REBN004

FOOTPRINT ECOLOGY

Essex Coast Recreational Disturbance Avoidance and Mitigation Strategy (RAMS)

Durwyn Liley, Emily Rush & Phil Saunders

FOOTPRINT ECOLOGY, FOREST OFFICE, BERE ROAD,
WAREHAM, DORSET BH20 7PA
WWW.FOOTPRINT-ECOLOGY.CO.UK
01929 552444

Footprint Ecology is a small, employee-owned, ecological consultancy with an ethical focus. Founded in 2004 and based in Purbeck, Dorset we are catalysts for change, collaborating with organisations that share our commitment to sustainability and social responsibility. We create practical solutions to complex ecological challenges across a diverse portfolio including nature conservation, outdoor recreation and associated strategic planning.

Footprint Contract Reference: 837
Date: 24th April 2026
Version: Final
Recommended Citation: Liley, D., Rush, E., & Saunders, P. (2026). Essex Coast Recreational Disturbance Avoidance and Mitigation Strategy (RAMS). Report by Footprint Ecology.

Summary

This avoidance and mitigation strategy ('the RAMS') sets out the mitigation requirements relating to impacts from recreation and the cumulative effects of new housing and tourism development on the Essex coastline. The strategy covers the internationally important nature conservation sites along the Essex coast, from the Stour Estuary to the Thames Estuary. This section of coast is protected through a range of designations (including Special Area of Conservation (SAC), Special Protection Area (SPA) and Ramsar listing) that afford strict legal protection. The RAMS ensures the relevant local authorities meet legislative requirements and adequately protect these European sites when permitting development. It enables housing growth while ensuring the exceptional importance of the Essex coast for biodiversity is not undermined.

Residential development brings additional people to live in the area and an increased demand for recreation. In addition, increases in the number of tourists and visitors from further afield adds to the people visiting the coast. Access to the countryside is important to many, it brings economic and health benefits to society and is a legal right yet can be difficult to balance with nature conservation. High levels of recreation can result in impacts to the nature conservation interest for example through trampling damage, disturbance or increased fire risk.

This strategy replaces and updates the original strategy established in 2018. Just under 150,000 new dwellings are now planned within the established Zone of Influence within future plan periods (extending to around 2042).

Mitigation measures, set out in detail within the strategy, comprise SAMM (Strategic Access Management and Monitoring) and cover measures on and around the European sites. These measures are to address the in-combination effects of new development and include increased ranger time, signage, interpretation, screening and changes to parking. Monitoring is incorporated to help target the mitigation to the right locations. The level of mitigation is appropriate to the significant level of growth now anticipated and is secured in-perpetuity.

Off-site infrastructure and SANG ('Suitable Alternative Natural Greenspace') provide additional scope to mitigate the alone impacts of particular development and deflect visitors away from the European sites (for example providing locations that welcome dog walking). Detailed guidance on SANG is however outside the remit of this strategy.

The RAMS will be updated on a rolling basis approximately every 5 years, providing the opportunity to check the mitigation, scale of growth and update any costs. As such the strategy provides a long-term solution to impacts from recreation. By addressing risks up front, the strategy provides a proactive, cross-boundary solution that ensures cumulative impacts of growth across a wide area are taken into account. The strategy ensures necessary resources and costs are identified and provides clarity for developers when bringing forward sites for development within a defined Zone of Influence.

Contents

Summary ii
Contents iii
Maps iv
Acknowledgements iv
1. Introduction 1
2. Background and wider context 4
Legislative context 4
Planning and Infrastructure Act 5
Additional context 5
The importance of access to the countryside and the new England Coast Path 5
Nature Recovery and the LNRS 6
Devolution 7
3. Relevant European Sites 8
Recreational use 14
Impacts of recreation 15
Damage (trampling and wear) 15
Contamination 18
Increased fire risk 19
Disturbance to birds 19
Breeding bird interest 21
Non-breeding bird interest 24
Difficulties with land management 27
Overview and additional context 27
Additional context 27
4. SAMM ('Strategic Access Management and Monitoring') 31
Mitigation delivery to date 31
SAMM measures in this strategy 33
Measures relevant to all sites 33
Measures specific to particular locations 37
Evolution of SAMM and monitoring 39
5. Off-site green infrastructure & SANG 44
6. Implementation 46
Types of development covered 46
Zone of Influence and the area covered by the strategy 48
HRA matters and other assessment considerations 48
Scale of future development 51
Costs per new dwelling 52
Long term delivery and in-perpetuity costs 53

Governance 53
Review and timing 55
References 57
Glossary 63
Appendix 1: Potential opportunities for site specific projects and opportunities 65
Additional sites and opportunities added after workshop 79
Appendix 2: Estimates of housing growth potentially requiring mitigation . 85
Appendix 3: SAMM costs 88

Maps

Map 1: European sites covered by the RAMS page 9
Map 2: the 12 local authorities within the RAMS page 10
Map 3: Historical (post 2000) and current breeding locations for a selection of the SPA-qualifying bird species. page 22
Map 4: Key non breeding wader and waterbird roost sites alongside the relevant European site and local authority boundaries page 25
Map 5: Zone of influence and interviewee postcodes from the visitor survey page 49

Acknowledgements

This strategy has been commissioned by Chelmsford City Council on behalf of a partnership primarily comprising Basildon Borough Council, Braintree District Council, Brentwood Borough Council, Castle Point Borough Council, Chelmsford City Council, Colchester City Council, Maldon District Council, Rochford District Council, Southend-on-Sea City Council, Tendring District Council, Thurrock Borough Council and Uttlesford District Council, alongside Essex County Council, Natural England, Essex Wildlife Trust, and the RSPB. We are grateful to Leanne Brisland for overseeing the commission.
Cover photo © Goldhanger Creek by Footprint Ecology.

1. Introduction

1.1 This strategy sets out the mitigation requirements relating to the impacts from increased recreation (linked to the in-combination effects of housing growth and tourist development across the county) on important nature conservation sites on the Essex coast. It replaces a previous strategy and relates to the 12 relevant Local Planning Authorities (LPAs) that comprise the greater part of the Essex Coast Recreational disturbance Avoidance and Mitigation Strategy (RAMS) Partnership[1]. The RAMS ensures these authorities are adequately protecting the relevant wildlife sites from the impacts of recreation, while mitigating the impacts of new housing in a timely manner. The strategy also provides clarity for developers when bringing forward sites for development within a defined Zone of Influence.

1.2 The Essex coast is of exceptional nature conservation importance, with a suite of sites along the coast that are covered by international designations, which afford strict protection for the biodiversity and habitats present. These sites ('European sites') stretch between the Stour Estuary in the north and the Thames Estuary in the south.

1.3 New housing growth in the various towns and villages near the coast, and tourism development in the area, has the potential to result in more people visiting the designated coastal sites. Increasing recreation use brings particular risks - this strategy addresses those risks, ensuring LPAs meet legislative requirements when permitting relevant development. By addressing risks up front, the strategy provides a proactive, cross-boundary, solution that ensures cumulative impacts of growth are taken into account and that the necessary resources and costs are identified.

1.4 A strategic and plan led approach to protecting sites from the cumulative impact of additional recreation is now widely recognised as being more effective than dealing with such impacts on a development-by-development basis. A strategic approach has been in place for the Essex coast since 2018 and similar approaches have been established around the country (for

[1] The 12 Local Planning Authorities that make up the majority of the Essex Coast RAMS Partnership include Basildon Borough Council, Braintree District Council, Brentwood Borough Council, Castle Point Borough Council, Chelmsford City Council, Colchester City Council, Maldon District Council, Rochford District Council, Southend-on-Sea City Council, Tendring District Council, Thurrock Borough Council, and Uttlesford District Council. The partnership also includes Essex County Council, Natural England, Essex Wildlife Trust, and the RSPB.

example on the Suffolk Coast, the Dorset Heaths, the Thames Basin Heaths and the Solent).

1.5 Recreation pressure is complex, as the way visitors use a site can change with time and the distribution of the qualifying features can also change. Furthermore, to ensure effectiveness, mitigation needs to include a package of measures that work in an integrated way. For example, educating visitors, reinforcing messages with site-based staff, and providing the right infrastructure to meet visitor needs and influence visitor behaviour could all fit together as part of a mitigation package, but cannot be delivered in a piecemeal way, if implemented by individual developments on a case-by-case basis.

1.6 Collective funding is essential for on-site measures, and these can then in turn be supported by the provision of the right alternative green infrastructure, i.e. a positive step to create more space for recreation and make a meaningful reduction in visits to the European sites. A strategic approach also ensures that mitigation can be secured in a way to maximise benefits for local communities and wildlife, ensuring a positive approach that provides for recreation use and ensures long-term protection for the European sites.

1.7 The original strategic mitigation scheme (which this replaces) was developed in partnership by the relevant LPAs, with input from a number of other organisations (for more information see Place Services / Essex County Council, 2018).

1.8 The strategy established a Zone of Influence (i.e. the zone within which it is deemed that mitigation measures are required) and a series of mitigation measures that work together to provide robust protection for the various European sites. Mitigation measures have been funded by developer contributions. The mitigation included Strategic Access Management and Monitoring measures ('SAMM'), that were targeted towards the European sites and included measures such as rangers.

1.9 This RAMS document replaces and updates the previous strategy. It has been produced following visitor surveys and a structured programme of workshops and formal meetings involving a wide range of stakeholders. The update is necessary to provide continued protection for the relevant European sites, to account for changing recreational use of the European sites and to ensure the strategy is appropriate to the level of growth coming

forward in the respective Local Plans, with mitigation secured in-perpetuity for the duration of the impact.

2. Background and wider context

2.1 This section sets out the background to the relevant legislation and provides wider context in terms of countryside access, nature recovery and changes to planning and local government that may be relevant.

Legislative context

2.2 This strategy has been produced in order to meet particular legislative requirements. European sites are those afforded the highest level of legislative protection for biodiversity. Public bodies, including LPAs, have specific duties in terms of avoiding deterioration of habitats and species for which sites are designated or classified, and stringent tests have to be met before plans and projects can be permitted. Importantly, the combined effects of individual plans or projects must be taken into account. For LPAs, this means that the combined effect of individual development proposals must be assessed collectively for their cumulative impact.

2.3 The designation, protection and restoration of European sites is embedded in the Conservation of Habitats and Species Regulations 2017, as amended, which are commonly referred to as the 'Habitats Regulations'. They include Special Protection Areas (SPAs) classified under the 1979 Birds Directive and Special Areas of Conservation (SACs) designated under the 1992 Habitats Directive. Collectively, these sites are sometimes referred to as Habitats sites. Ramsar sites were afforded the same level of statutory protection in England through the Planning and Infrastructure Act (2025). In this strategy we use the term 'European site' to refer to SACs, SPAs and Ramsar sites.

2.4 European sites are the cornerstone of UK nature conservation policy. They form part of a 'national network' of sites that are afforded the highest degree of protection in domestic policy and law. Public bodies are referred to as 'competent authorities' within the legislation. The duties set out within the Habitats Regulations, in relation to the consideration of plans and projects, are applicable in situations where the competent authority is undertaking or implementing a plan or project, or authorising others to do so.

2.5 The legislation is founded on the 'precautionary principle' and it is necessary to rule out harm, rather than demonstrate impacts. Assessment (Habitats Regulations Assessment) requires consideration of effects either alone or in-combination, and this strategy therefore relates to the cumulative effects of plan-led development across the relevant local planning authority areas.

2.6 The strategy is therefore necessary to allow the LPAs, as competent authorities under the Habitats Regulations, to rule out adverse effects on integrity for relevant European sites, as a result of recreation linked to future housing growth. The strategy is therefore focussed on future risk and being able to have the necessary certainty, under the Habitats Regulations, that harm can be ruled out and impacts not exacerbated by further development.

Planning and Infrastructure Act

2.7 The UK government has set ambitious targets for house building over the current parliament. The Planning and Infrastructure Act (2025) aims to speed up and streamline the delivery of new homes, with a focus on strategic mitigation to enable development. The Act includes provision for a delivery body (Natural England) to be responsible for the production of Environmental Delivery Plans (EDPs), determining standardised levels of environmental mitigation needed for certain types and scales of development in a specific area. Where an EDP exists, developers will have the option to pay into a new 'Nature Restoration Fund', which the delivery body will use to fund appropriate mitigations, including by pooling contributions from multiple developers. It is proposed that contributions to the Nature Restoration Fund will mean that Habitats Regulations Assessments (HRAs) will not need to assess the implications of a particular development in respect to the particular impact pathway the EDP is addressing. The first EDPs will cover issues such as nutrient neutrality but it is possible that they may cover impacts from recreation in certain areas at some point in the future.

2.8 It is important to ensure mechanisms are in place for strategic mitigation to be delivered in the absence of any alternative. As such this RAMS is intended to run as long as necessary to ensure continued mitigation and compliance with the relevant legislation. Regular reviews will be undertaken to ensure the strategy remains aligned with any legislative changes or new regulatory requirements.

Additional context

The importance of access to the countryside and the new England Coast Path

2.9 It is now increasingly recognised that access to the countryside is crucial to the long-term success of nature conservation projects, for example through

enforcing pro-environmental behaviours and instilling a greater respect for the world around us (Richardson et al., 2016). Access also brings wider benefits to society that include benefits to mental/physical health (Bragg and Atkins, 2016; Kondo et al., 2020; Lee and Maheswaran, 2011) and economic benefits (Bateman et al., 2014; Dasgupta, 2021; Day, 2020). In recent years there have been shifts in government policy and debate around enhancing access to the countryside.

2.10 Changes include the King Charles III England Coast Path, which will create a continuous walking route around the England Coast. The Marine and Coastal Access Act (2009) provides for the establishment of the England Coast Path and, usually, the right of accesses over the associated coastal margin. The right of Coastal Access includes 'roll back' such that if a section of coast erodes, the path will move back accordingly.

2.11 The King Charles III England Coast Path is being rolled out in sections, with sections 32-40 covering the Essex coast. Some sections are fully open while other sections are approved (or partly approved) but not yet open, with establishment works planned or in progress. The path will ensure a clearly marked National Trail running along the coast and around the estuaries. While it is not for this strategy to provide mitigation for the Coast Path, it is important to understand its context as the path may influence how people access and use different areas of the coast.

Nature Recovery and the LNRS

2.12 Local Nature Recovery Strategies (LNRS) support the establishment of a national Nature Recovery Network (NRN) and aim to identify opportunities and priorities for nature restoration at a local level. Essex's LNRS[2] highlights recreation as a pressure for many habitats and areas. The LNRS also maps areas of particular importance for biodiversity and sets out the priority species and habitats. The LNRS provides context to the RAMS in highlighting the wider importance and role of land outside European sites and collaborative working to facilitate nature recovery.

[2] See https://www.essex.gov.uk/about-council/plans-and-strategies/environment-and-planning/local-nature-recovery-strategy

Devolution

2.13 Greater Essex are part of the Government's Devolution Priority Programme. This involves the establishment of a Mayoral Combined County Authority (MCCA) for the local government areas of Essex County Council, Southend-on-Sea City Council and Thurrock Council. This proposed body would operate above the existing county, unitary, city, district and borough councils across Greater Essex.

2.14 In parallel, the Government is progressing Local Government Reform, which focuses on reshaping the structure of local authorities. Under current proposals, all 15 councils in Essex (including the county council, Southend and Thurrock) would be replaced by 5 unitary authorities.

2.15 In late March 2026, Government confirmed that they are 'minded to' approve a model of five new unitary authorities for Essex to replace the existing local authorities as well as Essex County Council.

2.16 As part of the behind-the-scenes work to align services, systems and ways of working, in preparation for the new unitary authorities coming into existence on 1 April 2028, consideration will need to be given to the future oversight, governance and coordination arrangements of RAMS.

3. Relevant European Sites

3.1 The European sites covered by the strategy are shown in Map 1, with their qualifying features listed in Table 1. This selection is the same as the previous strategy and it can be seen there is one SAC (the Essex Coast SAC), 9 SPAs and 9 Ramsar sites. The SPA and Ramsar sites are similar and the boundaries largely identical, so for simplicity only the SPAs are shown in Map 1. Hamford Water is the one SPA where the boundary is markedly different from the Ramsar of the same name, with the SPA extending to cover a wider area to the east.

3.2 It should be noted that the Stour and Orwell Estuaries SPA/Ramsar sites lies to the north of the area and the Thames Estuary and Marshes SPA/Ramsar to the south and for both these European sites there are areas outside Essex that are not included in the strategy and not shown in Map 1. For the Stour and Orwell Estuaries, the Orwell component and the northern shore of the Stour lies within Suffolk and is covered by the Suffolk RAMS. For the Thames Estuary only the Mucking Flats (near Tilbury) component of the SPA/Ramsar is included. The rest of the SPA/Ramsar lies on the north Kent shore and is covered by Birdwise Kent and a similar mitigation scheme.

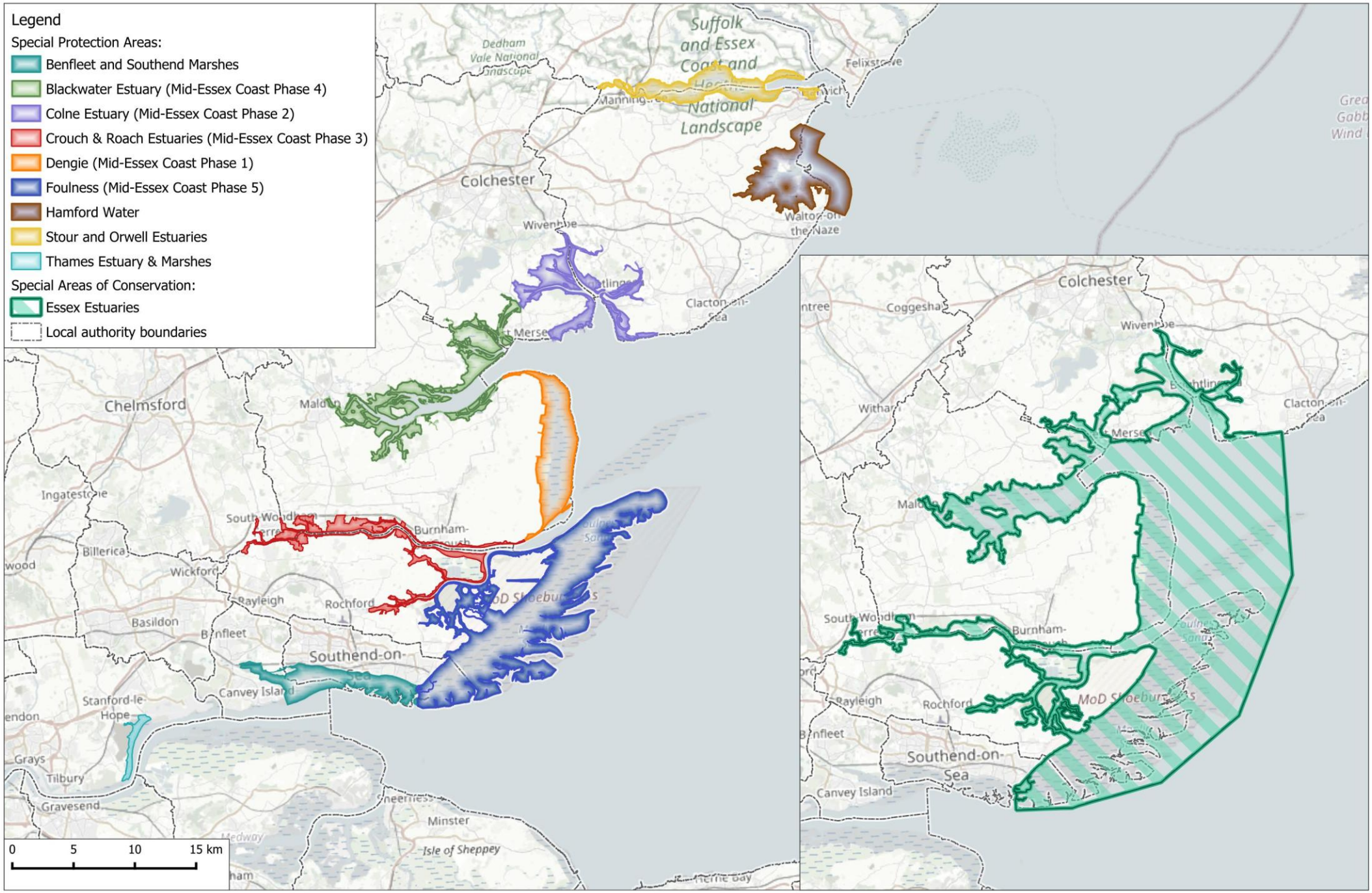
3.3 While Map 1 shows the designated site boundaries and Table 1 lists the particular features for each site, it is important to note that many of the qualifying features of the sites will move between sites. Birds may move from one estuary to another and as such the Essex coast potentially functions more as a single unit rather than multiple separate sites. Furthermore there will be areas outside the site boundaries that play a supporting role and will be functionally-linked (see Chapman and Tyldesley, 2016 for definitions and further background). The strategy encompasses such functionally linked land in that the birds using those areas could still be vulnerable to disturbance and mitigation measures may be relevant. These considerations are relevant for both breeding (e.g. Little Tern taking advantage of new areas of shingle) and wintering (e.g. use of fields and grazing marsh by wildfowl and waders).

3.4 It is also important to note that there are European sites in the area that are not covered by the RAMS. These include Hamford Water SAC, which qualifies solely for its population of Fisher's Estuarine Moth. This SAC is excluded from further consideration as the moth population (and the Hog's Fennel foodplant upon which it relies) is mostly restricted to islands within Hamford

Water (i.e. within areas largely inaccessible to recreation activity). In line with the previous version of the strategy, Abberton Reservoir SPA/Ramsar and Epping Forest SAC are also excluded.

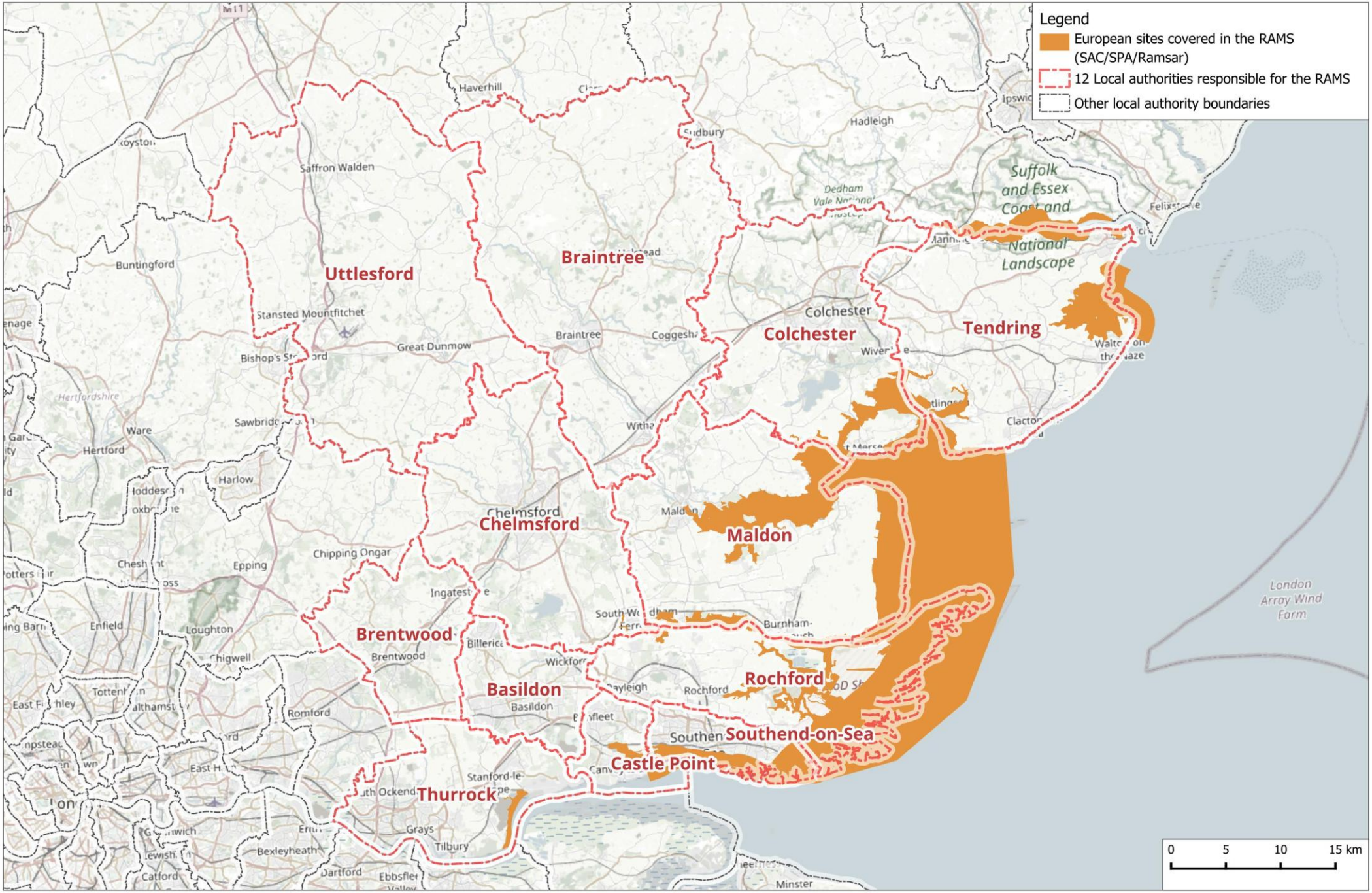
3.5 Map 2 shows the combined area of the European sites in context with the 12 local planning authorities that collect RAMS contributions and intersect the Zone of Influence.

Map 1: European sites covered by the RAMS. Main map shows SPAs, and inset map (same scale) shows SACs



Contains Ordnance Survey data © Crown copyright and Database Right 2025. Contains map data © OpenStreetMap contributors. Terms: www.openstreetmap.org/copyright Designated site boundaries download from the Natural England website © Natural England.

Map 2: The 12 local authorities within the the RAMS



Contains Ordnance Survey data © Crown copyright and Database Right 2024. Contains map data © OpenStreetMap contributors. Terms: www.openstreetmap.org/copyright Designated site boundaries download from the Natural England website © Natural England.

Table 1: European sites and qualifying features. Links cross-reference to the Natural England designated site page, which provides further background and the relevant conservation objectives, etc. For the waterbird assemblage underscoring refers to non-breeding only, and 'P' refers to passage only for other species.

European site	Habitats						Assemblages			Non-breeding birds													Breeding birds					
	Sandbanks which are slightly covered by sea water all the time	Mudflats and sandflats not covered by seawater at low tide	Salicornia and other annuals colonising mud and sand	Spartina swards	Atlantic salt meadows/saltmarsh	Mediterranean and thermo-Atlantic halophilous scrubs	Waterbird	Wetland invertebrate	Wetland plant	Avocet	Bar-tailed Godwit	Black-tailed Godwit	Dunlin	Grey Plover	Knot	Oystercatcher	Redshank	Ringed Plover	Dark-bellied Brent Goose	Pintail	Shelduck	Teal	Hen Harrier	Avocet	Ringed Plover	Pochard	Common Tern	Little Tern	Sandwich Tern
Essex Estuaries SAC	✓	✓	✓	✓	✓	✓																							
Hamford Water SPA										✓		✓		✓			✓	✓	✓		✓	✓						✓	
Hamford Water Ramsar												✓					✓	✓	✓										
Stour and Orwell Estuaries SPA							✓					✓	✓	✓	✓		✓		✓	✓				✓					
Stour and Orwell Estuaries Ramsar							✓	✓	✓			✓	✓	✓	✓		✓		✓	✓									
Colne Estuary SPA							✓										✓		✓				✓		✓	✓		✓	
Colne Estuary Ramsar					✓		✓	✓	✓								✓		✓										
Blackwater Estuary SPA							✓					✓	✓	✓					✓				✓		✓	✓		✓	
Blackwater Estuary Ramsar					✓		✓	✓	✓			✓	✓	✓					✓										
Dengie SPA							✓							✓	✓				✓				✓						
Dengie Ramsar					✓		✓	✓	✓					✓	✓				✓										
Crouch and Roach Estuaries SPA							✓												✓										

European site	Habitats						Assemblages			Non-breeding birds														Breeding birds					
	Sandbanks which are slightly covered by sea water all the time	Mudflats and sandflats not covered by seawater at low tide	Salicornia and other annuals colonising mud and sand	Spartina swards	Atlantic salt meadows/saltmarsh	Mediterranean and thermo-Atlantic halophilous scrubs	Waterbird	Wetland invertebrate	Wetland plant	Avocet	Bar-tailed Godwit	Black-tailed Godwit	Dunlin	Grey Plover	Knot	Oystercatcher	Redshank	Ringed Plover	Dark-bellied Brent Goose	Pintail	Shelduck	Teal	Hen Harrier	Avocet	Ringed Plover	Pochard	Common Tern	Little Tern	Sandwich Tern
Crouch and Roach Estuaries Ramsar							✓	✓	✓										✓										
Foulness SPA							✓				✓			✓	✓	✓	✓		✓				✓	✓	✓		✓	✓	✓
Foulness Ramsar					✓		✓	✓	✓		✓			✓	✓	✓	✓		✓										
Benfleet and Southend Marshes SPA							✓						✓	✓	✓			✓	✓										
Benfleet and Southend Marshes Ramsar							✓							✓	✓				✓										
Thames Estuary and Marshes SPA							✓			✓		✓	✓	✓	✓		✓	✓					✓						
Thames Estuary and Marshes Ramsar							✓	✓	✓			✓	✓	✓	✓		✓	P											

Recreational use

3.6 Work commissioned by Natural England to inform the England coast path route and HRA work (Panter and Liley, 2016) noted the presence of at least 210 car parks within 1 km of the European sites relevant to the RAMS; these providing around 18,000 parking spaces. They also recorded nearly 2,000km of paths within the same area and mapped 143 jetties, 146 slipways and 40 marinas on the relevant shorelines. As such there are numerous opportunities across a wide area for recreational access.

3.7 Visitor surveys (Rush et al., 2025) commissioned alongside this strategy[3] involved surveys at 26 locations and 1,793 interviews were conducted with visitors. Most interviewees (93%) were visiting directly from home, however 7% were staying away from home, either on holiday (4% of all interviewees) or staying with friends and family in the area (3%).

3.8 The survey results show the main activities to the Essex Coast to be dog walking (45% of interviewees) or walking (35%). Visits were typically relatively short (averaging around 102 minutes in the summer and 75 minutes in the winter) and on average interviewees visited 2.3 times per week.

3.9 Close to home was the most common reason for choosing to visit the coast, reflected by the median distance (home postcode to interview location) of just under 5km. The survey results also highlighted the impacts of local facilities on visitor behaviour. In total, 16% of interviewees gave visiting a café, restaurant or pub as one of the activities they had undertaken (or planned to undertake) on the day interviewed. 4% of interviewees indicated that the presence of a café, restaurant or pub was the specific reason behind the choice of where to visit on the day they were interviewed.

3.10 The average route length was 3km although this differed between activities undertaken on site.

3.11 The results suggest that the Essex Coast was busy all year round, with 60% of interviewees indicating that they tended to visit all year round. For those survey points that were surveyed in both the summer and winter period, there were more people counted during the winter than the summer.

[3] Report available to download on the Footprint Ecology website

3.12 Benfleet and Southend Marshes appeared both the busiest and had the most local cohort of visitors, compared to the Crouch and Roach (quietest) and the Dengie and Hamford Water which each had a wider draw for visitors.

Impacts of recreation

3.13 Drawing from the general literature (Harris, 2023; Liley et al., 2010; e.g. Lowen et al., 2008; Marion et al., 2016), impacts associated with recreation to coastal sites include:

- Damage (trampling and wear);
- Contamination;
- Increased fire risk;
- Disturbance to breeding birds;
- Disturbance to wintering birds;
- Difficulties with land management; and,
- Damage to infrastructure, etc.

3.14 These are considered in turn below. It should also be noted that nutrient enrichment from dog fouling can also pose a particular issue (De Frenne et al., 2022) that is most relevant to low nutrient habitats. In coastal areas such habitats would comprise vegetated shingle or unimproved grassland. These habitats are largely absent from the area covered by the RAMS however, and do not comprise qualifying features of the relevant European Sites; this impact pathway is therefore considered no further.

Damage (trampling and wear)

3.15 Trampling damage relates to footfall and ground pressure from wheels (bikes, buggies etc.). Erosion and wear are also linked to boat use, including the scouring from the bottom of boats as well as the wake from fast moving boats and damage linked to anchors/moorings.

3.16 Mechanical damage to plant tissue causes a loss of vegetation cover, changes in the plant composition of the vegetation and loss of species and a reduction in plant height. Trampling can cause damage to root systems and increase water run-off, soil erosion and compaction with consequences for decomposition, nutrient cycling and water quality. Compaction can also cause a reduction in organic matter, affecting fertility and the water infiltration capacity of the soil. Compaction can also impact on mycorrhizal fungi, affecting plant uptake of nutrients from the soil. Other effects of

human trampling include the widening of paths and path erosion, particularly on slopes.

3.17 Particularly sensitive habitats include seagrass beds, saltmarsh (including those dominated by Spartina), Atlantic salt meadow, and halophilous scrub. There may also be knock-on consequences for species – not only birds but also habitat specialist invertebrate species. Species such as the wolf spider *Arctosa fulvolineata*, the striped Horsefly, Big-spotted Cleg, and Ground Lackey moth are reliant upon upper saltmarsh habitats where footfall is most likely.

3.18 Seagrass beds are present within the European sites and recreation is identified as a threat[4]. Saltmarsh and halophilous scrub are also widely distributed within the RAMS area, however given the difficulty in accessing some areas, damage is considered likely to be localised within proximity to urban areas and access infrastructure such as car parks.

3.19 While trampling is not highlighted as a major concern in the Site Improvement Plans (SIPs) for any of the European Sites under discussion, visual appraisal of aerial imagery nevertheless shows that (localised) evidence of such damage is readily apparent (see Figure 1).

[4] See https://www.essexwt.org.uk/what-we-do/protecting-wildlife/projects/seagrass for background.

Figure 1: Aerial images depicting examples of trampling damage/wear in areas of halophilous shrub and bordering saltmarsh at: (a) Bradwell-on-Sea (within the Essex Coast SAC/Dengie Ramsar); and (b) West Mersea (within the Essex Coast SAC/Blackwater Estuary Ramsar). Images © National Coastal Monitoring https://coastalmonitoring.org/.

Contamination

3.20 Ponds and small water bodies are often popular with dogs and dog walkers will often seek such features out, particularly in hot weather. Heavy use by dogs leads to turbid water, an impoverished invertebrate flora and a loss of vegetation (Denton and Groome, 2017; Groome et al., 2018).

3.21 Shampoos, wormer, tick and flea treatments are a further concern (Groome et al., 2018; Harris, 2023). There is growing evidence of contamination by pesticides including flea treatments such as fipronil and imidacloprid in watercourses (Perkins et al., 2024, 2021, 2020). Preliminary studies of waterbodies at four locations in the New Forest where dogs are known to regularly enter the water revealed the presence of imidacloprid and at one site levels were nearly double the internationally agreed toxicity threshold for aquatic invertebrates[5]. Testing of waterbodies in sand dune systems in the Sefton Coast area has found similar levels of contamination (Denning et al., 2024).

3.22 Dogs may also act as vectors for non-native invasive plant species, such as New Zealand Pygmyweed *Crassula helmsii* (Groome et al., 2018) and the trampling impacts around the edge of the waterbody may lead to a loss of surrounding vegetation, exacerbating impacts.

3.23 These issues are potentially relevant to aquatic, wetland and coastal habitats (such as ditches and borrow dykes) and the specialist plant and invertebrate species that they support. Such species include the Scarce Emerald Damselfly, which is found across several of the European Sites.

3.24 Contamination is also potentially relevant in terms of litter. While discarded rubbish, waste etc. is unsightly it may not always be directly damaging to the qualifying features. However, discarded fishing line can entangle birds, food waste may encourage predators (such as foxes, gulls etc) and certain products such as plastics are a widespread and recognised concern (Sutherland et al., 2012; Wilcox et al., 2015).

[5] Reported by the BBC: https://www.bbc.co.uk/news/uk-england-hampshire-68400630

Increased fire risk

3.25 Fire incidence is directly associated with recreation use (Anderson, 1986; Miller and Miles, 1984; Tantram et al., 1999) for example through discarded cigarettes, sparks from a campfire, barbeques and even deliberate arson.

3.26 Fires can have major impacts on the soil, vegetation and fauna present, and recovery can take many years. Fire can change water filtration within soils and result in loss of nutrients (Mallik et al., 1984). Burning can also cause erosion through the exposure of soils – charred peat surfaces are particularly vulnerable (e.g. Maltby et al., 1990). Vegetation recovery may depend on the intensity of the fire and whether litter (protecting rootstock. and seeds) is burnt (Alchin, 1997).

3.27 Climate strongly influences wildfire risk and climate change is likely to increase the risks of wildfire and the types of habitat affected (Jolly et al., 2015). The incidence of forest fires globally has doubled since 1984 as a result of global warming (Mansoor et al., 2022). It is likely that wildfire incidence will occur in situations and vegetation communities where it has previously been rare or very limited (anon, 2017) and increasingly site managers will have to take active measures to minimise risks on sites.

3.28 While fire risk is therefore perhaps low for many of the habitats within the sites covered by the RAMS, this may well change. Most at risk will be upper saltmarsh and reedbed areas, particularly where these are relatively dry. A large fire on the Dee Estuary in 2022 destroyed reedbed habitat within the SPA there, and while outside the area covered by the RAMS, highlights that coastal areas can still be vulnerable.

Disturbance to birds

3.29 Disturbance occurs where human activity influences an animal's behaviour or survival. By far the majority of the literature (and there are thousands of studies), focuses on birds (Brawn et al., 2001; Hill et al., 1997; for a general review see Hockin et al., 1992; Lowen et al., 2008; Showler, 2010; Steven et al., 2011; Whitfield et al., 2008). Disturbance can also affect mammals, herptiles (see Edgar, 2002 for a review), and invertebrates.

3.30 Disturbance can have a range of different impacts, potentially affecting distribution, breeding success and health. Impacts can be chronic, for example otherwise suitable nesting habitat being completely avoided (e.g. Liley & Sutherland, 2007) or more short-term in nature, for example birds

becoming alert and then resuming the initial activity (Fernandez-Juricic et al., 2001).

3.31 Impacts can also include direct mortality of birds. There are studies showing increased predation rates when birds are disturbed, for example predators taking advantage of the change in behaviour caused by the disturbance (e.g. Brambilla et al., 2004). There are also examples of pet dogs preying on birds, for example both Ringed Plover adults and chicks have been witnessed predated by dogs (Liley et al., 2021; Pienkowski, 1984). Some studies document direct trampling of nests/eggs of ground-nesting species, where the eggs are so well camouflaged people are unaware of the damage they cause (Liley and Sutherland, 2007).

3.32 These impacts from disturbance can result from a wide range of activities. For example Steven *et al.* (2011), in their review of disturbance impacts to birds, listed the following activities and research findings:

- Standing/observing: 15 studies, 14 showing negative effects of disturbance;
- Touring/walking/hiking: 51 studies, 45 showing negative effects of disturbance;
- Running: 6 studies, 6 showing negative effects of disturbance
- Cycling/Mountain bike riding: 3 studies, 3 showing negative effects of disturbance;
- Canoeing: 3 studies, 3 showing negative effects of disturbance; and
- Dog walking: 11 studies, 11 showing negative effects of disturbance.

3.33 It is of course often difficult to separate different types of activities as at many sites multiple activities tend to overlap in space and time and impacts may be cumulative. Nonetheless, dog walking is widely recognised as a particular threat (Bavin et al., 2025; Harris, 2023) that has a disproportionate effect compared to other activities (Banks and Bryant, 2007; Cavalli et al., 2016; Gómez-Serrano, 2021; Lafferty, 2002; Taylor et al., 2007). Dogs are likely to be perceived as a greater threat, will actively chase birds and are able to access areas such as intertidal habitats that people on foot may avoid.

Breeding bird interest

3.34 Breeding birds are vulnerable to disturbance, with good evidence from the UK for a range of relevant species. For example disturbance has been shown to affect population size for Ringed Plover (Liley and Sutherland, 2007) and there are a range of studies showing disturbance effects for Little Tern (Medeiros et al., 2007; Ratcliffe et al., 2008; Rowell, 2020; Tratalos et al., 2021). Disturbance can lead to areas of suitable habitat being avoided entirely. In areas where they do nest, breeding birds are tied to a specific nest location, and there are particular energetic costs associated with egg laying, incubating, and raising chicks which can be exacerbated by disturbance.

3.35 The issues for breeding birds vary. Ringed Plover tend to nest on shingle and gravelly areas close to suitable intertidal foraging habitat. They are also territorial, meaning that territories/nests can be distributed along the beach. Terns are typically colonial nesters, with a more clumped distribution. Little Terns tend to nest in smaller, scattered, colonies spread across a range of beaches – typically the same sandy, open beaches favoured by people visiting the coast for recreation (D. Liley et al., 2023). The single remaining colony on the Essex Coast is at Hamford Water.

3.36 Sandwich Terns, by contrast, tend to nest in a smaller number of much larger, colonies. These colonies are susceptible to individual disturbance events, with the disturbance implicated in the abandonment of multiple colonies around the UK coastline (Brown and Grice, 2005; Tavener, 1965). The species' propensity to nest in a very small number of large colonies, and the potential for rapid abandonment makes it particularly vulnerable to human disturbance (Bourne and Smith, 1974; Garthe and Flore, 2007).

3.37 Common Terns will also nest colonially, with colony size varying across locations. The species will breed coastal shingle, beaches, saltmarsh, and offshore islands making it susceptible to coastal recreation (Brown and Grice, 2005), as well as inland lakes, reservoirs, and gravel pits.

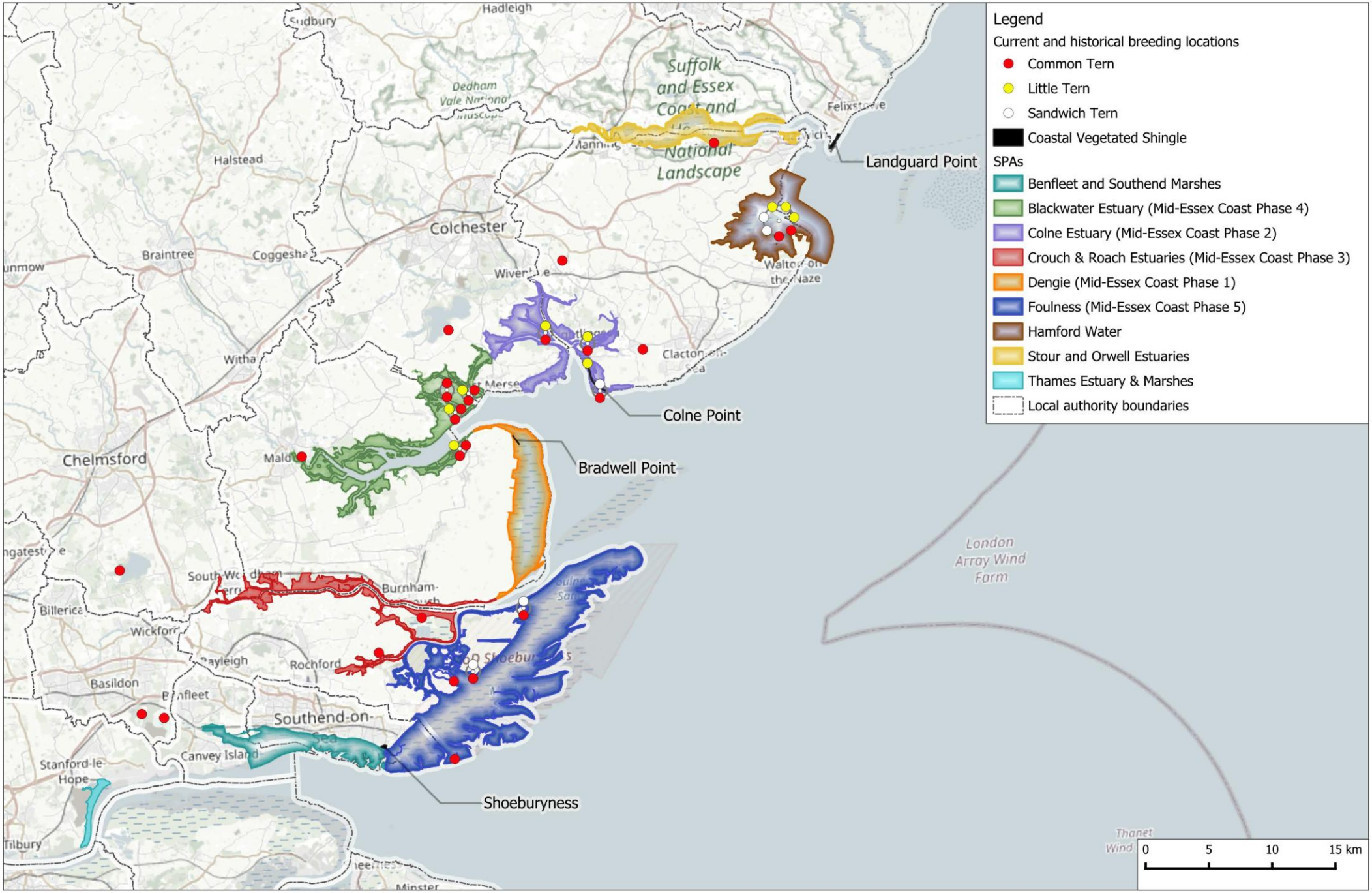
3.38 Avocets breed colonially on a range of shallow, coastal, wetlands, including saltmarshes and saline/brackish lagoons (Brown and Grice, 2005). The majority of saline/brackish lagoons that are used are those created within reserves such as Wallasea Island where protective measures (such as fences) are in place and therefore disturbance is potentially less of a concern. Saltmarsh areas are perhaps more at risk from disturbance for example

from dogs off lead or paddleboarders/kayaks accessing from the water. Such disturbance could also potentially affect other breeding waders that use saltmarsh, such as Redshank. Pochard generally breed on a range of sheltered/undisturbed inland waters, surrounded by dense vegetation, although they will also utilise brackish areas on the coast. As a breeding species they are potentially less susceptible to disturbance than the other breeding bird species.

3.39 Map 3 depicts records of breeding terns/tern colonies within Essex since 2000, alongside expanses of coastal vegetated shingle. The latter is shown as a proxy for additional/potential future breeding locations for Ringed Plover and Little Tern in particular. The bird data comes from a range of sources previously synthesised by Panter & Liley (2016), including the Essex Bird Report and Natural England, as well as more recent information from the Seabird Monitoring Programme[6].

[6] https://app.bto.org/seabirds/public/data.jsp

Map 3: Historical (post-2000) and current breeding locations for a selection of the SPA-qualifying bird species, shown alongside relevant European site and local authority boundaries. Areas of coastal vegetated shingle are labelled and shown as a proxy for potential/future Little Tern and Ringed Plover breeding locations. Note that overlapping points are displaced around a central point to aid interpretation



Contains Ordnance Survey data © Crown copyright and Database Right 2024. Contains map data © OpenStreetMap contributors. Terms: www.openstreetmap.org/copyright Designated site boundaries download from the Natural England website © Natural England.

Non-breeding bird interest

3.40 The various estuaries and wetland habitats along the Essex Coast support very large numbers of non-breeding bird species, including waders and wildfowl. The relevant SPAs are classified for a range of species individually and also the wintering waterbird assemblage, reflecting the wide range of species and large numbers of birds that can be present around the whole coastline.

3.41 While overall numbers tend to peak during the winter, the coast is important for these non-breeding species for much of the year, with non-breeding birds present from July through to May. Different species will use different areas at different times of year and numbers fluctuate, and multiple populations from different breeding sites can be involved. For example, the local breeding Ringed Plovers are likely to move to southern areas of the UK and France and be replaced by birds from the Baltic and Scotland over the winter. In May, Ringed Plovers from more northern populations, even as far north as Greenland and Canada may pass through on passage.

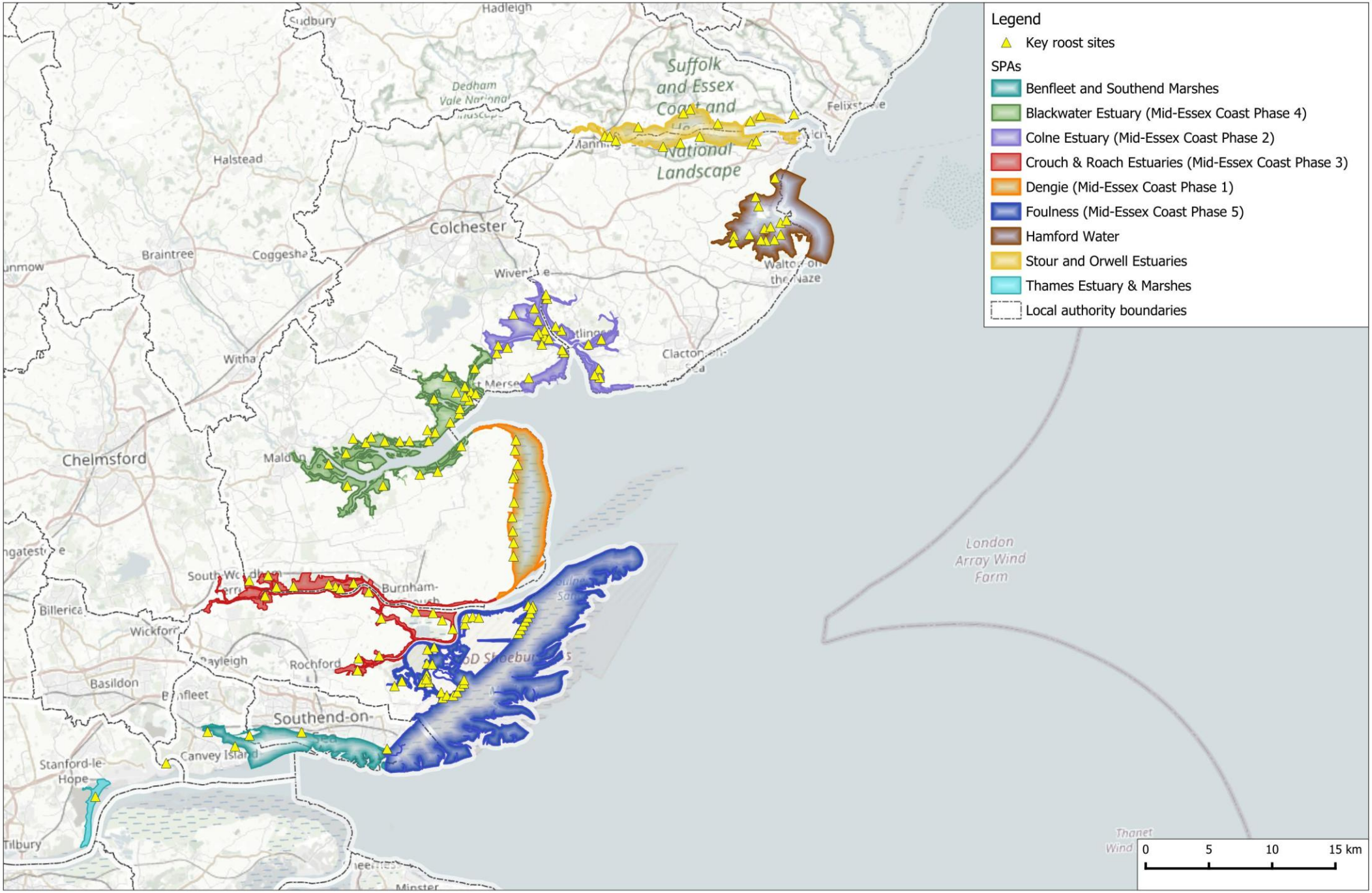
3.42 Disturbance for these wintering waterbirds can lead to areas of habitat being avoided (van der Kolk et al., 2022) and there can be energetic costs as a result of repeated flushing, which can be particularly damaging when food supplies or environmental conditions change (Goss-Custard et al., 2006).

3.43 Bird disturbance studies on the Orwell and Stour (Ravenscroft et al., 2008) over three winters found the Orwell to be much busier than the Stour, but birds tended to respond more to the presence of people on the Stour, potentially because the Stour held larger numbers of birds and there were more alternative areas available for the birds to switch to. Shoreline activities caused most disturbance at high tide while those occurring in the estuary caused the most disturbance at low tide. The authors suggested disturbance was having an impact on the populations of birds on the Stour and Orwell Estuaries SPA.

3.44 All intertidal mudflat habitat, when exposed, has the potential to be used by the non-breeding bird interest. Exposure will vary with the tidal cycle. In addition, birds will often gather over high tide and roost sites may support large numbers of birds at a given time. Use of roosts will vary according to prevailing weather conditions, habitat etc. and roosts can be avoided as a result of disturbance (Peters and Otis, 2007; van der Kolk et al., 2022). Map 4 overlays the relevant SPA boundaries with the locations of key wader and

waterbird roost sites, as identified in Panter & Liley (2016), with additional information synthesised from the previous Essex RAMS and informed by the RSPB (Place Services / Essex County Council, 2018). These data are not comprehensive but provide an indication of the distribution of roosts and highlight how roost sites are present within all the SPA sites.

Map 4: Key non-breeding wader and waterbird roost sites alongside the relevant European site and local authority boundaries



Contains Ordnance Survey data © Crown copyright and Database Right 2024. Contains map data © OpenStreetMap contributors. Terms: www.openstreetmap.org/copyright Designated site boundaries download from the Natural England website © Natural England.

Difficulties with land management

3.45 High recreational use can lead to challenges for land managers, with staff time and resources directed towards litter collection, emptying bins, managing parking and dealing with any problems (such as lost pets, gates left open etc.). Furthermore, high levels of recreation use can potentially lead to demand for facilities and infrastructure, creating additional pressure for those managing sites. Local residents can also be a strong voice in opposition to any change, potentially meaning additional consultation and community dialogue required prior to any changes or high-profile interventions.

3.46 Dog attacks on livestock have led to challenges with grazing some sites. Essex Wildlife Trust have stopped grazing sheep at some locations due to dog attacks. Where grazing and dog walking co-exist there is often a need for greater staff presence, extra secure fencing and very clear messaging to visitors with dogs.

Overview and additional context

3.47 The impacts caused by recreational activities are varied, and some impact pathways are more relevant to some features than others. As such, the risks for each European site on the Essex coast are slightly different. Based on the qualifying features for each site and other information available, we summarise which impact pathways are potentially relevant to each European site in Table 2. We have not tried to assign a degree of risk or ranked issues for different sites; a tick in the table simply indicates the potential for risk.

3.48 While we have summarised the risks separately, they also interact, for example a saltmarsh fire would reduce the available habitat for birds, with the potential to exacerbate risks of disturbance. In addition, many of the features are quite mobile and change in distribution over time, this is particularly the case with species such as Little Tern.

Additional context

3.49 Climate change will impact the distribution of the qualifying features, exacerbate risks such as fire incidence, change recreation patterns and fundamentally change the coast and surrounding habitats. Rising sea levels, coastal squeeze and more storm surges lead to a loss of habitat such as saltmarsh than mean there is less space for both recreation and for wildlife.

3.50 Recreation use will shift over time in response to trends, social media and a range of social factors and as such there is some complexity and inevitable uncertainty around the scale of future risk.

3.51 Dog ownership increased markedly during Covid (Morgan et al., 2020). Wild swimming (Bates and Moles, 2022), paddleboarding (Baker et al., 2021), drones (Rebolo-Ifrán et al., 2019) and e-bikes (Rérat, 2021) are becoming increasingly popular while improvements in wetsuit materials and technology can allow people to spend more time in the water, leading to changes in participation in activities such as kite surfing, jet skis, windsurfing and swimming. Tourism trends are also changing, with for example an increase in campervans, mobile homes and short-trip vacations to countryside destinations (e.g. Sommer, 2020). Campervans also provide opportunities for life-style choices with some people choosing to live 'off-grid'.

3.52 Such changes in the types of activity and how recreation takes place may mean people access sites in novel ways, for example paddleboards can be launched anywhere and are easily portable, meaning access to the water may not be focussed around slipways. Changing patterns of access may mean people access the coast at different times of day or different weather conditions, further exacerbating the existing level of recreational disturbance.

Table 2: Summary of risks to the relevant European sites from recreation.

European site	Damage (trampling and wear)	Contamination	Increased fire risk	Disturbance to breeding birds	Disturbance to non-breeding waterbirds	Difficulties with land management	Notes and reasons for ticks where further information necessary
Essex Estuaries SAC	✓		✓			✓	Habitats such as saltmarsh, seagrass and halophilous scrub potentially vulnerable to damage and increased fire risk
Hamford Water SPA				✓	✓	✓	
Hamford Water Ramsar					✓	✓	
Stour and Orwell Estuaries SPA				✓	✓	✓	Breeding Avocet an SPA feature and the supplementary conservation advice indicates Avocet have bred at Cattawade (as well as Trimley on the Orwell)
Stour and Orwell Estuaries Ramsar	✓				✓	✓	Ramsar listing includes a range of saltmarsh plants and eelgrasses potentially vulnerable to trampling
Colne Estuary SPA				✓	✓	✓	
Colne Estuary Ramsar	✓	✓	✓		✓	✓	Wetland invertebrate and plant interest potentially vulnerable to damage, contamination and increased fire risk
Blackwater Estuary SPA				✓	✓	✓	
Blackwater Estuary Ramsar	✓	✓	✓		✓	✓	Wetland invertebrate and plant interest potentially vulnerable to damage, contamination and increased fire risk
Dengie SPA					✓	✓	
Dengie Ramsar	✓	✓	✓		✓	✓	Wetland invertebrate and plant interest potentially vulnerable to damage, contamination and increased fire risk
Crouch and Roach Estuaries SPA					✓	✓	

European site	Damage (trampling and wear)	Contamination	Increased fire risk	Disturbance to breeding birds	Disturbance to non-breeding waterbirds	Difficulties with land management	Notes and reasons for ticks where further information necessary
Crouch and Roach Estuaries Ramsar	✓	✓	✓		✓	✓	Wetland invertebrate and plant interest potentially vulnerable to damage, contamination and increased fire risk
Foulness SPA				✓	✓	✓	
Foulness Ramsar	✓	✓	✓		✓	✓	
Benfleet and Southend Marshes SPA					✓	✓	
Benfleet and Southend Marshes Ramsar					✓	✓	
Thames Estuary and Marshes SPA					✓	✓	
Thames Estuary and Marshes Ramsar	✓	✓	✓		✓	✓	Wetland invertebrate and plant interest potentially vulnerable to damage, contamination and increased fire risk

4. SAMM ('Strategic Access Management and Monitoring')

4.1 SAMM measures form the basis of all strategic mitigation schemes (see Beveridge et al., 2024 for overview). SAMM comprise measures aimed at behaviour change or encouraging responsible access and are targeted at or around the European sites. Measures include signage, interpretation, ranger provision etc and extend to include monitoring linked to mitigation delivery to ensure the mitigation is targeted appropriately.

Mitigation delivery to date

4.2 Developer contributions have been used to fund the mitigation work set out in the original strategy (Place Services / Essex County Council, 2018), which at the time was designed to address impacts from 72,907 dwellings that (at the time) were anticipated to come forward in the period to 2038. The mitigation measures included:

- Recruitment of a full-time Delivery Manager (appointed in 2021) with role to oversee delivery and liaise with stakeholders;
- Adoption of the "Bird Aware" brand originally developed by Bird Aware Solent[7];
- Recruitment of a team of rangers to work on the ground to reduce disturbance by influencing the behaviour of visitors (team size of 4 full-time posts in 2024/25, including a lead ranger)
- Ranger attendance at a variety of prominent local events, raising awareness of Bird Aware Essex Coast and it's guidance;
- Development of initiatives to encourage responsible dog walking and encourage dog owners to go to less sensitive parts of the coast;
- Dedicated Bird Aware Essex Coast website[8] and social media channels, with content around responsible recreation, the ranger team, events, and general awareness raising;
- Production of an informative Bird Aware Essex Coast leaflet, about the habitats and the birds of the coast, that has been distributed widely throughout Essex;
- Habitat based measures, such as interpretation, fencing, waymarking, screening, access and habitat improvement; and,

[7] https://birdaware.org/solent/
[8] https://birdaware.org/essex/

- Institution of a monitoring scheme to track the implementation of mitigation measures and to assess their effectiveness.

4.3 The ranger team has grown over time and coverage across the area is not uniform, with effort targeted by the Bird Aware team. The team has identified at least 85 sites across the coast that require some sort of ranger presence and the level of provision at each is varied according to the ease with which it is possible to intercept and engage with visitors, presence of vulnerable features in areas that people might access, levels of recreation use and then effort is further refined according to tide, weather etc.

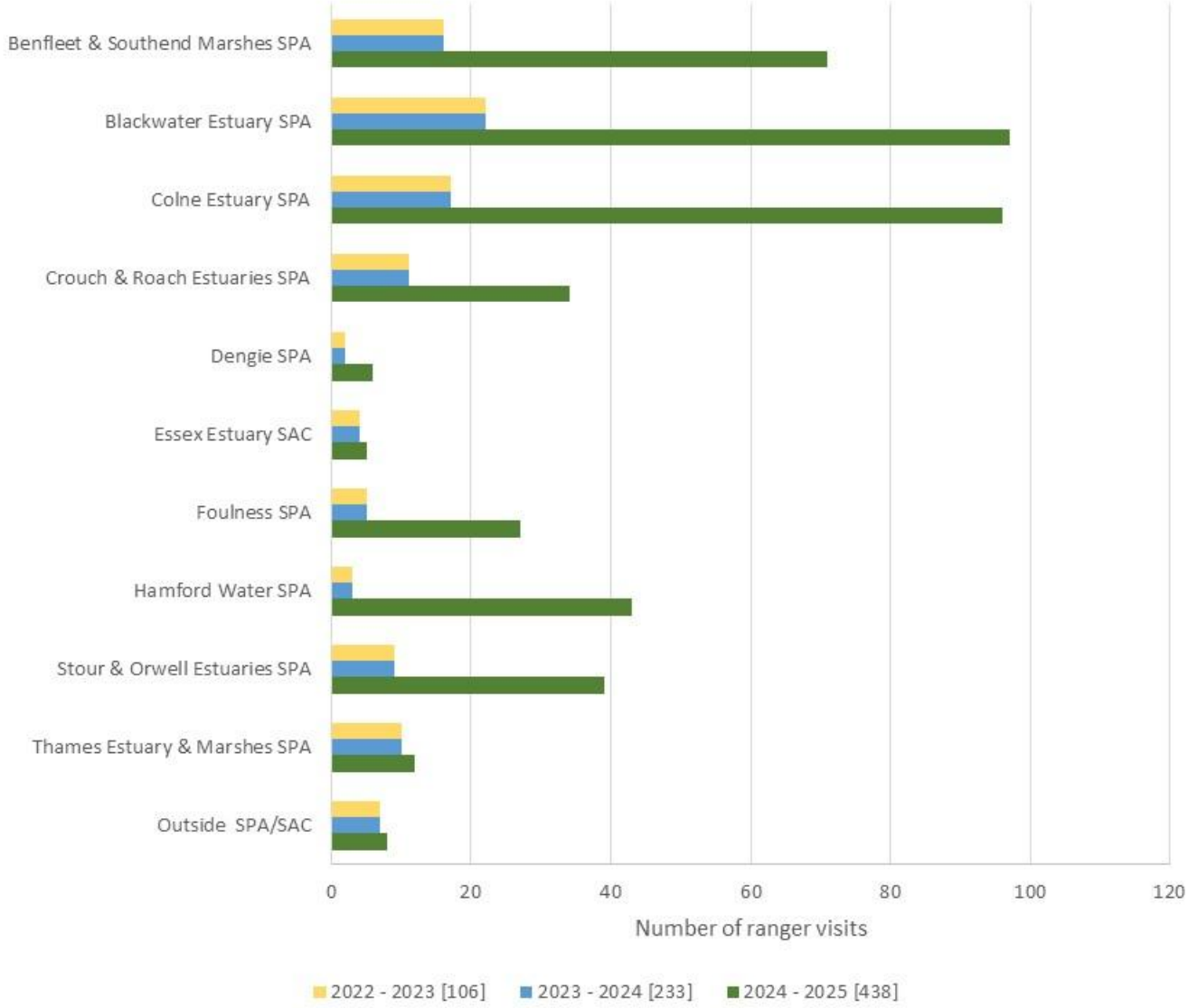


Figure 2: Ranger visits by year and European site. Data extracted from schedule provided by Bird Aware Essex team (note 24/25 data is the number of planned visits rather than actual visits).

SAMM measures in this strategy

4.4 SAMM measures include education, engagement with recreational users to influence their behaviour, raising awareness about the Essex coast and it's biodiversity, access management and monitoring. The measures are focussed around the European sites and extend to cover functionally-linked land in the vicinity. Measures are summarised below and itemised in Table 3 (at the end of this section). The measures have been carefully considered to build on the existing mitigation work achieved to date and further increase the level of mitigation provision to ensure it is sufficient to address the level of housing growth now planned.

Measures relevant to all sites

4.5 The delivery manager will oversee the implementation of the mitigation, with their role having strategic oversight of the mitigation, including the delivery of the strategy and partnership governance. The role ensures the budget and finances are appropriately managed, setting out the financial responsibilities, monitoring financial contributions, financial forecasting, RAMS reserves and in-perpetuity funds etc as appropriate. The delivery manager will also oversee the reporting and provide the point of contact for planning officers, other local authority staff, conservation organisations and other stakeholders etc.

4.6 The ranger team is fundamental to the mitigation delivery. It is proposed to have two ranger teams, one covering sites from the northern side of Blackwater north to the Stour estuary and one covering from the southern side of the Blackwater south to the Thames Estuary. Each team will have 1 lead ranger and 3 coastal rangers. Both teams will be supported by up to 3 seasonal ranger roles which will be flexible on the sites they support based on whether there are beach nesting birds that require specific support during the breeding season, providing flexible ranger support in the winter and for weekend working, and complimented by the dog officer and education and engagement officer roles. The overall ranger team size is therefore 9.5 full-time equivalent (fte) posts (including team leaders and 3 seasonal posts, each of 6 months).

4.7 This will essentially provide the following coverage, although each team will have the flexibility to place ranger resource where it is needed:

- 1 ranger covering the Stour Estuary and Hamford Water – supported by 1 seasonal ranger.

- 1 ranger covering the Colne Estuary – supported by 1 seasonal ranger.
- 2 rangers covering the Blackwater Estuary – supported by 1 seasonal ranger.
- 1 ranger covering Dengie and Crouch and Roach Estuary.
- 1 ranger covering Foulness, Thames Estuary and Southend and Benfleet Marshes – supported by 1 or 2 seasonal rangers.
- 2 lead rangers, one for each team (i.e. 1 for Black-water – Stour and 1 for Blackwater – Thames).

4.8 This team size is necessary as in some locations/times there is a need for two rangers to be out together, due to health & safety concerns, effectiveness or for confidence building. The work is demanding and approaching strangers in relatively remote areas can be difficult; the larger team size ensures team morale and sufficient cover to ensure sickness, holidays etc will not compromise delivery. It may take some time for sufficient contributions to be collected to allow the team to reach this size and as the team builds it may be necessary for a different geographic breakdown.

4.9 The total length of coast covered by the ranger team is nearly 500km[9], giving around 53km per ranger (based team size of 9.5). This is a relatively large area for each staff member to cover and the physical difficulties in moving around the Essex Coast make this even more ambitious. The 500km estimate includes areas such as Foulness that are largely inaccessible to the public and some sections of shoreline are remote and seldom visited. Nonetheless, the extent of ranger coverage remains low or similar compared to other mitigation strategies. For example, the Severn Estuary has a level of provision of around 26km per ranger, the Solent (in 2022) around 36km per ranger and the Northumberland Coast around 37km per ranger (see Liley and Caals, 2024). A strategic review of mitigation provision on the Solent (D Liley et al., 2023) found rangers could speak to around 5-7 groups per hour on-site, depending on how busy the location was and the level of provision equated to around 30 minutes ranger time per new dwelling per winter. This was deemed low in the review.

[9] this is an approximate figure, derived using the shoreline within SPA boundaries (including islands with land above mean high water mark) and defined as the edge of selected habitats. The measurement reflects the shoreline rather than including any portions at sea or open water. The figure was derived from GIS layers used in the work of Ross *et al.* (2014).

4.10 Alongside the ranger team and delivery manager, the strategy includes provision for four further posts:

- A dog project officer, full time to run dog walker engagement at particular locations and provide resources/engagement material for dog walkers, in-line with projects elsewhere in the country[10]. The role will complement the ranger teams by working as a specialist ranger as required;
- A communications officer (part-time) responsible for leading campaigns (e.g. dogs on leads) and work around specific activities and audiences (e.g. watersports), supporting the delivery manager and ranger team with social media, press releases etc and overseeing the website content.
- An education/community engagement lead (full time) undertaking work with schools, leading site visits/school trips.
- A monitoring and data lead, this being a part time role responsible for overseeing the data collected by the rangers, collating data from other sources (such as bird data) and producing regular reports.

4.11 Specific work areas for the various staff in the team and that apply across the whole geographic area will include:

- Maintain and update updating the Bird Aware Essex website and general information provision raising awareness of the coast, its importance for nature conservation and risks from recreation use.
- Undertake dedicated work on watersports and water-based recreation, raising issues of disturbance and trampling damage to sensitive habitat. Potential to produce generic guidance for whole coast as to where to launch, where to go, how to behave (including speed limits) and this supported on the ground/water with signs and buoys. This should include activities that are growing in popularity such as wild swimming, paddleboarding etc).
- Gather evidence on particular activities and events to provide information that could support/assist enforcement action if the need arises (enforcement by relevant authority/police etc).
- Contact holiday parks (with static caravans, lodges, mobile homes etc) and exploring opportunities for outreach, including interpretation, signage, information on slipways and other information for residents. Potential for an information pack or

[10] such as Dorset Dogs https://www.dorsetdogs.org.uk/, Devon Loves Dogs https://www.devonlovesdogs.co.uk/ and Coast & Country Canines https://coastandcountrycanines.org/

similar to be distributed to residents at key sites and dog-focussed projects.[11]

- Develop work around education resources and work with children to raise awareness of disturbance issues and the wildlife interest of the coast – including education packs, lesson plans and budget to fund children visiting sites.
- Complete the parking audit and use it to identify and prioritise locations where changes necessary (such as formalising parking, reducing parking spaces, need for height restriction barriers or other infrastructure) and inform dialogue/consultation with relevant parties over parking charges, car park design etc;
- Log bird use in nearby areas outside the boundary of European sites where disturbance issues may be relevant, for example fields adjacent to footpaths. This information will provide scope to target rangers or other mitigation to such areas as necessary.
- Undertake dedicated work around wildlife photography to promote best practice. Options could include supporting professional photographers or keen amateurs to act as ambassadors at popular locations, production of a code of conduct, social media and other publicity around the issues.
- Undertake some dedicated awareness raising and communications around drone use.
- Establish a jet ski working group with remit to develop joint working to manage growing issue and oversight of co-ordination/support for measures at a coast wide level.
- Clear messaging around where to walk dogs, sites where dogs are welcomed off lead and effective information and engagement coast wide around dogs. This will mean the dog project officer, rangers, communications officer and education work all highlight issues around dogs off-lead and responsible dog walking.
- Produce of a monitoring strategy (with budget for consultancy input) to ensure data officer has clear guidance and monitoring data are effectively integrated into mitigation delivery.
- Check the condition of relevant people counters and other monitoring equipment, replacing baterries and overseeing repair/replacement as required.
- Collect and review of monitoring data as relevant and to inform mitigation delivery.

---

[11] The visitor survey results indicated that those staying away from home accounted for a high proportion of visitors at certain locations. Data from other parts of the country indicate those the number of recreational visits made to European sites per unit of accommodation were as high or higher for holiday accommodation when compared to residential units (Panter and Liley, 2017)

- Link up with neighbouring mitigation strategies (Suffolk and North Kent) to ensure no gaps in coverage and consistency of approach where any overlap or work in close proximity. Scope for joint messaging and campaigns on some issues (e.g. around jet skis).
- Link up with other mitigation strategies and visitor management/engagement projects around the country to share best practice, expertise and learn from others.

Measures specific to particular locations

4.12 Alongside the coast-wide measures set out above, there will be a need for a range of site specific and more local projects. These will include (but are not limited to):

- Changes to individual car parks to make them work better, perhaps reducing parking provision in some places or creating new parking in more robust locations;
- Fencing or screening to keep people/dogs on paths;
- Path work to create new routes or improve paths to improve access while ensuring impacts reduced (e.g. creating routes that provide options for people to walk away from the shoreline);
- New/replacement signage;
- New/replacement interpretation;
- Changes to slipways and access points to the water to make them work better or restrict particular types of user (e.g. provision of barriers and gated access);
- Infrastructure to restrict or limit access by off-road vehicles and motorbikes where a persistent problem;
- Funding to support existing work and projects that have responsibilities for visitor management or engagement;
- Zoning or ways to redistribute access, for example creating areas where access is discouraged or not promoted or areas where particular activities are encouraged/promoted such as dedicated spaces for watersports;
- Buoys or other measures to inform those on the water when approaching sensitive locations;
- Support for site based staff/projects involved in managing access, particularly those with a focus on waterbased activities (e.g. around enforcement of speed restrictions on the water);
- Projects with marinas, holiday parks or other locations where high density of users and boat activity in particular locations;
- Projects to improve visitor facilities at sites – particularly those aimed at providing for local recreational use (e.g. dog walking, exercise) – where they can absorb more visitors without recreation

impacts. Examples could include litter bins, viewpoints, dog bins, dog washing stations, off-lead exercising facilities, etc.
- Roost protection measures;
- Breeding bird protection measures (fencing, signage etc).

4.13 Most of these kinds of projects will need to be undertaken by relevant landowners and site managers. Many will be relatively opportunistic in that they might depend on circumstance. For example, flooding or storm events may result in the need to replace infrastructure (fencing, paths etc) and this could provide scope to upgrade some elements. Changes in ownership or in staff may lead to different management options. Other funding sources may lead to new projects and drive change, creating opportunities for additional measures that have a mitigation benefit. One key driver for change will be the Beneficial Use of Dredged Sediments (BUDS) and also managed realignments which will create new areas of habitat that have potential to draw birds and people.

4.14 It is therefore not possible to define a complete list of local projects within this strategy that can be relied on as mitigation. Appendix 1 provides an overview of local project ideas and opportunities around the Essex coast. These are indicative ideas only that were generated during a series of workshops in September 2025, with locally based staff (from a range of organisations) working around the Essex coast, including Bird Aware Essex staff. The appendix is not exhaustive and some of the projects and ideas may not necessarily be feasible or work as mitigation.

4.15 As the ranger team spends time on the ground and the project builds momentum with partners, the project list can be refined and specific proposals developed. The strategy provides funding on an annual basis for locally based projects. This funding will provide the flexibility and scope to allow relevant stakeholders and organisations to be able to bid for funds for small scale projects that have a clear mitigation benefit and fit with the strategy. Equally it will be possible for the Bird Aware Essex team to work with local parties on the ground to assist in developing ideas and implementing work on the ground.

4.16 The governance and detail of any such funding to stakeholders would need to be set out and agreed by the RAMS Steering Group and Project Board to ensure funds are appropriately authorised. This will also ensure that the funding does provide mitigation benefit and ensure good geographic

coverage. Strategic oversight will also ensure necessary monitoring is in place.

Evolution of SAMM and monitoring

4.17 The SAMM measures are able to shift and adapt with time, which is essential given likely changes at the sites, for example with respect to climate change. Ranger time can be focussed as appropriate and project funds can be directed to where they are needed through the locally-based projects. Engagement, for example through social media, provides further opportunity to reinforce messaging and influence behaviour in a targeted and dynamic way.

4.18 Monitoring will play an important role in supporting the strategy and mitigation delivery (ensuring mitigation is sufficient and keeping pace with housing growth). Data will be important to highlight changes in access, pick-up emerging trends and flag where new issues emerge. Mitigation delivery in terms of ranger time, levels of engagement and some ecological data will be important to inform future updates to the strategy. Some monitoring data will be useful to show how measures have worked, providing case studies and examples of successful interventions and best practice for others to adopt. Sharing these successes will be important to capacity building and the long-term success of the mitigation. Given the wide range of sites, range of issues and types of access, consistent and systematic data gathering will be a challenge. A monitoring strategy is therefore necessary (and costed within the SAMM measures) to ensure monitoring is integrated into mitigation delivery and the right data are collected to inform action on the ground.

4.19 Looking to the future, working with volunteers provides an opportunity to expand the work of the ranger team. Volunteers could act as ambassadors and potentially undertake tasks such as showing people birds, handing out information and so on. Some other bird disturbance mitigation projects involve extensive use of volunteers (e.g. Plovers in Peril on the Norfolk coast), where volunteers help with both engagement and with monitoring. By involving volunteers in monitoring there is the potential to raise understanding and appreciation of the bird interest among local people, which can then feed through into the engagement with other visitors.

4.20 There are also some clear risks to working with volunteers; influencing people's behaviour is difficult and the ranger team are carefully selected and receive considerable training. Any volunteer network would require

considerable effort to build, maintain and support, with training, rotas, equipment, transport and similar – meaning a need for greater staff input (e.g. a volunteer coordinator) to make sure it works. There may be a need to vet volunteers to minimise risks of reputational damage. As such, the potential use and role of volunteers requires careful review, consideration and resourcing. Volunteers certainly do not provide a cheap panacea and alternative to dedicated rangers. As such it is best that the ranger team is the focus in the short term and the role of volunteers is reviewed, with the scope to incorporate them into the mitigation delivery in the medium term.

4.21 Close working with relevant stakeholders and other mitigation schemes around the country will also be important. This will ensure the Bird Aware Essex team are aware of local issues, familiar with best practice, aware of the latest research, able to learn from others and share information across organisations.

Table 3: Overview of SAMM measures

Mitigation measure	Description	Justification	Notes
Delivery Manager	Full time post managing ranger team and providing overall steer for mitigation delivery and link to partners, stakeholders, planners etc. Role also proving strategic links and wider policy work/liaison	Manager post key to ensuring smooth delivery and oversight of implementation	Already established and post extended to cover in-perpetuity
Ranger team leaders (2 posts)	Ranger team leader post with responsibility for co-ordinating team, oversight of rotas, ensuring cover for holidays, sickness etc., health & safety oversight, transport logistics etc. Two posts to allow for a northern team and southern team.	Rangers are a cornerstone of the mitigation. Leaders necessary to ensure coverage and co-ordinate work	Ranger team already established. Expansion necessary
Rangers (6 full-time, 3 seasonal)	Ranger team expanded and key function is patrolling on the European sites and directly engaging with visitors to those sites.	Rangers are a cornerstone of the mitigation.	Ranger team already established. Expansion necessary
Vehicles and other resources for rangers	Running costs for vehicle and any other travel costs, plus resources to cover equipment needed by team (trail cameras for nest monitoring, temporary signage etc.)	Budget required for transport and operational work. A dedicated vehicle has benefit in providing additional branding.	Bird Aware Essex branding necessary to ensure vehicle is eye-catching
Dog project staffing costs	1 post, fte	Staff costs to build project. Dog walkers main user group to influence and one with biggest impact	Post would be a dog specialist ranger post
Dog project resources	Running costs for events etc	Budget required for transport and operational work	
Communications Officer staffing costs	Mitigation relies on effective behaviour change through communication of key messages - focused, specialist work on	Budget required for operational work, targeted comms planning, campaigns,	

Mitigation measure	Description	Justification	Notes
	social media, press, newsletters. Running campaigns relating to wildlife photography, drones, watersports etc.	social media, newsletter and promotional/networking opportunities.	
Comms costs	Costs to cover resources for comms post in terms of campaign material, images, expenses etc	Comms work may need to buy in specialist design and support, for example graphics, images etc. Budget also covers campaign launches, printing and updates to the website	
Production of monitoring strategy & monitoring support	Consultancy support to work with the BA team and stakeholders to design monitoring programme and recording to cover data collection by ranger team, other relevant data (e.g. volunteer surveys), reporting protocols and report production	Will ensure monitoring is conducted efficiently and data available to feed into mitigation delivery	
Monitoring and data staffing costs	Budget for dedicated staff member to implement monitoring strategy, potentially covering targeted ecological monitoring, regular vehicle counts across area, automated counters, data collection by rangers while on site etc	Data important to help hone mitigation, target resources and pick up any changes/emerging trends	Will cover resources to collate data from a range of different sources, including surveys and automated counters.
Monitoring resources	Budget to cover commission of specific surveys where needed (e.g. vehicle counts) and purchase of equipment (automated visitor counters) etc. Dependent on monitoring straetgy	Data important to help hone mitigation, target resources and pick up any changes/emerging trends	
Visitor survey	Visitor survey to cover all European sites and surrounding GI (SANGs etc) at 5 year intervals	Provides data on changing use patterns, demographics, visitor numbers and visitor origins.	Repeat surveys of a selection of locations in line with work undertaken in 2024. Details to be set out in monitoring strategy

Mitigation measure	Description	Justification	Notes
Education/community engagement officer	Full-time post undertaking work with schools including schools visits and attending events	Education lead able to go into schools and community events (fetes etc), working directly with children in local communities to raise awareness with young people	
Resources for schools and events	Budget to cover resources for education work	Education/community engagement officer will need props and resources when visiting schools etc	
Engagement material for holiday parks etc.	Project targeting holiday parks, caravan sites etc with resources to develop material such as packs, leaflets, signage designs etc.	Wide range of holiday parks around coast, many providing cabins etc available for use all year round. Some with slip ways, boat storage etc.	Project could initially start by working with small group of sites to understand what might work. Potential for incentives such as help gaining environmental certifications or accreditation alongside promotion of wildlife around coast, responsible access etc.
Site-specific projects	Flexible funding for range of local and site specific projects	Workshops identified a wide range of possible projects that would have significant mitigation benefit but need to be subject to more detailed proposals and costings	Potential to create a small project fund to help deliver mitigation. Delivery manager and Bird Aware team would work with local partners to develop ideas and suggest opportunities

5. Off-site green infrastructure & SANG

5.1 Off-site green infrastructure and Suitable Alternative Natural Greenspaces (SANG) relate to additional greenspace, aimed at deflecting visitors away from the European sites (for example providing locations that welcome dog walking). These are widely used around the country to provide mitigation alongside SAMM measures and are positive measures in that they provide additional space for recreation. In many areas, such as around Ashdown Forest, the Exe Estuary, the Dorset Heaths and the Thames Basin Heaths SANGs have become popular destinations in their own right providing a popular and well-used resource for local communities. SANG, where applicable, can also fulfil a range of other functions, including biodiversity net gain and flood management.

5.2 There is a growing evidence base on the effectiveness of SANGs in coastal locations (e.g. Caals, Panter and Liley, 2022) and looking ahead there is a need to provide greater clarity about the level of SANG provision required from different developments in Essex and clear guidance on what SANG should look like and how it should work.

5.3 Development proposals within the Zone of Influence are required to contribute to the Essex Coast RAMS to address the in combination recreational impacts arising from growth across the region. However, applicants should also be aware that some schemes may give rise to alone impacts on designated European sites that are not fully addressed through the strategic RAMS measures. Where project level assessment identifies the potential for significant effects in isolation, additional, bespoke mitigation may be necessary to ensure compliance with the Habitats Regulations. In such cases, the provision of Suitable Alternative Natural Greenspace (SANG) or other targeted mitigation should be considered to avoid adverse effects on site integrity.

5.4 Broadly, developments that are 500+ dwellings are most likely to have alone impacts on the European sites, however development proposals for far fewer dwellings in close proximity to the designated site boundary will also pose particular risks. Any development that has impacts alone may be required to provide additional mitigation through the provision of SANG and will need to consult with Natural England.

5.5 Additional information about SANGs in Essex will be set out in an additional planning guidance note that will supplement this strategy. The additional guidance will cover the role of SANG in addition to a RAMS contribution, when SANGs might be required and how SANGs fit with the RAMS. Developers should consult this guide in addition to this strategy to ensure they are meeting their planning obligations.

6. Implementation

Types of development covered

6.1 This strategy applies to any future development that results in a net increase in residential units (i.e. Use Class C3) located within the identified Zone of Influence (ZOI).

6.2 Although primarily focussed on C3 residential development, this strategy also applies to other residential or overnight accommodation, that may give rise to recreational impacts on European Sites and therefore trigger Likely Significant Effects (LSEs). Table 4 lists the development types where LSEs are expected, or may be expected.

6.3 For the development types listed in Table 4, this strategy provides a consistent and effective mechanism to secure mitigation for in-combination recreational impacts arising from net new development within the ZOI. Where appropriate, and supported by project level HRA, the RAMS tariff may also be applied to other forms of development beyond C3 dwellings, to ensure recreational impacts are fully addressed.

6.4 Developments not listed in the table, but which may also trigger likely significant effects include, but are not limited to:

- Hotels (C1) – including boarding and guest houses;
- Tourism attractions (F1, Sui Generis).

Table 4: Relevant types of development

Use Type/Class	Likely Significant Effect	Mitigation requirements
Dwelling Houses (C3) including live work units *This applies to net new dwellings and excludes like for like replacement dwellings.*	Yes	Contribution per dwelling
Houses in Multiple Occupation (C4/Sui Generis)	Yes	Contribution per bedroom (based on C3 per dwelling contribution)*
Residential Institutions (C2/C2A) Sheltered accommodation, extra-care, nursing homes, hospitals and secure institutions.	Possibly, will be considered on a case-by-case basis dependant on mobility/independence of residents and proximity to European Sites. This generally excludes high dependency and end of life care.	Contribution per dwelling or justified reduced rate based on bedspaces (2.46 bedspaces = 1 dwelling)
Residential Institutions (C2/ Sui Generis) Schools, colleges or training centres and Student Accommodation	Possibly, will be considered on a case-by-case basis. If a training centre or college has associated adult accommodation where residents/occupants can visit the European Sites.	Contribution based on bedspaces (2.46 bedspaces = 1 dwelling)*
Gypsy and Traveller Pitches / Plots (Sui Generis) Net new temporary or permanent pitches	Yes	Contribution per pitch/plot
Caravan, chalet, touring and static holiday sites (Sui Generis)	Likely LSE, especially where located within 1.5 km of the coast	Contribution per unit/pitch (equivalent to per-dwelling rate)

* Some Local Planning Authorities apply a discounted rate, and it is advised to check with local guidance and the Supplementary Planning Guidance for more information

6.6 While residential development represents the primary source of recreational pressure, other land uses can also create significant impacts on European sites - particularly those involving overnight accommodation, high visitor turnover, or public recreational use. Any type of new overnight accommodation within 1.5 km (approximately a 15 minute walk) of the Essex coast, for example, is likely to give rise to recreational disturbance and therefore require mitigation.

6.7 For C3 residential development, contributions will be calculated on a per-unit basis. However, this approach may not be directly applicable to other forms of development, such as tourist accommodation or visitor attractions.

6.8 For development types not falling within the standard per dwelling tariff model, the potential for LSEs must be assessed through project level

Habitats Regulations Assessment (HRA) and advice sought from Natural England where necessary, and any required mitigation confirmed through appropriate assessment. Where recreational impacts cannot be ruled out, the RAMS tariff may be used as an appropriate and proportionate mitigation measure for 'in-combination' impacts, including for hotels, holiday parks, other overnight accommodation and tourist attractions. Proposals that are deemed to have 'alone' impacts will require additional bespoke mitigation. In such cases, payment of the RAMS tariff covers residual impacts.

6.9 Project-level HRA for tourist attraction and hotel related proposals will need to take into account both the type of use and its proximity to European sites. For example, a business focused hotel in Chelmsford city centre is unlikely to generate the same recreational pressure as dog friendly holiday accommodation located adjacent to a designated site. Each proposal will therefore need to be assessed on a case-by-case basis to determine whether LSEs are likely and whether additional mitigation is required to address 'alone' impacts.

6.10 Further detail on development types covered and the application of tariffs and bedspace calculations will be provided within Supplementary Planning Guidance. Developers should refer to this guidance, alongside the Essex Coast RAMS, to ensure all planning obligations and HRA requirements are fully met.

Zone of Influence and the area covered by the strategy

6.11 The Zone of Influence is shown in Map 5. This is the established Zone of Influence, which was originally derived separately for each SPA and then merged, with values for each separate SPA ranging from 4.5 to 22km (see Table 4.4 in Place Services / Essex County Council, 2018). Recent postcode data from the 2025 visitor survey (Rush et al., 2025) is included on the map for context and demonstrates that the zone works to capture the majority of visitors and remains fit for purpose.

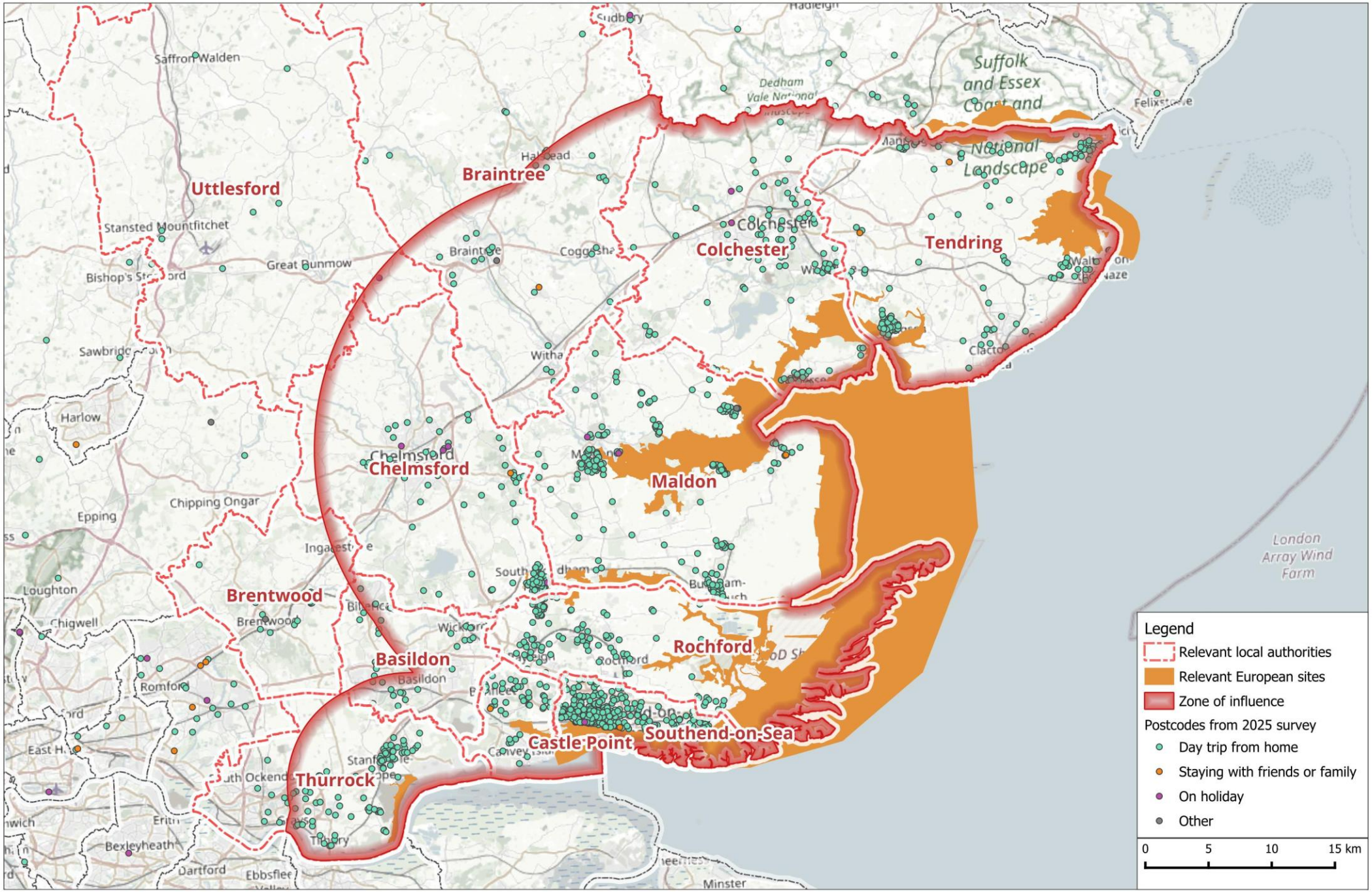
HRA matters and other assessment considerations

6.12 This strategy does not replace the requirement for HRA in relation to recreational impacts at plan or project level. Instead, it provides a mechanism to provide mitigation to support appropriate assessment and addresses the cumulative effects of recreation across a wide area. For most development types and locations, conformity with the strategy will

potentially allow a conclusion of no adverse effect on site integrity in respect of recreational pressure. In some cases, the strategic mitigation delivered through the RAMS may not however be sufficient. Developments in particularly sensitive locations—such as those immediately adjacent to European sites—may require additional, bespoke mitigation measures beyond the RAMS tariff. These will need to be identified and secured through project level HRA. As such the strategy does not remove the need to consider whether individual developments may also give rise to impacts alone.

6.13 It should also be noted that the strategy does not address other potential impact pathways, such as air quality or water quality, which must be considered separately where relevant to European sites. It should also be noted that recreation impacts to SSSI features may not necessarily be covered by the mitigation strategy (if those features are not qualifying features of the European sites). These may warrant separate consideration and mitigation in their own right.

Map 5: Zone of Influence and interviewee postcodes from visitor survey



Contains Ordnance Survey data © Crown copyright and Database Right 2024. Contains map data © OpenStreetMap contributors. Terms: www.openstreetmap.org/copyright Designated site boundaries download from the Natural England website © Natural England.

Scale of future development

6.14 Around 148,309 new dwellings have been estimated as coming forward in future local authority plans and requiring mitigation. This total is broken down by authority in Table 5. The estimates take into account each authority's local plan housing requirement and discounts a proportion of the homes which are unlikely to make a fee contribution to the RAMS. This step removes homes which are already permitted or would be complete by the base date (April 2026). To keep the calculation simple, no discount was made for non-qualifying types of residential or lapse rates. Full details of how the different totals have been derived are provided in Appendix 2.

6.15 The estimates are therefore intended as an approximate guide and derived as a snapshot at a particular point in time. They may not necessarily be an accurate representation of future development. They are however sufficient to determine the scale of mitigation likely to be required and therefore to allow a tariff to be set.

6.16 In 2025 there were approximately 609,786[12] residential dwellings within the Zone of Influence shown in Map 5. The estimate of 148,309 new dwellings would therefore represent a 24% increase in the amount of housing within the Zone of Influence.

Table 5: Summary of housing growth potentially requiring mitigation, by authority (see Appendix 2 for further details). Note stage of plan preparation reflects a snapshot at the time of writing

LPA	Stage of Plan Preparation	Plan Period	Potential housing requiring mitigation
Basildon	Reg 18 Local Plan	2023-2043	21,667
Braintree	Reg 18 Local Plan Review – March 2026	2026-2041	11,493
Brentwood	Adopted 2022, Call for sites - Reg 18 2026	2026-2042	3,060
Castle Point	Plan was submitted for Examination in January 2026	2026-2043	5,457
Chelmsford	Reg 19 Local Plan Review, Submission 2026	2022-2041	19,755
Colchester	Reg 18 Local Plan Review - December 25	2026-2042	16,435
Maldon	Exploring options to transition into the new plan-making system in 2026	2023-2043	9,521
Rochford	Reg 18 consultation February – March 2026	2023/24 - 2042/43	12,456

[12] Total extracted from national postcode data and relates to the residential delivery points per postcode within the Zone of Influence.

LPA	Stage of Plan Preparation	Plan Period	Potential housing requiring mitigation
Southend	Preferred Approach Consultation 2025, Reg 18 summer 2025	2025-2050	25,444
Tendring	Reg 18 Preferred Options consultation	2025 – 2042	12,851
Thurrock	Local Plan Initial Proposals, Reg 19 2026	2024-2044	10,170
Uttlesford	Full Council in March 2026 to be invited to adopt the Local Plan	2021-2041	0
Total			**148,309**

Costs per new dwelling

6.17 The total cost of SAMM measures is estimated to be £72,594,500 (see Appendix 3 for details). Per dwelling costs are set out below, calculated using the housing growth figures from Table 5. Costs for SAMM will be adjusted to take into account any reserves held by the partnership at the point at which the new strategy supersedes the previous one, giving a cost per new dwelling of £475.70.

Total cost SAMM:	£72,594,500
Approx. RAMS monies held by accountable body[13]:	£2,043,416.31
Estimate of number of houses needing mitigation:	148,309
Cost per new dwelling:	£475.70

6.18 The tariff will be further adjusted on an annual basis to take into account RPI Index linked inflation, any administrative costs and any other adjustments necessary. Housing growth will also be monitored and taken into account as part of future adjustments.

[13] This figure includes RAMS tariff held by the Accountable Body, and the interest accrued on held funds to date

Long term delivery and in-perpetuity costs

6.19 Mitigation is secured for the duration of the impact, and it is assumed the implementation of the mitigation will run for as long as it is required, with money set aside to provide long-term stability and in-perpetuity delivery. The strategy will operate on a rolling basis into the future, adjusting as necessary to changing levels of house building and impacts arising. The inclusion of in-perpetuity costs is one of the factors behind the increase in tariff compared to the previous strategy.

6.20 Some measures in this strategy are short-term, one-off measures while others need to run for many years, often extending well outside the Plan period. Changes to access infrastructure, the provision of any SANGs (which are secured indefinitely) alongside the increased awareness raising and education work should ensure that the need and annual cost for SAMM can decrease with time. As behaviour change (such as responsible dog ownership) is more widely accepted, high levels of ranger time may no longer be so relevant. It will be important for regular review and revision of costs as necessary to adjust the amount set aside for long term funding of mitigation measures. As such, SAMM is unlikely to need to be constant over time. The measures have been costed for in perpetuity (taken to be a minimum of 80 years, see Appendix 3). Costs and timing can however be reviewed and adjusted on a 5 yearly basis, allowing resources to be targeted different as necessary. Where measures are short-term or one-off, such as small infrastructure projects, it is anticipated that further short-term or one-off measures in different locations around the coast would come forward in later years of the strategy and the costs are therefore spread over an 80 year period.

Governance

6.21 There is already an established approach to the governance and implementation of the Essex Coast RAMS via the Essex Coast RAMS Partnership, which consists of local authorities, Essex County Council, conservation organisations, landowners and statutory bodies. The partnership is governed by a project board and the RAMS steering group whose activities are underpinned by a Partnership Agreement. The Essex Coastal Forum (ECF) a members led forum that discuss and recommend action on coastal issues provides democratic oversight on the project. In addition, one of the partner authorities is nominated as the Accountable

Body for the project and are responsible for holding the RAMS funds from developments that have commenced across Essex and for providing the financial procedures and protocols in its management. They also act as the Lead Institution and employ the RAMS Delivery Manager and project rangers, the 'Bird Aware Essex Team', who are responsible for co-ordinating and delivering the mitigation on the ground.

6.22 Figure 3 sets out the governance roles and arrangements of the Essex Coast RAMS implementation and its Partnership.

6.23 There is flexibility in the structure to allow for additional working groups to be established to support the implementation of the Essex coast RAMS, such as the RAMS Delivery and Technical Group, a group of landowners and land managers, technical and specialist people that provide relevant coastal expertise, knowledge, experience and on the ground direction / support to the Bird Aware Essex Coast team.

6.24 It will be important, looking forward, that there is flexibility and regular review as to how the contributions are spent and to assess the scope and nature of any necessary future mitigation projects. It will be essential that the mitigation delivery can respond to change and shifting priorities. There is uncertainty as to how priorities might need to change in the future, and such uncertainty can only be addressed through good monitoring, adaptive mitigation and regular review.

6.25 The need for flexibility will relate to the changing coastline and the impact of extreme weather events which could affect the qualifying features, visitor behaviour and the coastline itself. The King Charles III England Coast Path will also provide new opportunities for access and may change how people use the coast. Changes in housing delivery may affect how much mitigation revenue is collected and the scale of mitigation required.

6.26 Certain elements within the mitigation package have the scope to adapt and flex as conditions and priorities change. Furthermore, it is possible that additional opportunities may arise, for example as a result of changing land ownership. It is important therefore that the governance is responsive enough to enable developer contributions to be shifted to different components of the strategy easily. Annual reviews of budgets and the ability for the Delivery Manager to adjust finances as appropriate will be key.

6.27 The partnership also highlight the importance of the various delivery partners, for example site managers and other staff in the RSPB, Essex

Wildlife Trust, the National Trust, Essex County Council and Natural England. It is essential for the RAMS Delivery Manager to work with such organisations on the Essex coast RAMS delivery.

6.28 Additional flexibility could be accommodated within the structure for relevant stakeholders and organisations to bid for small amounts of money for particular projects that have a clear mitigation benefit and fit with the strategy. The governance and detail of such an arrangement would need to be set out and agreed by the RAMS Steering Group and Project Board to ensure proper governance arrangements are put in place beforehand.

Review and timing

6.29 The strategy will operate indefinitely on a rolling basis, with this version running to around 2031. The strategy has, however, been written in the context of local plans and the likely levels of growth to around 2045. The strategy will need to be reviewed and updated approximately every 5 years, with these reviews checking housing numbers, delivery, costs and mitigation priorities. The reviews will inform the 1 year and 5-year business plan that underpins the work of the partnership and their staff.

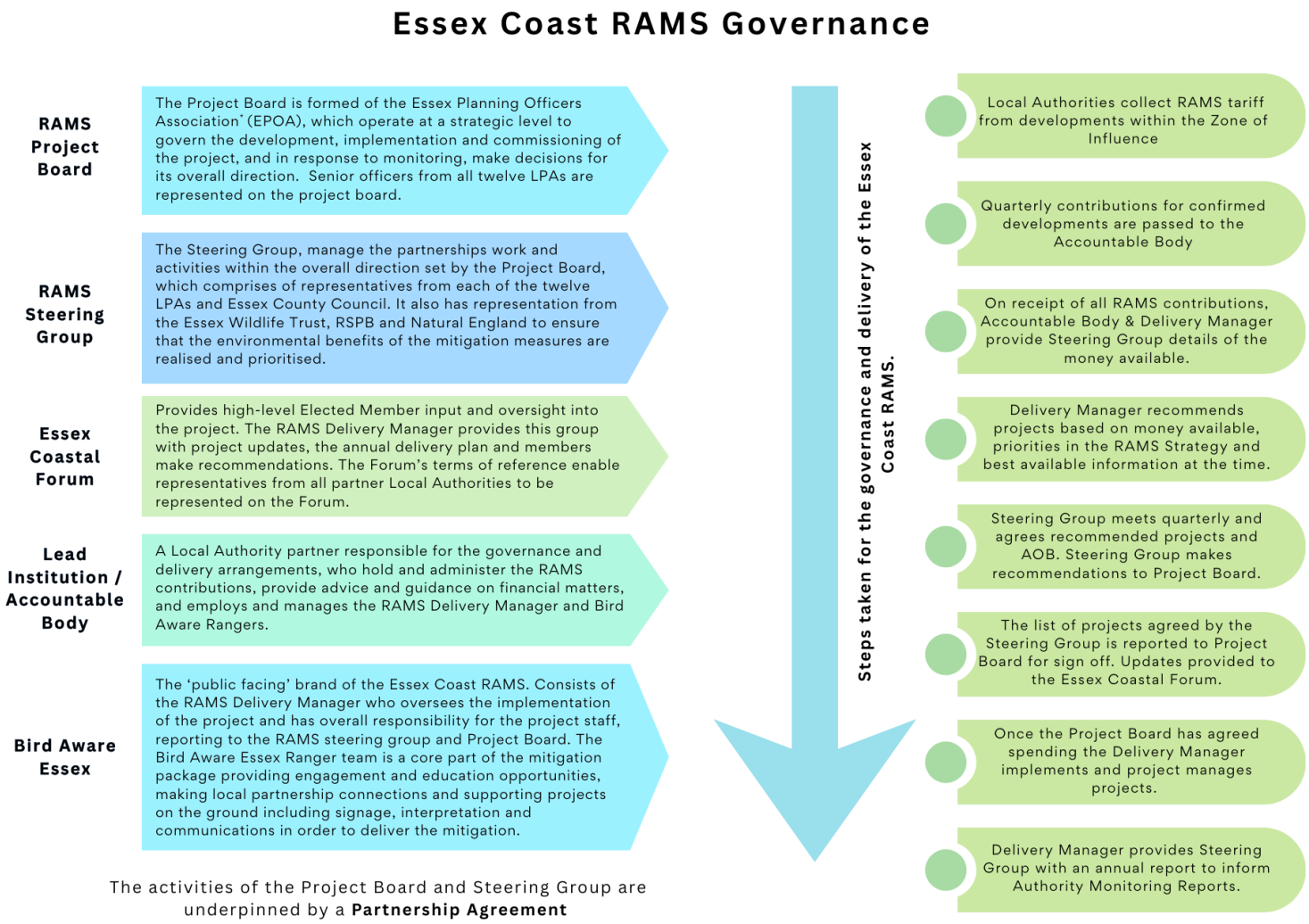


Figure 3: Summary of governance structure

References

Alchin, EA., 1997. Vegetation dynamics following management burning of lowland heath. University of Liverpool, Liverpool.

Anderson, P., 1986. Accidental moorland fires in the Peak District: A study of their incidence and ecological implications. Peak Park Joint Planning Board, Bakewell.

anon, 2017. Spreading like wildfire. Nature Climate Change 7, 755. https://doi.org/10.1038/nclimate3432

Baker, J., D'Antonio, A., Monz, C., Taff, D., Rice, W.L., Newton, J., Newman, P., Miller, Z.D., Freeman, S., 2021. What's 'SUP' with paddlers? Integrating spatial, social, and ecological data to understand behavior among paddlesport users at a popular lake destination. Applied Geography 135, 102531. https://doi.org/10.1016/j.apgeog.2021.102531

Banks, P.B., Bryant, J.V., 2007. Four-legged friend or foe? Dog walking displaces native birds from natural areas. Biology Letters 3, 611–613. https://doi.org/10.1098/rsbl.2007.0374

Bateman, I.J., Harwood, A.R., Abson, D.J., Andrews, B., Crowe, A., Dugdale, S., Fezzi, C., Foden, J., Hadley, D., Haines-Young, R., Hulme, M., Kontoleon, A., Munday, P., Pascual, U., Paterson, J., Perino, G., Sen, A., Siriwardena, G., Termansen, M., 2014. Economic Analysis for the UK National Ecosystem Assessment: Synthesis and Scenario Valuation of Changes in Ecosystem Services. Environ Resource Econ 57, 273–297. https://doi.org/10.1007/s10640-013-9662-y

Bates, C., Moles, K., 2022. Bobbing in the park: wild swimming, conviviality and belonging. Leisure Studies 0, 1–13. https://doi.org/10.1080/02614367.2022.2085774

Bavin, D., Crowley, S., Bissel, C., Twena, M., Heard, M., 2025. Paws for Thought: towards environmentally friendly dog walking in the UK. RENEW.

Beveridge, L., Cheater, S., Davidson, N., Senapati, S., 2024. Compilation and Review of Evidence Leading to SANG and SAMM Provision (No. RP04518). Report by Lepus for Natural England.

Bourne, W.R.P., Smith, A.J.M., 1974. Threats to Scottish sandwich terns. Biological Conservation 6, 222–224. https://doi.org/10.1016/0006-3207(74)90075-5

Bragg, R., Atkins, G., 2016. A review of nature-based interventions for mental health care. Natural England Commissioned Reports, Number 204.

Brambilla, M., Rubolini, D., Guidali, F., 2004. Rock climbing and Raven Corvus corax occurrence depress breeding success of cliff-nesting Peregrines Falco peregrinus. Ardeola 51, 425–430.

Brawn, J., Robinson, S., Thompson III, F., 2001. The role of disturbance in the ecology and conservation of birds. Annual review of Ecology and Systematics 32, 251–276.

Brown, A.C., Grice, P., 2005. Birds in England. T.A.D. Poyser, London.

Cavalli, M., Baladrón, A.V., Isacch, J.P., Biondi, L.M., Bó, M.S., 2016. Differential risk perception of rural and urban Burrowing Owls exposed to humans and dogs. Behavioural Processes 124, 60–65. https://doi.org/10.1016/j.beproc.2015.12.006

Chapman, C., Tyldesley, D., 2016. Functional linkage: How areas that are functionally linked to European sites have been considered when they may be affected by plans and projects – a review of authoritative decisions (Natural England Commissioned Report No. NECR207). Natural England.

Dasgupta, P., 2021. The Economics of Biodiversity: The Dasgupta Review. HM Treasury, London.

Day, B.H., 2020. The Value of Greenspace Under Pandemic Lockdown. Environ Resource Econ 76, 1161–1185. https://doi.org/10.1007/s10640-020-00489-y

De Frenne, P., Cougnon, M., Janssens, G.P.J., Vangansbeke, P., 2022. Nutrient fertilization by dogs in peri-urban ecosystems. Ecological Solutions and Evidence 3, e12128. https://doi.org/10.1002/2688-8319.12128

Denning, L., Pugh, M., Pitts, V., Dynamic Dunescapes partners, 2024. The Sand Dune Managers Handbook. Version 2. (No. LIFE17 NAT/UK/000570; HG-16-08643). Dynamic Dunescapes (DuneLIFE) project.

Denton, J., Groome, G., 2017. Dogs and ponds: a case study from Headley Heath. Conservation Land Management 15, 4–8.

Edgar, P., 2002. The effects of public access on amphibians and reptiles. an assessment of the potential effects of increased public access due to the introduction of the countryside and rights of way act 2000. CCW Contract Science, Bangor.

Fernandez-Juricic, E., Jimenez, M.D., Lucas, E., 2001. Alert distance as an alternative measure of bird tolerance to human disturbance: implications for park design. Environmental Conservation 3, 263–269.

Garthe, S., Flore, B.-O., 2007. Population trend over 100 years and conservation needs of breeding sandwich terns (Sterna sandvicensis) on the German North Sea coast. J Ornithol 148, 215–227. https://doi.org/10.1007/s10336-007-0123-7

Gómez-Serrano, M.Á., 2021. Four-legged foes: dogs disturb nesting plovers more than people do on tourist beaches. Ibis 163, 338–352. https://doi.org/10.1111/ibi.12879

Goss-Custard, J.D., West, A.D., Yates, M.G., Caldow, R.W.G., Stillman, R.A., Bardsley, L., Castilla, J., Castro, M., Dierschke, V., Durell, S.E.A.L.V.D., Eichhorn, G., Ens, B.J., Exo, K.-M., Udayangani-Fernando, P.U., Ferns, P.N., Hockey, P.A.R., Gill, J.A., Johnstone, I., Kalejta-Summers, B., Masero, J.A., Moreira, F., Nagarajan, R.V., Owens, I.P.F., Pacheco, C., Perez-Hurtado, A., Rogers, D., Scheiffarth, G., Sitters, H., Sutherland, W.J., Triplet, P., Worrall, D.H., Zharikov, Y., Zwarts, L., Pettifor, R.A., 2006. Intake rates and the functional response in shorebirds (Charadriiformes) eating macro-invertebrates. Biol Rev Camb Philos Soc 81, 501–529. https://doi.org/10.1017/S1464793106007093

Groome, G., Denton, J., Smith, P., 2018. The impact of dogs on the environment. In Practice 12–16.

Harris, S., 2023. Beware the dog: the ecological and environmental impacts of pet dogs. British Wildlife 34, 487–496.

Hill, D., Hockin, D., Price, D., Tucker, G., Morris, R., Treweek, J., 1997. Bird disturbance: Improving the quality and utility of disturbance research. Journal of Applied Ecology 34, 275–288.

Hockin, D., Ounsted, M., Gorman, M., Hill, D., Keller, V., Barker, M.A., 1992. Examination of the effects of Disturbance on birds with reference to its importance in Ecological Assessments. Journal of Environmental Management 36, 253–286.

Jolly, W.M., Cochrane, M.A., Freeborn, P.H., Holden, Z.A., Brown, T.J., Williamson, G.J., Bowman, D.M.J.S., 2015. Climate-induced variations in global wildfire danger from 1979 to 2013. Nat Commun 6, 1–11. https://doi.org/10.1038/ncomms8537

Kondo, M.C., Oyekanmi, K.O., Gibson, A., South, E.C., Bocarro, J., Hipp, J.A., 2020. Nature Prescriptions for Health: A Review of Evidence and Research Opportunities. International Journal of Environmental Research and Public Health 17, 4213. https://doi.org/10.3390/ijerph17124213

Lafferty, K.D., 2002. Human distrubance of shorebirds on California beaches. USGS.

Lee, A.C.K., Maheswaran, R., 2011. The health benefits of urban green spaces: a review of the evidence. J Public Health 33, 212–222. https://doi.org/10.1093/pubmed/fdq068

Liley, D., Caals, Z., 2024. Severn Estuary Recreation Mitigation Strategy 2024 - 2029 (No. 681). Footprint Ecology / Stroud DC.

Liley, D., Lake, S., Underhill-Day, J., Sharp, J., White, J., Hoskin, R., Cruickshanks, K., Fearnley, H., 2010. Welsh Seasonal Habitat Vulnerability Review. Footprint Ecology / CCW.

Liley, D., Lock, L., Brown, A., Scott, J., Legg, W., 2021. Beach-nesting Ringed Plovers and their conservation in England. British Wildlife 33, 157–165.

Liley, D, Panter, C., Saunders, P., Caals, Z., 2023. Initial review of the effectiveness of the Bird Aware Solent strategy (No. 711). Report by Footprint Ecology for Bird Aware Solent.

Liley, D., Saunders, P., Rush, E., 2023. Review of the likelihood of impacts on breeding birds around the Solent from increasing recreational disturbance from new housing (No. 772). Footprint Ecology / Bird Aware Solent.

Liley, D., Sutherland, W.J., 2007. Predicting the population consequences of human disturbance for Ringed Plovers Charadrius hiaticula: a game theory approach. Ibis 149, 82–94. https://doi.org/doi:10.1111/j.1474-919X.2007.00664.x

Lowen, J., Liley, D., Underhill-Day, J., Whitehouse, A.T., 2008. Access and Nature Conservation Reconciliation: supplementary guidance for England.

Mallik, A., Gimingham, C., Rahman, A., 1984. Ecological effects of heather burning I; Water infiltration, moisture retention and the porosity of the soil surface. Journal of Ecology 72, 633–644.

Maltby, E., Legg, C.J., Proctor, M.C.F., 1990. The ecology of severe fire on the North York Moors|: effects of the 1976 fires, and subsequent surface and vegetation development. Journal of Ecology 79, 490–518.

Mansoor, S., Farooq, I., Kachroo, M.M., Mahmoud, A.E.D., Fawzy, M., Popescu, S.M., Alyemeni, M.N., Sonne, C., Rinklebe, J., Ahmad, P., 2022. Elevation in wildfire frequencies with respect to the climate change. Journal of Environmental Management 301, 113769. https://doi.org/10.1016/j.jenvman.2021.113769

Marion, J.L., Leung, Y.-F., Eagleston, H., Burroughs, K., 2016. A Review and Synthesis of Recreation Ecology Research Findings on Visitor Impacts to Wilderness and Protected Natural Areas. j for 114, 352–362. https://doi.org/10.5849/jof.15-498

Medeiros, R., Ramos, J.A., Paiva, V.H., Almeida, A., Pedro, P., Antunes, S., 2007. Signage reduces the impact of human disturbance on little tern nesting success in Portugal. Biological Conservation 135, 99–106.

Miller, G., Miles, J., 1984. Moorland management: A study of Exmoor. Institute of Terrestrial Ecology, Banchory.

Morgan, L., Protopopova, A., Birkler, R.I.D., Itin-Shwartz, B., Sutton, G.A., Gamliel, A., Yakobson, B., Raz, T., 2020. Human–dog relationships during the COVID-19 pandemic: booming dog adoption during social isolation. Humanit Soc Sci Commun 7, 1–11. https://doi.org/10.1057/s41599-020-00649-x

Panter, C., Liley, D., 2017. Tourist use of the Exe Estuary, Dawlish Warren and East Devon Heaths (No. 268). Footprint Ecology / East Devon DC & Teignbridge DC.

Panter, C., Liley, D., 2016. Distribution of key bird species and access infrastructure along the Essex Coast Special Protection Areas (No. 308). Footprint Ecology / Natural England.

Perkins, R., Barron, L., Glauser, G., Whitehead, M., Woodward, G., Goulson, D., 2024. Down-the-drain pathways for fipronil and imidacloprid applied as spot-on parasiticides to dogs: Estimating aquatic pollution. Science of The Total Environment 917, 170175. https://doi.org/10.1016/j.scitotenv.2024.170175

Perkins, R., Whitehead, M., Civil, W., Goulson, D., 2021. Potential role of veterinary flea products in widespread pesticide contamination of English rivers. Science of The Total Environment 755, 143560. https://doi.org/10.1016/j.scitotenv.2020.143560

Perkins, R., Whitehead, M., Civil, W., Goulson, D., 2020. Potential role of veterinary flea products in widespread pesticide contamination of English rivers. Science of The Total Environment 143560. https://doi.org/10.1016/j.scitotenv.2020.143560

Peters, K.A., Otis, D.L., 2007. Shorebird roost-site selection at two temporal scales: is human disturbance a factor? Journal of Applied Ecology 44, 196–209. https://doi.org/10.1111/j.1365-2664.2006.01248.x

Pienkowski, M.J., 1984. Breeding biology and population dynamics of Ringed Plovers Charadrius hiaticula in Britain and Greenland: nest predation as a possible factor limiting distribution and time of breeding. Journal of the Zoological society of London 202, 83–114.

Place Services / Essex County Council, 2018. Essex Coast Recreational disturbance Avoidance and Mitigation Strategy (RAMS) 2018-2038.

Ratcliffe, N., Schmitt, S., Mayo, A., Tratalos, J., Drewitt, A., 2008. Colony habitat selection by Little Terns Sternula albifrons in East Anglia: implications for coastal management. Seabird 21, 55–63.

Ravenscroft, N., Parker, B., Vonk, R., Wright, M., 2008. Disturbance to waterbirds wintering in the Stour-Orwell estuaries SPA. Suffolk Coasts and Heaths Unit.

Rebolo-Ifrán, N., Grilli, M.G., Lambertucci, S.A., 2019. Drones as a Threat to Wildlife: YouTube Complements Science in Providing Evidence about Their Effect. Environmental Conservation 46, 205–210. https://doi.org/10.1017/S0376892919000080

Rérat, P., 2021. The rise of the e-bike: Towards an extension of the practice of cycling? Mobilities 16, 423–439. https://doi.org/10.1080/17450101.2021.1897236
Richardson, M., Cormack, A., McRobert, L., Underhill, R., 2016. 30 Days Wild: Development and Evaluation of a Large-Scale Nature Engagement Campaign to Improve Well-Being. PLOS ONE 11, e0149777. https://doi.org/10.1371/journal.pone.0149777
Ross, K., Liley, D., Austin, G., Clarke, R.T., Burton, N.H., Stillman, R.A., Cruickshanks, K., Underhill-Day, J., 2014. Housing development and estuaries in England: developing methodologies for assessing the impacts of disturbance to non-breeding waterfowl. Footprint Ecology, unpublished report for Natural England.
Rowell, H., 2020. Definition of Favourable Conservation Status for Little Tern Sternula albifrons. Natural England.
Rush, E., Liley, D., Panter, C., 2025. Essex Coast RAMS Visitor Survey 2025 (No. 837). Report by Footprint Ecology for Bird Aware Essex.
Showler, D., 2010. What is the impact of public access on the breeding success of ground-nesting and cliff-nesting birds (Systematic Review; completed review report No. CEE 05-10). Collaboration for Environmental Evidence, Bangor University.
Sommer, K., 2020. Holidays at home - Camping and glamping as a part of domestic tourism: An overview and analysis of camping (and in particular luxury camping) as an alternative form of domestic tourism in the time of the coronavirus (Working Paper No. 6/2020). IUBH Discussion Papers - Tourismus & Hospitality.
Steven, R., Pickering, C., Guy Castley, J., 2011. A review of the impacts of nature based recreation on birds. Journal of Environmental Management 92, 2287–2294. https://doi.org/10.1016/j.jenvman.2011.05.005
Sutherland, W.J., Alves, J.A., Amano, T., Chang, C.H., Davidson, N.C., Max Finlayson, C., Gill, J.A., Gill, R.E., González, P.M., Gunnarsson, T.G., Kleijn, D., Spray, C.J., Székely, T., Thompson, D.B.A., 2012. A horizon scanning assessment of current and potential future threats to migratory shorebirds. Ibis 154, 663–679. https://doi.org/10.1111/j.1474-919X.2012.01261.x
Tantram, D., Boobyer, M., Kirby, J., 1999. Monitoring heathland fires in Dorset: Phase 2. Report to DETR, Northampton.
Tavener, J., 1965. Observations on breeding sandwich and common terns. British Birds 58, 5–9.
Taylor, E.C., Green, R.E., Perrins, J., 2007. Stone-curlews Burhinus oedicnemus and recreational disturbance: developing a management tool for access. Ibis 149, 37–44. https://doi.org/10.1111/j.1474-919X.2007.00645.x
Tratalos, J.A., Jones, A.P., Showler, D.A., Gill, J.A., Bateman, I.J., Sugden, R., Watkinson, A.R., Sutherland, W.J., 2021. Regional models of the influence of human disturbance and habitat quality on the distribution of breeding territories of common ringed plover Charadrius hiaticula and Eurasian oystercatcher Haematopus ostralegus. Global Ecology and Conservation 28, e01640. https://doi.org/10.1016/j.gecco.2021.e01640
van der Kolk, H.-J., Ens, B.J., Oosterbeek, K., Jongejans, E., van de Pol, M., 2022. The hidden cost of disturbance: Eurasian Oystercatchers (Haematopus ostralegus)

avoid a disturbed roost site during the tourist season. Ibis 164, 437–450. https://doi.org/10.1111/ibi.13035
Whitfield, D.P., Ruddock, M., Bullman, R., 2008. Expert opinion as a tool for quantifying bird tolerance to human disturbance. Biological Conservation 141, 2708–2717.
Wilcox, C., Sebille, E.V., Hardesty, B.D., 2015. Threat of plastic pollution to seabirds is global, pervasive, and increasing. PNAS 112, 11899–11904. https://doi.org/10.1073/pnas.1502108112

Glossary

Competent authority: A body authorising, permitting or giving consent. This can include a public body that decides to give a licence, permit, consent or other permission for work to happen, adopt a plan or carry out work for itself,; a statutory undertaker carrying out its work; a minister or department of government, or anyone holding public office, such as a planning inspector, ombudsman or commissioner.

EiP: Examination in Public. the final independent assessment of a local council's development plan before it can be formally adopted.

European site: A site protected by the Conservation of Habitats and Species Regulations 2017 as amended (known as the Habitats Regulations).

Green infrastructure: A network of multi-functional green and blue spaces and other natural features, urban and rural, which is capable of delivering a wide range of environmental, economic, health and wellbeing benefits for nature, climate, local and wider communities and prosperity.

Habitats Site: Any site which would be included within the definition at regulation 8 of the Conservation of Habitats and Species Regulations 2017 for the purpose of those regulations, including candidate Special Areas of Conservation, Sites of Community Importance, Special Areas of Conservation, Special Protection Areas and any relevant Marine Sites.

HRA: Habitats Regulations Assessment. A legal assessment process conducted by a competent authority to determine if a plan or project will adversely affect the integrity of a protected European site

LNRS: Local Nature Recovery Strategy. A statutory system of 48 spatial strategies covering the entire region of England, designed to reverse biodiversity decline.

Local plan: A plan for the future development of a local area, drawn up by the local planning authority in consultation with the community, under the Town and Country Planning (Local Planning) (England) Regulations 2012. A local plan can consist of either strategic or nonstrategic policies, or a combination of the two.

MCCA: Mayoral Combined County Authority

RAMS: Recreational disturbance Avoidance and Mitigation Strategy

Ramsar site: Wetlands of international importance, designated under the 1971 Ramsar Convention.

Reg 18: Regulation 18 of The Town and Country Planning (Local Planning) (England) Regulations 2012 is the initial statutory stage of public consultation in the local plan-making process.

Reg 19: Regulation 19 of The Town and Country Planning (Local Planning) (England) Regulations 2012 defines the pre-submission stage of a Local Plan, where the final proposed plan is published for public consultation before submission to the Secretary of State.

SAC: Special Area of Conservation. Areas defined by regulation 3 of the Conservation of Habitats and Species Regulations 2017 which have been given special protection as important conservation sites.

SANG: Suitable Alternative Natural Greenspace. New or enhanced greenspace, aimed at deflecting visitors away from the European sites and creating more space for recreation

SAMM: Strategic Access Management and Monitoring measures. Mitigation measures targeting behaviour change and visitor management measures on and around a European site.

SPA: Special Protection Area. Areas classified under regulation 15 of the Conservation of Habitats and Species Regulations 2017 which have been identified as being of international importance for the breeding, feeding, wintering or the migration of rare and vulnerable species of birds.

SSSI: Site of Special Scientific Interest. Sites designated by Natural England under the Wildlife and Countryside Act 1981.

Sui Generis: buildings that do not fall within any particular use class for the purposes of planning permission

Zone of Influence: Area within which likely significant effects are triggered by new development and mitigation therefore required.

Appendix 1: Potential opportunities for site specific projects and opportunities

Potential opportunities for more site-specific projects were identified in a series of workshops hosted in September 2025. Opportunities are listed below and the numbers cross-reference to the corresponding map (see Maps 6 - 9 at the end of this Appendix). The opportunities listed are not intended to be exhaustive and neither do they reflect any specific commitment or firm proposal for any location. Many are suggestions only and will require further work by partners and Bird Aware Essex before the level of mitigation benefit can be confirmed.

Stour Estuary and Hamford Water

1 - Scope for ranger focus and engagement at launch points (note that point falls within Suffolk and has already been identified as a potential Suffolk Coast RAMS project location by Wildlife Wise).

2 - Potential to monitor EWT Hogmarsh Island for water users and disturbance.

3 - Scope for ranger focus and engagement on the Manningtree seawall – busy location used by dog walkers. Additional scope for signage & engagement in the nearby library and town, including installation of a leaflet box.

4 - Potential to enhance existing signage near Mistley at Manningtree Beach bathing area and engage with water-based activities in this area. Note that Wildlife Wise have also identified this location as a launch site for paddleboards and kayaks within the Suffolk Coast RAMS and have suggested the implementation of a range of signage/interpretation and/or guidance.

5 - Scope for continued ranger focus and engagement at Hopping point and where Mistley Walls road runs parallel to the estuary. The Mistley walls frontage towards Manningtree (from point 4) is a key engagement location, with dog focussed engagement also warranted here.

6 - Scope for engagement with pop-up camp site.

7 - Scope for ranger focus and engagement at private access/launch point. Raised by NE that they are concerned about disturbance from watercraft. Note that Wildlife Wise have also identified this location as a launch site for windsurfers and paddleboards within the Suffolk Coast RAMS and have suggested the implementation of a range of signage/interpretation and/or guidance.

8 & 9 - Scope for screening installation and signage between the two points to protect small roost, although note steps for beach hut access. Clarification of land ownership along this stretch of beach would also be beneficial. A people counter is already in place at Wrabness but may need upgrading at some point.

10 - Scope for ranger focus and engagement with land/business owners and holidaymakers/beach hut occupiers between Stone Point and Wrabness Point. Note also identified as such by Wildlife Wise in the Suffolk Coast RAMS.

11 - Potential to increase ranger coverage and update interpretation signage at Wrabness Nature Reserve, working with EWT. Also scope to undertake bird disturbance study to inform mitigation.

12 - Scope for engagement/promotional material targeting holidaymakers Wrabness Community Shop (by station): opportunity to engage with tourists/promotional material.

13 - Scope for (infrequent) dog-focussed pop-up events at Stour Woods. Site is part of a circular walking route, has a public car park, and is currently leafleted. Maybe also SANG potential (although note SSSI status).

14 - Potentially update RSPB signage at Copperas Creek and target ranger focus/engagement with kayakers and small boat users.

15 - Scope for engagement with seal boat trip operators running from Ha'penny Pier and with those undertaking the ferry crossing. The latter would benefit from a joined-up approach with Wildlife Wise on the Suffolk coast and the National Landscapes team.

16 - Scope for engagement with training providers on boating lake.

17 - Scope for ranger focus and engagement at public launch ramp used by jet skis.

18 - Scope for ranger focus, engagement, and increased signage at West End Lane car park (main access point).

19 - Compensatory habitat creation (via BUDS[14]?) already planned near Dovercourt. Comprises a good launch point and would benefit from increased ranger focus/engagement.

20 - Potential to install/update existing signage, carry out engagement, and install screening at Dovercourt Holiday Park, targeting unofficial access routes across

[14] Beneficial Use of Dredged Sediment project

saltmarsh. Note current concerns around Planning Consent conditions placed on the caravan site not being adhered too.

21 - Already a proposed compensatory habitat location and location of a new (lowered below seawall) Public Right of Way around inland of site. Also scope for signage and temporary (breeding season) fencing between points 18 and 19, which would require permission from the wildfowlers.

22 - Scope for continued ranger focus and engagement, or ideally signage and closing of access, at breeding/roost locations at the sensitive Irlam's Beach. Note that this is a very controversial area linked to proposed compensatory habitat at Bathside Bay.

23 - Scope for long-term support for water-based engagement/presence at Hamford Water, building on existing relationships, which would require boat access (currently provided via Tendring water officer)

24 - Scope for ranger focus and engagement at Beaumont Quay car park; sea wall facilitates access to rest of the coast.

25 - Potential to monitor EWT Skipper Island for water users and disturbance: an important roost site.

26 - Scope to ensure longevity of safe roost areas on Horsey Island via the use of BUDS.

27 - Potential ranger support/funding for summer wardens at Horsey Island Little Tern colony and ranger focus/engagement in winter at the important high tide roost.

28 - Scope for ranger focus and engagement (and signage?) at Stone Point.

29 - Scope to ensure longevity of safe roosting and breeding areas at Stone Point via the use of BUDS.

30 - Potential for fencing and engagement around entire spit area to protect breeding birds whilst maintaining access for local people.

31 - The Naze: key area for engagement across the day (car park, three cafes, etc). Also scope to work with schools or education groups and EWT, potentially including production of a dedicated education pack.

32 - Scope for engagement/ranger focus at Titchmarsh Marina, including with seal boat trip operators.

33 - Scope for engagement/ranger focus/signage at key access points for kite surfers along Island Lane and paralleling Quay Lane in Kirkby-le-Soken.

Blackwater and Colne Estuaries

34 & 35 - Circular walk around Howlands Marsh NR - currently inaccessible and protected for birds but with new UK Coast Path this area will be accessible during the summer. Will also include St Osyth Creek – scope to benefit from better engagement with Bird Aware ranger presence from the beginning. Shrangri-la Caravan Park is now designated for homes so potential for increased disturbance in this area – would benefit from advance signage and liaison with Essex Highways re: access. Also, an important opportunity to undertake monitoring before housing is built/progressed and before the coast path is opened, to measure the impact of both and target subsequent management.

36 - Designated water ski area up Brightlingsea Creek (past Cindery Island) towards Flag Creek; scope for engagement with private club.

37 - Colne Point seawall/Lee-over-Sands; disturbance from antisocial behaviour, quad bikes, and scramblers on the nature reserve. Suggestion that concrete bollards are being installed by resident's group, but Bird Aware influence may also be needed in the future.

38 - Brightlingsea Creek; Share our Shore signs have been effective here and closed one of the desire lines (would be great to replicate elsewhere) alongside ranger provision. Colchester City Council has jurisdiction on the River Colne rather than the Brightlingsea Harbour Master (who only manages Brightlingsea Creek).

39 - Scope for engagement with the caravan parks.

40 - Disturbance by people walking across to Sandy Point; a very popular area with watersports. The creek is silting up, giving bridging access from Point clear – a future concern calling for wider discussion and engagement with landowners to de-silt or identify other options to manage access. Scope to continue ranger presence on site for detailed beach-nesting bird monitoring, visitor engagement, and recreational disturbance reductions.

41 - Sandy Point (Colne Point) has the largest Ringed Plover and beach-nesting Oystercatcher populations – previous Bird Aware presence/signage at Point Clear was effective. The site is nearly joining up with Point Clear as a result of sediment deposition. Scope to continue the Share Our Shores project, with seasonal support, volunteers during the breeding season, better signage, improved fencing, and disturbance monitoring. Site would also potentially benefit from the zonation of seasonal access.

42 - Popular location for people to drop anchor and access the beaches, swim, etc. Existing signs advise not to stray to other areas, but need to be more obvious. Scope for 'interactive maps' – directing people to good places/encouraged for activities and identifying areas to avoid.

43 - Scope to work with the harbour master around speed restrictions and enforcement on the water. Could include buoys and engagement on the water, alongside potential resourcing of enforcement teams.

44 - Ferry Landing; watersports access point, although many people also access from the adjacent holiday park. Potential for summer signage about nesting birds and/or temporary fencing on the spit guiding walkers along a particular route to avoid nesting birds.

45 - Desire line here down to the salting/shoreline by existing sign. Opportunity to close it off.

46 - Scope to update signage by railway line (replace damaged Natural England signs).

47 - Scope to update signage in this area.

48 - Place services grant fund in place to excavate a Tudor fort – would benefit from discussion around timing and reducing disturbance. EA are also doing repairs in this area. Opportunity for future engagement, either when the works are finished or whilst it's happening (could include a story trail linked in with Bird aware, engagement alongside the Country Park, and signage across the site). Scope also for improved paths and dog-focussed engagement.

49 - Scope for targeted engagement with commercial dog walkers at Cudmore Grove Country Park. The second car park is also used by dog walkers and could benefit from engagement and signage (potentially including a community noticeboard). Also potential to identify circular routes to draw people away from certain areas at different times of year around Cudmore Grove Country Park, deflecting them from the beach/sea wall.

50 - Scope for engagement with the caravan park. Also, a launch point, so potential to target watersports too.

51 - Arlesford Lodge; water and beach access points, beach access would benefit from increased signage and ranger presence.

52 - Scope to increase buoys and signage (e.g. speed limited) for boats and other watercraft near Arlesford Creek, potentially working with the Harbour Master, as most of the disturbance in this area is water-based.

53 - Wivenhoe down to Arlesford Creek; launch points and jet ski's – scope for increased signage and ranger presence.

54 - Potential for signage and engagement at footpath by Wivenhoe Sailing Club.

55 - Potential for signage and engagement at moorings at Rowhedge.

56 - Potential for signage for jet skis/watercraft at managed realignment at Fingringhoe Wick EWT Reserve.

57 - Pyefleet Channel; seals loafing at the saltmarsh at this point (towards the Strood), with boats travelling to see them from Brightlingsea and elsewhere – scope for water-based engagement (limited onshore access).

58 - Waldegraves Farm Caravan Park; water sports launch point. Scope for signage, as well as engagement with the caravan park and watersports community.

59 - Shingle island located 200m offshore from Waldegraves Holiday Park is important for waders and gulls, terns, etc. It's currently a handy point to paddle out to from the holiday park. Scope to reduce landing and disturbance to the birds using the island via engagement and signage.

60 - Drones and kite surfers launch from West Mersea and cause disturbance around Old Hall Marshes and Tollesbury Wick; scope for engagement. Also scope to add bird information to Bathing Water signage at West Mersea Beach.

61 - Tom & Teds dog walking area on the Strood greenspace; scope for engagement with dog walkers/owners.

62 & 72 - (Route runs between) Feldy Marshes; there will be increased access via the coast path when it opens, running all the way to Salcott - opportunity for engagement. Would potentially be beneficial to include Bird Aware messaging on coast path signage/interpretation.

63 - Hammerhead Jetty is owned by Colchester City Council and is a public launch point; scope for engagement/signage.

64 - West Mersea Yacht Club owns/operates the moorings; opportunity for engagement/communications.

65- Packing Shed Marsh Trust; scope to provide continued support and engagement opportunities (note that this would require water-based access).

66 - Cob Marshes; good population of breeding waders and winter roost site. Scope for continued support and engagement opportunities.

67 - Old Hall Marshes; scope to extend and continue the work already being undertaken by Bird Aware (potentially with additional volunteer support), with planned work for next autumn. Seasonal ranger roles work well, but accessibility routes need to be considered. The combination of Share our Shores messaging, habitat creation, and the work of Bird Aware have all led to increases in on-site Ringed Plover activity and lowered levels of disturbance. Note that access across the site may require the use of an off-road vehicle, with associated time/costs associated with purchase/hire and staff training (one off cost per ranger renewed every 3 years).

68 - Copt Hall (National Trust); scope for Bird Aware Essex Coast to work with the Trust, potentially via signage and dog-focussed engagement in the site car park.

69 - Scope for engagement along seawall. Would potentially be beneficial to include Bird Aware messaging on coast path signage/interpretation. Potential to support current and future BUDS island creation in this area and provide dedicated ranger time.

70 - Disturbance from boats landing, anglers, low helicopters. Opportunity for a water-based ranger (or water-based access for the Bird Aware Essex Coast team) and scope to identify refuge areas. All islands within the Blackwater (e.g. Little Cob, Great Cob, etc.) have many roosting/wintering birds and monitoring would be beneficial here. A new BUDS location is also planned in the vicinity, with advance engagement with water users (concerning the importance of the new habitat for birds and requests not to land there) potentially also proving beneficial.

71 - Abbotts Hall Farm Nature Reserve will have an access point resulting from the opening of the UK Coast Path. It's likely that there will be no dog access into the farm, but the coast path will allow dogs – scope for ranger presence and visitor management, including signage and interpretation. A people counter is already in place here but may need upgrading at some point.

73 - Kayaks, stand-up paddleboards, and drones visit Old Hall Creek, although it's unclear where they are launching from. The whole area is important for birds, as it's usually relatively quiet. Also scope for engagement in the nearby Tollesbury Marina.

74 - Lauriston Farm and Goldhanger Creek area: potentially key location for engagement with both landowners and site users, and also important for birds. Scope for signage and targeted engagement with dog walkers on sea wall, with some potential scope for screening (although at a difficult location).

75 - Goldhanger pub; scope for engagement and important for birds.

76 - Osea Seawall also an important roost site towards Goldhanger, with scope for ranger stationing and patrols.

77 - Possible launch point; scope for ranger present and signage, etc.

78 - Osea Road Caravan Park & Heybridge Basin; scope for engagement at both. Note that the park is being extended which may lead to an increase in people accessing the seawall and estuary – need to consider future engagement.

79 - New BUDS project by roost at Northey Island. Would benefit from working alongside the National Trust to undertake monitoring and/or engagement with people on the water, with potential to enforce no landings.

80 - Planned enlargement at Osea Caravan Park; may affect Osea Island roost.

81 - Heybridge Basin and Gravel Pits likely comprise functionally linked land; scope for engagement with landowners about usage (although noted to be potentially contentious) and update of existing interpretation materials.

82 - Maldon Council funds the role of River Bailiff on the Blackwater. Scope for Bird Aware to support the service, which would be beneficial in the event of BUDS-related habitat creation.

83 - Promenade Park: key engagement location with potential for improved interpretation and dog-focused engagement.

84 - Northey Causeway; scope for renewed engagement and signage (although issues with vandalism) on access to the causeway, in partnership with the National Trust. Focus on Promenade Park also, as the main access point towards the causeway.

85 - Maylandsea is a popular site for boat and watercraft launches; scope for engagement. A people counter is already in place here but may need upgrading at some point.

86 - Steeple Point; popular for boat launching and watercraft – scope for engagement. Jet ski access from the slipway is also an issue which may benefit from targeted interventions, including partnering with the caravan park and council, alongside enforcement.

87 - St Lawrence supports intertidal seagrass (an SAC feature) subject to restoration activities; opportunity to ensure ongoing protection.

88 - Caravan park is subject to ongoing restoration works and will likely be busier in the future – would benefit from comms links, engagement, and partnership working. The location is an important access point for water-based activities , with scope for targeted visitor and landowner engagement.

89 - The slipway near the caravan park is likely to be more frequently used in the future. Also scope for engagement at rejuvenating saltmarsh area alongside Promenade Way.

90 - Opportunity for engagement with marina.

91 - Scope for engagement with Outdoor Essex at Bradwell Marina, alongside signage for paddlecraft at slipways, etc.

Dengie & Crouch and Roach Estuaries

92 - Scope for signage/ranger point at public car park near Bradwell Power Station.

93 - Opportunity to check for antisocial behaviour (e.g. off-road bikes), install barriers, or support landowners/liaise with police.

94 - Scope for signage to deter people walking out to the wader roost. Protection also of breeding birds, potentially including temporary fencing. Some monitoring along this stretch may also prove beneficial to allow for adaptive management/adjustment of the site-based approach.

95 - Potential for engagement with the Church of England and community settlement to the north re: info about birds/disturbance at St Peter's Chapel, with scope to install signage at the latter.

96 - Scope to install a new people counter at St Peter's Chapel car park and update the existing signage.

97 - Scope to reduce promotion/deter cyclists along the Dengie coastline – cyclists are not legally allowed along sea wall/public footpaths in this area already.

98 - Shell Bank; nesting site for Little Tern – scope for signage and additional monitoring.

99 - Potential paddlecraft launch point; scope for engagement with the landowner, alongside possible ranger presence and signage.

100 - Potential to work with local websites/operators to promote certain routes (hiking is currently promoted near Montsale).

101 - Potential paddlecraft launch point & angling location; scope to engage with the landowner, alongside possible ranger deployment and signage.

102 - Scope to engage with local landowners about access to the east of Burnham-on-Crouch.

103 - Scope for engagement with the new owners of the Wallasea Island foot ferry (potentially signage/info on ferry).

104 - Riverside Park; scope for engagement with dog walkers, with an aspiration to keep use within the park and off the intertidal area – possible SANG potential also.

105 - Scope for engagement with yacht clubs/marina at Burnham-on-Crouch.

106 - Creeksea launch area with road access; potential engagement point/liaison with landowners.

107 - Marina south of Althorne station; scope for community engagement and leafleting/engagement with visitors to the Crouch vineyards.

108 - Scope for engagement with the Bridgemarsh Island Trust (wildfowlers) and Crouch Harbour Master re: jet skis in the creeks.

109 - Blue House Farm; scope for providing information for dog walkers, including keeping out of waterbodies, reedbeds, and important bird areas.

110 - Blue House Farm; scope to engage in monitoring of low tide access, in terms of disturbance risk. Would also likely prove useful at a couple of other locations along the Crouch.

111 - Blue House Farm; potential to support grazing and lambing and roll out engagement alongside robust fencing to target dog attacks and related disturbance. Also scope for volunteer involvement seasonal support potential.

112 - Scope for engagement with yacht haven/marina/sailing club near Stow Creek.

113 - Stow Creek high tide roost; potential to maintain a watching brief.

114 - Potential for interpretation boards and bird hide in the future at Marsh Farm Country Park along footpath near the roost area.

115 - Opportunity to protect islands around wader roost (Clements Green Creek – Marsh Farm Country Park).

116 - Scope to institute speed restrictions/signage around Clements Green Creek for water-based access.

117 - Kayak/paddleboard launch point directly from housing near to Clements Green Creek; scope for engagement/signage.

118 - Opportunities for fencing to protect fields from access at Marsh Farm Country Park, particularly during winter months.

119 - Scope to support Marsh Farm Country Park with engagement and signage, particularly around dogs.

120 - Scope for (ongoing) engagement with local community and the Town Council at South Woodham Ferrers.

121 - Potential to engage with the Harbour Master/water police/community to reduce issues with jet skis.

122 - Scope for engagement alongside greenspace area.

123 - Two yacht clubs and water ski club at South Woodham Ferrers; potential engagement opportunity.

124 - Scope for engagement with Eyott Sailing Club.

125 - Woodham Fen wader roost; opportunity to reinstate people counter. A pressure point with Open Access, which adds to its vulnerability. Scope to support EWT here, potentially including increased ranger focus and access infrastructure.

126 - Scope for engagement with Hayes Country Park; residential access directly to the sea wall.

127 - West of Hullbridge and Kendal Park; opportunity to discourage dog access onto the saltmarsh via signage, screening, and engagement.

128 - Hullbridge; potential to upgrade people counter in Kendal Park. Also scope for engagement, signage, and interpretation.

129 – Scope for engagement at jet ski launch site near Hullbridge.

130 - Scope for engagement with the caravan park.

131 - East of Brandy Hole; key area for potential monitoring, as access may change in the future. Also, a (potentially occasional) jet ski launch point, which requires monitoring to confirm.

132 - East of Hullbridge; low levels of use from kayaks etc. Scope to maintain a watching brief.

133 - Lion Creek; narrow with a high risk of disturbance. Scope for ranger provision, screening, and/or signage to reduce disturbance here.

134 - Opportunity to run pop-ups at Wallasea Island with the RSPB, as necessary.

135 - Purdeys Industrial Estate; scope for ranger presence/engagement. There is a large boatyard here that may contain residential and visiting pleasure boats

Benfleet & Southend Marshes, Thames Estuary and Marshes, & Foulness

136 - Likely changes in access to Potton Island (MOD disposing of it); opportunity to maintain a watching brief.

137 - Likely changes in access to Rushley Island (MOD disposing of it); opportunity to maintain a watching brief. Scope to provide site-specific engagement and signage around seagrass with respect to trampling and mooring damage.

138 - Wakering Stairs; roosting waders, but recreational access to the saltmarsh - potential location for Ranger engagement, signage and leaflets. Scope to provide site-specific engagement and signage around seagrass with respect to trampling and mooring damage. There are popular guided walking tours to Foulness island via the Broomway from Wakering Stairs. Also note need for continued engagement with MOD over protection of Foulness SPA.

139 - Scope for engagement with kite surfing community on mudflats by East Beach. Scope to provide site-specific engagement and signage around seagrass with respect to trampling and mooring damage.

140 - Opportunity to produce a visitor management strategy for East Beach and Gunners Park, including focus on dog walkers, kite surfing, bait digging, and cockle digging, whilst ensuring engagement with local stakeholders (such as Coastwatch and Southend Association of Voluntary Services). Scope to provide site-specific engagement and signage around seagrass with respect to trampling and mooring damage.

141 - Increase in tourism (possibly from London) at East Beach via the train station; scope for engagement at the station and with other travel providers (e.g. C2C) and the bus stops around the site.

142 - Opportunity to enhance marker buoys around the accessible area of East Beach.

143 - Scope for additional resources, in terms of council (Bird Aware?) presence along Southend Foreshore.

144 - Near Gog's Berth; scope for jetty engagement with bait diggers, alongside signage and access management.

145 - Scope for engagement with Thorpe Bay Yacht Club.

146 - The car park behind Uncle Tom's Cabin is a key access point and engagement location, including with the members of the kite surfing club and beach hut group.

147 - Opportunities for engagement with organised events (fireworks in winter, runs in summer (e.g. RNLI September fun run), etc).

148 - Mullberry Harbour; running and other groups run over sea grass at low tide, accessing from Thorpe Bay Beach.

149 - Scope to stop the trampling of Eel Grass beds; potential to institute a voluntary non-anchoring zone?

150 - Southend Pier; huge scope for visitor engagement.

151 - Scope for discussions with commercial watersport providers around the entire Southend area.

152 - Scope for engagement with watersports enthusiasts and updated interpretation along Southend foreshore.

153 - Chalkwell/Leigh-on-sea area: scope for general ranger-led engagement and updating of signage, particularly at water sports launch points near café.

154 - Opportunity to support messaging and resources concerning dogs entering the water at Two Tree Island.

155 - Scope to collect data from the foraging community about their access and what they are gathering, with people accessing the saltmarsh. Also scope for signage.

156 - Two Tree Island; opportunity to provide better protection for the borrow dyke, with dogs and people currently entering the water.

157 - Two Tree Island; potential to institute a voluntary non-anchoring zone to protect the sea grass, alongside engagement and provision of better mooring options that don't damage the seabed.

158 - Scope to support EWT and the local authority with signage identifying Two Tree Island as a nature reserve before people access it.

159 - Scope for a redesign of parking to influence visitor movements, alongside a targeted reduction in antisocial behaviour.

160 - Scope for engagement, awareness raising, and signage at Two Tree Island.

161 - Scope for engagement with model aircraft operators flying at Two Tree Island.

162 - Potential to create a visitor management strategy for Two Tree Island.

163 - Scope for a redesign of parking to influence visitor movements, alongside a targeted reduction in antisocial behaviour.

164 - Paddlecraft, swimming and water entry point on slipway; opportunity for guidance, engagement, and signage.

165 - Canvey Point; access point to historical roost site. Opportunity to limit access, allow roost to re-establish, and carry out monitoring. The area down towards the seawall at the bottom of the point is also busy and has potential for engagement.

166 - Scope for improved signage and engagement (including leaflet boxes) at Canvey Heights Country Park.

167 - Jet skis and motorcraft an issue at Hadley Ray Creek; scope to work with the marine police to find the launch point.

168 - Scope for a watching brief, make sure the barriers to the lagoon are effective. Monty's Lookout also comprises a potentially useful engagement location.

169 - Hadleigh Country Park; scope for engagement with paddleboarders and also potential to create circular routes and SANG.

170 - Opportunity for information board (long walks from here to Two Tree Island). A people counter is already in place here but may need upgrading at some point.

171 - Opportunity for signage on community buildings and businesses near Thorney Bay.

172 - Scope for engagement and ranger focus at Thorney Bay.

173 - Scope for engagement with dog walkers and cyclists at Bowers Marsh, alongside installation of a people counter. A key roosting and feeding area at which it may be possible to provide support to the RSPB.

174 - Jet skis activity linked to Hadley Ray Creek; opportunity for speeding restrictions and limiting use.

175 - Slipway for jet skis at Wat Tyler Park; scope for engagement and signage.

176 - Bikes accessing seawall at Fobbing; opportunity to support actions to stop antisocial behaviour.

177 - Bikes accessing seawall at Fobbing; opportunity to support actions to stop antisocial behaviour.

178 - Functionally linked land near Great Garlands Farm; opportunity to protect it from development.

179 - Standford Wharf; scope to restrict off-road vehicle access and raise awareness around nature conservation issues, support improved or additional signage across the site and at access points, and to jointly identify engagement opportunities with the landowner.

180 - Scope to introduce more barriers at Stanford-le-Hope Marshes.

181 - Stanford Wharf; scope to restrict off-road vehicle access and raise awareness around nature conservation issues, support improved or additional signage across the site and at access points, and to jointly identify engagement opportunities with the landowner.

182 - Illegal fishing occurs on the spit onto Mucking Flats; opportunity to control antisocial behaviour.

183 - Thameside Nature Reserve Car Park; potential engagement point for rangers. The second car park at the entrance to the reserve connects with the walking route from Coalhouse Fort and would potentially benefit from engagement, signage, etc.

184 - Opportunity to maintain a watching brief for bird use as the landfill near Mucking Flats is decommissioned.

185 - Scope to support reductions in antisocial behaviour (fires, etc.) near the lake.

186 - Scope to create, promote, and maintain a circular route between Coalhouse Fort and Thameside.

187 - Lagoon; opportunity for engagement and signage.

188 - Scope for ranger focus at Coalhouse Fort, with potential for signage (although issues with permissions due to sensitive nature of the site). Also, a potential engagement location here (in association with the public car park), with on-site facilities, café, etc. and potential scope for dog-focussed activities. Important to note that Council Ranger resources have been reduced on site.

Additional sites and opportunities added after workshop

189 – Hullbridge, potential for signage at access point to the PROW (Dengie & Crouch and Roach Estuaries).

190 – Scope for engagement at Kingsman Point, Brandy Hole Yacht Club and Riverside Café (Dengie & Crouch and Roach Estuaries).

191 - Potential for signage at access point to the PROW to the river, potential for engagement with South Fambridge residents (Dengie & Crouch and Roach Estuaries).

192 - Signage and leaflets at Riverside Village (Dengie & Crouch and Roach Estuaries).

193 - Baltic Wharf Industry Estate and Essex Marina - increased monitoring and potential for engagement here (Dengie & Crouch and Roach Estuaries). Note - There is also a large boatyard here and may contain residential and visiting pleasure boats.

194 – Scope for engagement at Eastend, Paglesham. Visitors to local pub likely to travel down the River Roach (Dengie & Crouch and Roach).

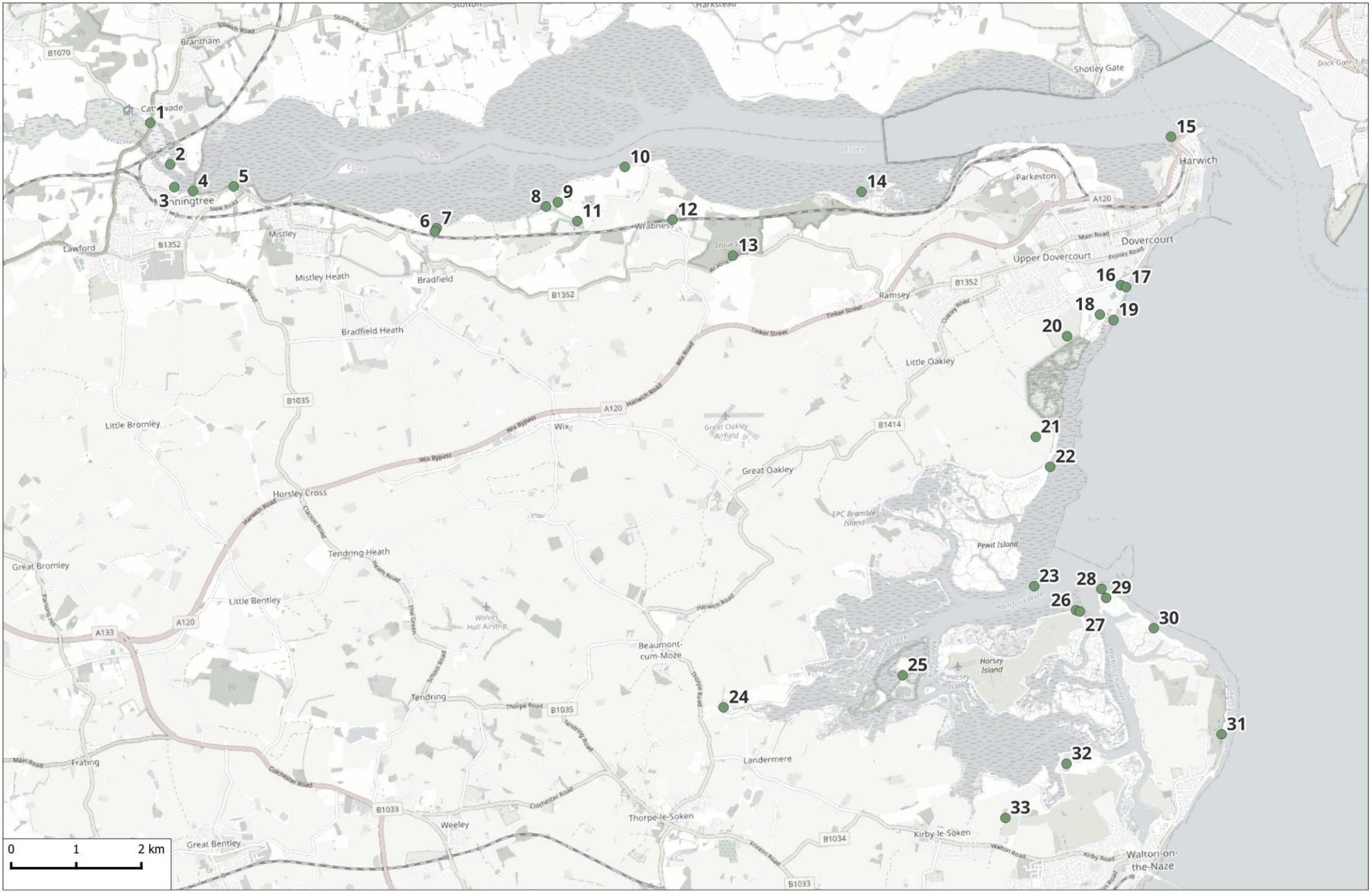
195 - Scope for engagement at Churchend, Paglesham. Visitors to local pub likely to travel down the River Roach (Dengie & Crouch and Roach).

196 - Scope for monitoring at Stannets Creek Reservoir (Dengie & Crouch and Roach).

197 - Scope for ranger presence/engagement and signage/leaflets at Barling Magna Wildlife Reserve (Dengie & Crouch and Roach).

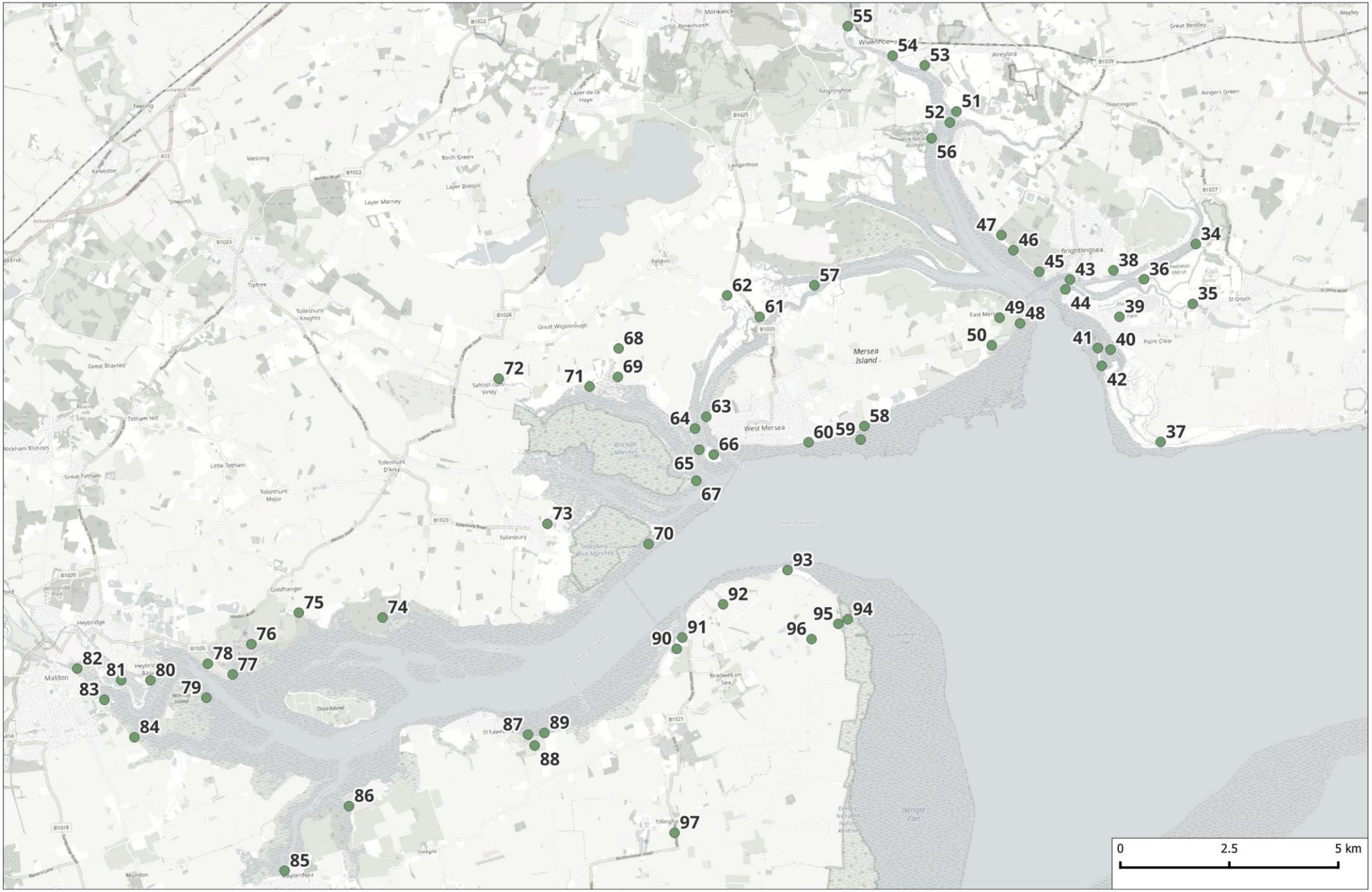
198 – Scope for engagement at Little Wakering / Barling (Dengie & Crouch and Roach).

Map 6: Stour and Orwell Estuaries & Hamford Water workshop output (note the Orwell Estuary is dealt with under the Suffolk RAMS)



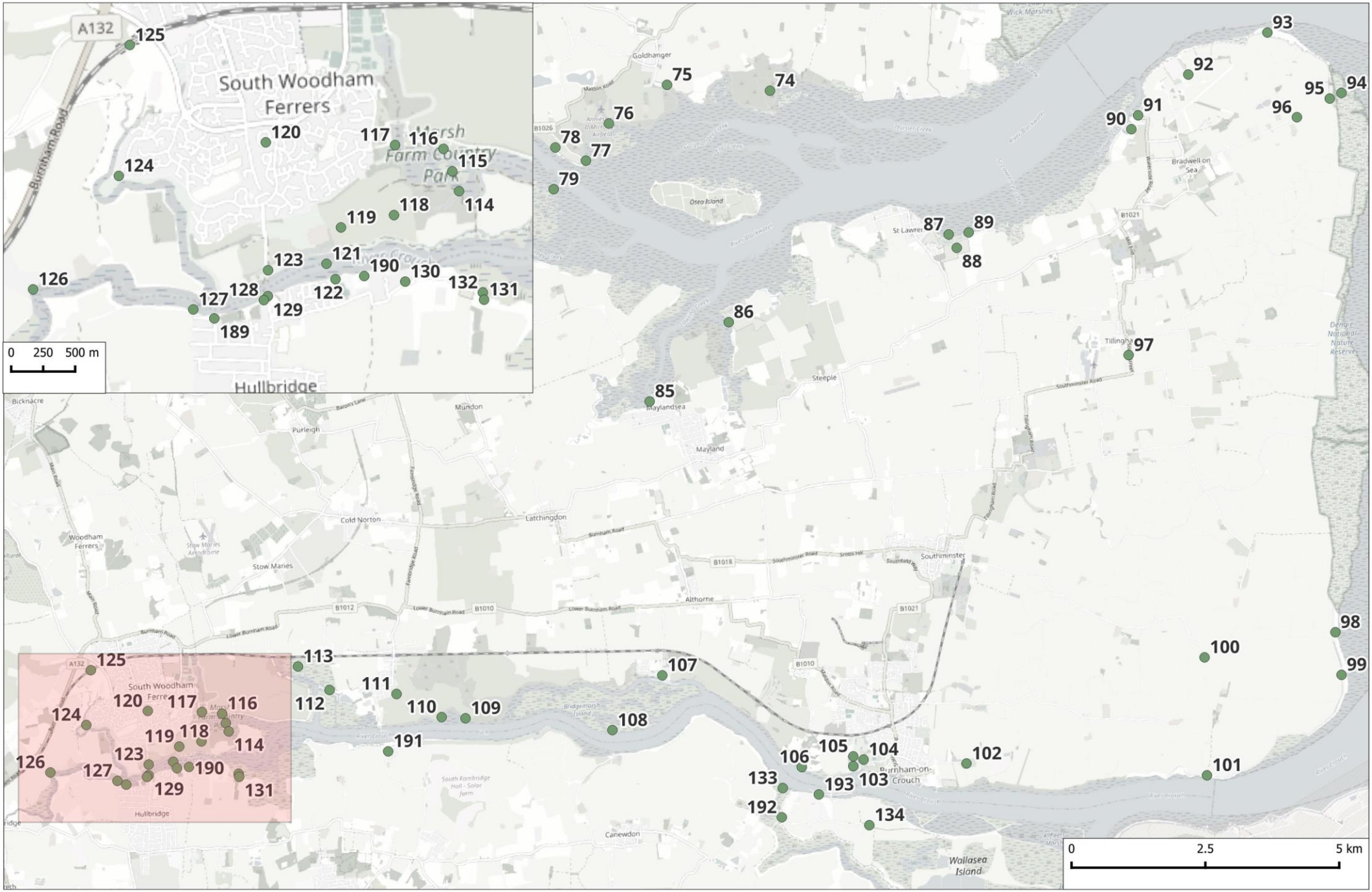
Contains Ordnance Survey data © Crown copyright and Database Right 2025. Contains map data © OpenStreetMap contributors. Terms: www.openstreetmap.org/copyright Designated site boundaries download from the Natural England website © Natural England.

Map 7: Blackwater and Colne Estuaries workshop output



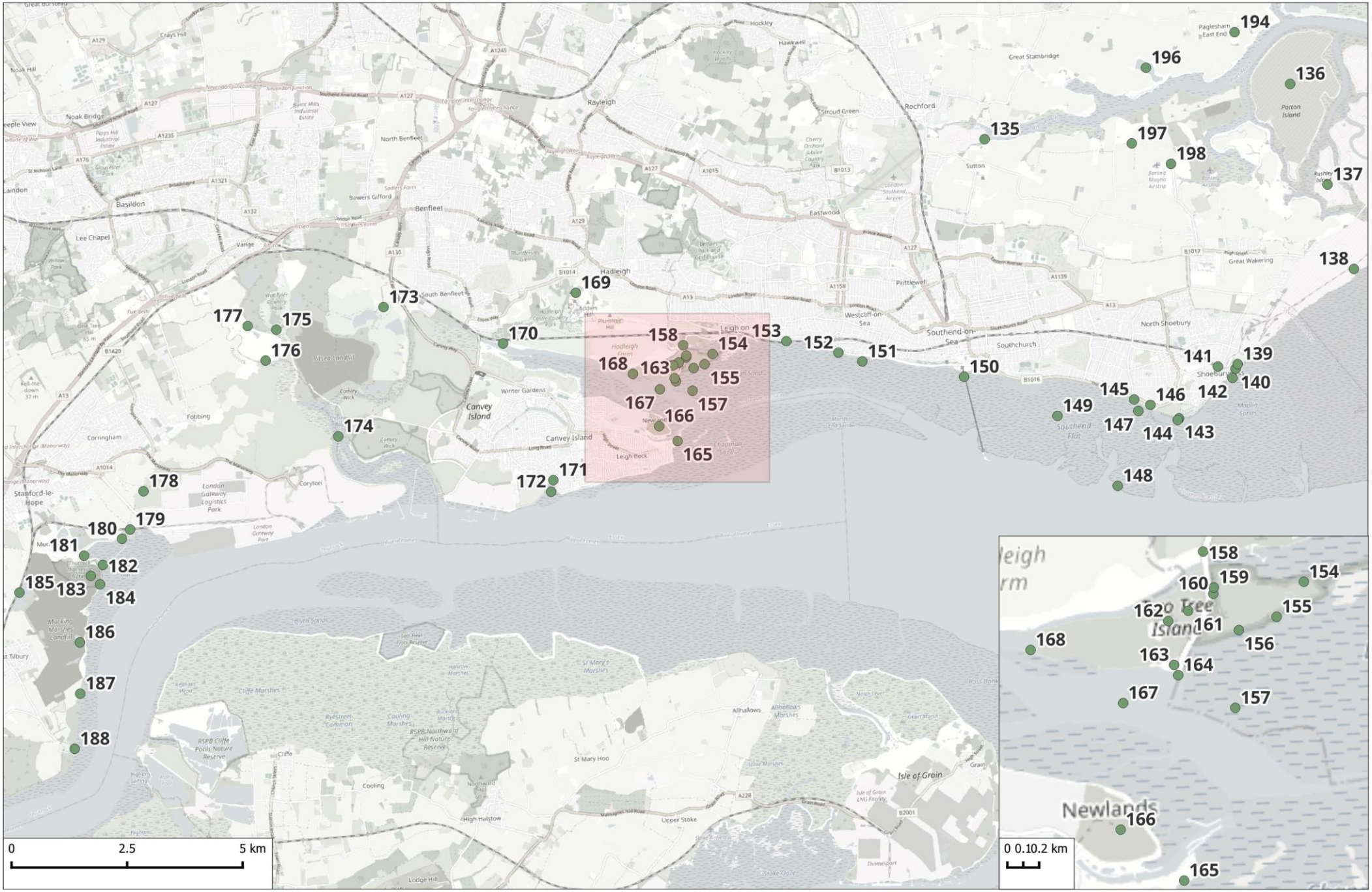
Contains Ordnance Survey data © Crown copyright and Database Right 2025. Contains map data © OpenStreetMap contributors. Terms: www.openstreetmap.org/copyright Designated site boundaries download from the Natural England website © Natural England.

Map 8: Crouch and Roach Estuary & Dengie workshop output (inset refers to red shaded area on main map) - note that point 135 is shown on Map 9 (Benfleet and Southend Marshes, Thames Estuary and Marshes, & Foulness workshop output)



Contains Ordnance Survey data © Crown copyright and Database Right 2025. Contains map data © OpenStreetMap contributors. Terms: www.openstreetmap.org/copyright Designated site boundaries download from the Natural England website © Natural England.

Map 9: Benfleet and Southend Marshes, Thames Estuary and Marshes, & Foulness workshop output (inset refers to red shaded area on main map) - note that point 135 is an output from the Crouch and Roach Estuary & Dengie workshop



Contains Ordnance Survey data © Crown copyright and Database Right 2025. Contains map data © OpenStreetMap contributors. Terms: www.openstreetmap.org/copyright Designated site boundaries download from the Natural England website © Natural England.

Appendix 2: Estimates of housing growth potentially requiring mitigation

This appendix provides background on how the figures in Table 5 were derived. Notes on each column are provided after the table.

The basic formula applied for each authority is: (Local Plan Housing Requirement - Sites with PP and Completions) × % in RAMS ZOI

A	B	C	D	E	F	G	H	I
LPA	Stage of Plan Preparation	Plan Period	SM/Published Target per year	Housing Requirement for Plan Period (stated/calculated)	Sites with PP (April 2026)	and completions before 2026	% in RAMS ZOI	Result (E - F - G) * H
Basildon	Reg 18 Local Plan	2023-2043	1,400	28,005	3,342	589	90	21,667
Braintree	Reg 18 Local Plan Review – March 2026	2026-2042	1,115	17,840	5,070	0	90	11,493
Brentwood	Adopted 2022, Call for sites - reg 18 2026	2026-2042	456	7,752	1,632	0	50	3,060
Castle Point	Plan was submitted for Examination in January 2026	2026-2043	701	6,196	739	0	100	5,457
Chelmsford	Reg 19 Local Plan Review, Submission 2026	2022-2041	1,437	24,915	2,510	2650	100	19,755
Colchester	Reg 18 Local Plan Review - December 25	2026-2042	1,300	20,800	4,365	0	100	16,435
Maldon	Exploring options to transition into the new plan-making system in 2026	2023-2043	583	11,660	1,736	403	100	9,521
Rochford	Reg 18 consultation February – March 2026	2023/24 - 2042/43	689	14,469	2,013	0	100	12,456
Southend	Preferred Approach Consultation 2025, reg 18 summer 2025	2025-2050	1,181	29,525	4,081	0	100	25,444
Tendring	Reg 18 Preferred Options consultation	2025 – 2042	1,063	18,071	4,541	679	100	12,851
Thurrock	Local Plan Initial Proposals, reg 19 2026	2024-2044	1,077	21,540	1,200	0	50	10,170
Uttlesford	Full Council in March 2026 to be invited to adopt the Local Plan.	2021-2041	785	13,500	9,247	0	Minimal	0

Notes

B. Stage of Plan Preparation: The further away an LPA is from publishing a Local Plan (Regulation 18 or 19), the less certainty.

C. Plan period: while the plan period ends circa 2041 for most LPAs, there is one exception (Southend) which extends 10 years beyond until 2050.

E: Housing requirement figure (column D): In agreement with Natural England, the preferred approach was sourced from the Local Plan housing target. In some cases, a published figure is not available so a Standard Method calculation (annual SM x 15) is used. The final figure was confirmed with the LPA in most cases, with the exception of Thurrock.

- Additional note: Some LPAs will have published figures which are below SM, this means there could be some additional uncertainty until the Local Plan is examined. Some LPAs have stepped trajectories, meaning that delivery of housing is later in the plan period, for simplicity no adjustment was made to account for this.

F: Sites with planning permission: as of April 2026.

- Additional note: for simplicity no discount is made for lapse rates.

G: Completions that occurred before 2026: This cannot yet be calculated but an adjustment can be made later.

H: RAMS Zone of Influence (ZOI) Adjustment: percentage of the LPA's area within the RAMS ZOI.

- Student, care homes and specialist housing are accounted for in accordance with the Local Plan for simplicity. It is understood that each LPA will deliver these forms of housing which may attract a discount RAMS rate.

I: Result: Final Calculation

- (Local Plan Housing Requirement - Sites with PP and Completions) × % in RAMS ZOI

- (E - (F + G)) * H
- For Uttlesford, only a tiny area is within the Zone of Influence and no growth is anticipated within this area.

Appendix 3: SAMM costs

The table below summarises the mitigation measures as set out in the strategy and the relevant costs for each. These have been used to calculate the overall cost of mitigation. Costs are estimates only and intended to provide the overall level to set tariff, costs to be reviewed and updated as strategy implemented, and budgets adjusted according to housing growth. Where staff posts are referred to, 'fte' refers to full-time equivalent.

Mitigation measure	One-off/ Capital cost	Rolling cost	Multiplier for rolling cost	Total cost	Notes on how cost calculated
Delivery Manager		£69,800	80	£5,584,000	£48000 annual salary, plus 35% (to cover NI, superannuation, etc.) and £5000 per annum support costs (training, equipment etc).
Ranger team leaders (2 posts)		£104,500	80	£8,360,000	2 fte posts, each with £35000 annual salary, plus 35% (to cover NI, superannuation, etc.) and £5000 per annum support costs (training, personal equipment etc).
Rangers (6 full-time, 3 seasonal)		£341,250	80	£27,300,000	7.5 fte, each with £30000 annual salary, plus 35% (to cover NI, superannuation, etc.) and £5000 per annum support costs (training, personal equipment etc).
Vehicles and other resources for rangers		£55,000	80	£4,400,000	4 vehicles, costed at: £450 per month to lease per vehicle, £1500 for livery, £2000 p.a. insurance, 15000 miles p.a. at 0.25p per mile running costs/charging. £2000 annual budget for team equipment. Rounded up to £55,000 to cover sundries (including parking charges) and personal mileage (some of which will still be required).
Dog project staffing costs		£52,250	80	£4,180,000	£35000 annual salary, plus 35% (to cover NI, superannuation, etc.) and £5000 per annum support costs (training, equipment etc). Costed in-perpetuity
Dog project resources		£8,000	80	£640,000	Travel costs at 5000 miles p.a. and 0.45p per mile. Assumes use of own vehicle or wider project vehicles. Additional costs of £5000 to cover resources and equipment. Rounded up to cover sundry expenses, parking etc.
Communications Officer staffing costs		£31,350	80	£2,508,000	£35000 annual salary, plus 35% (to cover NI, superannuation, etc.) and £5000 per annum support costs (training, equipment etc). Costed in-perpetuity, part time (0.6 fte).
Comms costs		£11,000	80	£880,000	Costs provide budget for printing, design, image sourcing, events etc as required.
Production of monitoring strategy & monitoring support	£17,500			£17,500	Initial budget to cover commission of a monitoring strategy and support to ranger team and delivery officer to ensure robust monitoring protocol and recording forms
Monitoring and data staffing costs		£28,625	80	£2,290,000	£35000 annual salary, plus 35% (to cover NI, superannuation, etc.) and £5000 per annum support costs (training, equipment etc). Part time (0.5 fte). Costed in-perpetuity

Mitigation measure	One-off/ Capital cost	Rolling cost	Multiplier for rolling cost	Total cost	Notes on how cost calculated
Monitoring resources		£15,000	80	£1,200,000	Indicative budget providing resources for purchasing and replacing equipment and commissioning surveys. Costs likely to vary between years and will be set out in monitoring strategy
Visitor survey		£35,000	16	£560,000	Cost allows for 16 repeat surveys - potentially one survey every 5 years for 80 years.
Education/community engagement officer		£52,250	80	£4,180,000	£35000 annual salary, plus 35% (to cover NI, superannuation, etc.) and £5000 per annum support costs (training, equipment etc). Costed in-perpetuity
Resources for schools and events		£6,000	80	£480,000	Indicative budget providing resources to get material printed, develop school packs, teaching resources etc. Budget small but should be possible to work with other mitigation projects to borrow content, ideas and material etc
Engagement material for holiday parks etc.	£15,000			£15,000	One off cost to cover bringing in specialist help to contact parks and develop material. Delivery and further work as necessary by comms post.
Site-specific projects		£125,000	80	£10,000,000	There are 9 SPA/Ramsar sites and the budget therefore provides around £13,888 per annum per site. This is an indicative sum intended as a guide only, potentially sufficient to fund 1-3 small projects at each site. No requirement to ensure projects at each site each year and scope to deliver larger one-off projects at a single location if substantial mitigation benefit. Annual budget with scope for amount to flex between years depending on housing delivery and available funds. Projects such as creating new routes/paths or changes to car parks likely to be one-off and simply require money in a single year. 80 year time period provides scope for scattering of small projects around coast in a given year.