitor rates to the coast – as a result of the new housing set out in relevant local authority plans – of 15%. Models predicted the survival rate of shorebirds wintering in Southampton Water under different scenarios which included that associated with current housing and that associated with the housing set out in relevant plans. The models were built using data on the distribution of the birds' prey, the tidal cycle and availability of feeding areas over time, the foraging ability of birds under different scenarios (prey densities, bird densities etc.) and energy expenditure (cost of flight etc.). Disturbance was incorporated through the birds losing feeding time, displacement and energetic costs. Within Southampton Water, in the absence of disturbance, all wader species modelled were predicted to have 100% survival and maintain their body masses at the target value throughout the course of winter. Disturbance from current housing was predicted to reduce the survival of Dunlin, Ringed Plover, Oystercatcher and Curlew. Increased visitor numbers because of future housing was predicted to further reduce the survival of Dunlin and Ringed Plover.

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Disturbance to breeding birds

- 3.6 Disturbance to breeding birds may have similar impacts as those described above to wintering birds, i.e. increased stress, displacement/avoidance of otherwise suitable habitat etc. However, there are additional considerations. Breeding places particular energetic consequences on birds (Thomson, Monaghan & Furness 1998), such that they may be less able to switch locations due to competition for territories and once nesting, birds are tied to very specific locations. Thus disturbance when birds are nesting can have particular implications (e.g. Yalden & Yalden 1990). Chicks and eggs can be vulnerable to trampling (e.g. Liley & Sutherland 2007), predation (Mikola *et al.* 1994; Bolduc & Guillemette 2003) and weather (Yasue 2006).
- 3.7 In general, it is ground-nesting species, particularly rare species and colony nesting species that are likely to be at most risk. There is evidence that disturbance can impact population size for Woodlarks (Mallord *et al.* 2007) and there are studies showing clear effects of disturbance for Little Tern (Medeiros *et al.* 2007; Ratcliffe *et al.* 2008), Nightjar (Murison 2002; Liley & Clarke 2003; Liley *et al.* 2006) and Marsh Harrier (Fernandez & Azkona 1993).

Trampling: Vegetated Shingle

- 3.8 Trampling has long been recognised as an issue for shingle vegetation (Sneddon & Randall 1994). Damage to ridge structures is also an issue. One of the main causes of damage is the breaking up of the surface layers of vegetation and the fine humic layer that may take many years to be deposited. As a result, damage to vegetation may not be possible to reverse. Spokes (1997) studied shingle vegetation and trampling and compared data from 1991 with that collected in 1997 on a shingle habitat at Slapton in Devon. The results indicated that untrampled areas were more diverse than the trampled areas. Hewitt (1973) came to the same conclusion on Chesil Beach in Dorset. Communities with abundant lichens are susceptible to trampling, particularly during dry weather. A single pass may be sufficient to cause irreparable damage (Doody & Randall 2003).
- 3.9 Disturbance of habitat from trampling or vehicles also has a negative impact on the majority of shingle invertebrates (Shardlow 2001), an assessment supported by Kirby (2001) "*Public access to shingle habitat is probably always damaging to some extent. Shingle communities are easily damaged by trampling because of the instability of that habitat*". Off-road vehicle access has been identified as a threat to invertebrates on some sites (Alexander *et al.* 2005).

Trampling: Woodland Habitats

- 3.10 Effects of urban development and recreation pressure on woodlands are reviewed by Corney *et al.* (2008). Trampling can result in damage to tree root growth, possibly associated with an impact on fungal mycelia (Dunn 1984; King M. & Liley 2014), and tree death may result from root exposure and damage (Speight 1973). This could affect any trees near access routes but might be especially the case for veteran trees, often with associated lichen interest, in woodland or wood pasture, that may be preferentially approached (Read 2000). Trampling decreases plant cover and changes

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the ground flora species composition, altering species composition locally on paths and providing opportunities for new species to establish in previously unbroken forest vegetation.

Nutrient enrichment

3.11 The primary and most common cause of nutrient enrichment through access to the natural environment is dog fouling. A number of reviews have addressed the impacts of dog fouling (Bull 1998; Taylor *et al.* 2005). Dogs will typically defecate within 10 minutes of a walk starting, and as a consequence most (but not all) deposition tends to occur within 400m of a site entrance (Taylor *et al.* 2005). Similarly, dogs will typically urinate at the start of a walk, but they will also urinate at frequent intervals during the walk too. The total volume deposited on sites may be surprisingly large. At Burnham Beeches National Nature Reserve over one year, Barnard (2003) estimated the total amounts of urine as 30,000 litres and 60 tonnes of faeces from dogs. Limited information on the chemical composition of dog faeces indicates that they are particularly rich in nitrogen, and as such impacts are similar to the application of fertilizer. Habitats that are relatively nutrient-poor are the most vulnerable, and impacts will be most pronounced on vegetated shingle and heathland sites.

Other impacts

3.12 A range of other impacts may be associated with increased access. These include:

- Increased bait harvesting/collection from estuary sites, resulting in habitat damage and prey removal (e.g. Cryer, Whittle & Williams 1987; James, Perrow & Thatcher 1993; Fowler 2002; Fearnley *et al.* 2013).
- Trampling of saltmarsh, because whilst many saltmarshes will attract little access as they are often inaccessible/difficult to traverse, in certain locations access for samphire collection or recreation is more prevalent and may result in damage (Doody 2008)
- Spread of non-native species through footfall (Wichmann *et al.* 2009) or on boats (e.g. Bax *et al.* 2002, 2003)
- Increased fire risk; studies have found a link between housing density and fire incidence (Kirby & Tantram 1999) and fire incidence may link to recreation use through cigarettes, barbeques etc. Potentially vulnerable features may include vegetated shingle, heathland and veteran trees.

Evidence for impacts or potential impacts on Suffolk coastal and heathland

European sites

3.13 Evidence for existing impacts (or potential future impacts that could be linked to increased recreation) come from a range of sources and are discussed below. There are some specific studies from Suffolk that are relevant as well as national studies that include the Suffolk coastal and heathland sites; also useful are the original Habitats Regulations Assessments that have identified the need for this strategy. It should be noted that impacts from recreation can be gradual. People have been visiting the Suffolk coastline and heaths for recreation for a long time, and with recreation levels increasing over a long period of time, change can be difficult to detect. Regular monitoring of sites, such as designated site condition assessments are not necessarily

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designed to pick up such change and there is certainly scope for more work on recreation impacts. Nonetheless, the evidence is sufficient for us to identify sites and issues of concern.

Site Improvement Plans

3.14 Site improvement plans (SIPs) have been developed by Natural England for all European sites in England. The plans provide an overview of the issues (both current and predicted) affecting the condition of the European site features. As such the plans are a useful guide, and where relevant will identify issues relating to public access/disturbance. The plans do not cover issues where suitable remedial actions are already in place or where ongoing management activities are required for maintenance. Where public access/disturbance is identified it therefore highlights an issue that requires resolving currently or may require intervention in the future. Public access/disturbance is identified as an issue for nine of the European sites considered in this report. Information relating to where public access and/or disturbance have been highlighted as a theme within SIPs is listed in Table 2 below.

Table 2: Site Improvement Plan references to recreation pressure

European site	Public Access/Disturbance a theme in the SIP (and whether and issue or a threat)	Relevant interest features
Alde-Ore Estuary SPA	✓(Pressure)	Non-breeding: • Avocet Breeding: • Avocet, • Redshank, • Lesser Black-backed Gull, • Little Tern.
Alde-Ore & Butley Estuaries SAC	No issues/threats raised	
Benacre to Easton Bavents Lagoons SAC	No issues/threats raised	
Benacre to Easton Bavents SPA	✓(Pressure)	Breeding: • Little Tern.
Deben Estuary SPA	✓(Pressure/Threat)	Non-breeding: • Dark-bellied Brent Goose, • Avocet.
Dew's Ponds SAC	No issues/threats raised	
Minsmere to Walberswick Heaths & Marshes SAC	✓(Pressure)	• H1210 Annual vegetation of drift lines, • H1220 Coastal shingle vegetation outside the reach of waves, • H4030 European dry heaths.

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European site	Public Access/Disturbance a theme in the SIP (and whether and issue or a threat)	Relevant interest features
Minsmere – Walberswick SPA	✓(Pressure)	Non-breeding: <ul style="list-style-type: none"> • Bittern, • Gadwall, • Shoveler • Avocet. Breeding: <ul style="list-style-type: none"> • Bittern, • Gadwall, • Shoveler, • Avocet, • Little Tern, • European Nightjar.
Orfordness-Shingle Street SAC	✓(Pressure)	<ul style="list-style-type: none"> • H1210 Annual vegetation of drift lines, • H1220 Coastal shingle vegetation outside the reach of waves
Sandlings SPA	✓(Pressure)	Breeding: <ul style="list-style-type: none"> • European Nightjar • Woodlark.
Staverton Park & The Thicks, Wantisden SAC	✓(Pressure/Threat)	H9190 Dry oak-dominated woodland
Stour and Orwell Estuaries SPA	✓(Pressure/Threat)	Non-breeding: <ul style="list-style-type: none"> • Dark-bellied Brent Goose, • Pintail, • Grey Plover, • Knot, • Dunlin, • Black-tailed Godwit, • Redshank, • Waterbird assemblage Breeding: <ul style="list-style-type: none"> • Avocet

Specific studies addressing recreation impacts at the relevant sites

3.15 Reviewing the site improvement plans it is apparent that there is a lack of information for some of the sites on the scale of impact of public access/disturbance. However, there are some studies which have focused on the specific sites and issues and we consider those in detail here.

The Sandlings

3.16 The visitor survey of the Sandlings, undertaken in 2010 (Cruickshanks, Liley & Hoskin 2010), used visitor survey data to model the distribution of people across the southern part of the Sandlings (south of Iken). The model was then used to test whether the distribution of key bird species was related to the level of access. Visitor distribution was heavily concentrated around particular locations such as Sutton Heath and looking across suitable habitat only, there was evidence that the distribution of Nightjar and (in

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particular) Dartford Warbler was related to visitor levels. The study did not address breeding success and was solely focussed on bird and visitor distribution.

- 3.17 Within the Sandlings there have been declines in both Woodlark and Nightjar (see site improvement plan) and this is contrary to the trend in much of the rest of England (for context see: Conway *et al.* 2007; Langston *et al.* 2007; Conway *et al.* 2009). Work in the Brecks (where there have also been declines) indicates that changes are predominantly linked to changes in the area of open habitats (see Dolman & Morrison 2012).

Stour and Orwell Estuaries

- 3.18 Ravenscroft *et al.* (2008) undertook bird disturbance fieldwork across the Stour and Orwell over three winters, involving over 540 hours recording access and birds. Key findings were that the Orwell was much busier than the Stour (about four times as busy) and across both sites walkers, dog walkers and boating were the main activities recorded. Overall the report suggests that birds in most parts of the SPA (and particularly on the Stour), were little affected by most activities at low tide. Birds on the Stour appeared to be more likely to respond to the presence of people than on the Orwell, which Ravenscroft *et al.* attributed to the larger numbers of birds present and the availability of alternative areas on the estuary. By contrast, the authors suggested that high levels of activity around most of the Orwell, relatively low numbers of birds at high tide and comparatively small mudflats at low tide, suggest that disturbance may be having an impact on populations of birds in this estuary.

The Deben

- 3.19 A report by Mason *et al.* (2014) considered disturbance issues for birds on the Deben. The report draws on the author's experience of the site and contains observations of recreation levels and use. While the report provides an impression that disturbance levels are generally low, some specific locations are highlighted and observations include canoes, jet skis and water-skiers causing disturbance. Sensitive locations are highlighted and management recommendations are made to minimise disturbance impacts.

National review of estuaries and housing pressure

- 3.20 In a study commissioned by Natural England (but currently unpublished), Footprint Ecology, working with the BTO and Bournemouth University, gathered data from all English SPA sites (39 SPAs) with intertidal habitat and wintering waterfowl interest. These data provided a strategic view of the SPA sites. Data included current housing levels (weighted according to how far people typically travel for recreation visits), changes in housing (2001-2013), access infrastructure (car-parks, path network), habitat extent and distribution, and bird data (from the Wetland Birds Survey, WeBS). For some (but not all SPAs) data also included the distribution and location of roost sites and information on the types of activity taking place at each SPA. Using the data, it was possible to rank and compare SPAs to identify those with current high housing pressure and features that made them vulnerable to recreation impacts. Given that we have

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modelling data from SPAs such as the Solent that indicates current population impacts of disturbance, ranking SPAs provides a means to identify those where increased housing is unlikely to result in marked impacts, and sites where further evidence gathering or mitigation may be necessary.

- 3.21 The work highlighted a continuum ranging from estuary sites with very high levels of nearby housing, current access to most of the shoreline and high proportions of the mudflats potentially close enough to be disturbed by recreation on the shore (SPAs such as the Mersey Narrows and North Wirral Foreshore SPA, Benfleet & Southend SPA, Portsmouth Harbour SPA) to very rural sites with little access along the shore and shapes such that access and birds were likely to be segregated in space (e.g. the Wash SPA, the Solway SPA). In such a ranking, the Stour and Orwell were the most vulnerable of the three Suffolk Estuaries, ranked in the top third of sites. The Deben Estuary was just below the top third and the Alde-Ore was ranked relatively low, in the least vulnerable third of sites.
- 3.22 The comparisons flagged a high number of WeBS alerts¹ on the Stour & Orwell, and in particular a high level of site specific alerts, indicating that bird declines at the site were not in-line with other local sites. For the Deben, the report highlighted the small, narrow shape of the estuary with a high proportion of the mudflats area vulnerable to disturbance from the seawall. A high proportion of roosts were thought to be potentially vulnerable to disturbance, with 78% of roost sites within 200m of the footpath network. The site has had a relatively large increase in housing pressure in recent years, but the vulnerability is to some extent reduced as stretches of the shoreline have limited current access (e.g. Ramsholt-Bawdsey; and most of the stretch from Melton-Methersgate). The Alde-Ore has low levels of housing nearby and limited current shoreline access for some parts of the site (e.g. Iken-Sudbourne, Orfordness).

Recreation use of sites and links to local housing

- 3.23 A further important evidence thread relates to visitor survey information and the links between local housing and recreation use. Information on the types of access, access infrastructure etc. informs the level of risk associated with new development and can help identify which sites are relevant for the Strategy. Parts of the Suffolk coast are popular tourist destinations and it is important to separate out those sites where access is predominantly from tourists rather than local residents. Data in the Suffolk Coast Tourism Strategy suggests around 3 million day visits to the coast per annum and around 1 million tourist bed-nights per annum. Day visitors are not broken down according to those who come from within Suffolk and those from further afield.
- 3.24 The Sandlings visitor survey work (Cruickshanks, Liley & Hoskin 2010) covered the area south of Iken and recorded few holiday-makers (6% of the total visitors interviewed

¹ WeBS stands for wetland bird survey and is a volunteer survey across sites run by the BTO. WeBS alerts flag marked population declines of specific bird species on sites.

<https://www.bto.org/volunteer-surveys/webs/publications/webs-alerts>

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during the winter¹), demonstrating that use was mostly from local residents. Dog walking was by far the most popular activity (52.8% of people interviewed) and was recorded at all sites where interviews were conducted, followed by walking (22% of interviews). Visitor use was particularly concentrated at a limited number of locations, particularly around Sutton Heath. Interviewees' home postcodes showed people travelling from the surrounding settlements, including Woodbridge, Martlesham, Ipswich, Saxmundham and Leiston, and the median distance from home postcode to interview location was 6.7km (winter) and 8.2km (summer; note only a subset of survey points were surveyed in the summer). The visitor postcodes from this survey are mapped and discussed in more detail in sSection 6.

- 3.25 Visitor surveys on the Deben (Lake *et al.* 2014) in late autumn also reveal a pattern of predominantly local use, with 91% of interviewees on a short visit/trip from home. Excluding holiday-makers the median distance from the home postcode to interview location was 3.7km and 75% of visitors lived within a 14.2km radius of the survey point. Walking (41% of interviewees) and dog-walking (39%) were the main activities. The visitor postcodes from this survey are mapped and discussed in more detail in Section 6.
- 3.26 Visitor surveys were conducted at Orwell Country Park in March 2015 (Sibbett 2015). This site is on the edge of Ipswich and provides access to the shoreline of the Orwell. Virtually all interviewees were local residents on short visits, again reflecting local, rather than tourist use. Dog walking was the most common reason for visiting. Most visitors lived within a few kilometres of the Country Park with a concentration of visitors living close to the Country Park in Gainsborough and in the Park Home site adjacent to Bridge Wood, while other visitors predominantly came from the main part of Ipswich. There was a general tendency for visitors with dogs to travel from a wider area, compared to those without dogs. The visitor postcodes from this survey are mapped and discussed in more detail in section 6.
- 3.27 We would expect sites around Aldeburgh, Thorpeness and Southwold to be the main areas with high proportions of tourists. European sites such as the Alde-Ore, Minsmere-Walberswick and Benacre-Easton Bawents are therefore ones where we would perhaps expect tourists to account for a high proportion of visitors. Visitor survey results from Minsmere are summarised by Molloy *et al.* (2011). In 2009 Minsmere received 80,271 visitors. Visitor survey results indicated that 42% of visitors were holiday-makers, staying an average of 5 nights in the local area, a further 37% were day-trippers and around a fifth (21%) of visitors were local residents. More recent data were provided by the RSPB and in 2014 that data indicated that 6% of visitors were local residents living within 10 miles of the reserve and a further 42% had come from home more than 10 miles away on a day visit. Some 49% of visitors were holidaymakers. These data suggest that there is perhaps little in the way of links between recreation and local

¹ Winter was the main survey period; it should be noted that 19% of interviewees during the summer were holidaymakers, but the data are not comparable as summer interviews were focussed at limited sites and included one point adjacent to a campsite.

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housing for Minsmere, however the data are from the main visitor centre/reserve hub which has a national profile as a flagship nature reserve. We are not aware of visitor data from the periphery of the reserve and the areas of the SPA that have public access but are outside the main reserve areas.

- 3.28 The interim approach taken forward in Babergh District and Ipswich Borough includes securing a number of localised mitigation, awareness raising and monitoring projects, particularly around the Stour and Orwell. As these projects come to fruition, they will inform the Strategy and provide valuable input to the first review of the strategic approach.
- 3.29 The neighboring authority of Great Yarmouth has undertaken considerable work to develop a strategic mitigation strategy for breeding Little Terns at North Denes SPA to the north of Benacre to Easton Bavents SPA. This draws on visitor survey work undertaken across Norfolk (Panter, Liley & Lowen 2017) and recognises the impact of disturbance on the breeding colonies. Little Terns would move around the coast, and in any given year will respond to the availability of suitable nesting habitat, distribution of fish stocks and predator abundance. Disturbance at a breeding site is also a significant factor in where the birds nest in the subsequent year. It is apparent that the Little Terns are utilising a number of nest sites along the Norfolk and Suffolk coastline, and that in some years their movement has been in response to issues at a particular site. It is possible that birds from the North Denes SPA, Benacre to Easton Bavents SPA and Minsmere to Walberswick SPA are interlinked populations. Recognising this, and the strategic mitigation scheme now in place for North Denes SPA, highlights the need for a consistent approach within the Suffolk stretch of the coastline.

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4. Levels of Current and Future Housing

- 4.1 Comparisons of current and future housing provide an indication of which sites will have a marked change in housing levels as a result of those coming forward within the Local Plan period. Levels of current housing in the area were examined, sourced from a national georeferenced postcode dataset. Our postcode dataset originates from Postzon and is based upon Royal Mail Postcode Address File and Ordnance Survey Open data. This details the number of residential properties (delivery points) for each georeferenced full postcode centroid. Plotting of these points in GIS can be used to calculate which postcodes, and subsequently the number of residential properties, which fall within set distance bands from designated sites.
- 4.2 For future housing levels, the relevant local authorities provided GIS data to show potential future housing. These data were intended to provide a snapshot of the scale of likely future development and included allocations and windfall values (i.e. small scale housing applications not related to site allocations). For allocations, typically a site boundary was provided with a value for the number of dwellings. We used this value to assign random points within the relevant boundary to match the number of properties. Windfalls were provided as a level of potential uplift on the quantum of housing related to site allocations, which was applied to relevant existing postcodes. The data are approximate but provide a means for mapping potential future housing. In total, across the Local planning authorities, the allocations represented around 15,070 dwellings and the windfall a further 3,768 dwellings, giving a total of around 18,838 dwellings.
- 4.3 Table 2 shows current and future housing at 1km distance intervals around nine selected SPA/SAC sites. It should be noted that for the purpose of this table, distances relate to the SPA and SAC boundaries not the Ramsar site boundary, where also present. All graphs are presented on the same scale and highlight the varying degrees of housing levels already present around many SPA/SAC sites. The highest values shown are for the Stour and Orwell Estuaries SPA, at the 3km distance buffer (e.g. within a 2-3 km radius). Overall the Stour and Orwell Estuaries SPA has much higher levels of housing than any others, due to the urban nature of the immediate shoreline and surrounding areas. This 3km radius includes approximately half of both Ipswich and Felixstowe. Around many other areas, such as the Deben Estuary SPA and Sandlings SPA, the housing levels can be comparatively low in some places, and then have sudden peaks in others. Particular peaks are associated with the relative position of dense urban areas (Ipswich, Felixstowe and to a lesser extent Woodbridge).
- 4.4 Table 2 also shows the future percentage increase in housing levels relative to the current levels and serves to highlight particularly large increases in housing. The highest levels of change, at least close to the European sites (within 5km) are around the Benacre to East Baven's SPA, where potential new developments include allocations at Reydon, Wangford and Wrentham

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Table 2: The percentage increase in housing from current levels with the addition of future housing around each SPA/SAC site. Bold text and grey shading indicate those above the average across all cells (5.1%).

Site	Percentage housing increase within distance buffers, in km														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Alde-Ore & Butley Estuaries SAC	1	1	0	3	2	5	0	4	1	5	3	7	1	0	1
Alde-Ore Estuary SPA	1	1	0	3	3	8	0	8	7	3	1	1	1	1	1
Benacre to Easton Barents SPA	22	7	6	1	44	2	2	29	2	23	11	49	8	3	0
Deben Estuary SPA	1	4	1	9	1	3	1	2	12	25	4	5	4	12	7
Minsmere-Walberswick SPA	1	13	2	1	4	10	13	6	2	3	1	4	33	17	1
Orfordness-Shingle Street SAC	1	2	1	3	4	12	2	6	6	6	0	1	1	1	0
Sandlings SPA	1	3	1	1	1	2	1	1	0	16	3	1	12	24	7
Staverton Park & The Thicks SAC	0	0	9	0	0	1	1	1	1	1	1	1	1	2	6
Stour and Orwell Estuaries SPA	1	7	5	4	19	14	3	1	2	2	2	1	1	0	0

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5. Relevant Sites for the Strategy

5.1 From a review of the European sites in Section 3, and then an analysis of current and future housing in Section 4, a confirmed list of European sites that should be the focus of the Strategy is presented in Table 3 below. This has been derived as a result of the assessment undertaken in the previous sections. This list confirms and consolidates the previous evolution of the approach to protecting the European sites, from Local Plan HRAs, through bespoke interim solutions to this Technical Report for the strategic approach.

Table 3: Summary of sites and those relevant to the strategy (highlighted in grey).

European site	Include or exclude	Reasons
Alde-Ore Estuary SPA	Include	Low levels of nearby housing, limited access to some parts and likely predominance of tourists (e.g. Aldeburgh) may limit concerns, but public access/disturbance raised in the site improvement plan. Any mitigation re housing solely focussed on selected locations such as Shingle Street and Iken.
Alde-Ore & Butley Estuaries SAC	Exclude	No sensitive features and no concern raised about public access/disturbance in the site improvement plan
Alde-Ore Estuary Ramsar	Include	Low levels of nearby housing, limited access to some parts and likely predominance of tourists (e.g. Aldeburgh) may limit concerns, but public access/disturbance raised in the site improvement plan. Any mitigation re housing solely focussed on selected locations such as Shingle Street and Iken.
Benacre to Easton Barents Lagoons SAC	Exclude	No sensitive features, public access/disturbance not raised in the SIP
Benacre to Easton Barents SPA	Include	Little Tern a sensitive feature, and while already subject to focussed management, measures need to be secured in the long term for the mobile population along this coastline. Strategic mitigation provision to the north in Norfolk indicates need for consistency along the coastline.
Deben Estuary SPA	Include	Narrow estuary where disturbance has potential for impact and is an existing concern. Visitor data shows use from local residents.
Deben Estuary Ramsar	Include	Narrow estuary where disturbance has potential for impact and is an existing concern. Visitor data shows use from local residents.
Dew's Ponds SAC	Exclude	No sensitive interest features.
Minsmere to Walberswick Heaths & Marshes SAC	Include (site fringes outside reserve)	While public access/disturbance identified as an issue in the site improvement plan, a large proportion of the site is managed for nature conservation and already good access infrastructure, wardening, interpretation etc. to raise awareness and minimise impacts. High proportion of visitors to the reserve areas are likely to be tourists so links to local housing tenuous. NE and RSPB have highlighted concerns relating to specific parts of the site (e.g. Fiveways, Westleton Heath, beach areas), where there is much less access infrastructure. Inclusion of this site in the strategy is therefore focussed on the areas outside the managed reserves.
Minsmere – Walberswick SPA	Include (site fringes outside reserve)	While public access/disturbance identified as an issue in the site improvement plan, a large proportion of the site is managed for nature conservation and already good access infrastructure, wardening, interpretation etc. to raise awareness and minimise impacts. High proportion of visitors to the reserve areas are likely to be tourists so links to local housing tenuous. NE and RSPB have highlighted concerns relating to specific parts of the site (e.g. Fiveways, Westleton Heath, beach areas), where there is much less access infrastructure. Inclusion of this site in the strategy is therefore focussed on the areas outside the managed reserves. Some Little Tern nesting locations also within the site (see Benacre to Easton Barents SPA below)..
Minsmere – Walberswick Ramsar	Include (site	While public access/disturbance identified as an issue in the site improvement plan, a large proportion of the site is managed for nature conservation and

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European site	Include or exclude	Reasons
	fringes outside reserve)	already good access infrastructure, wardening, interpretation etc. to raise awareness and minimise impacts. High proportion of visitors to the reserve areas are likely to be tourists so links to local housing tenuous. NE and RSPB have highlighted concerns relating to specific parts of the site (e.g. Fiveways, Westleton Heath, beach areas), where there is much less access infrastructure. Inclusion of this site in the strategy is therefore focussed on the areas outside the managed reserve.
Orfordness-Shingle Street SAC	Include	Much of site has limited access, however specific locations such as Shingle Street vulnerable and popular with local residents.
Sandlings SPA	Include	Two bird interest features are ground nesting and vulnerable to recreation impacts. Visitor surveys show use by local residents and some evidence for existing impacts.
Staverton Park & The Thicks, Wantisden SAC	Exclude	Site has limited parking and a single footpath near one side. As such most of site has no public access. While damage to the site is possible from access (see site improvement plan), issues relate to illegal access/trespassing, as such it will be at low levels and unlikely to be linked to increased housing development given rural location.
Stour and Orwell Estuaries SPA	Include	Close to major conurbation of Ipswich and with existing evidence of impacts, ranked the most vulnerable to recreation impacts from new housing of all the Suffolk estuary SPAs.
Stour and Orwell Estuaries Ramsar	Include	Close to major conurbation of Ipswich and with existing evidence of impacts, ranked the most vulnerable to recreation impacts from new housing of all the Suffolk estuary SPAs.

- 5.2 The Strategy now takes the above European sites and builds an approach for avoiding and mitigating the potential effects of increased recreation, by defining where development is a risk, and where it can be concluded it is not a risk, and establishing a robust set of mitigation measures that are applicable and deliverable.
- 5.3 The Strategy focuses on avoiding and mitigating for recreation pressure on the following European site groups:
- Alde-Ore Estuary SPA/Ramsar site with Orfordness-Shingle Street SAC
 - Deben Estuary SPA/Ramsar site
 - Stour and Orwell Estuaries SPA/Ramsar site
 - Sandlings SPA
 - Benacre to Easton Bavents SPA
- 5.4 In addition, the Strategy includes Minsmere-Walberswick SPA/SAC/Ramsar site, but specifically only the accessible fringes of the designated sites, which lie outside the reserve areas that are managed to provide a visitor destination to access nature. The inclusion of the areas outside the Reserve is primarily in response to concerns raised by Natural England as both a Government statutory nature conservation and advisory body and as site manager for Walberswick National Nature Reserve, and also by the RSPB as site manager for Minsmere RSPB Reserve.

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6. Existing Visitor data: Establishing Zones of Influence

6.1 This section of this Technical Report considers visitor data for the relevant European sites and looks for information relating to where visitors travel from, and the links between where people go and recreation use.

Identifying zones of influence

6.2 Zones of influence are areas from within which it is deemed there will likely significant effect arising from recreation undertaken by additional residents living within the zone. This determines where new development may result in changes in recreation and therefore where mitigation will be necessary. At other European sites around the country these have been identified using visitor survey data that includes home postcodes of visitors. A common approach is to take the distance at which 75% of interviewees had travelled. At sites with tourist use the figure is based on local visitors rather than tourists. The choice of 75% is a pragmatic one, it represents the area where most visitors come from, but excludes the bigger distances where visitors may be more infrequent and outliers that may have come some considerable distance.

6.3 Such zones tend to extend from 5-15km (Table 4).

Table 4: Some examples of zones of influence (relating to recreation) at other European sites. Links relate to one of the relevant local authorities.

Site	Designations	Relevant interest features	Zone of influence
Cannock Chase	SAC	Heathland habitats	15km (N.B due to implementation practicalities, developer contributions are collected from 0-8km to fund zone wide mitigation)
Dorset Heaths	SPA, SAC, Ramsar	Heathland habitats, range of SAC interest, Nightjar, Woodlark, Dartford Warbler	5km
Thames Basin Heaths	SPA	Nightjar, Woodlark, Dartford Warbler	5km
Dawlish Warren	SAC	Sand dunes	10km
East Devon/Pebblebed Heaths	SPA/SAC	Heathland habitats; Nightjar, Dartford Warbler.	10km
Exe Estuary	SPA/Ramsar	Wintering waterbirds	10km
Solent (3 European sites)	SPA/Ramsar	Wintering waterbirds	5.6km
Ashdown Forest	SPA	Nightjar, Dartford Warbler	7km (this was the initial distance used and is in the process of being reviewed, see link).

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- 6.4 Detailed visitor survey data that includes visitor origins (home postcodes) exist for some of the Suffolk European sites or at least some particular locations within the sites. We summarise information below and, where available, highlight the distance within which 75% of visitors were found to have originated. This figure is a useful guide as it suggests a zone where most visitors come from and will clearly capture the majority of use, while excluding outliers and those scattered postcodes that cover a wide area well beyond the core area from which access primarily originates.

The Deben Estuary

- 6.5 Visitor surveys were commissioned by the Deben Estuary Partnership and covered a range of locations on both sides of the estuary (Lake *et al.* 2014). Based on a sample of 280 interviewee postcodes, 75% of visitors interviewed travelling from home (and that gave valid postcodes) lived within 13.2km. The postcode data are shown in Map 4.

Minsmere-Walberswick

- 6.6 Data are only available from the main RSPB reserve, and therefore are not necessarily relevant to the more peripheral areas where the strategy needs to focus. Visitor data were provided by local RSPB staff and show a marked increase in visitor numbers in recent years to the Minsmere Reserve, potentially linked to the site featuring on national television (Springwatch). Visitor numbers in 2014 were 111,825 and rose to 124,426 in 2015. Questionnaire data from 2016 shows that 8% of visitors lived within 10km of the reserve and were visiting from home. A further 37% had travelled from home (but lived beyond 10km). Other visitors were tourists. Postcode data from 2014 are shown in Map 5. A total of 594 interviewee postcodes were collected by the RSPB and of these we could accurately map (i.e. full postcode provided) 426. Of these 61 (14%) fell within the three local authority boundaries relevant to this strategy. Visitors to the main reserve areas are clearly very different to those at the other sites and the core reserve areas should be excluded from the strategy.

Sandlings

- 6.7 Visitor surveys of the Sandlings (Cruickshanks, Liley & Hoskin 2010) included all areas south of Snape. Based on a sample of 501 postcodes the 75th percentile for those travelled from home was 12.9km. The data are shown in Map 4.

Stour and Orwell

- 6.8 Visitor surveys were conducted by the Landscape Partnership in Orwell Country Park in 2015. These data (106 postcodes geocoded, Map 6) show that visitors to the Country Park were mostly local and mainly originated in Ipswich, with the furthest some 68km from the Country Park. The 75th percentile for all these postcodes was 3.56km. The data are not representative for the whole estuary however, only from a single country park at the edge of the main conurbation.

Defining workable zones for the Strategy

- 6.9 A zone of influence is shown for all sites combined in Map 7. This has been drawn as follows:

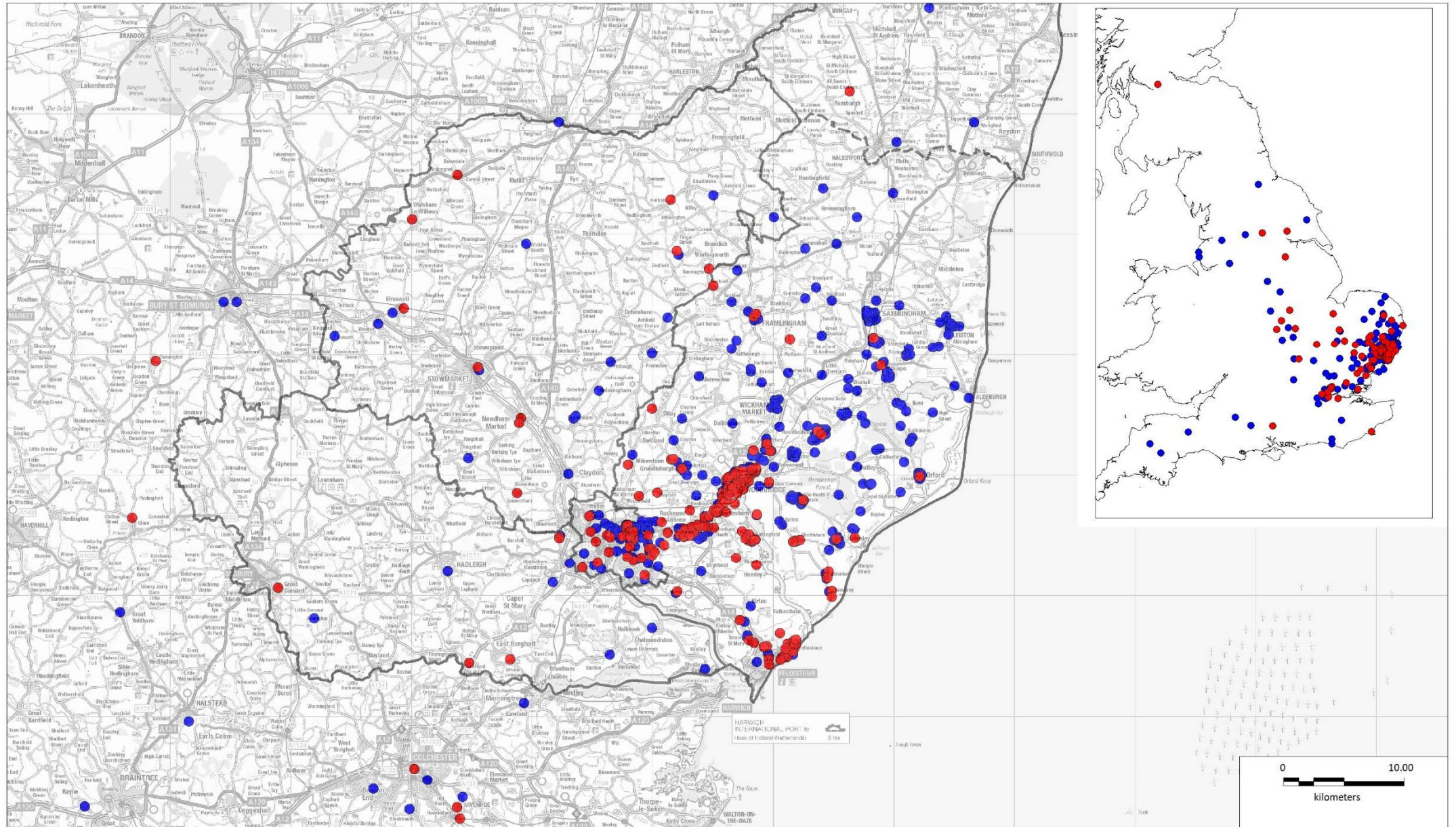
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- 6.10 In line with the Deben and Sandlings data we mapped an outer zone at 13km around the following European sites:
- The Alde-Ore SPA/Ramsar
 - The Deben SPA/Ramsar
 - Minsmere-Walberswick SPA/Ramsar/SAC
 - Orfordness-Shingle Street SAC
 - The Sandlings SPA
 - The Stour & Orwell SPA/Ramsar
- 6.11 The choice of 13km reflects the 75th percentile for the Sandlings and the Deben, drawn from data from multiple survey points. The consistency between the 75th percentile for the two surveys provides some confidence that this is likely to define the draw of the Suffolk Coast for people living inland. 13km is on the larger side compared to some other strategic mitigation strategies but reflects the particular draw of the sites and the spatial distribution of current housing relative to the sites. Whilst evidence from other strategic mitigation schemes provides helpful comparison, zones of influence should be appropriate for the local situation and available evidence. Zones of influence are used to determine the zone within which developer contributions are required in order to contribute to the delivery of the measures to avoid and mitigate for potential impacts. There is potential for the zones to be revised over time should further visitor survey data become available.
- 6.12 North of the River Blyth, the key concern from recreation pressure is Little Terns. These are mobile along the coast, nesting directly on the beaches and have nested at locations such as Kessingland that are outside the European sites. We therefore extended the zone along the coast to encompass the whole northern part of Waveney District. This makes a pragmatic and logical boundary around Lowestoft as the main growth area. This also provides a zone of influence up to the northern boundary of Suffolk, where the Norfolk strategic mitigation commences for Great Yarmouth Borough. This then provides a continued strategic approach for Little Terns across the relevant European sites for this species in Norfolk and Suffolk.
- 6.13 Map 7 shows this overall zone of influence, which has been clipped to the coastline and the relevant local authorities. It encompasses all of Ipswich and most of Suffolk Coastal District and most of Waveney Districts.
- 6.14 For this Strategy, it is necessary to define a simple, pragmatic and useable approach whereby development in any location is only contributing to mitigation relevant to that location. Within this overall zone it is therefore necessary to draw divisions to reflect the relevance to different sites. For example, there is no link between development in the far south, near the Orwell and impacts to Little Terns at Benacre or Kessingland. Equally, for development in Waveney District, there are no pathways by which development might be expected to impact the Stour and Orwell SPA/Ramsar site or the River Deben SPA/Ramsar site.

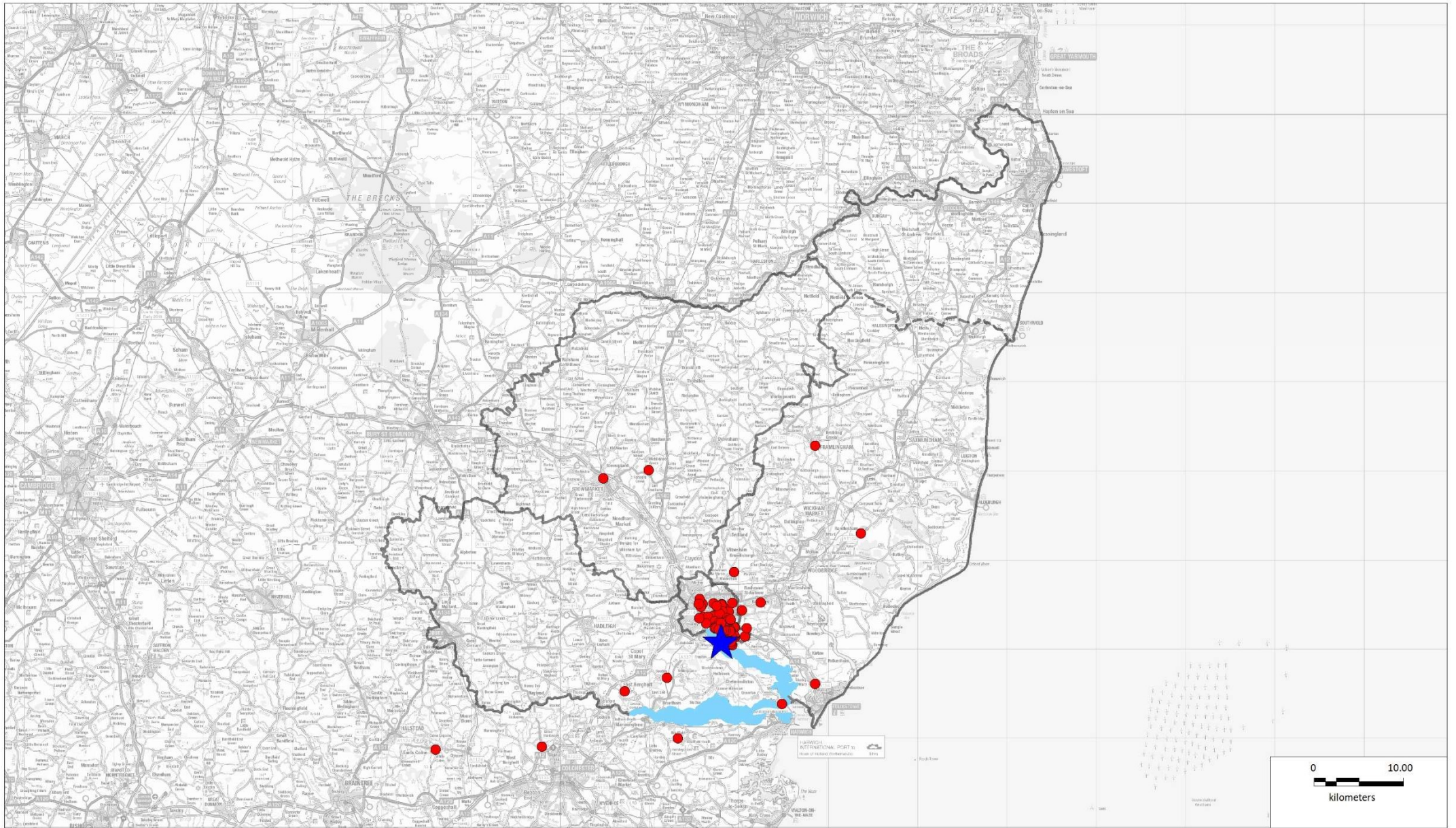
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- 6.15 Over time there has been considerable discussion within the Steering Group and Natural England to determine the most suitable ways to apportion the overall zone for implementing the Strategy. This has focused on making the strategy robust, fair and most importantly implementable without unnecessary complications for administration. Initially, prior to the Strategy being expanded, Ipswich, Babergh and Suffolk Coastal authorities considered how to combine the zones of influence into workable zones for implementation. With the inclusion of Mid Suffolk and Waveney Districts (and now with the merger of Waveney and Suffolk Coastal Districts to form East Suffolk Council), this was revised again with detailed discussion amongst the Steering Group to find the most practical solution.
- 6.16 Map 8 shows a two-zone split. Zone A reflects the zone of influence for the Stour and Orwell SPA/Ramsar and the Deben SPA/Ramsar. Zone B relates to all the relevant European sites apart from the Stour and Orwell.
- 6.17 This split allows impacts and mitigation contributions to be apportioned to relevant sites yet ensures a simple zone map that is straightforward to apply and aligned to local authority boundaries. Using the two zones shown in Map 8 it is possible to estimate the amount of new housing likely to come forward, based on the GIS data provided by the local authorities, within each zone. This suggests a level of development of around 9,592 new dwellings potentially within Zone A and 8,057 within Zone B.
- 6.18 Early in the development of the Strategy, some project level HRA work referred to a potential 8km zone. This was an early identification of a possible zone, based on very limited data (albeit the best available at the time), and it is confirmed that this is now redundant in light of the approach explained here.



Map 4: Footprint Ecology visitor data from the South Sandlings (2010) and the Deben (2014)



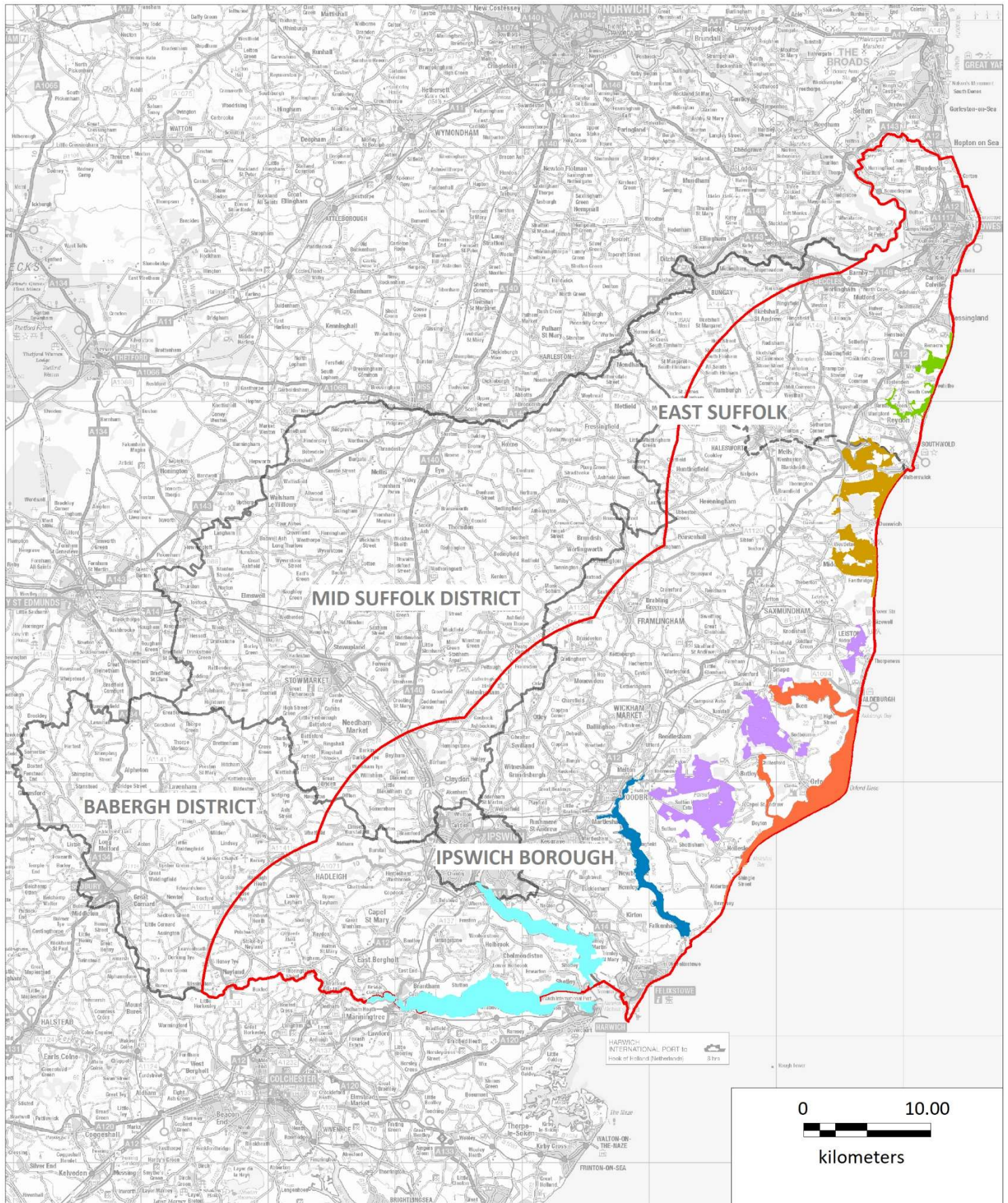
Map 6: Home postcodes for visitors to Orwell Country Park (data from the Landscape Partnership, collected in 2015)



 Relevant local authority boundary
 Historic boundary

 Home postcodes (106 mapped; note 1 from south Essex outside the area mapped)
 Orwell Country Park

Map 7: Overall zone of influence

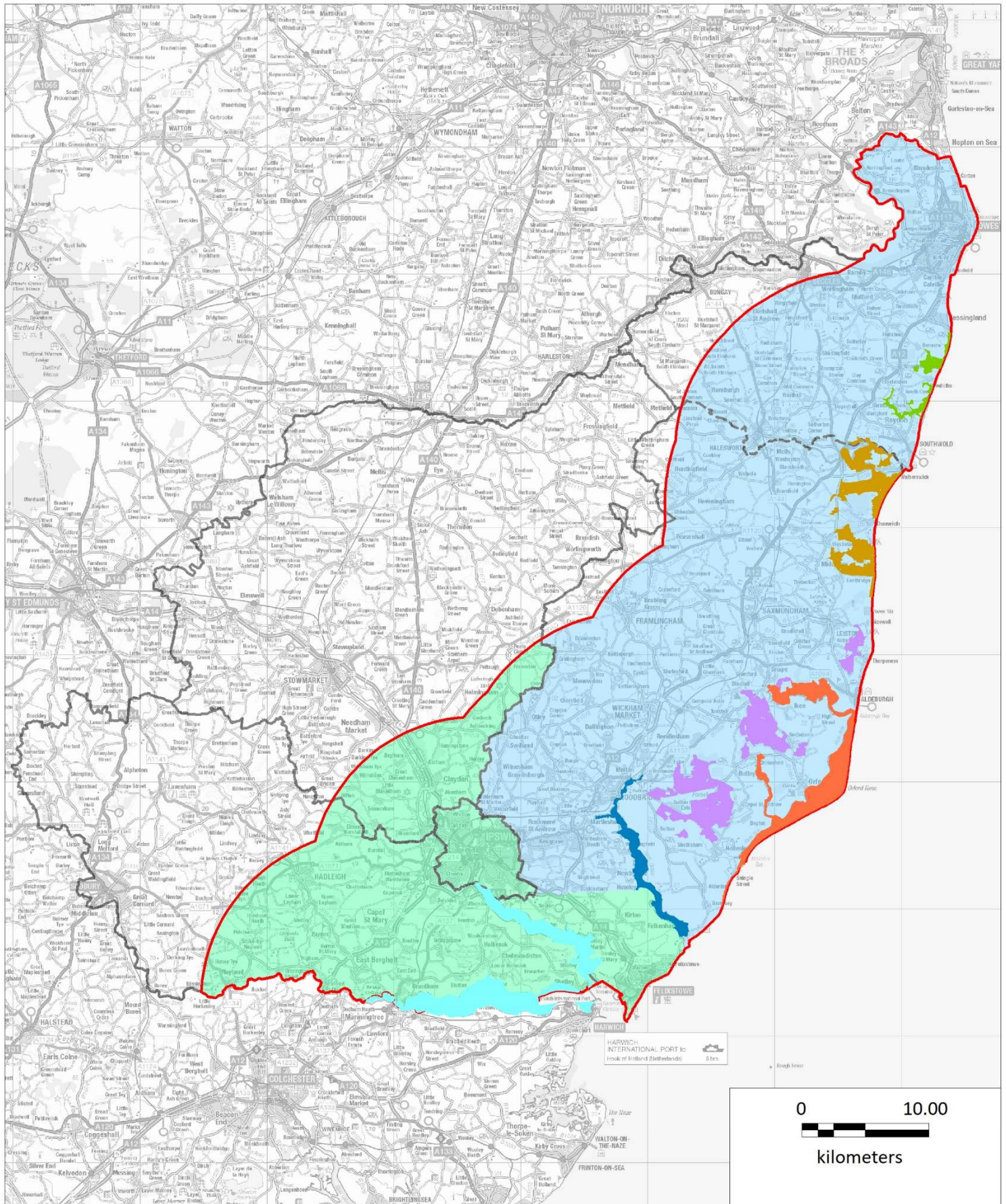


- Relevant local authority boundary
- Historic boundary
- Overall zone of influence

Relevant European sites

- Alde-Ore Estuary SPA/Ramsar
- Benacre to Easton Bavents SPA
- Deben Estuary SPA/Ramsar
- Minsmere-Walberswick SPA/SAC/Ramsar
- Sandlings SPA
- Stour and Orwell Estuaries SPA/Ramsar
- Orfordness-Shingle Street SAC

Map 8: Overall zone of influence and split into Zones A and B



Overall zone of influence



Zone A



Zone B

Relevant European sites

Aide-Ore Estuary SPA/Ramsar

Benacre to Easton Barents SPA

Deben Estuary SPA/Ramsar

Minsmere-Walberswick SPA/SAC/Ramsar

Orfordness-Shingle Street SAC

Sandlings SPA

Stour and Orwell Estuaries SPA/Ramsar

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 European site boundaries sourced from Natural England website; © Natural England.

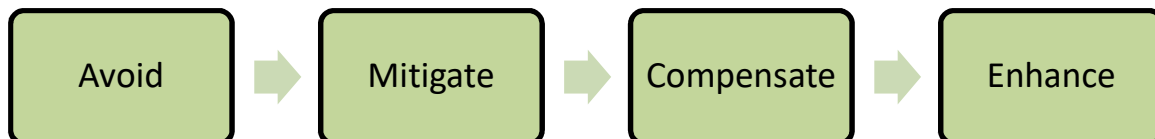
Part 2
Avoidance and
Mitigation

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7. Avoidance and Mitigation Options

The mitigation hierarchy and HRA

- 7.1 In considering the potential impacts of any plan or project, the basic principles of the 'mitigation hierarchy'¹ (which should be applied to any assessment of impacts on the natural environment) are also found in the specific steps in the HRA process. The mitigation hierarchy requires any effects to firstly be avoided, with any remaining effects that cannot be avoided being adequately mitigated for. The definition of avoidance and mitigation in the context of biodiversity impacts is discussed further below.
- 7.2 The HRA process includes a screening for likely significant effects, with the opportunity to apply measures to completely avoid significant effects. This rules out the need to go on to further and more detailed assessment because if an effect is fully excluded, there is no need to assess further. The appropriate assessment stage considers any effects that have not been avoided, and will look at the effectiveness of mitigation or minimization measures that could be applied to reduce an effect to an acceptable level. The final stage of the 'mitigation hierarchy' is the use of compensation as a last resort. Similarly, the steps in the HRA process allow for the use of compensation, but the use of compensation specifically for European site interest is restricted to specific and exceptional circumstances in accordance with the Habitats Regulations.



- 7.3 The Strategy follows the plan level HRA recommendations, for a more coordinated and strategic approach to be developed on the foundations of the interim project by project consideration. This Technical Report includes a range of measures in response to the need to develop the approach into a more strategic mechanism. The measures within this report are therefore those that can be applied as a result of co-ordination, rather than being bespoke and locally centred. Within this report, the measures are those that have been tested against available evidence, reflect best practice elsewhere, are the

¹ The mitigation hierarchy concept of avoid before mitigate, and mitigate before compensate, whilst at the same time seeking enhancements, is an established process in the assessment of impacts on the natural environment, promoted in the Royal Town Planning Institute publication 'Good Practice Guide - Planning for Biodiversity' 1999, republished in 2001. The mitigation hierarchy is now incorporated into the National Planning Policy Framework.

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most optimal approaches for individual site needs, and are informed by stakeholder input. The measures promoted are a combination of those that avoid effects and those which mitigate for effects.

Avoidance and mitigation measures

- 7.4 Avoidance of any impact arising from a plan or project, or completely blocking any effects on European site interest should always be the first option. If a potential effect has been completely avoided, the risk is completely removed. This ensures that there isn't any residual risk. Mitigation measures are those that reduce impacts stemming from the plan or project, or lower the effect that those impacts may have on the European site. A mitigation measure can reduce a risk or negate a risk through action that counterbalances the effect. When such measures are applied, they should reduce an effect to an acceptable level but may not completely eliminate it.
- 7.5 To completely avoid a likely significant effect, measures might include the re-siting of a particular plan allocation away from an area where effects could not be ruled out, to one where there is a good level of certainty that the predicted effects will no longer be realised. Other avoidance measures could be those that completely block an impact pathway, such as closing public access to a sensitive part of a designated site.
- 7.6 Where significant effects cannot be completely ruled out or avoided, the next step in the mitigation hierarchy is to consider measures to mitigate for any potential impact. Such measures might include the addition of natural planting to screen a feeding or roosting site used by SPA birds that are sensitive to disturbance from a public right of way, and to deter dogs from straying from the path. This will not completely eliminate the disturbance or stop every dog from straying from the path, but can be effective in reducing the impact to an acceptable level.
- 7.7 As noted earlier, the measures for the Strategy specifically relate to recreation pressure from residents in the Local planning authority areas. Project level HRA will still be required where there are other risks to European sites.

In-perpetuity

- 7.8 The term 'in-perpetuity' is often referred to when thinking about the requirements to avoid, mitigate or compensate for impacts that have a negative effect on the natural environment. It is a term that has been taken from a legal definition provided in the Perpetuities and Accumulations Act 1964, updated in 2009, where a need to define a period that equates to forever is necessary when dealing with wills and trusts. The 2009 Act defines this as 125 years, formerly 80 years in the 1964 Act. This legal definition is often applied to wider requirements where a stated definition of in-perpetuity is required, and has been accepted in strategic mitigation schemes for European sites such as those in place for the Thames Basin Heaths and Dorset Heathlands.
- 7.9 This Technical Report looks at the strategic measures to avoid or mitigate for recreation pressure arising from new housing growth. As new residential development is permanent in nature, the avoidance and mitigation measures secured should equally

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provide lasting protection for the European site interest features. Avoidance and mitigation measures will therefore need to be those that provide a permanent function, or those that are reviewed and then repeated or modified to provide continual mitigation. The latter option requires commitment to in-perpetuity unless evidence demonstrates otherwise. As such, the way in which avoidance and mitigation measures are funded over a long-term basis is important for the success of the Strategy. This is discussed further in Section 9.

Monitoring and review of measures

- 7.10 Any strategy to avoid or mitigate the impact of a plan or project should not be established and implemented without further checks to determine whether the approach is successful. Competent authorities should monitor any such measures, in order to identify any shortfalls from what was expected. Monitoring allows informed review of a mitigation approach; whereby additional measures could be added or existing measures adjusted to improve effectiveness.
- 7.11 Competent authorities should use evidence to determine the necessary level of monitoring required in order to be certain that measures are working. Importantly, monitoring may need to function as an early warning trigger of the need to adapt the mitigation strategy before adverse effects on European site interest are allowed to occur. By building early warning monitoring into an approach, a competent authority can have certainty that adverse effects will continue to be prevented because the warning is triggered by particular indicators prior to any adverse effect.
- 7.12 Monitoring should therefore result in changes to the mitigation strategy prior to any impacts, i.e. the strategy should continue to prevent impacts from occurring. For this to happen the competent authority needs to have certainty that there are a range of alternative measures that can be applied once a warning is triggered, and/or that the existing measures can be adapted.

Mitigation principles

- 7.13 The National Planning Policy Framework (NPPF) provides a framework for planning bodies to work within when planning for sustainable growth in their local area, and then managing that growth in accordance with the plans in place. Any avoidance and mitigation strategy necessary to protect European sites from impacts arising from development should be designed in accordance with principles embedded within the NPPF. The Strategy therefore seeks to include relevant principles that are in keeping with NPPF principles, supporting sustainable growth whilst protecting the integrity of European wildlife sites. The following principles have been adapted and expanded from those used to shape the strategic mitigation strategy for the Solent (Liley & Tyldesley 2013) and the strategic approach to mitigating for impacts at estuarine sites (Ross *et al.* 2014):
- **Necessary:** the measures within the strategy should be essential in order to enable planning permission to be granted in light of the requirements of the Habitats

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Regulations, the Community Infrastructure Levy Regulations and paragraph 204 of the NPPF (which relates to planning conditions and obligations).

- **Relevant to planning:** the measures should not constitute those which are required irrespective of new growth, in order to meet duties relating to the maintenance and restoration of European sites, as required by Article 6(2) of the Habitats Directive or Article 4(4) of the Birds Directive.
- **Relevant to the development:** the Strategy should be applied to all developments of a kind, scale and location that have the potential to affect the European sites (alone or in combination with other plans or projects), in accordance with the Community Infrastructure Levy Regulations and the NPPF.
- **Effective:** the Strategy should provide certainty that development can proceed without adverse effects on the European sites arising from recreation. Measures should avoid impacts, or reduce the effects to levels which could not possibly undermine the conservation objectives of the European sites, thus meeting the requirements of the NPPF.
- **Cost efficient:** the Strategy should be cost effective in terms of management, collection, fund-holding, distribution and accounting. It should seek to put in place measures that are fit for purpose to achieve the required objectives, but not those that are over and above that which is necessary to give certainty that the European sites will be adequately protected, and not those that deliver other objectives for the local area. Requirements should be fairly and reasonably related in scale and kind to the development, as required by the NPPF.
- **Flexible:** the Strategy should be robust enough to give certainty that European site interest will be protected, but at the same time flexible enough to be reviewed and modified over time, as may be indicated by monitoring. The strategy should be sufficiently flexible to ensure that planned development that is capable of being mitigated for is not impeded by the implementation of the strategy, in accordance with the NPPF. The strategy should be designed with a view that it is adaptable over time to give it greater longevity.
- **Fair:** the Strategy should be applied fairly to development, proportionate to the potential impact that will be generated. Measures should not target particular types of development and leave other types free to proceed without adequately contributing to the mitigation for their impacts. Equally, the measures should be fair in respect of the sources of increased recreational pressure. It is important to note that competent authorities are responsible for securing the necessary mitigation. This may in exceptional circumstances include funding raised from other sources if it is not possible to obtain adequate funding from the development itself (this accords with the solutions focused approach advocated in the NPPF).
- **Evidence-based:** the measures within the strategy should be included on the basis of evidence to justify their need and appropriateness, and to confirm their likely

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effectiveness, and therefore be in accordance with the requirements of the NPPF. The Strategy should not include measures that are unjustified or unproven, or that are desirable to achieve other objectives.

- **Timely and implementable:** the Strategy should be implementable with a good degree of certainty that the required measures can be delivered in a timescale that is related to the commencement of the development and the avoidance of potential impacts, taking account of the gradual change in recreational use over time. This will require considerable forward planning for the strategy to be implemented in a timely manner. Some measures will need to be secured in-perpetuity to ensure that impacts are avoided into the long term.
- **Compliant:** the Strategy should be compliant with planning law and policy, including the Habitats Regulations and parent European Directives, the NPPF, the Community Infrastructure Levy Regulations and the planning legislation and policy relating to the use of Section 106 Planning Obligations.

7.14 From these principles, it is considered particularly important for this Strategy to focus on being evidence based, fair, cost efficient and effective.

There is a clear need to dovetail the Strategy in to existing very positive initiatives that are currently in place. The Strategy needs to fill access management gaps, enhance existing work and ensure that new measures do not conflict with current projects. Stakeholder engagement is therefore a critical part of Strategy development, implementation, monitoring and review.

7.15 Dedicated staff, as discussed in Sections 7 and 8, will make the Strategy a success by overseeing implementation and review, and this includes taking on board ever emerging information and stakeholder input, and also includes overseeing the transition from the interim approach taken forward before finalisation of this Strategy document, including making the most of interim mitigation project outputs such as visitor monitoring.

Developing options for mitigation

7.16 Avoidance and mitigation measures for recreation pressure arising from the Local planning authority areas are developed within this Strategy by drawing on the following sources of information:

- Consideration of best practice elsewhere in the UK
- Monitoring information gathered from strategic mitigation schemes elsewhere in the UK

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- Locally specific evidence for the European sites
- Locally specific evidence in relation to recreation
- Evidence from elsewhere in the UK that is relevant to the local situation
- Local initiatives already in place and delivering avoidance and mitigation measures
- Footprint Ecology's own research and staff expertise
- Discussion at the stakeholder workshop event, drawing on local knowledge and experience
- Input from Natural England
- Input from the Suffolk Coast and Heaths AONB Unit
- Input from ecological and planning staff within each of the three Local planning authorities and Suffolk County Council
- Input from the local and country ecologists.

7.17 This is a mixture of national information of relevance, and local knowledge and understanding.

Options for mitigation – national best practice

7.18 The following list of avoidance and mitigation measures in Table 5 is collated from European site mitigation approaches across the country and identifies mitigation measures that could be applicable to each type of site. The table also indicates where a measure is suitable for general application to all sites at a strategic level, and where it would need to be designed to suit a local and specific situation.

7.19 Footprint Ecology continually adds to its library of information relating to European site mitigation, and available evidence on the applicability and effectiveness of the various measures. There are gaps in our understanding of how effective some of these measures might be and which are best employed in particular circumstances or locations. As more mitigation schemes are monitored and reviewed, the long list of measures is updated and refined with new information coming forward. This Technical Report is therefore using the most up to date information available.

7.20 Avoidance and mitigation measures may be applicable and successful in some situations and not others. Whilst evidence may indicate that a particular measure has achieved its objectives in one location, local circumstances may render a measure difficult to implement in another. Table 5 lists mitigation measures that have been successfully applied elsewhere and highlights where local information will be necessary in order to determine whether the measure is locally applicable.

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Table 5: Potential mitigation measures. Relevant site type and spatial scale columns are indicative and measures will vary markedly between sites. Sort order indicates effectiveness based on expert scoring (i.e. measures listed towards the top of the table were scored as more effective), undertaken by Ross *et al.* (2014), from which this table is derived and adapted.

Key: Measures that could be implemented through a site wide approach Complex measures potentially difficult to deliver. Careful consideration and local evidence necessary Measures that are more likely to be applied on a site by site basis

Measure	Type of site the measure relates to						Spatial scale			Very Site Specific	Temporal scale		
	Estuary - shore	Estuary - Water	Shingle	Heathland	More appropriate for sites with wardens	Dog walking impacts	Local	Strategic	Can be off-site		Short term measures: can be established quickly and likely to be effective quickly	Medium term measures	Major long-term projects/ large infrastructure
Lagoon and wetland creation	✓	✓				✓	✓	(✓)	✓			✓	
Hides	✓						✓				✓	✓	
On-site visitor engagement	✓	✓	✓	✓	✓	✓	✓	(✓)			(✓)	✓	
Screening	✓					✓	✓				✓	✓	
Development exclusion zones	✓	✓				✓		✓	✓		✓		
Artificial roosts	✓	✓				✓	✓		✓		✓	✓	
Closing car parks	✓	✓	✓	✓		✓	✓	(✓)			✓	✓	
Re-siting/relocating of car parks	✓	✓	✓	✓		✓	✓	(✓)			✓	✓	
Path improvement	✓			✓			✓				✓		
Permits / licences	✓	✓	✓		✓		✓	✓			✓	✓	
Path closure	✓		✓	✓		✓	✓				✓		
Path diversion	✓		✓	✓		✓	✓				✓		
Vehicle restrictions/barriers	✓	✓	✓	✓		✓	✓				✓		

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Measure	Type of site the measure relates to						Spatial scale			Very Site Specific	Temporal scale		
	Estuary - shore	Estuary - Water	Shingle	Heathland	More appropriate for sites with wardens	Dog walking impacts	Local	Strategic	Can be off-site		Short term measures: can be established quickly and likely to be effective quickly	Medium term measures	Major long-term projects/ large infrastructure
Direct contact with local clubs/user groups	✓	✓	✓	✓		(✓)	✓	✓	✓	✓		✓	
Alternative routes	✓			✓		✓	✓				✓		
Temporary exclusion fencing	✓		✓	✓		✓	✓				✓		
Managed retreat	✓	✓				✓	✓		✓				✓
Watersports zones		✓			✓			✓				✓	
Alternative sites	✓	✓		✓		✓		✓				✓	✓
PSPO ¹ s to exclude dogs entirely	✓		✓	✓	✓	✓	✓					✓	
Dedicated routes	✓			✓		✓	✓					✓	✓
Limiting/reducing parking provision	✓	✓	✓	✓		✓	✓	✓				✓	
Dog fenced areas	✓		✓	✓	✓	✓	✓				(✓)	✓	
Planning conditions	✓	✓		✓		✓	✓	✓	✓		✓	✓	
Other byelaws (e.g. fishing, kite surfing, etc.)	✓	✓	✓	✓	✓	✓	✓	✓		✓		✓	
PSPOs ¹ to keep dogs on a lead	✓		✓	✓	✓	✓	✓					✓	
Signs	✓	✓	✓	✓		✓	✓					✓	
Information materials (leaflets, interpretation)	✓	✓	✓	✓		✓	✓	✓				✓	

¹ Public Space Protection Orders, see <https://www.gov.uk/control-dog-public/public-spaces-protection-orders>

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Measure	Type of site the measure relates to						Spatial scale			Very Site Specific	Temporal scale		
	Estuary - shore	Estuary - Water	Shingle	Heathland	More appropriate for sites with wardens	Dog walking impacts	Local	Strategic	Can be off-site		Short term measures: can be established quickly and likely to be effective quickly	Medium term measures	Major long-term projects/ large infrastructure
Codes of conduct	✓	✓				✓		✓	✓		✓		
General off-site information provision	✓	✓	✓	✓		✓		✓	✓		✓		
PSPOs ¹ to put dogs on a lead when asked	✓		✓	✓	✓	✓	✓				✓		
Changing parking charges	✓	✓	✓	✓		✓	✓	✓	✓		✓		
PSPOs ¹ to limit the number of dogs per walker				✓	✓	✓	✓				✓		
PSPOs ¹ to pick up dog fouling			✓	✓	✓	✓	✓				✓		

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Options for mitigation – using local knowledge and evidence

7.21 In addition to evidence and best practice from elsewhere, it is also important for a Strategy to be informed by local understanding. As part of the development of this Strategy, consultation with local stakeholders has provided valuable input. The means by which the local stakeholder input has been obtained, and the outcomes, are described below.

Discussions with Natural England’s local area team

7.22 A telephone meeting with Natural England took place a few weeks before the stakeholder workshop event, to inform the planning for the event. During the meeting, Natural England staff confirmed that their role was to support and guide the development and implementation of the Strategy, but that the main driver must be via the Local planning authorities. Natural England therefore welcomed the more strategic approach being taken forward, in line with the recommendations of plan level HRA.

7.23 Footprint Ecology and Natural England staff discussed the focus on the European site groups for the Strategy (Alde/Ore and Shingle Street, the Deben, Sandlings, Stour and Orwell and Minsmere-Walberswick). Discussions included the new housing development coming forward to the north of the Suffolk Coastal District, near Minsmere and Walberswick, and Natural England provided interim advice at the project level in their responses to these planning applications. It was agreed that the Strategy will need to consider potential impacts arising from new development in this area. At the same time, it is also acknowledged that Minsmere-Walberswick is a flagship nature reserve area with established visitor management. As noted in Section 5, the potential effects on the SPA/SAC/Ramsar arising from recreation therefore relate to peripheral parts of the site outside the managed reserve areas. The approach to Minsmere-Walberswick is discussed in more detail within Section 8.

7.24 The meeting included a discussion on the relevance of the Sizewell C nuclear power station development that is proposed by EDF Energy adjacent to the existing site. Natural England has been giving advice to EDF Energy in relation to the potential impacts arising from the proposal on the natural environment. Of relevance to the Strategy is the proposed 10-year construction period for the new power station, during which time approximately 5,600 construction workers will be employed at the peak of the construction phase. Whilst construction worker accommodation is yet to be finalised, it is anticipated that the majority of workers will be accommodated locally as part of the proposal. A number of public rights of way will be affected, mainly during construction, which may lead to changes in use of recreation routes in the local area.

7.25 The strategic approach for the Strategy is likely to be in place before Development Order Consent is applied for by EDF Energy. The Sizewell C development will be required to mitigate for any significant impacts on European sites. The HRA for Sizewell C will therefore identify the need for any avoidance and mitigation measures, which do not need to be considered further at this point in time.

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- 7.26 Natural England advised that whilst the England Coast Path (ECP) is being planned, the stretches of coastline relevant to this Strategy are still in early stages of consideration. This was also confirmed by conversations with ECP officers. The ECP stretches will be the subject of HRA, which should include consideration of housing development and therefore identify links with the Strategy.
- 7.27 Natural England referred to the HRA work of neighbouring authorities, including Tendring and Colchester. As discussed in Section 10, after implementation of the strategic approach for the Strategy, attention needs to be given to the evolving changes to how spatial planning and development management is delivered by the planning authorities in the area. With continuing amalgamations of services and the preparation of joint plans and strategies in the future, the Strategy will similarly need to evolve.

Stakeholder workshop and consultation

- 7.28 Consultation with leading or local experts has been proved to be an effective means of informing strategic mitigation schemes, and this was an important element of the approach to strategic mitigation for the Solent¹. Similarly, it was recognised that local stakeholders can provide valuable information to assist with the Strategy, and it was therefore decided that a local stakeholder workshop event should inform the preparation of this report.
- 7.29 A half day workshop event to draw upon local and specialised knowledge from a wide range of organisations and individuals was held in November 2016, with over 50 people invited to attend and over 30 people in attendance. Whilst several organisations were unable to attend, all invitees were given the opportunity to fill in a questionnaire after the workshop event, which included providing further information or evidence, thus giving those not able to attend the ability to contribute thoughts and relevant information.
- 7.30 The workshop demonstrated that there is a wealth of local knowledge and experience from individuals and organisations involved in research, surveys, management and protection of the European sites in Suffolk. Testing mitigation options requires a good understanding of the local issues for each site, and an appreciation of what mitigation options may or may not be workable in the local situation. An important part of the Strategy is therefore the involvement of and input from local stakeholders to the consideration of avoidance and mitigation measures.
- 7.31 Attendees were asked to participate with productive discussion and a solution seeking focus. They were invited to think about the recreation related issues at the European sites, and to contribute to discussions on mitigation solutions that may work well at each of the sites.

¹ <https://www.portsmouth.gov.uk/ext/environment/solent-recreation-mitigation-strategy.aspx>

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- 7.32 The outputs from the workshop discussions, including annotated maps, where discussions referred to specific locations are provided at Appendix 2.
- 7.33 In summary, the key messages from the workshop attendees were as follows:
- Avoidance and mitigation measures need to relate to sensitive locations. There are areas where birds feed and roost that are currently subjected to a level of disturbance and this is likely to increase with more housing.
 - The Orwell Estuary is vulnerable to disturbance due to its narrow intertidal area and significant recreation use. New housing in Ipswich and the southern part of Suffolk Coastal District may exacerbate existing problems if not mitigated for.
 - An increased warden presence is a priority for avoidance and mitigation.
 - Signage is not consistent, with some areas providing comprehensive signage but in many other areas it is out of date and/or in the wrong place.
 - The current partnerships such as those on the Estuaries have local knowledge and understanding and need to be involved in the development of new avoidance and mitigation measures.
- 7.34 Within the workshop, wardening was particularly highlighted as important for many sites and dog walking was consistently raised as a particular issue. In a follow-up questionnaire circulated to participants, respondents were asked to score a range of different measures as ones they felt would be most appropriate for the sites they had experience of: face-face wardening and a dog project engaging with dog walkers were scored the most highly¹.
- 7.35 Dog projects elsewhere are gaining attention due to their successful engagement with dog walkers and were referred to by workshop attendees during the event. These include projects in Dorset² and on the Solent³.
- 7.36 During the preparation of this Technical Report the workshop attendees were contacted again to ask for their comments on a draft version of this report. During this stakeholder review, respondents provided comments that have now been used to inform the final version of this Technical Report and will also be used to assist the Delivery Officer once in post.

Discussions with organisations managing European sites

- 7.37 The stakeholder workshop event included attendees involved in managing the European sites, with organisations such as Natural England, the RSPB, National Trust, Forestry Commission and Suffolk Wildlife Trust, providing valuable contributions in

¹ There were 12 respondents. The question asked for scores for a range of different measures on a scale of 0 (not appropriate at all) to 4 (highly appropriate). Both face-face wardening and a dog walking project had a median score of 3.5 (mean 3.1), with 6 people in both cases giving a score of 4.

² <https://www.dorsetdogs.org.uk/dorset-dogs.html>

³ <http://www.birdaware.org/research>

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terms of local site management knowledge and experience. As described above, Natural England has highlighted their concern in relation to housing in the northern part of the Suffolk Coastal District, including at Leiston, advising that there are potential risks to Minsmere-Walberswick SPA/SAC/Ramsar, specifically for the peripheral areas of the designated sites outside the core reserve areas. This Strategy must therefore find a solution to mitigating for these potential risks, whilst recognising that the site differs from the others in that the majority of the designated site is already well managed in terms of access.

- 7.38 Footprint Ecology therefore held discussions with the RSPB, as the land manager for much of the designated Minsmere-Walberswick site (Natural England also manages some of the site at the Walberswick National Nature Reserve). The RSPB has provided helpful information on their understanding of the issues relating to the peripheral parts of the designated site; in terms of both the current access management outside the reserve areas, and how this may need to be added to with appropriate mitigation at part of this Strategy.
- 7.39 The RSPB Reserve at Minsmere provides a visitor centre, shop and café. Access to the reserve is free for RSPB members, and a charge is applied for non-members. With the exception of assistance dogs, all other dogs are not allowed within the RSPB Reserve, and are limited to the immediate visitor centre area only. The RSPB promotes the use of the public rights of way for dog owners (on the Reserve website), including the perimeter path around the reserve, and also at Westleton Heath National Nature Reserve where dogs are required to be kept on leads.
- 7.40 The RSPB has raised concerns relating to the potential increase in houses resulting in additional recreation pressure on the heathland periphery of the Reserve. Site staff have recommended that better monitoring would provide useful information to inform future measures (such as gate counters at key access points to the peripheral areas), and better interpretation provision for visitors, including the explanations for any restrictions being imposed (such as dogs on leads). Engagement with local communities should complement any new interpretation.
- 7.41 Any avoidance and mitigation should be distinctly separate from the function of the RSPB reserve, rather the Strategy will target the local resident use of peripheral areas of the European site to secure mitigation that will enhance local understanding and better manage local access.

Local evidence

- 7.42 Workshop attendees and post-workshop questionnaire respondents provided several sources of additional local evidence in relation to potential impacts, current access management at the sites and both current and possible avoidance and mitigation measures.

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Suitable Alternative Natural Greenspace provision

- 7.43 In addition to the preparation of this Technical Report to establish a range of avoidance and mitigation measures at a strategic level that manage access at the European sites, the plan level HRA work referred to in Section 2 of this report specifically identifies a need for provision of alternative greenspaces. Where housing growth will be significant in one particular location, large scale natural greenspaces are an additional measure, which are delivered individually within development projects. These provide an alternative to recreation on European sites are referred to as Suitable Alternative Natural Greenspaces (SANGs). The need for SANGs as an additional measure may be identified as new housing allocations are brought forward with Local Plan reviews.
- 7.44 An example of this is a proposal for a 2,000-home development at Brightwell Lakes, formerly known as Adastral Park, Martlesham Heath, with employment development to support 2,000 new jobs. The Suffolk Coastal District Core Strategy seeks to deliver at least 7,900 dwellings in the period 2010 to 2027 and the Adastral Park Development is therefore a key development in the overall housing strategy for the District.
- 7.45 The Brightwell Lakes proposal was originally submitted as a planning application a number of years ago, but was not determined due to delays in the progression of the Core Strategy prior to its adoption in 2013. Delay in determining the planning application now means that the delivery of the full 2000 dwellings is likely to continue beyond the current plan period.
- 7.46 In recognition of the fact that the proposal was a live planning application for some time, the original application was been withdrawn and a new application submitted, with a master-plan prepared for the proposal. This includes consideration of potential impacts on European sites, including identifying the location and size of the SANG as part of the greenspace component of the development. It will be an expansive greenspace and should incorporate design features that enable the SANG to be a viable alternative to undertaking recreation on the European sites.
- 7.47 The extent and design of the new SANG is being informed by current best practice in SANG provision. This is discussed further in Section 8. The current proposal is to provide an area of SANG of approximately 16ha, with additional formal open space provision in association with community infrastructure. It is understood that Natural England are supportive of this proposal.

Analysis of access infrastructure and new housing

- 7.48 An important step in identifying mitigation measures is ensuring the right locations are targeted. In Map 9 we provide an overview of the European sites included in the strategy and the current access infrastructure in terms of the path network and parking. In this map car-park locations are the main, formal car-parks indicated by a "P" on the Ordnance Survey 1:25,000 series maps. This map layer has been based on work done for Natural England where all such car-parks around estuary sites in England were mapped and extended as necessary to other sites. Within Map 10 the graduated symbols reflect the volume of current housing within a 13km radius (red) and the blue

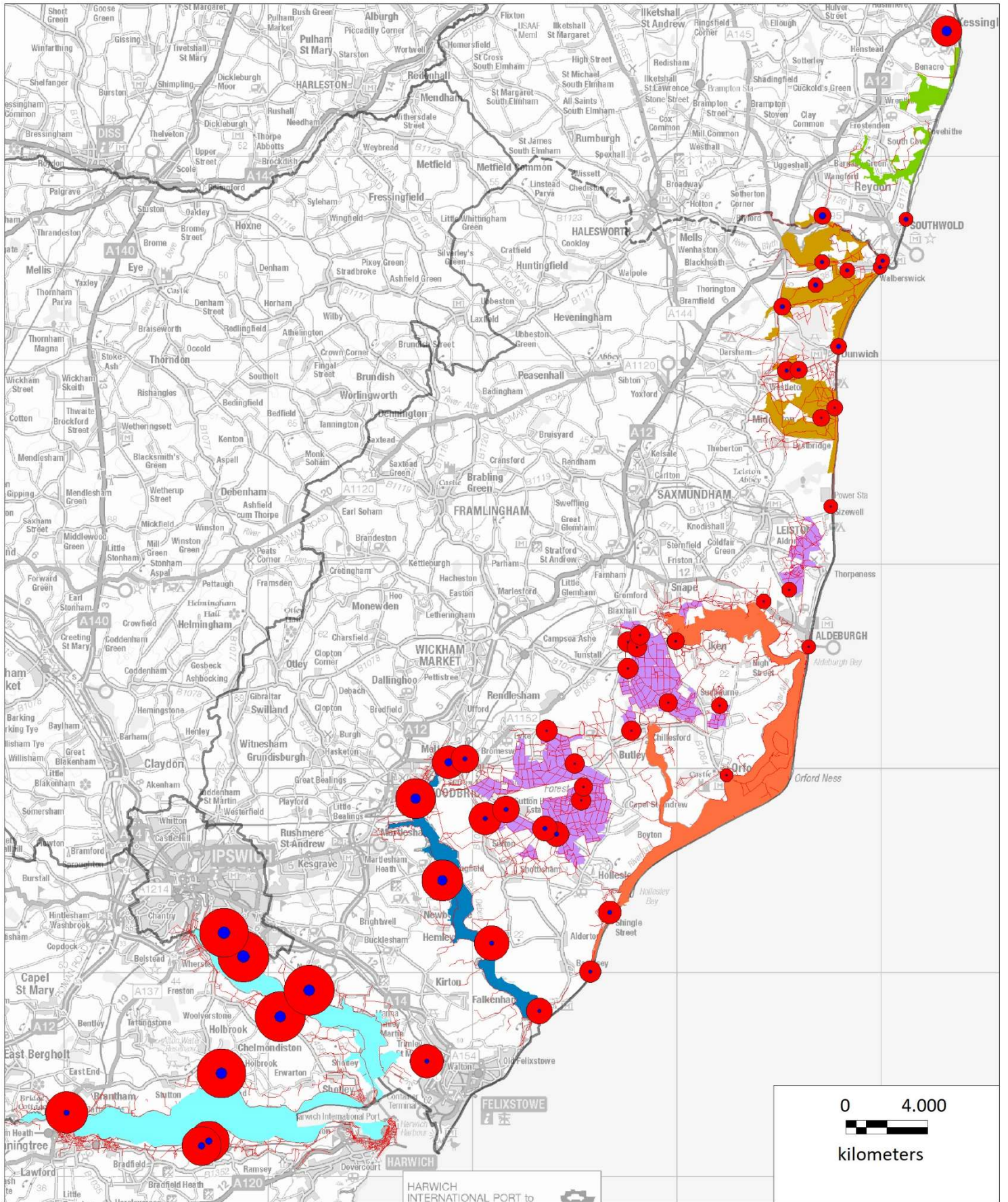
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dots represent new housing (i.e. current plan period) within the same radius. The larger blue dots therefore indicate locations where the greatest change in potential visitor numbers might be expected.

- 7.49 The path network in Map 10 is also based on the previous mapping work conducted for Natural England, where we used OpenStreetMap¹ data to show paths, tracks etc. around estuaries. This data is useful in that it includes a range of data sources including that uploaded by public (e.g. from personal GPS tracks). In order to generate Map 10 we have supplemented our OpenStreetMap data for estuaries with OpenStreetMap for other sites, and data from work in the Sandlings (Cruickshanks, Liley & Hoskin 2010) where we mapped forestry tracks and other paths. The red lines representing the path network therefore provide an overview of where there is current access, and a high density of paths potentially indicates more access or more urban areas.
- 7.50 From Map 10 it can be seen that the Orwell, Stour and the Deben are the sites with the most houses within 13km of car-parks and the largest changes in housing within that 13km radius. The map also highlights the relative lack of public access to parts of Orfordness and the Alde-Ore Estuary and to the Deben (north shore between Ramsholt and Bawdsey).

¹ See <https://www.openstreetmap.org/>

Map 9: Sites in the strategy, with parking and path network



Relevant European sites

- Alde-Ore Estuary SPA/Ramsar
- Benacre to Easton Barents SPA
- Deben Estuary SPA/Ramsar
- Minsmere-Walberswick SPA/SAC/Ramsar
- Orfordness-Shingle Street SAC
- Sandlings SPA
- Stour and Orwell Estuaries SPA/Ramsar

Car-parks by level of housing within 13km (red = current; blue = future)

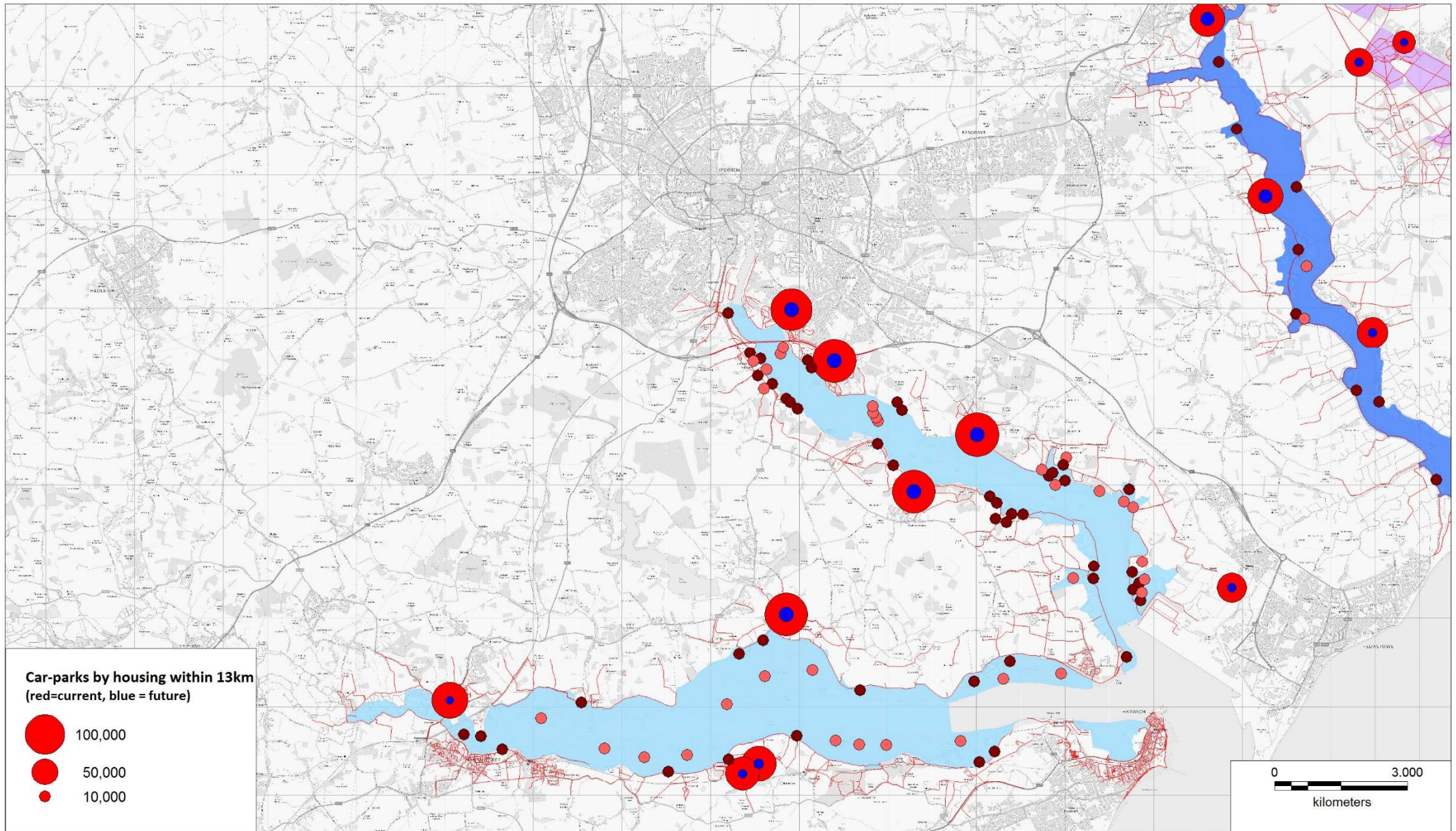
- 100,000
- 50,000
- 10,000
- Path netw

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Identifying key areas for mitigation: maps showing key locations and access infrastructure

- 7.51 In developing mitigation options, the locations within each European site where measures are most required must be established. The following maps (Maps 10 -13) identify key areas where new housing will come forward and where there are features present that are potentially sensitive to recreation.
- 7.52 Sensitive features within sites primarily relate to birds and habitat features. Footprint Ecology has identified these locations drawing on our own knowledge of the sites, the workshop held with stakeholders in November 2016 and data in a range of reports (Suffolk Wildlife Trust 2007; Mason, Excell & Meyer 2014; Ross *et al.* 2014; Panter & Liley 2016). With respect to birds, there are locations within sites where particular aggregations may occur and as such are locations that are potentially particularly sensitive to impacts from recreation. We have mapped as point data roost sites, feeding/loafing areas and areas (such as lagoons) that hold aggregations of nesting birds. For Minsmere and Walberswick (see Map 13) there are no particular locations as large areas of the SPA hold breeding bird interest and instead particular locations are labelled around the periphery of the main reserves where there are potential impacts from recreation.
- 7.53 For the Sandlings, we have extracted areas of lowland heathland and acid grassland based on the Natural England Priority Habitats data; we have singled out these areas as important as they are relatively permanent and support breeding Nightjar and Woodlark. Within the forestry blocks suitable nesting habitat for Nightjar and Woodlark will also be created temporarily when trees are felled, but we have not tried to map felling cycles. We have also used Priority Habitat data to identify areas of coastal vegetated shingle. This is a habitat type particularly vulnerable to impacts from trampling.
- 7.54 While the whole of the European site is important, the locations and features highlighted in Maps 11-13 provide an indication and overview of sensitive locations to inform the Strategy. The maps are not intended to be exhaustive and locations are mapped as a guide only; it is important to note that the distribution of habitats and species will shift over time. Certain locations may be important at very specific times/infrequently and may change in importance over time. Some roost sites may hold small numbers of birds and as such have not been mapped, yet such sites may still be important. As noted earlier, the car parks mapped are those marked as formal car parks on the Ordnance Survey map. There will therefore be other car parks that are not identified.
- 7.55 This information should therefore be used to target the avoidance and mitigation measures that are recommended for the Strategy, discussed in Section 8.

Map 10: Stour & Orwell, showing major roosts, key foraging/loafing areas, parking and path network



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European site boundaries sourced from Natural England website; © Natural England.

Bird data from various sources, see report text. Path network drawn from OSM data; © OpenStreetMap contributors.

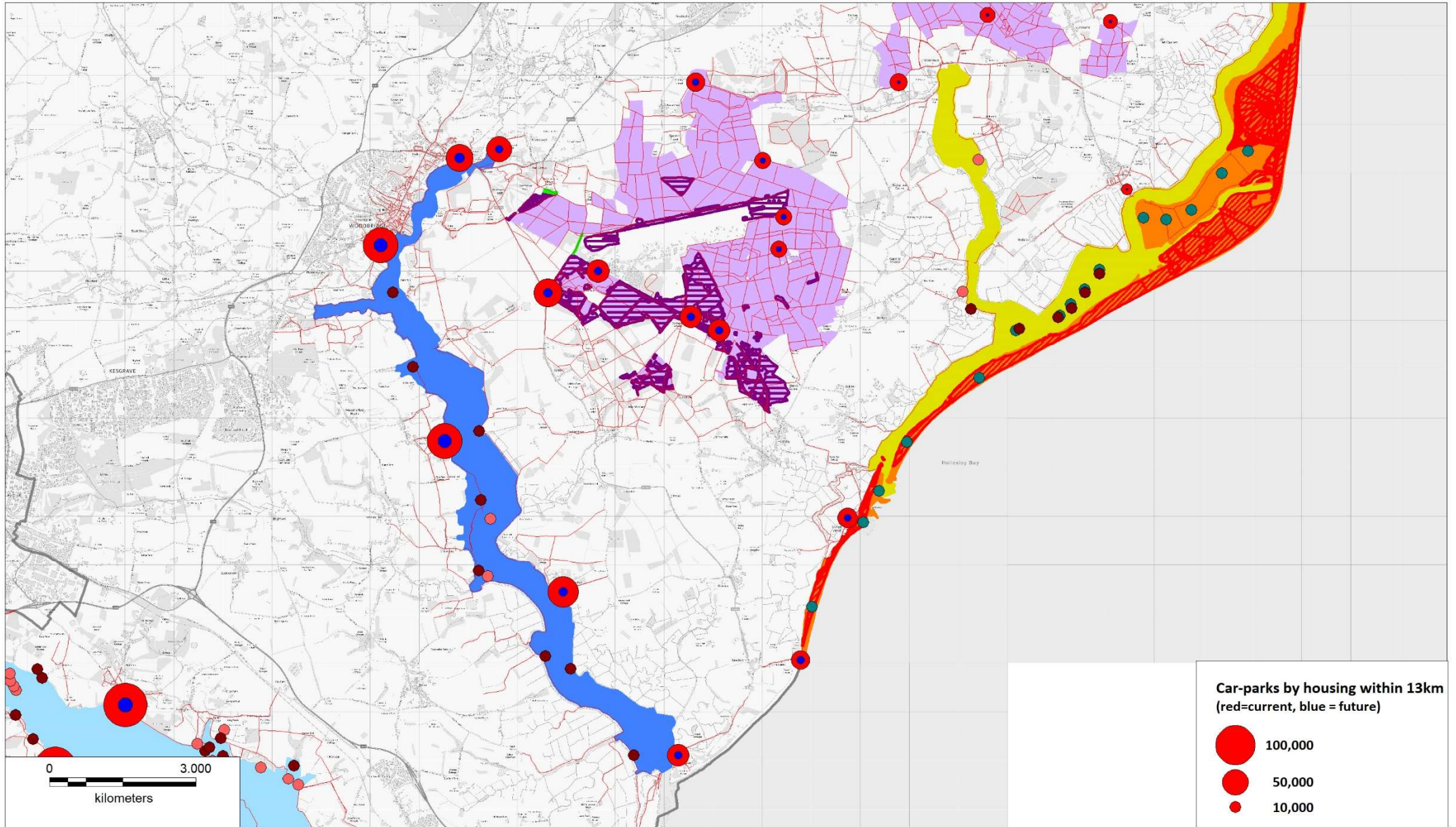
Deben Estuary (SPA/Ramsar)
 Sandlings (SPA)
 Stour and Orwell Estuaries (SPA/Ramsar)

Key locations for interest features

Bird loafing/feeding
 Bird Roost Site

Path/tracks

Map 11: Deben, south Sandlings & southern Alde-Ore, showing major roosts, key foraging/loafing areas, parking and path network



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 European site boundaries sourced from Natural England website; © Natural England.
 Bird data from various sources, see report text. Path network drawn from OSM data; © OpenStreetMap contributors.

- | | | | |
|---|--|---|---|
| <p>— Path/tracks</p> <p>● Bird breeding</p> <p>● Bird loafing/feeding</p> <p>● Bird roost</p> | <p>Key locations for interest features (birds)</p> <p>● Bird breeding</p> <p>● Bird loafing/feeding</p> <p>● Bird roost</p> | <p>Key Habitats
 Habitats from NE Priority Habitats Data</p> <p>▨ Coastal vegetated shingle</p> <p>▨ Lowland Dry Acid Grassland</p> <p>▨ Lowland Heathland</p> | <p>■ Alde-Ore Estuary (SPA/SAC/Ramsar)</p> <p>■ Deben Estuary (SPA/Ramsar)</p> <p>■ Orfordness-Shingle Street (SAC)</p> <p>■ Sandlings (SPA)</p> <p>■ Stour and Orwell Estuaries (SPA/Ramsar)</p> |
|---|--|---|---|

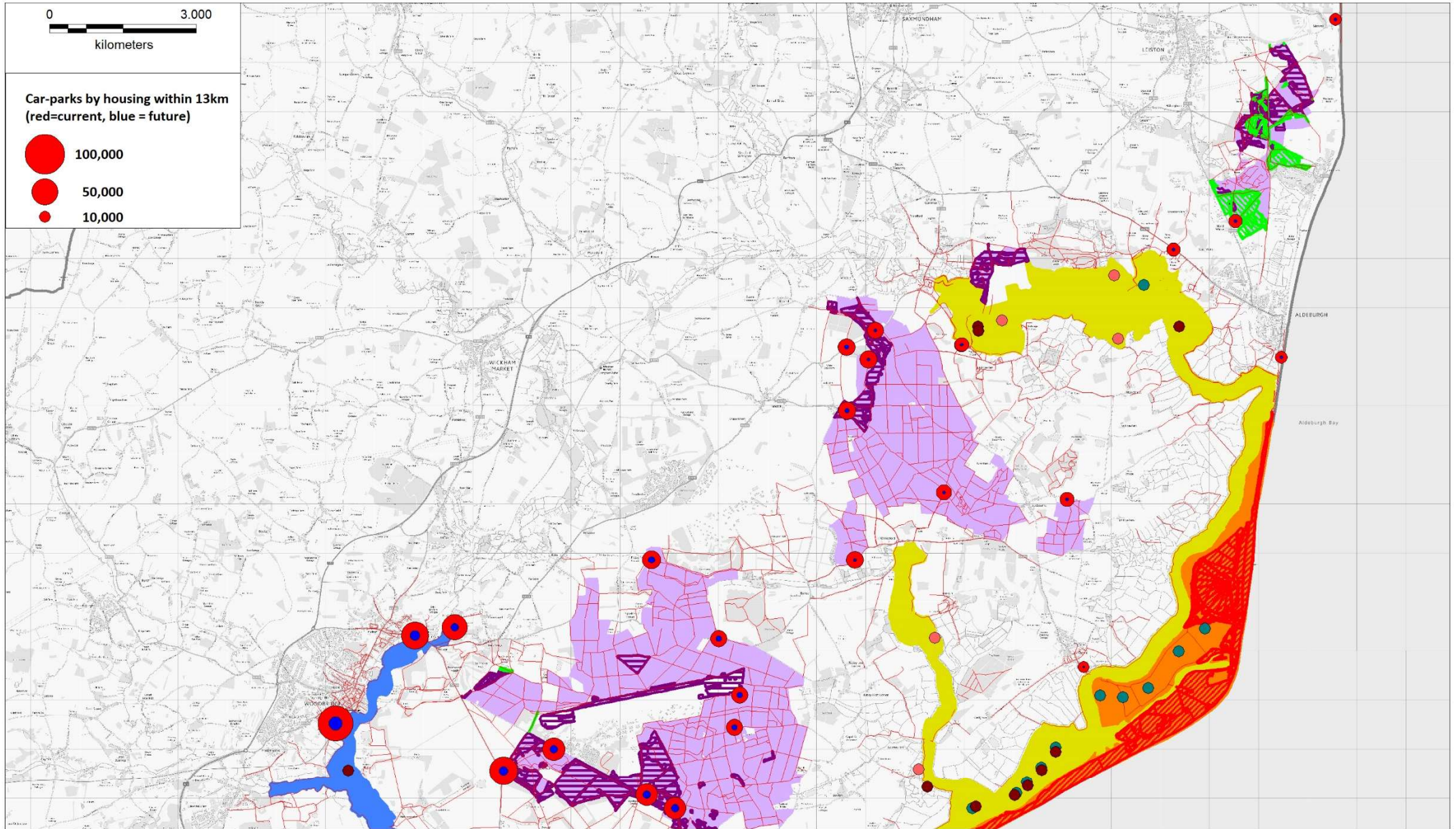
Car-parks by housing within 13km
 (red=current, blue = future)

● 100,000

● 50,000

● 10,000

Map 12: Deben, north Sandlings & southern Alde-Ore, showing major roosts, key foraging/loafing areas, parking and path network



— Path/tracks

Key locations for interest features (birds)

- Bird breeding
- Bird loafing/feeding
- Bird roost

Key Habitats

Habitats from NE Priority Habitats Data

- ▨ Coastal vegetated shingle
- ▨ Lowland Dry Acid Grassland
- ▨ Lowland Heathland

■ Alde-Ore Estuary (SPA/SAC/Ramsar)

■ Deben Estuary (SPA/Ramsar)

■ Orfordness-Shingle Street (SAC)

■ Sandlings (SPA)

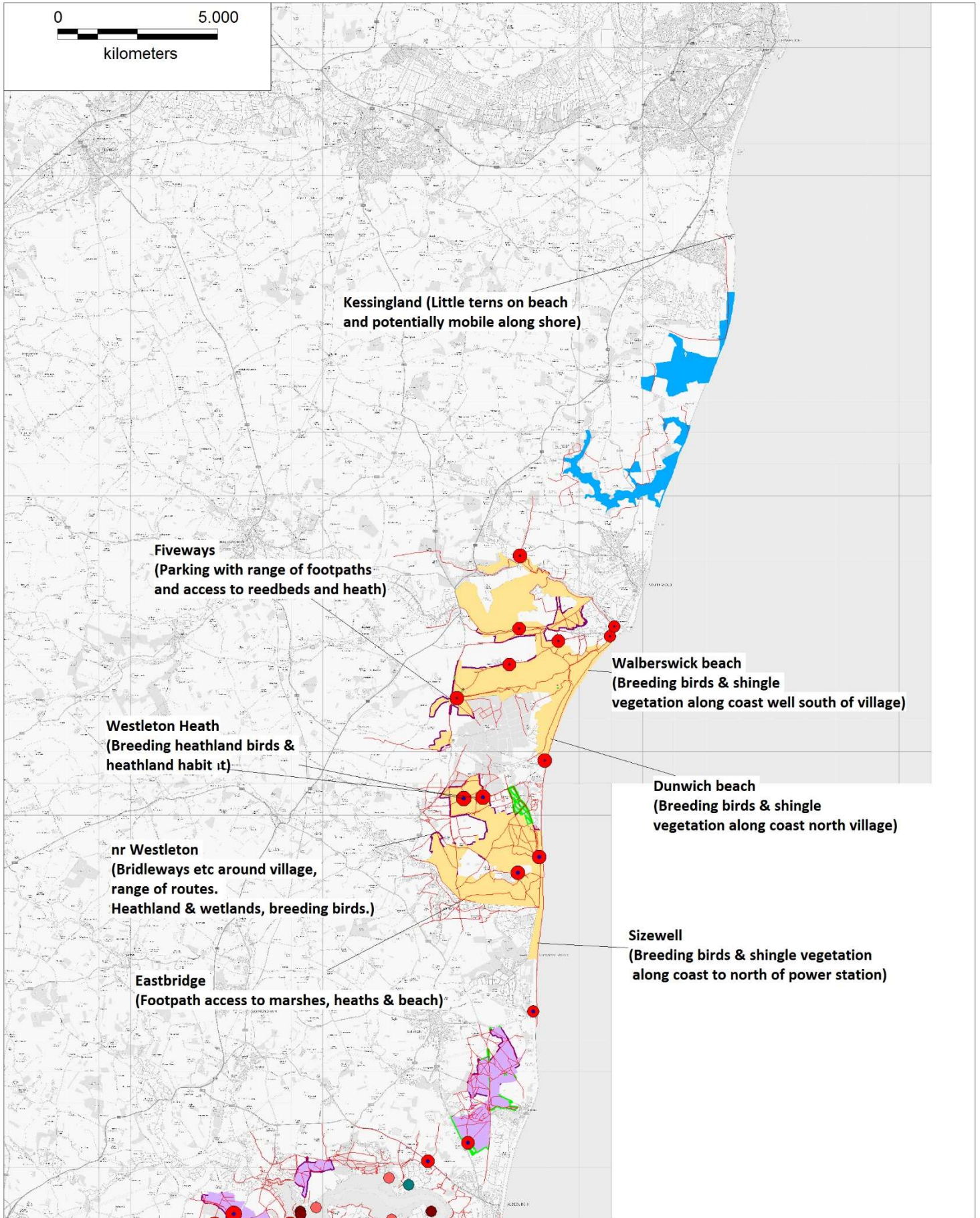
■ Stour and Orwell Estuaries (SPA/Ramsar)

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European site boundaries sourced from Natural England website; © Natural England.


Bird data from various sources, see report text. Path network drawn from OSM data; © OpenStreetMap contributors.

Map 13: Northern coastal strip, showing areas where potential access impacts






— Path/tracks

Key Habitats
Habitats from NE Priority Habitats Data

-  Coastal vegetated shingle
-  Lowland Dry Acid Grassland
-  Lowland Heathland

Car-parks by housing within 13km
(red=current, blue = future)

-  100,000
-  50,000
-  10,000

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The interim approach prior to the strategic approach

- 7.56 As discussed in Section 2, the Local Plan level HRAs concluded that the Local Plans posed a risk to European wildlife sites in terms of the new proposed residential growth, because such growth would be likely to result in increased recreation use of the European sites. This could adversely affect the sensitive species and habitats for which the sites are designated/classified. The plan level HRAs concluded that the Local Plans could be considered to be compliant with the Habitats Regulations if measures were secured to avoid and mitigate for the increased recreation. Subsequently, with the addition of Waveney District (now merged with Suffolk Coastal to form East Suffolk Council) and Mid Suffolk District, emerging Local Plans and associated HRAs are consistently providing for a plan level justification for this Strategy.
- 7.57 The HRAs recommend a number of access management measures, and proposed that these should form part of a strategic approach to protecting the European sites from increased recreation pressure through the preparation and implementation of a Strategy to deliver a suite of measures to mitigate for residential development set out within the Local Plans. Subsequent discussions with Natural England after the establishment of the evidence base detailed within this Technical Report led to the inclusion of both Mid Suffolk and Babergh Districts as part of the Strategy, recognising that the zones of influence extended into these Districts.
- 7.58 This Technical Report now assists with the delivery of necessary avoidance and mitigation measures in an overarching, consistent and coordinated way. It explains how a strategic approach can be effectively delivered across the authorities. This Technical Report is the next step in the evolution of the Strategy. It is a progression from an interim approach that focused on more localised and easily evidenced projects.

A Strategy does not need to have a technical report or Supplementary Planning Document (SPD) to be in place to enable delivery, rather these may be developed to assist with delivery. The need for avoidance and mitigation delivery is set out in plan level HRAs, and the authorities have until now had regard for this where required at the development project level through project level HRAs, and securing mitigation on a case by case basis.

- 7.59 Natural England initially assisted the three Local planning authorities throughout the early evolution of the Strategy, advising on the plan level HRAs and then providing interim advice letters to each Local planning authority as they established the approach and worked towards collaborating on a more strategic level. Latterly, Natural England advised Waveney and Mid Suffolk Districts in relation to their subsequent inclusion.
- 7.60 Where a strategic need is identified, but can take time to establish, an interim approach can be successfully achieved through project level HRAs identifying the need to mitigate

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for potential impacts, and the identification of appropriate measures that can be implemented. Measures that adequately mitigate for the potential impacts arising from new development being approved in the interim period have been secured, and they accord with the objectives of this emerging Strategy document. Where localised mitigation has been designed as part of the interim approach to date, these have been complementary to each other and are able to dovetail into the strategic approach in time.

- 7.61 The initial three authorities followed Natural England’s advice and have required developer contributions through S106 legal agreements to fund projects that have been tested within project level HRAs. S111 also provides a mechanism that could be used for small developments, and some of the Local planning authorities are trialing this approach.
- 7.62 This Technical Report now takes the Strategy to a more strategic level, and will integrate earlier measures whilst now developing measures that are larger or more long term projects, continually seeking better outcomes for the European sites as well as streamlining and reducing the burden of the project level HRA process on developer, Natural England and the Local planning authorities.
- 7.63 As the strategic approach to the Strategy nears finalisation, any development proposals still being considered under the interim approach will now direct developer contributions towards the measures within this technical report, particularly to establish the staff resources that are immediate priorities. This recommendation still enables S106 money to be clearly identified as relevant to the developments in question, as the staff resources are required to facilitate the delivery of mitigation projects on the ground and across all European sites.
- 7.64 Key staff are discussed in Section 8 as part of the suite of measures. Once in post, the Delivery Officer should check the avoidance and mitigation measures secured for development approved prior to the strategic approach. In particular they should check that adequate monitoring is being undertaken, and that the project outputs will be integrated into the design, implementation and refinement of more strategic projects within this technical report.

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8. Recommended avoidance and mitigation measures

8.1 The recommended avoidance and mitigation measures for the Strategy have been developed from the work set out in Section 7. That work includes an analysis of mitigation measures used elsewhere in other strategic mitigation schemes, the stakeholder workshop outputs and an understanding of the local circumstances in terms of site context, and any issues and opportunities. It also includes the current access management measures, along with analysis of existing access infrastructure and locations within or associated with the European sites, that are particularly sensitive for the site interest features.

The importance of a mix of measures to give certainty

8.2 A suite of mitigation measures should function together to have confidence that adverse effects arising from recreation have been prevented. Each measure taken alone is unlikely to give that certainty. A combination of measures, developed and targeted after analysis of available and gathered information has the potential to give the necessary certainty because of the combination of measures working together, reducing risk and building in contingency. A comprehensive suite of measures includes soft and hard measures, on and off-site measures, shorter and longer-term projects and timely monitoring and review. The latter is discussed in more detail in Section 10.

8.3 The measures are a mix of soft measures that involve proactive work to try to positively change visitor behaviour by providing a better understanding of the risks, and hard measures that purposefully restrict or re-direct visitor behaviour. Soft measures are recommended wherever they are deemed suitable and are likely to be successful. In other circumstances, if it can be concluded that soft measures will not be effective, or have already been tried with limited success, then hard measures should be considered. Where hard measures are recommended, the reason for their inclusion is explained.

8.4 The recommended measures now being taken forward for the Strategy relate to four key overarching themes, along with an additional list of more specific (in terms of their location and the project required) measures to be added.

8.5 This Technical Report recommends a package of avoidance and mitigation measures for the Strategy that can be summarised as follows under six key headings:

Staff resources

- A DELIVERY OFFICER: a dedicated post is required to initiate the elements of the strategy, manage the initial delivery of the mitigation and ensure the necessary procedures, reporting and monitoring is in place.
- A TEAM OF WARDENS/RANGERS: a small, mobile team of wardens is required to provide an on-site presence, talking to visitors, showing people birds and wildlife, helping with the delivery of other elements of the strategy and undertaking monitoring.
- DOG PROJECT STAFFING: as discussed for the Dog Project below

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Signage, Interpretation and awareness raising

- **AN AUDIT OF ACCESS POINTS:** a review of access locations, current signage and interpretation across each European site.
- **NEW SIGNS AND INTERPRETATION:** Branding and installation.
- **CODES OF CONDUCT PACK:** This would provide clear general guidance and would cover water sports and shore based activities (including dog walking).

Car parking

- **AN AUDIT OF CAR PARKING:** a review of parking in relation to access points, both formal and informal.

Dog related measures

- **A SUFFOLK COAST AND HEATHS DOG PROJECT:** a dog project to engage with dog walkers, promoting sites for dog walking, providing information on dog walking on the heaths and coast, highlighting issues at sites and ensuring positive engagement with dog walkers. This project would include a member of staff on a part time basis to initially set up the project and establish the necessary promotion, website and liaison with local dog walkers.

Site specific projects and longer-term measures

- **TARGETED PROJECTS:** in line with the reviews and close working with user groups set out above, a series of site specific projects would then be implemented relating to both shore-based and water-based access. These would include (but not necessarily be limited to) the following projects:
- **PATHS:** path re-routing where feasible, creation of new paths, upgrading and resurfacing existing paths.
- **DOG WALKING LOCATIONS:** high risk areas confining dogs to on lead only or excluding dogs, combined with the promotion of high quality dedicated areas for dog walking in other locations.
- **WATERSPORTS:** measures such as marking of dedicated water sport zones and codes of conduct with maps.
- **CAR PARKING:** changes to car-parks (improving, reducing and/or expanding in specific locations) and changes to charging.
- **RESTRICTIONS:** for example, bye-laws and Public Space Protection Orders, and other restrictions where required.
- **FACT FINDING STUDY:** a targeted research project for Minsmere-Walberswick to establish the measures necessary, or not necessary to protect the peripheral areas outside the RSPB reserve, focussing on access management staff interviews and on the ground fact finding.
- **INFRASTRUCTURE:** Fencing for Little Tern nesting sites every year.
- **NEW VISITOR SURVEY WORK:** A new single survey of visitors designed to fill evidence gaps across the European sites and Local planning authority areas, which would then inform future strategy review. This would be supplemented in future by further targeted interviews to check that mitigation measures are working adequately.
- **MONITORING AND DATA GATHERING:** Bird, vegetation and future visitor monitoring.

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Staff resources

- 8.6 The need for additional staff resources was a strong re-occurring theme at the stakeholder workshop event. Dedicated staff to implement a strategy has been proven to be critical to timely and coordinated delivery in other strategic European site schemes, and delays in their appointment have had consequential effects on scheme delivery. For this reason, the Strategy should now prioritise provision of staff to ensure its success. Staff will need to have demonstrable experience in promoting positive visitor behaviours, and will need to be people focused and knowledgeable on nature conservation.

Delivery officer

- 8.7 Appointment of a Delivery Officer would be the first step for the strategic approach to the Strategy. There is a clear need to create a post that would get the strategic measures up and running and oversee the implementation of the different measures. The Delivery Officer would essentially form the main contact point for the Strategy. They would regularly report to the Steering Group. As developer contributions grow there will be more resources to fund mitigation and the Delivery Officer will need to match the implementation to the funds available, as guided by the Steering Group. The Delivery Officer would ensure that the Strategy complements other work to protect and enhance European sites, potentially also bringing additional benefits from funding elsewhere, whereby match funding can open up enhancement opportunities over and above the mitigation requirement. As such the Delivery Officer would have the following duties:
- Develop projects and help with their implementation, working with stakeholders (landowners, NGOs, statutory bodies, estuary partnerships, Suffolk Coast and Heaths AONB etc.) as necessary.
 - Appoint and oversee wardening team
 - Report to the Executive Group, planners and others regarding work done
 - Organise funding for projects, both gaining funding from the developer contributions through the Steering Group but also linking with stakeholders and seeking other opportunities for additional funding, for example through reserve-based projects, tourism initiatives, HLF etc.
 - Oversee a project website and other publicity opportunities, explaining the strategy and providing information on the strategy.
 - Monitoring and review
- 8.8 Over time the duties of the Delivery Officer will change. Initially the work will need to focus on initiating projects and establishing administrative procedures relating to finance, reporting etc. Setting up the wardening team and their work, branding etc. will all be time consuming to establish. Once established the work will need to shift to cover fund raising, publicity, monitoring, reporting and working on some of the longer-term measures.
- 8.9 The Delivery Officer should be based at a location and within a host local authority or local partnership that most effectively enables the officer to liaise with relevant staff

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within the Local planning authorities and wider local partnerships that will be key to Strategy delivery. Establishing good working relationships with a wide range of local stakeholders will ensure that the Delivery Officer is able to identify opportunities that will enhance the success of the Strategy, such as adding to existing initiatives or identifying local delivery bodies for particular projects.

A team of wardens/rangers

- 8.10 The provision of wardens/rangers was a measure that was commonly cited in the workshops, and wardens are a feature of other mitigation schemes such as the Solent, the Thames Basin Heaths and the Dorset Heaths. In these other examples the wardens form a small mobile team that spend the majority of their time outside at sites, talking to visitors, influencing how visitors behave and showing people wildlife. The advantage of such an approach is that the staff can focus their time at particular sites/locations as required. This means that as particular projects are set up, as development comes forward, or if access issues become a concern at a particular location, the staff can be present and target their time accordingly. The roles of the team would also include helping with the delivery of site-specific and local projects and monitoring.
- 8.11 Key locations to target are areas where there are known access issues or where there are particularly sensitive features. For example, where waders roost at sensitive locations the wardens can be present at the necessary tide state and in a position where they can point out the roost to anyone passing and intercept anyone they believe might flush the roost and ask them to walk round/put dog on lead etc. One of the suggestions from the workshop was that in some locations such as the Alde-Ore the wardens could run a small boat, this would allow them to patrol a wide area but also could function as a local ferry (subject to assessment of costs, training and licenses etc.), providing a means to intercept visitors, engage with them and ensure they were dropped off at locations that are not sensitive. The viability and costs of such an approach need further consideration.
- 8.12 Wardens will need to be recognisable and therefore some distinctive branding or clothing will be important, and this should be recognisable to visitors. The use of branded vehicles and even display boards (e.g. sandwich boards or similar that can be put up when the warden is standing at a particular location) will help give a recognisable presence to visitors. Ensuring an official look and instantly recognisable identity will help the work of the wardens by ensuring visitors understand who they are and react to what they say. The identity and work of the wardens should be promoted through social media. The Solent mitigation work, in particular the wardening team, have a brand called Bird Aware¹¹ which has a unique logo, website, leaflets etc. and provides a good example of messages and public communication.
- 8.13 We envisage that the number of wardens and where they are targeted could change over time and it would need to be flexible. The new wardens would need to fit

¹¹ See <http://www.birdaware.org>

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alongside and supplement existing wardening effort and visitor engagement, for example European Life funding (for the National Trust and RSPB) has included work to improve visitor experience and limit damage to shingle habitats and disturbance to breeding birds (see Howe *et al.* 2014).

- 8.14 This Strategy includes provision for three full-time wardens. During the winter, one would be dedicated to the Stour and Orwell Estuaries when disturbance of over-wintering birds is likely. It is apparent from the information provided at the stakeholder workshop event that attendees feel strongly that additional warden presence is a priority for the Orwell Estuary. From the analysis of housing numbers and an understanding of the sites, the Orwell has a high level of current pressure, and the most future pressure in terms of local housing change. Additionally, the nature of the Orwell with its narrow intertidal zone is such that sensitive areas supporting European site interest features, and accessible routes used by visitors are in very close proximity. The warden will need to work closely with the Ipswich Borough Council Countryside Team to make sure that work is joined up and complementary, and does not overlap or conflict. Similarly, the warden will need to work closely with the Essex RAMs warden, with each working on the respective northern and southern shores of the Stour Estuary.
- 8.15 The second warden would cover a range of other sites, including the Deben, Shingle Street, East Lane, Iken, Tunstall Common, Blaxhall Common, the Sailors Path. This second wardening post would therefore be thinly spread, but the focus should be on a relatively small number of locations rather than trying to cover lots of areas thinly. Over the winter the focus on the Sandlings could be less (but Woodlarks establish territories around February, which is therefore a sensitive time of year). During the spring and summer, the focus could move away from wintering birds and focus on the heathland sites and coastal habitats rather than the estuaries.
- 8.16 The third post would have a Little Tern focus, covering the coast from Sizewell to Kessingland as necessary, and supplementing existing warden cover at key sites and potentially working with local volunteers, building on the work achieved through the recent LIFE project. The Little Tern focus would be primarily during the spring and summer. It would be anticipated the role would be able to also cover other areas, such as around the Minsmere-Walberswick (away from the main reserve hubs) at other times of year.
- 8.17 While each team member would have their own sites/roles, it would be possible for team members to work together for particular events as required. It would also be ideal if each warden had close links with local stakeholders, landowners and organisations, potentially even being based/hosted by local organisations. This would ensure that the wardens were complementing existing engagement/wardens/initiatives and fitting alongside existing ranger/wardens. As the Strategy develops the level of wardening effort should be reviewed. Monitoring data will help inform of any emerging issues or particular locations that need to be targeted, and there may need to be additional staff recruited over time.

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- 8.18 The Minsmere-Walberswick fact finding study will enable a clearer picture to be established of the specific mitigation needs, against a background of RSPB and Natural England dedicated staff in some parts but not all of the site. This will then refine the approach for this site after the first Strategy review. Initially therefore, dedicated staff time as part of the Strategy will be limited until this study is complete.

Signs, interpretation and awareness raising

Audit of access points

- 8.19 On sites where a large proportion of people visit by car, car parks provide key points where it is possible to engage with visitors and potentially influence their behaviour. Furthermore, modifying the distribution, cost and ease of parking is a means of managing visitor flows. For most European sites covered in this Strategy, much of the development will be some distance from the sites and therefore increased access associated with new development is likely to be linked to car use.
- 8.20 An initial audit of parking locations will therefore inform later stages of the Strategy and be fundamental. The audit should map all informal and formal parking locations and detail:
- Managing organisation,
 - Parking charges (if any),
 - Car-park type (formal car-park, verge, lay-by, on-street),
 - Number of spaces,
 - Interpretation present,
 - Signage present,
 - Other infrastructure present: dog bins, toilets, café etc.
- 8.21 Alongside the parking audit, locations with interpretation away from parking locations should be identified, as there may be some places with foot access and interpretation boards or similar. Existing information on access points will be available, and the Delivery Officer should liaise with stakeholders to obtain this. The Deben Estuary Partnership for example has current information that is likely to be beneficial.
- 8.22 The audit would be done by the Delivery Officer (and potentially the wardens) giving them an opportunity to get an overview of sites. The audit would be used to:
- Identify locations for new or updated interpretation/signage, reflecting local identity as well as Strategy wide consistency
 - Identify where there are opportunities to change the parking infrastructure (by changing the access, surfacing, location, design or charging) to attract or divert visitors. Any such opportunities can then be addressed later through site specific projects
 - Identify the need for summer and winter route options and associated infrastructure (lockable gates, for example)
 - Identify key locations for future monitoring.

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New signs and interpretation

- 8.23 One of the particular challenges for some European sites in the Strategy is that not all visitors realise they are visiting a location sensitive for wildlife or important for nature conservation. This is particularly the case for some of the estuary shorelines and locations within the Sandlings.
- 8.24 New signage and interpretation, alongside warden presence and other measures will need to address this and ensure visitors are aware of the issues. Signs direct people or inform them of how they should behave, whereas interpretation provides information about the place being visited. Signs can be simple symbols or way markers, while interpretation is traditionally on boards. In order to be effective:
- Consistent branding is important, as it allows visitors to recognise where the signs have come from - ensuring visitors recognise that signs are official and not installed by some third-party.
 - Signs directing behaviour (e.g. dogs on leads or water sports speed limits) need to ensure a very clear message. A bold graphic (e.g. as a triangle or circle with stylised graphic of a dog on a lead) is better than lengthy text - there are many standard pictograms for dogs on leads, no entry etc. that can be adapted. Regulatory messages should be clear, bold and authoritative.
 - Where signs direct behaviour (such as dogs on leads), signs should also be present to indicate where such restrictions end, so it is clear to visitors.
 - Interpretation should not be overly detailed as many people will often not want to stand still for long periods. Simple and bold notices are more effective for clear instructions. Readers can be directed to sources of additional information, for example through the use of QR codes.
 - Signs and interpretation need to be eye-catching, carefully sited so as to be in the right locations (e.g. perpendicular rather than parallel to pathways).
 - Interpretation should use colour, structure, illustrations and potentially flaps, sliding panels etc. to capture people's interest.
 - Interpretation should convey consistent messages relating to the importance for wildlife and why it is sensitive to people. They should refrain from too much technical jargon about designations etc.
 - Signs that convey key messages relating to changing behaviour are unlikely to be effective if put up in isolation, they should be part of an overall visitor management/engagement strategy (consistent branding ensuring visitors can link signs and interpretation to websites, face-face engagement etc.). Visitors are unlikely to respond if other users are already ignoring messages, and effectiveness is likely to be best achieved if put in place alongside other changes such as modification of parking, footpaths, fencing etc.
 - Seasonal signage will need to be removed to stay fresh and permanent signage well maintained and cleaned to keep people's attention. Which signs are permanent or seasonal will need to be effectively managed.
 - Signs relating to persistent issues or problems are likely to need some targeted visitor work to ensure the correct messages are used (see Ham *et al.* 2009 for best practice).
- 8.25 The Strategy needs to have regard for existing signage and the work that has already been done to develop interpretation branding for particular sites or areas. Many sites

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have existing signage and interpretation (for example the Suffolk Coasts & Heaths AONB installed 55 interpretation panels in 2013, these cover heritage and biodiversity) and there is the risk that additional material will simply be confusing for visitors. Conversely, there are also locations where existing signage is ineffective, cluttered and sometimes misleading. A notable example is at Shingle Street where signs relating to parking and preventing trampling of sensitive areas appear to be ignored, as illustrated by the photographs in Appendix 3. The audit will need to identify where, and understand why, signage is not adhered to and pay attention to precise positioning to maximise attention.

- 8.26 The audit should identify locations where there is an immediate need, i.e. where a lack of signage, or inappropriate/ineffective signage, is currently leading to access behaviour that poses a risk to interest features. The audit should also consider how Strategy wide signage can fit with existing initiatives. Consultation with those currently involved in providing interpretation as part of existing access management will be necessary, and this could potentially be in the form of a face to face discussion event.
- 8.27 The audit should consider the potential for new branding, or an approach that draws together and fits with existing interpretation, seeking a cost efficient but effective solution. It is envisaged that graphic design work will ensure a design and style that is flexible and can be adapted and provide a range of designs that landowners and organisations can pick and choose from and adapt as they require. Where there is existing signage or interpretation this can be retained and over time replaced/added to as appropriate or necessary. For example, the following designs could be commissioned:
- Small, dogs on leads signs, potentially just a symbol on a disc that can be added to existing infrastructure (e.g. way-posts and gate posts) and promoted via the dog project, by the wardens etc. and used across the area where required.
 - Signs indicating dogs on leads and explaining why (separate designs for wintering birds and breeding birds)
 - Signs indicating the need to pick up after dogs and explaining why (separate designs for heathland and beaches)
 - Interpretation boards explaining that the area is important for wildlife, that the wildlife is vulnerable to impacts from recreation, these impacts are cumulative as a result of lots of different activities and events. In the areas that are sensitive, it is necessary to be aware of the issues and modify behaviour. A range of designs reflecting different locations/habitats but also adaptable, such that different organisations/landowners can include their own logos etc.
- 8.28 A simple and easily recognizable brand has proven to make a very positive contribution to the success of a mitigation project. The Bird Aware¹² branding for the Solent, for

¹² <http://www.birdaware.org/>

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example could be looked at as part of the branding considerations. The Strategy could provide the opportunity for branding to be taken up by other partners/stakeholders to give wider consistency and recognition within linked projects, even if not fully funded by the Strategy. Simple adaptation of signage branding would therefore be required.

Car parking rationalisation

- 8.29 The results of the car parking audit should be analysed alongside the sensitive locations, and the Strategy may need to include some level of car parking rationalisation as a result. For example, where informal car parking has become regularised, but is posing a risk to site interest features, the Strategy should incorporate a project to prevent parking in such locations. This could include for example, the introduction of earth bunds, bollards, curb stones, landscaping or signage. The audit may highlight opportunities to provide additional parking, for example where car park capacity is limited but is in a location that draws people away from more sensitive locations. An example given by the County Council Rights of Way and Access Team is the footpath on the north bank of the Deben from Methersgarte to Ramsholt, where usage is low because there currently isn't any easily accessible parking.
- 8.30 Car park charging information would help to identify where the introduction or reduction in charging could lead to a more desirable spread of visitors, reducing use at sensitive locations and increasing use where additional people would not be a concern.

Codes of conduct

- 8.31 Codes of conduct set out clearly how users undertaking a particular activity should behave, and are most relevant to sporting activities, including watersports. Where there is plenty of space, relatively few users and few conflicts, there is unlikely to be a need for any agreed code of conduct. Developing good, clear codes with user groups ensures that safety issues, insurance, consideration of other users and nature conservation issues can be accommodated, ensuring users can enjoy their chosen activities while minimising any impacts. Codes of conduct are particularly relevant where there are a wide range of users, potentially not linked to a particular club, and a range of complicated issues, or where lots of multiple activities overlap. Casual and sporadic visits to a location are unlikely to be fully informed of all local issues and politics. A code of conduct serves to set out where there are particular issues and provides the user with all the information they need to undertake their chosen activity safely, within the law and without creating conflict with others.
- 8.32 Codes of conduct can be established by directly working with local users, even by the users themselves. Codes are likely to be most effective where they are developed with stakeholders and are not overly restrictive. One of the key issues with codes is ensuring that they are read and circulated widely and that visitors are aware of them. Getting people to sign up to voluntary codes of conduct is potentially tricky and may be particularly difficult to achieve where many users are ad hoc, casual visitors and where

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there are multiple access points (i.e. no central location at which users can be intercepted).

- 8.33 There are a range of examples from around the UK where codes of conduct have been developed to resolve particular concerns. We suggest that separate codes of conduct should be developed for all main activities across the sites, but may need to be tailored for site specific circumstances (such as differing estuaries):
- Dog walking (potentially an estuary/coastal one and a heathland one)
 - Bait collection
 - Horse riding
 - Kitesurfing and windsurfing
 - Canoeing, kayaking and paddle boarding
 - Jet skiing
 - Sailing
 - Fishing/angling
- 8.34 These codes would be developed with users and stakeholders, and provide clear guidance on where to go, how to behave, which areas are sensitive etc. Each code would contain a map highlighting key access points, where to park, locations to avoid, sources of further advice/information etc. The codes would then be widely disseminated and made widely available. They would be promoted by the warden/ranger team and link to some other elements within the Strategy such as the dog project (there would be a code of conduct for dog walkers).
- 8.35 There is an existing code of conduct (focusing on access onto mudflats and bait digging) for the River Orwell¹³ which includes a detailed map showing sensitive areas for birds that should be avoided. This was launched in 2010 and was the outcome of meetings between conservationists, regulators, landowners, bait diggers and recreational users. This could be updated/revisited and expanded to the other estuaries. There is also an existing leaflet relating to Little Terns on Suffolk beaches¹⁴ which includes information on why the species is so vulnerable and guidelines on how to behave.

Dog related measures

- 8.36 Dog related measures warrant a specific section because dog walking is by far the most common single activity across the sites in question and there are also particular issues relating to disturbance to birds and dog fouling. Workshop attendees were strongly in favour of additional dog related measures as they highlighted numerous locations, particularly on the estuaries, where dogs posed a risk to SPA birds in terms of disturbance. There is now some localised promotion of dogs on leads, such as at Alton Water.

¹³ See <http://www.suffolkcoastandheaths.org/estuaries/stour-and-orwell-estuaries-management-group/voluntary-code-of-conduct/>

¹⁴ See <http://www.touchingthetide.org.uk/assets/Documents/Little-Tern-leaflet.pdf>

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A Suffolk Coasts and Heaths Dog Project

8.37 A dog focused project that covered the Heaths and Estuaries would provide a means of engaging with dog walkers, and would represent a positive step towards enhancing access and forming links with the dog walking community. In view of experience from dog projects at European sites elsewhere, it is recommended that this aspect of the mitigation strategy has a dedicated member of part time staff in the first 5 years to support its establishment in terms of setting up promotional tools such as a dedicated website, and working with dog walker groups and local dog related businesses.

8.38 The project should:

- Have a strong web presence, with the website providing a gazetteer of countryside sites to walk dogs (where dogs are welcomed); provide information to dog walkers (presence of livestock on sites; safety issues; temporary closures; changes at popular dog walking sites); provide guidance on conduct and provide other useful information such as directories of local vets, kennels, dog walking services and dog grooming.
- Provide free membership, with membership benefits that include registration of dog's details (in case lost); owners contact details etc. Such membership provides a means of gathering people's contact details and establishing regular contact. Membership should also include other incentives, potentially a membership pack that includes the code of conduct, a printed gazetteer etc.
- Undertake on-site work, actively meeting dog walkers at popular sites, for example holding small events and engagement work at particular locations.

A precedent and useful case study comes from Dorset, where a project called Dorset Dogs, which has been part funded through developer contributions.

- **Clear and well-designed brand**
- **Distinctive logo**
- **Up to date and comprehensive website**
- **Web based information resource for dog walkers**
- **Codes of conduct**
- **Identification of dog friendly places to walk**
- **Dogs on or off lead site information**
- **Social media links and members forums**

8.39 The Dorset Dogs¹⁵ project has established a system of consistent signage to indicate sites where dogs are welcome (green paw print), dogs are welcome if on a lead (amber)

¹⁵ <https://www.dorsetdogs.org.uk/>

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and no dogs (red). The colours are used on the website and also small circular signs that are used on sites. Membership is free and members gain an information pack, free gifts (dog tags, dog bags, stickers etc.) and access to information such as directories of local vets etc. Events are held on-site and called pit stops. The pit stops involve a small gazebo and people on-site to talk to dog walkers and tell them about Dorset Dogs. This provides a means of gathering new members and actively discussing local dog walking issues. The project has won an award from the kennel club and has established a strong presence in Dorset. It works, in terms of mitigation, in that it promotes a code of conduct and provides a means of communicating issues and concerns (both those of dog walkers and those involved in countryside management).

- 8.40 The Suffolk Coast and Heaths AONB has been running a dog project ('I'm a good dog campaign'¹⁶) which includes some of the elements necessary for mitigation. The campaign has been funded through BALANCE and is cross-border. Some outputs from the campaign are reliant on funding so the mitigation money could potentially be used to expand and build on the work already undertaken, where projects could be identified as being directly related to reducing dog walking pressure on the European sites.
- 8.41 It is essential for targeted dog zones to be appropriately maintained. It is understood that a fenced dog zone at Sutton Heath is currently in disrepair due to a lack of agreed on-going maintenance. Checking with dog owners exactly what facilities they will and will not use, as well as size and types of facilities will be essential for the success of a dog project, and a focus group may therefore be beneficial. The desire to allow dogs to run off lead must be acknowledged and understood, as this influences the effectiveness of measures.

Dog walking diversion and restriction

- 8.42 The success of the Dorset Dogs Project is in part due to the positive approach to communicating and engaging with dog owners, and encouraging them to change their behaviour of their own free will, limiting enforcement to where it is needed. It is suggested that a similar approach should therefore be sought for this Strategy. The development of the project should include identifying locations where dog walking could be enhanced away from but near the European sites, and as discussed below, should be part of the considerations for the large scale SANGs.
- 8.43 The stakeholder workshop identified a small number of locations where it was felt that dogs should be excluded, and further work is therefore necessary to focus on these locations and have certainty that other measures could not be implemented. Formal exclusion of dogs where it is considered that a voluntary/signage only approach would not be successful would need to be pursued by the application of a Public Space Protection Order¹⁷ (PSPO) on public land, or by the landowner/occupier where on private land. The implementation and policing of a PSPO by the Local planning

¹⁶ <http://www.suffolkcoastandheaths.org/projects-and-partnerships/balance/i-m-a-good-dog-campaign/>

¹⁷ <https://www.gov.uk/control-dog-public/public-spaces-protection-orders>

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authorities will require additional resources, and can only be applied on the grounds that an activity is having a detrimental effect on quality of life of those in the locality. It should therefore only be applied as a last resort option, and there will be locations where the legislation could not be applied or it would be impractical do so, such as on open access land.

- 8.44 Working positively with dog owners is the most desirable approach wherever this can be successfully applied. Productive engagement leading to better understanding and responsible behaviour reduces the potential for conflict and disregard for enforced measures. There may be some locations where particular types of recreation will need to be excluded, but this should be undertaken after careful examination of evidence and exploration of other options.

Targeted projects and longer-term measures

- 8.45 The above measures can be established in the short to medium term and many are at a cross-site or site level. They will be the immediate priorities for the Delivery Officer to begin working on, and can be funded by those developments coming forward earlier in the plan period. There are several additional measures that can be planned for in the longer term, and therefore funded later in the plan period. Some of these will be very location specific and will be dependent on the results of monitoring and audits. These site-specific measures will therefore be longer term elements of the strategy and will require detailed work to plan and cost.

Minsmere-Walberswick

- 8.46 Discussions with RSPB both at the stakeholder workshop and in separate communications, identified that additional interpretation material on the peripheral parts of the designated site, outside the heavily visited RSPB Reserve areas (but predominantly still owned by RSPB), should be a priority mitigation measure. These sensitive heathland areas are accessible to the public and used for local dog walking. It is felt that better interpretation would raise awareness of the wildlife value of the peripheral areas outside the main wetland reserve areas and increase understanding of the ecological connections between these and the wider surrounding habitat. The signage projects discussed above should therefore ensure that Minsmere-Walberswick is included, and any site specific issues and needs appropriately assessed.
- 8.47 Additionally, a number of detailed discussions undertaken with Natural England staff ensure that the type and proportions of mitigation projects assigned to Minsmere-Walberswick are appropriate, recognising the staff resources already dedicated to some parts of this European site. The fact-finding study will be helpful at the first review of this Strategy to ensure that future mitigation is further informed by on the ground evidence and experience, as the study will include access management staff interviews and on site observations.

Site specific projects

- 8.48 Site specific projects will require careful liaison with landowners and stakeholders. The following are the kind of measures that could be relevant:

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- Developing new routes, allowing visitors to do circular walks or enhancing access while focussing the access away from sensitive locations
- Changes to parking, for example resurfacing, enlarging, reducing, new signage. Such measures would either draw visitors to particular locations or be aimed at reducing access to sensitive locations (e.g. dragon's teeth or ditches on verges). This could include locations outside European sites (where encouraging access would be likely to divert use from European sites)
- Infrastructure such as signage, screening, replanting, gates, stiles or fencing to help manage access at particular locations (e.g. fencing around Little Tern breeding areas)
- New infrastructure to enhance access at locations away from European sites, e.g. dog agility courses, fenced areas for dogs, new Public Rights of Way, improvements to existing PROW away from sensitive areas.
- Promotion of walks within European sites to demonstrate exemplar management of visitors
- Liaison with water sport user groups – discussion sessions with groups reviewing zones, better zone information and potentially the introduction of new zones and provision of new facilities if required
- Minsmere-Walberswick fact finding study, as explained above
- Orwell Country Park/Pond Hall Farm enhancements to divert people from sensitive estuary area and encourage use of less sensitive parts of the park.
- Further evidence gathering and monitoring data to inform future Strategy reviews, including visitor, bird and habitat surveys.

8.49 These measures would need to be carefully developed with relevant landowners and stakeholders and should be targeted where there are particular issues that need to be addressed. Opportunities may develop, for example if land ownership changes or particular funding streams become available. The Delivery Officer and wardening team will need to be open to ideas and be able to help shape projects so that they represent good value for money and are effective.

Part 3
Delivery of the
Strategy

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9. Implementation

- 9.1 This section of the Technical Report sets out the key requirements and recommendations for successful Strategy implementation and delivery across the Local planning authorities.
- 9.2 In Section 8 the recommended avoidance and mitigation measures are described under key themes. In taking the Strategy forward to strategic implementation, delivery of the Strategy requires governance to secure commitment from all authorities at a high level, provide effective delivery as an integrated part of local authority commitment to sustainable protection and management of the natural environment. Governance is also required to oversee the daily running of the Strategy from gaining funds through to delivering and monitoring projects on the ground. The Delivery Officer is a critical component, leading the project management in terms of managing the Strategy as a rolling project throughout the Local Plan period, but that officer must function within a wider governance structure.
- 9.3 The Strategy is committed to within Local Plan policy, as the means by which the quantum of residential development set out within the Local Plans can be delivered without adverse effects on European sites. The Strategy must therefore be delivered throughout the plan periods for the relevant Local Plans to meet this requirement. Delivery of this Strategy should also include planning for development beyond that period to enable the Strategy to evolve over time in order to function as a means of securing and implementing avoidance and mitigation measures for future growth. This requires oversight from a committee of representatives that can effectively gain high level support and commitment to the Strategy from within the Local planning authorities.

Role of the Executive Group

- 9.4 It is advised that a representative group that oversees a strategic approach is essential for its delivery, and an Executive Group for the Strategy is therefore required. The Executive Group should provide a decision-making role for key decisions that are above Delivery Officer delegated powers. To provide authority and effective influence, it is suggested that the Executive Group includes high level representation as well as those with technical knowledge.
- 9.5 The Strategy is applicable to the Local planning authority areas for Babergh District, Mid Suffolk District, Ipswich Borough, and East Suffolk Council, and each should be represented within the Executive Group. As statutory and specialist advisor on the application of the Habitats Regulations, Natural England should also be represented, ideally by an advisor with good local site knowledge. Responsibility for Strategy delivery lies with the Local planning authorities, and it is therefore suggested that Natural England's input to the Executive Group should be in an advisory capacity rather than taking responsibility for Strategy delivery.

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- 9.6 It is within this group that commitments can be made and actions approved but it is also from where any necessary buy-in can be driven. Group members may need to go back to their represented authority to gain support from heads of department or Council Members. It is therefore recommended that at least one head of department or Council Member is appointed to the Executive Group from each Local planning authority. Such representatives will have higher level connections with relevant stakeholders and can gain support from key parts of the Local planning authority they represent. The Local planning authorities could also provide technical representation on the group, for example by including an officer involved in development management, planning policy or management of the natural environment.
- 9.7 The Executive Group will be responsible for making a continued commitment on behalf of their organisation to the implementation of the Strategy, and securing those commitments within planning policy and at planning committee. The Group should meet on a regular basis; between two and four times per year may be ideal to allow for regular contact whilst enabling action between meetings.

Delivery Officer

- 9.8 A Delivery Officer to lead and project manage implementation is considered pivotal to the Strategy. As described in Section 8, previous experience from other strategic approaches has shown that the absence of a delivery officer, or even the delay in appointing one can have negative consequences for the timely delivery of mitigation. Staff providing representation on the Executive Group will all have busy roles within their organisations and cannot give significant time to delivery, rather they are there for debating Strategy direction and approving recommendations. A dedicated Delivery Officer gives assurance that the whole project will be effectively managed and delivered.
- 9.9 The Delivery Officer will need to have a good level and breadth of experience in terms of ecological understanding, some experience of site and visitor management but also with good knowledge of the planning system and strategic/spatial planning. The role holder should have good communication skills, able to effectively liaise with a wide range of stakeholders.
- 9.10 The post should command an appropriate grade for the level of ability required. An important role for the Delivery Officer will be maintaining a record of housing delivery alongside Strategy implementation. The Delivery Officer will be responsible for maintaining the record and reporting a rolling audit to the Executive Group. Additional tasks within the job description should include the following:
- Provide the reporting line for the wardens and dog project officer
 - Report to the Executive Group
 - Organise meetings with a wider stakeholder group (biannually is suggested)
 - Oversee the project management of the Strategy delivery, with appropriate document management in relation to delivery planning, finances etc.
 - Liaise with stakeholders with regard to specific measures

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- Liaise with planning officers to aid embedding of the Strategy within development management
- Promote and present at key meetings and events
- Oversee the monitoring programme for the Strategy
- Work with the Executive Group to commission work
- Plan for the evolution of the Strategy into future Local Plan periods, and horizon scan for future issues and opportunities.

- 9.11 The role description should be finalised by the Executive Group. The complexity and breadth of measures to be implemented as immediate priorities indicates that the Delivery Officer should be a full-time role. As discussed earlier, avoidance and mitigation measures are to be funded to the end of the plan period, but committed to on a permanent basis, with future funding options reviewed over time.
- 9.12 A commitment should therefore be made to the permanent provision of the delivery officer, with an understanding that future funding sources must be sought. This is likely to be through future development contributions, unless other sources can be identified. If the review of the Strategy recommends that the role can be reduced in any way (i.e. made less than full time or in place for a fixed period rather than a permanent role), this will need to be justified with good evidence of certainty for all necessary mitigation delivery in-perpetuity with any such changes.
- 9.13 The recruitment of the Delivery Officer is likely to need upfront funding in order to ensure that this part of the Strategy is fulfilled as soon as possible in order for the rest of the Strategy to progress, and provide timely mitigation for new housing growth being permitted. The Local planning authorities should consider options available to secure adequate funds to enable recruitment to proceed as a priority for Strategy delivery, recognising that future funds to support the post will come from developer contributions as housing development is given permission.

Governance

- 9.14 The delivery of the Strategy requires a governance structure that is effective and resource efficient. Elsewhere, a number of strategic mitigation schemes have established a lead authority where one administrative area has a clear lead in terms of impacts and/or in-house resources to facilitate a lead role. Whilst this arrangement is a governance option for this Strategy, there isn't a clear lead authority and many of the measures are cross boundary.
- 9.15 Hosting staff associated with the Strategy should also be undertaken in a way that minimises additional cost. For strategic mitigation schemes elsewhere, an approach has been taken where a particular authority may host staff if they have office or workshop space in a relevant location, and/or may already have a team of staff involved in access management that would offer a logical place for Strategy staff to be based.
- 9.16 The Strategy implementation needs to be undertaken with the support of a host, which is yet to be decided by the partnership Local planning authorities.

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- 9.17 By hosting staff alongside existing staff involved in the delivery of environmental restoration and enhancement, there is an opportunity to maximise effectiveness through cross-project working, whilst at the same time recognising the need to retain separation of funding allocation in accordance with respective objectives.
- 9.18 The range of alternative options for delivering the Strategy within the Local planning authorities is being explored through discussions with the Steering Group.

Administration within each Local planning authority

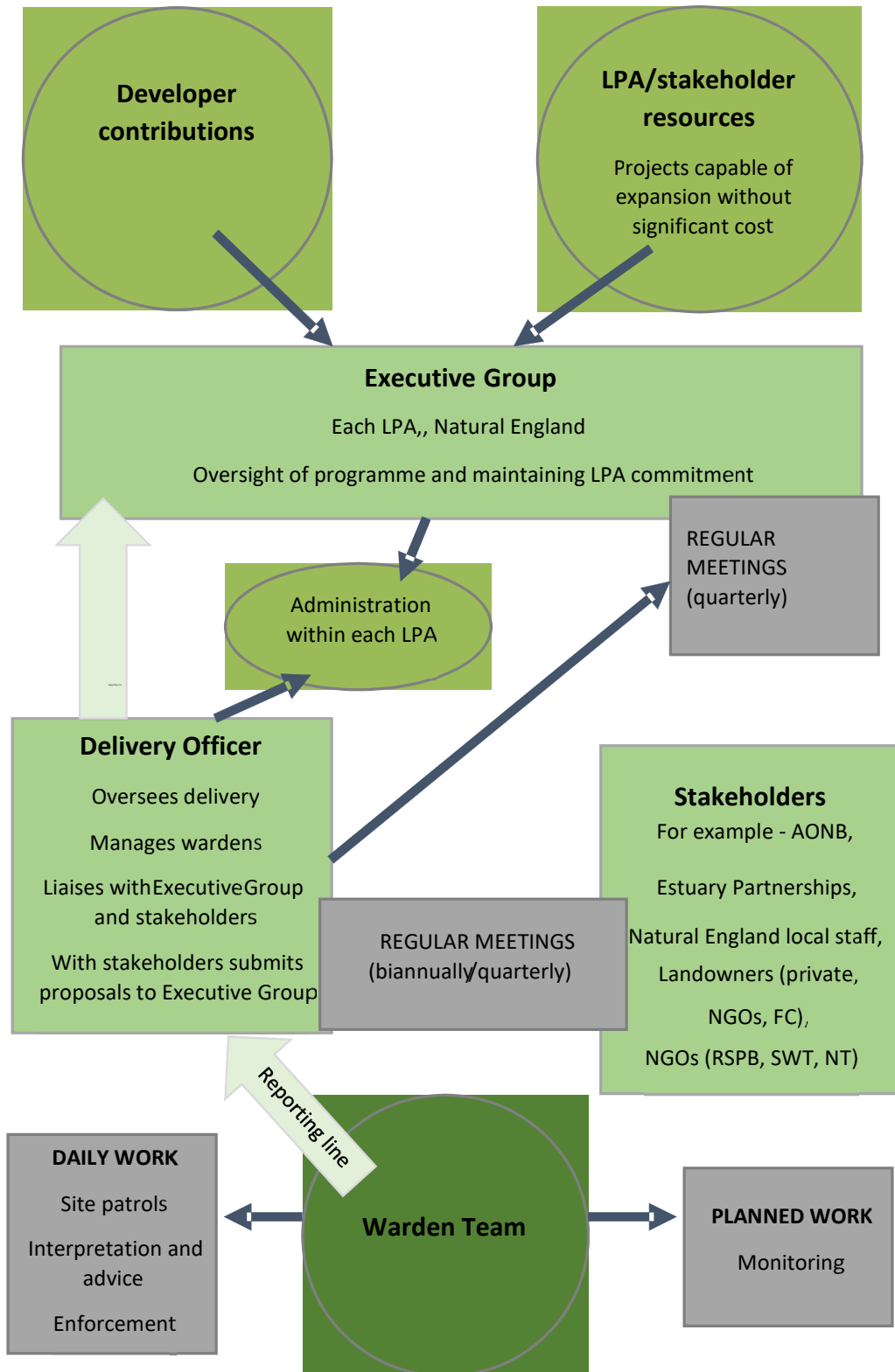
- 9.19 Once the most suitable option for hosting the Strategy is agreed, there will still be a requirement for some administration within the Local planning authorities, and each will need to put in place mechanisms that allow for resource efficient delivery of the Strategy. Mitigation delivery over the plan periods is the responsibility of the Local planning authorities, and whilst much of the resource is to be secured through developer contributions, there is an expectation that the authorities will provide an in-kind contribution in terms of administrative costs.
- 9.20 Administrative tasks should be divided in a way that maximises resource efficiency, based on the staff and skills available within each Local planning authority. For example, Strategy delivery will require input from legal staff, both in the initial stages of implementation with the development of standard Section 106 templates for financial contributions, and ongoing preparation and checking of legal documentation. Options to streamline and minimise legal costs should to be explored.
- 9.21 There are likely to be a number of existing means of joint working for other functions across the Local planning authorities that could provide a model for the administration of the Strategy, and joint administration processes in place already could be utilised or replicated.

Governance diagram

- 9.22 Basic recommendations for how the Strategy would work in terms of oversight, key staff and liaison with stakeholders are illustrated in Figure 1.

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Figure 1: Summary diagram giving an overview of implementation



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Funding mechanisms

- 9.24 The administration and funding of European site mitigation strategies has until recently primarily been using Section 106 or Section 111 of the Town and Country Planning Act 1990, as amended, which allows for legal agreements to place requirements on the development to make it acceptable in planning terms. The relatively recent introduction of the Community Infrastructure Levy (CIL) has removed the use of Section 106 agreements for infrastructure related requirements (unless small scale as explained below). This potentially creates some uncertainty about the most appropriate mechanisms for funding a European site mitigation strategy.
- 9.25 Section 106 of the Town and Country Planning Act allows for legal agreements to be put in place to set out obligations that must be fulfilled as part of a planning permission. The agreement is normally between developer and Local planning authority, and can be used to put in place any requirement that is deemed to be necessary to make a development sustainable, and in accordance with planning legislation and policy. Section 106 agreements can cover a wide range of requirements and have successfully been used for European site mitigation for some time. There are currently restrictions on the use of S106 agreements where the purpose is for funding infrastructure. Local planning authorities cannot pool more than five Section 106 agreements together if the money is being used to pay for a single infrastructure project. This restriction applies where the Section 106 funding is specifically being used for infrastructure, and was brought into force to ensure that CIL money is appropriately used for infrastructure projects rather than continued reliance on Section 106 funding. This restriction is currently under review, but remains in place at the time of finalisation of this report.
- 9.26 Section 106 agreements can still be used for non-infrastructure requirements that are directly related to the development. The restrictions in place also still allow for development to fund site specific infrastructure projects through S106 agreements, if the funding can be obtained from no more than five developments in total, and if the infrastructure project is not listed by the Local planning authority as a project to be delivered by CIL.
- 9.27 It is important to note that CIL contributions are not collected from all residential developments, as some development types are given exclusions, including some types of affordable and self-build homes. Where CIL money is used to fund European site mitigation, the impact of non-paying developments must still be accounted for.
- 9.28 CIL money should be used for infrastructure needs that are cumulative across an area, and not for maintaining existing infrastructure or remedying pre-existing problems or deficiencies (except to the extent that they could be aggravated by new growth), and should not be used for development specific infrastructure.¹⁸

¹⁸ Department for Communities and Local Government. Community Infrastructure Levy – Detailed proposals and draft regulations for reform. October 2011.

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- 9.29 An additional issue for the Strategy implementation through CIL funding is that Ipswich Borough has not embedded CIL within its planning function to date. With an absence of a CIL system for Ipswich Borough, and in light of discussions above in relation to the nature of the avoidance and mitigation measures, our recommended approach is to fund the Strategy entirely through Section 106 contributions. Pooling restrictions need not apply where the projects being funded are not considered to be infrastructure. Government guidance on CIL refers to pooling restrictions for infrastructure¹⁹ and thus far the Government has only identified SANGs as a type of European site mitigation that could constitute infrastructure. Other strategic mitigation schemes elsewhere are funding on site measures through S106 funding.
- 9.30 In making this recommendation, it should be noted that the discussions regarding the delivery of European site mitigation through the CIL or S106 remains an open debate. Precedents set by other planning authorities involved in strategic mitigation schemes are not necessarily consistent, but this does concur with local decision making advocated by central Government. This Strategy should therefore review funding mechanisms if guidance or caselaw indicates a change is required in the recommended approach in the future. This may be for example if Government expands what might constitute infrastructure.
- 9.31 The Local planning authorities may revise their approach to use of CIL in future and it may therefore become more feasible to use CIL for some or all of the avoidance and mitigation projects. Additionally, new projects coming forward as part of a rolling programme of mitigation over time could be off-site and more akin to infrastructure. Such matters will continue to be checked at Strategy review points.

Types of development to which the Strategy applies

- 9.32 In accordance with the plan level HRAs for the authorities, the Strategy is a mechanism to deliver mitigation for the residential development set out in the Local Plans. This must therefore include all net increases of one dwelling or more, and must include all residential dwelling types. This would therefore include houses, flats, gypsy and traveller pitches, student accommodation, warden controlled accommodation and residential homes, for example.
- 9.33 Project level HRA may exclude certain restricted development types from needing to contribute towards mitigation. These include nursing homes, where the residents will only be those in need of daily nursing care and therefore unable to undertake outdoor recreation. Good practice elsewhere has also excluded residential annexes, as these cannot be separated from residential extensions that do not constitute a net increase in dwellings.

¹⁹ Government on-line guidance refers to “a limit on pooled contributions from planning obligations towards infrastructure that may be funded by the levy.” <https://www.gov.uk/guidance/community-infrastructure-levy#>

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- 9.34 If any residential housing type is to be excluded from the Strategy for any reason, but still poses a risk to European sites (a Local planning authority may choose to make exclusions on development viability grounds, for example), the proportional effect of that development will need to be mitigated for, and therefore delivered through other means of securing funding. This could include increasing the tariff paid by eligible developments (whilst still ensuring proportionality) or providing resources from within Local planning authorities.
- 9.35 In some instances, residential development resulting in a net increase of one or more dwellings could be of a type that would normally benefit from Permitted Development Rights under the General Permitted Development (England) Order 2015, which ordinarily grants planning permission for certain types of development. Upon receiving an application for prior approval under this order, each of the Local planning authorities will need to establish whether the application is for the creation of one or more dwellings (for example through conversion) and whether it falls within the zones of influence. If it does, the proposal should be screened as having a likely significant effect in the absence of avoidance and mitigation measures. The development will require the approval of the relevant Local planning authority, in accordance with Regulations 75 to 78 of the Habitats Regulations. At which point the applicant will need to comply with the Strategy (unless able to offer bespoke mitigation).

Phasing

- 9.36 As discussed throughout the Strategy, the delivery of the Strategy is over the lifetime of the Local Plans, but must also be flexible enough to adapt to meet the needs of future growth. Initial implementation of the Strategy will require several key priority measures to be put in place, as these are the means by which the rest of the Strategy is successfully driven and delivered. The most urgent priority is therefore the delivery officer, for this reason.
- 9.37 It is suggested that the timeframe for the Strategy is split into three phases; immediate, short to medium term, and medium to beyond current plan periods. Table 7 below divides the proposed avoidance and mitigation measures for the Strategy into these three phases.
- 9.38 In the immediate implementation period, the appointment of the Delivery Officer will then lead to their oversight of the other key mitigation priorities; wardens, signage and interpretation, dog related projects and establishing monitoring.
- 9.39 In the short to medium term, a range of projects are highlighted that need further information gathering and project development by the Delivery Officer and wardens, once they are working on the ground and liaising with local communities and stakeholders.
- 9.40 In the medium term to beyond plan period, projects are listed as examples of the types of measures that are likely to be necessary, but the list will be informed by earlier phases of delivery and Strategy monitoring.

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- 9.41 There is therefore a sliding scale of detail and certainty across the three phases, and this inevitably affects the estimated costs given to the measures listed, as discussed below.

Costing the avoidance and mitigation measures

- 9.42 Strategy delivery is dependent upon funding to deliver the suite of avoidance and mitigation measures that will now be taken forward. As described above, Section 106 contributions are likely to form the main funding source. To utilise developer contributions, the imposition of Section 106 agreements must be justified as necessary to make a development acceptable in planning terms.
- 9.43 Measures are summarised in Table 6, where the costs are estimated for each. The costs assume some different timescales for the different measures, based on understanding of the nature of such projects and their typical lifetime. Most of the measures are calculated to run for the currently adopted plan periods and a little beyond, i.e. roughly 15 years. This allows for a suitable time frame to get the Strategy effectively running, regularly reviewed and offer certainty of delivery over time. As plan reviews take place and new plans are adopted, the Strategy reviews will need to revisit the timeframes set out for mitigation measures and ensure that the Strategy has a rolling programme of measures that continue beyond the initial 15 year period. As discussed earlier, the Delivery Officer should be a permanent role, with ongoing costs most likely to be gained from future plan periods, unless evidence indicates that the role could be reduced and recreation pressure still mitigated for in the future.
- 9.44 Strategic mitigation schemes elsewhere have calculated costs on an in-perpetuity basis. In recommending a permanent commitment to key elements such as the delivery officer, but with review after the plan periods, the Strategy recognises the lower level of housing in comparison with elsewhere, and the viability issues associated with delivering housing in some locations. A lower per house tariff is calculated as a result, but the commitment to permanently providing some key elements of the Strategy provides assurance of mitigation as long as there is the potential for effects on the European sites. This will need to be picked up in future plan level HRAs to ensure continuity into future plan periods.
- 9.45 Costs are split into capital/one off costs and annual costs within Table 6. The costs are guideline measures, intended to be approximate. Put together they give an overall budget, and the Executive Group will then take responsibility to oversee that budget and ensure appropriate targeting of resources. The actual cost of measures will vary depending on how they are implemented, as an example some or all of the wardens could be hosted by a range of different organisations including National Trust, RSPB, Suffolk Wildlife Trust or local authorities, or could be hosted within the host body for the Strategy alongside the Delivery Officer. In each case the costs would be likely to be slightly different. The costs are based on the costs of measures in other mitigation schemes and our own experience, but are not based on formal quotes.

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- 9.46 Many of the projects are not site specific but work across sites, for example the Dog Project, warden time, website and codes of conduct etc. Some elements are however more specific to particular European sites.
- 9.47 The overall cost, determined by adding up all estimated costs for the mitigation projects is £3,757,270 and this we have split (Table 7) across the two zones such that:
- Zone A would contribute £1,169,157 (£121.89 per dwelling)
 - Zone B would contribute £2,588,104 (£321.22 per dwelling)
- 9.48 The calculations made in Table 7 are based on housing figures provided by the Local planning authorities in early 2018. Some residential developments have come forward for approval since that date and some will have initially been considered as part of the interim approach, and then latterly payments collected are being included within the Strategy funds. Per house tariffs may be subject to change throughout the lifetime of the Strategy, as housing figures are reviewed again over time, and in response to more detailed understanding of costs, and as measures are implemented and monitored for effectiveness.
- 9.49 The total cost of the mitigation package at Strategy implementation is £3,757,270 and as explained above, is spread across the two zones in accordance with housing to be delivered, and the potential risks to European sites posed by each zone, with some measures weighted to target delivery in some sites more than others. For example, the warden resource is not spread equally across sites, but is divided in accordance with the relative need for a staff presence on site as part of the mitigation package.
- 9.50 Many of the avoidance and mitigation measures proposed for this Strategy do not have capacity limitations, i.e. they don't only mitigate for a certain number of houses. Projects such as signage will be effective no matter how many visitors there are. A dog walking project or staff resources may have upper limits of capacity but they will be very high. The nature of the measures is such that in the absence of low capacity limits, once in place they provide a strong avoidance and mitigation package that should be viable into the next plan period, but will need continued funding to keep them in place or updated (such as continued funding for staff or the eventual replacement of old signage).
- 9.51 The Local planning authorities may also find additional resources to contribute to the overall delivery of the Strategy. The Solent Bird Aware strategic mitigation scheme has recently secured £1.3 million funding from the Local Growth Deal, for example. A potential funding source for the Suffolk Strategy is the New Burdens fund provided by Government where any duty, policy or initiative increases the cost of providing local authority services, or restrains fee levels that are charged by local authorities, for example. The Suffolk authorities have received New Burdens funding, and Local Plan delivery with the duties identified through the HRA process should meet the New Burdens criteria, as could the general requirements for Local planning authorities to contribute towards the overall objectives of the European site network irrespective of

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development. It is recommended that the New Burdens money is used to frontload the recruitment of delivery staff, to kick start Strategy implementation.

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Table 6: Guideline costs for different measures. Costs are indicative estimates intended to give an overall budget for the mitigation.

Timeframe	RAM Theme	Measure	Relevant project detail	Capital/on e-off Cost	Annual Cost	No. of yrs to budget for annual cost	Total Cost	Notes on how cost calculated	
Immediate priorities for Strategy implementation	Staff resources	Delivery officer	Full time		£43,500	15	£652,500	Costs calculated as: £33,000 annual salary, plus national insurance (£2,500 per annum) and overheads (£8,000 per annum) giving a total per year of £43,500. Full time	
		1 warden	Full time		£35,000	15	£525,000	Costs per warden would be: £20,000 annual salary, plus national insurance (£2,500 per annum), vehicle costs (£4,500 per annum) and overheads (£8,000 per annum) giving a total per warden per year of £35,000. Full time	
		1 warden	Full time		£35,000	15	£525,000	Costs per warden would be: £20,000 annual salary, plus national insurance (£2,500 per annum), vehicle costs (£4,500 per annum) and overheads (£8,000 per annum) giving a total per warden per year of £35,000. Full time	
		1 warden	Full time		£35,000	15	£525,000	Costs per warden would be: £20,000 annual salary, plus national insurance (£2,500 per annum), vehicle costs (£4,500 per annum) and overheads (£8,000 per annum) giving a total per warden per year of £35,000. Full time	
		Executive Group	Staff time					£0	Costs met by local authority and relevant organisations involved
		Administration and accountancy	Staff time					£0	Costs met by local authorities
		Audit of current provision	Delivery officer/wardens possibly with some external support	£1,200				£1,200	Audit of current provision. Undertaken by delivery officer/wardens, possibly with some external support small budget to cover cost of travel etc.
	Dog related	1 staff member to set up project	0.5 fte		£17,500	5	£87,500	1 staff member part-time (0.5fte) to set up project. £25,000 annual salary, plus national insurance (£3,125 per annum), vehicle costs (£4,500 per annum) and overheads (£8,000 per annum) giving a total per year of £35,000.	

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Timeframe	RAM Theme	Measure	Relevant project detail	Capital/on e-off Cost	Annual Cost	No. of yrs to budget for annual cost	Total Cost	Notes on how cost calculated
		Coasts and Heaths Dog Project	Set up project	£15,000			£15,000	Costs to set up project and cover graphic design, building on work done under Balance/AONB project, liaison with specialist consultants (dog focussed), liaison with dog owners etc.
		Website inc gazeteer, social media & other promotion	Funding to cover promotion of mitigation scheme and information provision/sharing	£20,000	£5,000	15	£95,000	Website design estimated at £10,000 with a further £10 during the plan period for update/refresh and new material
		Advertising and promotion		£9,000			£9,000	costs to cover an initial launching event, printing of fliers, facebook/social media targeting etc.
	Monitoring & data gathering	Fact-finding study	Short study to gather information on issues from recreation from local residents around Minsmere Walberswick, involving potentially interviews with site managers/landowners, site visits, mapping of parking locations, GIS data collation	£12,000			£12,000	Estimated cost for short study to gather information on issues from recreation from local residents around Minsmere Walberswick, involving potentially interviews with site managers/landowners, site visits, mapping of parking locations, GIS data collation.
		Visitor survey involving interviews with visitors at selected locations	Single survey undertaken near start of mitigation targeted locations selected to fill evidence gaps and also selected to provide long term monitoring data	£30,000			£30,000	Single survey undertaken near start of mitigation targeted locations selected to fill evidence gaps and also selected to provide long term monitoring data. Estimated cost for visitor survey involving interviews with visitors at stratified sample of locations across relevant European sites
		Visitor numbers and activities	counts of cars and automated counters across range of locations		£10,000	8	£80,000	Biannual monitoring involving repeated transects/car-park counts and other counts done by consultant (potential to also use wardens/volunteers)
		Recording implementation of mitigation	Various records maintained by delivery officer				£0	Various records maintained by delivery officer. No cost as undertaken as part of core work by delivery officer

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Timeframe	RAM Theme	Measure	Relevant project detail	Capital/on e-off Cost	Annual Cost	No. of yrs to budget for annual cost	Total Cost	Notes on how cost calculated
		levels of new development	maintained by LPAs in a standardised way, collated by delivery officer				£0	Information maintained by LPAs in a standardised way, collated by delivery officer. No cost as undertaken as part of core work by delivery officer/LPAs
Short to medium term	Signage & Interpretation	Graphic design for new interpretation and signs	Commissioned external provider	£10,000			£10,000	£10,000 for design of new interpretation, covering 6 European sites, a range of different issues (heathland birds, wintering waterfowl, vegetated shingle etc); may need to allow for refresh/update of design during plan period. Potentially some cost savings if graphic design elements combined
		New interpretation boards	Production and installation	£243,000			£243,000	Production and installation. £2,700 per board, based on HLF guidance. Approx. 7 boards per European site, plus 3 at Benacre (i.e. 45 boards). Costs allow for one replacement within plan period
		New Signs, waymarking etc.	Production and installation	£10,000			£10,000	Production and installation. Cost based on 100 posts at £80 per post. Treated softwood marker posts, 1.6m high with slanting top and coloured band or marking incorporated. Additional £1000 for waymarking discs or signs made of glass reinforced plastic for longevity (£1000 allows for 2 sets of discs - 2 designs, 500 of each).
		Code of conduct - new	8 new codes written and published	£15,000			£15,000	8 new codes of conduct, designed for web and printing; cost allows for printing and reprints/refresh through plan period
	Infrastructure	Fencing, e.g. for Little Terns	Range of fencing may be appropriate, from single strand of baler twine to electric fencing. Variable deployment each year depending where the birds are.		£15,000	15	£225,000	Range of fencing may be appropriate, from single strand of baler twine to electric fencing. Cost provides annual budget to be targeted as appropriate.
	Dog related	Coasts and Heaths Dog Project	Advertising, promotion and events	£1,500	£2,500	15	£39,000	Costs to cover initial purchase of gazebo, merchandise etc, plus annual costs to help with specialist/consultants at events etc. Delivery Officer and warden time potentially required too

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Timeframe	RAM Theme	Measure	Relevant project detail	Capital/on e-off Cost	Annual Cost	No. of yrs to budget for annual cost	Total Cost	Notes on how cost calculated
		Project specific signage		£1,500			£1,500	£1500 allows for 3 sets of discs - 3 designs, 500 of each; e.g. potentially paw prints in traffic light colours to show where no dogs, dogs on lead and dogs welcome.
	Monitoring & data gathering	Bird monitoring			£5,000	8	£40,000	Small budget to allow boosted coverage of WeBs and some basic data presentation/collation of WeBs across estuary sites, biannual rather than annual
		Vegetation monitoring			£5,000	5	£25,000	Targeted monitoring at limited sample of sites, conducted every three years
Medium term to beyond plan period	Monitoring & data gathering	Visitor interviews	Repeat of previous survey and inclusion of other sites	£35,000			£35,000	Repeat of previous survey and inclusion of other sites. Costs based on earlier survey, but costs increased to allow wider coverage to include some points on Sandlings and Deben
	Targeted site specific	New paths/path diversion	In response to audits/consultations and warden experiences on site	£100,000			£100,000	Cost very approximate and gives a budget to be targeted as necessary in relation to where development comes forward and where issues remain. Works would be targeted in response to audits/consultations and warden experiences on site
		Dog walking locations	Provision of new bespoke facilities	£25,000			£25,000	Provision of new bespoke facilities. Cost very approximate and provides a budget to be targeted as necessary in relation to where development comes forward and where issues remain
		Watersports - new facilities	In response to user group consultation	£15,000			£15,000	Cost very approximate and gives a budget to be targeted as necessary in relation to where development comes forward and where issues remain. New facilities such as slipways could be very expensive but given wider benefits the European funding budget could be used as contribution towards larger project costs
		Water-sports - zonation	Modifying/promoting/enforcing	£10,000			£10,000	Modifying/promoting/enforcing. Cost very approximate and gives a budget to be targeted as necessary in relation to where development comes forward and where issues remain
		Car parking rationalisation	In response to audits/consultations	£50,000			£50,000	Cost very approximate and gives a budget to be targeted as necessary in relation to where development comes forward and where issues remain.

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Timeframe	RAM Theme	Measure	Relevant project detail	Capital/on e-off Cost	Annual Cost	No. of yrs to budget for annual cost	Total Cost	Notes on how cost calculated
			and warden experiences on site					Funding targeted based on audits/consultations and warden experiences on site Capital works closing car-parks, resurfacing or similar likely to be expensive and depend very much on location. May be justification in combining with other funding sources.
		Enforced restrictions	Bye-laws etc	£15,000			£15,000	Bye-laws etc. Cost very approximate and gives a budget to be targeted as necessary in relation to where development comes forward and where issues remain
Total							£3,415,700	
Contingency (10%)							£341,570	
Total							£3,757,270	

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Table 7: Costs per dwelling for mitigation, based on overall costs per charging zone

Charging Zone	Dwellings coming forward to the end of plan period	Cost of mitigation	Cost per dwelling
A	9592	£1,169,157.13	£121.89
B	8057	£2,588,103.87	£321.22
TOTAL	17,649	£3,757,261	

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10. Monitoring and Review

- 10.1 The Strategy is being implemented alongside and as an integral part of the Local Plans, and development management decisions within the Local planning authorities. It should be in place for the lifetime of the current Local Plans, but should continue to be a living Strategy, adapted and updated over time as new relevant information comes forward, as initial projects are funded and implemented and more need to be added, and importantly should be considering any monitoring information.
- 10.2 This section identifies some initial work that is necessary to help refine the Strategy and fill-in existing data gaps, in the form of Strategy monitoring and additional evidence projects. The results from these studies may change elements of the Strategy, such as the zones, mitigation priorities and timing. Review of new evidence collected and refinement of the Strategy should as a minimum coincide with plan reviews.
- 10.3 Monitoring is a fundamental part of a strategic approach to European site mitigation. The concept of the Strategy was developed at the plan level HRA stage, and certainty in its progression to an implemented and functioning Strategy, because of the commitments made in plan policy, enabled the plan level HRAs to conclude that the plans could be adopted with conformity with the Habitats Regulations. A functioning Strategy is one which is appropriately monitored and reviewed, because its success is dependent upon an understanding of what is working, and what needs improving or modifying. This can only be achieved with monitoring, and is an element of the overall Strategy that should be built in as an element that requires funding. Monitoring should record effectiveness over and above basic implementation, i.e. is it resulting in behavioural change, for example.

Evidence gaps

- 10.4 A key evidence gap relates to home postcodes and visitor catchments for selected sites, namely: the Stour and Orwell, the Alde-Ore, Shingle Street & East Lane and Minsmere-Walberswick, focussing on the locations likely to be used by local residents predominantly, as opposed to the tourist hotspots such as the main reserve car park for Minsmere. Some of the data gathered for projects as part of the interim approach may be able to contribute to reducing this evidence gap.
- 10.5 Stakeholders identified several additional evidence gaps during the Stakeholder workshop, as identified in Appendix 2, which the Delivery Officer should check and discuss further with local stakeholders and partnerships to determine appropriate priorities for further information gathering, over and above those recommended as projects for the Strategy in Section 8.
- 10.6 The Strategy will be implemented on the basis of exiting information, but as evidence gaps are filled the Strategy can be reviewed and refined at appropriate points in its progression. One fact finding study has been incorporated at this point in time, in

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relation to Minsmere-Walberswick, and it is possible that others will be identified and scoped out as the Strategy is embedded and taken to its first review.

- 10.7 The indirect effect of disturbance to grazing animals, from people and particularly dogs running free, which in turn then causes disturbance to birds, is highlighted as an ongoing issue on a number of grazed sites by stakeholder consultees. It may be beneficial to get a better understanding of this issue in order to potentially add additional measures to the Strategy to combat this problem.
- 10.8 Wildlife crime is another possible evidence gap, and further evidence gathering may identify opportunities through the Strategy to highlight issues and to liaise with the relevant authorities to improve reporting and progression of investigations. Wildlife crime such as poaching and anti-social behaviour can inadvertently affect visitor behaviours.

Monitoring elements to inform the Strategy's evolution

- 10.9 Monitoring is essential to ensure successful delivery of the mitigation work. Monitoring will be necessary to ensure approaches are working as anticipated and whether further refinements or adjustments are required. Monitoring would be best set out in a separate monitoring strategy, potentially produced by the Delivery Officer once the strategy is up and running.
- 10.10 As different projects take off, monitoring will inform whether resources can be better allocated, for example it may be that once codes of conduct are in place and working efficiently, wardening presence can be reduced or scaled back. Furthermore, it is difficult to be confident of how access patterns may change over time, for example in response to changes in climate, new activities, and in response to changes on the sites themselves. Monitoring will pick up such changes and ensure mitigation is targeted as necessary. The monitoring is therefore aimed at ensuring mitigation effort is focused, responsive to changes in access, and that money is well-spent and correctly allocated. Monitoring is therefore integral to the mitigation package of measures.
- 10.11 Different monitoring elements include counts of people, interviews, recording mitigation measures, on-going bird monitoring etc. These are all relatively basic monitoring and would need to be continuous, i.e. being recorded every winter. Financial monitoring is anticipated to be absorbed within the local planning authorities and the role of the Delivery officer.

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Table 8: Monitoring elements

Monitoring work	Aim	Conducted by	Methods	Notes
Visitor numbers and activities	Checking types of use and levels of use over time	By warden/ranger team, potentially with help from freelance surveyors and/or volunteers	Repeated coordinated spot counts of parked cars and people (mapped) at different locations. Undertaken every alternate year.	Will need careful design to ensure good spatial and temporal coverage, plus ability to pick up changes in behaviour (such as dogs on leads). Potentially scope to use automated counters too.
Interviews with visitors	Gathering information relating to home postcode, reasons for visiting, motivations, visitor profiles etc.	Warden/ranger team or consultant	Face-to-face surveys on site. At least one survey during the plan period.	Targeted to selected locations. Postcode data will show where visitors are travelling from and questionnaire responses will show how well informed visitors are and whether mitigation has influenced their behaviour
Bird numbers and distribution	Checking bird numbers and changes over time	Mainly volunteers; continuation of WeBS on estuaries; liaison with FC and other stakeholders re heathland bird monitoring; continued monitoring of Little Terns.	WeBS and breeding bird surveys.	Some funding may be necessary to support counts locally and ensure no gaps in coverage. Data should cover at least every alternate year.
Vegetation monitoring	Picking up impacts of trampling and need for mitigation.	Ideally professional surveyors to establish locations and approach, potential for some volunteer support	Targeted monitoring of shingle vegetation at selected locations, allowing checks over time. Potentially undertaken every 3 years.	Monitoring targeted to locations where concerns relating to trampling and where measures likely to be needed. Monitoring will help identify suitable approaches.
Effectiveness of different measures	Check that specific projects are working	Wardens/rangers, possibly volunteers or consultants	Range of approaches, potentially including automated counters, interviews, direct observation	Targeted monitoring aimed at checking different measures, including before and after monitoring.
Recording of all mitigation measures	Ensuring detailed documentation of projects undertaken and where.	Delivery officer	Range of approaches including work log for wardens/Delivery officer	This will need to record details like membership of dog project, events, site-specific projects, level of wardening (time spent by warden/ranger team in different locations, no. of people spoken to etc.)

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Levels of new development	Recording amount of new building/development to relate to changes in access levels	LPAs	Some standard approach of recording development across all authorities	
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11. Future Considerations

- 11.1 This Technical Report has been written for the Strategy with the intention of moving forward to a consistent and agreed approach to avoiding and mitigating for residential development within the Local planning authority areas. In order to achieve effective implementation of the Strategy, the Local planning authorities may consider the preparation of an Supplementary Planning Document to sit alongside this Technical Report. The recruitment of a Delivery Officer and wardens will start the project management and on the ground delivery necessary to make headway and provide measures that are time critical given the point at which this Strategy is coming forward in the plan period.
- 11.2 This Technical Report is not therefore written with the benefit of on the ground experience, and some of the suggested projects need much more planning than has currently been possible. It is fully expected that the measures will be refined and updated in the near future by the Delivery Officer and on a regular basis going forward. This could have the potential to alter the initial per house tariffs proposed for strategic commencement of the Strategy.

Positive working with partners

- 11.3 Some elements of the Strategy have been purposefully brief in nature because it is recognised that there are several established access management initiatives in place, and that on the job experience from the Delivery Officer and wardens will inform the way in which additional measures can be successfully added without compromising the success of existing or additional initiatives.
- 11.4 Appendix 1 provides a list of current projects and initiatives that the Delivery Officer will find relevant to the Strategy and may present opportunities for effective delivery of additional measures.
- 11.5 It will also be important for the Strategy implementation to consider other functions within Local planning authorities delivering access management, including economic and tourism functions that will be promoting the local area as a destination for walking, nature related tourism, filming, weekend breaks, education trips etc. Such initiatives could potentially integrate some of the Strategy into their tourism work, particularly in relation to signage and interpretation, for example. The East Suffolk Council Transport and Infrastructure Manager is undertaking some work looking at car parking across the Suffolk Coastal District and will therefore be able to provide valuable information to assist with the car parking audit project. Steering Group members will need to closely liaise with other officers within their authorities. Parish Councils, and the Suffolk Association of Local Councils (SALC) may also be important contacts.

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- 11.6 Local authority and partner events such as the Annual Suffolk Walking Festival may be a good avenue for promoting the Strategy and any early projects that might be in the pipeline. Liaison with Natural England at the ECP progresses will be essential.
- 11.7 The Strategy needs to recognise the wider links to health and wellbeing, as the vast majority of visitors to the sites will not be very knowledgeable about birds. Finding other ways of influencing behaviours as well as education on disturbance issues will be important, and linkages with other topics that are of wider/political interest will be beneficial.

Progression to a Supplementary Planning Document

- 11.8 This Technical Report incorporates all the information necessary to assist with the determination of planning applications. An SPD could incorporate the key implementation guidance from this report into a concise document to enable quick reference to the main delivery elements of the Strategy that developers and decision makers need to have regard for within development proposals and determinations. This Technical Report would then continue to sit alongside the SPD as the full technical guidance, evidence and analysis source that explains and justifies the approach, but which does not need to be continually referred to on a daily basis.

Changes to the delivery of planning functions

- 11.9 It is clear that planning delivery is a fast-evolving area of interest for central Government, who are keen to see streamlined delivery of Local planning authority functions. Suffolk Coastal District Council and Waveney District Council merged to form East Suffolk Council on the 1st April 2019. Local Plan reviews will take an aligned or joint approach to future spatial planning. The authorities within and adjacent to Suffolk are already joining resources to deliver a number of initiatives and in some instances, are working on the amalgamation of functions for long term resource efficiency. A number of joint initiatives are likely to come to fruition in the next two years, including the preparation of the Babergh and Mid Suffolk Joint Local Plan, and it may therefore be beneficial to plan for a review of the Strategy within this timeframe.
- 11.10 Local planning authorities will strategically plan for respective future development requirements, including the housing and employment needs, the physical and social infrastructure to support it and environmental implications. Changes in housing priorities in the future, in relation to both numbers and locations, may inform future reviews of the current Strategy.
- 11.11 Neighbourhood level planning is also likely to progress over time, bringing more Neighbourhood Plans forward to be delivered alongside Local Plans. These will need to be the subject of HRA, prepared by the relevant Local planning authority, and should therefore be developed in conformity with the Strategy.

Strategy review

- 11.12 It is suggested that the first review of the strategic approach to the Strategy should take place within 18 months after adoption of this Strategy document. Staff recruitment may

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take a few months, but staff should have been in place for over a year by the time the first review is programmed, and should make preparation for the review as an ongoing element of their work. This could fit well with the changes described above in relation to planning functions and resource sharing across authorities. The Delivery Officer will be responsible for undertaking the review, the scope of which should be agreed by the Executive Group.

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Appendix 1: Other Strategies and Initiatives

This appendix lists other strategies, initiatives, and partnerships that potentially overlap with the mitigation strategy. These may provide some of the means by which measures within the strategy can be delivered, or by which some measures can be added to complement existing approaches. Efficiency between projects could be discussed at an annual meeting, or through an email group for example.

Strategy/Initiative/Partnership etc.	Description/Relevance to mitigation strategy
Alde-Ore Estuary Partnership	The partnership was established to ensure the development and maintenance of a safe, secure, productive, biologically diverse and pleasant estuary. The partnership exists to oversee a strategy for the estuary as a whole and to prepare a plan including a rolling programme of works for the furtherance of the strategy.
Deben Estuary Partnership	The Deben Estuary Partnership was formed with the vision of creating a plan along with the Environment Agency and Suffolk Coast and Heaths AONB to conserve the future of the Estuary
Stour and Orwell Estuaries Management Group	The group promotes the sustainable use of the Stour and Orwell estuaries through the management of human activity, in a way which is compatible with the conservation of the estuarine landscape and wildlife.
Suffolk Coasts and Heaths AONB Partnership	26 organisations, including the AONB, work together to make up the Suffolk Coast & Heaths AONB Partnership which oversees delivery of the AONB Management Plan. The management plan includes measures relating to impacts of recreation, e.g. section 1.5 of the plan includes measures relating to recreation impacts and nature conservation. Also relevant is the Suffolk Tourism Strategy produced by the AONB which considers promotion of the Suffolk Coast and provision of visitor facilities/infrastructure as well as the need to ensure tourism is sustainable.
Coastal Access: the England Coast Path	Natural England is working to establish a national trail around the English coastline; the ECP. The coastal areas relevant for the Strategy are split into five stretches: Harwich to Shotley Gate, Shotley Gate to Felixstowe Ferry, Felixstowe Ferry to Bawdsey, Bawdsey to Aldeburgh and Aldeburgh to Hopton on Sea. The route will potentially include some estuary shores.
Sizewell Power Station	A new power station has been proposed at Sizewell. The new power station would potentially result in a short-term increase in local residents/housing while work is underway (construction is estimated to require some 25,000 workers) and during works, access to the coast and surrounding areas may be affected, potentially diverting recreation use to other areas.
Little Tern Project	A partnership approach involving over 20 sites across England and Wales (including Suffolk sites), for which

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	funding has been obtained from EU LIFE+ Nature. Project aims to help Little Terns through wardening, infrastructure, monitoring, networking etc. Project ran until 2018.
Suffolk Wader Strategy	The Suffolk Wader Strategy consists of a core group of organisations who have come together to arrest and reverse the decline in wader populations in Suffolk, with a focus on the coastal area – NGOs, public and private sector.

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Appendix 2: Stakeholder workshop outputs

The Stakeholder event held on the 10th November 2016, as described in Section 7, has been used to inform the Strategy in terms of workable avoidance and mitigation measures, drawing upon local and specialised knowledge from a wide range of organisations and individuals involved in the management of the European sites and with local expertise in relation to ecology, habitat management, visitor management and education/interpretation of visitors. The outputs from the event are recorded here.

The workshop results, as summarised here, are not a complete record of mitigation work that is required, merely a record of information that has helped shape the Strategy and that will provide a useful reference and starting point for the Delivery Officer, once in place. Additional information is available in a range of reports, for example Mason *et al.* (2014), which identify management measures relating to disturbance and map sensitive locations on the Deben. The workshop focussed on the southern sites, with four discussion groups covering the Stour & Orwell, the Deben, the Sandlings and the Alde-Ore (including Shingle Street). The workshop did not include Minsmere-Walberswick SPA/SAC/Ramsar.

Attendee list

Name	Organisation
S Youngs	Associated British Ports
J Coleman	Associated British Ports
P.J. Garrets	BSMDC
Andy Halley	Ipswich Borough Council
Annette Robinson	Suffolk County Council
D Walker	Tendering District Council
Emma Hay	Natural England
Grant Whear	National Trust
M Wright	British Trust for Ornithology
Neil Armour-Chelu	Forestry Commission
Charlotte Tompkinson	Natural England
James Mayer	Suffolk Wildlife Trust
Nicholas Newton	Suffolk Coastal District Council
Christine Block	Suffolk Coastal District Council/Deben Estuary Partnership
Peter Ross	SC NORSE
Ray Sidaway	Ipswich Wildlife Group
Colin Hullis	Ipswich Wildlife Group
Matthew Ginn	Natural England
Glyn Bradbury	Forestry Commission
James Baker	Ipswich Borough Council
Jacqui Miller	RSPB
Jack Haynes	Natural England
John Jackson	Natural England
Kin Thirlby	Natural England
Simon Amstutz	AONB Unit
Bev Mclean	Colchester Borough Council
Alison Collins	Natural England
Mark Nowers	RSPB

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Chris Keeling	Natural England
?	Association of Inshore Fisheries and Conservation Authorities

Current recreation activities

Attendees were asked to list both the most common recreation activities and those which are most concerning in term of potential impacts on European sites features.

Most common recreation activities = ✓

Most concerning for the Strategy to address = S

Activity	The Sandlings	Alde-Ore/Shingle Street	The Deben	Stour and Orwell 1
Dog walking	✓ S	✓ S	✓ S	✓ S
Walking	✓ S	✓ S	✓ S	✓ S
Bird watching				S
Boating (powered)		S	✓ S	✓ S
Boating (non-powered)		✓ S		✓ S
Water sports - jet skiing			✓	✓
Bait digging				✓ S
Cycling/mountain biking	✓ S		✓	✓ S
Beach angling		✓ S		
Beach walking				
Drones/light aircraft/paramotors		✓ S	S	S
Horse riding	✓ S			
Motor bikes/ 4x4	✓ S			
Camping	✓			
Education visits	✓			
Sled dog training	✓			

Note – dogs off lead was highlighted as a particularly concerning current activity at the Deben, and Stour and Orwell.

Site impacts

Each group was asked to identify the current recreation impacts at each site. Results are summarised by group below. Where specific locations were identified these have been mapped (see Map 15).

Map 15 at the end of this appendix is intended to indicate approximate locations as mentioned in the workshop, providing a useful reference for the Delivery Officer and wardens as the Strategy is implemented. It was developed from input by the Stakeholders at the workshop event and therefore cannot be taken as a definitive record.

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Location	Description of the impact	Activity	Evidence and info sources, contacts, case studies	Any additional notes	Map Ref
Stour & Orwell Group					
Nr. Levington	Jet skis not sticking within designated zone	Water sports	Harbour master ABP	Essex Marine Police – no available evidence	7
Hogmarsh	Disturbance to high tide roost	Walking/dog walking	RSPB access management staff	Disturbance risk for 9 months of the year	8
Factory	Disturbance to high tide roost	Walking/dog walking	RSPB access management staff	Impact is likely to increase with recreation pressure	6
Mill Stutton	Disturbance to sensitive roost	Walking/dog walking	RSPB access management staff	Impact is likely to increase with recreation pressure	9
Holbrook Bay	Disturbance to sensitive roost	Walking/dog walking	RSPB access management staff	Impact is likely to increase with recreation pressure	10
Shotley Erwarton Bay	Disturbance to sensitive roost	Walking/dog walking	RSPB access management staff	Impact is likely to increase with recreation pressure	11
Hogmarsh	TDC and Babergh sides - kayaking	Non- powered boating	RSPB access management staff	Code of conduct needed	7
Stour, main channel	Impact on Merganser & goldeneye	Powered boating	RSPB access management staff	Code of conduct needed	12
N. side of Stour	Brent geese winter barley feeding sites	Walking	RSPB access management staff	Code of conduct needed	13
Site wide	Disturbance to birds, especially breeding	Dog walking - off lead	Stour sensitive sites document – RSPB and NE, c. 2008	Additional wardens required	
Stone Point	Brent geese, wader flocks, 100 + dunlin and turnstone roost here - disturbance	Dog walking - off lead	Stour sensitive sites document – RSPB and NE, c. 2008	Access gained from huts, shingle beach at the front edge which can be reached on foot. Dogs are often let off lead when at the woods, then run back to the roost. Area is bisected by channels and creeks along the PROW.	1
Stone Point	Brent geese, wader flocks, 100 + dunlin and turnstone roost here - disturbance	Boating and angling (bass and flounder)	Stour sensitive sites document – RSPB and NE, c. 2008		1
Jacques Bay	Bird disturbance	Dog walking - off lead	Stour sensitive sites document – RSPB and NE, c. 2008	Gaps in hedges away from the PROW, lots of use	2
Jacques Bay	Bird disturbance	Dog walking - off lead	Stour sensitive sites document – RSPB and NE, c. 2008	The bird hide should be moved to a place that means it is seen by dog walkers – in order to provide a focal point and highlight the use of the area as a quiet reserve and wildlife sanctuary	3
West Holbrook	Bird disturbance to the shore area,	Dog walking - off lead and on lead	Stour sensitive sites document – RSPB and NE, c. 2008	Stutton Beach is promoted	4

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Location	Description of the impact	Activity	Evidence and info sources, contacts, case studies	Any additional notes	Map Ref
	particularly oystercatcher				
Alton Water	Bird disturbance	Dog walking - off lead	Sensitive sites document – RSPB and NE, c. 2008 RSPB and NE. Holbrook development 2015 – mitigation measures	There is an alternative site promoted for dogs off lead in the Holbrook development 2015.	5
Factory roost	Bird disturbance	Dog walking - off lead	Stour sensitive sites document – RSPB and NE, c. 2008	Birds feed at Mistley Walls, people walk on top of the walls – could the route be below on the other side of the wall?	6
Freston	Bait digging	Dog walking - off lead	Ipswich BC	Draft MMP, visitor survey, bird surveys. Speak to IBC Orwell CP staff	14
Freston	Disturbance to wintering birds	Dog walking - off lead	Ipswich BC	Draft MMP, visitor survey, bird surveys. Speak to IBC Orwell CP staff	14
Site wide	Disturbance to birds, especially breeding	Dog walking - off lead	Orwell sensitive sites document – SWT 2006	Additional wardens required	
Freston	Disturbance to birds	Angling	Orwell sensitive sites document – SWT 2006	Large numbers of waders – suggest stopping access across the shore and alter the PROW	15
Trimley	Disturbance to birds	Angling (bass fishing)	Orwell sensitive sites document – SWT 2006	Wardening could be effective here	16
Levington	Disturbance to birds	Dog walking	Orwell sensitive sites document – SWT 2006	Wardening could be effective here	17
Levington	Disturbance to birds	Angling	Orwell sensitive sites document – SWT 2006	Wardening could be effective here	17
Nacton	Disturbance to birds	Night time cycling		Large numbers of cyclists at dusk, with lights. They tend to come by car, into the car park, and then go cycling around the estuary. Some signs there already but not very prominent? Should not be cycling on the PROW.	18
Shotley	Disturbance to birds	Bait digging	Orwell sensitive sites document – SWT 2006	Wardening is needed to enforce restrictions.	19
Sandlings Group					
Site wide	Displacement of birds	Dog walking	Annual monitoring survey;; FC Forest design plan, SSLL report 2010 ; RSPB and FC – annual bird data; Fc for the FDP.; Footprint Ecology	Some mitigation is in place e.g. Sutton Heath; SCDC dogs off lead zone (D on map) is open access.; There are multiple access/parking points	
Site wide	Displacement of birds	Walking	Annual monitoring survey;; FC Forest design plan, SSLL report 2010 ; RSPB and FC – annual bird data; FC for the FDP; Footprint Ecology	Area is open access	

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Location	Description of the impact	Activity	Evidence and info sources, contacts, case studies	Any additional notes	Map Ref
Snape, Tunstall	Displacement of birds	Mountain biking	As above, plus; TROG (mountain biking club)	There are designated biking tracks and skills areas.; Cycle hire at Snape Maltings (C on map)	21
Tunstall	Displacement of birds	Horse riding	As above, plus Equestrian stables	There are designated de-box areas e.g. Rendlesham	20
Site wide but localised	Displacement of birds	Motor bikes/4x4		An occasional and localised problem	
Site wide	Disturbance of breeding birds	Dog walking	Annual monitoring survey, FC Forest design plan, SSSL report 2010; RSPB and FC – annual bird data; Fc for the FDP.; Footprint Ecology	Some mitigation is in place e.g. Sutton Heath; SCDC dogs off lead zone (D on map) is open access.; There are multiple access/parking points	
Site wide	Disturbance of breeding birds	Walking	Annual monitoring survey; FC Forest design plan, SSSL report 2010; RSPB and FC – annual bird data; Fc for the FDP.; Footprint Ecology	Area is open access	
Site wide	Disturbance of breeding birds	Mountain biking	As above, plus; TROG (mountain biking club)	There are designated biking tracks and skills areas.; Cycle hire at Snape Maltings (C on map)	
?	Disturbance of breeding birds	Horse riding	As above, plus Equestrian stables	There are designated de-box areas e.g. Rendlesham	
Site wide but localised	Disturbance of breeding birds	Motor bikes/4x4		An occasional and localised problem	
	Lack of ability to remove scrub		Views on management	Site users oppose scrub control/tree felling and management generally	
	Lack of ability to graze		Views on management	Conflict between users and grazing livestock	
Alde-Ore Group					
Aldeburgh marshes	Disturbance to birds	Night time cycling	AOEP/AOA	There is currently a proposal to upgrade the footpath to formally make it a cycleway	22
Shingle Street, East Lane	Trampling of vegetated shingle	Dog walking, Kite surfing, Angling; Beach users	'Assessment of Shingle in the UK' Randall; NE Site Improvement Plans; NE site condition monitoring;	Occasional vehicle on the beach.; Use by commercial dog walking businesses	23
Shingle Street	Little tern disturbance	Dog walking, Kite surfing, Angling; Beach users	'Assessment of Shingle in the UK' Randall; NE Site Improvement Plans; NE site condition monitoring;	Occasional vehicle on the beach.; Use by commercial dog walking businesses	23
Orfordness	Trampling and disturbance	Specific access point at Orfordness – all activities			24

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Location	Description of the impact	Activity	Evidence and info sources, contacts, case studies	Any additional notes	Map Ref
Orfordness Crouch	Trampling and disturbance	Anglers – see map ref 4a The Crouch		Anglers can stay in place for up to 24 hours, and their trolleys are dragged across the shingle.	25
Orfordness nr tip	Trampling and disturbance	Boat access	Aerial photos for the LIFE project		26
Snape - Iken	Disturbance	Walkers from Snape Maltings to Iken Church			27
Saltmarsh in Butley Creek and Alde-Ore	Disturbance	Walkers and boats		This location is a key roost and feeding site for redshank and avocet etc.	28
nr. Aldeburgh	Development disturbance	Construction and occupation adjacent to the Estuary	SCDC Planning	Developments – Adleburgh Brick Pit, Cobra Mist, jumbos ??	29
Orfordness	Disturbance	Promotion of lighthouse visits	NE	Seems well managed but numbers are significant	30

Access management measures currently in place

Each group was asked to highlight the measures currently in place at each site to manage recreation access. Results are summarised by group below.

Current type of access management/infrastructure	Undertaken by whom?	How is it managed, resources and funded?
Alde-Ore & Shingle Street Group		
On-site visitor management	National Trust and RSPB	National Trust rangers at Orfordness and resident ranger; RSPB warden occasionally at Havergate
Signage/interpretation	National Trust and RSPB	National Trust; Code of conduct for river users; Havergate Reserve
Zonation	National Trust	Southern end of Orfordness with paths, plus whole site has waymarking on roads and structures
Signage/interpretation at Shingle Street	AONB/Balance	Interpretation panel, notice board; Very faded SSSI signage needs replacement
Dog bins at Shingle Street	Suffolk Coastal District Council	Possibly elsewhere also
Car parks at Hollesley; East Lane; Boyton; Iken ; Hazelwood Sailor's Path; Snape Warren ; Sloughden (by sailing club)	Suffolk Coastal District Council and RSPB; RSPB; Suffolk Coastal District Council; Suffolk Coastal District Council	Very small; May have an interpretation panel at Iken and Hazelwood
Little Tern Fencing at Shingle Street	Suffolk Little Tern Group	Little Tern LIFE+ project; Suffolk Little Tern Group
Little Tern fencing at Orfordness	Suffolk Little Tern Group	Little Tern LIFE+ project; Suffolk Little Tern Group
Formation of Orfordness Angling Club (OAG)	National Trust instigated	Club to manage access to Orfordness by anglers

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Current type of access management/infrastructure	Undertaken by whom?	How is it managed, resources and funded?
Wildfowling	Alde-Ore Wildfowlers Association and others	SSSI consenting by NE; TCE management plan
Pay barrier and ferry	National Trust	Need to pay for the ferry and entry charge/National Trust membership
River Deben Group		
River bylaws – speed limit;	Suffolk Coastal District Council	Informal leaflet available from River Deben Association.; Informal wardening by Suffolk Coast and Heaths volunteer wardens
Car park charging	Woodbridge; Waldringfield; Felixstowe Ferry	Private control from landowners
Free parking	Melton riverside; Bawdsey	
Very limited signage	Suffolk Coast and Heaths AONB	
Suffolk Coast and Heaths Newspaper	Suffolk County Council; Suffolk Coastal District Council; Suffolk Coast and Heaths AONB	
Limited promotion of alternative routes		
Sandlings Group		
Part- time warden	Suffolk Coastal District Council	Covers Suffolk Coastal District Council land 2 days (?) a week
Zoning on Forestry Commission land	Forestry Commission	Car parks encouraged for specific activities
Wardening on RSPB/SWT reserves	RSPB/SWT	Staff presence – providing guidance to walkers if they are on site
Signage	Landowners/CROW land	
Planning recreational trails to avoid sensitive habitats	Forestry Commission	Forestry Commission
Dogs off lead area at Sutton Heath	Suffolk Coastal District Council;	Grant funded by Suffolk Coastal District Council on Broxtead Estate Land
Stour & Orwell Group		
Code of conduct for bait digging and dog walking	SOME Group – promoted by Estuaries officer on the website, Suffolk Coast and Heaths AONB management plan?	Colour coded paw prints system
S106 leaflets/info packs for new developments	LPA/developer funded/AONB	Developer funded – see Bradthorn development and Holbrook development
Alton Water	Anglian Water funded by S106 from Holbrook development	Alternative recreation site owned by Anglian Water. Holbrook development contributed to this.
Signage	Various	Generally confusing/contradictory.; Various organisations deliver, e.g. RSPB have signs at Coopers Wood (Stour) prohibiting dogs.; See Stephen Jenkinson report on signage.
Hides		Can encourage anti-social behaviour (e.g. Trimley); Good examples at Jacques Bay on the Stour (see 3 on the map). Can be effective to show a location is sensitive

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Current type of access management/infrastructure	Undertaken by whom?	How is it managed, resources and funded?
Hedging	Suffolk Wildlife Trust	Levington Creek is a good example; Issues when around sea walls – EA permission needed.; Screens and dead-hedging seen to be effective by some in the group
Group membership (all areas)	LPAs/developers/AONB	Secured as part of mitigation package for development in Babergh.; Developer funded, delivered/facilitated by Suffolk Coast & Heaths AONB
Wardening	Suffolk Coast and Heaths AONB have volunteer wardens, Suffolk Wildlife Trust for Trimley, WeBS counters/wildfowling also police informally	At Trimley (Orwell) on a rota

Potential mitigation solutions

Referring back to the identified impacts, each group was asked to discuss potential avoidance and mitigation solutions for those impacts identified. These are summarised below. Where specific locations were identified by the group these have been mapped (see Map 15). The map is intended to indicate approximate locations as mentioned in the workshop.

Location	Description of the mitigation	Resolving which impacts	Why will it work at this site?	Possible delivery mechanisms (who and how)	Evidence and info sources, contacts, case studies	Any additional notes	Map Ref
Alde-Ore/Shingle Street Group							
Orfordness Slaughter	Pay barrier – full time or seasonal	Unauthorised access	A formal manned barrier provides face to face contact	National Trust	Periodic discussion	Interpretation at the barrier	1
Shingle Street East Lane	Interpretation at car parks and improved signage						2
Estuary	Additional wardening						
Estuary	The river warden and ferry operator could be the same person – double up						
Slaughter	Ferry crossing to Sudbourne						3
Zonation at Shingle Street	Boardwalk/surfacing/channelling/signage	Trampling fanning from access points	Reduce trampling by taking traffic directly to the sea and back		Used elsewhere	Trampling on a recreational beach is very hard to resolve	4
Exclusion zones	Temporary fenced zones to	Trampling and bird disturbance					5

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Location	Description of the mitigation	Resolving which impacts	Why will it work at this site?	Possible delivery mechanisms (who and how)	Evidence and info sources, contacts, case studies	Any additional notes	Map Ref
	prevent trampling						
FC forest and wider countryside	Promote the non-sensitive access areas to divert disturbance	Trampling and bird disturbance					
Dog off lead areas - FC forest and wider countryside	Promote the non-sensitive access areas to divert disturbance	Trampling and bird disturbance					
Site wide	Rationalise signage						
Deben Group							
Whole river	Wardens (land and water)	Disturbance to overwintering birds	Site needs more information and education/advice, and more policing.; More direct contact required with local clubs/user groups.	LPA's and Estuary Partnerships	Deben Estuary: Birds and Disturbance 2014, pages 33 – 42. Mitigation measures discussed and is up to date.	Measures need to be targeting hot spots of activity	
Site wide	Seasonal signage	Disturbance to overwintering birds	Site needs more information and education/advice, and more policing.	LPA's and Estuary Partnerships	As above	Measures need to be targeting hot spots of activity	
Site wide	Branding (LNR)				As above		
Site wide	Salt-marsh creation/re-instatement				As above		
Site wide	Alternative circular routes				As above		
Bawdsey	Visitor centre at Bawdsey Quay				As above		6
Site wide	Deben Dogs; DCOs to ban dogs in some sensitive areas				As above		
Site wide	Cycle routes				As above		
Site wide	Screening and fencing				As above		
Site wide	A fenced dog area				As above		
Site wide	Re-surfacing and better maintenance of				As above		

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Location	Description of the mitigation	Resolving which impacts	Why will it work at this site?	Possible delivery mechanisms (who and how)	Evidence and info sources, contacts, case studies	Any additional notes	Map Ref
	preferred routes/alternative routes away from sensitive areas						
Site wide	Limiting or reducing car parking provision						
Site wide	Codes of conduct						
Sandlings Group							
Site wide	Dog club scheme	Disturbance to birds by dogs	Already some wardening; Success in Dorset	Partnership with land managers/developer funded	Dorset example		
Site wide	Seasonal wardening	Disturbance to birds across the SPA	Seasonal, therefore an opportunity to share with a winter warden on the estuaries	Developer contributions			
Site wide	Provision of greenspace within development	Disturbance to birds	Avoids the impact	Developer contributions		Should include access to local PROW network	
Site wide	Shared signage	Disturbance to birds	Provides education	Developer contributions			
Site wide	Strategic management of car parking provision	Disturbance to birds	Avoids the impact	Forestry Commission, RSPB, Suffolk Coastal District Council			
Site wide	Seasonal footpath closure	Disturbance to birds	Avoids the impact	Natural England, landowners			
Site wide	Increase quality of habitat	Displacement	By providing more habitat	Developer contributions			
Site wide	Educating user groups about changes	All	Improves the delivery of all measures	Engagement			
Site wide	Path improvement for all ROW	All	Avoids the impact	Deliver within/through development			
Site wide	Covenants	Disturbance to birds	?	Planning permission		Limiting pet ownership	
Stour & Orwell Group							
Site wide	Code of conduct	Physical disturbance	Raising awareness	IFCA?, Stour and Orwell Estuary		Developers to contribute	

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Location	Description of the mitigation	Resolving which impacts	Why will it work at this site?	Possible delivery mechanisms (who and how)	Evidence and info sources, contacts, case studies	Any additional notes	Map Ref
				Group; Developers			
Site wide	Wardening	Physical disturbance	Raising awareness/ education	IFCA?; Stour and Orwell Estuary Group; Developers		Discuss scope for wardening scheme; Developers to contribute	
Site wide	Code of conduct to initiate behavioural change; Plus promotion of alternative launch sites	Disturbance to high tide roost	Raising awareness/ education	Harwich Haven Authority; SOEM – promoting the Code of Conduct	Need to review launch areas to inform this measure	Impacts are seasonal; Needs a communication plan. www.HHA.co.uk	7
Site wide	Wardening	Disturbance to high tide roost and sensitive areas by walkers and dogs	Wardens should be specifically trained to maximise benefits			Comms. plan	8
Site wide	Seasonal signage	Disturbance to high tide roost and sensitive areas by walkers and dogs	Raising awareness	SOME Group		Part of comms. plan; Contribution to SOME Group;	9
Orwell	Avoidance – raising awareness of why the Orwell is special, e.g. park walks	Winter/physical disturbance	Relieving pressure on European sites	Ipswich Borough Council Orwell CP staff		Giving people alternative and high quality routes, and variety.	
Orwell Country Park/Pond Hall Farm	Improvements and resources for wardens	Dog walking/walking related disturbance to birds	A good alternative site for dog walking		Greenways Project Officer. The Landscape Partnership recreation surveys	On site wardening needed	10
Site wide	Dog exclusion measures (site wide)	Disturbance of breeding birds (especially)		Statutory or advisory – depends on whether PROW?	Local WeBS counters	Decline of breeding birds is a real issue – big declines from historic numbers	
Trimley	Signage	Dog walking/walking related disturbance to birds	The site needs to be promoted and maintained as a quiet site – important site for SPA birds	'Quiet zone' signage	Local WeBS counters); Suffolk Wildlife Trust	May only need to be over a short stretch	11
Site wide	Target cycling groups locally	Night-time cycling		Civil trespass against landowner – would need a			

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Location	Description of the mitigation	Resolving which impacts	Why will it work at this site?	Possible delivery mechanisms (who and how)	Evidence and info sources, contacts, case studies	Any additional notes	Map Ref
				consultation order etc.			
Site wide	Wardening	Dog walking/walking related disturbance to birds					

Additional comments

The groups were asked to add any additional comments that may be helpful for the development of the Strategy. For the Sandlings and Deben the additional comments sheets were not annotated, but additional comments were submitted for the other site groups.

Alde-Ore/ Shingle Street Group

- The England Coast Path provides opportunities e.g. rationalise signage, control dog access
- Separate 'Estuary' signage is needed

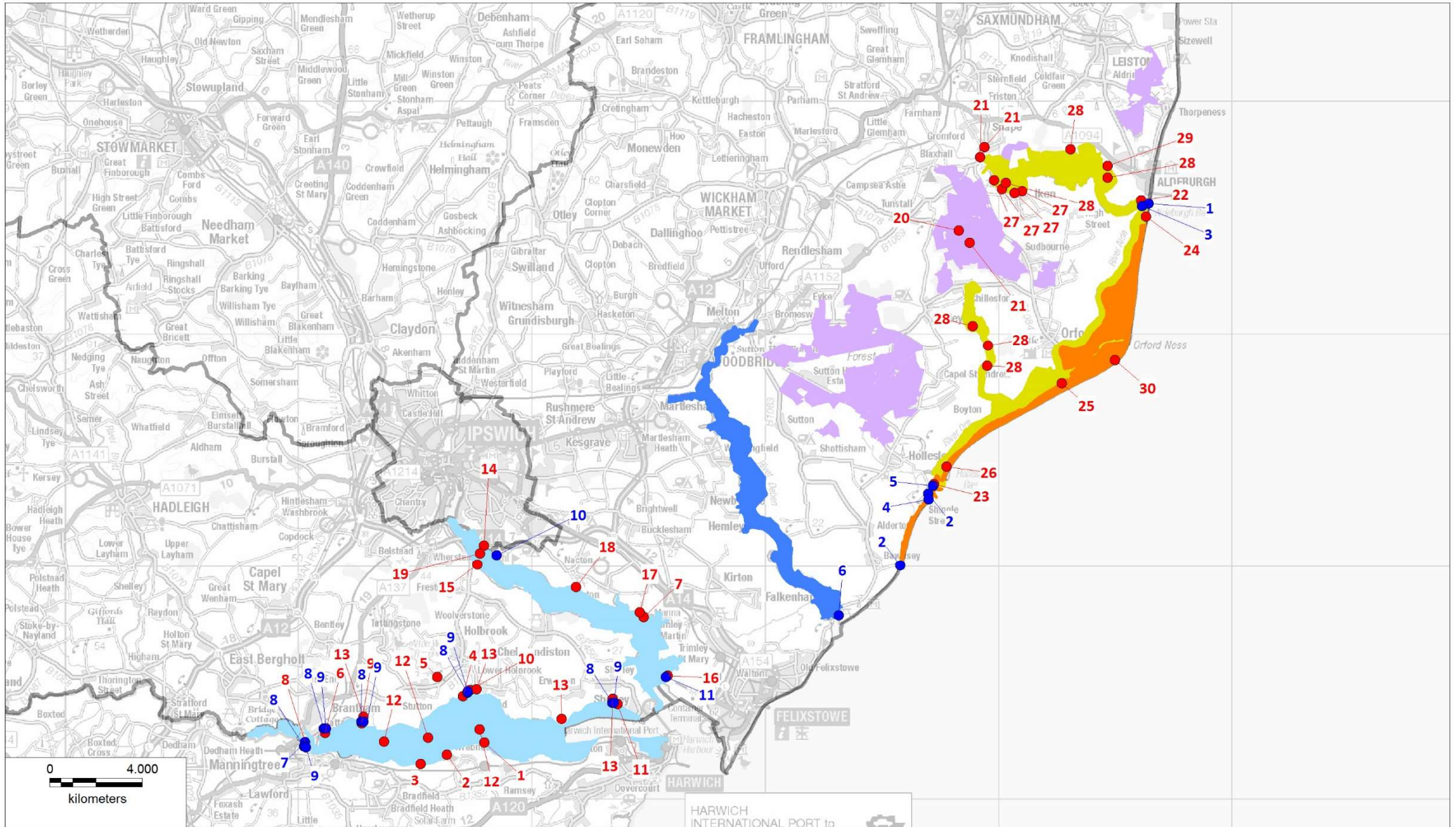
Stour and Orwell Group 1

- Suggested mitigation measures for specific sites could be applied more widely across the project area.
- The Stour and Orwell Estuary Management Group is a really important group for the Strategy
- Dorset Dogs – there is strong support for this sort of scheme in the project area
- The Strategy needs a strong communications plan and all partners should sign up.

Stour and Orwell Group 2

- We can't divert footpaths from sensitive sites but it may be possible to divert people to sections of path that go inland or avoid sensitive areas, e.g. lengths of sea wall – pinch points/identified zones of disturbance. *Note that subsequent consultation comments from SCC Rights of Way and Access Team highlight difficulties with this suggestion and alternative solutions may be better to pursue.
- Ipswich Borough Council have highlighted the issue of wild camping at Orwell County Park.

Map 15: Indicative locations highlighted by workshop participants



- Alde-Ore Estuary (SPA/SAC/Ramsar)
- Deben Estuary (SPA/Ramsar)
- Orfordness-Shingle Street (SAC)
- Sandlings (SPA)
- Stour and Orwell Estuaries (SPA/Ramsar)

- Impacts from recreation
- Potential specific locations for mitigation measures

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Appendix 3 – Signage at Shingle Street

An un-coordinated collection of signs, including instructions for dogs to be kept under control and no vehicles beyond the signage point, all being ignored.

