www.gov.uk/englandcoastpath

NATURAL ENGLAND

Assessment of Coastal Access Proposals between Southwold and Pakefield on sites and features of nature conservation concern

29th January 2020

About this document

This document should be read in conjunction with the published Reports for the Aldeburgh to Hopton-on-Sea Stretch and the Habitats Regulations Assessment (HRA).

The Coastal Access Reports contain a full description of the access proposals, including any additional mitigation measures that have been included. These Reports can be viewed here:

https://www.gov.uk/government/collections/england-coast-path-aldeburgh-to-hopton-on-sea

An HRA is required for European sites (SPA, SAC and Ramsar sites). The HRA is published alongside the Coastal Access Reports.

This document, the Nature Conservation Assessment (NCA), covers all other aspects (including SSSIs, MCZs and undesignated but locally important sites and features) **in so far as any HRA does not already address the issue for the sites and feature(s) in question**.

The NCA is arranged site by site. The maps in Figures 1-5 show the designated sites along this stretch of coast.

See the table below for a summary of designated sites and features for this stretch of coast, including features that have been considered within any HRA.

Contents

Introduction

The following table gives an overview of the protected sites and features along the stretch of coast between Southwold and Pakefield.

Pakefield to Easton Bavents SSSI

Pakefield to Easton Bavents is part of a European site. Some species may be assessed in both this NCA and the Aldeburgh to Hopton-on-Sea HRA or solely in the HRA. Please see the table below. Note that some species are considered in the HRA but in relation to other designated sites.

Designated sites and features between Pakefield and Easton Bavents	Pakefield to Easton Bavents SSSI	Benacre to Easton Bavents SPA	Benacre to Easton Bavents Lagoons SAC	Assessment in HRA or NCA
1150 Coastal lagoons * Priority Habitat	✓		✓	HRA
A021 Breeding bittern (*Botaurus stellaris*)	✓	✓		HRA
A081 Breeding marsh harrier (*Circus aeruginosus)*	✓	✓		HRA
A195 Breeding little tern (*Sternula albifrons*)	✓	✓		HRA
Pleistocene Vertebrata	✓			NCA
Quaternary of East Anglia	✓			NCA
Coastal Geomorphology	✓			NCA
Vegetated shingle	✓			NCA
Flood-plain fen	✓			NCA
Vascular plant assemblage: marsh-mallow *(Althaea officinalis),* grey hair-grass (*Corynephorus canescens),* mossy stonecrop (*Crassula tillaea),* sea pea (*Lathyrus japonicas),* bur medick (*Medicago minima),* bulbous meadow-grass (*Poa bulbosa),* spiral tasselweed (*Ruppia cirrhosa),* marsh sow-thistle (*Sonchus palustris),* clustered clover (*Trifolium glomeratum),* suffocated clover (*Trifolium suffocatum),* dune fescue (*Vulpia fasciculate),* dwarf eelgrass *(Zostera noltei).*	✓			NCA

Designated sites and features between Pakefield and Easton Bavents	Pakefield to Easton Bavents SSSI	Benacre to Easton Bavents SPA	Benacre to Easton Bavents Lagoons SAC	Assessment in HRA or NCA
Breeding bird population of scarce species: bearded tit (*Panurus biarmicus)*	✓			NCA
Breeding bird population of scarce species: water rail (*Rallus aquaticus)*	✓			NCA
Assemblages of breeding birds - Lowland heath: hobby (*Falco subbuteo*), quail (*Coturnix coturnix*), stone curlew *(Burhinus oedicnemus),* cuckoo *(Cuculus canorus*), woodlark *(Lullula arborea),* wheatear *(Oenanthe oenanthe),* grasshopper warbler *(Locustella naevia),* and linnet *(Carduelis cannabina).*	✓			NCA
Assemblages of breeding birds - Lowland open waters and their margins: little grebe (*Tachybaptus ruficollis*), great crested grebe (*Podiceps cristatus*), bittern (*Botaurus stellaris*), grey heron (*Ardea cinerea*), mute swan (*Cygnus olor*), shelduck (*Tadorna tadorna),* gadwall (*Anas strepera),* garganey (*Anas querquedula),* shoveler (*Anas clypeata),* pochard (*Aythya farina),* tufted duck (*Aythya fuligula),* marsh harrier (*Circus aeruginosus),* water rail (*Rallus aquaticus*), spotted crake (*Porzana porzana),* avocet (*Recurvirostra avosetta),* ringed plover (*Charadrius hiaticula),* snipe (*Gallinago gallinago),* redshank *(Tringa totanus*), cuckoo *(Cuculus canorus),* kingfisher (*Alcedo atthis),* Cetti's warbler (*Cettia cetti),* grasshopper warbler (*Locustella naevia),* sedge warbler (*Acrocephalus schoenobaenus),* reed warbler (*Acrocephalus scirpaceus),* bearded tit (*Panurus biarmicus),* and reed bunting (*Emberiza schoeniculus*).	✓			NCA

Designated sites and features between Pakefield and Easton Bavents	Pakefield to Easton Bavents SSSI	Benacre to Easton Bavents SPA	Benacre to Easton Bavents Lagoons SAC	Assessment in HRA or NCA
Assemblages of breeding birds – Scrub: turtle dove (*Streptopelia turtur),* cuckoo *(Cuculus canorus*), nightingale *(Luscinia megarhynchos),* grasshopper warbler *(Locustella naevia*), lesser whitethroat *(Sylvia curruca),* whitethroat *(Sylvia communis),* garden warbler *(Sylvia borin),* blackcap *(Sylvia atricapilla),* and linnet *(Carduelis cannabina).*	✓			NCA
Assemblages of breeding birds - Woodland: grey heron *(Ardea cinerea)* , goshawk *(Accipiter gentilis),* sparrowhawk *(Accipiter nisus),* hobby *(Falco subbuteo),* stock dove *(Columba oenas),* cuckoo *(Cuculus canorus),* tawny owl *(Strix aluco),* green woodpecker *(Picus viridis),* great spotted woodpecker *(Dendrocopos major),* nightingale *(Luscinia megarhynchos),* garden warbler *(Sylvia borin),* blackcap *(Sylvia atricapilla),* chiffchaff *(Phylloscopus collybita),* goldcrest *(Regulus regulus),* spotted flycatcher *(Muscicapa striata),* long-tailed tit *(Aegithalos caudatus),* marsh tit *(Parus palustris),* coal tit *(Parus ater),* nuthatch *(Sitta europea),* treecreeper *(Certhia familiaris),* jay *(Garrulus glandarius),* common crossbill *(Loxia curvirostra),* and bullfinch *(Pyrrhula pyrrhula).*	✓			NCA and HRA
Aggregations of non-breeding birds: bittern *(Botaurus stellaris)*	✓	✓[1]		HRA
Narrow-mouthed whorl snail (*Vertigo angustior*)	✓			NCA
Features of conservation concern				
Strandline vegetation				NCA
Starlet sea anemone (*Nematostella vectensis*)				NCA
Breeding Oystercatcher (*Haematopus ostralegus*)				NCA
Breeding sand martin (*Riparia riparia*)				NCA

[1] Aggregations of non-breeding bittern have been recommended for designation as part of the SPA

Designated sites and features between Pakefield and Easton Bavents	Pakefield to Easton Bavents SSSI	Benacre to Easton Bavents SPA	Benacre to Easton Bavents Lagoons SAC	Assessment in HRA or NCA
Winter roost of harriers				NCA
Otter (*Lutra lutra*)				NCA

In addition, the Outer Thames Estuary SPA and Southern North Sea SAC designated sites can be found on this stretch of coast.

Outer Thames Estuary SPA

The qualifing feature for the **Outer Thames Estuary SPA** is the largest aggregation of wintering red-throated diver *(Gavia stellata)* in the UK, an estimated population of 6,466 individuals which is 38% of the wintering population of Great Britain. The SPA has Additional Qualifying Features: foraging areas for breeding common tern *(Sterna hirundo)* and breeding little tern *(Sternula albifrons)*.

Further details are available in a separate HRA which fully considers these features and can be found on line at:

https://www.gov.uk/government/collections/england-coast-path-aldeburgh-to-hopton-on-sea

Southern North Sea SAC

The Southern North Sea Special Area of Conservation has been considered alongside our proposals and we have concluded that there could not be an impact on the special interest (marine) features due to the spatial separation between them and walkers using the proposed route of the England Coast Path.

Of the above features, those features with a European designation (SPA or SAC) will be considered in detail in the HRA accompanying the report which can be found on line at:

https://www.gov.uk/government/collections/england-coast-path-aldeburgh-to-hopton-on-sea

Current situation

Pleistocene Vertebrata and Quaternary Geology

Pleistocene Vertebrata and Quaternary of East Anglia: the units containing these features are currently in favourable or favourable recovering condition. Easton Bavents Geological Conservation Review (GCR) site provides extensive cliff and foreshore exposures of the Chillesford Church, Easton Bavents and Westleton Members of the Early Pleistocene Norwich Crag Formation.

Flint tools have been found at Pakefield indicating the earliest recorded human activity in northern Europe. Thought to be 680,000 years ago they are likely to be the work of *Homo heidelbergensis*. [2]

Easton Bavents is the only site in the Pleistocene Vertebrata block to represent an assemblage of Antian Age. These include the remains of zebrine horse, mastodon, mammoth, comb-antlered deer, clawless otter, baleen whale and walrus. The teeth of an extinct cheetah are also known and are of particular note. Rodents are represented by voles, the species of which provide evidence of the age of this part of the Norwich Crag at Easton Bavents. These sediments extend landward from the cliffs and in places support other biological features. These deposits provide suitable cliff faces for the breeding sand martin population which is of local importance.

Sensitivities to changes in access

The construction of infrastructure relating to access may have implications for the exposures. There may be an increase in fossil collection from the beach or the cliffs, although these would otherwise be lost to the scientific community due to the erosion rates. If not collected they would be lost to the sea. However, there is low potential for impact and/ or low sensitivity to our proposals. This feature group can **be ruled out** from further consideration.

[2] http://www.touchingthetide.org.uk/assets/Documents/Tides-of-Change-2-million-years-on-the-Suffolk-coast.pdf

Geomorphology

The Coastal Geomorphology feature lies from the northern end of the SSSI southwards to the southern end of the beach fronting Benacre Broad.

Benacre Ness is part of a suite of Geological Conservation Review (GCR) sites, within the Coastal Geomorphology of Great Britain network, that illustrate the characteristics of 'gravel and shingle beaches' around the coast of Great Britain. It was selected because it comprises both an exceptional feature (Benacre Ness itself) and because of its representative geomorphological features (cliffs cut in fluvio-glacial sands and a retreating beach ridge).

The site comprises three landform units:

a. Benacre Ness, formed of sand and shingle ridges, has a long history of mainly northward movement as material accretes on its northern shore and is eroded from the southern edge;
b. The eroding cliffs at Covehithe are cut mainly in fluvio-glacial sands, and have a fringing beach of sand and shingle, this is the most rapidly eroding area on the English coast;
c. A beach ridge fronting Benacre Broad and the Denes that is retreating landwards as a result of coastal erosion.

These landform units support the following interest features of the site: Vegetated shingle, Vascular plant assemblage, Breeding bird population of scarce species: little tern *Sternula albifrons*, and Assemblages of breeding birds - Lowland open waters and their margins which includes the Schedule 1 bird species avocet *Recurvirostra avosetta*. The other features of interest included here are the annual vegetation of drift lines.

Sensitivities to changes in access

Shingle forms when sediment is deposited into ridges during storms and then sorted by subsequent wave action. The sorting process creates conditions in which specialist communities of plants and animals can colonise, some of which are confined to shingle. Where a series of beach ridges form larger structures out of reach of the waves, further communities can survive and develop. Nick Williams (Natural England Senior Specialist in Coastal Geomorphology) advises that the interest in the geomorphological features lies in the large scale processes and consequently are believed not to be adversely affected by access or use as spreading room.

However, although the geomorphological feature may not be adversely impacted, the other features that utilise the structure may be. These aspects will be dealt with in the sections dealing with the other features. Geomorphological SSSI features are ruled out for further consideration in this appraisal.

Vegetated shingle may be found on Benacre Ness and the barrier beaches seaward of the broads and lagoons. Dunes are developing along the back of the beaches and shingle features adjacent to the cliffs.

Vegetated shingle

The floristic communities of Benacre Ness can be subdivided into three main types; mature vegetated shingle, vegetated shingle ridges and shoreline, and marram-grass *Ammophila* dominated stands. It includes a mosaic of other habitats that are functionally dependent upon the movement of and deposition of the sediment. The vegetation also includes two important plant species, sea pea *Lathyrus japonicus* and sea-kale *Crambe maritima*.

Mature vegetated shingle:

- MC5 *Armeria maritima – Cerastium diffusum* ssp. *diffusum* maritime therophyte community
- Vegetated shingle ridges and shoreline:
- SD7 *Ammophila-arenaria – Festuca rubra* semi-fixed dune community
- SD1 *Rumex crispus – Glaucium flavum* shingle community SD1b *Rumex crispus – Glaucium flavum* shingle community, *Lathyrus japonicus* sub-community
- *Ammophila* dominated vegetation on sandy substrate:
- SD6a *Ammophila-arenaria* mobile dune community, *Elymus farctus* sub-community

This feature supports the following SSSI interest features of the site: Vascular plant assemblage, Breeding bird population of scarce species: little tern *Sternula albifrons*, and Assemblages of breeding birds - Lowland open waters and their margins which includes the Schedule 1 bird species avocet *Recurvirostra avosetta* which will nest at the back of the shingle adjacent to the lagoons. The other features of interest included here are the annual vegetation of drift lines.

Sensitivities to changes in access

These communities can be vulnerable to trampling as this can damage established plants or counteract the natural sorting of shingle by wave action. This can directly damage the plants and the special conditions required in which the seeds can germinate. The Natural England Commissioned report "Scientific research into the effects of access on nature conservation: Part 1: access on foot", 2009 identifies that vegetation developing on shingle structures is very susceptible to disturbance from trampling, and recovery times are slow.

Sea pea (*Lathyrus japonicas)* is particularly vulnerable to trampling damage. The breeding bird populations are vulnerable to disturbance and are dealt with separately below.

Annual vegetation of drift lines

The beaches and lagoon edges are considered the main areas for this feature, though there has been no systematic survey conducted. It is also present on the barrier beaches. This is believed to be of national significance and possibly of greater importance. The evaluation of the significance is dependent upon a systematic survey of the species and their distribution. This feature is to be found at the top end of the intertidal area of the beach. The vegetation is often associated with areas of flotsam and jetsam. The plants grow on the landward edge of the Mean High Water Mark, a very dynamic element of the coastal processes at this location.

Sensitivities to changes in access

Annual vegetation is sensitive to trampling because of physical damage to plants on the strandline. There may also be impacts caused by the disturbance of the substrate by access across the beach. ECP walkers are likely to be on the cliff tops where possible or walking on the firm inter-tidal sand if they are walking in the margin. Those areas supporting this feature which occur next to the water bodies (the broads) are subject to annual management by fencing for ground nesting birds, which will also encourage establishment of vegetation of drift lines depending on the location of the fencing. The proposals will have a negligible impact on the use of the margin and so this feature, where it occurs in the margin, will be **ruled out** for further consideration in this appraisal.

At Easton, Covehithe and Benacre Broads:

Trampling and loss of vegetated shingle

There is seasonal fencing to protect bird nesting sites which also reduces trampling to vegetated shingle sites. The coast path will be clearly waymarked to focus walkers onto a single route, thus reducing the potential for trampling to vegetated shingle. When the main trail is unavailable due to coastal processes, an optional alternative route is available which takes walkers landward of this feature.

At The Denes and Kessingland:

Trampling and loss of vegetated shingle

Low to medium levels of use are expected to continue across this area with a small increase in path use. The England Coast Path will create a well-waymarked route which will encourage walkers to use a single pathway. Walkers have been observed to use the intertidal area when available to avoid walking on shingle.

Along Kessingland beach the impact of the path is likely to be negligible given the high levels of existing access at the site. Providing a well waymarked route to focus walkers onto one pathway is likely to reduce the existing levels of trampling to vegetated shingle. A new section will be created to link the cliff top route which had been lost at Heathland Beach Caravan Park which will further encourage walkers to stick to the path and not use the margin. This feature is therefore ruled out from further consideration in this assessment.

Flood plain fen

The flood-plain fens are located in the valleys landward of the saline lagoons and may be influence by saline intrusions when there are breaches in the barrier beaches.

At the time of notification the areas of flood-plain fen within the valleys of the SSSI totalled 168ha. The majority of the area are in units of more than 10ha. A survey in 1999 identified the following National Vegetation Classification communities stand types as part of this feature:

- S4a *Phragmites australis* swamp and reed-beds, *Phragmites australis* sub-community
- S4d *Phragmites australis* swamp and reed-beds, *Atriplex prostrata* sub-community

- S21a *Scirpus maritimus* swamp, sub-community dominated by *Scirpus maritimus*
- S21b *Scirpus maritimus* swamp, *Atriplex prostrata* sub-community
- S21c *Scirpus maritimus* swamp, *Agrostis stolonifera* sub-community
- S25a *Phragmites australis-Eupatorium cannabinum* tall-herb fen , *Phragmites australis* sub-community
- S26b *Phragmites australis-Urtica dioica* tall-herb fen , *Arrhenatherum elatius* sub-community
- S26d *Phragmites australis-Urtica dioica* tall-herb fen , *Epilobium hirsutum* sub-community

The site includes one of the largest reedbeds in England with subsidiary areas elsewhere.

A key component of this SSSI feature is the ditches and open water habitats.

This feature supports a range of SSSI features that include Vascular plant assemblage, Assemblage of breeding birds - Lowland open waters and their margins, Breeding bird population of scarce species: bittern, *Botaurus stellaris*, Breeding bird population of scarce species: bearded tit, *Panurus biarmicus*, Breeding bird population of scarce species: marsh harrier, *Circus aeruginosus*, and Breeding bird population of scarce species: water rail, *Rallus aquaticus*, Assemblages of breeding birds – Scrub, and Aggregations of non-breeding birds: bittern, *Botaurus stellaris*. Bittern and marsh harrier form part of the designated features of the Special Protection Area (SPA). The other important features that have not been designated include a regular winter roost of mixed harrier species, wintering birds identified as context on the SPA citation.

Sensitivities to changes in access

Flood plain fen habitat is vulnerable to the effects of public access as are the SSSI features that use it. The Natural England Commissioned report “Scientific research into the effects of access on nature conservation: Part 1: access on foot”, 2009” states that reedbeds have been shown to be vulnerable to trampling and could be damaged unacceptably where alongside popular water edge sites (Section 7.4.2).

The plant assemblage and breeding bird interests are susceptible to disturbance especially during busy periods in the summer. Reedbed breeding and non-breeding birds are considered separately below. It is very rare for people and their dogs to go into the reedbed. The reedbed features are considered robust and there are ditches and fences close to the reedbed areas which deter access. This feature can therefore be **ruled out** for further consideration in this appraisal.

Vascular plant assemblage

The Vascular plant assemblage is spread across the habitats of the SSSI including flood-plain fens, vegetated shingle and dunes, sand and mud in pools, and coastal lakes. It includes the following species:

- marsh-mallow (*Althaea officinalis*) - on the banks of ditches containing brackish water, in brackish pastures,
- grey hair-grass (*Corynephorus canescens*) - open areas on consolidated dunes, on sandy shingle and on open sand,
- mossy stonecrop (*Crassula tillaea*) - bare, often compacted, sandy or gravelly ground,
- sea pea (*Lathyrus japonicus*) - on shingle beaches, or rarely, in smaller quantities on blown sand,
- bur medick (*Medicago minima*) - dry, open, sandy or gravelly places,
- bulbous meadow-grass (*Poa bulbosa*) - open grassland and barish sandy places near the sea; mainly on sand dunes and stabilised shingle,
- spiral tasselweed (*Ruppia cirrhosa*) aquatic which occurs in coastal lakes, tidal inlets, creeks and brackish ditches,
- marsh sow-thistle (*Sonchus palustris*) - rivers on damp peaty or silty soils rich in nitrogen and can grow near tidal river mouths,
- clustered clover (*Trifolium glomeratum*) - short open communities on light, drought-prone often somewhat acidic sandy or stony soils near the coast,
- suffocated clover (*Trifolium suffocatum*) - thin, dry soils on rocky coasts or on acidic compacted sand and shingle, either in open turf or on bare ground, and often part of a species-rich mosaic of annuals or bulbous plants.
- dune fescue (*Vulpia fasciculata*) - An annual of sand dunes, particularly open, disturbed parts of fixed dunes, and sandy shingle, frequently associated with other winter-annuals,
- dwarf eelgrass (*Zostera noltei*) - sheltered estuaries and harbours, where it is found on mixed substrates of sand and mud. Plants are often concentrated in pools or runnels on the shore.

The distribution of this feature will vary depending on the coastal change and the impacts on the environment both on the coast but also inland through flooding and changes in water quality.

Sensitivities to changes in access

This feature is vulnerable to the effects of public access. Excessive trampling can damage the ridges that run across the Ness and support the interest features. The vegetation itself is also susceptible to damage from trampling. There is evidence that some of the species such as sea pea (*Lathyrus japonicas)*, are susceptible to trampling, while others are more resilient such as mossy stonecrop (*Crassula tillaea)*. The structure of the shingle habitats is important for the colonisation of the species using the habitat and these may be susceptible to excessive trampling. Due to the provision of clearly marked routes, Optional Alternative Routes for when the main trail in front of the broads is not available and a new section of trail enabling walkers to follow a cliff top route where previously they had been forced onto the beach to continue their onward journey, this feature can be ruled out from further consideration in this assessment.

Reedbed breeding birds

Bearded tit

This Schedule 1 species is also a component of the Assemblage of breeding birds – Lowland open water and their margins SSSI feature. Bearded tits live in the dense reedbeds and will be found in areas of reedbed across the SSSI.

Water rail

This species is also a component of the Assemblage of breeding birds – Lowland open water and their margins. It is a bird found in the reedbeds on this site.

Sensitivities to changes in access

Bearded tit and water rail: These species would be affected if a significant increase in access to the reedbeds was to take place. However, reedbeds are not currently accessed by walkers or their dogs and we do not anticipate this activity will start with our proposals for the ECP. These features are therefore ruled out for further consideration in this assessment.

Assemblages of breeding birds of lowland heath

Stone curlew forms part of this assemblage and may breed in the area. Some of the species within this assemblage benefit from inclusion in schedule 1 of the Wildlife and Countryside Act 1981, as amended. These include hobby *Falco subbuteo*, quail *Coturnix coturnix* (which nests only rarely in Suffolk with no nests and only 8 sightings in the county in 2017), stone curlew *Burhinus oedicnemus* and woodlark *Lullula arborea*. Neglected heathland habitats are currently being lost from unit 51 due to coastal processes. Elsewhere the habitat is being improved to support these bird species.

Sensitivities to changes in access

This feature is vulnerable to the effects of public access. Stone curlew have been shown to be particularly susceptible to access to the breeding areas. Increasing access in the heathland areas, particularly with dogs is likely to adversely impact on the bird assemblage due to the ground nesting nature of some of these species. One unit hosting these features which is geographically closest to a section of PRoW being proposed as part of the Easton Broad OAR, is spatially separate from it, therefore we do not consider the proposals will have a detrimental impact on the features.

The other unit in which these features are found has existing well-walked PRoWs running through it. This section will form part of the Covehithe OAR. The proposals use existing access through or near these units for use on those occasions when the main trail is unavailable. The unit has higher levels of access compared with other parts of the nature reserve due to the availability of space to park less than 1km away. The predicted levels of increase in use of this section of the OAR due to our proposals are small. Vulnerable ground-nesting birds are likely to occupy sites away from these well used routes, which are on the border between an arable field and the Benacre NNR. Walkers will tend to stick to the walked routes which will also be clearly signed. Throughout the NNR, walkers are also asked to keep their dogs under control. With these measures therefore, we do not consider there will be a detrimental impact on the features at this location.

Assemblages of breeding birds of lowland open waters and their margins

The assemblage of breeding birds of lowland open water and their margins includes a number of Schedule 1 bird species including bittern (*Botaurus stellaris)*, garganey (*Anas querquedula)*, marsh harrier (*Circus aeruginosus),* spotted crake (*Porzana porzana)* (very rare: no records in 2017 and only 2 in 2016), avocet (*Recurvirostra avosetta)*, kingfisher (*Alcedo atthis)*, Cetti's warbler (*Cettia cetti)*, and bearded tit (*Panurus biarmicus)*. These species are widespread through the dense reedbed habitats. The species within this assemblage are to be found across the site breeding on the edge of saline lagoons, shingle and beach deposits, grasslands, and in the reedbeds and flood-plain fen. Most of the units containing these assemblages are geographically separated from the proposed routes.

However, each of the broads has an element of existing access on the seaward side; Easton Broad will also have new access (part of the Optional Alternative Route) on its southern edge.

Sensitivities to changes in access

This assemblage is vulnerable to the effects of public access due to the disturbance of breeding behaviours where the public can be visible to some of the breeding species. There are concerns about birds being impacted by walkers' sky lining along the reedbed edge.

However, disturbance does not in and of itself mean that an area will be abandoned. The frequency and duration of that disturbance is important in the bird's determination of the usefulness of that area to them. For those species breeding in reedbeds, whilst alert responses may be induced, they are more likely to remain and therefore during incubation at least not expose eggs to increase risk of predation, exposure etc.. Due to sensitivities to changes in access these SSSI features are **ruled in** for further consideration in this appraisal.

Assemblages of breeding birds – scrub

Small patches of scrub may be found across the site forming a mosaic with other terrestrial habitats such woodland, flood-plain fen, heathland, dunes and grassland. Recent assessments have indicated deer browsing as having an adverse impact on this feature.

Sensitivities to changes in access

This feature is potentially vulnerable to the effects of public access due to the disturbance of breeding birds where the public can spread through the scrub features. The ECP proposals however do not pose a potential for interaction with these features. However, there is a section of OAR at the northern edge of Pottersbridge Marshes (about 450m) where the proposal is to take a route just inside the NNR, SSSI and SPA site which will require the removal of some area of scrub. The feature is **ruled in** for further consideration in this appraisal.

Assemblages of breeding birds - woodland

This assemblage includes populations of Schedule 1 birds: goshawk (*Accipiter gentilis)* and hobby (*Falco subbuteo)*. The breeding bird assemblage may be found in the woodland areas across the site from the valley bottoms where wet woodland exists through to semi-natural woodland and plantations on the higher ground.

Sensitivities to changes in access

This feature is vulnerable to the effects of public access. Goshawk is known to be vulnerable to disturbance at the nest and a national senior specialist has advised that there should be a 250m buffer around potential nesting trees. The Forestry Commission and Scottish Natural Heritage advise that in relation to forestry work a safe working distance of 250-450 metres from goshawk nests should be maintained. Many other species are less susceptible to disturbance unless access is close to the nest. While many of the species present in the assemblage may be able to accommodate an increase in disturbance through the ECP access, the sensitivity of **goshawk** to the disturbance and its special protection under Schedule 1 this SSSI feature is **ruled in** for further consideration in this appraisal.

Aggregations of non-breeding birds

Bittern This Schedule 1 bird is also a feature of the Special Protection Area. Bitterns are a species of extensive reedbeds and the edges of open water in the SSSI.

The status of bittern is currently considered to be favourable as non-breeding birds are seen regularly. There is no Common Standards Monitoring guidance within the Favourable Condition Tables available for this feature.

Mixed harrier species A Winter roost of mixed harrier species is found in flood-plain fen habitats. This is considered an important winter roost and the non-breeding birds may be found between September and April. It is likely that the harriers will be hunting over a wide area.

Other species on Annex 1 of the Birds Directive are present on the site include avocet (*Recurvirostra avosetta)* and a few pairs of common tern (*Sterna hirundo)* occasionally nest. Red-throated diver (*Gavia stellata)*, black-throated diver (*G. arctica)*, great northern diver (*G. immer)*, Slavonian grebe (*Podiceps auritus*) and hen harrier (*Circus cyaneus)* sometimes winter within the SSSI.

The site supports a notable assemblage of other wintering birds such as little grebe (*Tachybaptus ruficollis)*, shelduck (*Tadorna tadorna*), wigeon (*Anas penelope)*, gadwall (*Anas strepera),* pochard (*Aythya farina*) (also winter), tufted duck (*A. fuligula)*, water rail (*Rallus aquaticus)*, ringed plover (*Charadrius hiaticula)*, barn owl (*Tyto alba)*; little owl (*Athene noctua)*, kingfisher (*Alcedo atthis)*, lesser spotted woodpecker (*Dendrocopos minor)*, bearded tit (*Panurus biarmicus*) and tree sparrow (*Passer montanus)*.

The site also supports the following notable assemblage of other wintering birds, including cormorant (*Phalacrocorax carbo)*, whooper swan (*Cygnus cygnus)*, pink-footed goose (*Anser brachyrhynchus)*, white-fronted goose (*A. albifrons)*, greylag goose (*A. anser*), Canada goose (*Branta canadensis*,) gadwall (*Anas* strepe*ra)*, teal (*A. crecca)*, pintail (*A. acuta)*, shoveler (*A. clypeata)*, scaup (*Aythya marila)*, eider (*Somateria mollissima*), long-tailed duck (*Clangula hyemalis)*, common scoter (*Melanitta nigra)*, velvet scoter (*M. fusca*), goldeneye (*Bucephala clangula)*, smew (*Mergellus albellus)*, red-breasted merganser (*Mergus serrator)* , goosander (*M. merganser)*, buzzard (*Buteo buteo)*, lapwing (*Vanellus vanellus)*, dunlin (*Calidris alpina)*, redshank (*Tringa totanus)*, great black-backed gull (*L. marinus)*, guillemot (*Uria aalge)*, shore lark (*Eremophila alpestris)*, rock pipit (*Anthus petrosus)*, fieldfare (*Turdus pilaris)*, siskin (*Carduelis*

spinus), twite (*C. flavirostris)*, snow bunting (*Plectrophenax nivalis*) and reed bunting (*Emberiza schoeniclus)*.

Sensitivities to changes in access

Mixed harrier species

The areas used by the birds currently have limited access and thus little disturbance. A significant increase in access and disturbance is likely to adversely affect this feature as they are sensitive to disturbance close to the roosting sites. This feature should be **ruled in** for further consideration in this appraisal.

Population of breeding sand martin

Breeding population of sand martin (*Riparia riparia)*. Currently identified as nesting in the Covehithe cliffs northwards to Benacre Ness. Nesting was only reported at three other Suffolk sites in 2017, with Covehithe having most pairs (50), though Minsmere supported 320 pairs in 2016.

Sensitivities to changes in access

The areas used by the birds currently have limited access to people due to their position in the cliffs. Access will be either on the beaches below or along the tops of the cliffs. North Warren, the SSSI unit just south of Easton Broad, is becoming lower as it is eroded and so in time one might expect this area to be less used by the features as a smaller area of cliff will be available for nesting. This feature should be **ruled out** from further consideration in this appraisal.

Otters

Otters are currently seen on the Benacre National Nature Reserve. It is likely that the animals can be found in most habitats on the site given their movements between catchments and waterbodies.

Sensitivities to changes in access

The presence of dogs can affect otter behaviour. Otters will tolerate some disturbance, and bypass activities rather than retreat, but are very sensitive to disturbance by dogs. This feature should be **ruled in** for further consideration in this appraisal.

Narrow-mouthed whorl snail (*Vertigo angustior*)[3]

This section 41 Natural Environment and Rural Communities (NERC) Act 2006 species is very small, less than 2mm and as such is sensitive to local changes in habitat, sward height, hydrology and shading. It occurs in open, short swards, usually of calcareous places, warmed quickly by the sun but consistently humid, not flooded nor prone to desiccation. Vegetation can include grasses, mosses and low herbs in wet grazed meadows and maritime turf and has been found near the proposed boardwalk at AHS-4-OA005 to AHS-4-OA007. Flooding events, tidal surges, increased salinity, trampling and growth of tall vegetation e.g. *Phragmites* and scrub will be quite detrimental to the snail, and it will not survive under the boardwalk, and is very unlikely to be found on the boardwalk itself unless suitable vegetation is right next to the boardwalk. It will be grazing on the surface film of bacteria and algae on the natural vegetation, within the sward. This could be close to or even right next to a boardwalk, depending on habitat suitability in the vicinity of the boardwalk.

[3] https://sac.jncc.gov.uk/species/S1014/

Summary of interim conclusions of potential impact of ECP on features

Features considered between Pakefield and Easton Bavents NCA	Consider further in this appraisal	
SSSI features	**Yes**	**No**
Quaternary Geology		✓
Coastal Geomorphology		✓
Vegetated shingle		✓
Flood-plain fen		✓
Vascular plant assemblage		✓
Breeding bird population of scarce species: bearded tit, *Panurus biarmicus*		✓
Breeding bird population of scarce species: water rail, *Rallus aquaticus*		✓
Assemblages of breeding birds - Lowland heath		✓
Assemblages of breeding birds - Lowland open waters and their margins	✓	
Assemblages of breeding birds – Scrub	✓	
Assemblages of breeding birds – Woodland	✓	
Aggregations of non-breeding birds: overwintering mixed harrier species	✓	
Features of Conservation Interest		
Annual vegetation of drift lines		✓
Wintering birds – Occasional (from SPA citation)		✓(see HRA)
Notable wintering birds (from SPA citation)		✓(see HRA)
Population of breeding sand martin *Riparia riparia*		✓
Breeding Oystercatcher (*Haematopus ostralegus*)	✓	
Otter	✓	
Narrow-mouthed whorl snail	✓	

Risk analysis

Outline of changes in access

Kessingland to Benacre Ness pumping station

The proposed trail uses a mix of: public right of way (PROW); currently walked route; re-establishes links between rights of way which had been lost through erosion at Heathland Beach caravan park; promenade, footway and road. A section of landward margin has been proposed just south of Kessingland Beach Holiday Village, which is currently popular with dog walkers and uncategorised on the Priority Habitats Inventory.

No new interaction is anticipated. The area is already well-used by locals and visitors: access is expected to continue in the same way as they are currently, so the geological features not considered to be at risk.

Little terns nest in colonies on open shingle on Kessingland Beach, and usually arrive at the nesting site at the beginning of May. The chicks will usually have fledged by late July to the beginning of August. A recent report published by the Suffolk Little Tern Group suggests the timings may be a little later with some birds arriving in June and leaving in the last week of August. 50 pairs at Benacre were disturbed by a fox getting though the fence and moved to Kessingland where 55 pairs reared just 4 young. We anticipate a negligible increase in use of the margin on this section which will benefit features such as vegetated shingle and little tern. ECP walkers will be on an improved, signed route; other walkers may be encouraged to follow it, away from shore nesting birds and vegetated shingle, and so may benefit these features.

The Denes to The Warren (unit 3 “Warren House Fields” just north of Easton Wood)

The proposed trail uses a mix of current access through an area mapped as CROW Open Access land, existing public rights of way, existing walked routes and establishes new sections of route on cliff tops at the seaward headland of arable fields, grassland, bracken and wooded areas (Boathouse Covert and Long Covert).

There is potential for interaction in relation to walkers and their dogs for little tern, and avocet through The Denes which is on CROW Open Access land. There is a potential for interaction between walkers and shore nesting birds and vegetated shingle, and walkers and their dogs on Benacre Broad and Covehithe Broad.

The lagoons are not currently used by people or their dogs, even in summer when at their most sensitive. We do not anticipate such use with the advent of the ECP. In addition, we consider the measures to protect little tern will also provide the necessary protection for the lagoons.

Optional Alternative Route (OAR) around Benacre Broad

An Optional Alternative Route (OAR) is a route that the public have the option to use when the normal route (even though not formally closed) is unsuitable because of flooding, tidal action, coastal erosion or other geomorphological processes. At times in the past Benacre Broad has breached for periods of several weeks and this could recur. The OAR uses existing public rights of way and roads.

No potential for interaction due to spatial separation between walkers and dogs and interest features. The routes are already clearly marked, and easy to follow.

Optional Alternative Route (OAR) around Covehithe Broad

The proposed OAR uses existing well-walked public rights of way, road, plus the creation of a new 440m section of path to link from the PROW back up to trail via an existing track and a less frequently-walked route past Warren House. It is a route that the public have the option to use when the normal route (even though not formally closed) is unsuitable because of flooding, tidal action, coastal erosion or other geomorphological processes.

There is very low potential for interaction between walkers and the assemblages of breeding woodland birds in Easton Wood. The OAR around Covehithe Broad is on a track at the northern tip of Easton Wood, and walkers are separated from the wood by fencing. The route back to the trail at the northeast corner of Easton Wood will re-open a disused track through scrub and is separate from Easton Wood. The remaining routes are already clearly marked, are currently walked and include public rights of way and highways. With the advent of ECP they will also be well-signed to include the circumstances under which they can be used.

Easton Wood to Southend Warren

The proposed trail uses a mix of existing walked routes, and new sections through Easton Wood, and on Easton Bavents to Southend Warren. There is a potential for interaction between walkers and their dogs and goshawks through Easton Wood.

Optional Alternative Route (OAR) around Easton Broad

The proposed OAR uses a mix of public rights of way, roadside verge and new sections. The public may legally use this OAR when the normal route (even though not formally closed) is unsuitable because of flooding, tidal action, coastal erosion or other geomorphological processes. If the OAR is aligned on a PROW, then the PROW may be used at all times as usual. There is a potential for interaction with marsh harrier at the southern section of the OAR. Mitigation measures are discussed in detail below.

Assessment of impact-risk

The Denes to The Warren (just north of Easton Wood)

This section of the coast path links the southern end of Benacre Ness to the saline lagoon at Covehithe. It takes the public past a range of habitats including vegetated shingle, arable fields, heathland, reedbed, woodland and saline lagoons.

Little tern, ringed plover, avocet and oystercatcher are particularly sensitive to disturbance when nesting on the shingle and margins to the lagoons. Goshawk has been identified as being sensitive to disturbance during the breeding season. Otters are most sensitive to disturbance by people and dogs.

Current access provisions and use of site for recreation

The Denes is a mobile shingle feature. The lagoon itself is not mobile having been originally man-made and is now subject to continued gravel/shingle winning; it is steadily being infilled by coastal processes since the beach breached. It has no landward valley to retreat to and so will be lost through natural coastal processes.

It is mapped as Open Access land within the Benacre NNR. A restriction on access is currently in place such that dogs must be on short leads between 1st March and 31st July to protect ground nesting birds. A separate “Please keep your dog on a lead” sign protects avocet, little tern and ringed plover between March and August and is located on the gate at the access point from the pumping station. Recent breeding figures recorded 4 pairs of ringed plover at Kessingland, with 7 young fledging. NNR staff indicate that this request is complied with by a minority of dog walkers. A larger green Benacre NNR sign informs walkers of the mosaic of habitats and asks walkers:

"Please help look after this site by following the Countryside Code and, in particular, keep dogs on leads."

Walkers tend to stick to the intertidal area when it is available; or they use the access track and path landward of The Denes to avoid walking on shingle. Data from a people counter at Benacre Ness pumping station shows 5,300 counts for January and February 2018. The access track links up with FP003, which is used as the current Suffolk Coast Path. There are low to medium levels of use along the track behind The Denes and low levels of use of the beach. There is no PROW along the next section south. Although a clifftop path is marked on the map, and there was historic use of the cliff edge for access, this has been lost to erosion for some years. There is no current access along this section and access is actively discouraged.

There is no current legal access through Boathouse Covert on the cliff top, although attempts have been made to find a route from the southern side by walkers, but worn routes peter out as they reach a thicket of gorse and bramble. Walkers use the beach area. There are low to medium levels of use of the beach, including by dog walkers. There are also limited attempts to access Long Covert to the south, most walkers using the beach. A large bird hide is situated near the northern tip of Long Covert.

Natural England manages the beach for little tern and ringed plover by fencing off sections of beach between March and October. In 2015 there were over 100 breeding pairs of little tern on the site. In 2017, two rows of three-strand electric fencing, surrounded by a final post and rope fence to create a buffer was erected in March (see Figure 1); inside this there were two eight-strand electrified blocks. The fence occupied a broad section of beach including the high ground that walkers would normally use to access the beach at high tide. Suffolk little tern data indicates that two pairs at Covehithe fledged two young in 2017. The fencing erected alters in position from year to year and may be close to the Mean High Water mark as in Figure 1 or may be set further landward on the beach according to the assessment of the suitability of the beach as a potential nest site for the little terns.

Photograph 1: inundation of the beach at Benacre Broad

In addition, frequent inundation or breach of the barrier beach due to natural processes and reduction of sediment at a low point (such as that next to a small mound of sediment shown in photograph 1) has resulted in the need for an OAR.

When breeding birds are present on site, wardens and volunteers engage with beach users to share knowledge about the species and ensure dogs are kept on leads. NNR staff also provide spare leads for use past the site where necessary, free of charge as part of engagement activity to protect nesting birds. There are medium levels of use of the clifftop between Long Covert and Covehithe and low levels of use on the beach.

Anecdotal evidence points to an increasing number of visitors parking at Covehithe, over 1.5km away; a number of walkers from here may continue to Benacre Broad. There is no current legal access through Long Covert. As with all other areas without public access on the Benacre Estate,

the private nature of the land is indicated with frequent signage, and fencing. A route has been made by walkers through Long Covert but is not established or easy to follow. Most public access is therefore on the beach adjacent to this unit at medium to low levels. There is a strong local desire for cliff top routes to be re-opened.

Covehithe is a popular place for people to start their visits to the area. Free but limited parking is available on the road verges. This tends to be at its busiest on weekends and bank holidays accompanied by a good weather forecast.

Again, a cliff top path (not a PROW) is indicated on OS maps at Covehithe. The old walked route has since been lost to erosion of the cliff, the rate of which has made it difficult to establish 20 years use for the route to be considered for inclusion on the Definitive Map and Statement. Covehithe Cliffs have receded by 65-80m in the period 1991 to 2009. The cliff top is often accessed by those walking from Covehithe via the road between St Andrew's church and Church Farm (Mill Lane, Covehithe). A Traffic Regulation Order preventing access by car, horse, bicycle and on foot on the road starts at a point 272m eastwards from the eastern boundary of Church Farm and continues for 100m. This section lies seaward of the proposed trail. Approximately 15m is on the cliff top seaward of the proposed trail, 85m of the TRO is on the beach or in the sea due to erosion. There are current prohibitions on the use of vehicles from a point 10m from the centre of the access road at the eastern property boundary of Church Farm. Notwithstanding the TRO, a route has always been worn onto the cliff top areas, north and south from the closed road. Signs placed by the Benacre Estate informing people that they were trespassing on private land and that there is no right of public access on the cliff top.

Cliff top routes are used as far as people can easily walk them: to Long Covert in the north and through the first field to the south of Covehithe Road. Cliff top access further south is difficult and no worn routes are visible. The main access from Covehithe to the beach is on a PROW, FP1. About 60m east of Corner Cottages in Covehithe, FP1 heads south from the road for 730m until it meets the proposed trail at Green Heath.

The last few metres of the PROW has been eroded leaving an abrupt end at a high point for walkers. A permissive route has been established which brings walkers onto the beach via 200m of well walked, gently sloping compacted mud and sand through the heath. The beach is open to the public; it experiences low to medium levels of use. A large section of beach has been informally fenced to provide potential nesting sites for breeding little tern.

The beach is often the destination for people who have parked on Covehithe Road and is used by people as a place to picnic or rest. The intertidal area is also attractive for walkers to explore and enjoy. The Suffolk Coast Path does not go further seaward than Corner Cottages and doesn't reach Covehithe church – another location popular with visitors. This area is subject to high levels of erosion through coastal processes. The management of Covehithe beach for little tern using fencing can reduce the available width walkable to a narrow strip along the beach at high tide. High spring tides and/ or high winds can cause the walking area to be overtopped.

Warren House Fields is an area of rough tussocky grassland. It is separated from the beach by a small "cliff". A fence at the northern end of Warren House Fields runs perpendicular to the cliff face. There is a worn point of access at the seaward end of the fence, between the beach and the cliff top, marking the lowest point at which people can access beach/cliff top. The small climb up can be more difficult for users if the little tern fencing is positioned across the lowest point of access onto the cliff top.

Despite this obvious access point there is little sign of people using the cliff top of Warren House Fields. There is anecdotal evidence of walkers accessing the beach via Warren House from the PROW northwest of Warren House but this is only on occasion. The beach at this point also has low levels of use.

Predicted change in use of site for recreation

From The Denes to Benacre Broad, we predict a small increase in the levels of use of the trail and a negligible increase in levels of use of the margin with the advent of the ECP.

The small increase in use of the trail we anticipate is for the following reasons:

- trail improvements such as signage and vegetation clearance;
- the trail gaining promoted route status as a National Trail;
- a new route on the cliff top will be established (the re-establishment of an historical one);
- at Benacre Broad we will use existing walked routes;
- walkers may be attracted to the area and be prepared to walk further from Covehithe on the easier-to-use cliff top route.

The negligible increase in users on the margin is for the following reasons:

- small increase in numbers of trail users;
- an attractive intertidal area (although walkers are unlikely to access the seaward margin at The Denes);

- there are no prohibitions in place - apart from seasonal management for little tern and ringed plover – that will be lifted.

The predicted increases are no higher because:

- The Denes itself does not seem to attract walkers;
- the route landward at The Denes is blocked by vegetation;
- the seaward margin when the intertidal is under water is shingle which is difficult to walk on;
- there are few facilities at the location, limited to parking only at Beach Road, Covehithe at least 1.5km away and some parking (limited to a few cars) park at the junction of the track to Beach Farm and The Street, Benacre and walk towards The Denes;
- it is already well-used: approximately 14,000 walkers were logged by people counters past the Benacre Ness pumping station in 2017.

Further south through Long Covert and at Covehithe, we predict a medium increase in levels of use of the trail. We anticipate this increase on the trail, in addition to the factors outlined above, will be due to:

- a new legal right of access through the wood;
- a much sought-after legal route being re-established on the cliff top;
- the trail being easier to walk than the sand/shingle beach, especially when the beaches are being managed for little tern;
- the trail's proximity to an area used for parking used by walkers;
- previous prohibitions on the cliff top will be lifted.

We anticipate a possible increase in the use of the margin at Long Covert. Although it will not be managed for access, sections of cliff edge may appear that people may be tempted to explore from the trail.

At the next section south, covering Green Heath and Covehithe Broad, we anticipate a medium increase in levels of use on the trail and a negligible increase in levels of use in the margin, because the area is already popular with visitors in increasing numbers and the parking facilities are only about 1km away (albeit limited by the number of spaces available on the road verge).

The beach is attractive to walkers and is already often used to sit on and have picnics. Again, the beach in front of the Broad is seasonally managed for little tern which can significantly reduce the walking area available at high tides or with on-shore winds.

At Warren House Fields, the southern end of this section, the establishment of a new route will lead to a medium increase in levels of use. Although there will be some local displacement of walkers, and the area may form a popular turning point for those parked at Covehithe, we do not anticipate this will be in significant numbers. The location currently supports low levels of use, probably because there are no visitor facilities nearby and the nearest (parking only) facilities are at Covehithe, 1.5km away.

We anticipate a possible increase in the levels of use of the beach margin. This is because the cliff top part of the margin is accessible but is covered in tussocky grass which is difficult to walk on. The proposed route will result in a medium increase in levels of use which may encourage further visits to the area and to the beach part of the margin and although the beach comprises sand/shingle which is difficult to walk on, the inter-tidal area is attractive to walkers.

Little tern, ringed plover, avocet and oystercatcher are particularly sensitive to disturbance when nesting on the shingle and margins to the lagoons. Increasing access close to the shingle and barrier beaches may adversely impact on the populations, causing nests, eggs and young to be put at risk from disturbance or predation. Goshawk has been identified as being sensitive to disturbance during the breeding season. Given the distances whereby the birds may be displaced there is potential for increased access to displace nesting birds. Otters are most sensitive to disturbance by people and dogs and so may avoid areas used for access.

Mitigation measures

There is an existing restriction on the northern entry into the Benacre NNR for visitors to keep their dogs on leads between 1st March and 31st July each year to protect ground nesting birds (breeding ringed plover, oystercatcher and potential for little tern). This restriction will continue on the trail and seaward margin under ECP and will have the effect of protecting other ground-nesting birds. The landward margin will remain CROW Open Access land and current restrictions will continue.

The interpretation panel at the northern entrance to the NNR will be replaced with updated information.

A separate “dogs on leads” sign for use during the restriction period will be available for use within the restriction period at northern and southern entrances to The Denes.

A zone will be identified at both Benacre Broad and Covehithe Broad within which fencing will be erected to protect ground nesting birds (little terns). A s26 restriction of access will be applied to the fenced areas between 1st March to 31st July each year.

A sign will be replaced at Covehithe to reflect new legal protection. The access authority and the Suffolk Coast & Heaths AONB will liaise with site managers to rationalise signs where appropriate.

A warning sign about the rapidly eroding nature of the cliff top will be updated.

Signs will be displayed at suitable locations advising that dogs are not to be allowed to enter the water bodies (with the location of the nearest water body where dogs are welcome).

We conclude that with the continuation of current restrictions, updated and rationalised signage, and new zones of restricted access within which existing management can operate (see Maps D to I in the associated reports), there will be no significant impact on the overall integrity of the site and its special interest features on this section. We conclude that the measures proposed will not result in destruction of or damage to the protected features identified on this section.

Easton Wood to Southend Warren

This section of the coast path links the southern end of Covehithe Broad to the southern end of the SSSI. It takes the walker past a range of habitats including dunes, open shingle, fields, grassland, woodland and saline lagoons.

Ground-nesting birds are particularly sensitive to disturbance when nesting on the shingle and margins to the lagoons. Goshawk has been identified as being sensitive to disturbance during the breeding season. Otters are most sensitive to disturbance by people and dogs.

Current access provisions and use of site for recreation

There is no current legal access through Easton Wood. However, there are access points via the track from a PROW, past Warren House into the wood and an access point (for walkers) into the wood at the southern end of the unit from Easton Broad. But tracks through the wood going north to south are difficult to see or follow as people successfully gain such access in insufficient numbers. Signs have clearly been displayed to ward walkers away from the wood which is marked as ‘Private Benacre Estate land’. The main access near the site is on the beach, which, although it is sand/ shingle and difficult to walk on, has low levels of use.

People walk along the beach at Easton Broad. Its northern edge is about 2km from Covehithe to the north; its southern edge is about 2.4km from Southwold in the south. There is management of the beach for little tern: electric fencing and a buffer post and rope fence. The location of the fence can impede access onto the beach; the fence can occupy the higher ground that walkers need to use at high tides and at times of strong on-shore winds. There are currently low levels of use on the beach.

A worn path is walked from the beach at Easton Broad via a footbridge over the Easton Broad outflow pipe up onto North Warren. The footbridge can be completely covered in sediment on this dynamic section of beach. The water flow seaward of the pipe can flow at fast rates; there is a sign warning people on the beach of this, encouraging them to use the footbridge rather than walking seaward of it. The path continues south until it crosses a low point at North Warren Marshes. People freely use the beach area and often sit near the base of the low cliff to enjoy the beach with a level of shelter.

There is a worn route which leaves North Warren (part of Easton Cliffs) at the southern end of the unit and enters North Warren Marshes on lower ground. Vegetation is sparse; the terrain is soft shingle and difficult to walk on, but only for a short distance; it marks the main way to easily connect North Warren and Easton Bavents Cliffs. The beach is open to the public. There are low current levels of use on the trail and margin area at this location, too.

Local people drive down Easton Lane, a private road, and park in an unofficial parking area, seaward of no. 3 East End Cottages. It has a capacity for about 6-8 cars. From here, walkers follow the line of the proposed trail along the top of Easton Cliffs on the seaward headland of an arable field. There are occasional levels of use via Easton Lane. The landowner has recently prevented such access but it is not known how frequently this occurs or what impact it has had on local use of the area.

The private status of Easton Bavents Cliffs is robustly defended; the public are actively dissuaded with a number of signs and personal communications with walkers. However the cliff top remains an attraction for walkers who are prevented from using the beach for walks north from Southwold as it is frequently covered by the sea. The Environment Agency have an installation of rock armour near the cliffs which is very difficult to surmount; access over the rocks is strongly discouraged by the Environment Agency as they can be slippery and uneven and the structure as a whole is designed to be flexible and move. When it is available, the beach is popular and is the main destination for those from Southwold and from Easton Lane. There are usually low levels of use of

the beach which increases to medium levels when the beach is available.

Predicted change in use of site for recreation

We anticipate there will be a small increase in the level of use of the trail with the advent of ECP. This is because:

- a new legal route will be created;
- walkers currently using the beach may be attracted to use the trail;
- vegetation will be cleared and the route well signed; and
- the trail gains promoted route status by becoming a National Trail.

We do not anticipate a higher increase because:

- there are no visitor facilities at Easton Wood;
- there is limited parking available 1.7km away (from the north edge of Easton Wood) at Covehithe;
- facilities (paid parking, toilets and refreshments) are available in Southwold are 3.2km to the south;
- the location attracts fewer walkers than nearer to Covehithe.

Further south of this location, walkers are a greater distance from car parking facilities. For locals aware of it, there is unofficial parking at the seaward end of Easton Lane about 1km away and de facto access northwards, along the cliffs to the beach. However, the landowner does block the use of this unofficial parking area sometimes. We anticipate the small increase in level of use to continue on this section with the advent of ECP.

As the trail heads south, we anticipate there will be a medium increase in the level of use of the trail with the advent of ECP. As it heads closer to Southwold, more people will be tempted to take advantage of new legal rights of access on the cliff top at Easton Bavents.

The local population is predicted to remain fairly constant, but as the trail heads south, closer to Southwold, the new proposed legal rights would create a much sought-after cliff top route, especially as the beach option is so frequently inundated. At the section of the designated site where Southwold is only 0.6-1.8km away from the trail, we anticipate a large increase in the levels of use of the trail with the advent of ECP.

In relation to the margin, there are no prohibitions which are being lifted through the ECP on the beach. Seasonal little tern fencing can reduce the walkable width on the beaches which are not passable at all states of the tide or with strong on-shore winds. At such times an Optional Alternative Route will be available. On the cliff top, vegetation largely impedes access on the seaward side of the trail but there are sections where the vegetation is sparser and walkers may be tempted to access a sea view.

The sections of low-lying cliff are used by some walkers to sit on. Soft sand and shingle on the beach part of the margin are difficult to walk on. We anticipate a negligible increase in levels of use with the advent of ECP.

Further south towards Southwold, the new rights on the cliff top may make the use of the margin for a circular walk more likely. The intertidal area remains attractive to walkers in any event so we anticipate a possible increase in the levels of use of the margin at this southern section.

Possible risks to sensitive features

Little tern, ringed plover, avocet and oystercatcher are particularly sensitive to disturbance when nesting on the shingle and margins to the lagoons. Increasing access close to the shingle and barrier beaches may adversely impact on the populations, causing nests, eggs and young to be put at risk from disturbance or predation.

Goshawk has been identified as being sensitive to disturbance during the breeding season. Given the distances at which the birds may be displaced there is potential for increased access to displace nesting birds.

Otters are most sensitive to disturbance by people and dogs and so may avoid areas used for access.

Mitigation measures

Within Easton Wood for approximately 500m north to south, stock fencing (slightly higher than standard height) will be installed, screened by a brushwood fence, all about 50m landward of the trail. This is to prevent dogs accessing the woods and disturbing goshawks.

A zone will be identified on Easton Broad within which seasonal fencing may be erected between 15th March and 31st August each year. An s26 restriction of access within the fenced areas will be

applied to back up this management practice and an alternative route seaward of the fenced area will be signed.

National Nature Reserve site wardens currently prefer to erect their own signs requesting visitors put their dogs on leads as required. Signs will be displayed at suitable locations advising that dogs are not to be allowed to enter the water bodies (with the location of the nearest water body where dogs are welcome).

We conclude that the measures identified, that is: fencing in Easton Woods, and a mapped zone across which fencing may be erected with restriction of access under s26 at Easton Broad, will ensure that there will be no destruction of or damage to protected features at this location.

Optional Alternative Route (OAR) around Easton Broad

The concerns here are based on the risk of damage to the breeding bird assemblage of open water and their margins interest, and otter. The breeding bird assemblage features assessed in this NCA are water rail and bearded tit. These features are vulnerable to the effects of public access due to the disturbance of breeding behaviours where the public can be visible. There are concerns about birds being impacted by the walkers along the reedbed edge on the field margin.

Specialist advice was sought on the likely impacts on the bird interests; evidence suggests disturbance does not in and of itself mean that an area will be abandoned. The frequency and duration of that disturbance is important in the bird's determination of the usefulness of that area to them. Species breeding in reedbeds, whilst alert responses may be induced, are more likely to sit tight and therefore during incubation at least not expose eggs to increase risk of predation, exposure etc.

Note that marsh harrier are known to be far ranging in their foraging.

Current access provisions and use of site for recreation

There is no current legal access through Easton Wood. However, there are access points via the track from Warren House into the wood which walkers occasionally use, and an access point for walkers into the wood at the southern end of Easton Wood from Easton Broad. Although these paths and tracks are occasionally used by members of the public, no legal rights exist.

North to south tracks on the cliff through the wood are difficult to see or follow as few people seem successfully to have established access. Signs have been clearly displayed to ward walkers away from the wood which is marked as private land by the Benacre Estate. However recently, an area of woodland forming a track has been cleared through the wood.

There are PROW footpaths (FP008 and FP002), and Byways (005, 006 and 011) landward of Easton Broad. The PROWs follow tracks or arable headlands and can be accessed from the main trail via the track past Warren House. The southernmost footpath, FP8, at the north edge of Pottersbridge Marshes exits onto the Lowestoft Road. 600m south of this FP18 heads west from Lowestoft Road. Byway 11 heads east from Lowestoft Road and starts 400m to the north of FP8. FP8 crosses the unit boundary and enters the marshes, winding through the reed beds on a boardwalk which does not accurately follow the definitive line. During the 2013 tidal surge, the boardwalk was shifted out of position and is currently in need of repair. The path has been closed by the access authority pending works which has impacted on the number of walkers able to use the route. It is not just during surge tides that the boardwalk is vulnerable. Regular flooding of the marshes (and the boardwalk) occurs, about monthly. This is due to sediment deposited by wave action blocking the Easton Broad outflow pipe which serves to drain the marshes into the sea. These events are frequent enough for the Environment Agency to permanently base a digger on site to clear such blockages, when reported.

The Suffolk Coast Path is about 1.75km further inland at this point and is up to about 3.3km landward of the coast as the crow flies along this section. There is occasional use of these PROWs: they are difficult to access on foot and there are few places to park a car nearby. The Optional Alternative Route may be attractive for the following reasons:

- a new legal route is created with trail improvements (waymarkers, small improved section of boardwalk near the road) where there currently is no public access;
- there will be a spot on the OAR with good views across the marshes;
- OAR gains promoted route status by becoming part of a National Trail;
- there are long sections of easy-to-walk, well-maintained tracks;
- it presents a drier option for walkers rather than the main trail.

There are also predicted increases in the number of visitors to the area. But:

- the route is only legally available from the trail when the main trail is unsuitable. This varies from 1 or 2 hours at high spring tides in winter, to several weeks on end when there has been a breach (as seen June 2017);
- it creates 2.1km to 3.9km of extra walking for those using it instead of the main trail;
- the section next to the southern edge of the Marshes is on an arable headland at the bottom of a small hill;
- it does not give sea views and takes people away from their main reason for visiting the area, i.e. to visit the beach and to be close to the sea;
- ECP walkers are 2.8km from Covehithe (for parking only facilities) or 1.3km from Lowestoft Road to the south; the closest property in Reydon is 1.4km away via the Lowestoft Road or 2.5km away via FP22 and FP1 north of Bridgefoot, Reydon Common and Easton Marshes;
- the OAR leads to Lowestoft Road, a class B road with a national speed limit of 60mph and with variable verge width for walkers to use;
- the hard standing at the Environment Agency compound on Lowestoft Road is too small to accommodate more than a couple of vehicles. Easton Lane informal car parking area east of East End Cottages, already attracts locals and can fit 6-8 cars; local people use this to access the beach although the landowner has recently started to discourage this;
- Natural England have the option to ask the Ordnance Survey not to depict the OAR on their mapping systems so that it is only those on the ground who may need it will be aware of its existence.

We anticipate that there will be a small increase in the level of use of this route with the advent of ECP.

There is no current public access to the south side of the valley. There is a risk that people using the new route or by accessing the reedbeds may disturb breeding bird interests. One section affords a good view across the marshes and may tempt walkers to stop which may disturb breeding birds.

Between the arable field and the southern edge of the marshes, the walker is separated by a line of mature hedging which becomes patchier in nature as one heads towards the coast. Beyond the hedge line is an area of overgrown grassland which is the probable location of the track shown on OS maps but which is not visible on the ground. The hedge and mature grassland form a barrier between walkers and their dogs.

Beyond this, there are extensive areas of reedbed within Pottersbridge Marshes and no open marsh habitat close to the proposed route such as that found at Dingle Marshes. At Dingle Marshes, marsh harrier feed in an area with many well-used public footpaths. The presence of reedbed reduces the potential for disturbance. The proposed OAR passes through mature vegetation on the north side of the marshes, just inside the northern boundary of the NNR. The spatial location of previous nests is found in the attached confidential annex but is further evidence of the low likelihood of disturbance by walkers due to recent patterns of nesting. Concerns are focused on the potential for walkers to stop (e.g. to picnic) for longer lengths of time which may create a greater risk of disturbance to feeding marsh harrier.

Mitigation measures

The main trail occupies the high point of the beach. When the fencing to protect ground nesting birds is in place, it could occupy some or all of the ground over which the trail runs. In these circumstances, a signed alternative route seaward of the fencing will be put in place to direct walkers seaward of the seaward side of the line of fencing.

Dog walkers will be requested to put their dogs on a lead past the fencing.

When the main trail or the alternative route are unsuitable for the public to use because of flooding, tidal action, coastal erosion or other geomorphological processes available, an optional alternative route (OAR) may be used.

We have identified a potential issue with breeding marsh harriers being disturbed by the introduction of access use here, so we are taking the precautionary approach of installing screening through planting of naturally occurring species (e.g. gorse, bramble, hawthorn, willow whips) in the hedge gaps and along the field edge. In addition:

- The Access Authority will monitor the establishment of planted and built screening;
- Natural England will request that the OAR is not depicted on OS mapping products so that only those needing to use it on the ground will be made aware of it;
- a new gate will be installed as part of the establishment works at the Lowestoft Road, southern edge of Pottersbridge Marshes. A sign on/ near the gate will explain the legal circumstances under which the OAR may be used and that dogs are to be kept under control and not to enter waterbodies (and state nearest water body where dogs are welcome);
- signage of the OAR from Easton Broad could encourage use of the OAR when the main trail is suitable for use. So information about the OAR will be located near Easton Broad outflow

pipe. Walkers can then choose whether to continue their onward route on the main trail, or use the alternative option if it is in operation, or consider whether they need to retrace their steps for 600m and use the OAR;

- the "gateway" to the OAR from the seaward side to be carefully designed so as not to attract illegal use and will include appropriate signage including about dogs being kept under control and dogs to be kept clear of water bodies (plus location of nearest water body where dogs are welcome).
- On the beach just north of where the OAR meets the trail at the southern end, a zone will be identified within which temporary fencing may be erected to protect shore nesting birds from disturbance by walkers and their dogs. This will be re-enforced with a s26 restriction of access under CROW Act 2000 which will be placed within the fenced areas between 15th March and 31st August each year.

North edge of Pottersbridge Marshes

A PROW footpath currently runs through the reedbed on a boardwalk at the northern edge of the marshes. To avoid any additional disturbance to nesting marsh harrier at Easton Broad OAR, the OAR has been routed at the northern edge of the designated site on the northern edge of Pottersbridge Marshes. It may be possible in the future to divert the prow onto the OAR to reduce impacts on the designated features of the SPA and SAC. The OAR is proposed on the northern edge of mature hedging so that the hedging will be between walkers and the marshes.

Mitigation measures

The narrow-mouthed whorl snail *Vertigo angustior,* a s41 species, is present in the Easton Marshes in the vicinity of sections AHS-4-OA005 to AHS-4-OA007. During establishment, the construction work itself, tracking of machinery, stacking of materials, trampling, oil leakage (an environmental statement should have procedures in place to prevent the latter anyway) all need to be controlled and areas of suitable looking habitat avoided, i.e. short, damp, open swards. Removing turves at risk will only be worthwhile if it is suitable looking habitat; this will not be necessary where there is just a Phragmites habitat as it is not suitable for the species. And any turves that are lifted need to be placed in an area of suitable hydrology and other environmental conditions for their long term survival in the new location.

The alignment on this part of the OAR, proposed by the reserve manager, will involve a de minimis area of habitat removal. An audit will be conducted by a specialist on the proposed line of the boardwalk, for example by hand searching (by beating vegetation into a tray), lifting handfuls of litter and shaking it off into a tray or suction/vacuum collection and tipping the contents of the net into a tray for examination to detect the presence of the species (a viable option in the autumn). Suction vacuuming is a way in itself of actually removing the snails (and other invertebrates) if there is a small area of suitable looking habitat at risk, and then placing the animals in suitable habitat elsewhere which should be close by on the same site to reduce attendant risks associated with translocations.

The same principles apply to reducing impacts on any suitable looking habitat in the vicinity of the scrub clearance. However, reducing shading would be beneficial to the snail on the whole as it helps keep an open sward. The vegetation that follows is key: if afterwards it becomes colonised by Phragmites then it is likely to be too wet for this feature.

We conclude that with the measures identified prior to and during establishment, there will be no destruction of or damage to the special interest features on this section.

Establishment works

Is SSSI assent needed to implement any specific proposals for establishment works? Yes

If yes, describe any special conditions that have been identified concerning how or when the works are to be carried out:

Once approval for a coastal access report is received from the Secretary of State, any necessary works can be carried out on the ground to make the trail fit for use and prepare for opening. Works on the ground will be conducted in accordance with the scheme in operation by Natural England at the time.

An estimate of the total cost of works needed to establish the trail is given in our coastal access report for the stretch. The cost of establishment works will be met by Natural England.

The person or organisation conducting works is/are responsible for ensuring they take appropriate steps to protect sensitive features whilst works on the ground are carried out, in line with any recommendations or conditions agreed in advance.

We have held preliminary discussions with Suffolk County Council about the works required and believe that it is feasible for them to be carried out without adverse effect on the designated sites considered in this appraisal. This is on the basis that the following special conditions are observed:

Legally protected species are an important consideration where works involve the destruction or maintenance of existing features, or the construction of new features. Where these species are known to be present, or are likely to be, any works carried out should include appropriate mitigation in line with legislative guidelines.

The main considerations with regard to protected sites and species, and on-site working methods, are summarised in the bullet points and table below.

- European Protected Species are those species of plant and animal listed in Annex IV to EC Directive 92/43/EEC ('the Habitats Directive). For a complete list of European Protected Species in England & Wales refer to Schedules 2, 4 and 5 of the Conservation of Habitats & Species Regulations 2010.

- The Wildlife and Countryside Act 1981, as amended, affords protection to wild birds, their eggs, young and nests (the latter whether complete or under construction). Those listed in

Schedule 1 of the 1981 Act receive additional protection against intentional or reckless disturbance while they are nest building or at a nest containing eggs or young. Dependant young are also protected from intentional or reckless disturbance. The timing of any works on habitats which may support birds (particularly breeding birds), and the methodologies employed, should take these factors into account.

- Plants and animals included in Schedules 5 & 8 of the Wildlife and Countryside Act 1981 (as amended) are protected from killing or injuring, and protection may also apply to their place of shelter.

- Badgers and their setts are protected under the Protection of Badgers Act 1992. Under the '92 Act it is an offence to damage, destroy or obstruct a badger sett, or to disturb a badger when it is occupying a sett.

- All bat species, their breeding sites and resting places are fully protected by law and they are European protected species. The presence of bats is often overlooked and it should be remembered that they inhabit crevices in tree trunks and branches as well as built structures (both above and below ground). Where there is uncertainty about their presence, surveys should be carried out beforehand by suitably qualified individuals.

- Activities which may affect any of the above species may require a licence from Natural England's licensing team, from which advice should be sought, as appropriate.

Where necessary, Suffolk County Council or another Natural England approved person or organisation will instigate the SSSI consent/assent process by writing to us to confirm the timing of works and how operations to be undertaken in line with these conditions. Natural England will provide further advice as necessary.

Conclusion

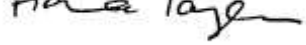
We, Natural England, are satisfied that our proposals to improve access to the English coast between Southwold and Pakefield (Report AHS 4) are fully compatible with our duty to further the conservation and enhancement of the notified features of Pakefield to Easton Bavents SSSI consistent with the proper exercise of our functions[4].

In respect of all features we are satisfied that in developing the new access proposals the appropriate balance has been struck between Natural England's conservation and access objectives, duties and purposes.

If our proposals are agreed by the Secretary of State and after commencement of the coastal access rights, further restrictions, exclusions or temporary routes may be necessary locally, if situations arise that could not be foreseen initially. People with a legal interest in the land will have powers to apply to us later for directions to restrict or exclude access, and can appeal to the Secretary of State against our decision if they disagree with it.

See also, where relevant, the conclusions of the separate HRA relating to common features.

The conclusions of this assessment have been checked by:

	6 Jan 2020	On behalf of the Coastal Access Programme Team
	6 Jan 2020	Senior Officer with responsibility for protected sites
	6 Jan 2020	Stretch lead Aldeburgh to Hopton-on-Sea

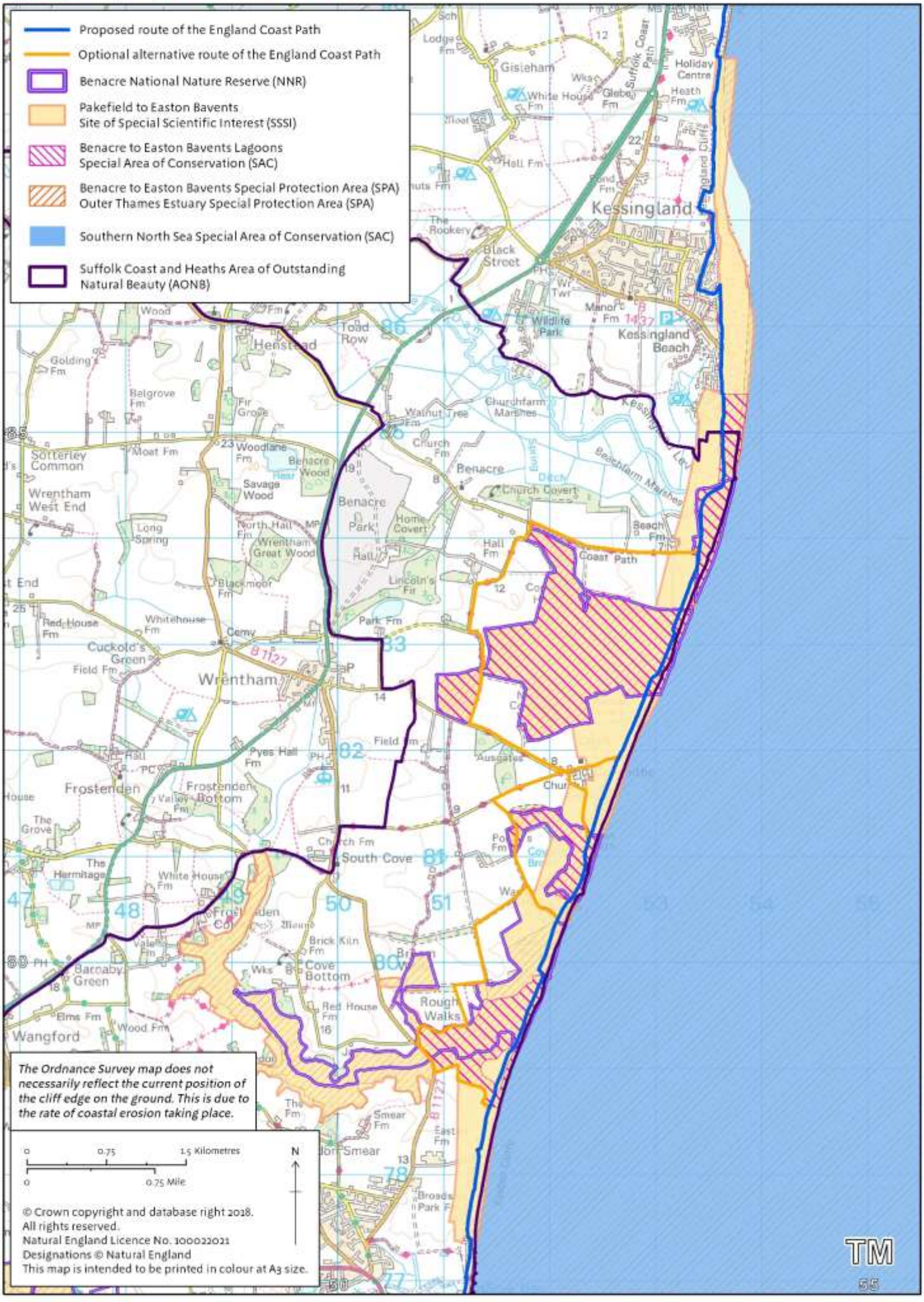
[4] Natural England's functions includes its balanced general purposes for access, nature conservation and landscape under the NERC Act 2006, any specific statutory duties it may have to deliver specific improvements to public access, and the access-related policies and priorities it periodically agrees with Defra.

Coastal Access - Aldeburgh to Hopton-on-Sea - Natural England's Proposals

Coastal Access: Emerging access proposals

Key designations - Pakefield to Easton Bavents

Figure 1



Key designations - Pakefield to Easton Bavents

Coastal Access - Aldeburgh to Hopton-on-Sea - Natural England's Proposals

Coastal Access: Emerging access proposals

Key designation - Benacre National Nature Reserve (NNR): South

Key designation - Benacre National Nature Reserve (NNR): South

Coastal Access - Aldeburgh to Hopton-on-Sea - Natural England's Proposals

Coastal Access: Emerging access proposals

Key designation - Benacre National Nature Reserve (NNR): North

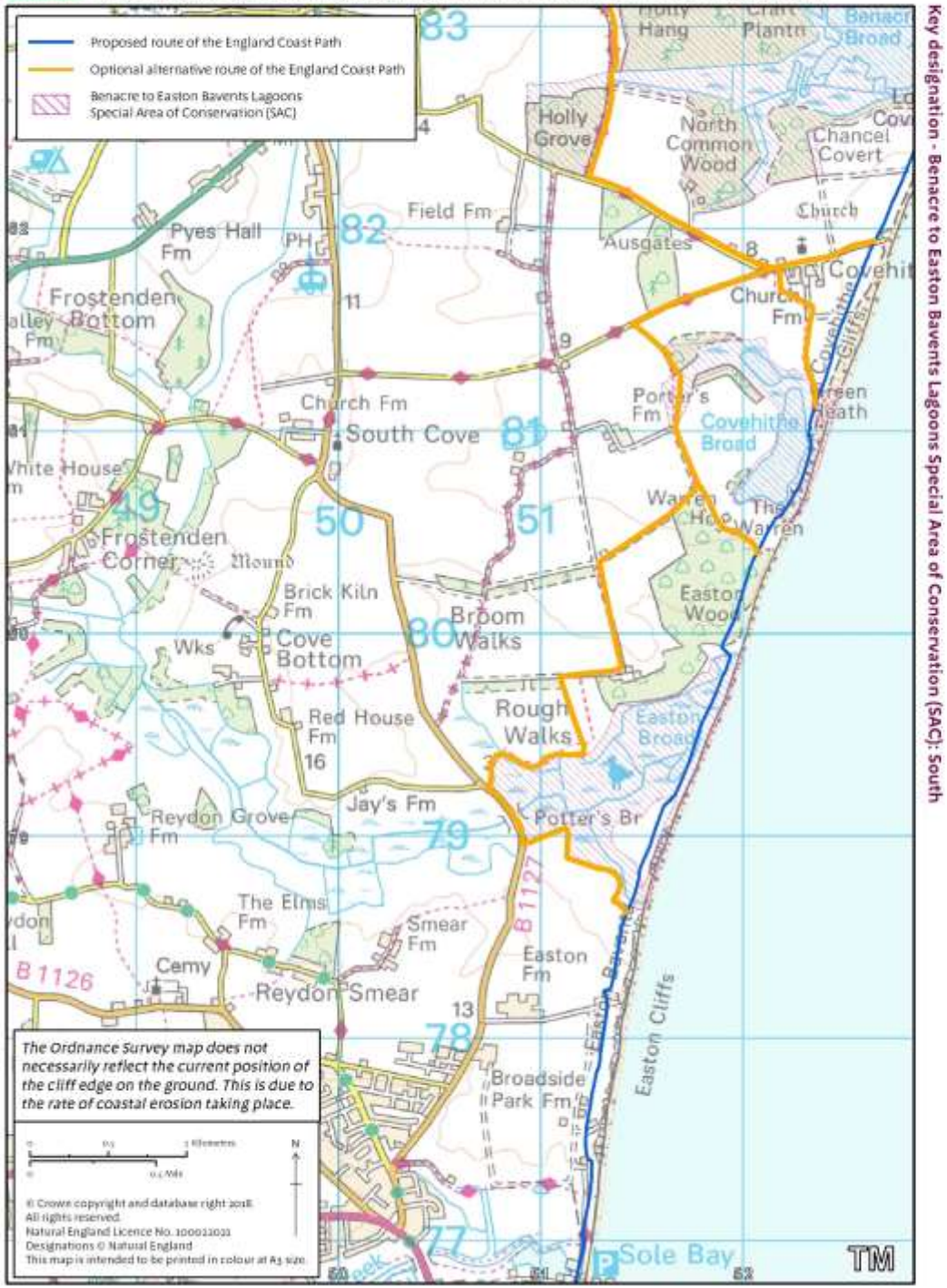
Figure 2

Key designation - Benacre National Nature Reserve (NNR): North

Coastal Access - Aldeburgh to Hopton-on-Sea - Natural England's Proposals

Coastal Access: Emerging access proposals

Key designation - Benacre to Easton Bavents Lagoons Special Area of Conservation (SAC): South



Key designation - Benacre to Easton Bavents Lagoons Special Area of Conservation (SAC): South

Coastal Access - Aldeburgh to Hopton-on-Sea - Natural England's Proposals

Coastal Access: Emerging access proposals

Key designation - Benacre to Easton Bavents Lagoons Special Area of Conservation (SAC): North

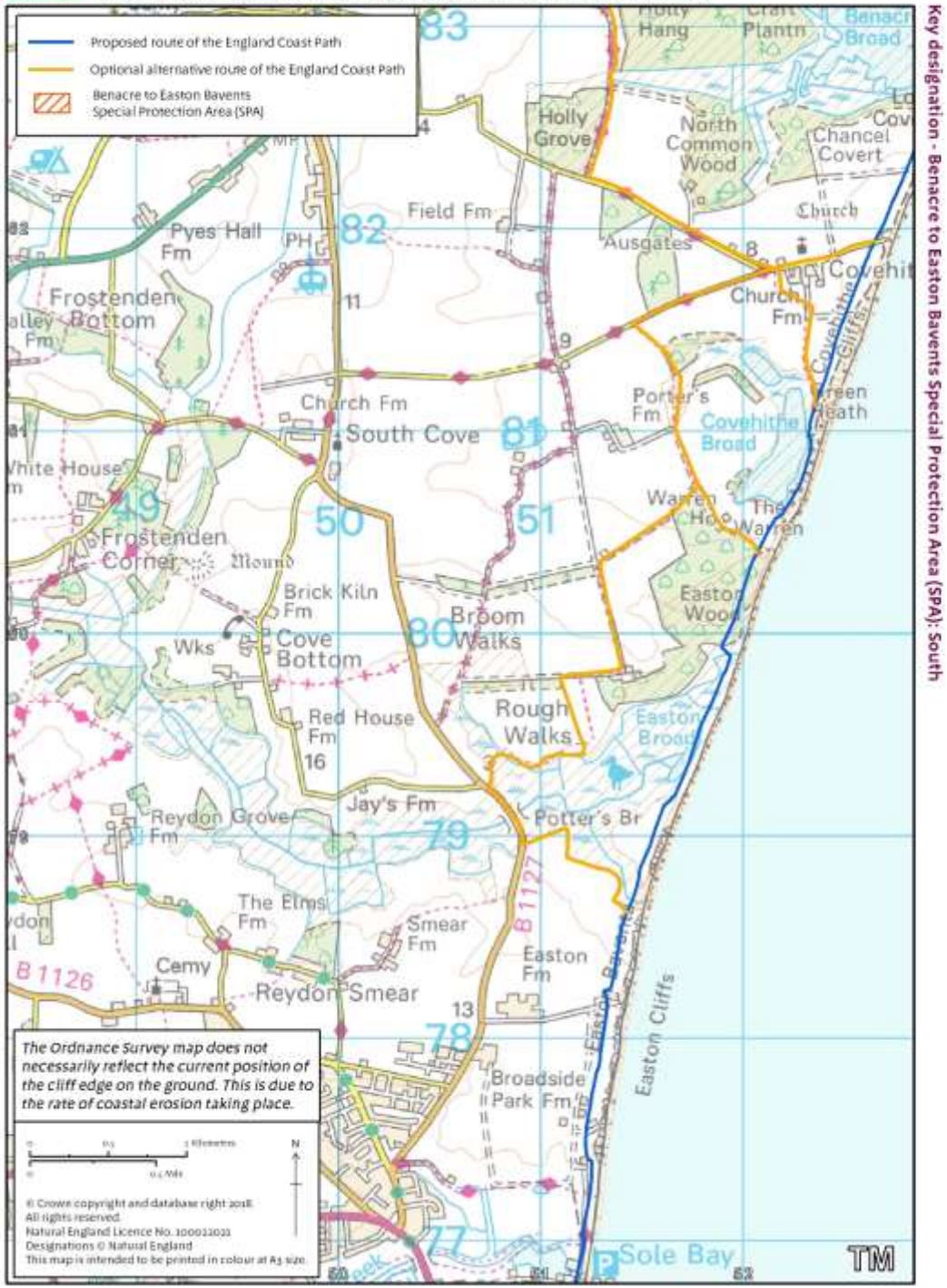
Figure 3

Key designation - Benacre to Easton Bavents Lagoons Special Area of Conservation (SAC): North

Coastal Access - Aldeburgh to Hopton-on-Sea - Natural England's Proposals

Coastal Access: Emerging access proposals

Key designation - Benacre to Easton Bavents Special Protection Area (SPA): South



Key designation - Benacre to Easton Bavents Special Protection Area (SPA): South

Coastal Access - Aldeburgh to Hopton-on-Sea - Natural England's Proposals

Coastal Access: Emerging access proposals

Key designation - Benacre to Easton Bavents Special Protection Area (SPA): North

Figure 4

Key designation - Benacre to Easton Bavents Special Protection Area (SPA): North

Coastal Access - Aldeburgh to Hopton-on-Sea - Natural England's Proposals

Coastal Access: Emerging access proposals

Key designation - Pakefield to Easton Bavents Site of Special Scientific Interest (SSSI): South

Key designation - Pakefield to Easton Bavents Site of Special Scientific Interest (SSSI): South

Coastal Access - Aldeburgh to Hopton-on-Sea - Natural England's Proposals

Coastal Access: Emerging access proposals

Key designation - Pakefield to Easton Bavents Site of Special Scientific Interest (SSSI): North

Figure 5

Key designation - Pakefield to Easton Bavents Site of Special Scientific Interest (SSSI): North

References

BTO, *BirdTrack data October 2019*. Records of individual bird species at key sites, 2019.

BURGESS, N.D., EVANS, C.E. and SORENSEN, J., *The management of lowland heathland for nightjars at Minsmere, Suffolk, Great Britain*. Pages 351-359 Journal of Environmental Management, 1990.

COUNTRYFILE online article, '*RSPB Minsmere visitor numbers up thanks to Springwatch*', 2014. Available from: http://www.countryfile.com/news/rspb-minsmere-visitor-numbers-thanks-springwatch

EAST SUFFOLK COUNCIL, *Habitat Mitigation* webpage. Available from: https://www.eastsuffolk.gov.uk/planning/s106/habitat-mitigation/

EAST SUFFOLK COUNCIL *Local Plan - Final Draft, Jan 2019*. Available from: https://www.eastsuffolk.gov.uk/assets/Planning/Suffolk-Coastal-Local-Plan/Final-Draft-Local-Plan/Final-Draft-Local-Plan.pdf

EAST SUFFOLK COUNCIL, *Suffolk Coast Recreational Disturbance Avoidance Mitigation Strategy Q&A*. Available from: https://www.eastsuffolk.gov.uk/assets/Planning/Section-106/Habitat-mitigation/Suffolk-Coast-Recreational-Disturbance-Avoidance-Mitigation-Strategy-FAQ.pdf

EAST SUFFOLK COUNCIL, *Waveney Local Plan*. Available from: https://www.eastsuffolk.gov.uk/planning/planning-policy-and-local-plans/waveney-local-plan/ , 2019.

ENVIRONMENT AGENCY, *Coastal Morphology Report Southwold to Benacre Denes (Suffolk) RP016/S/2010 March 2010*, 2010. Available from: https://www.channelcoast.org/anglia/analysis_programme/Coastal%20Morphology%20Report%20Southwold%20to%20Benacre%20Denes%20Suffolk%20RP016S2010.pdf

ENVIRONMENT AGENCY, *Minsmere Flood Risk Management Strategy*, 2009. Available from: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/289667/gean0109bpfi-e-e.pdf

HOSKIN, R., LILEY, D. & PANTER, C. *Habitats Regulations Assessment: Recreational Disturbance Avoidance and Mitigation Strategy for Ipswich Borough, Babergh District, Mid Suffolk District and East Suffolk Councils – Technical Report*. Footprint Ecology, 2019

JNCC, *Benacre to Easton Bavents Lagoons Designated Special Area of Conservation (SAC)* https://sac.jncc.gov.uk/site/UK0013104

JNCC, *Natura 2000 Standard Data form for Minsmere-Walberswick SPA, UK9009101.* JNCC, 2016. Available from: http://archive.jncc.gov.uk/pdf/SPA/UK9009101.pdf

JNCC, *Seabird Monitoring Programme Online Database*. Available from: http://archive.jncc.gov.uk/smp/

NATURAL ENGLAND, *Benacre to Easton Bavents SPA Site Improvement Plan (SIP015)*. Natural England, 2015.

NATURAL ENGLAND, *Coastal Access Natural England's Approved Scheme 2013*. Natural England Catalogue Code NE446, 2013. http://publications.naturalengland.org.uk/publication/5327964912746496?category=50007

NATURAL ENGLAND COMMISSIONED REPORT NECR012: *Scientific research into the effects of access on nature conservation: Part 1: access on foot*. Natural England, 2009.

NATURAL ENGLAND *Designated Sites View Minsmere-Walberswick Heaths and Marshes SSSI* https://designatedsites.naturalengland.org.uk/SiteDetail.aspx?SiteCode=S1000721&S

NATURAL ENGLAND *Designated Sites View Pakefield to Easton Bavents SSSI* https://designatedsites.naturalengland.org.uk/SiteDetail.aspx?SiteCode=S2000508&SiteName=benacre&countyCode=&responsiblePerson=&SeaArea=&IFCAArea=

NATURAL ENGLAND, *European Site Conservation Objectives for Minsmere-Walberswick SPA (UK9009101*). Natural England, 1991.

NATURAL ENGLAND, *European Site Conservation Objectives for Minsmere to Walberswick Heaths & Marshes SAC (UK0012809).* Natural England, 2014.

NATURAL ENGLAND, *European Site Conservation Objectives for Outer Thames Estuary SPA (UK9020309)*. Natural England, 2019.

NATURAL ENGLAND, *Information Note EIN030. Marine recreation evidence briefing: wildlife watching*, 2017. Available from: http://publications.naturalengland.org.uk/category/4891006631149568

NATURAL ENGLAND, *Information Note EIN034. Marine recreation evidence briefing: general beach life*. Available from: http://publications.naturalengland.org.uk/category/4891006631149568 , 2017.

NATURAL ENGLAND, *Minsmere to Walberswick Heaths Site Improvement Plan (SIP139).* Natural England, 2014.

NATIONAL TRUST online article *'Rare birds breed for first time at Dunwich Heath'* , 2017. Available from: https://www.nationaltrust.org.uk/dunwich-heath-and-beach/news/rare-birds-breed-for-first-time-at-dunwich-heath

NATIONAL TRUST, *A WOOF Guide to Dunwich Heath. A precious landscape on the Suffolk coast*, online campaign leaflet. Available from: https://nt.global.ssl.fastly.net/dunwich-heath-and-beach/documents/dunwich-heath-woof-guide.pdf

PLANTLIFE Webpage '*Red-tipped cudweed Filago lutescens'* Available from: https://www.plantlife.org.uk/uk/discover-wild-plants-nature/plant-fungi-species/red-tipped-cudweed

RARE BIRD ALERT online article *Sandwich Terns breed at Minsmere for first time in four decades*, 2017. Available from: https://www.rarebirdalert.co.uk/v2/Content/RSPB-Sandwich-Terns-breed-at-Minsmere-for-first-time-in-four-decades.aspx?s_id=93583808

ROWLANDS, Adam, "*Great bird reserves: RSPB Minsmere*", *British Birds*, 2017. Available from: https://britishbirds.co.uk/wp-content/uploads/2017/06/Aug-17-final-1.pdf

RSPB, *Annual Little Tern Newsletter 2018*, 24th edition. *LIFE Little Tern Recovery Project,* 2018.

SUFFOLK BIODIVERSITY INFORMATION SERVICE Newsletter article: '*Lots of Good Terns at RSBP Minsmere'* by Ian Barthorpe, RSPB Minsmere. (SBIS) 2019. Available from: https://issuu.com/suffolknaturalistssociety/docs/sbis_newsletter_summer_2019_final

THE SUFFOLK COASTS AND HEATHS AONB, *Projects and Partnerships.* Available from: http://www.suffolkcoastandheaths.org/projects-and-partnerships/

THE SUFFOLK COASTS AND HEATHS AONB, *"Balance" webpage* Available from: http://www.suffolkcoastandheaths.org/projects-and-partnerships/balance/

SUFFOLK COASTAL DISTRICT COUNCIL/WAVENEY DISTRICT COUNCIL/ENVIRONMENT AGENCY, 2010. *Shoreline Management Plan 7 Lowestoft Ness to Felixstowe Landguard Point. (Previously Sub-cell 3c)*. Available from http://www.suffolksmp2.org.uk/index.php

SUFFOLK ORNITHOLOGIST'S GROUP, *Suffolk Birds Volume 67: A review of birds in Suffolk in 2017*. Suffolk Naturalists Society, 2018.

SUFFOLK ORNITHOLOGIST'S GROUP, *Suffolk Birds, Volume 66: A review of birds in Suffolk in 2016*. Suffolk Naturalists Society, 2017.

SUFFOLK WILDLIFE TRUST, *Dingle Marshes Nature Reserve*, 2019. Available from: https://www.suffolkwildlifetrust.org/dinglemarshes

TOUCHING THE TIDE Webpage. Available from: http://www.touchingthetide.org.uk/touching-the-tide/

UK CEED, *A review of the effects of recreational interactions within UK European marine sites. Countryside Council for Wales (UK Marine SACs Project) Section 'Erosion from land-based recreation'*, 2000. Available from: http://www.ukmarinesac.org.uk/activities/recreation/r05_02.htm

URS (on behalf of Suffolk Coast and Heaths AONB Partnership and the Suffolk Coast Destination Management Organisation), *The Suffolk Coast Tourism Strategy 2013 – 2023*. 2013. Available from http://www.suffolkcoastandheaths.org/assets/Projects--Partnerships/BALANCE/TourismStrategy.pdf

VISITENGLAND online document. Available from: https://www.visitbritain.org/sites/default/files/vb-corporate/Documents-Library/documents/England-documents/most_visited_paid_east_2016.pdf

Glossary of terms

AONB	Area of Outstanding Natural Beauty
CROW	Countryside and Rights of Way Act 2000 (CROW)
ECP	England Coast Path
GCR	Geological Conservation Review
HRA	Habitats Regulations Assessment
MCZ	Marine Conservation Zones
NCA	Nature Conservation Assessment
PROW	Public Right of Way
SAC	Special Area of Conservation
SPA	Special Protection Area
SSSI	Sites of Special Scientific Interest