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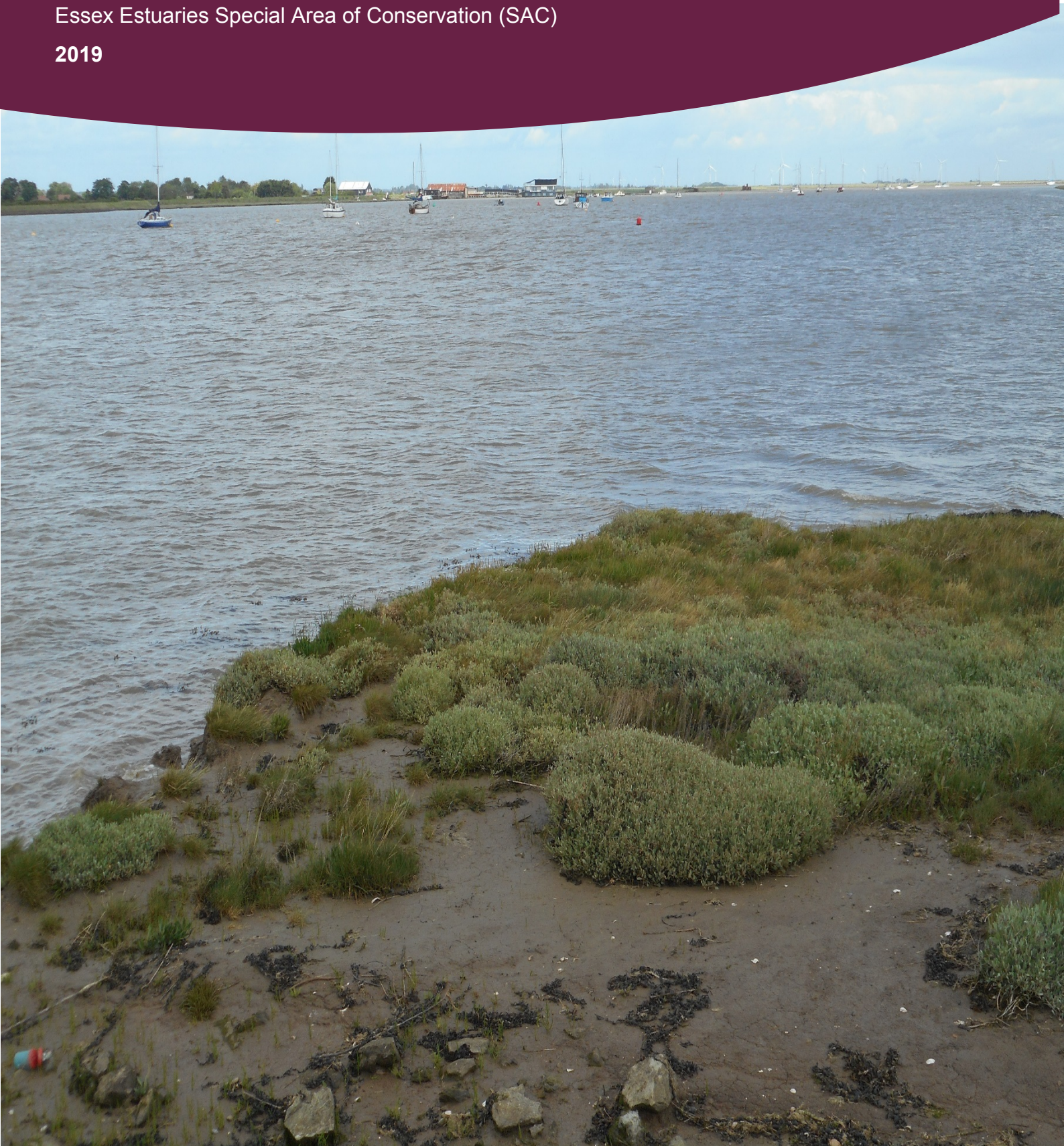
Habitats Regulations Assessment of England Coast Path proposals between Southend-on-Sea and Wallasea Island

On Benfleet and Southend Marshes Special Protection Area (SPA) and Ramsar site, Foulness SPA and Ramsar site, Crouch and Roach Estuaries SPA and Ramsar site, Outer Thames Estuary SPA, and Essex Estuaries Special Area of Conservation (SAC)

2019



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I) Introduction

This is a record of the Habitats Regulations Assessment ('HRA') undertaken by Natural England (in its role of competent authority) in accordance with the assessment and review provisions of the Conservation of Habitats and Species Regulations 2017 (as amended) ('the Habitats Regulations').

Natural England has a statutory duty under the Marine and Coastal Access Act 2009 to improve access to the English coast. This assessment considers the potential impacts of our detailed proposals for coastal access from Southend-on-Sea to Wallasea Island, including the Wallasea Island coast, on the following sites of international importance for wildlife: Benfleet and Southend Marshes Special Protection Area (SPA) and Ramsar site, Foulness SPA and Ramsar site, Crouch and Roach Estuaries SPA and Ramsar site, Outer Thames Estuary SPA, and Essex Estuaries Special Area of Conservation (SAC).

This assessment should be read alongside Natural England's related Coastal Access Reports which between them fully describe and explain its access proposals for the stretch as a whole. The Overview explains common principles and background and the reports explain how we propose to implement coastal access along each of the constituent lengths within the stretch**.**

https://www.gov.uk/government/publications/england-coast-path-from-southend-on-sea-to-wallasea-island-comment-on-proposals

II) Background

The main wildlife interests for this stretch of coast are summarised in Table 1 (see Table 3 for a full list of qualifying features).

Table 1. Summary of the main wildlife interest

Interest	Description
Non-breeding waterbirds	Over the winter and during spring and autumn migration periods the Benfleet and Southend Marshes, Foulness, and Crouch and Roach Estuaries SPAs and Ramsar sites support internationally important assemblages of waterbirds, including several species present in internationally or nationally important numbers. Extensive intertidal mudflats are the key feeding areas for many species. Saltmarshes, grazing marshes and water bodies - both within the sites and nearby - are also important feeding habitats, as are adjacent arable fields and grassland. Many species need suitable undisturbed places to roost at high tide, usually on saltmarsh.
Breeding terns and waders	Three tern and two wader species (avocet and ringed plover) breed on Foulness SPA in important numbers in spring/summer. They mainly nest on sparsely vegetated shingle, shell or sand. Near the SPA,

Interest	Description
	suitable habitat was recently created at Wallasea Island and is now important for at least two species. The waders feed in a variety of wetland habitats generally near their nest sites. The terns forage more widely along the coast and offshore in the Outer Thames Estuary SPA.
Saltmarsh and other intertidal habitats	The Essex Estuaries SAC covers a diversity of intertidal and subtidal habitats. These are of considerable importance in their own right and also as essential supporting habitat for SPA and Ramsar site species and other wildlife. They including a wide variety of saltmarsh types and extensive mudflats and sandflats. Along the open coast at Foulness, the intertidal flats support some of the most extensive eelgrass beds in the country.
Assemblages of wetland plants and invertebrates	The Foulness and Crouch and Roach Estuaries Ramsar sites support assemblages of plants and invertebrates that are nationally scarce, rare and/or declining. Most of these species are associated with saltmarshes, grazing marshes and their ditches, or other brackish coastal habitats such as sand/shingle and the borrow dykes and foldings behind sea defences.

III) Our approach

Natural England's approach to ensuring the protection of sensitive nature conservation features under the Coastal Access Programme is set out in section 4.9 Coastal Access: Natural England's Approved Scheme 2013 [Ref 7].

Our final published proposal for a stretch of England Coast Path is preceded by detailed local consideration of options for route alignment, the extent of the coastal margin and any requirement for restrictions, exclusions or seasonal alternative routes. The proposal is thoroughly considered before being finalised and initial ideas may be modified or rejected during the iterative design process, drawing on the range of relevant expertise available within Natural England.

Evidence is also gathered as appropriate from a range of other sources which can include information and data held locally by external partners or from the experience of local land owners, environmental consultants and occupiers. The approach includes looking at any current visitor management practices, either informal or formal. It also involves discussing our emerging conclusions as appropriate with key local interests such as land owners or occupiers, conservation organisations or the local access authority. In these ways, any nature conservation concerns are discussed early and constructive solutions identified as necessary.

The conclusions of this assessment are approved by a member of Natural England staff who is not a member of the coastal access programme team and who has responsibility for protected sites. This ensures appropriate separation of duties within Natural England.

IV) Aim and objectives for the design of our proposals

The new national arrangements for coastal access will establish a continuous well-maintained walking route around the coast and clarify where people can access the foreshore and other parts of the coastal margin. These changes will influence how people use the coast for recreation and our aim in designing our detailed proposals has been to secure and enhance opportunities for people to enjoy their visit whilst ensuring appropriate protection for affected European sites.

A key consideration in developing coastal access proposals for this stretch has been the possible impact of disturbance on waterbirds as a result of recreational activities. Objectives for design of our proposals have been:

- to avoid exacerbating issues at sensitive locations by making use of established coastal paths
- where there is no suitable established and regularly used coastal route, to develop proposals that take account of risks to sensitive nature conservation features and incorporate mitigation as necessary in our proposals
- to clarify when, where and how people may access the foreshore and other parts of the coastal margin on foot for recreational purposes
- to work with local partners to design detailed proposals that take account of and complement efforts to manage access in sensitive locations
- where practical, to incorporate opportunities to raise awareness of the importance of this stretch of coast for wildlife and how people can help efforts to protect it.

V) Conclusion

We have considered whether our detailed proposals for coastal access between Southend-on-Sea and Wallasea Island might have an impact on the eight SPA, SAC and Ramsar sites along this stretch (see (I) above for list of sites). In Part C of this assessment we identify some possible risks to the relevant qualifying features and conclude that proposals for coastal access, without incorporated mitigation, may have a significant effect on these sites. In Part D we consider these risks in more detail, taking account of avoidance and mitigation measures incorporated into our access proposal, and conclude that there will not be an adverse effect on the integrity of any of these sites. These measures are summarised in Table 2 below.

Table 2. Summary of risks and consequent mitigation built in to our proposals

Risk to conservation objectives	Relevant design features of the access proposal
Repeated disturbance to foraging or resting birds during winter and on passage, following changes in recreational activities as a result of the access proposal, may lead	■ Access will be restricted year round to the coastal margin on Jubilee Marsh by a formal direction on nature conservation grounds.

Risk to conservation objectives	Relevant design features of the access proposal
to reduced fitness and reduction in population and/or contraction in the distribution of qualifying features within the site.	■ On the southern side of Wallasea Island, the route will be aligned along the folding, not on the seabank crest. ■ There will be a 'no dogs' restriction on all parts of the route around Wallasea Island that are not currently public rights of way, by a formal direction on nature conservation grounds. ■ On the south side of the Roach Estuary where the proposal will provide new access along the seabank, signage will inform walkers of access restrictions in the coastal margin and of ways to reduce bird disturbance. ■ Except at Jubilee Marsh, nearly all intertidal areas adjacent to the route are saltmarshes or mudflats unsuitable for walking, so access will be excluded by direction. (Though not a mitigation measure per se, this substantially reduces the risk of bird disturbance.)
Repeated disturbance to birds during the breeding season, following changes in recreational activities as a result of the access proposal, may lead them to abandon nesting areas or reduce their breeding success.	■ Access will be restricted year round to the coastal margin on Jubilee Marsh by a formal direction on nature conservation grounds. ■ There will be a 'no dogs' restriction on all parts of the route around Wallasea Island that are not currently public rights of way, by a formal direction on nature conservation grounds. ■ Except at Jubilee Marsh, nearly all intertidal areas adjacent to the route are saltmarshes or mudflats unsuitable for walking, so access will be excluded by direction.
Repeated trampling, following changes in recreational activities as a result of the access proposal, may damage sensitive habitats, plant communities or species, leading to long-term declines in their quality, distribution or numbers within the site.	■ Advisory signs at East Beach, Shoeburyness, will make walkers aware of the eelgrass beds on the intertidal flats beyond the beach and provide advice on how to avoid damaging them. ■ Access will be restricted year round to the grazing marsh within the coastal margin at Oxenham Farm by a formal direction on nature conservation grounds. ■ The trail is aligned inland of saltmarsh and other sensitive intertidal habitats within designated sites, except in one 200 m section near Wallasea

Risk to conservation objectives	Relevant design features of the access proposal
	Island where it crosses upper/transitional saltmarsh along an existing public footpath. ■ For most of its length the trail is aligned along the seabank crest following existing public or permissive footpaths. ■ Nearly all the saltmarsh and other sensitive intertidal habitats in the coastal margin are unsuitable for walking and access will be excluded by direction. ■ Signposts and waymarking will be used to ensure the route of the trail is clear and easy to follow.
New public access rights on grazed land as a result of the access proposal may lead to dogs or their owners scaring livestock, resulting in the temporary or permanent cessation of grazing management, or significant changes to the grazing regime. Where the grazed land affected supports important populations of rare plant species, this disruption of the grazing regime may lead to reduction in the species' populations and distribution within the site.	■ Access will be restricted year round to the grazing marsh within the coastal margin at Oxenham Farm by a formal direction on nature conservation grounds.

VI) Implementation

Once a route for the trail has been confirmed by the Secretary of State, we will work with Essex County Council to ensure any works on the ground are carried out with due regard to the conclusions of this appraisal and relevant statutory requirements.

VII) Thanks

The development of our proposals has been informed by input from people with relevant expertise within Natural England and other key organisations. The proposals have been thoroughly considered before being finalised and our initial ideas were modified during an iterative design process. We are particularly grateful to RSPB staff and volunteers for their information on bird numbers and distributions in and around the society's Wallasea Island Wild Coast Project reserve, and to other organisations and local experts whose contributions and advice have helped to inform development of our proposals.

PART A: Introduction and information about the England Coast Path

A1. Introduction

Natural England has a statutory duty under the Marine and Coastal Access Act 2009 to improve access to the English coast. The duty is in two parts: one relating to securing a long-distance walking route around the whole coast: we call this the England Coast Path; the other relating to a margin of coastal land associated with the route where in appropriate places people will be able to spread out and explore, rest or picnic.

To secure these objectives, we must submit reports to the Secretary of State for Environment, Food and Rural Affairs recommending where the route should be and identifying the associated coastal margin. The reports must follow the approach set out in our methodology (the Coastal Access Scheme), which – as the legislation requires – has been approved by the Secretary of State for this purpose.

Where implementation of a Coastal Access Report could impact on a site designated for its international importance for wildlife, called a 'European site[1]', a Habitats Regulations Assessment must be carried out.

The conclusions of this assessment are approved by a member of Natural England staff who is not a member of the coastal access programme team and who has responsibility for protected sites. This ensures appropriate separation of duties within Natural England.

Natural England's approach to ensuring the protection of sensitive nature conservation features under the Coastal Access Programme is set out in section 4.9 of the Coastal Access Scheme [Ref 7].

A2. Details of the plan or project

This assessment considers Natural England's proposals for coastal access along the stretch of coast between Southend-on-Sea and Wallasea Island. Our proposals to the Secretary of State for this stretch of coast are presented in a series of reports that explain how we propose to implement coastal access along each of the constituent lengths within the stretch. Within this assessment we consider each of the relevant reports, both separately and as an overall access proposal for the stretch in question.

Our proposals for coastal access have two main components:

- alignment of the England Coast Path; and,
- designation of coastal margin.

[1] Ramsar sites and proposed Ramsar sites; potential Special Protection Areas (pSPA); candidate Special Areas of Conservation (cSAC); and sites identified, or required, as compensatory measures for adverse effects on European sites are treated in the same way by UK government policy

England Coast Path

A continuous walking route around the coast – the England Coast Path National Trail - will be established by joining up existing coastal paths and creating new sections of path where necessary. The route will be established and maintained to National Trail quality standards. Where specified in our proposals, the coastal path will be able to 'roll back' as the coast erodes or where there is significant encroachment by the sea such as occurs when sea defences are breached deliberately as part of a coastal 'managed realignment' scheme.

Coastal Margin

An area of land associated with the proposed trail will become coastal margin, including all land seawards of the trail down to mean low water.

Coastal margin is typically subject to new coastal access rights, though there are some obvious exceptions to this. The nature and limitations of the new rights, and the key types of land excepted from them, are explained in more detail in Chapter 2 of our Coastal Access Scheme [Ref 7]. Where there are already public or local rights to do other things, these are normally unaffected and will continue to exist in parallel to the new coastal access rights. The exception to this principle is any pre-existing open access rights under Part 1 of the Countryside and Rights of Way Act 2000 (CROW) over land falling within the coastal margin: the new coastal access rights will apply in place of these. Those parts of the coastal margin on which new coastal access rights will apply are referred to as 'spreading room'.

Where public access on foot already takes place on land within spreading room without any legal right for people to use the land in this way, the new coastal access rights will secure this existing use legally. Access secured in this way is subject to various national restrictions. It remains open to the owner of the land, should they wish, to continue tolerating other types of established public use not provided for by coastal access rights.

The following points are of particular relevance to this assessment:

i) Large areas of land seaward of the trail along the two southernmost lengths of this stretch lie within the Foulness MoD area and are subject to military byelaws that restrict public access. They include intertidal areas and also land behind the sea defences.

ii) Access to nearly all other areas of saltmarsh and flats seaward of the proposed route in this stretch will be excluded year round by direction under s25A of the Countryside and Rights of Way Act (2000), because they are unsuitable for public access.

It should be noted that while neither of the above restrictions are made on nature conservation grounds, they are important in reducing the potential for adverse effects on waterbirds and other sensitive SPA, SAC, and Ramsar site features. Therefore if in future there is a proposal to remove these restrictions from any areas along the stretch, further Habitats Regulations Assessment would be essential.

Promotion of the England Coast Path

The Coast Path will be promoted as part of the family of National Trails. On the ground, the path will be easy to follow, with distinctive signposting at key intersections and places people can join the route. Directional way markers incorporating the National Trail acorn symbol will be used to guide people along the route. The coastal margin will not normally be marked on

the ground, except where signage is necessary to highlight dangers that may not be obvious to visitors, or to clarify the scope and/or extent of coastal access rights.

Maintenance of the England Coast Path

The access proposals provide for the permanent establishment of a path and associated infrastructure, including additional mitigation measures referred to in this assessment and described in the access proposals. The England Coast Path will be part of the National Trails family of routes, for which there are national quality standards. Delivery is by local partnerships and there is regular reporting and scrutiny of key performance indicators, including the condition of the trail.

Responding to future change

The legal framework that underpins coastal access allows for adaptation in light of future change. In such circumstances Natural England has powers to change the route of the trail and limit access rights over the coastal margin in ways that were not originally envisaged. These new powers can be used, as necessary, alongside informal management techniques and other measures to ensure that the integrity of designated sites is maintained in light of unforeseen future change.

Establishment of the trail

Establishment works to make the trail fit for use and prepare for opening, including any special measures that have been identified as necessary to protect the environment, will be carried out before the new public rights come into force on this stretch. Details of the works to be carried out and the estimated cost are provided in the access proposals. The cost of establishment works will be met by Natural England. Works on the ground to implement the proposals will be carried out by Essex County Council, subject to any further necessary consents being obtained, including to undertake operations on a SSSI. Natural England will provide further advice to the local authority carrying out the work as necessary.

PART B: Information about the European Site(s) which could be affected

B1. Brief description of the European Sites(s) and their Qualifying Features

Map 1 shows the boundaries of the European sites described below in the vicinity of the Southend-on-Sea to Wallasea Island stretch.

Benfleet and Southend Marshes SPA and Ramsar site

Benfleet and Southend Marshes SPA covers 2,250 ha along the north shore of the Thames Estuary from Canvey Island in the west to Shoebury Ness in the east. The site supports major concentrations of waterbirds over the winter and during spring and autumn passage, including internationally important numbers of brent geese and four species of wader. Much of the SPA comprises extensive intertidal flats lying off Southend's predominantly urban seafront. These flats are the key feeding habitat for the site's waterbirds. They range from sand and muddy sand in the east to soft mud in the west around Hadleigh Ray and Benfleet Creek, and include mussel beds, coarse and mixed sediments and, near Two Tree Island, extensive eelgrass beds. Areas of saltmarsh towards the western end of the SPA provide high tide roost sites but are vulnerable to erosion and disturbance. This SPA lies west of the Southend-on-Sea to Wallasea Island stretch of the Coast Path but is included in this HRA because its eastern boundary - at Barge Pier, Shoebury Ness - lies within about 50 m of the start of the stretch. The Benfleet and Southend Marshes Ramsar site covers the same area as the SPA.

Foulness SPA and Ramsar site

Foulness SPA lies immediately east of Benfleet and Southend Marshes SPA on the north side of the Thames Estuary mouth between Barge Pier, Shoebury Ness, in the south and the Rivers Roach and Crouch in the north. At almost 11,000 ha, it is made up of extensive intertidal mudflats and sandflats, saltmarsh, beaches, grazing marshes, rough grass and scrubland. A very large proportion of the site (both seaward and landward of the flood defences) is covered by Ministry of Defence (MoD) byelaws that restrict access. The site supports major concentrations of waterbirds over the winter and during spring and autumn passage, including internationally important numbers of brent geese and five species of wader. There are also important breeding populations of avocet, ringed plover and three tern species, which mainly nest on areas of shell, shingle or sand. The overwintering and breeding waterbirds mentioned above (and those of the other SPAs along this stretch) also use surrounding areas beyond the SPA's boundaries for feeding or roosting; this is referred to below as 'functionally linked land'.

The Foulness Ramsar site covers the same area as the SPA but this designation includes non-avian as well as avian qualifying features. The site's complex matrix of habitats supports a diverse range of plants and invertebrates, including two nationally rare and twenty one nationally scarce plants and 71 nationally important invertebrates.

Crouch and Roach Estuaries SPA and Ramsar site

The Crouch and Roach Estuaries SPA is located on the coast of south Essex, north of the Thames Estuary, south of the Dengie Peninsular and immediately northwest of Foulness. It covers about 1,850 ha and mainly comprises intertidal mudflats, saltmarsh and some grazing marsh. The intertidal zone along both estuaries is 'squeezed' between flood defences and the river channels, leaving relatively narrow strips of tidal mud and saltmarsh compared to other Essex estuaries. Nonetheless the site supports a large assemblage of waders and wildfowl in winter and during passage periods, including internationally important numbers of brent geese. Particularly along the Crouch, the birds tend to be concentrated in side channels and locations where breaching of the old seabanks has created wider intertidal areas, either as a result of historic flood events or recent managed realignment schemes. The SPA was extended recently to include two realignment sites created in 2001 and 2006. The larger of these extends along the north side of Wallasea Island. Since 2009 the RSPB has created another large realignment site and a mosaic of brackish wetland habitats covering most of the rest of the island. These are now important as functionally linked land for qualifying features of the adjacent SPAs.

The Crouch and Roach Estuaries Ramsar site covers the same area as the SPA. This designation includes the same avian features and also assemblages of nationally scarce plants and notable invertebrates. Many of the species in these assemblages are also found on the Foulness Ramsar site.

The boundaries of the Foulness and Crouch and Roach Estuaries protected sites meet at Barling Ness, midway along the Roach Estuary. Downstream of that point the SPAs are less than 300 m apart, separated by the main channel of the Roach.

Outer Thames Estuary SPA

This SPA covers over 390,000 ha of coastal waters from north Kent to Norfolk and supports a large proportion of the red-throated diver population overwintering in the southern North Sea. It also provides important at-sea foraging areas for colonies of little terns and common terns breeding within its boundaries and in other SPAs nearby, including Foulness SPA. The site covers intertidal as well as subtidal waters. Its coastline includes shingle and sand beaches, low cliffs and mudflat-lined estuaries. The southern part overlaps extensively with the Foulness and the Crouch and Roach Estuaries SPAs: it extends up the north side of the Thames to Southend and includes the Roach Estuary, the Crouch Estuary upstream to near North Fambridge, and creeks in the southwest part of Foulness that connect with the Roach.

Essex Estuaries SAC

The SAC contains the best example of a coastal plain estuary system on the North Sea coast. Covering an area of more than 46,000 ha, this relatively undeveloped estuary complex includes the major estuaries of the Colne, Blackwater, Crouch and Roach, as well as extensive open coast tidal flats at Foulness, Maplin and the Dengie.

The site protects a variety of intertidal and subtidal habitats that support many marine and estuarine species, including many of the waterbirds, plants and invertebrates that are features of overlapping SPAs and Ramsar sites. It covers extensive intertidal mudflats and sandflats that support a wide range of typical estuarine and marine communities and are key

feeding habitats for many waterbirds. The SAC also contains a significant proportion of the country's saltmarsh resource. This saltmarsh ranges from pioneer to upper/transitional types and includes plant communities with restricted UK distributions, such as Mediterranean saltmarsh scrub and stands of small cord-grass *Spartina marina*. Saltmarshes are highly productive biologically, providing nutrients which support many other features. They also have an important physical role, acting as a sediment store to the estuary system as a whole and providing roosting sites for waterbirds at high tide.

A high proportion of the area within the Foulness and Crouch and Roach Estuaries SPAs also lies within the SAC. The SPAs and the SAC share the same landward boundaries in many places, where these run along a seabank or the borrow dyke behind it. But the SAC does not include areas of grazing marsh inland of the borrow dyke, while the SPAs generally do.

Tables 3a and 3b below provide a complete list of the qualifying features of the European sites which could be affected by the access proposals.

Coastal Access - Southend-on-Sea to Wallasea Island - Habitats Regulations Assessment

Map 1 - Designations (SPAs, Ramsar sites and SAC)

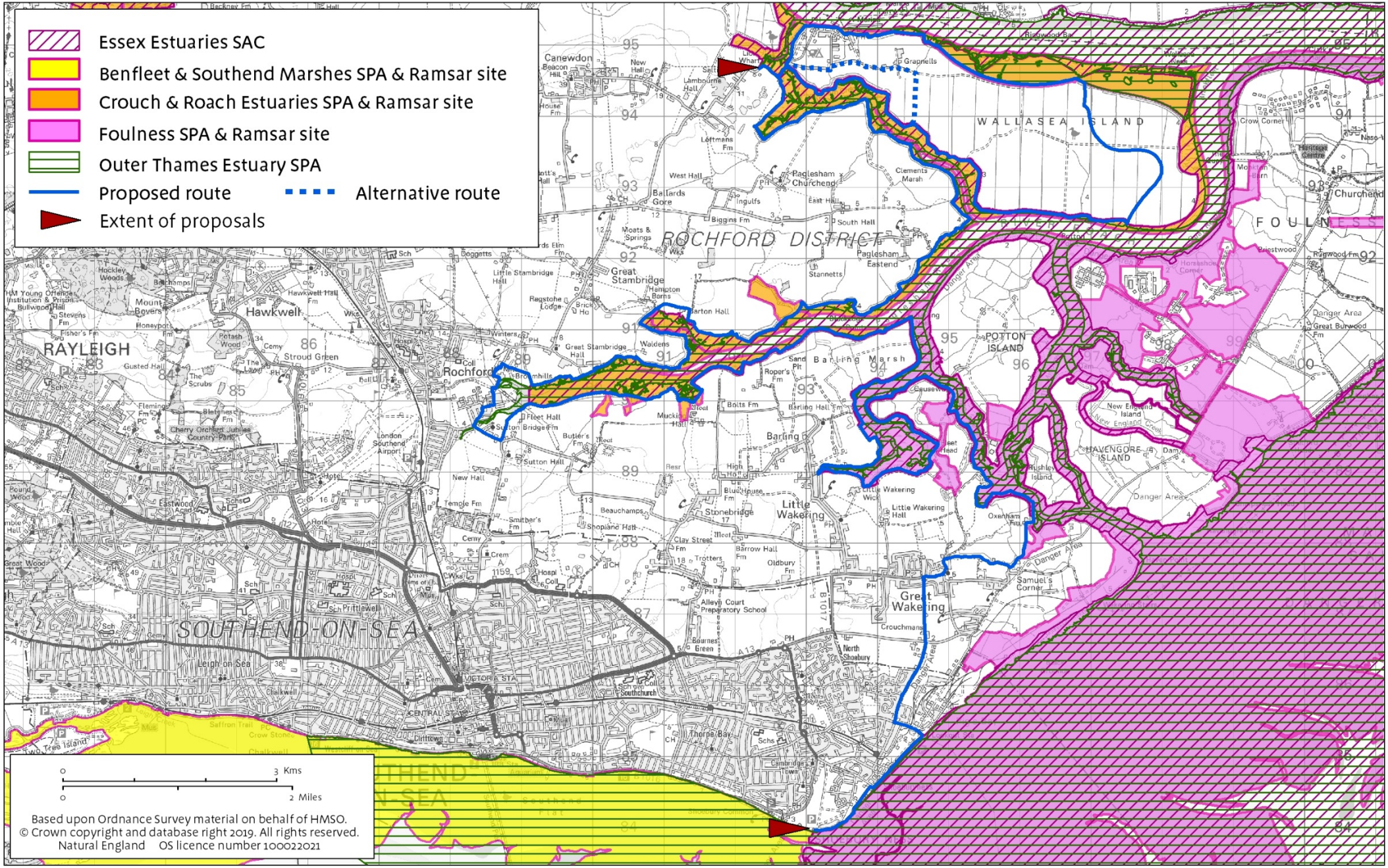

Table 3a. Avian Qualifying features

Avian Qualifying Feature [1]	Benfleet & Southend Marshes	Benfleet & Southend Marshes	Foulness SPA	Foulness Ramsar site	Crouch & Roach Estuaries SPA	Crouch & Roach Estuaries	Outer Thames Estuary SPA
A132 *Recurvirostra avosetta;* Pied avocet (Breeding)			✓				
A137 *Charadrius hiaticula*; Ringed plover (Breeding)			✓				
A191 *Sterna sandvicensis*; Sandwich tern (Breeding)			✓				
A193 *Sterna hirundo*; Common tern (Breeding)			✓				✓
A195 *Sterna albifrons*; Little tern (Breeding)			✓				✓
A001 *Gavia stellata*; Red-throated diver (Non-breeding)							✓
A046a *Branta bernicla bernicla*; Dark-bellied brent goose (Non-breeding)	✓	✓	✓	✓	✓	✓	
A082 *Circus cyaneus*; Hen Harrier (Non-breeding)			✓				
A130 *Haematopus ostralegus*; Eurasian oystercatcher (Non-breeding)			✓	✓			
A137 *Charadrius hiaticula*; Ringed plover (Non-breeding)	✓						
A141 *Pluvialis squatarola*; Grey plover (Non-breeding)	✓	✓	✓	✓			
A143 *Calidris canutus*; Red knot (Non-breeding)	✓	✓	✓	✓			
A149 *Calidris alpina alpina*; Dunlin (Non-breeding)	✓						
A157 *Limosa lapponica*; Bar-tailed godwit (Non-breeding)			✓	✓			
A162 *Tringa totanus*; Common redshank (Non-breeding)			✓	✓			
Waterbird assemblages (Non-breeding) [2]	✓	✓	✓	✓	✓	✓	

Notes:

[1] Latin names and International English names for species, as used in SPA Conservation Objectives, are given. Elsewhere in this HRA, shorter and more familiar English vernacular names are used for some species (for example: avocet, oystercatcher, knot, redshank).

[2] Bird species covered by the Ramsar Convention's Strategic Framework definition of 'waterbird' are included in SPA and Ramsar site waterbird assemblage features. 'Main component species' of an assemblage are those which regularly occur on the site in internationally or nationally important numbers or regularly exceed 2,000 individuals. The main component species are:

Benfleet and Southend Marshes assemblage: brent goose, little egret, oystercatcher, avocet, ringed plover, grey plover, knot, sanderling, dunlin, black-tailed godwit, bar-tailed godwit, (whimbrel), (greenshank), redshank, turnstone.

Foulness assemblage: brent goose, shelduck, wigeon, little egret, oystercatcher, avocet, golden plover, lapwing, knot, dunlin, black-tailed godwit, bar-tailed godwit, (whimbrel), curlew, (common sandpiper), (green sandpiper), (greenshank), redshank, black-headed gull.

Crouch and Roach Estuaries assemblage: brent goose, shelduck, wigeon, teal, shoveler, little egret, avocet, golden plover, lapwing, dunlin, black-tailed godwit, (whimbrel), (common sandpiper), (green sandpiper), (greenshank), redshank.

Species in brackets are those with very low thresholds for national importance (<10 birds).

Table 3b. Non-avian Qualifying Features

Non-Avian Qualifying Feature	Essex Estuaries SAC	Foulness Ramsar site [1]	Crouch and Roach Estuaries Ramsar site
H1110 Sandbanks which are slightly covered by sea water all the time (Subtidal sandbanks)	✓		
H1130 Estuaries	✓		
H1140 Mudflats and sandflats not covered by seawater at low tide (Intertidal mudflats and sandflats)	✓		
H1310 *Salicornia* and other annuals colonising mud and sand (Glasswort and other annuals colonising mud and sand)	✓	✓	
H1320 *Spartina* swards (*Spartinion maritimae*) (Cord-grass swards)	✓	✓	
H1330 Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*)	✓	✓	
H1420 Mediterranean and thermo-Atlantic halophilous scrubs (*Sarcocornetea fruticosi*) (Mediterranean saltmarsh scrub)	✓	✓	
Wetland plant assemblages [2]		✓	✓
Wetland invertebrate assemblages [3]		✓	✓

Notes:

[1] Foulness Ramsar site qualifies under Ramsar criterion 1a ("extent and diversity of saltmarsh") and 2b ("extensive saltmarsh habitat, with areas supporting full and representative sequences of saltmarsh plant communities covering the range of variation in Britain"). Therefore saltmarsh vegetation types that are qualifying features of the Essex Estuaries SAC (H1310, H1320, H1330 and H1420) are also taken to be qualifying features of Foulness Ramsar site.

[2] Nationally scarce vascular plant species, mainly of saltmarsh and brackish coastal habitats. The assemblages of the two Ramsar sites are not the same but have several species in common.

[3] Notable invertebrate species of saltmarsh and other coastal habitats, including scarce species with high habitat fidelity. The assemblages of the two Ramsar sites are not the same but have several species in common.

Table 4. Summary of geographical extents of European designated sites within this Coast Path stretch and its six constituent lengths and proposal reports

Lengths/ Proposal reports Designated site	SWI 1: Barge Pier to Landwick Cottages	SWI 2: Landwick Cottages to Little Wakering	SWI 3: Little Wakering to Sutton Ford Bridge	SWI 4: Sutton Ford Bridge to Paglesham Eastend	SWI 5: Paglesham Eastend to Wallasea Island causeway	SWI 6: Wallasea Island coast
Foulness SPA	✓	✓✓	✓			(✓)
Foulness Ramsar site	✓	✓✓	✓			(✓)
Crouch & Roach Estuaries SPA			✓✓	✓✓	✓✓	✓✓
Crouch & Roach Estuaries Ramsar site			✓✓	✓✓	✓✓	✓✓
Outer Thames Estuary SPA	✓	✓✓	✓✓	✓✓	✓✓	✓✓
Essex Estuaries SAC	✓	✓✓	✓✓	✓✓	✓✓	✓✓

✓: <50% of length within or adjacent to the designated site.
✓✓: >50% of length within or adjacent to the designated site.
(✓): part of length adjacent to functionally linked land important for features of the designated site.

B2. European Site Conservation Objectives (including supplementary advice)

Natural England provides advice about the Conservation Objectives for European Sites in England in its role as the statutory nature conservation body. These Objectives (including any Supplementary Advice which may be available) are the necessary context for all HRAs.

The overarching Conservation Objectives for every European Site in England are to ensure that the integrity of each site is maintained or restored as appropriate, and that each site contributes to achieving the aims of the Habitats Regulations, by either maintaining or restoring (as appropriate):

- The extent and distribution of their qualifying natural habitats,
- The structure and function (including typical species) of their qualifying natural habitats,
- The supporting processes on which their qualifying natural habitats rely,
- The supporting processes on which the habitats of their qualifying features rely,
- The population of each of their qualifying features, and
- The distribution of their qualifying features within the site.

Where Conservation Objectives Supplementary Advice is available, which provides further detail about the features' structure, function and supporting processes mentioned above, the implications of the plan or project on the specific attributes and targets listed in the advice will be taken into account in this assessment.

In light of the European Sites which could be affected by the plan or project, this assessment will be informed by the following site-specific Conservation Objectives, including any available supplementary advice.

Supplementary advice on the conservation objectives for Benfleet and Southend Marshes SPA can be viewed at:

https://designatedsites.naturalengland.org.uk/Marine/MarineSiteDetail.aspx?SiteCode=UK9009171&SiteName=benfleet&countyCode=&responsiblePerson=&SeaArea=&IFCAArea=

Draft supplementary advice on the conservation objectives for Foulness SPA can be viewed at:

https://designatedsites.naturalengland.org.uk/Marine/MarineSiteDetail.aspx?SiteCode=UK9009246&SiteName=foulness&countyCode=&responsiblePerson=&SeaArea=&IFCAArea=

Draft supplementary advice on the conservation objectives for Crouch and Roach Estuaries SPA can be viewed at:

https://designatedsites.naturalengland.org.uk/Marine/MarineSiteDetail.aspx?SiteCode=UK9009244&SiteName=crouch&countyCode=&responsiblePerson=&SeaArea=&IFCAArea=

Draft supplementary advice on the conservation objectives for Outer Thames Estuary SPA can be viewed at:

https://designatedsites.naturalengland.org.uk/Marine/MarineSiteDetail.aspx?SiteCode=UK9020309&SiteName=outer%20thames%20estuary&countyCode=&responsiblePerson=&SeaArea=&IFCAArea=

Supplementary advice on the conservation objectives for Essex Estuaries SAC can be viewed at:

https://designatedsites.naturalengland.org.uk/Marine/MarineSiteDetail.aspx?SiteCode=UK0013690&SiteName=essex%20estuaries&countyCode=&responsiblePerson=&SeaArea=&IFCAArea=

For Ramsar sites, a decision has been made by Defra and Natural England not to produce Conservation Advice packages, instead focussing on the production of High Level Conservation Objectives. As the provisions on the Habitats Regulations relating to Habitat Regulations Assessments extend to Ramsar sites, Natural England considers the Conservation Advice packages for the overlapping European Marine Site designations to be, in most cases, sufficient to support the management of the Ramsar interests. However, for the purposes of this assessment it is important to note that the qualifying features of the Foulness Ramsar site and the Crouch and Roach Estuaries Ramsar site include assemblages of rare, vulnerable or endangered wetland plants and invertebrates that qualify under Ramsar criterion 2. These assemblages are not qualifying features of the equivalent SPA designations, or of the Essex Estuaries SAC. Ramsar Information Sheets for each site, available on the JNCC website, list species in the assemblages and give other details of the designation.

The Ramsar Information Sheet for the Foulness Ramsar site can be viewed at:

http://jncc.defra.gov.uk/pdf/RIS/UK11026.pdf

The Ramsar Information Sheet for the Crouch and Roach Estuaries Ramsar site can be viewed at:

http://jncc.defra.gov.uk/pdf/RIS/UK11058.pdf

PART C: Screening of the plan or project for appropriate assessment

C1. Is the plan or project either directly connected with or necessary to the (conservation) management (of the European Site's qualifying features)?

The Coastal Access Plan is not directly connected with or necessary to the management of the European sites for nature conservation listed in B1 above.

Conclusion:

As the plan or project is not either directly connected or necessary to the management of all of the European site(s)'s qualifying features, and/or contains non-conservation elements, further Habitats Regulations assessment is required.

C2. Is there a likelihood [or risk] of significant [adverse] effects ('LSE')?

This section details whether those constituent elements of the plan or project which are (a) not directly connected with or necessary to the management of the European Site(s) features and (b) could conceivably adversely affect a European site, would have a **likely significant effect,** either alone or in combination with other plans and projects, upon the European sites and which could undermine the achievement of the sites' conservation objectives referred to in section B2.

In accordance with case law, this HRA has considered an effect to be 'likely' if it '*cannot be excluded on the basis of objective information'* and is 'significant' if it *'undermines the conservation objectives'*. In accordance with Defra guidance on the approach to be taken to this decision, in plain English, the test asks whether the plan or project '*may'* have a significant effect (i.e. there is a risk or a possibility of such an effect).

This assessment of risk therefore takes into account the precautionary principle (where there is scientific doubt) and **excludes**, at this stage, any measures proposed in the submitted details of the plan/project that are specifically intended to avoid or reduce harmful effects on the European site(s).

Each of the project elements has been tested in view of the European Site Conservation Objectives and against each of the relevant European site qualifying features. An assessment of potential effects using best available evidence and information has been made.

C2.1 Risk of Significant Effects Alone

The first step is to consider whether any elements of the project are likely to have a significant effect upon a European site 'alone' (that is when considered in the context of the prevailing environmental conditions at the site but in isolation of the combined effects of any other 'plans and projects'). Such effects do not include those deemed to be so insignificant as to be trivial or inconsequential.

In this section, we assess risks to qualifying features, taking account of their sensitivity to coastal walking and other recreational activities associated with coastal access proposals, and in view of each site's Conservation Objectives.

For the purposes of this assessment, the qualifying features of the European Sites listed in B1 have been grouped as follows:

Table 5. Feature groups

Feature group	Qualifying feature(s)
Breeding terns and waders	Common tern; little tern; Sandwich tern; avocet; ringed plover (all breeding)
Non-breeding red-throated diver	Red-throated diver (non-breeding)
Non-breeding hen harrier	Hen harrier (non-breeding)
Non-breeding waterbirds	Dark-bellied brent goose; oystercatcher; ringed plover; grey plover; knot; dunlin; bar-tailed godwit; redshank; waterbird assemblages (all non-breeding)
Subtidal sandbanks	Sandbanks which are slightly covered by seawater all the time
Intertidal mudflats and sandflats	Mudflats and sandflats not covered by seawater at low tide
Saltmarsh	Salicornia and other annuals colonising mud and sand; Spartina swards; Atlantic salt meadows; Mediterranean and thermo-Atlantic halophilous scrubs
Estuaries	Estuaries
Wetland plant assemblages	Wetland plant assemblages
Wetland invertebrate assemblages	Wetland invertebrate assemblages

The risk of significant effects alone is considered in the following table:

Table 6. Assessment of likely significant effects alone

Feature group	Relevant pressure	Sensitivity to coastal access proposals	Assessment of risk to site conservation objectives	LSE alone ?
Breeding terns and waders	Disturbance of nesting, feeding or resting birds	Birds and their nests in the vicinity of the Coast Path may be disturbed by recreational activities including walking and walking with a dog.	Localised risk. At Jubilee Marsh on Wallasea Island there is a large area of recently created nesting and feeding habitat suitable for the feature group. Two of the five species already nest on it. The area is all within the coastal margin and much of it is accessible from the proposed route. It is outside but within a few hundred metres of the Foulness and Outer Thames Estuary SPAs and is important as functionally linked land.	Yes
Non-breeding red-throated diver	Disturbance of feeding or resting birds	Divers using waters near the shore line in the vicinity of the Coast Path might be disturbed by land-based recreational activities including walking and walking with a dog.	No appreciable risk. The great majority of red-throated divers wintering in the Outer Thames Estuary SPA feed and rest in open water offshore, well beyond the range of disturbance from the Coast Path. At classification the SPA supported an estimated winter population of 6,446 divers (1989 to 2006/7 peak mean) and more recent surveys estimated 18,079 (2012/13 to 2017/18 peak mean). But numbers recorded within a few hundred metres of the shore during land-based WeBS counts are at least three orders of magnitude lower: 5-year peak means for 2011/12 to 2015/16 were 17 birds for Foulness and less than one for the Crouch and Roach Estuaries [Ref 3]. The disturbance risk is even lower than suggested by these figures because the Coast Path skirts around the inland edge of Foulness, away from the open coast.	No
Non-breeding hen harrier	Disturbance of feeding or resting birds	Birds hunting or roosting in the vicinity of the Coast Path may be disturbed by recreational	Localised risk. The Coast Path runs inland of the MoD area on Foulness and so avoids nearly all the coastal grassland and saltmarsh used by hen harriers on this SPA. But on Wallasea Island,	Yes

Feature group	Relevant pressure	Sensitivity to coastal access proposals	Assessment of risk to site conservation objectives	LSE alone ?
		activities including walking and walking with a dog.	less than 500 m from Foulness across the Roach Estuary, recently created wetland and grassland now supports similar numbers of wintering harriers as Foulness, and individual birds fly between the two sites. Some of this important functionally linked land on Wallasea Island lies near the proposed route and in the coastal margin.	
Non-breeding waterbirds	Disturbance of feeding or resting birds	Birds feeding or resting in the vicinity of a coastal path may be disturbed by recreational activities including walking and walking with a dog.	Low to high risk for Foulness and Crouch and Roach Estuaries. The level of risk is higher where the access proposals are likely to bring people close to places on which large numbers of birds depend, such as key high tide roost sites and important feeding areas. No appreciable risk for Benfleet to Southend Marshes SPA because it lies west of this Coast Path stretch and, for 500 m from its eastern boundary at Barge Pier, public access is prohibited under MoD byelaws.	Yes
Non-breeding waterbirds	Loss of supporting habitat through installation of access management infrastructure	The supporting habitats of the features may be permanently lost due to installation of new access management infrastructure.	Low risk. The level of risk is higher where there is a permanent and irreversible loss of the extent of supporting habitat which waterbirds depend on.	Yes
Subtidal sandbanks	Trampling	If close to a coastal path, areas of this feature in the uppermost parts of the subtidal zone (so only submerged under a few cm of water during spring low tides) might be damaged by walkers or their dogs wading seaward of the trail.	No appreciable risk. All areas of this feature lie below Mean Low Water and are therefore beyond the seaward limit of any increased access rights in the coastal margin. On this stretch the feature is well separated from the proposed route by extensive intertidal flats and saltmarshes that are restricted under MoD byelaws or are unsuitable for access on foot, so access will be excluded by direction.	No

Feature group	Relevant pressure	Sensitivity to coastal access proposals	Assessment of risk to site conservation objectives	LSE alone ?
Intertidal mudflats and sandflats	Trampling	If the Coast Path crosses intertidal flats, or the feature is included in spreading room between the trail and Mean Low Water, trampling by walkers could damage the feature's structure, or its fauna and flora. Sub-features of intertidal flats present along this stretch have low sensitivity to trampling except for intertidal eelgrass beds, which have medium sensitivity.	Localised low risk, no appreciable risk elsewhere. The proposed route is not aligned across intertidal flats at any point. No intertidal flats are within spreading room in the coastal margin, either because they are subject to MoD byelaws or because they are unsuitable for public access on foot and will be excluded by direction. At East Beach, Shoeburyness, all the flats below Mean High Water are subject to MoD byelaws but a limited area is managed by the local authority, under licence from MoD, as part of the public beach. This area includes eelgrass beds, which might be damaged if the adjacent Coast Path attracts more people to the beach.	Yes
Saltmarsh	Trampling	If the Coast Path crosses saltmarsh, or the feature is included in spreading room, then trampling by walkers could damage the feature, changing its structure and species composition. Some saltmarsh plant communities are more sensitive to trampling than many terrestrial vegetation types.	Localised low risk, no appreciable risk elsewhere. For the great majority of this stretch, the Coast Path is aligned inland of the saltmarsh zone, generally along the top of a seabank. Nearly all the saltmarsh in the coastal margin is unsuitable for public access on foot and so will be excluded by direction. But in one 200 m section just south of the road onto Wallasea Island, the proposed route follows an existing public footpath across upper saltmarsh within the Essex Estuaries SAC.	Yes
Saltmarsh	Loss of feature extent through installation of access management infrastructure.	Areas of saltmarsh may be permanently lost due to the installation of new access management infrastructure (eg signage, bridges, gates, surfacing).	Localised low risk. For the great majority of this stretch, the Coast Path is aligned inland of the saltmarsh zone and no infrastructure on saltmarsh is proposed. But in one 200 m section the route follows an existing public footpath across upper salt marsh within the SAC.	Yes

Feature group	Relevant pressure	Sensitivity to coastal access proposals	Assessment of risk to site conservation objectives	LSE alone ?
Estuaries	Trampling and/or loss of feature extent through installation of access management infrastructure.	The SAC 'estuaries' feature includes intertidal flats and saltmarsh among its sub-features. The sensitivities of those are outlined above.	As summarised for intertidal flats and saltmarsh. None of the other intertidal or subtidal sub-features of the feature are sensitive to this coastal access proposal.	Yes
Wetland plant assemblages	Trampling, and cutting to maintain the trail	If the Coast Path crosses habitats that support assemblage species, or such habitats are included within spreading room either side of the trail, then trampling by walkers could damage some species. Regular cutting to keep the trail open could also damage species occurring on or immediately adjacent to it.	Low risk. The nationally scarce species in the plant assemblages of the Foulness and Crouch and Roach Estuaries Ramsar sites grow in a variety of coastal habitats including saltmarsh, intertidal flats, grazing marsh, seabanks, and the foldings immediately inland of them. These plant species vary considerably in their sensitivity to trampling or cutting.	Yes
Wetland plant assemblages	Interruption or cessation of grazing management necessary for sensitive species.	If Coast Path proposals include new access rights onto grazed areas important for assemblage species, new access by walkers and their dogs may disrupt the grazing regime and so cause population declines of sensitive species.	Localised risk. Most of the grazed land that supports assemblage species along this stretch lies inland of the coastal margin, so new access rights cannot apply to it. But there is one area of horse-grazed grazing marsh just seaward of the proposed route which is of high importance for several species in the assemblage.	Yes
Wetland plant assemblages	Loss of supporting habitat through installation of access management infrastructure	The supporting habitats of the features may be permanently lost due to installation of new access management infrastructure.	Low risk. The level of risk is higher where there is a permanent and irreversible loss of the extent of supporting habitat which assemblage species depend on.	Yes

Feature group	Relevant pressure	Sensitivity to coastal access proposals	Assessment of risk to site conservation objectives	LSE alone ?
Wetland invertebrate assemblages	Damage to habitats supporting assemblage species caused by trampling, and by cutting to maintain the trail	If the Coast Path runs through habitats of particular importance for assemblage species, or such habitats are included within spreading room, then trampling by walkers or regular cutting to keep the trail open may change the habitat structure or species composition and so cause local population declines of sensitive species.	Low risk. The invertebrates listed on Ramsar Information Sheets for the Foulness and Crouch and Roach Estuaries Ramsar sites are a mix of grazing marsh species, upper saltmarsh species, and more 'generalist' species found in a variety of coastal habitats.	Yes
Wetland invertebrate assemblages	Loss of supporting habitat through installation of access management infrastructure	Areas of supporting habitats may be permanently lost due to installation of new access management infrastructure.	Low risk. The level of risk is higher where there is a permanent and irreversible loss of the extent of supporting habitat which assemblage species depend on.	Yes

Conclusion:

The plan or project alone is likely to have a significant effect on the following qualifying feature groups or features:

- Breeding terns and waders (common tern; little tern; Sandwich tern; avocet; ringed plover)
- Non-breeding hen harrier
- Non-breeding waterbirds (dark-bellied brent goose; oystercatcher; grey plover; knot; bar-tailed godwit; redshank; waterbird assemblages)
- Intertidal mudflats and sandflats
- Saltmarsh (Salicornia and other annuals colonising mud and sand; Spartina swards; Atlantic salt meadows; Mediterranean and thermo-Atlantic halophilous scrubs)
- Estuaries

- Wetland plant assemblages
- Wetland invertebrate assemblages

The plan or project alone is unlikely to have a significant effect on the following qualifying features:

- Non-breeding red-throated diver
- Subtidal sandbanks

(Any appreciable risks identified that are not significant alone are further considered in section C2.2.)

C2.2 Risk of Significant Effects in-combination with the effects from other plans and projects

The need for further assessment of the risk of in-combination effects is considered here.

Natural England considers that it is the appreciable risks of effects (from a proposed plan or project) that are not themselves considered to be significant alone which must be further assessed to determine whether they could have a combined effect significant enough to require an appropriate assessment.

Step 1 – Are there any appreciable risks from the access proposals that have been identified in C2.1 as not significant alone?

In C2.1 the qualifying features on which the access proposals might have an effect alone are identified – these are considered further in Part D of this assessment. For all other features, no other appreciable risks arising from the access proposals were identified that have the potential to act in combination with similar risks from other proposed plans or projects to become significant. It has therefore been excluded, on the basis of objective information, that the project is likely to have a significant effect in-combination with other proposed plans or projects.

Conclusion:

The plan or project, in combination with other plans and projects, is unlikely to have a significant effect on the following qualifying features of the European Site(s):

- Non-breeding red-throated diver
- Subtidal sandbanks

C3. Overall Screening Decision for the Plan/Project

On the basis of the details submitted, Natural England has considered the plan or project under Regulation 63(1)(a) of the Habitats Regulations and made an assessment of whether it will have a likely significant effect on a European site, either alone or in combination with other plans and projects.

In light of sections C1 and C2 of this assessment above, Natural England has concluded:

As the plan or project is likely to have significant effects (or *may* have significant effects) on some or all of the Qualifying Features of the European Site(s) 'alone', further appropriate assessment of the project 'alone' is required.

PART D: Appropriate Assessment and Conclusions on Site Integrity

D1. Scope of Appropriate Assessment

In light of the screening decision above in section C3, this section contains the Appropriate Assessment of the implications of the plan or project in view of the Conservation Objectives for the European Site(s) at risk.

The Sites and the Qualifying Feature for which significant effects (whether 'alone' or 'in combination') are likely or cannot be ruled out and which are initially relevant to this appropriate assessment are:

Table 7. Scope of Appropriate Assessment

Environmental pressure	Qualifying Feature(s) affected *	Risk to Conservation Objectives
Disturbance of feeding or resting birds	• Non-breeding waterbirds[1,2,3,4] (dark-bellied brent goose[1,2,3,4]; oystercatcher[1,2]; grey plover[1,2]; knot[1,2]; bar-tailed godwit[1,2]; redshank[1,2]; waterbird assemblages[1,2,3,4]) • Non-breeding hen harrier[1]	Repeated disturbance to foraging or resting birds during winter and on passage, following changes in recreational activities as a result of the access proposal, may lead to reduced fitness and reduction in population and/or contraction in the distribution of qualifying features within the site.
Disturbance of nesting, feeding or resting birds	• Breeding terns and waders[1,5] (common tern[1,5]; little tern[1,5]; Sandwich tern[1]; avocet[1]; ringed plover[1])	Repeated disturbance to birds during the breeding season, following changes in recreational activities as a result of the access proposal, may lead them to abandon nesting areas or reduce their breeding success (for example by causing eggs to become chilled, reducing food supply to chicks, or increasing the vulnerability of eggs, chicks or adults to predation).
Trampling, and cutting to maintain the trail	• Intertidal mudflats and sandflats[6] • Saltmarsh[2,6] (Salicornia and other annuals colonising mud and sand[2,6]; Spartina swards[2,6]; Atlantic salt meadows[2,6]; Mediterranean and thermo-Atlantic halophilous scrubs[2,6]) • Estuaries[6] • Wetland plant assemblages[2,4] • Wetland invertebrate assemblages[2,4]	Repeated trampling, following changes in recreational activities as a result of the access proposal, may damage sensitive habitats, plant communities or species, leading to long-term declines in their quality, distribution or numbers within the site. Types of possible effect include physical changes to habitats (for example through compaction of the substrate), shifts in the species composition of plant communities, and reductions in species' population size or distribution. Regular cutting could have similar effects on species that occur on or immediately adjacent to the trail.
Interruption or cessation of grazing management necessary for the survival of sensitive species	• Wetland plant assemblages[2,4]	New public access rights on grazed land as a result of the access proposal may lead to dogs or their owners scaring livestock, resulting in the temporary or permanent cessation of grazing management, or significant changes to the grazing regime. Where the grazed land affected supports important populations of rare plant species that require a short, open sward to allow them to compete successfully, this disruption of

Environmental pressure	Qualifying Feature(s) affected *	Risk to Conservation Objectives
		the grazing regime may lead to reduction in the species' populations and distribution within the site or even local extinction.
Loss of feature extent or of species' supporting habitat through installation of access management infrastructure	■ Non-breeding waterbirds[1,2,3,4] ■ Saltmarsh[2,6] ■ Estuaries[6] ■ Wetland plant assemblages[2,4] ■ Wetland invertebrate assemblages[2,4]	The installation of access management infrastructure may lead to a permanent loss of extent within the site of habitats that are qualifying features themselves or support bird, plant or invertebrate species that are qualifying features.

Notes:

* Feature groups are underlined; at first mention, their constituent features are listed in brackets.

[1] Foulness SPA feature or feature group

[2] Foulness Ramsar site feature or feature group

[3] Crouch and Roach Estuaries SPA feature or feature group

[4] Crouch and Roach Estuaries Ramsar site feature or feature group

[5] Outer Thames Estuary SPA feature or feature group

[6] Essex Estuaries SAC feature or feature group

D2. Contextual statement on the current status, influences, management and condition of the European Sites and those qualifying features affected by the plan or project

Non-breeding birds

One of the factors we take into account when developing proposals for the alignment of the England Coast Path is the potential for disturbance to waterbirds, particularly when the birds are qualifying features of coastal SPAs and Ramsar sites. This is clearly an important consideration on this stretch of the Coast Path which runs close to the boundaries of the Foulness and the Crouch and Roach Estuaries SPAs, both of which have non-breeding waterbird assemblages and dark-bellied brent goose as qualifying features, while Foulness has additional non-breeding and breeding bird interest. The conservation advice for both SPAs gives all their non-breeding bird features 'maintain' (rather than 'restore') targets for population size, as numbers have not declined significantly since site classification and in some cases have increased, and there is no evidence of declines that do not mirror broader trends at a regional or national level, indicative of a site-specific problem.

Birds using Foulness are generally much less susceptible to recreational disturbance than those on other Essex coast SPAs because the MoD restricts access to a very large proportion of the mudflats, saltmarsh, grazing marsh and other habitats supporting qualifying bird features. Birds using the Crouch and Roach Estuaries SPA are more susceptible, as no parts of the site are within the MoD area and both estuaries are quite narrow, so an appreciable proportion of the intertidal mudflats and saltmarsh used by waterbirds are quite close to seabanks with current or potential public access.

Restricting disturbance at major high tide roosts is important, particularly if there are no suitable alternative roost sites nearby, because these roosts are used by large numbers of birds 'commuting' to and from much larger foraging areas. From summary maps produced by Panter and Liley [Ref 13] nearly all the major roosts on Foulness are within the MoD restricted area and over 300 m from seabanks with public access along the southwest edge of the SPA. The large majority are several kilometres away. The exceptions are two roost locations on the extensive saltmarshes between Fleet Head and Little Wakering, where there is already a public footpath along the seabank.

Major roost sites in the Crouch and Roach Estuaries SPA along this Coast Path stretch include three along the Roach (one on the south side, two on the north) and several around Wallasea Island [Ref 13]. The latter include roosts that have recently appeared or increased in size within and adjacent to the large managed realignment sites created in 2006 and 2015.

Functionally linked land (supporting habitat lying outside SPA boundaries) is important for several wader species, such as lapwing, golden plover and curlew, and especially important for brent geese. Historically, most brent geese fed on eelgrass (*Zostera* spp.) and green marine algae on intertidal mud and on saltmarsh plants. However, there has been a widespread decline in eelgrass (Foulness and Benfleet and Southend Marshes are now the only SPAs in Essex with extensive beds) and dark-bellied brent geese now appear to be largely dependent on winter wheat and barley, oil seed rape, grass fields and amenity grasslands. Both SPAs on this stretch include some grazing marsh and improved grassland

for brent geese but winter cereal fields beyond their boundaries are important feeding areas, particularly in late winter when food resources in the intertidal zone are depleted [Ref 15].

Jubilee Marsh, the more recent of the two large managed realignment sites on Wallasea Island, is outside the current boundaries of the Crouch and Roach Estuaries SPA but already important as functionally linked land for its non-breeding birds, providing both feeding and roosting habitat. Other recently created wetland areas inland of the island's seabanks are also important and increase the variety of supporting habitats close to the SPA boundaries.

Breeding terns and waders

In contrast to Foulness SPA's passage and overwintering birds, four of its five breeding bird features (three tern species and ringed plover) have suffered marked declines since classification. The change is not related to recreational disturbance but to the loss of large areas of suitable nesting habitat seaward of flood defences, such as cockle shell banks at Maplin Bund and Foulness Point. Due to sea-level rise and erosion these areas are now inundated too frequently by high tides for birds to nest successfully on them. The SPA's conservation advice sets 'restore' targets for the breeding populations of all four species. Avocets at Foulness mainly breed around shallow water bodies inland of flood defences so they have been affected much less. Their numbers have fluctuated around the 26 pair baseline at SPA classification. Survey results for 2016 to 2018 suggest a recent decline to single figures [Ref 2] but the evidence is not conclusive because parts of the SPA were not accessible for those surveys.

Past and present nesting locations on Foulness for all five breeding bird features are well away from the publically accessible southwest edge of the SPA. But the recent creation of new wetland habitats at Jubilee Marsh and elsewhere on Wallasea Island has provided suitable nesting and feeding areas for breeding terns, avocet and ringed plover within a kilometre or two of the Foulness SPA. Two of the five species, avocet and common tern, are already nesting and foraging on this functionally linked land [Ref 1] (see part D3.2D for more detail).

SAC habitats and Ramsar site wetland plant assemblages

The intertidal features of the Essex Estuaries SAC and the nationally scarce plants in both Ramsar sites' wetland plant assemblages show some overlap in their sensitivities to coastal access. Four assemblage species are essential components of a SAC feature or sub-feature: eelgrass *Zostera marina* and dwarf eelgrass *Z. noltii* for intertidal eelgrass beds (a sub-feature of H1140 Intertidal mudflats and sandflats), small cord-grass *Spartina maritima* for H1320 cord-grass swards, and shrubby sea-blite *Suaeda vera* for H1420 Mediterranean saltmarsh scrub. All four are mainly found in the MoD-restricted parts of this stretch with only limited areas elsewhere. But several assemblage species are saltmarsh plants typically found in H1330 Atlantic salt meadows, which form a substantial part of the coastal margin. Most of these are mainly found in upper/mid zone saltmarsh, sometimes within a few metres of seabanks. As a result of sea level rise and coastal squeeze some now grow on the seaward slopes of sea defences. All these plant assemblage species and the SAC habitat features they are found in are sensitive to trampling.

Several other species in the wetland plant assemblages cannot tolerate regular flooding with sea water and so are mainly restricted to areas inland of seabanks. Most require brackish, relatively open ground. They are often found on the foldings behind seabanks or on their landward slopes, particularly where there is some seepage through the sea defences. These species benefit from some ground disturbance (for example by livestock or farm vehicles) to create bare patches and they can tolerate some trampling. Other assemblage species are mainly found further inland on brackish grazing marshes or in their ditch systems.

Current levels of use

Current levels and patterns of public use can have an important influence on the potential effects of Coast Path alignment options on qualifying features, particularly in relation to bird disturbance. There are marked differences in public use within and between the six lengths of this stretch. The southern part of the length from Barge Pier, Shoebury Ness, to Landwick Cottages is urban, with heavily-used public green spaces at Gunners Park and East Beach - the latter a popular bathing beach. But access to nearly all of the adjacent intertidal flats below Mean High Water is strictly controlled under MoD byelaws. Beyond the north end of East Beach, MoD restrictions also apply inland of the shoreline so the Coast Path alignment must turn inland for several kilometres. For the stretch's remaining five lengths (from Oxenham Farm, just beyond Landwick Cottages, to Wallasea Island) there are no MoD restrictions and the seabanks already have public footpaths except along parts of the upper Roach and the Wallasea Island coast. These five lengths are essentially rural, with open farmland inland of the seabanks and few houses within a kilometre or so, except near Rochford at the head of the Roach estuary. There are relatively few pedestrian access points from houses and villages inland and even fewer vehicle access points. There are no public car parks close to the shoreline except at the head of the Roach Estuary, at Paglesham Eastend on its north side, and on Wallasea Island. From our site visits and Strava heatmaps[2], use of the existing coastal footpaths appears to be generally light and related to access points, housing nearby, and the availability of short circular routes. The Wallasea Island coastline is atypical in that about three-quarters of the island forms the RSPB's Wallasea Island Wild Coast Project reserve, which has recently been transformed from arable farmland into a variety of coastal wetland habitats. The reserve has a car park adjacent to the public footpath along the northern seabank and several kilometres of permissive paths. It already attracts about 20,000 visitors per year and numbers are expected to increase as visitor facilities are added.

Housing growth and the Essex RAMS

The emerging Local Plans for Southend-on-Sea, Rochford District and several other Essex planning authorities covering areas on or close to the coast are at early stages of development. These plans include targets for new housing that would substantially increase the population living within easy reach of the coast over the next 20 years. Recognising that this population increase has the potential to adversely affect the county's internationally

[2] Strava is a website and mobile app used to track running, cycling and other sports activities via GPS. Users upload workouts and the logged activities include route data. The accumulated information is collated to produce a global 'heatmap' which provides a qualitative, graphical summary of how often routes in an area are used. The large majority of Strava users on foot are likely to be runners rather than walkers, so heatmaps cannot be taken as an accurate guide to patterns of use by typical coastal path users. Nevertheless, from comparisons with our observations during site visits, they can be useful as a rough indication of relative levels of use.

designated coastal sites (SPA, SAC and Ramsar sites) 11 Essex planning authorities have entered into partnership to develop and implement an Essex Coast Recreational disturbance Avoidance & Mitigation Strategy (Essex RAMS). This aims to deliver the mitigation necessary to avoid significant adverse effects from 'in-combination' impacts of the residential development that is anticipated across Essex; thus protecting SPAs, SACs and Ramsar sites on the Essex coast from adverse effects on site integrity. The RAMS identifies a detailed programme of strategic mitigation measures which are to be funded by developer contributions from residential development schemes. All new residential developments within evidenced Zones of Influence (ZoIs) of the coastal sites and where there is a net increase in dwelling numbers are included. Agreed ZoIs based on visitor survey data for the sites considered in this HRA vary from 4.3 km (Benfleet and Southend Marshes SPA) to 13 km (Foulness SPA). Taken together, the 11 authorities are aiming to deliver approximately 80,000 new homes in the next 20 years according to growth set out in their current and emerging Local Plans. This will potentially result in around 190,000 new residents in their combined area (based on a 2.4 person per household average household occupancy) between 2018 and 2038 – the end of the current period of the Essex RAMS [Ref 14].

Participating planning authorities are expected to adopt Supplementary Planning Documents in 2019 to deliver the Essex RAMS. In November 2017 Natural England provided written advice to them that until the implementation phase of the RAMS, an interim protocol should be followed to ensure consistency and fairness in securing strategic level mitigation for new housing developments within ZoIs. Recommended elements of this protocol include: (i) collection of appropriate funding for strategic mitigation measures, proportionate to the level of housing development; (ii) a delivery mechanism for these measures and their implementation prior to first occupation of the dwellings; and (iii) a policy in emerging Local Plans setting out how likely recreational disturbance impacts from new residential development will be mitigated, which should include a policy commitment to the production and implementation of the Essex RAMS. In August 2018 Natural England provided further interim advice, including information on revised ZoIs agreed by the RAMS Steering Group and, for larger scale residential developments falling within ZoIs, recommendations on appropriate and proportionate measures within the development site - such as high quality green infrastructure with provision for dog walking - to reduce recreational disturbance on European sites nearby.

D3. Assessment of potential adverse effects considering the plan or project 'alone'

This section considers the risks identified at the screening stage in section C and assesses whether adverse effects arising from these risks can be ruled out, having regard to the detailed design of proposals for coastal access.

In reviewing the ability of any incorporated measures to avoid harmful effects, Natural England has considered their likely effectiveness, reliability, timeliness, certainty and duration over the full lifetime of the plan or project. A precautionary view has been taken where there is doubt or uncertainty regarding these measures.

D3.1 Design of the access proposal to address possible risks – at a stretch level

The key nature conservation issue for this stretch of the Coast Path is the protection of non-breeding waterbirds, which occur all along the stretch during the winter and the spring and autumn migration periods. When considering the potential for increased disturbance to birds we focussed attention on: (i) parts of the stretch where we predict appreciable changes in levels of public use as a result of our proposals; and (ii) sensitive locations likely to hold concentrations of birds, such as high tide roost sites and important feeding areas, either within or outside SPA boundaries.

To assess sensitive locations, we used BTO WeBS data [Ref 3], observations during site visits, and information compiled by Panter and Liley [Ref 13] or provided to us by land owners and site managers. Where necessary we carried out additional survey work. To identify parts of the stretch where at least a moderate increase in levels of use appears to be likely we used our own observations, on-line mapping and aerial photography, Strava heatmaps, and information provided by the local access authority, site managers and land owners, or by Panter and Liley [Ref 13]. Based on this information, we predict only small increases in use above current baseline levels except in two areas where there are currently no public rights of way near the shoreline: the south side of the upper Roach Estuary and the majority of the Wallasea Island coastline. We predict a moderate increase in use for both these areas, which are considered in more detail below (see D3.2C and D3.2D).

Any increase in levels of public use near areas where birds are feeding or resting may produce some increase in bird disturbance. But that can vary from occasional, short-term, 'low cost' events affecting a few birds (for example increased alertness and a small reduction in feeding rates lasting a few minutes) to major disruption on a regular basis (such as large flocks abandoning a key roost site or feeding area and flying several kilometres to the nearest alternative site).

When assessing whether increases in bird disturbance at a particular location require changes to route alignment or other mitigation measures to ensure there is no adverse effect on site integrity, we have followed the principle that 'significant' disturbance - as defined by the Agreement on the Conservation of African-Eurasian Migratory Waterbirds (AEWA) and used in Natural England's supplementary advice on the conservation objectives for marine SPAs - must be avoided. The definition is: "Disturbance should be judged as significant if an

action (alone or in combination with other effects) impacts on (water)birds in such a way as to be likely to cause impacts on populations of a species through either: (i) changed local distribution on a continuing basis; and/or (ii) changed local abundance on a sustained basis; and/or (iii) the reduction of ability of any significant group of birds to survive, breed, or rear their young."

The potential for bird disturbance is reduced on this stretch because nearly all the intertidal flats and saltmarshes in the coastal margin are restricted under MoD byelaws and/or are unsuitable for public access on foot, so they will be excluded from new coastal access rights on grounds unrelated to nature conservation. The only important exception to this is the east side of Wallasea Island, which is also the only part of the stretch where there is an appreciable disturbance risk to breeding as well as non-breeding SPA birds (see D3.2D for details).

The non-avian qualifying features on this stretch (intertidal habitats and wetland plant and invertebrate assemblages) are generally much less susceptible to adverse effects from Coast Path proposals than the birds. This is because new coastal access rights will not apply to a very large proportion of the area supporting them (for the reasons given above) and, unlike birds, these features are not susceptible to 'disturbance from a distance'. But two specific locations where areas of high value for sensitive wetland plant features are at potential risk are considered in parts D3.2A and D3.2B below.

We have also considered the extent to which the installation of access management infrastructure on this stretch may result in loss of habitats that are SAC qualifying features and/or support species that are SPA or Ramsar site features. Our proposals involve the installation of the following new infrastructure items within designated sites along the approximately 60 km of trail: 8 pedestrian gates (7 replacing styles), 13 finger posts with waymarkers, 6 advisory signs, and 1 sleeper footbridge. We estimate the total 'footprint' of these items to be roughly 21 m^2. One finger post and the footbridge (about 5 m^2) will be on upper saltmarsh near Wallasea Island (see D3.3 for details). The remaining items will be on the seabank crest (14 m^2) or on the folding (2 m^2). Unlike saltmarsh, these are not SAC habitats and are not listed in SPA conservation advice as supporting habitat for waterbirds. Birds may occasionally use seabanks to roost but normally prefer the outer edges of saltmarsh, where the risks of disturbance and predation are lower. The infrastructure we propose for seabank crests will not be within known roost sites. Some species in the wetland plant and invertebrate assemblages are found on seabanks or foldings, though the seabank crest is less important for them than the folding. On both, assemblage plant species have very sparse, scattered distributions. A pre-works check of proposed infrastructure locations, and adjustment where necessary, will minimise the risk of any damage.

D3.2 Design of the access proposal to address possible risks – at a local level

In this part of the assessment we consider key locations along the coast between Barge Pier, Shoebury Ness and Wallasea Island where establishing the England Coast Path and associated coastal access rights might impact on Qualifying Features of a European site. We assess the possible risks at each location and explain how the detailed design of our proposals takes account of them.

The relationship between the locations referred to in this assessment and the corresponding Coastal Access Reports in which the access proposal is described is shown in the table below.

Table 8. Summary of key locations

Location	Cross reference to Coastal Access Reports	Non-breeding waterbirds	Breeding terns and waders	Non-breeding hen harrier	Intertidal mudflats and sandflats	Wetland plant assemblages
East Beach, Shoeburyness	Report SWI 1/ route sections SWI-1-S015 to SWI-1-S017 (Map SWI 1b)				✓	✓
Oxenham Farm grazing marsh	Report SWI 2/ route section SWI-2-S002 (Map SWI 2a)					✓
Upper Roach, Mucking Hall to Fleet Hall	Report SWI 3/ route sections SWI-3-S023 to SWI-3-S029 (Maps SWI 3c to SWI 3f)	✓				
Wallasea Island	Report SWI 6/ route sections SWI-6-S003 to SWI-6-S029 (Maps SWI 6a to SWI 6i)	✓	✓	✓		

D3.2A East Beach, Shoeburyness

I) Baseline situation

East Beach is a popular public beach roughly 750 m long managed by Southend-on-Sea Borough Council under licence from the MoD. There is an area of amenity grassland immediately behind it with two large car parks, toilets, barbeque areas and park benches. The sand beach slopes down from the grass edge for about 20 to 40 m to a little below Mean High Water, beyond which intertidal sand and muddy sand flats extend for more than 3 km into the Thames Estuary. The shared landward boundary of the Essex Estuaries SAC and the Foulness SSSI, SPA and Ramsar site runs along the top of the beach. All four designations include the intertidal flats. MoD byelaws apply seaward of the Mean High Water line but the licensed area where public access is permitted includes a roughly two- to three-hundred metre wide strip of intertidal flats directly in front of the beach. The beach is popular

for watersports, particularly kite-surfing, as well as bathing. There is a public launch ramp midway along it and a bathing pool in the intertidal area near the south end.

Dwarf eelgrass *Zostera noltii* and narrow-leaved eelgrass *Z.marina var angustifolia* are recorded in intertidal areas of the Essex Estuaries SAC and the Foulness Ramsar site. Both are component species of the Ramsar site's wetland plant assemblage. Intertidal eelgrass beds is a sub-feature of the SAC feature intertidal mudflats and sandflats, and is sensitive to trampling.

A survey of eelgrasses (also known as seagrasses) was carried out in 2014 [Ref 4] at seven intertidal sites in the Essex Estuaries SAC where eelgrass beds had been recorded previously. No *Zostera* species were found at five of these sites, the two exceptions being the flats off East Beach and a small area in the outer Blackwater Estuary. East Beach was the only site where both eelgrass species were still present. Here, the survey results show a patchy distribution of eelgrass extending from a few metres beyond the beach for up to 200 m seaward in places. Comparing the 2014 transect results with previous Environment Agency survey data indicated that the eelgrass distribution had become more fragmented towards the shoreline but extended further seaward. Recreational activities at East Beach that could affect the eelgrass were noted as "water sports, kite-surfing, popular beach for tourists and dog walkers, and horse-riding". Considering the results from all seven sites surveyed in 2014, Natural England has concluded that the Essex Estuaries SAC eelgrass beds are in unfavourable condition due to significant declines in extent from previous surveys.

II) Detailed design features of the access proposal

We propose to align the Coast Path parallel to the beach, inland of seaward facing park benches on the amenity grassland and at least 10 m from the SAC and Ramsar site boundary. There are already signs nearby giving information on safety, prohibited activities, access restrictions beyond the licenced area, and the bird and other nature conservation interest of the wider Southend foreshore. But they do not specifically mention the eelgrass beds on the intertidal flats immediately in front of the beach. Therefore we propose two new advisory signs at either end of the grassland to inform visitors about these eelgrass beds. They will explain the high conservation value of this habitat and its sensitivity to trampling or other physical disturbance, and ask people to avoid damaging it as far as possible (the eelgrass is patchily distributed, so quite easy to avoid if walking out onto the flats at low tide). The signs will also include similar messages about other notable plant species growing near the top of the beach that are scarce in Essex, some of which are constituents of a strandline plant community that is a SSSI interest feature. We will liaise with Southend-on-Sea Borough Council and MoD to ensure the locations and wording of the new signage are fully compatible with theirs.

III) Consideration of possible risks to qualifying features at this location in light of the access proposal

The proposed trail alignment runs inland of protected site boundaries and across amenity grassland that is already accessible to the public and well used, as is East Beach itself. Our proposals will not affect public access rights to the eelgrass beds just beyond the beach because these lie within an area subject to military byelaws. But as the eelgrass is mainly in the area managed by Southend-on-Sea Borough Council under licence from the MoD, in

which public access is permitted, it is at risk of trampling or other physical damage by beach users. Our proposals would increase that risk significantly if promotion of this part of the Coast Path led to a substantial increase in the numbers of people walking out over the flats. However, East Beach is already well known and publicised so we predict that promotion of the Coast Path will, at most, only result in a small increase in public use of the area above the current baseline level. The new advisory signage will make the public aware of the eelgrass beds and the risk of trampling damage. If it influences the behaviour of even a small proportion of visitors as intended, it should counteract any potential effect of the Coast Path and may reduce damage to the eelgrass beds below current levels. It is worth noting that trampling or other physical damage is only one of several types of threat that may be contributing to national declines in eelgrass extent over the last several decades. Others, such as nutrient enrichment and disease, are not linked to recreational use of the coast. Indeed, measures to improve water quality at bathing beaches may be helping to reduce nutrient enrichment.

Conclusion

Natural England has considered the possible risks to qualifying features at this location, and given the avoidance and mitigation measures detailed above, consider that no significant adverse effects to sensitive features will be caused. The advisory signage included as mitigation may reduce physical damage to the eelgrass beds below current levels. The proposals will therefore not adversely affect the achievement of the conservation objectives in this location. Establishing a well maintained and easy to follow Coast Path along the alignment proposed will also help with the long-term management of visitors to the site.

D3.2B Oxenham Farm grazing marsh

I) Baseline situation

The irregular area of privately owned brackish grazing marsh south of Oxenham Farm lies within the Foulness SPA and Ramsar site and covers about 12 ha (Map 2). Its northern limit is formed by a borrow dyke and seabank also within the designated sites. The MoD restricted area lies just to the southeast and east, separated from the grazing marsh by arable fields and an old sewage works. A surfaced track from Landwick Cottages to the Oxenham Farm buildings runs north just inland of the grazing marsh, directly adjacent to part of its western boundary. A public footpath follows this track and joins the seabank beyond the farm, where it meets public footpaths extending along the flood defences in both directions. Other footpaths connect nearby Great Wakering with the southern and northern ends of the track and with the seabank further north, creating short circular routes which are well used by local residents with and without dogs.

The grazing marsh is grazed by horses and is of particular importance for nationally scarce plant species in the Foulness Ramsar site's wetland plant assemblage. It supports at least five assemblage species, most of which are annuals that are likely to be outcompeted by perennial grasses if grazing ceases or is interrupted. There are currently no rights of public access on the marsh.

II) Detailed design features of the access proposal

Our proposed alignment for the Coast Path runs along the public footpath that follows the track between Landwick Cottages and Oxenham Farm. It then joins the seabank footpath just beyond the farm and continues north along that towards Fleet Head. This alignment avoids the grazing marsh but brings it into the coastal margin, where new coastal access rights would normally apply. The northern half of the track to Oxenham Farm is separated from the grazing marsh by a small arable field. But the southern half lies directly adjacent to the marsh, separated from it by a ditch about 3 m wide and with gates onto the marsh at the south and north ends.

Because of the high value of this grazing marsh for the wetland plant assemblage, we consider that allowing public access rights over it would represent a significant risk to the integrity of the Foulness Ramsar site, even if promotion of the Coast Path does not attract more users to this part of the route. We have identified two main types of risk:

i) **Disruption to the grazing regime**: Walkers or their dogs could scare the horses, and even very occasional incidents might well lead the grazier to take their animals off the marsh and graze them elsewhere. The resulting interruption or cessation of grazing, or other unpredictable changes to the grazing regime, are likely to cause rapid changes in sward structure and lead to nationally scarce assemblage species being outcompeted by common grasses.

ii) **Trampling damage**: The wetland assemblage species this grazing marsh supports are clearly adapted to grazing and the associated light poaching of the ground by horses. But trampling by walkers differs from that in a number of respects and may cause damage. Firstly, walkers' desire line paths are difficult to predict and may concentrate damage in parts of the marsh that are particularly important for assemblage species. Secondly, trampling by walkers does not have the same effects on the ground or the sward as grazing and poaching by horses. Trampling does not remove vegetation and would cause soil compaction along desire lines. Thirdly, the intensity and pattern of grazing can be readily adjusted if necessary to benefit assemblage plants but, if new access rights were granted, public use of the area would be much harder to control to prevent damage.

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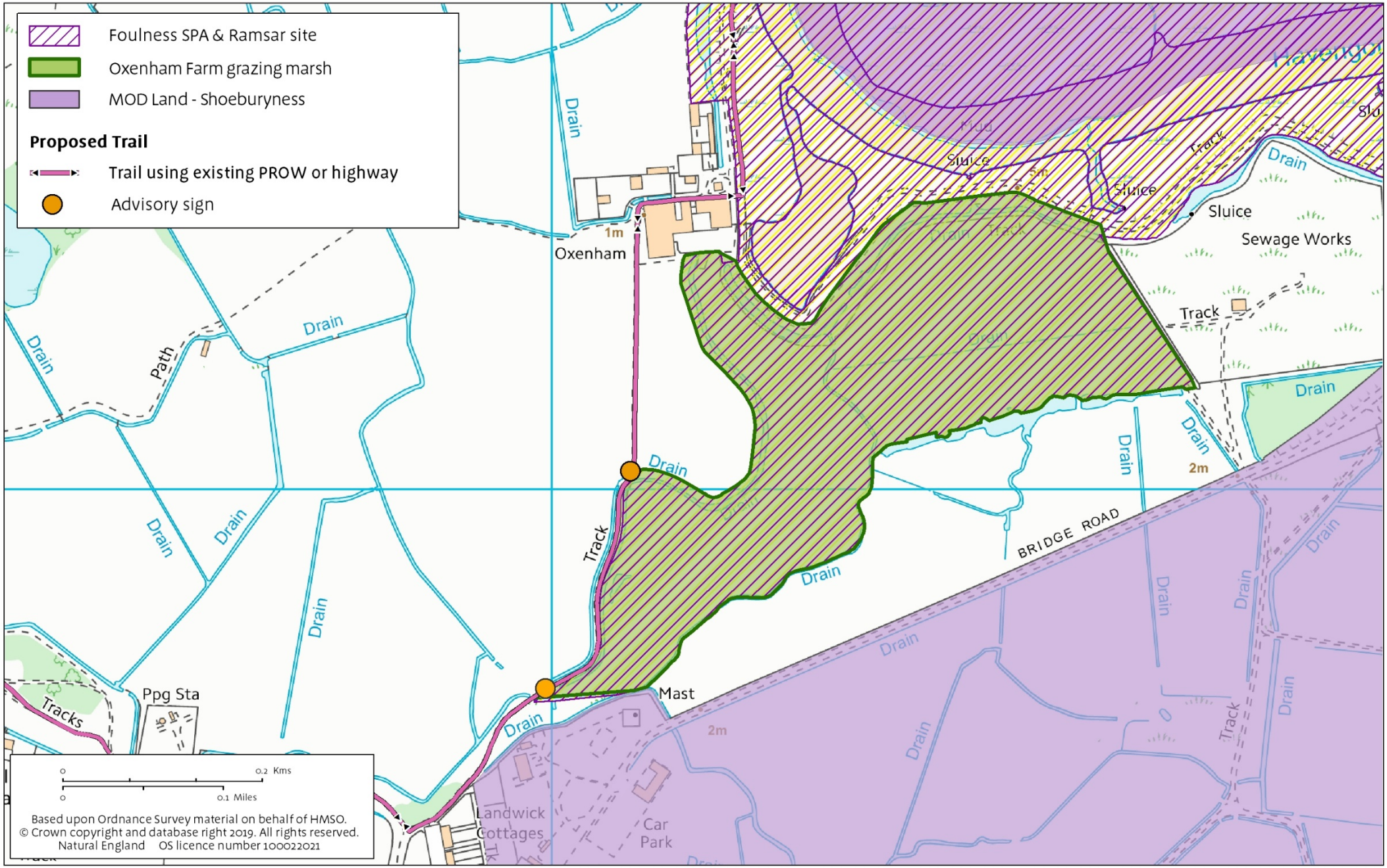
Map 2 - Oxenham Farm Grazing Marsh



In relation to both the above risks, it is worth noting that allowing new coastal access rights on the grazing marsh would open up new short, circular routes which could become popular with local walkers: for example crossing the marsh to the seabank along its northern side and returning via Oxenham Farm.

Given the identified risks and the high value of this grazing marsh for the Ramsar site wetland plant assemblage, we propose to exclude access to it year round on nature conservation grounds under a S26(3)(a) CROW Direction (see Directions Map SWI 2A in Report SWI 2), and to include signage to inform trail users of this. Walkers will obviously continue to have access to the seabank footpath just beyond the northern edge of the grazing marsh, which is reached by turning south where the Coast Path route joins the seabank.

III) Consideration of possible risks to qualifying features at this location in light of the access proposal

Our proposed Coast Path alignment in the vicinity of Landwick Cottages and Oxenham Farm, and other public rights of way connecting with it, are already well used by local walkers. We expect that promotion of the Coast Path will only result in a modest increase in visitor numbers here; typically long distance trail users passing through. As our access proposal does not include any new coastal access rights on the Oxenham Farm grazing marsh it does not present appreciable risks to qualifying features at this location.

Conclusion

Natural England has considered the possible risks to qualifying features at this location, and given the avoidance and mitigation measures detailed above, consider that no significant adverse effects to sensitive features will be caused. The proposals will therefore not adversely affect the achievement of the conservation objectives in this location. Establishing a well maintained and easy to follow Coast Path along the alignment proposed will also help with the long-term management of visitors to the area.

D3.2C Upper Roach, Mucking Hall to Fleet Hall

The seabank along the south side of the upper Roach Estuary between Mucking Hall, Barling Magna, and Fleet Hall, near Rochford, is unusual in having no public footpath. Creating new coastal access on this roughly 3.5 km-long section of seabank would increase levels of public use and so might significantly increase disturbance to non-breeding waterbirds feeding or resting in the vicinity over the winter or during autumn and spring passage periods. Before deciding on preferred route options and design details for this location we assessed the limited information available and carried out survey work during 2018 to gather more data on the species and numbers of waterbirds using this part of the estuary and the extent to which birds may be concentrated near enough to the southern seabank at certain states of the tide to be disturbed by walkers. We also installed a people counter on the seabank to quantify baseline levels of use. The description below of the baseline situation includes a summary of the previously available information and our 2018 survey work.

l) Baseline situation

In the upper Roach both avian features of the Crouch and Roach Estuaries SPA and Ramsar site occur: non-breeding dark-bellied brent goose and the non-breeding waterbird assemblage. Based on analysis of WeBS data, Natural England defines the sensitive period for dark-bellied brent goose on this SPA as November to March inclusive. The sensitive period for bird assemblages is not formally defined but, based on seasonal patterns of occurrence of the main component species, it is likely to last from around August to April.

The part of the estuary without public access on the southern seabank has a very narrow subtidal channel except at its eastern end. It is predominantly intertidal mudflats with discontinuous and generally narrow areas of saltmarsh. The southern side has three distinct sections (Map 3): the West and East sections have little or no saltmarsh between the seabank and adjacent mudflats, while the Central section has a block of saltmarsh 65 to 230 m wide separating the seabank from the open mud. There is an important wader high tide roost on this saltmarsh and another on the north side of the estuary about 1 km further east at Bartonhall Creek [Ref 13]. A wildfowling club occasionally shoots over the Central section saltmarsh and other parts of the Roach foreshore. A recent change in the West section not shown on OS mapping is that a variable strip of cord-grass (*Spartina anglica*) 15 to 70 m wide now separates the seabank from the open mudflat.

The only direct connection with existing public footpaths is at the east end of the East section, where a path joins the seabank from the south and continues east along the seabank. There is a small public car park at Barling Magna Wildlife Reserve about 650 m south-southeast of this point but otherwise very little public parking space nearby. On the north side of the estuary a public footpath along the seabank forms part of the waymarked Roach Valley Way, which is promoted by Rochford District Council.

Since 2000, the upper Roach has only been covered by Wetland Bird Survey (WeBS) core counts between 2010/11 and 2014/15. Moreover, it was surveyed as part of a 7 km-long count sector that extends northeast to Wallasea Island. This limits the usefulness of the sector totals for assessing bird numbers upstream of Mucking Hall. We were unable to contact the previous volunteer counter to obtain information on a finer spatial scale. However, a WeBS low tide survey using smaller count sectors was carried out over the 2010/11 winter. Distribution maps from that [Ref 3] show several common wader and wildfowl species as slightly to markedly more numerous in the upstream half of the estuary. Taken together with the limited core count data, they suggest that brent goose and several of the other main species in the waterbird assemblage may use the upper Roach in important numbers.

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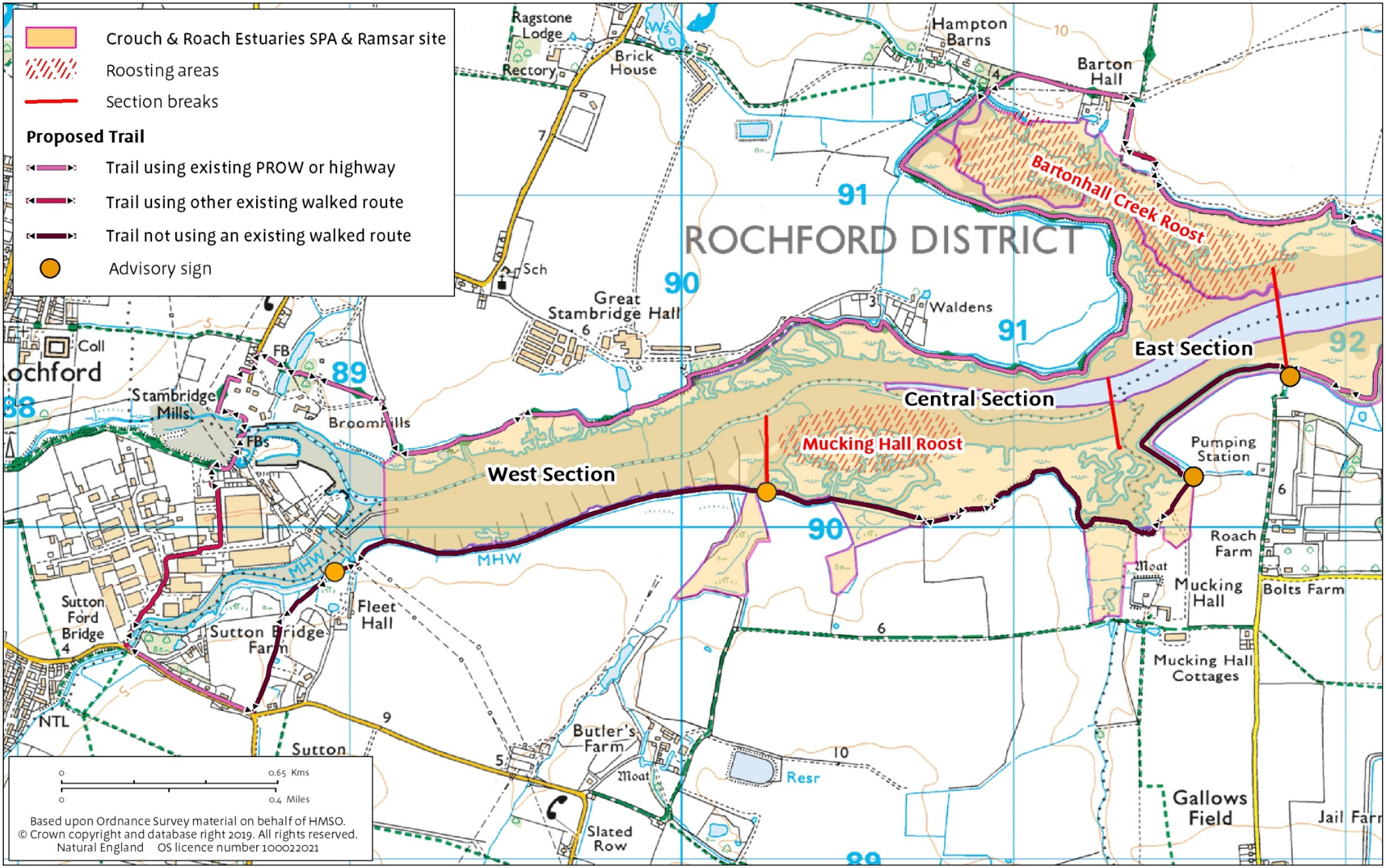
Map 3 - Upper Roach Estuary



Recent Natural England survey: overview

Between mid-January and mid-February 2018 we carried out bird surveys on four days. These concentrated on the West and East sections (Map 3), where the mudflats are not separated from the seabank by a wide area of saltmarsh, so waders feeding on the mud could be disturbed by walkers. The risk of disturbing significant numbers was expected to be greater when the tide covered most but not all of the mudflat, restricting feeding waders to narrow areas of exposed mud near the seabank. We therefore chose survey days with high tides during late morning or early afternoon and normally covered the period 2 or 3 hours before and after a high tide. On all but the first day, we used three vantage points on the south seabank to survey both sections simultaneously. From each point, recording was concentrated in a count area several hundred metres long and extending from the seabank to the mid-line of the estuary. Normally at 15 minute intervals, we estimated the distance between the seabank and the waterline beyond the exposed mudflat, recorded waterbirds in the count area, and made brief notes on their activity, location and movement. As far as time allowed, counts and notes were also made for adjacent areas, including the north side of the estuary. We also recorded some information on possible sources of disturbance (walkers, boats etc) and how and at roughly what distances birds reacted. During our survey periods the mudflats were completely submerged for longer in the East section than the West, so our data from the East are more limited.

In the Central section, the risk of walkers on the seabank disturbing birds on the mudflat is negligible because of the width of saltmarsh. At high tide waders congregate to roost near the outer edge of this marsh, where for most high tides they are beyond disturbance distance from the seabank. But we found they occasionally become susceptible to disturbance when particularly high tides flood much of the marsh, pushing roosting waders closer to the seabank and allowing wildfowl to swim in over the flooded vegetation. We observed this situation twice during very high tides[3] over 5.5 m and recorded the approximate numbers of birds affected. We returned in December 2018 during a slightly lower (5.25 m) high tide to estimate better the minimum tide height at which roosting waders are pushed landward. Local tide tables were then used to estimate how frequently such tides would occur during daylight (when walkers might be on the seabank). Tide tables and the people counter data were also used to assess how often disturbance might occur at current levels of use.

Reaction distances and tidal conditions that increase the risk of disturbing feeding birds

As expected from the literature, our estimates of distances at which birds reacted to people on the seabank varied considerably: from under 25 m to 120 m. There was a tendency for ducks to take flight at greater distances than waders, and larger flocks at greater distances than scattered individuals. Birds resting at high tide seemed more wary than those feeding actively afterwards. When disturbed, birds usually moved a few 10s or 100s of metres rather than longer distances.

[3] Tide heights quoted in this HRA are generally as predicted in tide tables for Burnham-on-Crouch, available on the Crouch Harbour Authority website. On one of our survey days the predicted height was 5.66 m (just 10 cm below Highest Astronomical Tide); on another the height was increased to over 5.5 m by a strong tidal surge.

At all states of the tide when some mudflat was exposed, most waders and ducks tended to feed near the waterline at the outer edge of the mudflat. Therefore we identified three tide states with different levels of disturbance risk, based on the distance between the waterline and the seabank: lowest (>100 m), medium (50-100 m) and higher (<50 m). When all the mudflat was submerged disturbance risk was again low because waders had moved to roost sites and there were very few wildfowl near the seabank. We used our repeated distance estimates to assess the duration of low, medium and high disturbance risk in both sections. In the West section, higher disturbance risk only lasted for half to one hour in total on our survey days (5 to 10% of total day length) and medium risk about the same. This is because, except close to the subtidal channel, the mudflats in this section are almost horizontal. In the shorter East section the estimated duration of higher risk conditions varied more from day to day and was on average about twice as long, while medium risk took up most of the remaining period when some mudflat was exposed. This is because the mudflats here slope more steeply and the subtidal channel is wider and closer to the seabank.

Maximum counts in West and East sections, where disturbance to feeding birds is a risk

In our count areas covering the south side of the estuary, we recorded 22 waterbird species - 16 in the West section, 18 in the East, 14 in both. Maximum counts on all survey days were below 20 individuals for nine species but over 100 for redshank, dunlin, knot, black-tailed godwit, brent goose and teal. For nearly all the species with maxima of 20 or more, numbers were higher in the West than the East. The exceptions were wigeon (slightly higher in the East) and brent goose (not recorded in the West, maximum of 1,650 in the East). In the East section, numbers of most wader species were much higher on the north side of the river, particularly around the large Bartonhall Creek roost. In the West, birds were much more evenly spread between the south and north sides.

In the West section we recorded seven main component species of the waterbird assemblage on the south side of the estuary. Maximum counts (and the percentages of the species' 2011/12 - 2016/17 five-year mean peak for the whole SPA they represent) were: redshank: 124 (13.0%); dunlin: 549 (17.9%); black-tailed godwit: 200 (27.2%); lapwing: 10 (0.2%); teal: 105 (5.2%); wigeon: 50 (1.4%) and shelduck: 15 (2.5%). In the East section, equivalent figures for the nine main component species recorded on the south side of the estuary were: redshank: 73 (7.7%); dunlin: 271 (8.8%); black-tailed godwit: 4 (0.5%); avocet: 42 (22.9%); brent goose: 1,650 (34.4%); teal: 98 (4.8%); wigeon: 82 (2.4%); shelduck: 12 (2.0%); little egret: 1 (1.4%). Most of these maximum counts usually occurred during periods of low disturbance risk when the waterline, and most birds, were well away from the seabank. But during higher disturbance risk periods, the following maxima for main species were recorded: In the West section: redshank: 124 (13.0%): dunlin: 170 (5.5%); black-tailed godwit: 150 (20.4%); teal: 30 (1.5%); wigeon: 50 (1.4%); shelduck: 15 (2.5%); and in the East section: redshank: 50 (5.3%); dunlin: 271 (8.8%); avocet: 32 (17.5%); brent goose: 1,650 (34.4%); teal: 98 (4.8%); wigeon: 82 (2.4%); shelduck: 12 (2.0%). These maximum counts during higher risk periods are more significant for the waders than the wildfowl, because (i) the latter were generally swimming beyond the waterline; and (ii) with the exception of brent goose, the maxima for the waders represent a higher proportion of the species' whole SPA populations. We saw very little sign that birds became concentrated close to the southern seabank on a rising tide; most appeared to have already moved elsewhere, closer to roost locations. The relatively high counts for some species, particularly

waders, during higher risk periods when the waterline was within 50 m of the seabank generally occurred on a falling tide, as birds returned promptly from their roost sites to feed along the rapidly retreating waterline as the tide ebbed.

The Central section and potential for disturbance of its high tide roost

We did not count birds in the Central section systematically. Except when a particularly high tide flooded most of the saltmarsh, many birds roosting or feeding in this section were out of view from the southern seabank. From our occasional and partial counts, the roost was used on one or more survey days by several 100 dunlin and lapwing, at least 100 each of redshank, black-tailed godwit and knot, and at least 50 grey plover and curlew. But higher numbers roosted on saltmarsh at the mouth of Bartonhall Creek, about 1 km downstream on the north side of the East section. Birds were regularly seen moving from one roost site to the other.

On the two occasions when we saw high tides of 5.5 m or more flood the Central section saltmarsh, about 200 dunlin, 100 redshank and 50 each of black-tailed godwit, grey plover and curlew were forced by the rising tide to roost close enough to the seabank to be flushed by walkers on it. These were the majority of waders roosting in the Central section at the time (all of which had to move elsewhere at peak tide when the marsh was completely submerged). While it was flooded, about 300 wigeon and teal and up to 1,000 brent geese swam in over the saltmarsh, some close enough to the seabank to be disturbed. On the slightly lower (5.25 m) high tide observed in December, much less of the saltmarsh was flooded. Just over 100 of roughly 1,000 waders seen on the roost shortly before high tide moved close enough to the seabank to be disturbed from it, along with about 300 wigeon and teal.

From our observations, we estimate the minimum tide heights necessary to produce conditions when walkers on the seabank might produce 'major' or 'moderate' disturbance to roosting birds are 5. 4 m and 5.2 m respectively. Major disturbance would involve the majority of birds on the saltmarsh, with some moving to Bartonhall Creek or other roost sites; 'moderate' only a minority of birds and smaller-scale movements. From local tide tables for Burnham-on-Crouch for October 2017 to March 2018, winter high tides of at least 5.4 m or 5.2 m during day-time (when walkers might be on the seabank) are only predicted to occur on 10% and 19% of days respectively. The percentages are slightly lower if the spring and autumn migration periods are included.

Birds inland of the seabank

The only waterbirds seen on the open farmland south of the estuary were lapwings, brent geese and some roosting gulls. All these birds were several hundred metres inland, too far to be disturbed from the seabank. Brent geese were only seen on winter cereal fields south of the Central section. Flocks of 1,000 and 1,650 recorded on two days swimming in the Central and East sections around high tide flew to and from these fields and other farmland further southeast.

Baseline levels of use

There is a low level of de facto use of the seabank despite the current lack of a public footpath. From observations during site visits and patterns of wear, there is noticeably more in the East and Central sections than the West. The people counter installed on the seabank

crest midway along the Central section provided data for the period May 2018 to January 2019. These give monthly means of 3.4 to 4.4 passes per day for September to January (overall mean 3.6) and of 4.9 to 7.3 per day for May to August (overall mean: 6.0). The data also show a distinct pattern of usage through the day, with average numbers of passes building from mid-morning and declining from mid/late afternoon, with a slight decrease around midday. Averaging each month's data separately shows winter months generally have a more restricted period of activity, probably related to shorter day length. There was little sign of increased use at weekends.

II) Detailed design features of the access proposal

In part (III) below we summarise our assessment of the level of bird disturbance that a new public footpath along the seabank between Mucking Hall and Fleet Hall would produce, based on the available information and recent survey work outlined above. We conclude that though there would be a limited amount of additional disturbance above current baseline levels, this would not be frequent or large-scale enough to risk an adverse effect on the integrity of the Crouch and Roach Estuaries SPA and Ramsar site. The proposed route of the Coast Path therefore follows the seabank crest. All the saltmarsh and mudflats seaward of the route are unsuitable for public access, so access to them will be excluded by direction (see Directions Map SWI 3B in Report SWI 3). Advisory signs informing walkers of this, and of the need to keep dogs under close control, are proposed at the west and east ends of the new path. We propose two more signs on the seabank at either end of the Central section saltmarsh, to reinforce those messages near the high tide roost and because walkers or their dogs may be more tempted to stray out onto saltmarsh than mudflat.

We propose that spreading room inland of the new path includes the folding behind the seabank. And that the signs include a message that flocks of waterbirds may occasionally be feeding or resting near enough to the path to be disturbed and that, in those circumstances, users are requested to walk in the folding to avoid disturbing them. We do not consider compliance with this advice necessary to avoid an adverse effect on site integrity but it will raise awareness of the bird disturbance issue and any level of compliance should be beneficial.

III) Consideration of possible risks to qualifying features at this location in light of the access proposal

The level of bird disturbance that new public access along the seabank between Mucking Hall and Fleet Hall might produce depends on a variety of factors, in particular:

a) the numbers of waterbirds using the south side of the estuary;
b) the duration and frequency of periods when tide conditions may cause a significant proportion of feeding or roosting birds to use areas within disturbance distance of the seabank;
c) changes in levels of use of the seabank above the current baseline.

Information on the first two factors is summarised above. On changes in levels of use: though our proposals at this location include new access along the seabank, we only expect a moderate increase in the number of users because:

- the proposal does not create new short, circular routes;

- there are relatively few houses near the new path;
- there is very little public parking space nearby apart from one small car park over 600 m inland;
- there is already some de facto use of the seabank.

As mentioned earlier, current use appears to be more frequent in the East and Central sections, so the increase in use may be smaller there than in the West. Our notes from bird survey days suggest winter use of the public footpath along the north side of the estuary is light: averaging between one and three passes in a 4 to 6 hour period, about double the frequency seen on the south side in the East and Central sections. This is very limited and approximate information but it may give a rough indication of the levels of use that might be expected on the south side on winter days as a result of our proposals.

Disturbance to dark-bellied brent goose

On two survey days flocks of 1,000 and 1,650 brent geese were recorded in the East and Central sections. These were swimming in the estuary around high tide, and flying between it and cereal fields inland. This pattern of use suggests that aligning the Coast Path along the seabank here would not result in significant disturbance because geese roosting/loafing on the water could swim further from the seabank if necessary, with little energetic cost and therefore impact on survival. Three areas of unimproved grazing marsh within the SPA just inland of the Central section seabank are too small, irregular and enclosed to attract brent geese, which we only recorded using the larger, more open cereal fields to the south. Further upstream we saw no brent geese in the West section, though 2010/11 WeBS low tide survey results [Ref 3] and shooting licence applications [Ref 13] indicate that in recent years they have used the north side of the estuary and adjacent farmland north of the existing public footpath.

Disturbance to waterbird assemblage species feeding on the mudflats

In the West and East sections there is very little saltmarsh and no roost sites but the inland edge of the mudflats lie near the south seabank, so the disturbance risk is to feeding rather than roosting birds. The West section is more than twice the length of the East, its south side is used by more birds, and new public access is likely to change levels of use more than in the East (because current levels are lower). It is therefore the more important of the two when assessing the effects of the access proposal.

Significant numbers of several main component species in the waterbird assemblage use the West section when some mud is exposed. But the large majority of birds feed near the waterline, which usually lies close to the subtidal channel and well over 100 m from the seabank. At such times they are too far from the seabank to be disturbed, and many are hidden from view. Periods around high tide when the disturbance risk is higher because the waterline lies within 50 m of the seabank are brief: estimated at half to one hour on our survey days, just 5 to 10% of total daylength. This is because the mudflats away from the subtidal channel here are almost horizontal. In the short periods after high tide when the waterline was close to the seabank, waders flew in promptly to feed. But there was no equivalent concentration of birds near the seabank on a rising tide. In addition, the southern edge of the mudflat is now separated from the seabank by a strip of cord-grass averaging roughly 35 m wide which birds do not feed in.

In the East section the width of mudflat between the southern seabank and Mean Low Water is generally less than 100 m and the mudflats slope more steeply than in the West, so periods when some mud is exposed and the waterline is close enough to the seabank to put waders at risk of disturbance are longer. Set against that are the higher current levels of use of the seabank here, the smaller area of feeding habitat involved, the lower numbers of birds recorded, and the fact that there are large areas of mudflat nearby that are over 100 m from any seabank: just upstream in the Central section and directly north around the mouth of Bartonhall Creek.

Disturbance to waterbirds roosting on the saltmarsh

Regular disturbance to a high tide roost can have serious consequences for the energy budgets of birds at times of the year when energy expenditure is already particularly high, and can be exacerbated if there are no alternative roost sites in the area. But birds roosting on the Central section saltmarsh are only susceptible to disturbance from the seabank during particularly high tides that flood most of the marsh, pushing birds towards the flood defence. We estimate a high tide of at least 5.2 m is needed before there is a risk of moderate disturbance (involving a minority of roosting birds and flights of a few hundred metres or less). The risk of major disturbance (involving the majority and movement to other roost sites) would probably require a high tide of 5.4 m or more. From local tide tables, tides of ≥5.2 m and ≥5.4 m are predicted to occur on only 19% and 10% of winter days respectively (high tides between sunset and sunrise were ignored because the seabank path is unlikely to be used at night). Even on these days, the risk period when the marsh is mainly but not completely submerged will be quite short. It lasted roughly 80 minutes for the 5.25 m tide we observed. When tides are above 5.5 m, there are likely to be two distinct risk periods shortly before and after high tide, separated by a time when the saltmarsh is completely flooded and waders have to move elsewhere.

Information from the people counter installed in the Central section is available for 92 autumn/winter days: October 2018 to mid-January 2019. We combined records of passes along the seabank during this period with data on predicted tide heights and times to assess disturbance to the roost at current levels of use and the potential for increased disturbance from new public access along the seabank. For this analysis we used a precautionary 4 hour 'risk period' (2 hours either side of high tide) and threshold tide heights of 5.1 m and 5.4 m (for moderate and major disturbance respectively). Tides of ≥5.1 m occurred on 33 days in the 92 day period (35.9%); on 18 (19.6%) there was at least one pass during the risk period, and on 10 (10.9%) there was at least one pass per hour (a frequency of disturbance at which a location may become unavailable to roosting birds). Equivalent figures for tides of ≥ 5.4 m (risk of major disturbance) were 8 days (8.7%), 6 days (6.5%) and 3 days (3.3%) respectively. The results suggest that if new public access increased the frequency of passes along the seabank this would have relatively little effect on the proportion of days on which major disturbance events might occur, simply because tides of ≥5.4 m are so infrequent. Its main effect would probably be to increase the frequency of moderate disturbance events, which would only affect a minority of roosting birds and mainly involve local displacement within the Central section.

Conclusion

Natural England has considered the possible risks to qualifying features at this location, and having assessed the available information including that from recent survey work, consider

that the proposals will not cause significant levels of disturbance. The proposals will therefore not adversely affect the achievement of the conservation objectives in this location. Establishing a well maintained and easy to follow Coast Path along the alignment proposed, with signage to inform walkers of the access restrictions in the coastal margin and advice on how to reduce bird disturbance, will also help with the long-term management of visitors to the area.

D3.2D Wallasea Island

I) Baseline situation

Wallasea Island (Map 4) has a caravan site, a marina, a commercial wharf, and arable fields at its narrow northwest end. The rest of the island is a mosaic of intertidal, brackish and freshwater wetland habitats covering several hundred hectares, nearly all created from arable farmland since 2005. Allfleets Marsh - 115 ha of new mudflats and saltmarsh - is a managed realignment site completed by Defra in 2006 which runs along the north side of the island. The RSPB's Wallasea Island Wild Coast Project nature reserve lies immediately south of that. The reserve takes up about three-quarters of the island and comprises 670 ha of new wetland habitats created since 2009 [Ref 1]. It includes another large managed realignment site, Jubilee Marsh on the east side of the island, which covers 160 ha and was flooded in 2015. The development of Jubilee Marsh involved the importation of several million tonnes of inert material to raise and vary the ground levels so that the area develops into a mixture of mudflat, saltmarsh, lagoons, islands and non-tidal grassland. The rest of the reserve lies behind sea defences and mainly comprises coastal grazing marsh with large saline lagoons and other water bodies. The last elements to be completed were extensive shallow lagoons on the south side of the island covering about 200 ha and flooded in 2018. These are regulated tidal exchange (RTE) areas, their water levels managed using a tide gate in the southern seabank and other water control structures.

There is a public footpath along the north side of Wallasea Island on the recently constructed seabank that forms the landward edge of Allfleets Marsh. This path continues west and south to Ferry Creek Road – the road link to the mainland. Permissive footpaths with a 'no dogs' restriction provide access southwards into the RSPB reserve. One follows the new seabank along the western edge of Jubilee Marsh to a viewpoint overlooking the Roach Estuary on the south side of the island. Another provides a circular route further west that incorporates several hundred metres following the folding behind the southwestern sea defences adjacent to Paglesham Creek. There are no other permissive or public footpaths on the south side of the island. Further up Paglesham Creek, west of the RSPB reserve, the saltmarsh and adjacent borrow dyke are managed for shooting by a wildfowling club. A fence and a high, locked gate prevents access onto the wildfowling area from Ferry Creek Road. In 2018 the RSPB reserve received about 20,000 visits. Now that habitat creation works have been completed visitor numbers are likely to increase further, particularly when a planned ferry service to the reserve from Burnham-on-Crouch starts operating, and as visitor facilities are added. Currently the public footpath along the north side of the island is well used by walkers (with and without dogs) particularly within a kilometre or two of the reserve car park. Levels of use are lower on paths further from the car park but from Strava heatmaps the out-and-back routes along the north and west sides of Jubilee Marsh are

regularly used. De facto use away from public or permissive rights of way on Wallasea Island appears to be very low.

The Crouch and Roach Estuaries SPA and Ramsar site were extended to include Allfleets Marsh in 2018, after Defra's monitoring of the realignment site confirmed that within a few years of completion it supported large numbers of overwintering waterbirds, including brent geese and several other main component species of the non-breeding waterbird assemblage. Jubilee Marsh and the other wetland areas on Wallasea Island created since 2009 are not currently part of the SPA or Ramsar site but are already important as functionally linked land for feeding and roosting waterbirds. Co-ordinated counts of Jubilee Marsh on 6 days during January and February 2018 produced the following mean peak numbers: brent goose: 1,479; wigeon: 1,065; dunlin: 1,052; grey plover: 483; shelduck: 410; redshank: 302; teal: 260; and over 100 for knot, lapwing, avocet and black-tailed godwit [Ref 1]. The total WeBS high tide count for the whole of Wallasea Island in January 2018 was 13,500 waterbirds. This is roughly half the annual peak number for the whole SPA.

Wallasea Island also attracts overwintering hen harrier, a qualifying feature of the Foulness SPA, which lies a few hundred metres away across the Roach Estuary. Annual peak numbers on the island during the winters 2009/10 to 2017/18 varied from 2 to 7 (mean: 3.6) [Ref 1], similar to peaks recorded for Foulness. Hen harriers fly between the two sites and hunt across the whole island including the intertidal areas, and sometimes roost on it.

The new wetland habitats on the island also provide suitable nesting and feeding areas for the three tern and two wader species that are breeding bird qualifying features of Foulness SPA. This area is already being used by two of these species: 88 pairs of avocet and 43 of common tern nested on the RSPB reserve in 2018 [Ref 1]. Two pairs of ringed plovers held territory in Jubilee Marsh in 2016 but are not thought to have nested. Habitat enhancement and decoys are being used in an effort to attract little terns to the marsh and sandwich terns have been seen foraging there.

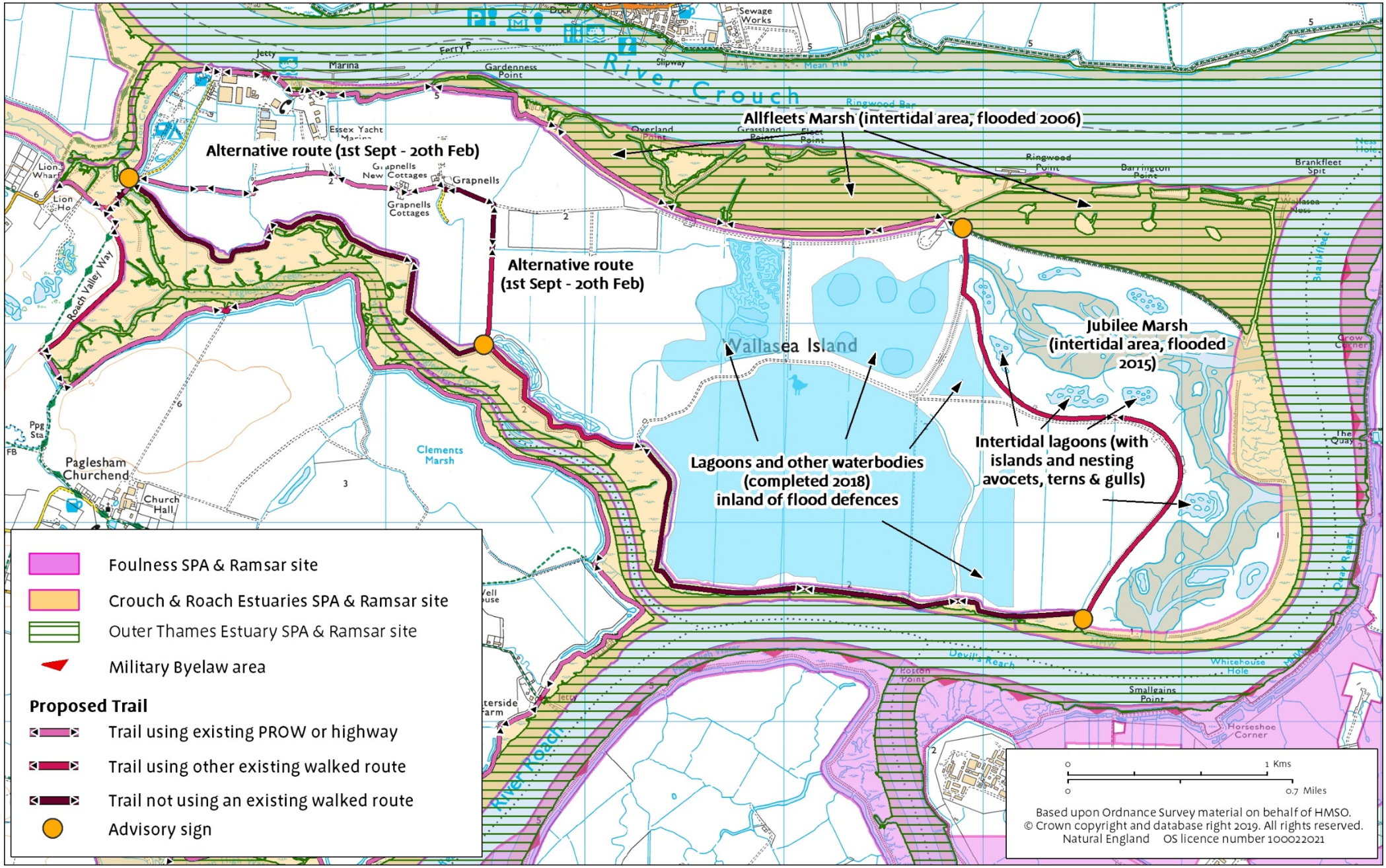
On Jubilee Marsh, the avocets and common terns nest with Mediterranean and black-headed gulls on low islets in seven shallow lagoons that retain seawater at low tide. These are on the higher parts of the realignment site, mainly within 50 to 150 m of seabank paths along its western and northern edges (see Map 4).

II) Detailed design features of the access proposal

When developing our access proposal for the Wallasea Island coast we consulted closely with RSPB staff involved in the management and monitoring of the Wild Coast Project reserve and received specialist, site-specific advice from a leading consultant commissioned by Natural England to provide evidence based advice on people and dog management and behavioural change on sensitive sites.

Coastal Access - Southend-on-Sea to Wallasea Island - Habitats Regulations Assessment

Map 4 - Wallasea Island



Our proposed alignment for the Coast Path on Wallasea Island uses the existing public footpath along the north side and provides several kilometres of new public access on the southern and east sides of the island (Map 4). Going anticlockwise from the point where Ferry Creek Road crosses from the mainland, the route follows the folding between the southern seabank and the borrow dykebehind it for about 6.5 km to the southwest corner of Jubilee Marsh. It then follows the existing permissive path along the crest of the seabank that forms the western boundary of the new realignment site for about 3 km. At the northwest corner of Jubilee Marsh the route joins the crest of the seabank on the south side of Allfleets Marsh. It follows the public footpath west along this seabank and then south along Lion Creek to meet Ferry Creek Road from the north.

The first part of the route along the southern folding that runs through the area managed by a wildfowling club will be closed on public safety and land management grounds during the wildfowling season (1 September to 20 February). Lockable pedestrian gates will be installed at either end of this section. An alternative inland route will be available during the wildfowling season, following Creeksea Ferry Road east to Grapnells Farm and then cutting south across the western end of the RSPB reserve to rejoin the seabank.

On the south side of the island we propose to align the trail along the folding rather than the crest of the seabank. This is partly to provide a better walking route as the bank top is narrow, frequently uneven and would be difficult to maintain by cutting. But it is also to reduce bird disturbance on a part of the route with very little current access and where there are now important wetland habitats on both sides of the sea defences. By following the folding, walkers will not be silhouetted on the skyline, so they will be much less prominently visible from the large RTE lagoons and other wetland habitats on the landward side and will also be screened from adjacent saltmarsh and mudflat along Paglesham Creek and the Roach.

As elsewhere on this stretch, the majority of the saltmarsh and mudflats around Wallasea Island, including the areas within Allfleets Marsh, are unsuitable for public access on foot and will be excluded by direction from new coastal access rights because of this. But at Jubilee Marsh, extensive areas in the coastal margin are firm underfoot, not dissected by channels and safe to walk on. This is because: (i) the site was only flooded in 2015 and has had little time to accrete soft sediment; and (ii) imported material was used to create high, gently sloping areas around the edges to accommodate future sea level rise. At present these areas are rarely or never flooded even by high spring tides. They are likely to remain safe for access on foot for many years.

However, granting new coastal access rights on Jubilee Marsh would risk significant disturbance to the large numbers of non-breeding birds that now feed and roost on it during passage periods and through the winter. It would also risk significant disturbance during the summer to terns and waders that are breeding bird qualifying features of Foulness SPA, for which Jubilee Marsh has become important as functionally linked land. The risk to breeding birds is heightened by the fact that most of the shallow lagoons where they nest are around the accessible edges of the site. Therefore we propose to exclude access on nature conservation grounds, year-round, to all parts of Jubilee Marsh within the coastal margin. For the same reasons we propose a year-round 'no dogs' restriction on all parts of the route where the Coast Path provides new public access rights. Dog walkers will remain free to exercise their pets on the 6.5 km of existing public footpath along the north side of the island.

Access onto the old seabanks within Allfleets Marsh will also be excluded year-round on nature conservation grounds to prevent disturbance to waterbirds roosting and nesting on them or feeding on the adjacent mudflats. Maps E4 and E5 in the Overview of this stretch and Directions Maps SWI 6A and 6B in Report SWI 6 show the areas on which the exclusions and restrictions mentioned above apply around Wallasea Island.

We propose new signage to inform users of the seasonal alternative route around the wildfowling area west of the RSPB reserve and of the restrictions on nature conservation grounds outlined above. The signs will be located at both ends of those parts of the route where the relevant restrictions apply and will include advice on how users can reduce the risk of bird disturbance during their visit.

III) Consideration of possible risks to qualifying features at this location in light of the access proposal

We expect our proposals to increase levels of public use to varying degrees on different parts of the Wallasea Island coast. On the southern side, access from Creeksea Ferry Road is currently blocked by a locked gate and there are only a few hundred metres of permissive path midway along it. Here our proposals are likely to significantly increase use above the low baseline level, particularly outside the wildfowling season when the whole length will be accessible. Increases on the east side along the Jubilee Marsh seabank are likely to be proportionately lower but may still be moderate because this seabank will become part of long circular routes (14 km around the whole island, or about 9 km using current permissive paths within the RSPB reserve). Only a small increase is expected along the north side of the island where there is already a popular public footpath and visitor car park. In and around the RSPB reserve, future increases in visitor numbers will probably be driven more by the provision of extra visitor facilities or new ferry access from Burnham-on-Crouch than by promotion of the Coast Path.

Along the south side of the island, more frequent use will increase the risk of disturbance to the non-breeding waterbird assemblage somewhat. But having considered the available information and discussed route options with RSPB reserve staff, we conclude that aligning the trail along the folding and a 'no dogs' restriction provide sufficient mitigation to ensure that any increase in disturbance will be too small-scale to be significant. Signage will advise users to follow the folding to keep disturbance to a minimum but we do not propose a formal restriction on the southern seabank. That would be difficult to enforce and walkers looking over the bank occasionally are unlikely to disturb significant numbers of birds here because: (i) there are no major high tide roosts within 200 m of the seabank [Ref 13]; (ii) there are only limited areas of intertidal mudflat, the majority of which is along Paglesham Creek and separated from the seabank by at least 100 m of saltmarsh; and (iii) WeBS low tide survey data [Ref 3] show relatively low numbers of waterbirds using mudflats adjacent to the sea defences here. The use of an alternative route at the top end of Paglesham Creek during the wildfowling season will reduce any risk of significant disturbance to overwintering birds even further.

At Jubilee Marsh exclusion by direction seaward of the trail and a 'no dogs' restriction are necessary to avoid the risk of significant disturbance to both non-breeding and breeding waterbirds. But with those mitigation measures in place (which effectively maintain the status quo) we consider that a moderate increase in use of the western seabank is not likely to produce any significant adverse effects.

Conclusion

Natural England has considered the possible risks to qualifying features at this location, and given the avoidance and mitigation measures detailed above, consider that no new significant disturbance will be caused. The proposals will therefore not adversely affect the achievement of the conservation objectives in this location. Establishing a well maintained and easy to follow Coast Path along the alignment proposed will also help with the long-term management of visitors to the area.

D3.3 Assessment of potentially adverse effects (taking account of any additional mitigation measures incorporated into the design of the access proposal) alone

In this section we assess the potential for adverse effects on site integrity resulting from the five environmental pressures and consequent risks to site conservation objectives identified in Table 7. We consider the whole Coast Path stretch and take into account mitigation measures incorporated into the design of our access proposal. Each of the following five subsections deals with one type of pressure. For ease of reference, we repeat the risk to conservation objectives and the qualifying features affected given in Table 7 (see D1) before summarising relevant design features, our conclusions on site integrity and whether non-significant residual effects remain which need to be considered in combination with non-significant effects of other plans or projects (see D4).

As in Table 7, feature groups are underlined and, at first mention, their constituent features are listed in brackets. Superscript numbers identify which designated sites each feature or feature group applies to, as follows: 1: Foulness SPA; 2: Foulness Ramsar site; 3: Crouch and Roach Estuaries SPA; 4: Crouch and Roach Estuaries Ramsar site; 5: Outer Thames Estuary SPA; 6: Essex Estuaries SAC.

Disturbance to non-breeding birds

Risk to conservation objectives: Repeated disturbance to foraging or resting birds during winter and on passage, following changes in recreational activities as a result of the access proposal, may lead to reduced fitness and reduction in population and/or contraction in the distribution of qualifying features within the site.

Qualifying feature(s) affected: Non-breeding waterbirds[1,2,3,4] (dark-bellied brent goose[1,2,3,4]; oystercatcher[1,2]; grey plover[1,2]; knot[1,2]; bar-tailed godwit[1,2]; redshank[1,2]; waterbird assemblages[1,2,3,4]); Non-breeding hen harrier[1]

Relevant design features of the access proposal:

- Access will be restricted year round to the coastal margin on Jubilee Marsh, Wallasea Island, by a formal direction on nature conservation grounds.
- The route will be aligned along the folding, not on the seabank crest, on the southern side of Wallasea Island.

- There will be a 'no dogs' restriction on all parts of the route around Wallasea Island that are not currently public rights of way, by a formal direction on nature conservation grounds.
- Except at Jubilee Marsh, nearly all intertidal areas adjacent to the route on this stretch are unsuitable for walking and access will be excluded by direction.
- On the south side of the upper Roach Estuary where the proposal will provide new access along the seabank, signage will be included to inform users of access restrictions in the coastal margin and of ways to reduce bird disturbance.

Can 'no adverse effect' on site integrity be ascertained? Yes, for the following main reasons:

- Along most of this stretch, where the route follows existing public rights of way, only small increases in levels of use are expected.
- Results of winter surveys indicate that public access to the seabank between Mucking Hall and Fleet Hall on the south side of the upper Roach will not cause significant bird disturbance.
- The route skirts around the inland edge of the Foulness SPA to avoid the MoD-restricted area, and lies well away from major roost sites and important feeding areas.
- Access is prohibited under MoD byelaws to nearly all the mudflats and sandflats in the coastal margin from Shoebury Ness to beyond East Beach.

Are there residual effects? Yes

Disturbance to breeding birds

Risk to conservation objectives: Repeated disturbance to birds during the breeding season, following changes in recreational activities as a result of the access proposal, may lead them to abandon nesting areas or reduce their breeding success (for example by causing eggs to become chilled, reducing food supply to chicks, or increasing the vulnerability of eggs, chicks or adults to predation).

Qualifying feature(s) affected: Breeding terns and waders[1,5] (common tern[1,5]; little tern[1,5]; sandwich tern[1]; avocet[1]; ringed plover[1])

Relevant design features of the access proposal:

- Access will be restricted year round to the coastal margin on Jubilee Marsh, Wallasea Island, by a formal direction on nature conservation grounds.
- There will be a 'no dogs' restriction on all parts of the route around Wallasea Island that are not currently public rights of way, by a formal direction on nature conservation grounds.
- Except at Jubilee Marsh, nearly all intertidal areas adjacent to the route are unsuitable for walking and access will be excluded by direction.

Can 'no adverse effect' on site integrity be ascertained? Yes, for the following main reasons:

- The route skirts around the inland edge of the Foulness SPA to avoid the MoD-restricted area, and lies well away from nesting areas of the species concerned within the SPA.
- At Jubilee Marsh, which is now important as functionally linked land, the restrictions outlined above will maintain the current access arrangements and prevent a significant increase in disturbance to breeding terns and waders.
- Given the route alignment and the restrictions affecting most of the coastal margin, none of the breeding species are vulnerable to significant disturbance by Coast Path users when foraging further from their nest sites.

Are there residual effects? Yes

Trampling, and cutting to maintain the trail

Risk to conservation objectives: Repeated trampling, following changes in recreational activities as a result of the access proposal, may damage sensitive habitats, plant communities or species, leading to long-term declines in their quality, distribution or numbers within the site. Types of possible effect include physical changes to habitats (for example through compaction of the substrate), shifts in the species composition of plant communities, and reductions in species' population size or distribution. Regular cutting could have similar effects on species that occur on or immediately adjacent to the trail.

Qualifying feature(s) affected: Intertidal mudflats and sandflats[6]; Saltmarsh[2,6] (Salicornia and other annuals colonising mud and sand[2,6]; Spartina swards[2,6]; Atlantic salt meadows[2,6]; Mediterranean and thermo-Atlantic halophilous scrubs[2,6]); Estuaries[6] ; Wetland plant assemblages[2,4]; Wetland invertebrate assemblages[2,4]

Relevant design features of the access proposal:

- Advisory signs at East Beach, Shoeburyness, will make walkers aware of the eelgrass beds on the intertidal flats beyond the beach and provide advice on how to avoid damaging them.
- Access will be restricted year round to the grazing marsh within the coastal margin at Oxenham Farm by a formal direction on nature conservation grounds.
- The trail is aligned inland of saltmarsh and other sensitive intertidal habitats within designated sites, except in one 200 m section near Wallasea Island just south of Creeksea Ferry Road (route sections SWI-5-S010 and SWI-6-S001) where it crosses upper/transitional saltmarsh.
- Nearly all the saltmarsh and other sensitive intertidal habitats in the coastal margin are unsuitable for walking and access will be excluded by direction.
- For most of its length the trail is aligned along the seabank crest following existing public or permissive footpaths.
- Natural England will liaise with the access authority to ensure that, where cutting is required to keep the trail easily walkable, only a 1 to 2 m width is cut. For route sections where the vegetation is relatively species-rich, particular attention will be paid to agreeing a cutting regime that minimizes the risk of damage to assemblage species.

- Signposts and waymarking will be used to ensure the route of the trail is clear and easy to follow.

Can 'no adverse effect' on site integrity be ascertained? Yes, for the following main reasons:

- MoD byelaws prohibit public access on most of the intertidal flats along the open coast at Foulness that support eelgrass beds. The relatively small area off East Beach managed under licence by Southend-on-Sea Borough Council is the only exception.
- Where the trail crosses saltmarsh for 200 m near Wallasea Island it follows an existing public footpath along a low bank dominated by sea couch grass, a common type of upper/transitional saltmarsh that is species-poor and less sensitive to trampling than others.
- Access rights are not increased on grazing marsh or saltmarsh. These are the habitats that support the majority of wetland plant assemblage species sensitive to trampling, and also most wetland invertebrate assemblage species.
- The few plant assemblage species that are sometimes found on the tops of seabanks are more tolerant of moderate levels of trampling than those restricted to other habitats.
- Along most of this stretch where the route follows existing public rights of way, only small increases in levels of use are expected.

Are there residual effects? Yes

Disruption of grazing management causing damage to sensitive features

Risk to conservation objectives: New public access rights on grazed land as a result of the access proposal may lead to dogs or their owners scaring livestock, resulting in the temporary or permanent cessation of grazing management, or significant changes to the grazing regime. Where the grazed land affected supports important populations of rare plant species that require a short, open sward to allow them to compete successfully, this disruption of the grazing regime may lead to reduction in the species' populations and distribution within the site or even local extinction.

Qualifying feature(s) affected: Wetland plant assemblages[2,4]

Relevant design features of the access proposal:

- Access will be restricted year round to the grazing marsh within the coastal margin at Oxenham Farm by a formal direction on nature conservation grounds.

Can 'no adverse effect' on site integrity be ascertained? Yes, because there are no other grazed areas of high importance for species in the wetland plant assemblage within the coastal margin.

Are there residual effects? No.

Habitat loss caused by installation of infrastructure

Risk to conservation objectives: The installation of access management infrastructure within designated sites may lead to a permanent loss of extent of habitats that are qualifying features themselves or support bird, plant or invertebrate species that are qualifying features.

Qualifying feature(s) affected: Non-breeding waterbirds[1,2,3,4]; Saltmarsh[2,6]; Estuaries[6]; Wetland plant assemblages[2,4]; Wetland invertebrate assemblages[2,4]

Relevant design features of the access proposal:

- The only infrastructure to be installed on habitat that is a SAC feature or supporting habitat for SPA birds is one sign and one sleeper bridge on upper saltmarsh within a few metres of a road. The 'footprint' of the sleeper bridge will be roughly 5 m^2. It is needed to provide an easy, defined route across a channel in upper saltmarsh on an existing public footpath.
- The remaining infrastructure within designated site boundaries (mainly kissing gates replacing styles) will take up about 16 m^2, of which 14 m^2 will be on seabank crests. These are effectively site fabric for SAC and SPA features and of low value for Ramsar site wetland assemblage species when compared to habitats either side of the crest.
- Before infrastructure is installed, pre-works checks for wetland plant assemblage species will be carried out and locations adjusted if necessary to avoid them.

Can 'no adverse effect' on site integrity be ascertained? Yes, for the following main reasons:

- Installation of the sleeper bridge, while resulting in a 5 m^2 loss of saltmarsh, will lead to a reduction in trampling damage to saltmarsh along the adjacent channel banks.
- Though there will be a roughly 14m^2 loss of habitat due to installation of infrastructure on seabanks, the overall effect of our access proposal is expected to be a net gain of several hundred m^2 of open seabank habitat, as a result of the trimming back of scrub to keep the trail open elsewhere on the stretch.

Are there residual effects? No.

Conclusion:

The following risks to achieving the conservation objectives identified in D1 are effectively addressed by the proposals and no adverse effect on site integrity (taking into account any incorporated mitigation measures) can be concluded:

- Disruption of grazing management causing damage to sensitive features
- Loss of extent of habitats that are qualifying features themselves or support species that are qualifying features, caused by the installation of access management infrastructure

The following risks to achieving the conservation objectives identified in D1 are effectively addressed by the proposals and no adverse effect on site integrity (taking into account any incorporated mitigation measures) can be concluded, although there is some residual risk of

insignificant impacts which will be considered further in combination with other plans and projects:

- Disturbance to foraging or resting birds during winter and on passage
- Disturbance to breeding birds
- Damage to sensitive features caused by trampling, or by cutting to maintain the trail

D4 Assessment of potentially adverse effects considering the project 'in-combination' with other plans and projects

The need for further assessment of the risk of in-combination effects is considered here.

Natural England considers that it is the appreciable effects (from a proposed plan or project) that are not themselves considered to be adverse alone which must be further assessed to determine whether they could have a combined effect significant enough to result in an adverse effect on site integrity.

Step 1 – Are there any appreciable risks from the access proposals that have been identified in D3.3 as not themselves considered to be adverse alone?

Natural England considers that in this case the potential for adverse effects from the plan or project has not been wholly avoided by the incorporated or additional mitigation measures outlined in section D3. It is therefore considered that there are residual and appreciable effects likely to arise from this project which have the potential to act in-combination with those from other proposed plans or projects. These are:

- Disturbance to foraging or resting birds during winter and on passage
- Disturbance to breeding birds
- Trampling damage to sensitive features

Step 2 – Have any combinable risks been identified for other live plans or projects?

Table 9. Review of other live plans and projects

Competent Authority	Plan or project	Have any insignificant and combinable effects been identified?
Rochford District Council Southend-on-Sea Borough Council	Rochford New Local Plan Southend-on-Sea New Local Plan	**No.** The two local planning authority (LPA) areas that this Coast Path stretch runs through (Southend-on-Sea and Rochford) have emerging Local Plans at early stages of development. Both LPAs have recently consulted on 'Issues and Options' documents but, as of summer 2019, have not yet released for consultation 'preferred options' documents or Habitats Regulations Assessments (HRAs) of their plans. These plans are therefore not yet sufficiently developed to allow meaningful assessment of any insignificant and combinable effects as part of this Coast Path HRA.

Competent Authority	Plan or project	Have any insignificant and combinable effects been identified?
		Southend-on-Sea and Rochford councils are collaborating with ten other Essex LPAs to develop and implement the Essex Coast Recreational disturbance Avoidance & Mitigation Strategy (Essex Coast RAMS – see section D2 above) which aims to deliver the mitigation necessary to avoid significant adverse effects from 'in-combination' impacts of new residential development on SPAs, SACs and Ramsar sites on the Essex coast [Ref 14]. Formal implementation of the RAMS is expected to start in 2019/20, before the new Local Plans are adopted. Once formal implementation has started, adherence to the RAMS by the collaborating LPAs should mean that there are no adverse effects on the integrity of SPA, SAC or Ramsar sites or appreciable residual effects on them due to housing growth to be taken into account.
Southend-on-Sea Borough Council	Construction of 172 houses and 14,130sqm of offices and health centre on land between Barge Pier Road and Ness Road, Shoeburyness (15/02053/OUTM) (amended proposal, outline application 04/12/2015, conditional permission granted 27/04/2016)	**Yes.** A large new housing development which, at its nearest point, is within 350 m of SPA boundaries at the southwest end of the stretch. Outline permission pre-dates the Essex RAMS partnership. The HRA of this proposal considers the potential for increased recreational disturbance to be 'very small' due to MoD restrictions on access to intertidal habitats along the Shoeburyness shoreline. The HRA recommends several mitigation measures including new public open space within the development, advisory signage along the shore, and provision of funding to expand the zone patrolled by the Gunners Park nature reserve ranger. The outline permission includes a condition that the development shall not commence until mitigation measures recommended in the HRA have been carried out and completed in accordance with a Conservation Management Plan to be approved by the LPA. However, we consider that a nonsignificant residual disturbance effect cannot be ruled out, given the scale and proximity of the development, and so take this forward for in combination assessment.
Rochford District Council	Construction of 78 dwellings, associated landscaping etc on land between Star Lane and Alexandra Road south of High Street, Great Wakering (18/00556/FUL) (revision of approved proposal adding 20 dwellings; received	**Yes.** A moderately large new housing development which, at its nearest point, is within 1.5 km of SPA boundaries to the north, and within 2.5 km to the east and southeast. The HRA form completed for the 2018 permission (of the revised proposal) does not appear to address the potential for increased recreational disturbance, either alone or in combination with other plans or projects. The decision letter does not appear to secure developer contributions in line with the Essex RAMS to fund strategic mitigation of recreational disturbance. Therefore possible disturbance effects from this development need to be considered in combination.

Competent Authority	Plan or project	Have any insignificant and combinable effects been identified?
	12/06/2018, permission granted 20/12/2018)	
Rochford District Council	Residential development of up to 120 homes with public open space and parking, on land west of Little Wakering Road and south of Barrow Hall Road, Little Wakering (16/00731/OUT and 18/01129/REM) (outline permission granted 10/10/2017; reserved matters application 30/11/2018, pending consideration as of July 2019)	**No.** A large new housing development which, at its nearest point, is within 1 km of SPA boundaries to the north, and within about 2.5 km to the east. The LPA consulted Natural England on its HRA of the proposal in June 2019. Natural England is satisfied that the mitigation described is in line with our strategic-level advice of August 2018 and so should rule out adverse effects on site integrity, either alone or in combination with other plans or projects. That mitigation includes onsite green infrastructure and a financial contribution per dwelling in line with the Essex RAMS strategy, to be delivered prior to occupation, to fund offsite visitor management measures.
Rochford District Council and Marine Management Organisation (MMO)	Floating pontoon and jetty at Grassland Point, Wallasea Island, and footpath on crest of seawall for passenger ferry (17/00636/FUL) (full application 22/06/2017, pending consideration as of 28/06/2019)	**Yes.** A proposal by RSPB to allow a foot passenger ferry service from Burnham-on-Crouch to run to/from the north side of the Wallasea Island Wild Coast Project reserve, landing at Grassland Point at the north edge of the Allfleets Marsh realignment site. Construction of the jetty and floating pontoon requires a MMO licence as well as planning permission. A HRA of the proposal based on detailed bird survey data provided by the RSPB and ABPMer has been prepared by Place Services on behalf of the LPA. It includes an Appropriate Assessment and concludes that the project is not expected to have any adverse effect on the integrity of SPA, Ramsar site or SAC features provided mitigation measures incorporated into the proposal are implemented in their entirety. Those measures, listed in the HRA, are: (i) no construction during the overwintering period; (ii) instructions to visitors using the ferry to keep dogs on leads and remain on the footpath to/from Grassland Point (including signage and lockable barrier if needed following monitoring); (iii) ferry speed restricted to below 2 knots on approach; (iv) if a regular winter service is initiated, the monitoring of disturbance impacts; (v) no ferry operation during severe winter weather (whenever temporary close season of waterfowl shooting is imposed). Condition (iv) above recognises that with all the mitigation measures in place there is still the possibility of nonsignificant, localised disturbance to waterbirds if the ferry service

Competent Authority	Plan or project	Have any insignificant and combinable effects been identified?
		is operated during the winter. This residual effect is considered in combination.
Natural England	Implementation of coastal access from Tilbury to Southend-on-Sea	**No.** The proposals for the Tilbury to Southend-on-Sea coastal access stretch are not at a sufficiently detailed stage where an assessment of likely significant effects has been carried out.
Natural England	Implementation of coastal access from Wallasea Island to Burnham-on-Crouch	**No.** The proposals for the Wallasea Island to Burnham-on-Crouch coastal access stretch are not at a sufficiently detailed stage where an assessment of likely significant effects has been carried out.

In light of this review, we have identified insignificant and combinable effects are likely to arise from the following projects that have the potential to act in-combination with the access proposals:

- Construction of 172 houses and 14,130sqm of offices and health centre on land between Barge Pier Road and Ness Road, Shoeburyness
- Construction of 78 dwellings, associated landscaping etc on land between Star Lane and Alexandra Road south of High Street, Great Wakering
- Floating pontoon and jetty at Grassland Point, Wallasea Island, and footpath on crest of seawall for passenger ferry

Step 3 – Would the combined effect of risks identified at Steps 1 and 2 be likely to have an adverse effect on site integrity?

In light of the conclusions of Steps 1 & 2, we have made an assessment of the risk of in combination effects. The results of this risk assessment, taking account of each qualifying feature of each site and in view of each site's Conservation Objectives, are as follows:

Table 10. Assessment of adverse effect on integrity in-combination

Residual risk	In-combination effect	Assessment of risk to site conservation objectives	Potential adverse effect?
Disturbance to foraging or resting birds during winter and on passage: A higher frequency of interactions between people using the Coast Path and waterbirds foraging or resting close	Increased use of the Coast Path is expected as a result of improvements to the quality of the path and its promotion as a National Trail. Other plans or projects that would increase local demand for recreational routes could similarly increase use of coastal paths and lead to more frequent interruptions	The two housing developments listed above are located near the southern end of this Coast Path stretch. Residual increases in recreational use resulting from them are therefore likely to affect the first two lengths of the stretch (between Barge Pier, Shoebury Ness, and Little Wakering) more than lengths further north. The potential for residual effects from the Coast Path in this area to combine with those from the new housing to produce an adverse	No

Residual risk	In-combination effect	Assessment of risk to site conservation objectives	Potential adverse effect?
to the path, or in/near parts of the coastal margin subject to new coastal access rights.	to foraging or resting waterbirds.	effect on site integrity are limited for the following reasons: (i) Where it runs within or close to protected site boundaries between Barge Pier and Little Wakering, the Coast Path will follow existing public rights of way and only a small increase in levels of use is expected; (ii) MoD byelaws restrict access over large areas of intertidal and terrestrial habitat seaward of the path between Barge Pier and Oxenham Farm; (iii) Other areas of saltmarsh and mudflat seaward of the trail are unsuitable for public access on foot, so access to them will be excluded by direction. The jetty and ferry proposal at Grassland Point, Wallasea Island, lies at the opposite end of the stretch. From mitigation measures included in that proposal and bird survey data and other evidence provided with it, residual disturbance effects as a result of ferry operation would be temporary (limited to times when the ferry is running) and localised (to within about 100 or 200 m of the jetty and the seabank running out to it). There will be no residual disturbance effects during construction as that will be scheduled during the summer. The RSPB monitor bird numbers on Allfleets Marsh and the Wallasea Island Wild Coast Project reserve closely and RSPB staff manage both areas, including visitor access. Our proposals for the Coast Path on the island have been discussed in detail with the RSPB and include restrictions and other measures to limit disturbance (see D3.2D). It is therefore unlikely that nonsignificant residual effects of the Coast Path and the jetty and ferry proposal could combine to	

Residual risk	In-combination effect	Assessment of risk to site conservation objectives	Potential adverse effect?
		produce an adverse effect on site integrity.	
Disturbance to breeding birds: A higher frequency of interactions between people using the Coast Path and waterbirds nesting close to the path or in/near parts of the coastal margin subject to new coastal access rights.	Increased use of the Coast Path is expected as a result of improvements to the quality of the path and its promotion as a National Trail. Other plans or projects that would increase local demand for recreational routes could similarly increase use of coastal paths and lead to more frequent disturbance to breeding waterbirds at or near their nesting areas.	On this Coast Path stretch, a nonsignificant residual risk of disturbance to breeding waterbirds is limited to Wallasea Island, where coastal wetland habitats recently created on the RSPB's Wild Coast Project reserve have become important as functionally linked land for breeding bird qualifying features of the adjacent Foulness SPA (avocet, ringed plover and terns). Combinable residual disturbance effects from the two new housing developments listed above (see Table 9) are unlikely due to their distance from Wallasea Island and the fact that the RSPB manages access to its reserve, particularly by vehicles (a locked gate prevents vehicle access when the reserve is closed). Grassland Point is on Wallasea Island, so the jetty and ferry operation proposed there may have more potential to produce an effect on breeding birds in combination with our Coast Path proposal. However it is unlikely that this could ever amount to a significant adverse effect on breeding bird qualifying features because: (i) The RSPB will continue to monitor breeding birds on the reserve and also manage public access to it, including how and when the ferry operates. (ii) Jubilee Marsh (where qualifying species nest on/near land in the coastal margin that is accessible on foot) is about 1.5 km from the point where ferry users will arrive on the reserve. (iii) On Jubilee Marsh access to the coastal margin will be excluded by direction. There will also be a 'no dogs' restriction on all parts of the Coast Path on Wallasea Island that are not currently public rights of way.	No

Residual risk	In-combination effect	Assessment of risk to site conservation objectives	Potential adverse effect?
		These restrictions will apply year round. (iv) Other parts of the reserve where breeding bird qualifying features nest are inland of the Coast Path, with the main areas separated from it by fences and/or water barriers.	
Damage to sensitive features caused by trampling, or by cutting to maintain the trail: More footfall along the Coast Path, or in parts of the coastal margin subject to new coastal access rights, may cause trampling damage to sensitive habitats, vegetation types or species. Cutting of sections of the route that do not follow existing public or permissive footpaths may also cause damage.	Increased use of the Coast Path is expected as a result of improvements to the quality of the path and its promotion as a National Trail. Other plans or projects that would increase local demand for recreational routes could similarly increase use of coastal paths and lead to more frequent trampling of sensitive features. But as the Coast Path will already be maintained to national trail standards, other plans or projects will not increase cutting to keep the trail walkable.	Along much of this Coast Path stretch, the residual risk of trampling damage to sensitive features is negligible because: (i) the trail follows existing public footpaths, where only a small increase in footfall is expected, and generally runs along seabank crests; and (ii) access on nearly all the coastal margin is either restricted under MoD byelaws or will be excluded by direction on saltmarshes and mudflats that are unsuitable for access on foot. The potential for residual effects to result in appreciable 'in combination' trampling damage to sensitive features is therefore limited to a few specific locations. Two of these, the eelgrass beds off East Beach (see D3.2A) and the grazing marsh seaward of the route at Oxenham Farm (see D3.2B) are in the southern part of the stretch between 1 and 3 km from the new housing developments listed in Table 9. But for both these locations our access proposal includes mitigation measures (advisory signage at East Beach, and exclusion by direction on the Oxenham Farm grazing marsh) that not only ensure the proposal will have no adverse effect on site integrity alone, but also substantially reduce the risk of any appreciable trampling damage in combination with effects of other plans or projects. The third location where there is some potential for 'in combination' trampling damage, is the 200 m	No

Residual risk	In-combination effect	Assessment of risk to site conservation objectives	Potential adverse effect?
		section where the Coast Path follows an existing public footpath across upper/transitional saltmarsh just west of Wallasea Island, about 3 km from Grassland Point. We cannot identify any 'in combination' risk at this location. The Grassland Point jetty proposal includes about 500 m of footpath along the crest of an old seabank to the point but no sensitive qualifying features are recorded on that seabank and the HRA of the proposal does not identify any potential or residual effects of trampling. Our proposal for this Coast Path stretch involves route improvements including new waymarking and advisory signage. These should help to reduce trampling damage to sensitive features nearby - either alone or in combination with other plans or projects - despite an expected small increase in footfall along the trail.	

D5. Conclusions on Site Integrity

Because the plan/project is not wholly directly connected with or necessary to the management of the European site and is likely to have a significant effect on that site (either alone or in combination with other plans or projects), Natural England carried out an Appropriate Assessment as required under Regulation 63 of the Habitats Regulations to ascertain whether or not it is possible to conclude that there would be no adverse effect on the integrity of a European Site(s).

Natural England has concluded that:

It can be ascertained, in view of site conservation objectives, that the access proposal (taking into account any incorporated avoidance and mitigation measures) will not have an adverse effect on the integrity of Benfleet and Southend Marshes SPA and Ramsar site, Foulness SPA and Ramsar site, Crouch and Roach Estuaries SPA and Ramsar site, Outer Thames Estuary SPA, and Essex Estuaries SAC, either alone or in combination with other plans and projects.

PART E: Permission decision with respect to European Sites

Natural England has a statutory duty under section 296 of the Marine and Coastal Access Act 2009 to improve access to the English coast. To fulfil this duty, Natural England is required to make proposals to the Secretary of State under section 51 of the National Parks and Access to the Countryside Act 1949. In making proposals, Natural England, as the relevant competent authority, is required to carry out a HRA under Regulation 63 of the Habitats Regulations.

We, Natural England, are satisfied that our proposals to improve access to the English coast between Southend-on-Sea and Wallasea Island are fully compatible with the relevant European site conservation objectives.

It is open to the Secretary of State to consider these proposals and make a decision about whether to approve them, with or without modifications. If the Secretary of State is minded to modify our proposals, further assessment under the Habitats Regulations may be needed before approval is given.

Certification

HRA prepared by:	Charles Williams	*Lead adviser, East & Essex Coastal Access Team, Area 8*
Date:	1 August 2019	
HRA approved by:	John Torlesse	*Senior officer with responsibility for protected sites, Manager, Area 8*
Date:	1 August 2019	

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Cover photograph
View across the River Roach
By Phil Sturges of Natural England