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Assessment of England Coast Path proposals between Shotley Gate and Felixstowe Ferry On Stour and Orwell Estuaries Special Protection Area and Stour and Orwell Estuaries Ramsar Site

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Summary

I) Introduction

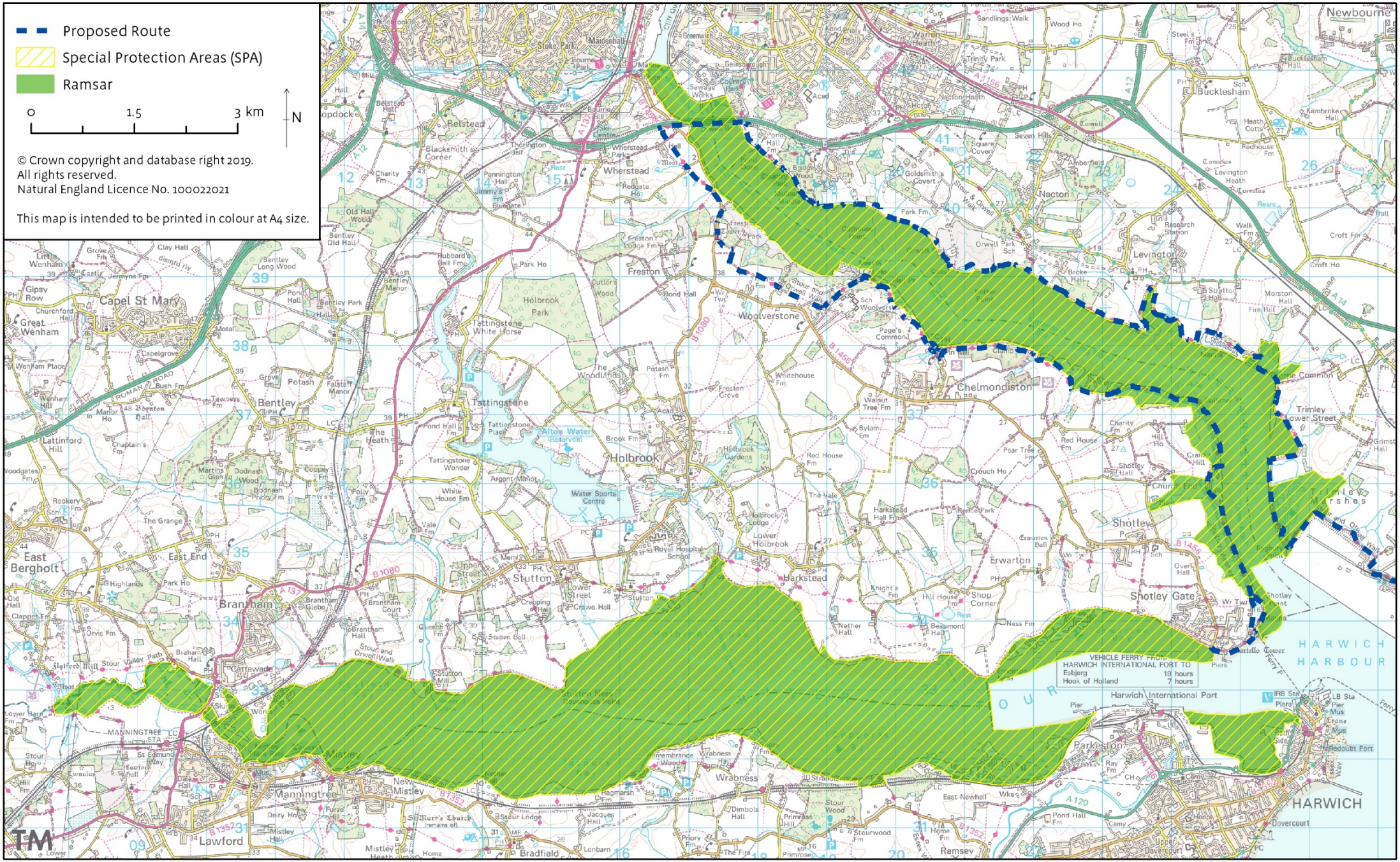
This is a record of the Habitats Regulations Assessment ('HRA') undertaken by Natural England (in its role of competent authority) in accordance with the assessment and review provisions of the Conservation of Habitats and Species Regulations 2017 (as amended) ('the Habitats Regulations').

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 Shotley Gate to Felixstowe Ferry on the following sites of international importance for wildlife:

- Stour and Orwell Estuaries Special Protection Area (SPA)
- Stour and Orwell Estuaries Ramsar site

Coastal Access - Shotley Gate to Felixstowe Ferry - Habitats Regulations Assessment

Map 1: Extent of the Stour and Orwell Estuaries' SPA and Ramsar sites



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/collections/england-coast-path-shotley-gate-to-felixstowe-ferry

II) Background

The Shotley Gate to Felixstowe Ferry stretch of the England Coast Path takes in the majority of the Orwell Estuary. This estuary is a long, low lying and relatively narrow estuary, designated as an Area of Outstanding Natural Beauty (part of the Suffolk Coasts and Heaths AONB) and protected under EU and UK law.

The European sites relevant to this assessment are the Stour and Orwell Estuaries SPA and the Stour and Orwell Estuaries Ramsar site, the boundaries of which mirror each other exactly (Map 1). These designated sites include the length of the Orwell Estuary from Shotley Point and Fagbury Point at the mouth of the estuary inland to Ostrich Creek. They extend as far as mean high water (MHW) for much of the estuary and beyond this to include areas of saltmarsh, mudflat and grazing fields, at a number of locations. The Orwell Estuary SSSI boundary also mirrors the boundary of the Orwell Estuary section of the SPA and Ramsar site.

The main wildlife interests for this stretch of coast are summarised in Table i) (see section B1 for a full list of qualifying features).

Table i). Summary of the main wildlife interest

Interest	Description
Non-breeding waterbird assemblage	During the winter months, the Orwell Estuary supports nationally and internationally recognised populations of non-breeding waterbirds. The waterbirds within this broad grouping include waders and wildfowl which feed on intertidal sediments and saltmarsh (the extensive areas of soft mud exposed at low tide are the main feeding areas) and roost primarily on higher areas of saltmarsh at high tide or the adjacent marshes and arable fields. Diving waterbirds, such as the cormorant are present.
Breeding avocet	The Orwell Estuary supported important numbers of breeding avocet at designation in 1994, however successful breeding has been variable in the last decade. The mudflats and intertidal brackish waters provide prey populations of insects, a range of larvae, crustaceans and other invertebrates, which are important food sources for the avocet during the breeding season. The main nesting sites for these birds are upon the grazing marshes which flank the estuary. They may also use the saltmarsh edges to roost during high tide.

Invertebrate assemblage	Muscid fly; horsefly; spider spp; swollen spire snail. The natural habitat for these British Red Data Book species is saltmarsh and upper tidal litter.
Wetland plant assemblage	Eelgrasses; Stiff saltmarsh-grass; Small cord-grass; Perennial glasswort; Lax-flowered sea lavender. These saltmarsh plant species are mainly found in the intertidal habitat, grazing marshes and ditches. In addition to providing important bird feeding areas the plants also help to stabilise the sediment.

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 1].

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 our assessment are certified by both the member of staff responsible for developing the access proposal and the person responsible for considering any environmental impacts. 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 the Orwell Estuary has been the possible impact of recreational activities on breeding and non-breeding waterbirds in the form of disturbance and physical damage due to trampling on their supporting habitat, wetland plants, and invertebrate species. Our aim in developing proposals for the Orwell Estuary has been to secure and enhance opportunities for people to enjoy their visit whilst ensuring appropriate protection for sensitive wildlife. Objectives for the design of our detailed local 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, incorporate opportunities to raise awareness of the importance of the Orwell Estuary for wintering and passage waterbirds and how people can help efforts to protect them

V) Conclusion

We have considered whether our detailed proposals for coastal access between Shotley Gate and Felixstowe Ferry might have an impact on the Stour and Orwell Estuaries SPA and Ramsar site. In Part C of this assessment we identify some possible risks to certain of the 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 either site. These measures are summarised in Table ii).

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

Risk to conservation objectives	**Relevant design features of the access proposal**
Breeding avocet and non-breeding waterbirds: Disturbance The Conservation Objectives Supplementary Advice and advice on sensitivity to operations records that the evidence base suggests these features are sensitive to the pressure of human disturbance. This proposal could therefore impact upon the Conservation Objectives for these features. The level of risk will vary along the route and will be higher where the access proposal is likely to bring people close to places on which birds depend including high tide roost sites and known important breeding and feeding areas. The risk of disturbance is increased on rising tides when birds are forced to feed closer to seawalls and the trail/ footpath.	<u>Route Alignment</u> ■ The trail is aligned away from the shore where possible to where it is deemed the least impactful ■ A large proportion of the proposed trail is aligned along existing public footpaths using the seawall and walked tracks ■ Field edge alignment has been selected where land type and ownership allows ■ Screening will be employed along specific lengths at Colton Creek to shield people from bird's view. It will also help guide visitors to stay on the path ■ Screening will be positioned to block open access for dogs at one location on Colton Creek

Risk to conservation objectives	Relevant design features of the access proposal
The nature, scale, timing and duration of construction and or installation works could result in bird disturbance sufficient to disrupt normal behaviours and/or distribution of birds within the site. The establishment works that this proposal would involve could therefore impact upon the Conservation Objectives for this feature.	■ New advisory and information signs will be erected in key locations. These signs will raise awareness and inform users about waterbirds and the sensitivities of wildlife to disturbance and its consequences. They will also describe the desired behaviour that can be adopted to ensure walkers do not create an impact ■ Signs will be erected strategically asking that dogs are kept under control at all times ■ Signposts and waymarking will be used to ensure the route of the trail is clear and easy to follow ■ The trail will be well maintained ■ Local Authority and contractors will adhere to the mitigation measures set out in Table 5 section D3.1 of this assessment **Coastal Margin** Under S25A of Countryside Rights of Way Act CROW [REF 2] access will be excluded to the vast majority of the saltmarsh and mudflat. It has been established that these areas are unsuitable for public access for safety reasons (as set out in section 7.15 of the Coastal Access Scheme [REF 1])
Breeding and non-breeding waterbird supporting habitat including the Wetland Plant assemblage: Loss or damage due to Trampling: The specific attributes of each supporting habitat may include vegetation characteristics and structure, water depth, food availability, connectivity between nesting, roosting and feeding areas both within and outside the SPA. The maintenance of the structure and function of the habitat is key to the site's ability to support and sustain the Qualifying Features.	**Route Alignment** ■ The trail is aligned away from the shore and supporting habitat where possible to where it is deemed the least impactful ■ A large proportion of the proposed trail is aligned along existing public footpaths using the seawall and walked tracks ■ Field edge alignment has been selected where land type and ownership allows

Risk to conservation objectives	Relevant design features of the access proposal
Damage to or loss of the supporting habitat will impact directly on the long term viability of this feature and thereby pose a risk to the Conservation Objectives Taking in to account the dynamic nature of the estuary and the pattern of accretion/erosion, the objective is to avoid deterioration of the extent, distribution and function of the supporting habitats from their current level, as indicated by relevant data.	■ Signposts and waymarking will be used to ensure the route of the trail is clear and easy to follow ■ The trail will offer a viable user friendly alternative to currently used informal walked routes ■ The trail will be well maintained **Coastal Margin** Under S25A of CROW access will be excluded to the vast majority of the saltmarsh and mudflat. It has been established that these areas are unsuitable for public access
Breeding and non-breeding waterbird supporting habitat including the Wetland Plant assemblage: Loss of supporting habitat (including Wetland Plant assemblage) through the installation of access management infrastructure. There is a potential risk to the Conservation Objectives where there is a permanent and irreversible loss of the extent of supporting habitat. Loss of supporting habitat, by definition will impact directly on the long term viability of this feature and thereby the conservation objectives. This project proposes the installation of new and replacement infrastructure on or near supporting habitat.	**Route Alignment** ■ The trail is aligned away from the shore where possible to where it is deemed the least impactful ■ A large proportion of the proposed trail is aligned along existing public footpaths using the seawall and walked tracks ■ None of the new infrastructure will be placed on sensitive habitat ■ Local Authority and contractors will adhere to the mitigation measures set out in Table 5 section D3.1 of this assessment ■ Of the new infrastructure the majority will not be placed on land within the SPA or Ramsar site boundary
Wetland Invertebrate Assemblage: Loss of or damage to feature due to trampling on the trail or within the coastal margin. The rarest and most threatened species within the assemblage, the small money spider, favours damp ground underneath upper tidal litter which users of the trail could potentially access.	**Route Alignment** ■ The trail is aligned away from the shore where possible to where it is deemed the least impactful ■ A large proportion of the proposed trail is aligned along existing public footpaths using the seawall and walked tracks ■ Field edge alignment has been selected where land type and ownership allows

Risk to conservation objectives	Relevant design features of the access proposal
Therefore it can be concluded that the proposal could pose a risk to the Conservation Objectives of the Ramsar site.	■ Signposts and waymarking will be used to ensure the route of the trail is clear and easy to follow ■ The trail will be well maintained ■ Local Authority and contractors will adhere to the mitigation measures set out in Table 5 section D3.1 of this assessment **Coastal Margin** ■ Under S25A of CROW access will be excluded to the vast majority of the saltmarsh and mudflat. It has been established that these areas are unsuitable for public access
Breeding avocet and non-breeding waterbirds Disturbance of breeding, feeding and roosting birds on functionally linked land i.e. land nearby but outside the boundary of the SPA/Ramsar site and used by a Qualifying Feature of the European sites e.g. Levington Lagoon and Mansbrook Grove. The nature, scale, timing and duration of construction and or installation works could result in bird disturbance on functionally linked land sufficient to disrupt normal behaviours and/or distribution of birds within the site. The establishment works that this proposal would involve could therefore impact upon the Conservation Objectives for this feature.	**Route Alignment** ■ The trail is aligned away from the shore where possible to where it is deemed the least impactful ■ A large proportion of the proposed trail is aligned along existing public footpaths using the seawall and walked tracks ■ New advisory and information signs will be erected in key locations. These signs will raise awareness and inform users about waterbirds and the sensitivities of wildlife to disturbance and its consequences. They will also describe the desired behaviour that can be adopted to ensure walkers do not create an impact ■ Signs will be erected strategically asking that dogs are kept under control at all times ■ Signposts and waymarking will be used to ensure the route of the trail is clear and easy to follow ■ The trail will offer a viable user friendly alternative to informal walked routes ■ The trail will be well maintained

Risk to conservation objectives	Relevant design features of the access proposal
	■ Local Authority and contractors will adhere to the mitigation measures set out in Table 5 section D3.1 of this assessment **Coastal Margin** ■ Under S25A of CROW access will be excluded to the vast majority of the saltmarsh and mudflat. It has been established that these areas are unsuitable for public access.

VI) Implementation

Once a route for the trail has been confirmed by the Secretary of State, we will work with Suffolk 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 Ipswich Borough Council, the Environment Agency, Suffolk Wildlife Trust, the Suffolk Coasts and Heaths AONB unit, the RSPB and the Suffolk Biodiversity Information Service and to other organisations and local experts whose contributions and advice have helped to inform development of our proposals.

Special thanks are due to the following individuals, for their generous contributions of time and invaluable knowledge of the dynamics of local bird populations: Andrew Excell of Suffolk Wildlife Trust and Mick Wright of Suffolk Wildlife Trust (retired) and the British Trust for Ornithology and Mark Nowers of the RSPB.

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, as set out in section 1.2 of our Coastal Access Scheme [REF 1]. 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 would be likely to have a significant effect on a site designated for its international importance for wildlife, called a 'European site', the report must be subject to special procedures designed to assess its likely significant effects.

The conclusions of this screening are certified by both the member of staff responsible for developing the access proposal and the person responsible for considering any environmental impacts. 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 1].

A2. Details of the plan or project

This assessment considers Natural England's proposals for coastal access along the stretch of coast between Shotley Gate and Felixstowe Ferry. 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 this stretch.

Our proposal for coastal access has two main components:

- Alignment of the England Coast Path
- Designation of coastal margin

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. The coastal path will be able to 'roll back' as changes in this dynamic coastline occur over time, thereby maintaining a continuous route on this stretch of coast.

Coastal Margin

An area of land associated with the proposed trail will become coastal margin, including all land seaward 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 1]. 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 CROW over land falling within the coastal margin: the new coastal access rights will apply in place of these.

Where public access on foot already takes place on land within the margin 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.

Of particular note for this assessment is that the majority of saltmarsh and mudflat within the Orwell Estuary is considered unsuitable for public access and will be excluded, under S25A of CROW, from the new coastal access rights at all times, regardless of any other considerations.

The conclusion can therefore be drawn that the ECP proposal will not have a direct impact on the nature conservation features of those areas that are excluded from the new coastal access rights.

Note: Should the exclusion under S25A of CROW of all or any part of the areas currently excluded become unnecessary at any time in the future, we will consider the need for further measures to protect the conservation features which are currently protected as a secondary consequence of the S25A exclusion. Such measures would include restriction or exclusion of access under section 26(3)(a) of CROW.

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 the site 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 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 Suffolk 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 Sites which could be affected

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

The Stour and Orwell Estuaries are located on the Suffolk-Essex border on the east coast of England, with the Orwell Estuary wholly in the county of Suffolk. The estuaries are adjacent and their waters combine in Harwich Harbour before entering the North Sea. Both are tidal, shallow and relatively sheltered, although the Orwell Estuary is narrower and more linear compared to the wider Stour Estuary. This stretch of the England Coast Path takes in the Orwell Estuary from its mouth at Harwich Harbour, inland to the Orwell Bridge and returns to Harwich Harbour from where it goes on to Felixstowe Ferry. There it will join with the next stretch of the ECP. The Orwell Estuary section of the stretch is covered by the following SPA and the Ramsar site

- The Stour and Orwell Estuaries SPA (3672.57ha)(Map 1)

Invertebrate-rich mudflats characterise both the Stour and the Orwell estuaries, regularly being covered and uncovered by the tide. The Stour Estuary in particular has extensive mudflats due to its wider and more intertidal channel. The mudflats of the Orwell Estuary are more linear in nature and are particularly noteworthy for large congregations of waterbirds at Freston and Colton Creek. In addition there are low cliffs, saltmarsh and small areas of vegetated shingle on the lower reaches.

The algae *Enteromorpha* is present across the mudflats, as well as several small areas of seagrass (*Zostera* spp.). Diverse communities of saltmarsh fringe the edges of both estuaries, ranging from high saltmarsh species such as sea purslane, sea aster and annual seablite to low saltmarsh species such as glasswort species and cord grass species.

Several freshwater pools and grazing marshes fall within the SPA boundary such as Trimley and Shotley Marshes.

The SPA hinterlands include large areas of farmed arable land, as well as several major urban areas, including Ipswich at the head of the Orwell Estuary, and the towns of Harwich and Felixstowe at the mouth of the estuaries, both of which are major ports.

Breeding avocet feed upon the intertidal mudflats and use the grazing marshes, particularly at Trimley Marshes, to nest during the summer. Important numbers of overwintering and passage waterbirds use the mudflats extensively for feeding. The saltmarsh and grazing marsh provide important roosting sites, whilst some waterbirds feed and roost on the surrounding arable land.

- The Stour and Orwell Estuaries Ramsar site (3672.57ha)(Map 1)

The Stour and Orwell Estuaries Ramsar site is a wetland of international importance the extent of which mirrors exactly the SPA described above.

The site provides habitats for an important assemblage of waterbirds in the non-breeding season and supports internationally important numbers of wintering and passage wildfowl and waders. This Ramsar site holds several nationally scarce wetland plants and British Red Data Book invertebrates.

The wildlife Qualifying Features of the SPA and Ramsar site are listed in Table 1 below**.**

Table 1. Qualifying features

Qualifying feature	Stour and Orwell Estuary SPA	Stour and Orwell Ramsar Site
A132 Avocet, *Recurvirostra avosetta* (breeding)	√	√
A616 Black-tailed godwit, *Limosa limosa islandica* (non-breeding)	√	√
A675 Dark-bellied brent goose, *Branta bernicla bernicla* (non-breeding)	√	√
A672 Dunlin, *Calidris alpina alpina* (non-breeding)	√	√
A141 Grey plover, *Pluvialis squatarola* (non-breeding)	√	√
A143 Knot, *Calidris canutus* (non-breeding)	√	√
A054 Pintail, *Anas acuta* (non-breeding)	√	√
A162 Redshank, *Tringa totanus* (non-breeding)	√	√
Waterbird assemblage[1]	√	√
Wetland invertebrate assemblage		√
Wetland plant assemblage		√

[1] A waterbird assemblage is a qualifying feature of both the SPA and Ramsar sites. When classifying a waterbird assemblage as an SPA qualifying feature, the Ramsar Conventions Strategic Framework definition of 'waterbird' is used and as such we consider the two qualifying features synonymous. Current abundance and composition of the assemblage feature is taken into account in our assessment.

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, it 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 [REF 3]:

https://designatedsites.naturalengland.org.uk/SiteList.aspx?siteName=Stour%20and%20Orwell

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.

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 for the management of the European or Ramsar sites for nature conservation listed in B1 above.

Conclusion:

As the plan or project is neither directly connected nor 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 Sites 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 site's 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 sites.

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 2. Feature groups

Feature group	Qualifying feature(s)
Breeding avocet	Avocet
Non-breeding waterbirds	Grey plover; ringed plover; knot; dunlin; black-tailed godwit; redshank; pintail; dark-bellied brent goose; non-breeding water bird assemblage (shelduck; cormorant; great crested grebe; curlew, wigeon; goldeneye, gadwall, oystercatcher, lapwing, turnstone) The waterbirds within this broad grouping are treated as a single feature group because they have generally similar characteristics in terms of their choice of habitat and vulnerability to land-based disturbance. However, the group can be divided in to two sub-groups which could behave slightly differently and use habitats in ways that make them more or less prone to disturbance. The sub-groups relevant to the Orwell Estuary are: ■ Sub-group 1: Birds that feed on intertidal sediments and saltmarsh and roost primarily on higher areas of saltmarsh at high tide. This is the largest sub-group and it includes many waders and wildfowl. The estuary's expansive mudflats and areas of saltmarsh are an important resource for many of these species. Some species also feed and roost on nearby functionally linked land such as arable and grass fields ■ Sub-group 2: Diving waterbirds, such as great crested grebe, cormorant and goldeneye. Nationally important numbers of these birds also depend on the neighbouring Stour Estuary.
Wetland invertebrate assemblage	British red data book invertebrates: Muscid fly; horsefly; spider spp; swollen spire snail
Wetland plant assemblage	Eelgrass spp; Stiff saltmarsh-grass; Small cord-grass; Perennial glasswort; Lax-flowered sea lavender.

Table 3. Assessment of likely significant effects alone

Feature	Relevant pressure	Sensitivity to coastal access proposals	Assessment of risk to site conservation objectives	LSE alone?
Breeding Avocet	Disturbance of breeding birds by users of the trail or due to use of the newly created legal right of access to the Coastal Margin. The creation of legal right of access to the Coastal Margin seaward of the trail could result in access to areas not previously permitted if not excluded under S25A	Sensitive: The Conservation Objective target is to reduce the frequency, duration and/or intensity of disturbance of birds. The nature, scale, timing and duration of some human activities can result in bird disturbance sufficient to disrupt normal behaviours and/or distribution of birds within the site. This can be at a level that may substantially affect their behaviour, and consequently affect the long-term viability of the population.	Evidence (as recorded in The Conservation Objectives Supplementary Advice and advice on Sensitivity to Operations) suggests the feature is sensitive to the pressure of human disturbance. This proposal could therefore impact upon the Conservation Objectives for this feature. The level of risk will vary along the route and will be higher where the access proposal is likely to bring people close to places on which birds depend including undisturbed high tide roost sites, and important breeding and feeding areas such as Levington Lagoon and Trimley Marshes	Yes
Breeding Avocet	Trampling: Loss of, or damage to, supporting habitat	Sensitive: Intertidal mudflats, sandflats, saltmarsh, sand or shingle, not covered at low tide could be sensitive to changes in access that lead to increased trampling. The creation of Coastal Margin seaward of the trail will result in access	Taking in to account the dynamic nature of the estuary and the pattern of accretion/erosion, the objective is to avoid deterioration of the extent, distribution and function of the supporting habitats from their current level, as indicated by relevant	

Feature	Relevant pressure	Sensitivity to coastal access proposals	Assessment of risk to site conservation objectives	LSE alone?
		to areas that are not covered by the Section 25A CROW direction to exclude saltmarsh and mudflats. Trampling could result in: structural damage, compaction, erosion and loss of or reduction in effectiveness of habitat This target may apply to supporting habitat which lies outside the site boundary also. Birds will not be nesting on habitat regularly flooded by the tide but they will use intertidal habitats.	data. Loss of breeding avocet supporting habitat could impact directly on the long term viability of this feature and thereby the Conservation Objectives	
Breeding avocet	Loss of supporting habitat through the installation of access management infrastructure	Sensitive: The supporting habitats of the qualifying feature may be permanently lost due to the installation of new access management infrastructure.	There is a potential risk to the Conservation Objectives where there is a permanent and irreversible loss of the extent of supporting habitat. This project proposes the installation of new and replacement infrastructure on or near avocet supporting habitat.	Yes
Breeding avocet	Disturbance of breeding avocet during the construction or installation of route infrastructure	Sensitive: The Conservation Objective target is to reduce the frequency, duration and/or intensity of disturbance of birds. The nature, scale, timing and duration of construction and or	Evidence (as recorded in The Conservation Objectives Supplementary Advice and advice on Sensitivity to Operations) suggests the feature is sensitive to human disturbance. The establishment	Yes

Feature	Relevant pressure	Sensitivity to coastal access proposals	Assessment of risk to site conservation objectives	LSE alone?
		installation works could result in bird disturbance sufficient to disrupt normal behaviours and/or distribution of birds within the site.	works that this proposal would involve could therefore impact upon the Conservation Objectives for this feature.	
Non breeding waterbirds Sub-group 1 Sub-group 2 (see Table 2)	Disturbance of wintering and passage birds by users of the trail or due to use of the newly created legal right of access to the coast margin. The creation of legal right of access to the Coastal Margin seaward of the trail could result in access to areas not previously permitted if not excluded under S25A	Sensitive: The target is to reduce the frequency, duration and/or intensity of disturbance affecting roosting, foraging, feeding, moulting and/or loafing birds. The nature, scale, timing and duration of some human activities can result in bird disturbance sufficient to disrupt normal behaviours and / or distribution of birds at a level that may substantially impact their behaviours.	Evidence (as recorded in The Conservation Objectives Supplementary Advice and advice on Sensitivity to Operations) suggests the feature is sensitive to the pressure of human disturbance. For sub-group 1 there is a risk therefore that this proposal could impact upon the Conservation Objectives for this feature. The level of risk will vary along the route and will be higher where the access proposals are likely to bring people close to places on which birds depend including undisturbed high tide roost sites and important feeding areas. The risk of disturbance is increased on rising tides when birds are forced to feed closer to seawalls and the trail/ footpath.	Yes: Sub-group 1 only

Feature	Relevant pressure	Sensitivity to coastal access proposals	Assessment of risk to site conservation objectives	LSE alone?
			Newly created access to areas where S25A CROW exclusion are not in place could bring disturbance closer to the key locations For sub-group 2, the level of risk is low: The geographical separation of the favoured roost sites and feeding areas from any likely alignment of the England Coast Path means that disturbance of diving waterbirds (Sub-group 2) as a result of this proposal is highly unlikely to manifest	
Non breeding waterbirds	Trampling: Loss of, or damage to, supporting habitat.	Sensitive: Intertidal mudflats, sandflats, saltmarsh, sand or shingle, not covered at low tide could be sensitive to changes in access that lead to increased trampling. The creation of Coastal Margin seaward of the trail will result in access to areas that are not covered by the Section 25A CROW direction to exclude saltmarsh and mudflats. Trampling could result in: structural damage, compaction, erosion and loss of or reduction	The specific attributes of each supporting habitat may include vegetation characteristics and structure, water depth, food availability, connectivity between nesting, roosting and feeding areas both within and outside the SPA. The maintenance of the structure and function of the habitat is key to the site's ability to support and sustain the feature. Damage to the supporting habitat could impact directly on the long term viability of this feature and thereby have the potential to	Yes

Feature	Relevant pressure	Sensitivity to coastal access proposals	Assessment of risk to site conservation objectives	LSE alone?
		in effectiveness of habitat This target may apply to supporting habitat which lies outside the site boundary also.	pose a risk to the Conservation Objectives	
Non breeding waterbirds	Loss of supporting habitat through the installation of access management infrastructure	Sensitive: The supporting habitats of the qualifying features may be permanently lost due to the installation of new access management infrastructure.	There is a potential risk to the Conservation Objectives where there is a permanent and irreversible loss of the extent of supporting habitat. Loss of supporting habitat, by definition will impact directly on the long term viability of this feature and thereby the conservation objectives. This project proposes the installation of new and replacement infrastructure on or near supporting habitat.	Yes
Non breeding waterbirds	Disturbance of wintering and passage birds during the construction or installation of route infrastructure	Sensitive: The Conservation Objective target is to reduce the frequency, duration and/or intensity of disturbance of birds. The nature, scale, timing and duration of construction and or installation works could result in bird disturbance sufficient to disrupt normal behaviours and/or distribution of birds within the site.	Evidence (as recorded in The Conservation Objectives Supplementary Advice and advice on Sensitivity to Operations) suggests the feature is sensitive to human disturbance. The establishment works that this proposal would involve could therefore impact upon the Conservation Objectives for this feature.	Yes

Feature	Relevant pressure	Sensitivity to coastal access proposals	Assessment of risk to site conservation objectives	LSE alone?
Non breeding waterbirds and breeding avocet	Disturbance of breeding, feeding and roosting birds on functionally linked land i.e. Agricultural fields and/or a lagoon nearby but outside the boundary of the SPA/Ramsar site and used by qualifying feature of the European sites	Sensitive: Mansbrook Grove, a fresh water outlet on the estuary, is acknowledged as functionally linked land as it is used by preening and drinking waterbirds which are Qualifying Features of the European sites. There are limited areas of freshwater for use by the birds on the estuary and it sees large numbers flying in. New trail and coastal margin access rights have the potential to create a disturbance risk. Levington Lagoon is also functionally linked land. It is used by breeding and non-breeding waterbirds which could be subject to increased disturbance as a result of this proposal.	As a result of the proposed new trail access and the alignment of the trail on existing PROW, walkers and walkers with dogs will be brought past these functionally linked locations resulting in the potential for disturbance. The new legal right of access associated with the coastal margin also means that there is the potential for trail users to access functionally linked land at Mansbrook Grove and potentially cause disturbance to the qualifying feature of the European sites.	Yes
Wetland invertebrate assemblage	Trampling of feature on trail or the coastal margin	This feature is sensitive to damage or loss if walkers access the wet ground and upper tidal litter which they inhabit. The upper tidal litter occurs on the strandline along the seaward side of the sea wall and on shingle. It occurs close to the trail route and therefore is susceptible to the impacts of changes in access.	Walkers will not be moving through the wet ground which four of the five species that make up this assemblage inhabit. However the rarest and most threatened of the assemblage, the small money spider, favours damp ground underneath upper tidal litter which users of the trail could potentially access.	Yes: small money spider only

Feature	Relevant pressure	Sensitivity to coastal access proposals	Assessment of risk to site conservation objectives	LSE alone?
			Therefore it can be concluded that the proposal could pose a risk to the Conservation Objectives of the Ramsar site.	
Wetland invertebrate assemblage	Loss of feature through the installation of access management infrastructure	Sensitive: This feature may be permanently lost due to the installation of new access management infrastructure.	There is a risk to the Conservation Objectives where there is a permanent and irreversible loss of the population numbers or distribution of this feature within the site.	Yes
Wetland plant assemblage	Trampling: Loss of or damage to vegetation	Sensitive: Saltmarsh vegetation is vulnerable to trampling. Footfall has the potential to both damage the vegetation and have the secondary effect of exacerbating erosional processes of the substrate where the plants grow	The trail passes across, and close to, areas designated as Priority Habitat Inventory Saltmarsh potentially containing sensitive saltmarsh/intertidal habitats and freshwater wetlands. The potential for trail users to stray from the path or access the Coastal Margin creates a risk to the extent and distribution of this feature and thereby the Conservation Objectives.	Yes
Wetland plant assemblage	Loss of feature through the installation of access management infrastructure	The supporting habitats of the qualifying features may be permanently lost due to the installation of new access management infrastructure.	There is a potential risk to the Conservation Objectives where there is a permanent and irreversible loss of the extent of the qualifying feature.	Yes

Conclusion: The proposal alone is likely to have a significant effect on the following qualifying features:

- Breeding avocet
- Non-breeding waterbirds: Black-tailed godwit; dark bellied brent goose; dunlin; grey plover; knot; pintail and redshank; Non-breeding water bird assemblage (ringed plover; shelduck; curlew, wigeon; gadwall, oystercatcher, lapwing, turnstone)
- Wetland Plant assemblage
- Wetland Invertebrate assemblage

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.

Further to the risks identified as being significant alone (in C2.1), it is considered that there are no other residual and appreciable risks likely to arise from this project which have the potential to act in-combination with similar risks from other proposed plans or projects to also become significant. Therefore the need further assessment of the risk of in-combination effects of this project has been excluded.

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 (if relevant) 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 a significant effects (or *may* have significant effects) on some or all of the Qualifying Features of the European Sites alone, further appropriate assessment of the project alone is required.

PART D: Appropriate Assessment and Conclusions on Site Integrity

D1. Scope of Appropriate Assessment

Note on terminology used within this assessment:

- European Sites: Refers to both the SPA and the Ramsar site
- Seawall: Describes the earth banks protecting low-lying land from tidal flooding
- Folding: Describes the strip of level ground adjacent to a seawall on its landward side
- Borrow dyke: Ditch landward of the seawall

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 Sites at risk.

The Sites and the Qualifying Features 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 4. Scope of Appropriate Assessment

Environmental pressure	Qualifying Feature(s) affected	Risk to Conservation Objectives
Disturbance	Avocet, *Recurvirostra avosetta* (breeding) Non-breeding waterbirds: Dark-bellied brent goose *Branta bernicla bernicla;* ringed plover *Charadrius hiaticula*; grey plover, *Pluvialis squatarola*; shelduck, *Tadorna tadorna*; curlew *Numenius arquata;* wigeon; *Anas penelope*; pintail *Anas acuta;* gadwall, *Anas strepera*; oystercatcher *Haematopus ostralegus*; lapwing *Vanellus vanellus*; knot *Calidris canutus;* dunlin *Calidris alpina alpine;* black-tailed godwit *Limosa limosa islandica*; redshank *Tringa totanus*; turnstone *Arenaria interpres*.	The nature, scale, timing and duration of some human activities can result in bird disturbance, that is, any human-induced activity sufficient to disrupt normal behaviours and / or distribution of birds at a level that may substantially affect their behaviour, and consequently affect the long-term viability of the population. Such disturbance can, for example, result in changes to feeding or roosting behaviour, increases in energy expenditure due to increased flight, abandonment of nest sites and desertion of supporting habitat (both within or outside the designated site boundary). This disturbance may undermine successful nesting, rearing, feeding and/or roosting, and/or may reduce the availability of suitable habitat for use as birds are displaced and their distribution within the site contracts.

Environmental pressure	Qualifying Feature(s) affected	Risk to Conservation Objectives
		Human disturbance associated with this proposal may take a variety of forms including noise, presence of people, animals and structures. Disturbance birds due to recreational activities as a result of the ECP proposal, could lead to reduced productivity and reduction in population and/or contraction in the distribution of avocet within the site. The nature, scale, timing and duration of construction and or installation works could result in bird disturbance sufficient to disrupt normal behaviours and/or distribution of birds within the site. Disturbance poses a potential risk to the number and distribution of these qualifying features and consequently their long-term viability which is counter to the Conservation Objectives
Loss of supporting habitat through trampling	Avocet, *Recurvirostra avosetta* (breeding) Non-breeding waterbirds: Dark-bellied brent goose *Branta bernicla bernicla;* ringed plover *Charadrius hiaticula*; grey plover, *Pluvialis squatarola*; shelduck, *Tadorna tadorna*; curlew *Numenius arquata;* wigeon *Anas penelope*; pintail *Anas acuta;* gadwall, *Anas strepera*; oystercatcher *Haematopus ostralegus*; lapwing *Vanellus vanellus*; knot *Calidris canutus;* dunlin *Calidris alpina alpina;* black-tailed godwit *Limosa limosa islandica*; redshank *Tringa totanus*; turnstone *Arenaria interpres*. Wetland Invertebrat assemblage: Muscid fly	The alignment of the trail along existing PRoW on sections of this ECP stretch takes walkers across what may be supporting habitat. In addition the creation of Coastal Margin seaward of the trail will permit physical access on to supporting habitat recorded as saltmarsh and mudflats where it is not excluded by S25A CROW direction. Loss of the extent, distribution and availability of suitable habitat for the full breeding cycle of breeding avocet, for non-breeding birds and for invertebrates, including intertidal coarse and mixed sediment, intertidal mud, seagrass beds, freshwater and coastal grazing marsh and saltmarsh, could present a direct risk to the Conservation Objective which are to maintain or restore the extent of supporting habitats and their range in order to maintain the populations

Environmental pressure	Qualifying Feature(s) affected	Risk to Conservation Objectives
	Phaonia fusca; horsefly *Haematopota grandis;* spider *Arctosas fulvolineata;* spider *Baryphma duffeyi;* swollen spire snail *Mercuria confusa* and invertebrates	
Loss of supporting habitat through installation of access management infrastructure	Avocet, *Recurvirostra avosetta* (breeding) Non-breeding waterbirds: Dark-bellied brent goose *Branta bernicla bernicla;* ringed plover *Charadrius hiaticula*; grey plover, *Pluvialis squatarola*; shelduck, *Tadorna tadorna*; curlew *Numenius arquata;* wigeon; *Anas penelope*; pintail *Anas acuta;* gadwall, *Anas strepera*; oystercatcher *Haematopus ostralegus*; lapwing *Vanellus vanellus*; knot *Calidris canutus;* dunlin *Calidris alpina alpine;* black-tailed godwit *Limosa limosa islandica*; redshank *Tringa totanus*; turnstone *Arenaria interpres*. Wetland Invertebrate assemblage: Muscid fly *Phaonia fusca;* horsefly *Haematopota grandis;* spider *Arctosas fulvolineata;* spider *Baryphma duffeyi;* swollen spire snail *Mercuria confusa* and invertebrates	The installation of new ECP infrastructure could potentially result in the permanent loss of supporting habitat. Loss of the extent, distribution and availability of suitable habitat for the full breeding cycle (courtship, nesting, feeding) and all behaviours of the non-breeding/wintering period (moulting, roosting, loafing, and feeding) will present a direct risk to the Conservation Objective which are to maintain or restore the extent of supporting habitats and their range in order to maintain the population Loss of extent, distribution and availability of habitat which supports the Wetland Invertebrate assemblage will present a direct risk to the Conservation Objective to maintain or restore the extent of these Red Data Book invertebrates
Disturbance on functionally linked land	Avocet, *Recurvirostra avosetta* (breeding)	The nature, scale, timing and duration of some human activities can result in bird disturbance, that is, any human-induced

Environmental pressure	Qualifying Feature(s) affected	Risk to Conservation Objectives
	Non-breeding waterbirds: Dark-bellied brent goose *Branta bernicla bernicla;* ringed plover *Charadrius hiaticula*; grey plover, *Pluvialis squatarola*; shelduck, *Tadorna tadorna*; curlew *Numenius arquata;* wigeon; *Anas penelope*; pintail *Anas acuta;* gadwall, *Anas strepera*; oystercatcher *Haematopus ostralegus*; lapwing *Vanellus vanellus*; knot *Calidris canutus; d*unlin *Calidris alpina alpine;* black-tailed godwit *Limosa limosa islandica*; redshank *Tringa totanus*; turnstone *Arenaria interpres*.	activity sufficient to disrupt normal behaviours and / or distribution of birds at a level that may substantially affect their behaviour, and consequently affect the long-term viability of the population. Such disturbance can, for example, result in changes to prospecting, nesting, feeding or roosting behaviour, increases in energy expenditure due to increased flight, reduced fitness and desertion of supporting habitat (both within or outside the designated site boundary). This disturbance may reduce the availability of suitable habitat for use as birds are displaced and their distribution within the site contracts. Human disturbance associated with this proposal may take a variety of forms including noise, presence of people, animals and structures. The nature, scale, timing and duration of construction and or installation works could result in bird disturbance sufficient to disrupt normal behaviours and/or distribution of birds within the site. Disturbance poses a potential risk to the number and distribution of these qualifying features and consequently their long-term viability which is counter to the Conservation Objectives.
Loss of feature habitat through trampling	Wetland plant assemblage: Eelgrass, *Zostera marina;* dwarf eelgrass*, Z. noltii;* eelgrass *Zostera angustifolia;* stiff saltmarsh-grass *Puccinellia rupestris;* small cord-grass *Spartina maritima;* perennial glasswort *Sarcocornia perennis;* lax-flowered sea lavender *Limonium humile.*	The alignment of the trail along existing PROW on sections of this ECP stretch takes walkers across what may be feature habitat. In addition the creation of Coastal Margin seaward of the trail will permit physical access on to the feature where saltmarsh and mudflat is not excluded by S25A CROW direction. Loss of the extent and distribution of the feature could present a direct risk to the Conservation Objective which are, to maintain or restore the extent.
Loss of feature	Wetland plant assemblage:	The installation of new ECP access management infrastructure could

Environmental pressure	Qualifying Feature(s) affected	Risk to Conservation Objectives
through installation of access management infrastructure	Eelgrass, *Zostera marina;* dwarf eelgrass*, Z. noltii;* eelgrass *Zostera angustifolia;* stiff saltmarsh-grass *puccinellia rupestris;* small cord-grass *Spartina maritima;* perennial glasswort *Sarcocornia perennis;* lax-flowered sea lavender *Limonium humile.*	potentially result in damage to or permanent loss of feature. Loss of extent, and distribution will present a direct risk to the Conservation Objectives.

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

D2.1 Stour and Orwell Estuary: Overview

The Orwell Estuary is part of the Stour and Orwell SPA and Ramsar Site. The SPA was classified in July 1994 under the EU Natura 2000 network and extended in May 2005. The Stour and Orwell Estuary has had Ramsar site status since July 1994.

The estuary, as described at section B1 above, comprises extensive mudflats, low cliffs, saltmarsh, grazing marsh and small areas of vegetated shingle, which are important for overwintering waterbirds, breeding avocets, a Wetland Plant assemblage and a Wetland Invertebrate assemblage.

These estuaries are valued by, and popular with, local communities and visitors alike for recreational activities including walking and dog walking with a number of existing long-distance and circular trails that attract tourists as well as local people.

The estuaries are also popular for bird watching, family visits and sailing. These activities are supported by nature reserves, marinas, boat yards, local clubs and societies. The attractive and varied landscape and opportunities for quiet enjoyment as well as active sports make the Suffolk coast an attractive place to live and work.

The estuaries' popularity for leisure and tourism, results in a contribution of over £1.75 billion annually to Suffolk's economy (the Stour and Orwell Estuaries Management Strategy) [REF 4] alongside which, the estuaries host one of the UK's most important port clusters, comprised of Felixstowe, a very large container port, Harwich a major east coast ferry and cruise port and Ipswich, the UK's largest grain exporting port [REF 4].

As the theme of this project is recreation, consideration of the current recreational use is highly relevant. Data on the numbers of people that currently use the estuary for leisure and how that has changed over the last ten years is not available. Anecdotal evidence is clear however that the number of people accessing the Orwell Estuary for informal recreation has increased dramatically over the last decade and it is safe to predict that in the foreseeable future, this trend will continue as plans for the further development of towns such as Ipswich, Felixstowe and Shotley get underway.

In addition to its economic importance the Orwell Estuary is internationally important for wildlife, particularly breeding avocet and overwintering and passage waterbirds.

The need for these two key aspects of the Orwell Estuary to be able to co-exist, that is, to both fulfil the economic and recreational potential of the estuaries and to maintain and expand the sensitive environmental qualities is recognised by all stakeholders. It is in fact a key aim of the Stour and Orwell Estuaries Management Group (1) [REF 5].

The Stour and Orwell Estuaries Management Group is set up to "Promote the sustainable use of the Stour and Orwell estuaries through the management of human activity, in a way which is compatible with the conservation of the estuarine landscape and wildlife" and is chaired by Suffolk County Council.

The demands of increasing recreational activity on land and water, a dynamic coastline and commercial and residential development all need to be balanced with the demands of wildlife protection.

The stated aim of the Stour and Orwell Estuaries Management Group is to work together to achieve the sustainable use of the estuaries by promoting human and economic activity that is compatible with the special landscape and wildlife qualities of the area.

(1) The Stour and Orwell Estuaries Management Group is an established partnership that has operated since the 1990s and has more than 20 members, with representatives from businesses, local authorities, government agencies, conservation charities and local interest groups.

As Councils respond to the demand for increased housing provision and the need for economic growth in the form of jobs, commerce and industry, communities close to the estuaries are expanding with new homes being proposed and built.

The Ipswich Local Plan 2011 to 2031 [REF 6] adopted in 2017 has been assessed through the Habitats Directive formal process [REF 7]. The assessment concluded that visitor numbers to the Orwell

Estuary will increase as a result of growth in the Ipswich Policy Area and that increase could adversely impact the SPA and Ramsar site.

Measures to mitigate any such potential impacts are set out in detail in the Suffolk Recreational Disturbance Avoidance and Mitigation Strategy (RAMS) [REF 8] and has been taken in to account in the Shotley Gate to Felixstowe Ferry Access Assessment.

In addition to these physical pressures, the estuaries are vulnerable to the potential impact of climate change, including possible sea level rise. The potential for large scale loss of salt marsh and freshwater habitats on the East Anglian coast due to climate change has implications for both nature conservation and flood risk management.

D2.2. Pattern of use by birds of the Orwell Estuary

Waders and wildfowl use the Orwell Estuary for roosting and loafing, and they feed on intertidal mud throughout the estuary.

Their pattern of use of the estuary is governed primarily by the tidal cycle but also, and in growing frequency, by the levels of disturbance at individual locations on the estuary. A roost may form on every tide both day and night, or only on some high tides, or seasonally.

During neap tides, birds may roost for only a short time due to fewer feeding areas being flooded and more roosting areas being available whereas on spring tides, birds may roost for several hours while their feeding grounds remain covered and may even move on to surrounding farmland.

It is important that birds experience minimal disturbance on their roosting sites. There are a number of different potential sources of disturbance on this estuary, however, for the purpose of this assessment of a proposed recreation project, avoidance of disturbance by people and dogs is a key consideration.

If disturbance is repeated or continual birds may have to remain on the wing when their feeding grounds are covered with the potential negative impact on their productivity and survival. Habitats are generally less disturbed at night except for Shotley Marsh, Colton Creek, Hares Creek and Levington Creek which are shot over (Wildfowling, usually at dawn or dusk) between 1st October and 1st February

Roost sites on the Orwell vary from sand and shingle spits, shoreline and saltmarsh to adjacent farmland. The Orwell Estuary Hinterland Report produced by SWT in 2007 [REF 9], identified key roosting and loafing sites on the estuary. However it should be noted that discussions with RSPB, BTO and the SWT indicate that the relative importance of some of those sites is shifting in response, they believe, to disturbance with some high tide roosts no longer being noted as a key locations and birds no longer recorded in any number on previously functionally linked land such as Redgate Farm arable fields.

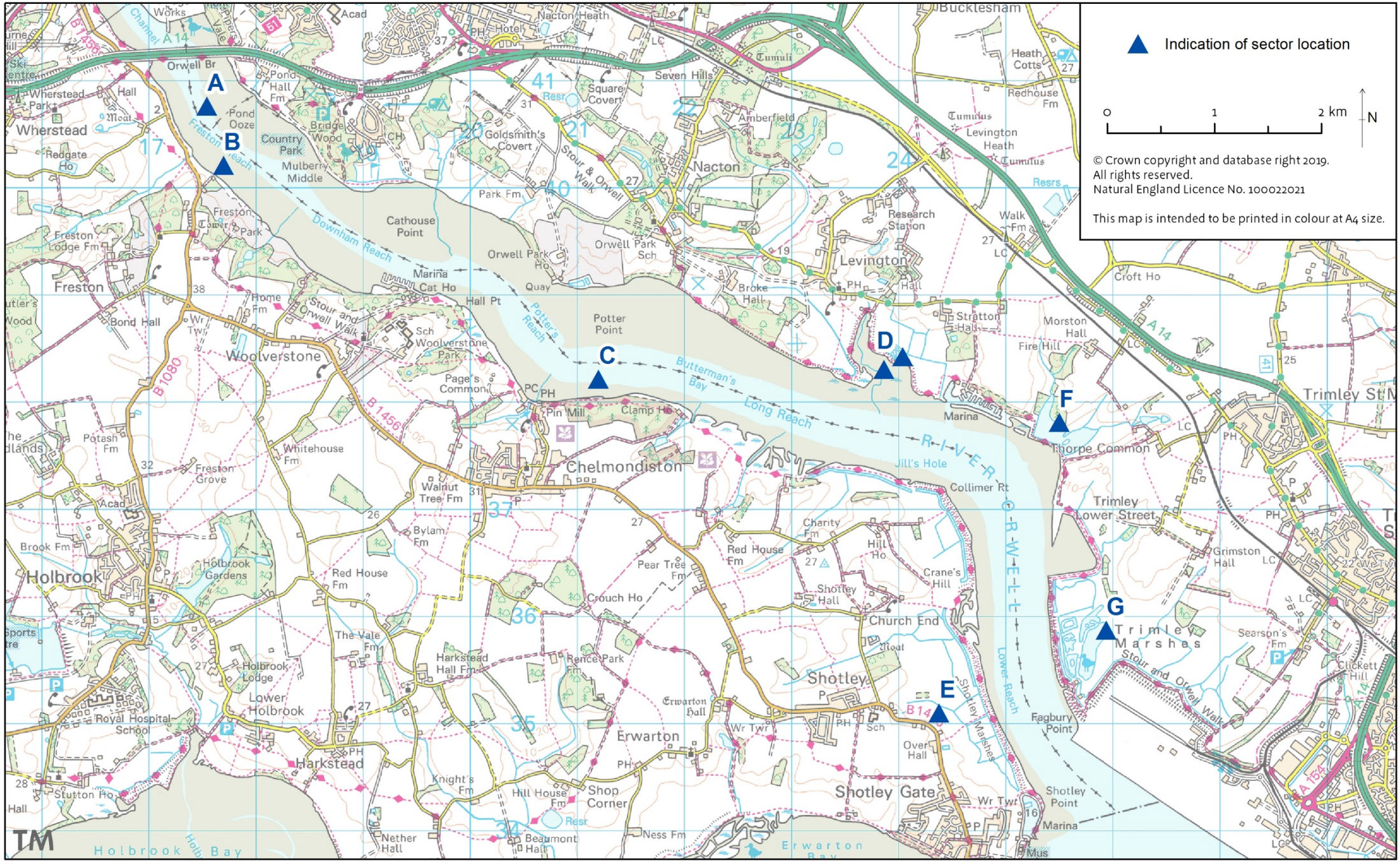
Bird species vary in their selection of favoured roost sites on the Orwell Estuary and roosting sites may be predominantly one or two species or may be made up of a range of waders and wildfowl.

Using the WeBS sector data the proportion of each species found in each sector, compared to the whole site for each year was calculated (Ornithological Status of the Orwell Estuary 2017) [REF 10]. The percentages for each year were averaged and used to give an indication of which sectors are important for each species. A sector was considered important if it held on average more than 10% of the overall peak count for the whole estuary. This figure was used to give an indication of which sectors are important for each species at their high tide roosts (Map 2).

The following information is selected from the Ornithological Status of the Orwell Estuary report [REF 10] and provides an indication of the pattern of use of the estuary sites by waders and waterbirds and their favoured areas. Only those sites relevant to the proposed ECP route are included (in certain areas the report notes there were insufficient numbers to draw conclusion).

Coastal Access - Shotley Gate to Felixstowe Ferry - Habitats Regulations Assessment

Map 2: Location of sites important for specific species, that is, sites that hold on average more than 10% of the overall peak count for that species for the whole estuary



(Note: words in italics below indicate direct quotes)

A. Redgate Hard; Black Ooze; Pond Ooze; river channel: *WeBS Sector 4a&c is an important sector for Cormorant and Redshank. On average sector 4a&c supports 13% of the wintering Cormorant population of the Orwell Estuary and 13% of the Redshank population.*

B. Freston Point; Redgate Hard; river channel: WeBS *Sector 5 is an important sector for Black-tailed Godwit (30% of the Orwell Estuary wintering population), Cormorant (14% of the Orwell Estuary wintering population), Pintail (10% of the Orwell Estuary wintering population), Redshank (27% of the Orwell Estuary wintering population) and Shelduck (25% of the Orwell Estuary wintering population).*

C. The Cliff; Hall Point; river channel: WeBS *Sector 8a: is a key sector for Black-tailed Godwit, Dunlin and Redshank supporting the most individuals when compared with all other sectors. On average sector 8a supports 67% of the Orwell Estuary Black-tailed Godwit population, 47% of the Dunlin population and 28% of the Redshank population. Sector 8a is also an important sector for Dark-bellied Brent Goose (31% of the Orwell Estuary wintering population), Grey Plover (37% of the Orwell Estuary wintering population), Pintail (19% of the Orwell Estuary wintering population) and Shelduck (12% of the Orwell Estuary wintering population).*

D. Levington; river channel: WeBS *Sector 10c is an important sector for Grey Plover. On average sector 10c supports 23% of the wintering Grey Plover population on the Orwell Estuary.*

E. Shotley Marshes: WeBS *Sector 11c is a key sector for Dark-bellied Brent Goose and 11d (Shotley Point) is a key sector for Grey Plover, supporting the most individuals when compared with all other sectors. On average sector 11c supports 35% of the Orwell Estuary Dark-bellied Brent Goose population and 50% of the Grey Plover population. Sector 11a (Hill House Farm Marshes) is also an important sector for Dark-bellied Brent Goose (10% of the Orwell Estuary wintering population) and sector 11d is important for Cormorants (10% of the Orwell Estuary wintering population).*

F. Loompit Lake: WeBS *Sector 12a is a key sector for Cormorant and Gadwall, supporting the most individuals when compared with all other sectors. On average sector 12a supports 60% of the Orwell Estuary Cormorant population and 60% of the Gadwall population. Sector 12a is also an important sector for Grey Plover contributing on average 10% of the Orwell Estuary wintering population.*

G. Trimley Marsh Nature Reserve: WeBS *Sector 13c is a key sector for Pintail and Shelduck, supporting the most individuals when compared with all other sectors. On average sector 13c supports 39% of the Orwell Estuary Pintail population and 29% of the Shelduck population. Sector 13c is also an important sector for Black-tailed Godwit (14% of the Orwell Estuary wintering population), Cormorant (21% of the Orwell Estuary wintering population) and Gadwall (37% of the Orwell Estuary wintering population).*

Follow link below for sector locations.

https://app.bto.org/websonline/sites/data/sitesdata.jsp#lon=1.2183651&lat=52.0019829&zoom=12

D2.3 Qualifying Features, risks of the ECP proposal and current condition status

D2.3.1 Breeding avocet; Non-breeding waterbirds: Disturbance

The annual Rare Breeding Bird report published in British Birds in November 2018 (covering 2016) refers to 247 pairs of avocet in Suffolk on 14 site (Holling et al. 2018) [REF 11]. They are reportedly present all year around on the Orwell Estuary. The current breeding population across the whole of the UK is estimated at 1885 pairs (5 year average) [REF 11]. Avocet feed on exposed intertidal mud or in shallow water, finding prey by sifting or pecking, but sometimes swimming and up-ending.

The Orwell Estuary supports significant populations of many of the UK's non breeding waterbirds over winter, notably black-tailed godwit, dark-bellied brent goose, dunlin, grey plover, knot, pintail and redshank. It is an important staging area in summer/autumn and spring for migratory waterbirds.

As part of the Supplementary Advice on Conservation Objectives for the Stour and Orwell Estuary European marine sites, Natural England set targets to achieve a favourable condition assessment of the SPA and Ramsar site qualifying features including waterbirds and their supporting habitats.

Supporting habitats in this context include intertidal feeding areas and high tide roosting areas on upper saltmarsh, sea banks/seawalls and nearby wet grassland and freshwater habitats. Waterbirds sometimes roost and feed on wet grassland and freshwater habitats that are not part of the designated site. Where there is evidence that this takes place the functionally linked land is treated as supporting habitat in this assessment.

The attribute of disturbance at roosting areas is most relevant to this assessment (although not exclusively) as the vast majority of the feeding mudflats and saltmarsh are excluded from the access rights through a S25A CROW direction. The target is 'no significant reduction in numbers or distribution attributable to disturbance associated with this project proposal, from an established baseline'.

Disturbance can be problematic because it reduces the time available to birds for resting and may increase energy expenditure, for example, if it results in flight. Repeated disturbance at a favoured feeding or roosting site may significantly reduce its function as supporting habitat and thereby the health and productivity of the birds.

Most waders and some waterfowl are considered more vulnerable to disturbance at high tide because the available habitat is greatly reduced as the tide covers it, and many birds roost on or just above the waterline.

Conversely at low tide waterbirds are generally less vulnerable to disturbance because there is extensive feeding and resting habitat on the intertidal flats in the main estuary, which is further from places where recreational activity normally takes place.

There is anecdotal evidence provided by the Suffolk Wildlife Trust (SWT), RSPB and British Trust for Ornithology (BTO), that as land based recreation on the Orwell Estuary has increased over the last decade it is causing disturbance at what had been recognised as key locations for birds on the estuary to the point where these areas are no longer key roost sites.

Waterbirds are also vulnerable to disturbance during migration when their energy reserves are depleted. There is a short period in spring after the spring migration has finished and before the summer/autumn migration begins when sensitivity is lower. This period of lower sensitivity can be very brief, depending upon how particular species use the site.

- Condition of qualifying feature: Breeding avocet

Avocets choose to breed in open, bare, undisturbed areas close to brackish or salt water. On the Orwell Estuary avocets are reported by the SWT to have bred on Levington Lagoon (although not successfully) and on Trimley Marshes. The latter site supported a mean of 21 breeding pairs of Avocet during 1996-2000, representing 3.5% of the national population. The breeding population of Avocet on Trimley

Marshes declined dramatically up to 2016 with a particularly sharp decline in 2006 down to zero breeding birds.

2016 saw an increase in breeding pairs to 10 (and 8 in 2017) with no chicks successfully reared in either year, however, in 2019 11 pairs bred rearing 17 chicks successfully. This success should not be read as an indication that conditions on the Orwell Estuary are now favourable for avocet to breed. The successfully fledged chicks were on the Trimley Marsh Nature Reserve, on a fenced, wardened, island in a lagoon well away from recreational disturbance and involved the investment of many hours of oversight by the SWT. Everywhere else on the estuary breeding efforts failed.

Most breeding birds are found on reserves where disturbance is usually less than on adjacent areas, as illustrated by the success at Trimley Marsh.

- Condition of qualifying feature: Non breeding waterbirds

The BTO's Wetland Bird Survey (WeBS) Alerts [REF 12] provide information relating to population trends of waterbirds. The 'Alerts' system provides a standardised technique with which to monitor changes in the numbers of wintering waterbirds in the UK over a range of spatial scales and time periods using data collected as part of WeBS. Declines of between 25% and 50% trigger Medium Alerts and declines of greater than 50% trigger High Alerts.

Using the WeBS Alerts data it is possible to gain an indication of the current status of the qualifying features for the European sites.

The Wetland Bird Survey Alerts 2009/2010 assessed 17 species for WeBS Alerts for this site [REF 13].

SPA and Ramsar site Qualifying Features, black-tailed Godwit; dark-bellied brent Goose; dunlin; grey Plover; knot; pintail; redshank and the Wetland Bird Assemblage, ringed plover, shelduck, cormorant, great crested grebe, curlew, wigeon, goldeneye, oystercatcher, lapwing and turnstone were assessed.

High Alerts were recorded for pintail $(SC0)_{(2)}$; cormorant (LT); lapwing (ST,MT,SC); ringed plover (LT,SC); dunlin (LT,SC)

Medium Alerts were recorded for shelduck (LT,SC); wigeon (SC); pintail (ST,MT); goldeneye (ST,MT,SC); great crested grebe (SC); cormorant (MT,SC); grey plover (ST,MT,SC); black-tailed godwit (SC); knot (ST); dunlin (MT); redshank (LT,SC).

Further detail from the WeBS Alerts information for selected SPA Qualifying Features is as follows:

Numbers of **black-tailed godwit** over-wintering on Stour and Orwell Estuaries SPA have been stable in the short-term having previously declined. Consequently, Alerts have been triggered for the period since designation. Numbers of this species over-wintering within Anglian Region have been increasing long term. Numbers of this species over-wintering in Great Britain have been increasing long term. The trend on the site does not appear to be tracking that of the either the region or the British trend. The declining proportion of regional and country-wide numbers supported by this site suggest that site-specific pressures may be affecting numbers on this site.

Numbers of **dark-bellied brent goose** over-wintering on Stour and Orwell Estuaries SPA have been stable in the medium-term having previously increased. Consequently no Alerts have been triggered for this species. Numbers of this species over-wintering within Anglian Region have been stable in the short-term having previously declined. Numbers of this species over-wintering in Great Britain have been stable in the short-term having previously declined. The trend on the site appears to be tracking that of the region and British trends. The stable proportion of both regional and country-wide numbers supported by this site suggest the environmental conditions remain relatively favourable for this species.

Numbers of **dunlin** over-wintering on Stour and Orwell Estuaries SPA have been increasing in the short-term following a previous decline. Consequently, Alerts have been triggered for the medium- and long-terms and the period since designation. Numbers of this species over-wintering within Anglian Region have been decreasing in the medium-term having previously peaked. Numbers of this species over-wintering in Great Britain have been decreasing in the medium-term having previously peaked.

(2) Key to abbreviations: ST short-term (5 years), MT medium-term (10 years), LT long-term (up to 25 years), AT all-time, SC since classification.

The trend on the site appears to be tracking that of the region and British trends. The declining proportion of the regional numbers supported by this site suggest that site-specific pressures may be affecting this species.

Numbers of **grey plover** over-wintering on Stour and Orwell Estuaries SPA have been decreasing in the medium-term having previously peaked. Consequently, Alerts have been triggered for the short- and medium-terms and the period since designation. Numbers of this species over-wintering within Anglian Region have been stable in the medium-term having previously increased. Numbers of this species over-wintering in Great Britain have been stable in the short-term having previously declined. The trend on the site does not appear to be tracking that of the region although is similar to the British trend. The declining proportion of regional and country-wide numbers supported by this site suggest that site-specific pressures may be affecting numbers on this site.

Numbers of **knot** over-wintering on Stour and Orwell Estuaries SPA have been decreasing in the short-term having previously peaked. Consequently, Alerts have been triggered for the short-term. Numbers of this species over-wintering within Anglian Region having remained relatively stable long term. Numbers of this species over-wintering in Great Britain having remained relatively stable long term. The trend on the site does not appear to be tracking that of the either the region or the British trend. In conclusion, the contrast between the declining site trend and both the regional and British trends suggests that declining numbers underpinning these Alerts are most likely due to site-specific pressures.

Numbers of **pintail** over-wintering on Stour and Orwell Estuaries SPA have been decreasing in the medium-term having previously peaked. Consequently, Alerts have been triggered for the short- and medium-terms and the period since designation. Numbers of this species over-wintering within Anglian Region have been decreasing in the short-term having previously peaked. Numbers of this species over-wintering in Great Britain have been decreasing in the short-term having previously been relatively stable. The trend on the site does not appear to be tracking that of the either the region or the British trend. In conclusion, the contrast between the declining site trend and both the regional and British trends suggests that declining numbers underpinning these Alerts are most likely due to site-specific pressures.

Numbers of **redshank** over-wintering on Stour and Orwell Estuaries SPA have been decreasing in the medium-term having previously peaked. Consequently, Alerts have been triggered for the long-term and the period since designation. Numbers of this species over-wintering within Anglian Region having remained relatively stable long term. Numbers of this species over-wintering in Great Britain having remained relatively stable long term. The trend on the site does not appear to be tracking that of the either the region or the British trend. The declining proportion of the regional numbers supported by this site suggest that site-specific pressures may be affecting this species.

In conclusion, the contrast between the declining site trend and both the regional and British trends suggests that declining numbers underpinning these Alerts are most likely due to site-specific pressures.

In summary, WeBS Alerts have been triggered for 13 of the 17 species assessed for WeBS Alerts for this site. No WeBS Alerts have been triggered for dark-bellied brent geese which suggest the environmental conditions remain relatively favourable for this species. For Dunlin, the declining

proportion of the regional numbers supported by this site suggest that site-specific pressures may be affecting this species.

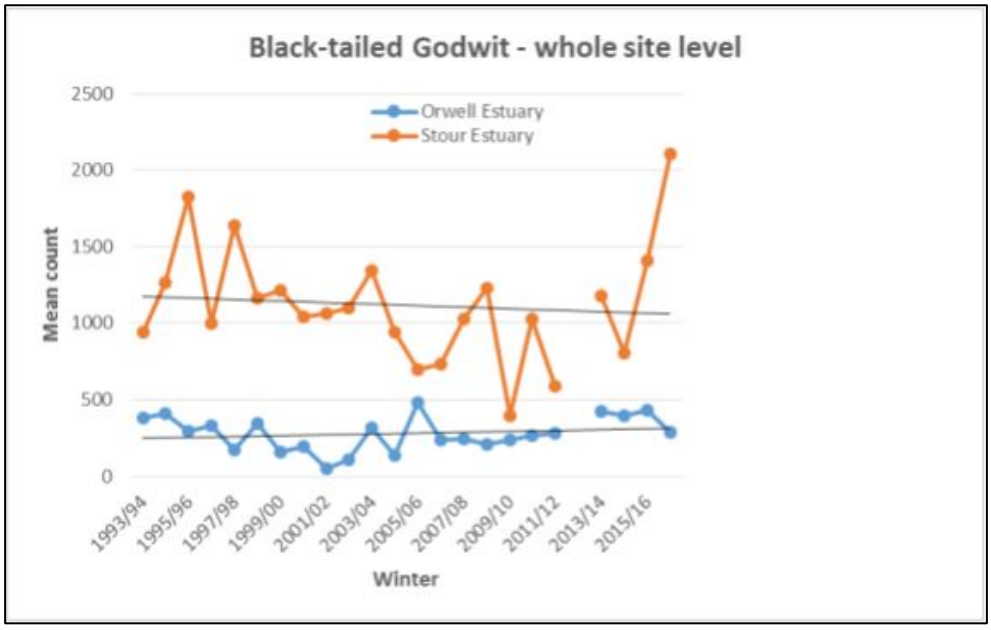
For Black-tailed Godwit, Grey Plover, Knot, Pintail, and Redshank, the contrast between the declining site trend and both the regional and British trends suggests that declining numbers are most likely due to site-specific pressures.

WeBS core counts (September to March five year means) from the data available is presented in graph form to illustrate the overall trends for the whole the Stour and Orwell estuaries European sites for seven of the Qualifying Features.

The SSSI target population attribute (Orwell Estuary SSSI Favourable Condition Table) [REF 15] was calculated using the 5 year annual peak means including supplementary counts. The current attribute has been calculated similarly using the most recent available five year annual peak means including supplementary counts presented in WeBS data. This is usually 2013/14 – 2017/18 unless gaps in the data result in previous years, for example, 2011/12 being used. There is often a gap in the data for 2012/13 which may be a result of the storm surge and widespread flooding which occurred that winter.

Note: The SSSI target and current attributes are not represented on the graphs due to the difference in the calculation method.

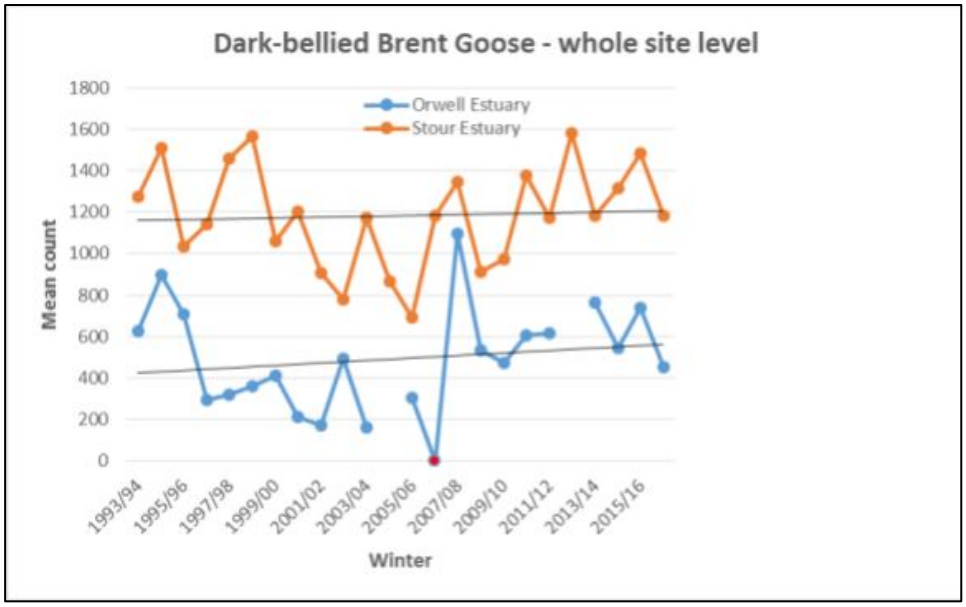
Fig 1: Black-tailed godwit



Black tailed godwit are increasing at a national level. The 25 year trend (1991/92 - 2016/17) for Black-tailed godwit in the UK was a 266% increase, and the 10 year trend (2006/07 - 2016/17) was a 38% increase [REF 14]. On the Orwell Estuary numbers have increased very slightly on average.

The SSSI target (useful here as they provide information on the Orwell Estuary alone) for the Orwell Estuary wintering population is to maintain the population above 555 individuals which was the five year mean (1996 - 2000) at designation. The current population attribute for Black-tailed Godwit on the Orwell Estuary is 873 which means that the site is meeting its SSSI target.

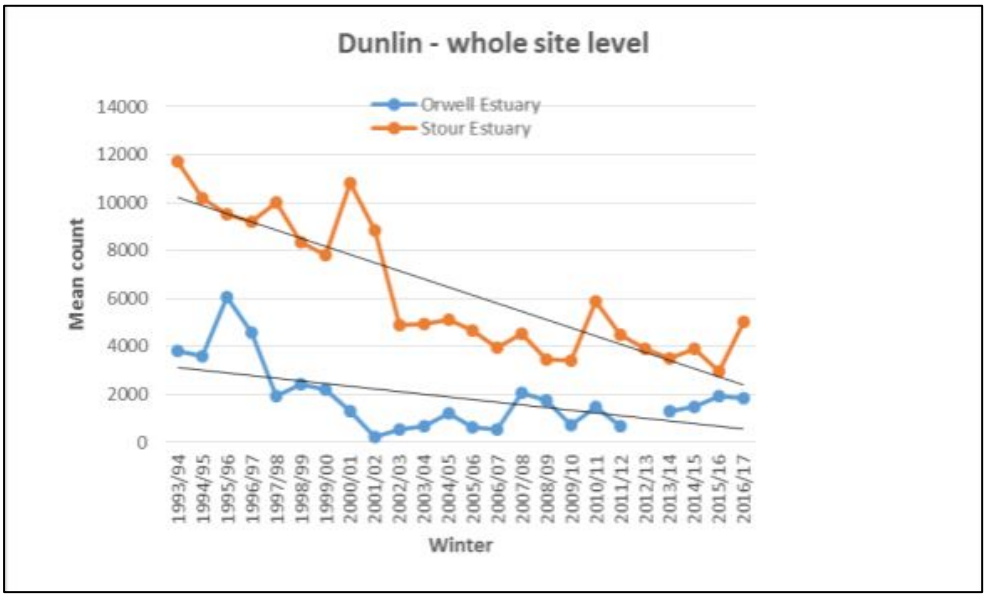
Fig 2: Dark-bellied brent goose



The national population of dark-bellied brent geese has been relatively stable. The 25 year trend (1991/92 - 2016/17) saw a 12% decrease, and the 10 year trend (2006/07 - 2016/17) a 13% increase [REF 14]. There is an anomaly in the data for 2006/07 at the Orwell whole site level. The population of Dark-bellied Brent Goose on Orwell Estuary has fluctuated, with a positive trend overall.

The SSSI target for the Orwell Estuary wintering population is to maintain the population above 1219 individuals which was the five year mean (1996 - 2000) at designation. The current population attribute for the dark-bellied brent goose on the Orwell Estuary is 1381 so the site is meeting its SSSI target.

Fig 3: Dunlin



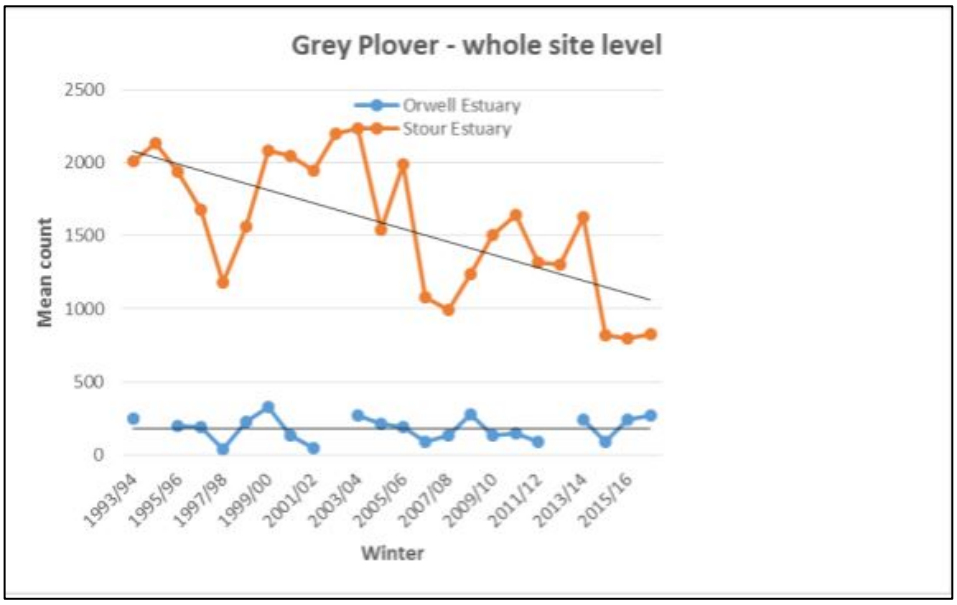
The national population of Dunlin has been relatively stable in the past decade following a steep decline. The 25 year trend (1991/92 - 2016/17) for Dunlin in the UK saw a 40% decrease, and the 10 year trend (2006/07 - 2016/17) a 0% change [REF 14].

Numbers of Dunlin have climbed slowly in the last four years to just under 2,000 in 2015/16 and 2016/17.

The SSSI target for the Orwell Estuary wintering population is to maintain the population above 8,767 individuals which was the five year mean (1996 - 2000) at designation. The current population attribute

for Dunlin on the Orwell Estuary is 4190. Therefore the site is not meeting the SSSI target by a large margin.

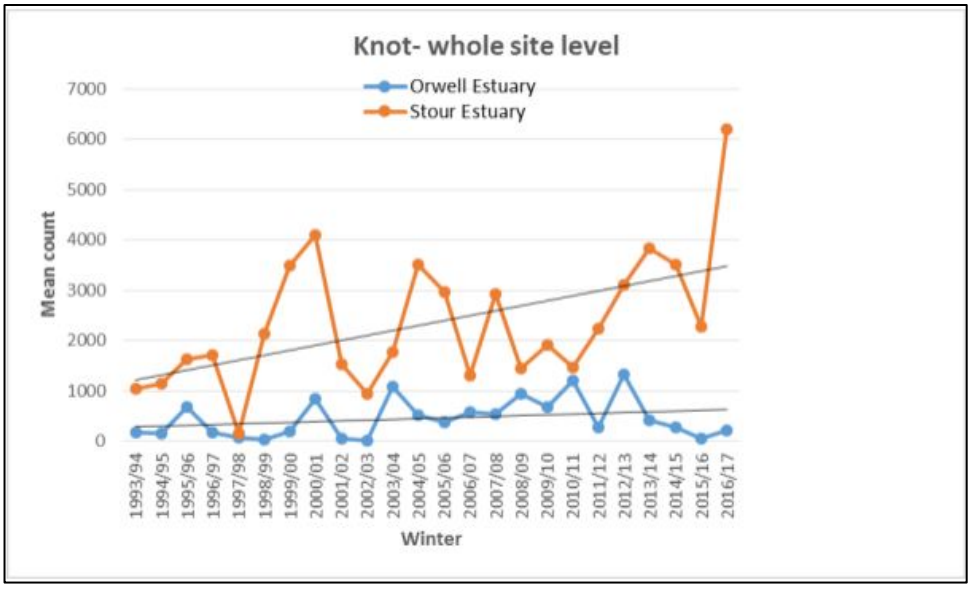
Fig 4: Grey plover



The 25 year trend (1991/92 - 2016/17) for Grey Plover in the UK saw a 31% decrease, and the 10 year trend (2006/07 - 2016/17) a 16% decrease indicating a national population decline [REF 14]. Numbers of Grey Plover seem relatively stable over the longer-term.

The SSSI target for the Orwell Estuary wintering population is to maintain the population above 618 individuals which was the five year mean (1996 - 2000) at designation. The current population attribute for Grey Plover on the Orwell Estuary is 505 so the site is not meeting the SSSI target.

Fig 5: Knot

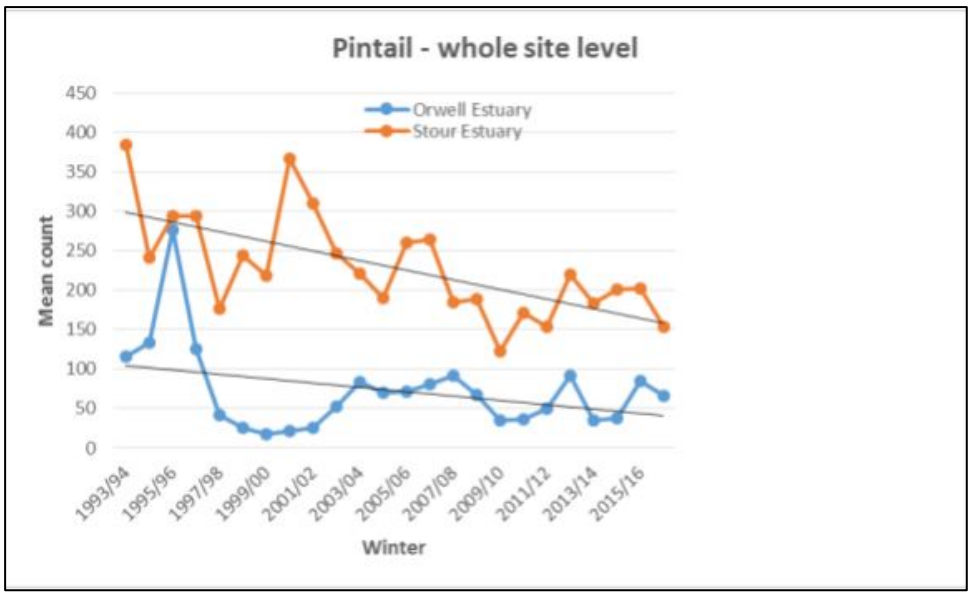


The 25 year trend (1991/92 - 2016/17) for knot in the UK saw an 18% decrease, and the 10 year trend (2006/07 - 2016/17) a 10% decrease indicating a national population decline [REF 14].

Numbers of knot on the Orwell estuary seem relatively stable over the longer-term.

The current population attribute for knot on the Orwell Estuary is 2358. Knot is a migrating species of European importance but, as it is not a notified feature of the SSSI, there is no SSSI target for population attribute however the 5 year average for the period 95/96 to 99/00 was 2313.

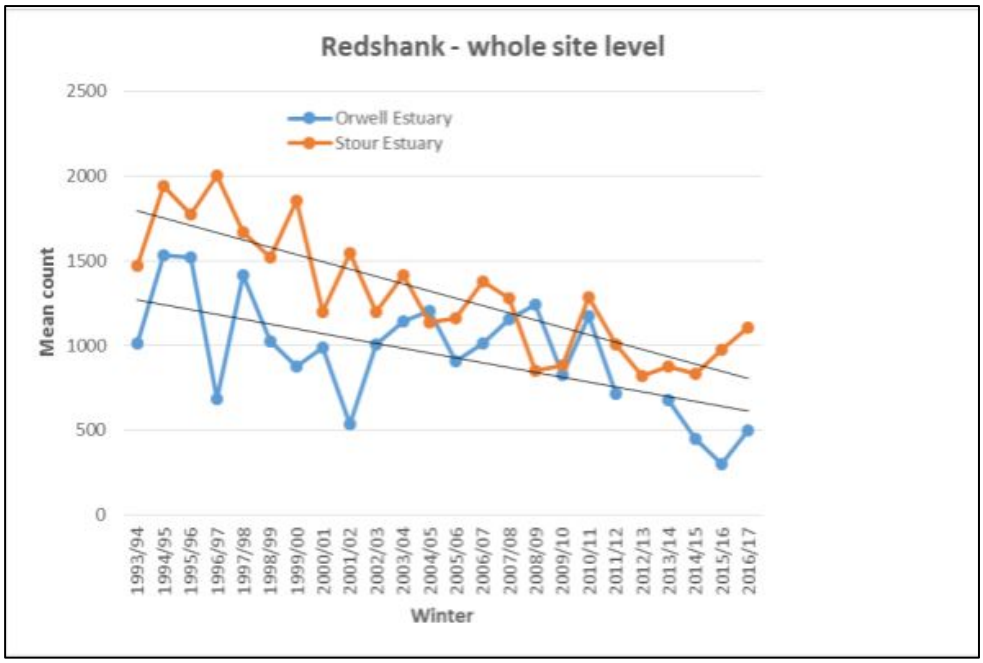
Fig 6: Pintail



The 25 year trend (1991/92 - 2016/17) for Pintail in the UK saw a 25% decrease, and the 10 year trend (2006/07 - 2016/17) a 35% decrease indicating a national population decline [REF 14]. Pintail populations are also declining on the Orwell Estuary.

The SSSI target for the Orwell Estuary wintering population is to maintain the population above 317 individuals which was the five year mean (1996 - 2000) at designation. The current population attribute for Pintail on the Orwell Estuary is 172 so the site is not meeting the SSSI target by a large margin.

Fig 7: Redshank

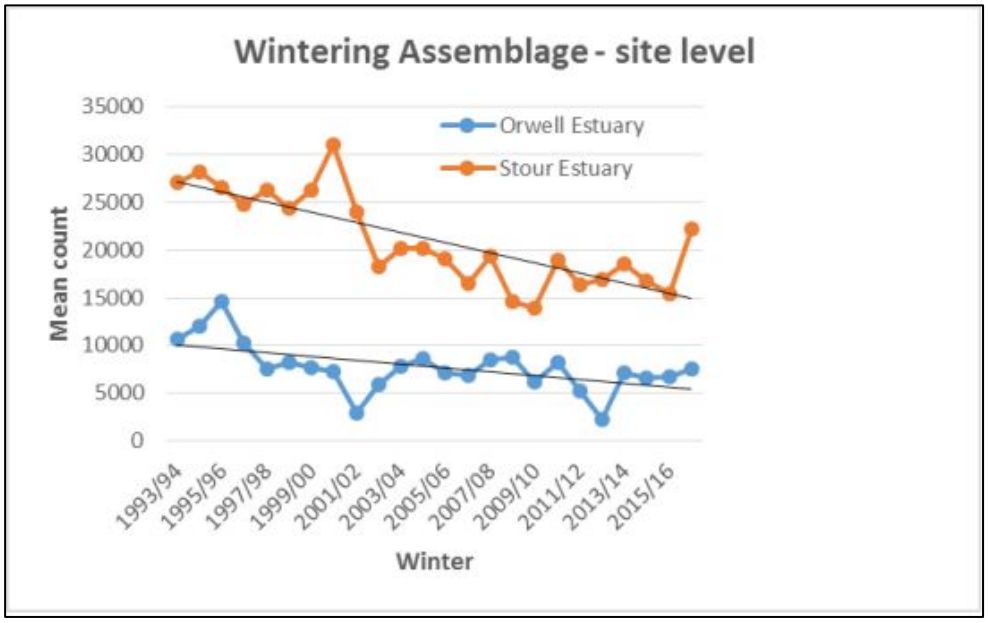


The 25 year trend (1991/92 - 2016/17) for Redshank in the UK saw a 15% decrease, and the 10 year trend (2006/07 - 2016/17) a 10% decrease [REF 14] indicating a national population decline.

Although there has been a small upturn in the most recent data, Redshank populations have declined significantly overall on the Orwell Estuary

The SSSI target for the Orwell Estuary wintering population is to maintain the population above 2,098 individuals which was the five year mean (1996 - 2000) at designation. The current population attribute for Redshank on the Orwell Estuary is 1074 so the site is not meeting the SSSI target by a large margin.

Fig 8: Overwintering Wetland Bird Assemblage



The average population of the wintering assemblage on the Orwell Estuary over 25 years is 7,679. There is a declining trend over 25 years on the Orwell Estuary. Populations of the wintering waterbird assemblage are declining on the Orwell Estuary.

The above data indicates that currently a number of the Qualifying Features waterbirds of the European sites are experiencing challenges to their Conservation Objectives. Four out of six of the specific waterbird Qualifying Features of the SPA are showing a decline in numbers on the Orwell estuary for potentially site specific reasons.

D2.3.2 Saltmarsh (including Wetland Plant Assemblage): Trampling

Saltmarsh and the Wetland Plant assemblage is broadly made up of plants of littoral sediment and saltmarsh with seawalls supporting species associated with coastal lowland neutral grassland.

Typically, supporting habitat is comprised of eelgrass, dwarf eelgrass, slender hare's-ear *Bupleurum tenuissimum,* golden-samphire *Inula crithmoides,* lax-flowered sea-lavender *Limonium humile*, shrubby sea-blite *Suaeda vera,* small cord-grass *Spartina maritima*, perennial glasswort *Sarcocornia perennis*, and divided sedge *Carex divisa*.

The Wetland Plant assemblage, a Qualifying Feature of the Ramsar site citation are stiff saltmarsh-grass *Puccinellia rupestri;* small cord-grass *Spartina maritima;* perennial glasswort *Sarcocornia perennis;* lax-flowered sea lavender *Limonium humile.*

- Condition of qualifying feature

As part of the Supplementary Advice on Conservation Objectives updated in 2019 [REF 3], Natural England set a generic target to maintain or restore supporting habitats of qualifying features. This means maintaining the attributes relating to overall extent, distribution and zonation of the component

communities, species abundance, sward structure, characteristic landforms and the processes that create them.

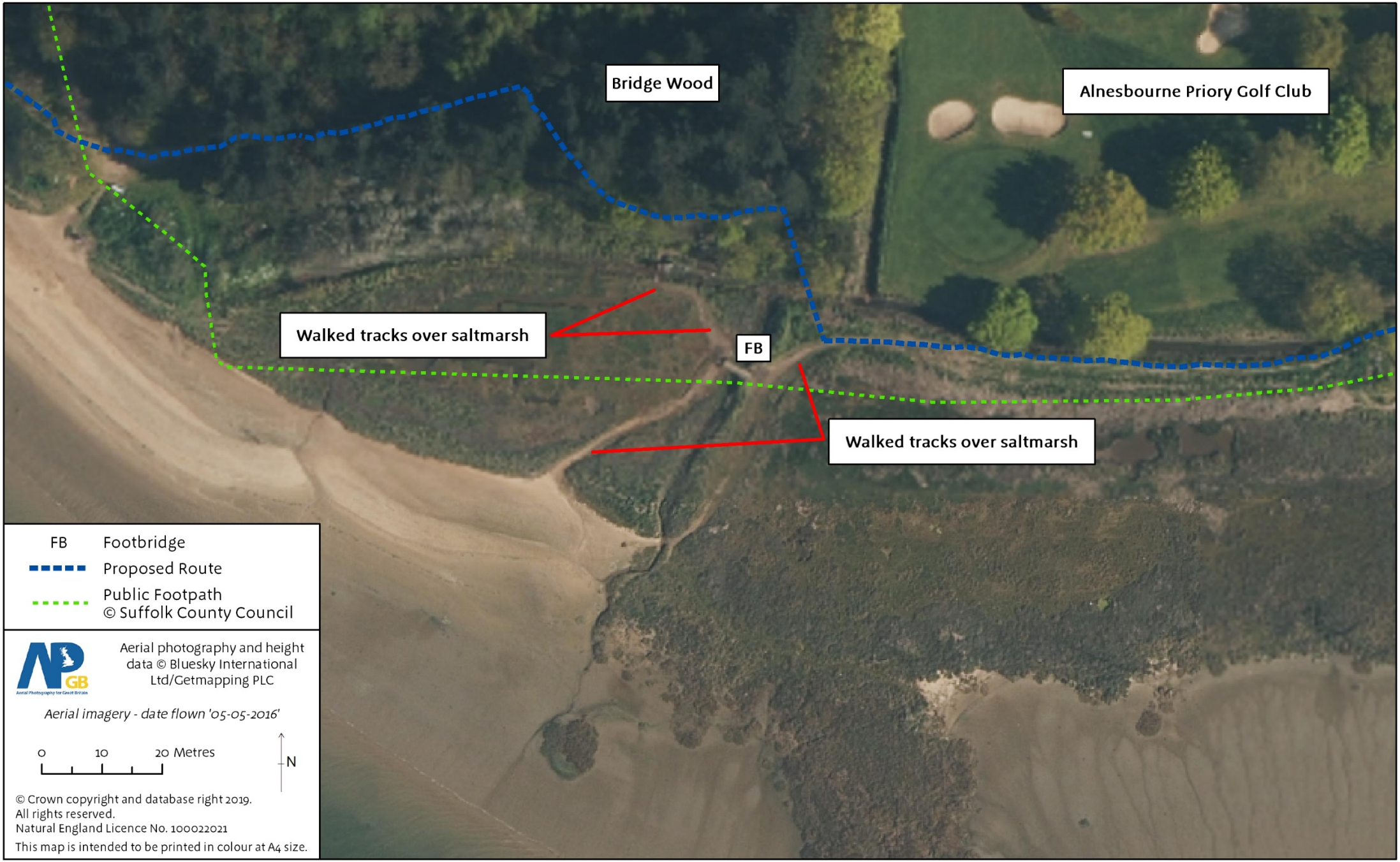
An Orwell Estuary SSSI condition assessment in 2009 [REF 15] recorded 14 of the 21 units in favourable condition. Recreational pressure was not recorded as contributing to this although some transition from mid to higher marsh was noted on the marsh near Orwell Country Parks.

Of the remaining 7 units, four were recorded as 'unfavourable no change' and 3 recorded as 'unfavourable declining' where localised losses were recorded. In all cases the assessment concluded that the finding was due to the loss of extent resulting from coastal squeeze as the natural development of the saltmarsh is constrained by the sea wall, a manmade sea defence structure.

A site inspection, as part of this assessment, of the section between Orwell Bridge and Shore Lane Car Park confirms that there is currently localised damage to saltmarsh as a result of recreation on foot along PRoWs and informal established access. Where damage has occurred, it takes the form of well-established, narrow pathways of bare ground and trampled vegetation across mid and upper saltmarsh communities. These pathways are typically visible on aerial photography, see Map 3.

Coastal Access - Shotley Gate to Felixstowe Ferry - Habitats Regulations Assessment

Map 3: Aerial view of walked track damage to saltmarsh (Aerial photography 2016)



This map is intended to be printed in colour at A4 size.

D.2.3.3 Invertebrate assemblage: Loss of extent

Wetland Invertebrate assemblage is a Qualifying Feature of the Stour and Orwell Ramsar site. The listed species are, Muscid fly *Phaonia fusca*; horsefly *Haematopota grandis*; spider *Arctosas fulvolineata*; spider *Baryphma duffeyi* and swollen spire snail *Mercuria confuse*.

These species are ranked below in decreasing order of risk of extinction (IUCN) threat:

1. Spider: *Praestigia duffeyi* (used to be *Baryphyma*) Nationally Rare IUCN Endangered
2. Water snail: *Mercuria (=Pseudamnicola*) confusa; Now known as *Mercuria cf similis* IUCN Vulnerable
3. Spider: *Arctosa fulvolineata* Nationally Rare; IUCN Near Threatened
4. Muscid fly: *Phaonia fusca* provisionally IUCN Near Threatened
5. Horse-fly: *Haematopota grandis*; Nationally Scarce

- General habitat and ecology

Praestigia duffeyi has typically been found in tidal litter or on mud beneath *Atriplex, Phragmites* and other vegetation in saltmarsh and brackish marshes. It appears to prefer the higher tidal reaches of rivers or their tributaries. Adults of both sexes have been found from April to June, and females also in July.

Mercuria cf similis is restricted to very slightly brackish water in estuaries and tidal ditches. Mainly a detritus feeder which can tolerate exposure at low tide. In Britain *Mercuria* associates with freshwater species or in nearly fresh conditions.

Arctosa fulvolineata's typical habitat is saltmarsh and seasonally wet saline areas. It is found under debris and stones at the top of saltmarshes, under lumps of mud and wet, tightly matted debris along the foot of the sea wall and under stones on the wet mud on the nearby marshes. It has also been found in cracks in the upper saltmarsh where saltpans had dried out and were not vegetated, and on pure shingle. The species appears to have very specific habitat requirements and these specific requirements are not at all common even where otherwise apparently suitable habitat abounds. Neither are the spiders' specific requirements stable, so in many locations areas may change and become unsuitable relatively quickly.

Phaonia fusca is confined mainly to estuarine areas in the south-east. Its presence in Suffolk dates back to a record on the Stour Estuary in 1951. Its habitat is estuarine marshes and coastal levels, where it is associated with salt marshes, with blue lyme grass *Lymus arenarius* and beds of common reed *Phragmites.* The ecology and biology is unknown but adults appear in July and August.

Its status is very local in the south-east and seemingly very rare elsewhere with only six post-1960 localities. Threats are mainly drainage of coastal levels and estuarine marshes for agricultural improvement, and coastal development; the loss of salinity in coastal marshes, salt meadows and grazing levels following the construction of sea walls or flood barriers could render sites unsuitable.

Haematopota grandis is a classic upper saltmarsh species.

- Condition of qualifying feature

Records are not available from which to draw conclusions on current condition on the Orwell estuary. Instead the focus is on the habitat upon which it depends.

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

Analysis of the potential impacts of this stretch of the ECP proposal on the qualifying features concludes likely significant effect. In this section of the assessment the mitigation measures proposed at a stretch level, to address those identified potential impacts and risks, are described.

The proposal for the Shotley Gate to Felixstowe Ferry stretch of the England Coast Path is divided into five sections for the Reports. Report 5 covers a section of the stretch which is outside the boundary of the SPA and Ramsar site. Reports 1 to 4 cover the Orwell Estuary from Shotley Gate to the Orwell Bridge and finishing at Fagbury Point, the eastern limit of the European sites.

As previously mentioned, key considerations revolve around, disturbance to breeding avocets and non-breeding waterbirds, trampling of supporting habitat and the Wetland Plant assemblage and impact on the Wetland Invertebrate assemblage.

The overall approach to potential waterbird disturbance or damage to supporting habitat is to aim for an outcome where, the conservation objectives of the qualifying features are not impacted by the ECP proposal. This should mean that the existing functioning network of high-tide roosts and feeding areas on the site are not hindered from meeting the needs of the breeding and non-breeding waterbirds in so far as they do at the establishment of the proposed ECP.

Since waterbirds are mobile and present in significant numbers in every part of the site, it is most appropriate to adopt a strategic approach to the design of the new access arrangement. This approach will also ensure that the Wetland Invertebrate Assemblage is not impacted by the proposal at a stretch level.

The adoption of a strategic approach means taking in to account the location of sensitive sites and the long-term, overall aims and interests of the qualifying features, and ensuring that the proposal design, together with mitigation measures, does not impact on their achievement. How this approach is implemented for each of the key considerations is as set out in the following sections.

D.3.1.1 Waterbirds and their supporting habitat (including Wetland Plant assemblage) and Wetland Invertebrate assemblage

The strategy for the detailed design at a stretch level of the proposal and incorporated mitigation measures to avoid the possible impact of the proposal on the above Qualifying Features is:

- Communication with users through the installation of signs:

Signs will raise awareness and inform users:

- Of the sensitivities of wildlife to disturbance and its consequences

- Of the importance of supporting habitat
- Of behaviour that can be adopted in specific sensitive locations to ensure that their actions do not create an impact
- About the waterbirds on the site, especially around high-tide, explaining the importance of keeping a reasonable distance away, with dogs on leads, until out of sight
- About the importance of keeping dogs under control at all times. There is a body of anecdotal evidence, backed up locally, that suggests that disturbance to waterbirds is more significant when dogs are allowed to roam freely

Areas and locations have been identified where signs can be used to influence both existing and new users' behaviour positively by explaining the importance of the site with regard to wintering and migratory birds, the risks associated with disturbance, and how to avoid them. More detail on the positioning of particular signs and the message to be conveyed at a local level is set out in section D3.2 below.

Signs, as described above, will be erected at key access points and the most sensitive locations. Typically these will require users to keep to the path but in some places users will also be requested to keep their dogs on leads. Dogs on leads restrictions will be clearly signalled at access points, carefully targeted and proportionate. Evidence suggests that clear, consistent and credible signage encourages compliance [REF 16].

- S25A CROW 2000 Exclusion of all access (all users and dogs) from the Coastal Margin. The possible risk to birds feeding on intertidal mud throughout the estuary has been considered. It has been concluded that no new, direct, adverse impacts should result from the proposal because the vast majority of the mudflat and saltmarsh on this estuary will be excluded from coastal access rights under section 25A of CROW 2000. Section 25A is used to exclude access specifically on the grounds of suitability for access and it has been applied on that basis on the Orwell Estuary. However, excluding access to the saltmarsh and mudflat on suitability for access grounds protects waterbirds from disturbance, supporting habitat, Wetland Plant assemblage and Wetland Invertebrate assemblage from trampling. These conservation interests would need to have been addressed separately in these areas if the S25A exclusion was not applied

Because of the S25A exclusion on mudflat and saltmarsh, favoured feeding grounds of breeding and non-breeding waterbirds, it can be concluded that this proposal will not have an adverse effect on feeding birds from the direct access by people where these areas are subject to the exclusion.

In addition this exclusion will have the secondary effect of preventing trampling of supporting habitat (including Wetland Plant assemblage) and impact on likely habitat of the Wetland Invertebrate assemblage.

There are areas of mudflat and salt marsh which despite the exclusion a potential risk could still exist or on which disturbance to feeding birds could still occur, or is not covered by S25A. These areas will be addressed along with a number of key locations in section D3.2 below which addresses the design of the access proposal at a local level.

It is anticipated that new users of the trail will adopt the desired patterns of behaviour from the outset because they will remain on the coast path and because they will read the signs and consciously adopt the desired behaviour [REF 16] In the long-term a positive outcome could be that there is a reduction in disturbance to waterbirds and damage to saltmarsh on the Orwell Estuary as existing users moderate their behaviour in response to the new information and the provision of a well maintained alternative trail.

At a stretch level, in addition to communication and the S25A CROW exclusion the following factors will ensure that for the greatest majority of the route of this proposed stretch of the ECP, potential risks identified in the LSE above will not materialise:

- The route alignment: The trail is aligned away from the shore where possible and where it is deemed the least impactful. A large proportion of the proposed trail is aligned along existing public footpaths using the sea wall for the greatest length of the trail. Field edge alignment has been selected where land type and ownership allows, such as at Orwell Park
- Access assessment: The assessment of changes in access as a result of the ECP proposal is taken in to account at every section, along with, specific sensitivities of that stage
- The trail will be well maintained and easy to follow

It should be reiterated here that the above additional design features mean that there is the potential for a positive consequence of the ECP proposal and that is, a reduction in levels of waterbird disturbance compared with current levels and less impact on supporting habitat.

The remaining focus of the HRA is on the avoidance of disturbance to breeding avocet and non-breeding waterbirds at specific locations, that is, rising tide and high tide roosts, in freshwater outlets and on functionally linked land.

Also considered is the potential trampling of supporting habitat in specific locations and impact to Red Data Book invertebrates by walkers and walkers with dogs, who may be brought into close proximity to saltmarshes and intertidal areas not excluded by the s25 CRoW direction.

D.3.1.2 Installation of access management infrastructure

An outcome of the choice of route alignment is that the vast majority of the infrastructure can be installed without any risk of direct habitat damage either due to the location of the infrastructure or during establishment works. Disturbance during installation works has been identified as a potential likely significant effect. Method statements by the local authority managing the works, in conjunction with Natural England, will ensure that this is risk is mitigated, for example by stipulating safe routes for vehicle access, requiring the use of hand tools where more control is necessary and/or specifying timings for work.

The establishment of the trail will see existing infrastructure being retained, some being removed or replaced with similar and there will be some new infrastructure also.

Of the new infrastructure the majority will not be within the SPA or Ramsar site boundary.

There will be seven new fingerpost for way markers, one new footbridge and two new information signs that will be placed on land within the boundary of the European sites. However, none of this new infrastructure will be placed on sensitive habitat and the mitigation measure outlined in Table 5 below allows the conclusion that there will be no loss of supporting habitat as a result of this proposal, nor will the establishment works create a disturbance risk. In addition, compliance with the mitigation measures outlined in Table 5 will ensure that surrounding sensitive habitat will not be damaged nor other Qualifying Features impacted during establishment works.

Table 5 summarises procedures designed in to the project proposal to mitigate risks associated with infrastructure and its construction.

Table 5: Establishment works - mitigation measures

Site design	Local Authority to design access routes, storage areas and site facilities to minimise disturbance and other impacts on Qualifying Features and protect supporting habitat and invertebrate sensitive habitat. Design to be approved by Natural England before work begins. Operations to be conducted out of sight of roosting and feeding areas. Local Authority to obtain all necessary permissions and approvals.
Timing of works	Local authority to plan work schedule with Natural England to limit disturbance risk. Natural England to specify a period of low sensitivity at each construction site based on likely departure and arrival dates of waterbird species that use it. At all other times, operators working within 200 metres of, and visible to, a roost site will stop work during the 2 hours before and after high tide. Operator to limit construction activities to daylight hours at all times of year.
Method	Operator to use hand tools where practicable. Operator to avoid use of percussive machinery outside period of low sensitivity, or avoid use of machinery during the 2 hours before and after high tide.

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

In this part of the assessment we consider the coast between Shotley Gate and Fagbury Point as a series of shorter lengths of coast, corresponding to the coastal access report for that length, where establishing the England Coast Path and associated coastal access rights might impact on Qualifying Features of a European site. Each length of coast is considered in a separate subsection (3.2A, 3.2B etc). In each subsection we investigate the potential risk in detail and explain how, if it is concluded necessary, the detailed design of our proposals in the relevant report or reports takes account of possible risks.

Many of the potential risks to the qualifying features as identified in the LSE stage in Table 3 will be mitigated through the design of the proposal at a stretch level. However potential risk may be associated with a number of factors at specific locations and those locations need to be assessed separately. Each of these shorter lengths of coast are shown in Table 6.

For readers who wish to cross–refer between this assessment and the corresponding Coastal Access Report in which access proposals are described, the relationship between the geographic units used in this assessment and the way the stretch is sub divided into reports, is also shown.

> Note: Freston, between Cathouse Point and north of Freston Point, is an important area for waterbirds on the Orwell Estuary. Due to low recreational activity within this area, this site is important throughout the tidal cycle but especially on a rising and high tide when the site becomes very sensitive due to the large numbers of wading birds that may be present. (see section D.2.2.1 of this assessment)

It is not assessed separately in this HRA as, for reason other than conservation, the route was aligned inland between these points. A positive consequence of the alignment is that there will be no new access to Freston. Also, as the land is excepted land the area is excluded from the Coastal Margin and associated access rights.

Table 6. Summary of Key Locations

Location	Coastal Access Report	Specific location	Disturbance of breeding Avocets	Disturbance of non-breeding waterbirds	Trampling of supporting habitat/ wetland plant assemblage	Loss of Invert assemblage or damage from trampling
Colton Creek	1	SGF - 1 – S016 to SGF – 1 – SO22		√		√
Bridge Wood to Alnesbourne Priory Park	2	SGF – 2 – S022 to SGF – 2 – SO32			√	√
Mansbrook Grove	3	SGF – 3 – S004 to SGF – 3 – S009		√	√	
Levington Lagoon	4	SGF – 4 – S011 to SGF – 4 – S015	√	√		
Trimley Realignment	4	SGF – 4 – S027 to SGF – 4 – S029		√		
Trimley Marshes and Fagbury Point	4	SGF – 4 – S029 to SGF – 4 – S032	√	√		

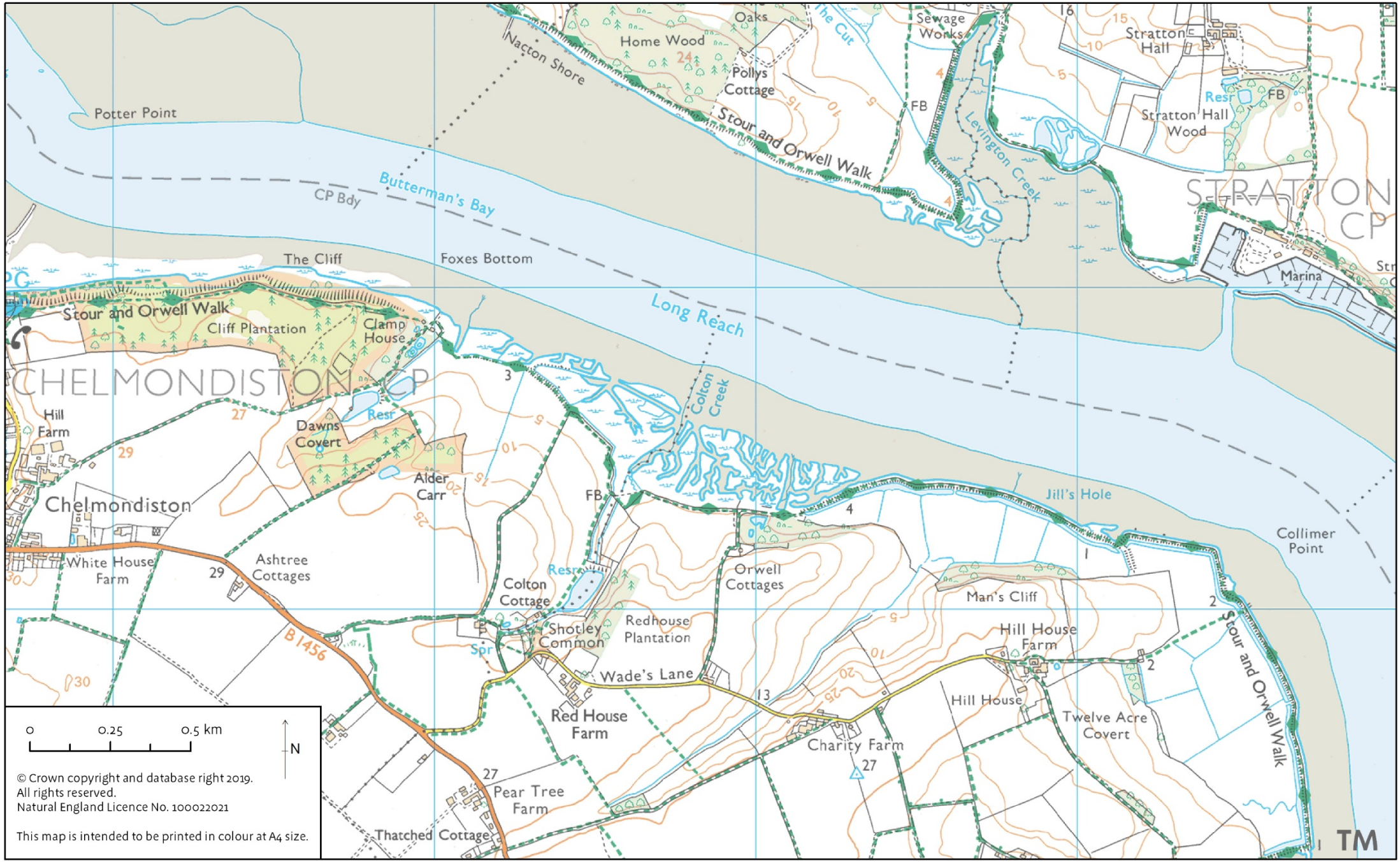
To inform our assessment of risk, we have reviewed how relevant sections of coast are currently used for recreation, how levels of access might be affected by our proposed improvement to access [REF 17] how current levels of access might change as a result of known factors (such as planned housing). The predictions we have made from this review are informed by site visits and meetings, available information including the HRA undertaken for the Ipswich Local Plan and the associated Suffolk Recreational Disturbance Avoidance and Mitigation Strategy (RAMS), input from local access and conservation managers and bird recorders, on-line mapping and aerial photography and travel and visitor information where available. The findings of these reviews are incorporated into the assessments below.

D3.2A Report 1: Shotley Gate to Orwell Bridge

D3.2A.1: Colton Creek:

Coastal Access - Shotley Gate to Felixstowe Ferry - Habitats Regulations Assessment

Map 4: Colton Creek



This map is intended to be printed in colour at A4 size.

Colton Creek has been identified as a location where, despite the design features integral to the ECP proposal at a stretch level, there was still a potential risk that because of the specific nature of this location and its use by people and birds, the ECP proposal could impact on high tide roosting and feeding waterbirds through disturbance and on the invertebrate assemblage through trampling.

Further investigation of the nature of the location, the pattern of its use by waterbirds and the level of increase in use of the path as a result of its upgrade to the ECP, was undertaken as set out below. In addition consideration was given to the possibility of walkers impacting on the Wetland Invertebrate assemblage at this location.

- Current Situation: Disturbance to non-breeding waterbirds

The area known as Colton Creek stretches from approximately 450m east of Orwell Cottages to Clamp House (Map 4) and is the largest area of saltmarsh on the Orwell. The intertidal substrate is sandy mud with stones. The farmland slopes away from the seawall; the hinterland is arable with a large reservoir at Colton Cottage and ponds in a wooded area near Orwell Cottages.

Field observations by the SWT and the BTO have confirmed that this saltmarsh is currently the most important site on the Orwell estuary as both a day and night-time HTR for waterbirds including avocet. Although WeBS data is not available for sub-sector 8d Colton Creek alone, sector 8 as a whole is a key sector for black-tailed godwit, dunlin and redshank supporting the most individuals when compared with all other sectors. The sector is also favoured by dark-bellied brent goose, grey plover, pintail and shelduck. Whilst Sector 8 covers a much larger area than sub-sector 8d and therefore does not provide definitive evidence of use of the sub-sector by these species, it is indicative of use by SPA/Ramsar site qualifying features and an assessment has been made on that precautionary basis.

Anecdotal evidence reports that the relevance of Colton Creek as a HTR has increased over recent years as areas more accessible by people have become more used and hence less favoured by birds as a roost.

The potential for disturbance arises from the fact that the whole of the creek is used at all tides, rather than birds only being pushed back towards the shore and footpath on the occasions of the highest tides of the year, as might have been anticipated.

As a rule of thumb, any recreational activity on foot by people or dogs at 200 metres or less of high tide feeding or roosting birds is considered to be a potential cause of visual disturbance. This corresponds to the distance at which the more sensitive species are likely to respond to the activity by flight. Location specific factors are also taken in to account. Local knowledge of recreational activity and field observations of pattern of use by birds and their interaction with recreational users has been collected to inform the design of the proposal at this location.

Mick Wright, Orwell WeBS coordinator has confirmed that the birds come in with the tide but then, regardless of the high tide height, disperse through the inlets, on to the marsh not covered by the tide and back on to the mud nearest to the path, well within the desired separation minimum of 200 metres. Mr Wright makes regular visits to the creek and has observed upwards of 5000 birds at high tide. (WeBS data records 6125 birds (as a 5 year mean peak) present in the WeBS sector that includes the creek)

The main recreational activities are walking and walking with dogs. Disturbance to birds has been recorded at this creek principally by walkers and loose dogs. Dogs are however for the most part limited to the fringes of the saltings due to the deep inlets.

The ECP trail will follow the existing PRoW which is also part of the Stour and Orwell and the Swallows and Amazons, promoted routes. There will be no change in the walked line on the ground for this subsection.

The footpath around the creek will be accessed from six points:

- Follow the ECP (uses existing PRoW) from Pinmil
- Follow the ECP (uses existing PRoW) on the sea wall from Shotley Gate
- Use PRoW from Orwell Cottages
- Use PRoW from Colton Cottage
- Use PRoW from Clamp House
- Use PRoW from Mill House Farm

The Access Assessment [REF 17] (based on site visits and information from local landowners, land managers and conservation bodies) for the section Shotley Gate to Clamp House Slipway/Track, concludes a small increase in users of this section as a result of the ECP designation. This conclusion is drawn on the basis that there will be no change to the route of the trail on the ground, there is an existing PRoW and promoted routes and, visitor facilities are limited at Shotley Gate and at Colton Creek.

Shotley Gate is undergoing development and greater numbers of walkers can be anticipated due to housing development. However this impact has been assessed through the Local Plan HRA and will be mitigated through RAMS to conclude no impact on site integrity.

There should be no change in permitted access to the Coastal Margin as access to all of the margin at Colton Creek is excluded under S25A CROW direction.

- Analysis of risk

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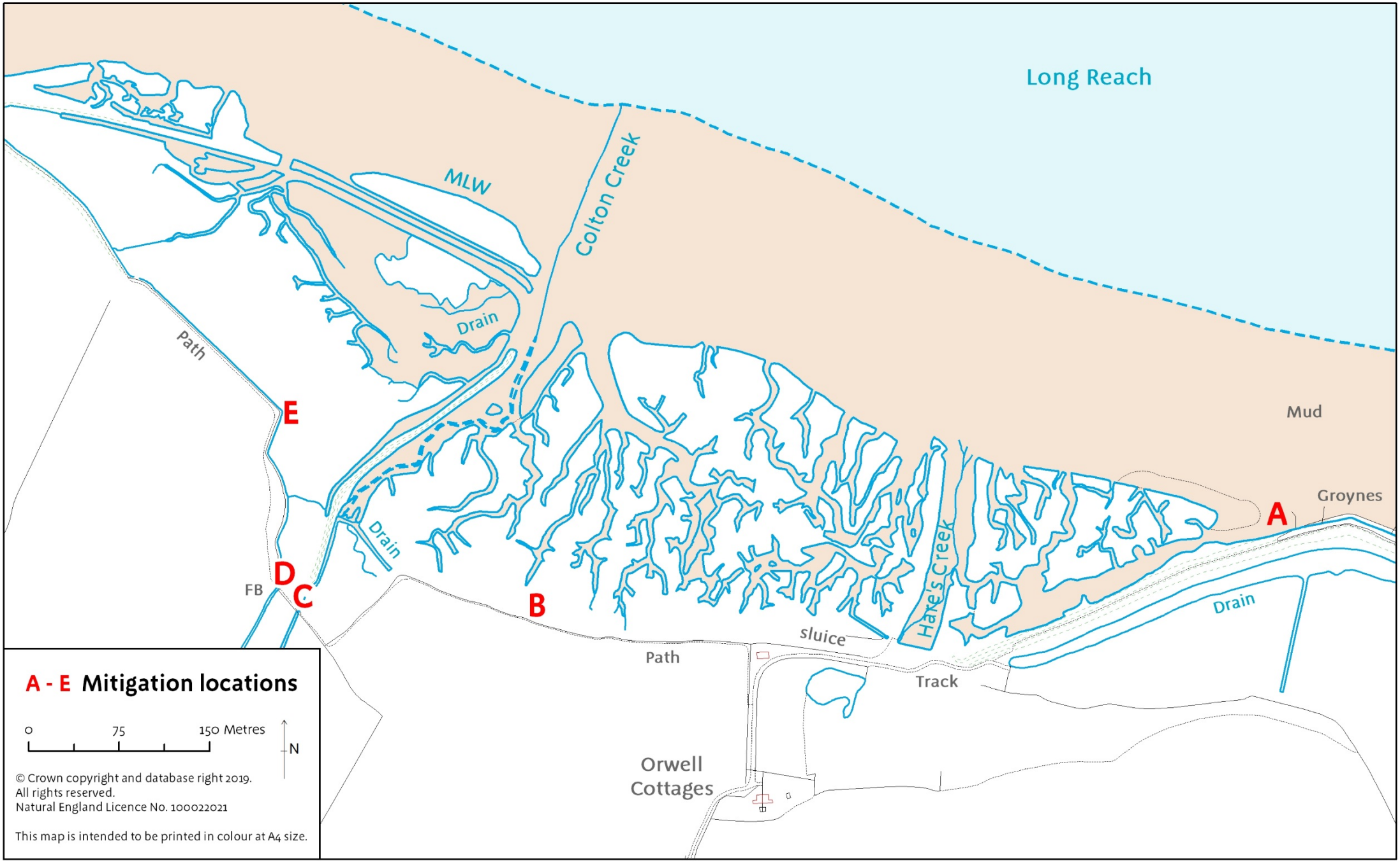
Map 5: Colton Creek: Location of mitigation measures



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Between points A and B (see Map 5) it is assessed that there is sufficient vegetation in the form of tall grasses on the path edge with the shore, hedges, scrub and trees which, although not continuous do provide the effect of screening users on the path from the birds on the creek whilst allowing walkers the enjoyment of glimpses of the estuary. The vegetation is also considered sufficient to deter dogs, provided they are kept under control, from accessing the saltmarsh and causing disturbance to the birds.

At point B on Map5 there is a short section of open access to the creek. Whilst it is unlikely that walkers would cause disturbance to birds due to their visual presence at this point, it is sufficiently open and inviting that dogs not on leads could cause considerable disturbance at times when birds are on the creek in large numbers.

At point C on Map 5 the trail emerges from vegetation on to a short section of what is mapped as saltmarsh/mud. The path crosses the edge of the creek at this point using a walked bare ground path and boardwalk/footbridge. At point D the trail re-joins the field edge however this section, D to E, is open to the creek with no vegetation to create a screening effect between walkers and the creek. ECP users and their dogs will be visible for the whole of this section to point E on Map 5.

Also there is no natural barrier to prevent dogs not properly under control from running on to the marsh.

- Design features of the proposal to mitigate risk of disturbance

Despite the small increase in users expected along this section its particular importance as a HTR and taking account of the pattern of use by waterbirds, which brings birds well within the 200m separation ideal, the following mitigation measures are incorporated into the route design at this location:

- Screening through the creation of sections of scrub between points D and E on Map 5. This vegetation will screen people from birds thus preventing a disturbance impact and will have the added benefit of guiding people and dogs to remain on the trail
- Short section of scrub to gap up and thereby block open access for dogs at point B on Map 5
- Information signs will be placed at the eastern and western approach to the creek explaining the sensitivity of the creek and requesting that dogs are kept on leads
- Signs requesting that dogs are kept on leads for the length of the creek will be placed at access points on the PRoWs from Orwell Cottages, Colton Cottages, Clamp House and Mill House Farm

- Current situation: Wetland Invert Assemblage: loss of extent

It is difficult to establish the exact location of the species members of this assemblage on the Orwell Estuary. The preferred habitat for these species is known however and from that information the likely presence or absence of a species can be inferred.

The factors which were taken in to account for the design of the trail at a stretch level mean that the habitat preferred by these species is not impacted for the majority of the length except at Colton Creek. Here the route crosses the edge of the saltmarsh for a short distance and it is considered that the habitat could potentially replicate the upper tidal litter preferred by these species.

- Analysis of risk and Design features of the proposal to mitigate risk

A site visit confirmed that this short length, mapped as Priority Habitat Inventory (PHI) saltmarsh is in fact compacted, hard, bare/sparsely grassed ground. Consultation with a Natural England entomology specialist confirmed that this is not a preferred habitat.

The conclusion is therefore that specific design features are not required as the proposed route of the ECP along the established path does not represent suitable habitat for these species.

D3.2B Report 2: Orwell Bridge to Priory Caravan Park

D3.2B.1 Bridge Wood to Alnesbourne Priory Caravan Park

A potential risk of loss of, or damage to, the supporting habitat or Wetland Invertebrate assemblage, by trampling on sections of this stretch was concluded in Section C2.1 of this HRA. Part of the area is recorded as PHI saltmarsh (see Map 7 for damaged saltmarsh).

The potential risk identified, despite the design features integral to the ECP proposal at a stretch level, was that because of the specific nature of this location and its formal and informal use by people, the ECP proposal could impact on the supporting habitat, the Wetland Plant assemblage and Wetland Invertebrate assemblage through trampling.

Further investigation of the nature of the location, the pattern of current use by walkers, the proposed alignment of the trail and the level of increase in use of the path as a result of its upgrade to the ECP, was undertaken.

- Current Situation: Trampling of saltmarsh

The PRoW from Orwell Bridge runs close to the shore, crossing a freshwater outlet using a broken culvert close (also close to the shore) near Pond Hall Farm (see Map 6)

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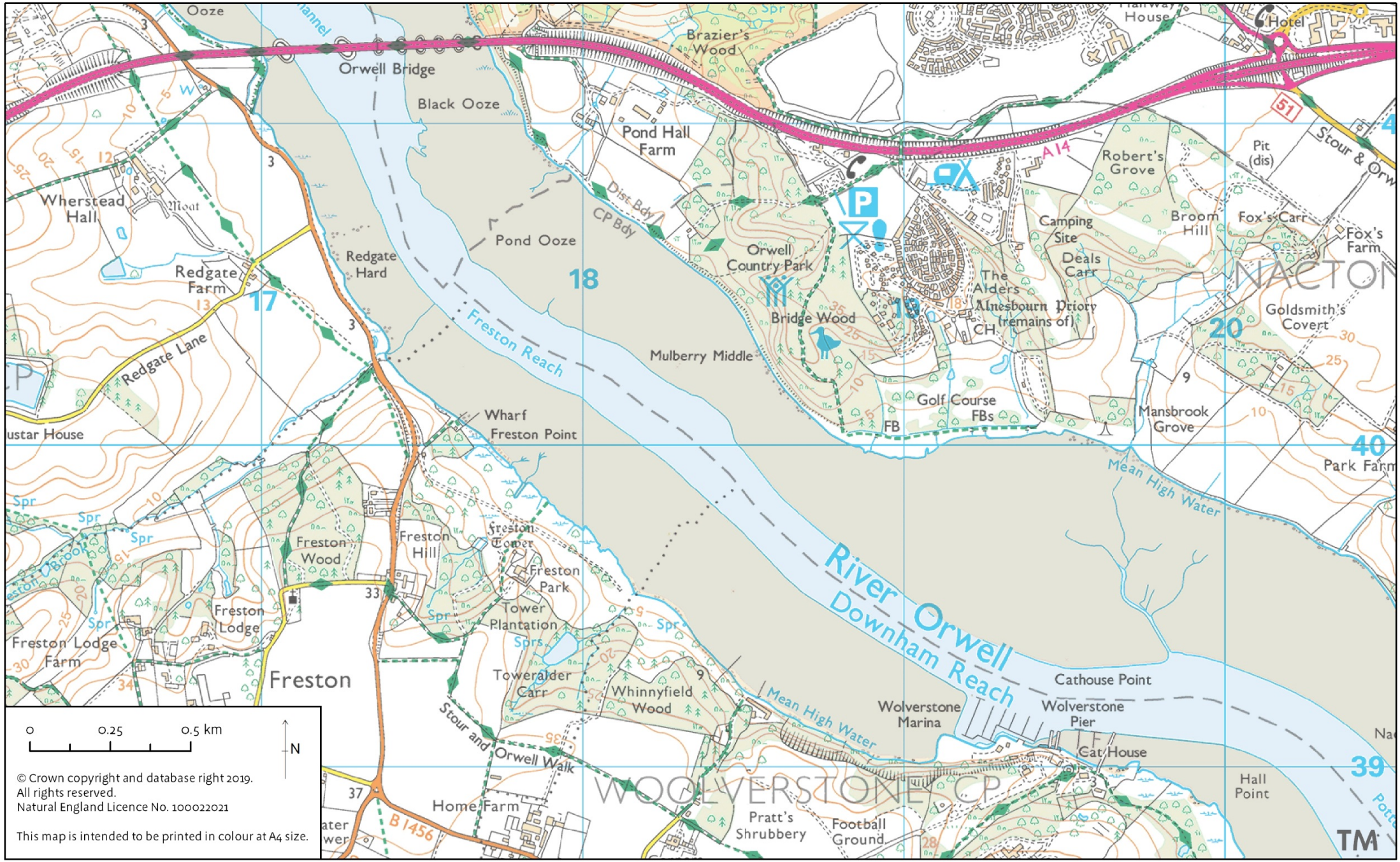
Map 6: Public Rights of Way from Orwell Bridge



0 0.25 0.5 km

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When the PRoW reaches Bridge Wood it turns inland on a line almost perpendicular to the shore. There is anecdotal evidence of considerable informal use of the shore in front of Bridge Wood by walkers and walkers with dogs as people appear to choose to stay close to the estuary rather than go inland. Walkers are observed to leave the PROW and continue along the shore, tide permitting, to meet up again with another PROW towards the end of Bridge Wood. The PROW then crosses a number of footbridges as it continues along the shore, close to the field boundary of the Alnesbourne Priory Golf Course.

The saltmarsh leading to and around the first footbridge, Footbridge 1, (see Map 7), has become damaged from footfall with walkers taking a number of lines through the shingle and saltmarsh.

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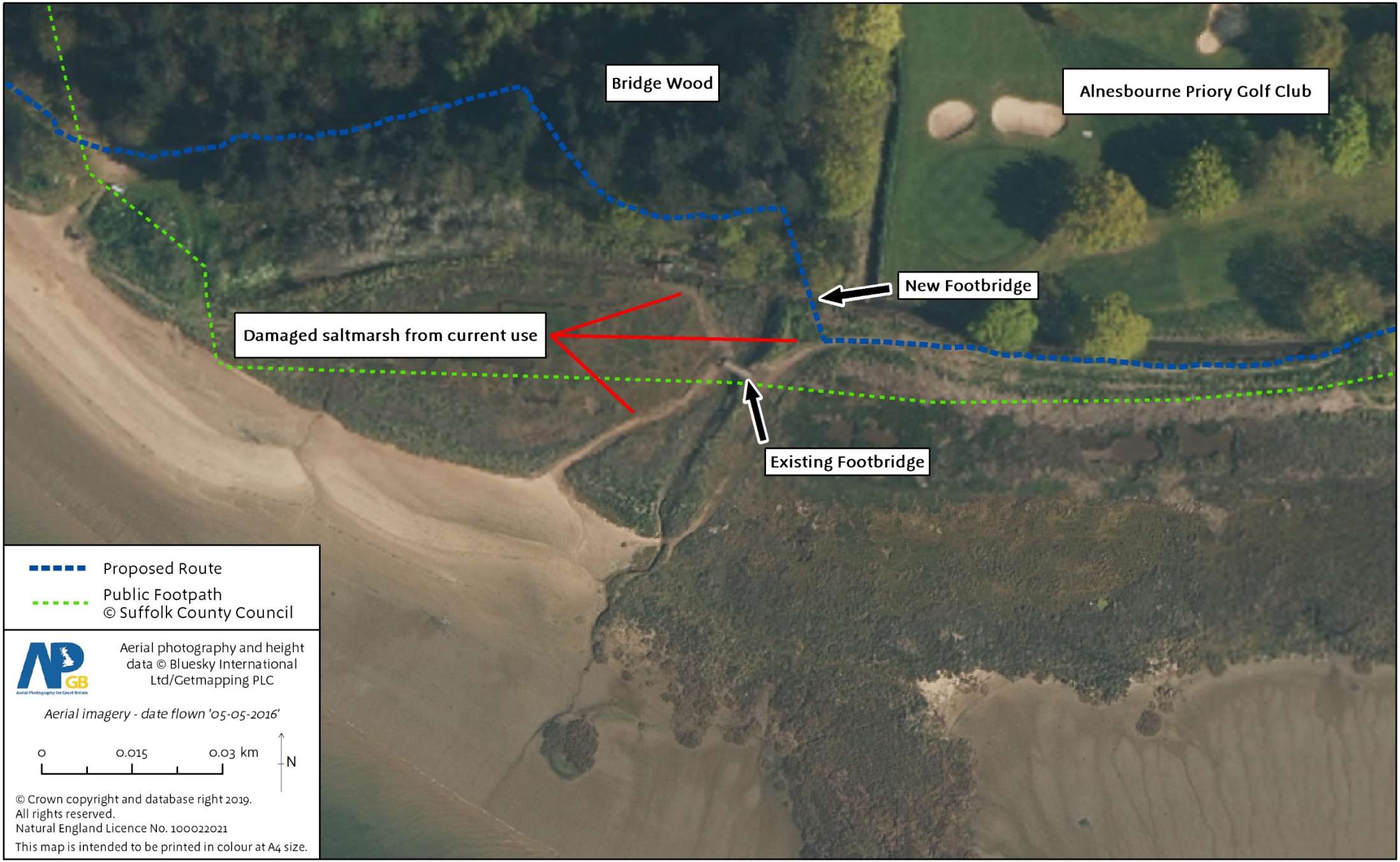
Map 7: Proposed route of ECP avoiding saltmarsh



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The proposed route of the ECP trail from the Orwell Bridge runs inland of the existing PRoW with new infrastructure proposed to cross the freshwater outflow near Pond Hall Farm. The trail will then turn in to Bridge Wood but will run within the wood, parallel to the shore offering many vistas of the estuary.

The trail exits Bridge Wood, (see Map 7) avoiding the PRoW (which currently leads people out on to the areas of damaged saltmarsh) instead continuing through the wood and exiting at its corner to cross a newly installed footbridge, which will be placed off the saltmarsh on an area of coarse grass (see Map 7).

The Access Assessment predicts that there could be a medium increase in users of this section as a result of the upgrade of the path to the ECP trail.

The reasoning leading to this prediction includes, the creation of new section of path, closeness to habitation, ease of access and visitor facilities such as parking at Orwell Country Park.

- Analysis of Risk: Trail

There is existing informal use of the shore in front of Bridge Wood. A LSE was identified that the anticipated increase in users as a result of the establishment of the ECP route would increase pressure on the informal and formal paths across the shore and the saltmarsh and exacerbate the existing saltmarsh damage (see Map 7).

The proposed ECP is aligned inland of the existing PRoW. A new foot bridge will be put in place to cross the outflow near Pond Hall Farm. The trail alignment leaves the shore and passes in to the wood as described above and exits at the furthest limit of the wood.

This alignment of the trail was chosen after careful consideration of a number of factors including:

- Suitability for walkers (mudflat/saltmarsh/dangers posed by tides and access points etc.)
- Discussions with landowners and taking their views into account
- Improving coastal access
- Rollback and erosion
- Existing local usage patterns

Routing of the path through the wood for the above listed reasons, along with strategically placed information signs, is expected to encourage all new users to follow the ECP trail. It is also anticipated that as existing users read the signs and, as the well maintained and easy to follow ECP trail over dry ground unimpeded by tides is established, they will chose to make use of it in preference to the current level of use of the shore when tides allow.

It is anticipated that not only will this route minimise the risk of new users following the shore it will result in an easing of pressure on the shore and saltmarsh by existing users.

The location of the exit point at the end of the wood and the provision of a new footbridge avoiding wet ground (and co-incidentally the damaged saltmarsh) will encourage users, existing and attracted by the new ECP, away from potentially sensitive areas.

From the exit point from the wood the trail follows a hard bare ground path to Alnesbourne Priory Caravan Park.

The conclusion of the appropriate assessment of this section of the proposed trail is that it will not add pressure to the supporting habitat and Wetland Plant assemblage, in fact it is minimised as a result of the route alignment. In addition it is anticipated that the provision of the new dry route close to the

estuary and with views of it, will discourage existing informal usage of the shore and thereby the section of PROW and footbridge at the end of Bridge Wood.

The provision of an alternative well maintained trail may well provide the landowner with the opportunity to consider enabling the recovery of the damaged saltmarsh at this location in the future.

- Analysis of Risk: Coastal Margin

The coastal margin along this section is excluded from new coastal access rights under s25 CROW exclusion (Map 8). There is no physical barrier separating the ECP trail (using the existing PROW) and the saltmarsh, however, this route is currently a well walked section and a site visit recorded that the saltmarsh to its side is flourishing.

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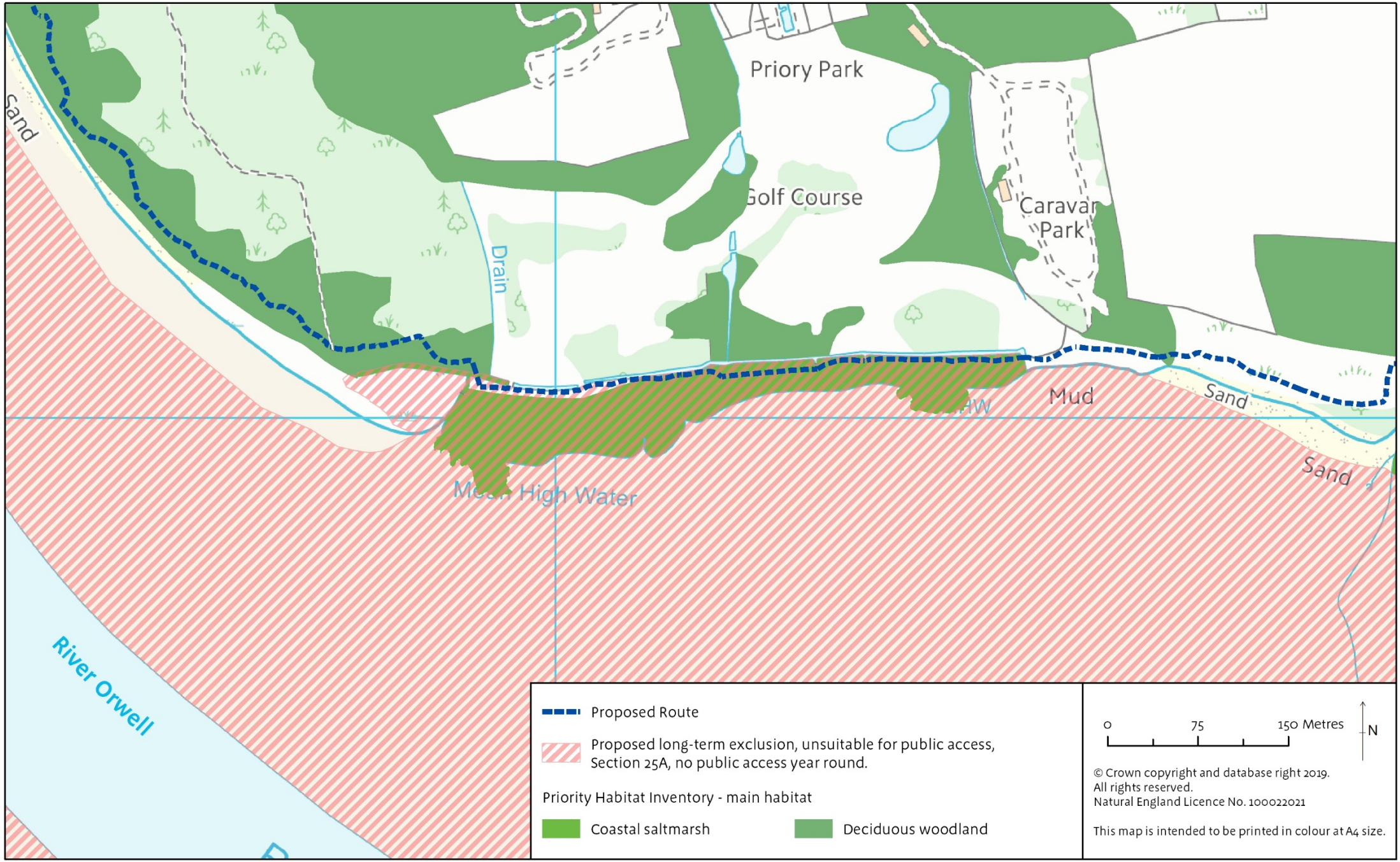
Map 8: Route of ECP trail, PHI saltmarsh area and s25A exclusion



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There is no evidence of trampling of saltmarsh or walked tracks through it. The saltmarsh plants are dense here and do not encourage trespass on to them. It is not anticipated that the situation will alter when the new ECP trail is established.

- Design features of the proposal to mitigate risk of disturbance

For the reasons described in the section above no mitigation is required on this section

- Current situation Wetland Invertebrate Assemblage: Loss of feature

It is difficult to establish the exact location of the species members of this assemblage on the Orwell Estuary. The preferred habitat for these species is known however and from that information the likely presence or absence of a species can be inferred.

The factors which were taken in to account for the design of the trail at a stretch level mean that the habitat preferred by these species is not impacted for the majority of the length.

At Bridge Wood to Alnesbourne Priory Caravan Park the route travels along the edge of the saltmarsh. This length could potentially replicate the upper tidal litter preferred by these species.

- Analysis of risk and Design features of the proposal to mitigate risk

A site visit confirmed that this length of the ECP route, mapped as PHI saltmarsh is in fact compacted bare ground. Consultation with Natural England entomology specialists confirmed that this is not a preferred habitat of any of the species.

The conclusion is therefore that specific design features are not required as the proposed route of the ECP along the established path does not represent suitable habitat for these species.

D3.2C Report 3: Priory Caravan Park to Shore Lane

D3.2C.1 Mansbrook Grove

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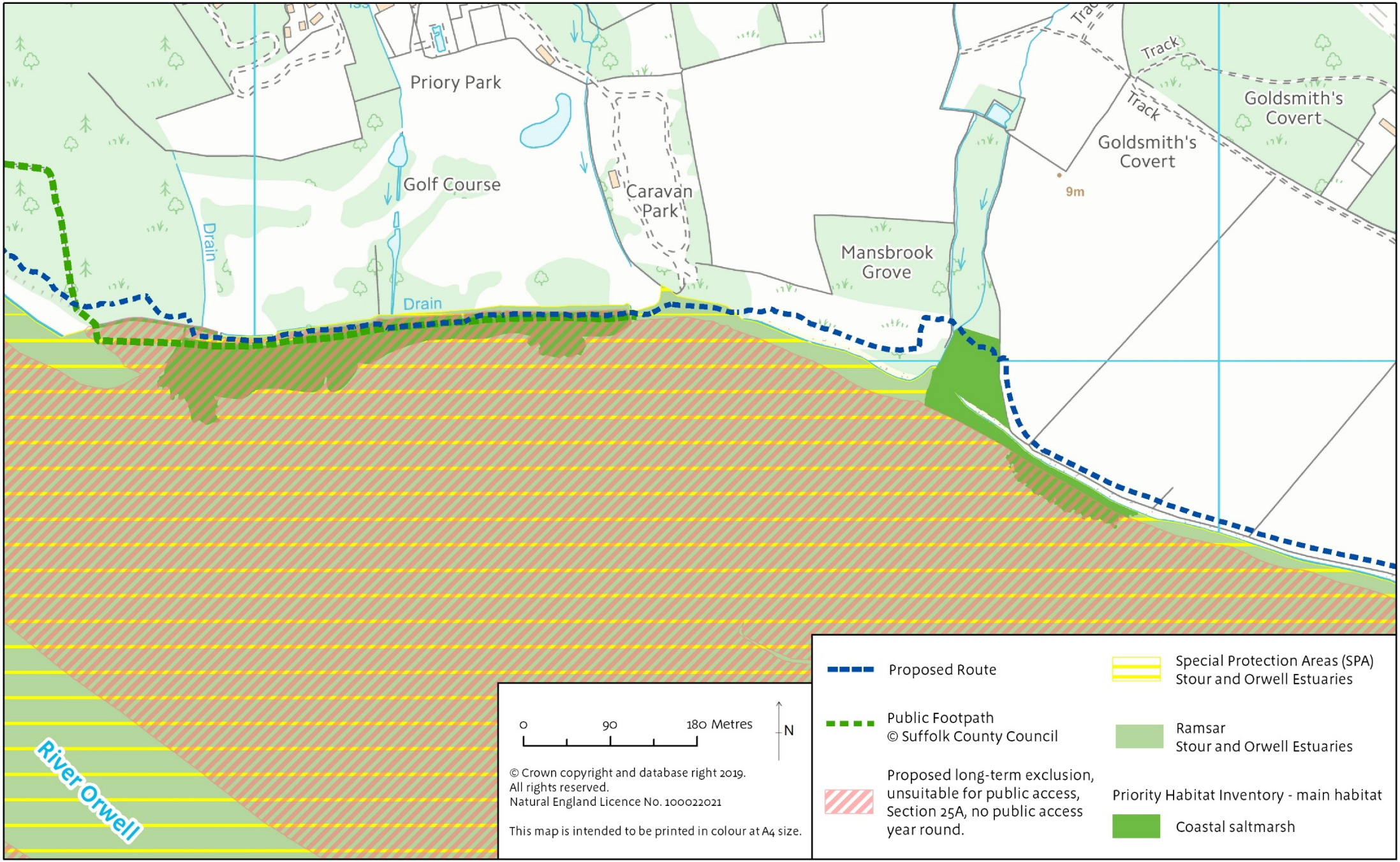
Map 9: Mansbrook Grove



The potential risk identified, despite the design features integral to the ECP proposal at a stretch level, was that because of the specific nature of this location and its formal and informal use by people, the ECP proposal could impact on waterbirds through disturbance and the supporting habitat through trampling. Part of the area is recorded as PHI saltmarsh.

Further investigation of the nature of the location, the pattern of current use by walkers, the proposed alignment of the trail and the level of increase in use of the path as a result of its upgrade to the ECP, was undertaken.

- Current situation: Disturbance of Waterbirds

Mansbrook Grove (Map 9) is a fresh water outlet in to the estuary. Freshwater outlets serve an important role to estuary birds for preening and drinking. Birds can be expected to fly in and out of freshwater locations irrespective of tide heights.

The land at Mansbrook Grove is outside the boundary of the SPA and Ramsar site. Recent WeBS data for this sector, 6a & c, is not available. The Ornithological Importance and Status of the Orwell Estuary report [REF 10] suggests these sectors don't meet the 10% threshold used in that report to signify importance. This is however contrary to information provided by BTO and SWT officers also familiar with the site, who report that field observations confirm that this is an important freshwater area, used by breeding and non-breeding waterbirds, Qualifying Features of the European sites. Therefore the land is considered to be functionally linked land. Given the uncertainly and indications of importance, we have proceeded on a precautionary basis to make our recommendations.

The use of this outlet by large numbers of birds is supported by the BTO and SWT officers, familiar with the estuary, who report that birds fly in from all sections of the estuary in great numbers.

There is currently no PRoW through this section of the estuary shore past Mansbrook Grove, however, anecdotal and site visit evidence confirm it is used widely on an informal basis by walkers and walkers with dogs past the grove and necessarily, across the water outlets.

The vegetation at Mansbrook Grove, although recorded as PHI saltmarsh, was noted on a site visit as mostly coarse grasses over freshwater outlets.

- Analysis of Risk: Trail

The alignment of the new ECP access route is inland away from the shore and the outflow and is partially screened by vegetation. A sleeper bridge, footbridge and two boardwalks are planned to carry users above the wet ground. As a result the conclusion of this assessment is that the introduction of access, using the proposed alignment, will not create a risk of disturbance to birds using the freshwater outflow.

- Analysis of Risk: Coastal Margin

A potential risk was also identified associated with the inclusion of the land between the trail and the high water mark within the new coastal access rights. The S25A CROW exclusion is applied to the mudflats at this point however the land between the new ECP trail and the mudflats is not excluded, the new coastal access rights apply to this section of land.

The permission to use this area as spreading room could result in trampling of sensitive vegetation and disturbance to drinking and preening birds.

Site visits were made by Natural England specialists to assess the vegetation and nature of the area to consider the likelihood of people making use of it and thereby causing damage. In addition information was sought from those with local knowledge such as the RSPB, SWT and the BTO officer.

Walkers and walkers with dogs currently make informal use of the shore at this point and were observed picking their way through the wet ground of the outlet during site visits however they did not encroach into the grove area.

Users of the trail will arrive at this point on the new inland route of the ECP and it can be safely assumed that they will be unlikely to step off the trail on to the wet and uninviting land to make use of it as spreading room.

- Design features of the proposal to mitigate risk of disturbance

It is the conclusion of Natural England specialists that the provision of an alternative well maintained, easy to follow dry route will encourage both existing and new users to walk on the ECP and not to spread out across the wet ground of the grove.

- Current Situation: Trampling of functionally linked supporting habitat

Although the conclusion is that the ECP will not create new or increase any existing access on to Mansbrook grove, for completeness, the sensitivity of the vegetation at this location was also assessed on a site visit. It was clear that in actuality the plants are not supporting habitat saltmarsh plants but coarse tufted grasses.

- Analysis of risk and Design features of the proposal to mitigate risk of trampling

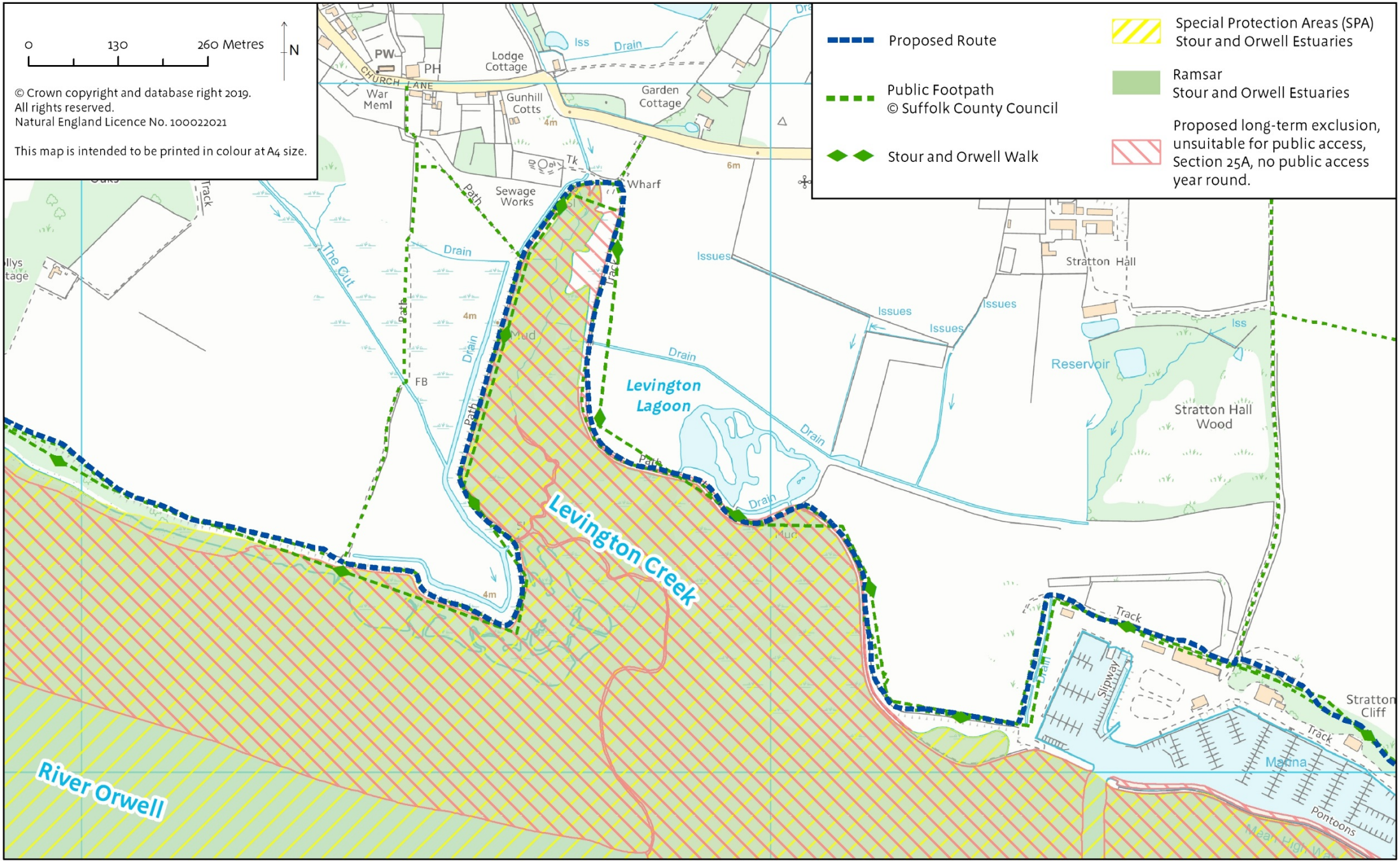
It is concluded that there will be no impact of disturbance or trampling on the Qualifying Features of the European sites as a result of the alignment of the ECP and therefore no specific additional mitigation is needed in the design of the proposal

D3.2D Report 4: Priory Caravan Park to Shore Lane

D3.2D.1 Levington Lagoon

Coastal Access - Shotley Gate to Felixstowe Ferry - Habitats Regulations Assessment

Map 10: Levington Lagoon



The potential risk identified, despite the design features integral to the ECP proposal at a stretch level, was that because of the specific nature of this location and its formal use by walkers and walkers with dogs, the ECP proposal could have an impact on waterbirds through disturbance.

Further investigation of the nature of the location, the pattern of current use by walkers, the proposed alignment of the trail and the level of increase in use of the path as a result of its upgrade to the ECP, was undertaken.

- Current Situation: Disturbance to breeding and non-breeding waterbirds

Levington Lagoon (Map 10), a five hectare brackish lagoon, is a nature reserve south-east of Levington which is managed by the SWT.

The lagoon is an area of open water and saltmarsh on the landward side of the seawall on the north shore of the Orwell estuary. It was formed when the seawall was breached during the North Sea flood of 1953. As a result of infilling only remnants remain.

The site is comprised of saline lagoons, reed fringed dykes, and a mosaic of gorse, hawthorn and rank grassland, some of which is herb rich.

Levington Creek and the village of Levington are immediately west and north west respectively, of the reserve and Suffolk Yacht Harbour.

There is no public access onto the site but it is promoted as a bird watching site by the SWT. It is visible from parts of the PRoW which is the proposed alignment of the ECP at this point.

The lagoon is outside the boundary of the SPA and Ramsar site. Breeding, wintering and passage estuarine birds all make use of the lagoon and the Ringing Report for 2018 [REF 18] confirms that the site is used by birds that are Qualifying Features of the European sites including redshank and black tailed godwit and, as such, it is considered functionally linked land.

The Access Assessment (based on site visits and information from local landowners, land managers and conservation bodies) for the section Shore Lane Car Park to the end of Trimley Marshes, concludes a small increase in users of this section as a result of the ECP designation.

This conclusion is drawn on the basis that there will be no change to the route on the ground, the ECP follows the PROW, which is also the Stour and Orwell promoted walk, there are very few facilities nearby and just one small, car parking area. The route at this section is relatively isolated.

The main factors taken in to account when considering the potential for impact at this location was the information supplied by local land managers and bird recorders, the nature of the existing use of the route, the predicted increase in users as a result of designation of the route as part of the ECP and the visibility of people on the whole length of the path as it passes the lagoon.

- Analysis of Risk: Trail

A site visit of Natural England specialists was convened in order to assess the possible impact of the proposed ECP route on the waterbirds that use the lagoon. Consultation with SWT and BTO officers provided records and anecdotal evidence on patterns of use by birds and current levels of use of the path by people.

The site visit recorded that there is existing vegetation or fence screening in place for part of the boundary of the lagoon. The access assessment predicts a small increase in use of the route at this location as a result of its proposed ECP designation.Taking these factors in to account it is concluded that there should be no additional disturbance to waterbirds as a result of ECP designation alone

- Design features of the proposal to mitigate risk of disturbance

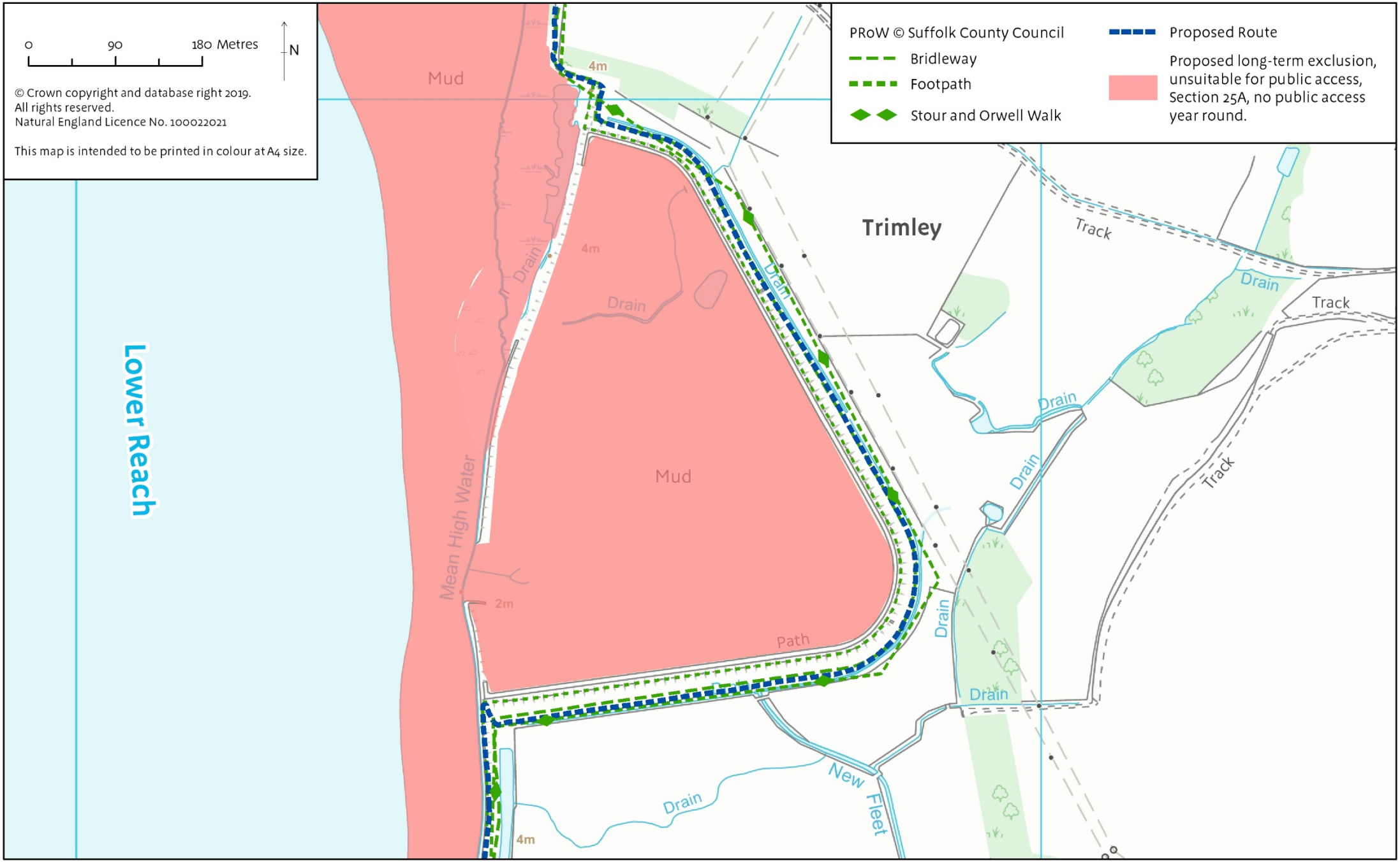
For the reasons outlined above no additional mitigation is needed in the design.

D3.2E Report 4: Shore Lane to Felixstowe

D3.2E.1 Trimley Realignment

Coastal Access - Shotley Gate to Felixstowe Ferry - Habitats Regulations Assessment

Map 11: Trimley Realignment



Despite the design features integral to the ECP proposal at a stretch level, there remained a need to assess further the potential impact of the ECP proposal on the Qualifying Features at this location.

The specific design and history of this location and its existing formal use by walkers and walkers with dogs meant that there was a potential risk of disturbance to waterbirds.

The Trimley managed realignment came in to being as part of the package to develop a habitat creation scheme. The scheme was to part compensate for potential impacts on the European sites of the Harwich Haven Authorities (HHA) works to deepen the approach channel to the Haven Ports.

The objective was to increase coastal and intertidal habitat. To this end, 16.5 hectares (ha) of intertidal habitat was created through managed realignment at North Trimley Marsh. This habitat now represents 0.5% of the total SPA designated area. The site now consists of intertidal mudflat fringed with developing pioneer saltmarsh.

Monitoring up to 2010 concluded that the habitat created was a success and was being used by birds that are listed as Qualifying Features of the SPA and Ramsar site [REF 19].

The entrance (i.e. the breach in the seawall) was designed to enable the site to completely drain at low tide leaving exposed mudflat and developing saltmarsh, feeding areas for waterbirds.

Since construction, the benthic community has increased in species richness, abundance and diversity, as the site has developed. The diversity and density of saltmarsh plants on the Trimley managed realignment site has increased significantly since construction. The distribution of saltmarsh over the site is uneven and some areas support much larger areas of vegetation than others, particularly the northern extent of the site.

Of the species which qualify for international status as part of the Stour and Orwell SPA, there were increases in numbers of five species in 2009/10 including black-tailed godwit, dunlin, grey plover, knot and redshank. The report concludes that the site is functioning well as a SPA habitat. [REF 19]. WeBS sector 13a data (5 year annual peak mean 2013/14 to 2017/18) records avocet (29); black tailed godwit (41); bark bellied brent goose (79); dunlin (178); grey plover (27) and redshank (110) at this location.

- Analysis of risk: The trail

Site visits were convened and discussions with stakeholders including the SWT and the BTO officers highlighted concerns about disturbance at this location. In addition analysis of the WeBS data and the HHA monitoring report suggest that this site has proved a successful habitat creation project, has been growing in importance and is possibly still developing in its importance as a feeding and roosting site for waterbirds within the SPA and Ramsar site.

The PROW currently follows the top of the seawall around the realignment, and because of its shape, providing the potential for walkers to be on all sides of the semi-enclosed area at any one time.

As a result it is probable that there is a greater chance of birds within the alignment being disturbed than those using the mudflats out in the estuary.

The access assessment predicts a small increase in users as a result of the ECP designation.

Although the predicted increase in user numbers is small, as a result of ECP designation at this location, the particular sensitivity of the realignment as described above led to the conclusion that there was a potential risk of disturbance to waterbirds. In addition the design of the alignment meant that there was a satisfactory alternative alignment in the folding.

- Design features of the proposal to mitigate risk of disturbance

The mitigation design features of the proposal at this location incorporate

- information signs
- alignment of the route of the trail

The ECP route proposal has been designed so that when walkers reach the realignment they will meet a sign providing information and direction. The signs will provide information on the birds that use the mudflats at this point and their sensitivity to the visual disturbance which could be created if walkers and dogs follow the unscreened seawall top around the boundary of the alignment. Instead walkers will be directed to the folding (at the inland base of the wall) where they can follow the ECP route around the alignment and finally returning to the seawall. The PRoW of course remains on the seawall top, however, the installation of signs could have the added benefit of reducing the numbers of walkers that currently follow the PRoW on the seawall top, as they respond to the information on the signs.

D3.2F Report 4: Shore Lane to Felixstowe

D3.2F.1 Trimley Marshes to Fagbury Point

Despite the design features integral to the ECP proposal at a stretch level, there remained a need to assess further the potential impact that the ECP proposal could have on the Qualifying Features at this location.

Further investigation was undertaken on the nature of the location, the pattern of current use by walkers, the options for the alignment of the trail, and the level of increase in use of the path as a result of its designation as the ECP.

- Current situation: Waterbird disturbance

The area between the Trimley managed realignment and Fagbury point is part of the Suffolk Wildlife Trust's Trimley Marsh Nature Reserve. The seawall, the proposed alignment of the ECP at this location, is also within the boundary of the reserve and therefore the wardened extent (Map 12).

Coastal Access - Shotley Gate to Felixstowe Ferry - Habitats Regulations Assessment

Map 12: Boundary of Trimley Marsh Nature Reserve

This map is intended to be printed in colour at A4 size.

The reserve's mix of wetland features were sculpted out of farmland to mitigate the loss of the internationally important Fagbury mudflats due to the expansion of the Port of Felixstowe. The project began in 1990. The inclusion of the reserve within the designation of the European sites is a reflection of the success the project.

The site which is made up of a large lagoon, islands and maturing reed beds, provides a variety of habitats throughout the year with the islands providing ideal nesting sites for avocet and ringed plover. As noted in section D2.2.1 above, Trimley Marsh Nature Reserve is a key sector for pintail and is also important for black-tailed godwit and cormorant.

In spring and autumn the muddy margins make excellent feeding grounds for migrating waders.

This section of the ECP is approximately a 2 mile walk from the nearest carpark.

- Analysis of risk: Trail

A prediction of the Access Assessment [REF 17] is that this section is likely to be the least walked length of the Orwell stretch of the ECP trail.

The area, as stated above, is within the wardened Trimley Marsh Nature Reserve. There is a PRoW on the seawall and a bridleway in the folding together with a track.

The shingle and mudflats out in the estuary at this section are widely used especially during the winter months by waterbirds that are Qualifying Features of the European sites.

The conclusion is that the predicted small increase in possible users of the trail, as a result of its ECP designation, within this wardened site, will not cause additional disturbance to birds feeding on the estuary or within the reserve.

- Design features of the proposal to mitigate risk of disturbance

Since it can be concluded that the ECP proposal will not have an adverse effect at this location, no additional design features are required.

However, in order to support and not undermine the existing successful management of the nature reserve by the SWT, it is proposed that a new information sign be sited at the new steps leading up on to seawall.

The sign will provide information about the overwintering waterbirds that use the estuary along this section and their sensitivity to disturbance by walkers and dogs. It will support the SWT message by requesting that people walk in the folding during specific winter months of the year and that dogs are kept under close control on leads at all times.

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

Table 7 Assessment of adverse effect on site integrity alone

Risk to conservation objectives	Relevant design features of the access proposal	Can 'no adverse effect' on site integrity be ascertained? (Yes/No) Give reasons.	Residual effects?
Breeding avocet and non-breeding waterbirds: Disturbance The Conservation Objectives Supplementary Advice and advice on sensitivity to operations records that the evidence base suggests these features are sensitive to the pressure of human disturbance. This proposal could therefore impact upon the Conservation Objectives for these features. The level of risk will vary along the route and will be higher where the access proposal is likely to bring people close to places on which birds depend including high tide roost sites, and known important breeding and feeding areas. The risk of disturbance is increased on rising tides when birds are forced to feed closer to seawalls and the trail/ footpath. The nature, scale, timing and duration of construction and or installation works could result in bird disturbance sufficient to disrupt normal behaviours and/or distribution of birds within the site. The establishment works that this proposal would involve could therefore impact upon	<u>Route Alignment</u> ■ The trail is aligned away from the shore where possible to where it is deemed the least impactful ■ A large proportion of the proposed trail is aligned along existing public footpaths using the seawall and walked tracks ■ Field edge alignment has been selected where land type and ownership allows ■ Screening will be employed along specific lengths at Colton Creek to shield people from bird's view. It will also act to help guide visitors to stay on the path ■ gapping with scrub type plants will be used to block open access for dogs at one location on Colton Creek ■ New advisory and information signs will be erected in key locations. These signs will raise awareness and inform users about waterbirds and the sensitivities of wildlife to disturbance and its consequences. Also the desired behaviour that can be adopted to	The design features of the route alignment and the s25 CROW exclusions ensures that the new ECP trail will not impact on the breeding or non-breeding waterbirds. It was identified that the level of risk could vary along the route. The additional mitigation measures incorporated in to the design has taken account of that risk. The s25 CROW exclusion, due to unsuitability of substrate for walkers, has the benefit of ensuring that the ECP will not impact on the conservation interests of the saltmarsh and mudflats thereby ensuring that the risk of disturbance to breeding and non-breeding birds on these habitats is unchanged as a result of this proposal	No

Risk to conservation objectives	Relevant design features of the access proposal	Can 'no adverse effect' on site integrity be ascertained? (Yes/No) Give reasons.	Residual effects?
the Conservation Objectives for this feature.	ensure they do not create an impact will also be described ■ Signs will be erected strategically asking that dogs are kept under control at all times ■ Signposts and waymarking will be used to ensure the route of the trail is clear and easy to follow ■ The trail will be well maintained ■ Local Authority and contractors will adhere to the mitigation measures set out in Table 5 section D3.1 of this assessment <u>Coastal Margin</u> ■ Under s25 of CROW access will be excluded to the vast majority of the saltmarsh and mudflat. It has been established that these areas are unsuitable for public access (as set out in section 7.15 of the Coastal Access Scheme [REF 1])		
Breeding avocet and non-breeding waterbird supporting habitat including the Wetland Plant assemblage: Loss or damage due to Trampling: The specific attributes of each supporting habitat may	<u>Route Alignment</u> ■ The trail is aligned away from the shore and supporting habitat where possible to where it is deemed the least impactful	Yes The route alignment has ensured that no supporting habitat (including plants of the Wetland Plant assemblage) is crossed by walkers. Additional	No

Risk to conservation objectives	Relevant design features of the access proposal	Can 'no adverse effect' on site integrity be ascertained? (Yes/No) Give reasons.	Residual effects?
include vegetation characteristics and structure, water depth, food availability, connectivity between nesting, roosting and feeding areas both within and outside the SPA. The maintenance of the structure and function of the habitat is key to the site's ability to support and sustain the Qualifying Features. Damage to or loss of the supporting habitat, by definition will impact directly on the long term viability of this feature and thereby pose a risk to the Conservation Objectives Taking into account the dynamic nature of the estuary and the pattern of accretion/erosion, the objective is to avoid deterioration of the extent, distribution and function of the supporting habitats from their current level, as indicated by relevant data.	■ A large proportion of the proposed trail is aligned along existing public footpaths using the seawall and walked tracks ■ Field edge alignment has been selected where land type and ownership allows ■ Signposts and waymarking will be used to ensure the route of the trail is clear and easy to follow ■ The trail will offer a viable user friendly alternative to currently used informal walked routes ■ The trail will be well maintained <u>Coastal Margin</u> ■ Under s25 of CROW access will be excluded to the vast majority of the saltmarsh and mudflat. It has been established that these areas are unsuitable for public access	investigation, undertaken where it appeared that walkers might track on what was recorded as PHI saltmarsh, allowed this risk to be discounted. In addition the s25 CROW direction has resulted in the vast majority of saltmarsh and mudflat on this estuary being excluded from the ECP proposal.	
Breeding avocet and non-breeding waterbird supporting habitat including the Wetland Plant assemblage: Loss of supporting habitat (including Wetland Plant assemblage) through the installation of access management infrastructure.	<u>Route Alignment</u> ■ The trail is aligned away from the shore where possible to where it is deemed the least impactful ■ A large proportion of the proposed trail is aligned along existing public footpaths using	Yes The establishment of the trail will see existing infrastructure being retained, some being removed or replaced with similar and there will be	No

Risk to conservation objectives	Relevant design features of the access proposal	Can 'no adverse effect' on site integrity be ascertained? (Yes/No) Give reasons.	Residual effects?
There is a potential risk to the Conservation Objectives where there is a permanent and irreversible loss of the extent of supporting habitat. Loss of supporting habitat, by definition will impact directly on the long term viability of this feature and thereby the conservation objectives. This project proposes the installation of new and replacement infrastructure on or near supporting habitat.	the seawall and walked tracks ■ None of the new infrastructure will be placed on sensitive habitat ■ Local Authority and contractors will adhere to the mitigation measure set out Table 5 section D3.1 of this assessment ■ Of the new infrastructure the majority will not be placed on land within the SPA or Ramsar site boundary	some new infrastructure also. Of the new infrastructure the majority will not be within the SPA or Ramsar site boundary. There will be seven new fingerpost for waymarkers, one new footbridge and two new information signs that will be placed on land within the boundary of the European sites. However, none of this new infrastructure will be placed on sensitive habitat and the mitigation measure outlined in Table 5 section D3.1 allows the conclusion that there will be no loss of supporting habitat as a result of this proposal. In addition, the mitigation measures outlined in Table 5 section D3.1, will ensure that surrounding sensitive habitat will not be damaged nor other Qualifying Features impacted by establishment works.	
Wetland Invertebrate Assemblage: Loss of or damage to feature due to trampling on trail or the coastal margin. The rarest and most threatened of the	<u>Route Alignment</u> ■ The trail is aligned away from the shore where possible to where it is deemed the least impactful	Yes Consultation with Natural England entomology specialists identified the favoured habitat of these invertebrates.	No

Risk to conservation objectives	Relevant design features of the access proposal	Can 'no adverse effect' on site integrity be ascertained? (Yes/No) Give reasons.	Residual effects?
assemblage, the small money spider, favours damp ground underneath upper tidal litter which users of the trail could potentially access and which could be impacted during installation works. Therefore it can be concluded that the proposal could pose a risk to the Conservation Objectives of the Ramsar site	■ A large proportion of the proposed trail is aligned along existing public footpaths using the seawall and walked tracks ■ Field edge alignment has been selected where land type and ownership allows ■ Signposts and waymarking will be used to ensure the route of the trail is clear and easy to follow ■ The trail will be well maintained ■ Local Authority and contractors will adhere to the mitigation measure set out Table 5 section D3.1 of this assessment <u>Coastal Margin</u> ■ Under s25 of CROW access will be excluded to the vast majority of the saltmarsh and mudflat. It has been established that these areas are unsuitable for public access.	Walkers will not be moving through the wet ground which four of the five species that make up this assemblage inhabit. Due to the design features of this proposal nor will upper tidal litter be impacted by the proposed route or associated coastal margin.	
Breeding avocet and non-breeding waterbirds: disturbance on functionally linked land Disturbance of nesting, feeding, preening and roosting birds on functionally linked land i.e. land nearby but outside the boundary of	<u>Route Alignment</u> ■ The trail is aligned away from the shore where possible to where it is deemed the least impactful ■ A large proportion of the proposed trail is aligned along existing	Yes Specific investigation, site visits and consultation of potential impact at these locations has confirmed that neither the trail route nor the coastal margin should impact on the	No

Risk to conservation objectives	Relevant design features of the access proposal	Can 'no adverse effect' on site integrity be ascertained? (Yes/No) Give reasons.	Residual effects?
the SPA/Ramsar site and used by a Qualifying Feature of the European sites e.g. Levington Lagoon and Mansbrook Grove. The nature, scale, timing and duration of construction and or installation works could result in bird disturbance on functionally linked land sufficient to disrupt normal behaviours and/or distribution of birds within the site. The establishment works that this proposal would involve could therefore impact upon the Conservation Objectives for this feature.	public footpaths using the seawall and walked tracks ■ New advisory and information signs will be erected in key locations. These signs will raise awareness and inform users about waterbirds and the sensitivities of wildlife to disturbance and its consequences. Also the desired behaviour that can be adopted to ensure they do not create an impact will also be described ■ Signs will be erected strategically asking that dogs are kept under control at all times ■ Signposts and waymarking will be used to ensure the route of the trail is clear and easy to follow ■ The trail will offer a viable user friendly alternative to informal walked routes ■ The trail will be well maintained ■ Local Authority and contractors will adhere to the mitigation measure set out Table 5 section D3.1 of this assessment <u>Coastal Margin</u>	functioning of this linked land. There is the potential for the alignment of the route at Mansbrook Grove to deliver a positive benefit.	

Risk to conservation objectives	Relevant design features of the access proposal	Can 'no adverse effect' on site integrity be ascertained? (Yes/No) Give reasons.	Residual effects?
	■ Under s25 of CROW access will be excluded to the vast majority of the saltmarsh and mudflat. It has been established that these areas are unsuitable for public access.		

Conclusion:

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

- Disturbance of breeding avocet and non-breeding waterbirds
- Trampling of supporting habitat of breeding avocet, non-breeding waterbirds and Wetland Invertebrates
- Trampling of Wetland Plant assemblage
- Trampling of Wetland Invertebrate assemblage

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.

Natural England considers that in this case the potential for adverse effects from the plan or project has been wholly avoided by the incorporated or additional mitigation measures outlined in section D3. It is therefore considered that there are no 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. It has therefore been excluded, on the basis of objective information, that the project can have an adverse effect on site integrity in-combination with other proposed plans or projects.

In light of this review, we have not identified any insignificant and combinable effects that are likely to arise from other plans or projects.

In light of the above conclusions no further in-combination assessment is required.

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 Sites.

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 the Stour and Orwell SPA or the Stour and Orwell Ramsar site either alone or in combination with other plans and projects.

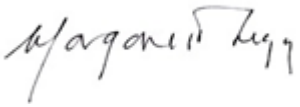
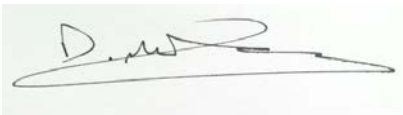
PART E: Permission decision with respect to European Sites

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 Shotley Gate and Felixstowe Ferry 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

Assessment prepared and completed by:	 Margaret Trigg	
Date	1st November 2019	
HRA approved:	 Darren Braine	*On behalf of the Coastal Access Programme Team*
Date	1 November 2019	
HRA approved:	 Andy Millar	*Senior officer with responsibility for protected sites*
Date	1 November 2019	

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