Habitats Regulations Assessment of the Broads Plan

Report to Inform the Habitats Regulations Assessment

April 2022

Draft

LEPUS CONSULTING
LANDSCAPE, ECOLOGY, PLANNING & URBAN SUSTAINABILITY

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Habitats Regulations Assessment of the Broads Plan Consultation of Draft Plan

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Contents

List of Figures

List of Tables

Abbreviations

AA	Appropriate Assessment
AADT	Annual Average Daily Traffic
APIS	Air Pollution Information System
AWS	Anglian Water Services
CJEU	Court of Justice of the European Union
CIEEM	Chartered Institute of Ecology and Environmental Management
DfT	Department for Transport
DMRB	Design Manual for Roads and Bridges
DTA	David Tyldesley and Associates
GI	Green Infrastructure
HDV	Heavy Duty Vehicles
HRA	Habitats Regulations Assessment
IAQM	Institute of Air Quality Management
IRZ	Impact Risk Zone
IUCN	International Union for Conservation of Nature
JNCC	Joint Nature Conservation Committee
LPA	Local Planning Authority
LSE	Likely Significant Effect
LTP	Local Transport Plan
NBP	Norfolk Biodiversity Partnership
NE	Natural England
NSPF	Norfolk Strategic Planning Framework
pSAC	Possible / proposed Special Area of Conservation
pSPA	Potential Special Protection Area
RAMS	Recreational Impact Avoidance Mitigation Strategy
RBMP	River Basin Management Plan
RSPB	Royal Society for the Protection of Birds
SAC	Special Area of Conservation
SANG	Suitable Alternative Natural Greenspace
SIP	Site Improvement Plan
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest
SuDS	Sustainable Urban Drainage
WFD	Water Framework Directive

WMS	Waterways Management Strategy
WRMP	Water Resources Management Plan
WRZ	Water Resource Zone
WwTW	Wastewater Treatment Works
ZoI	Zone of Influence

1 Introduction

1.1 Background

1.1.1 The Broads Authority is a Special Statutory Authority established under the 1988 Norfolk and Suffolk Broads Act. The Act places a requirement on the Authority to produce a Management Plan for the Broads and to review it at least once in every five years. The existing Broads Plan was adopted in 2017 and covers the period up to 2022[1]. The Broads Plan sets out a long-term vision for the area and shorter-term actions to benefit the environment, local communities and visitors. As a high-level overarching plan, it also draws together and guides a wide range of partnership plans, programmes and policies relevant to the area.

1.1.2 Lepus Consulting has prepared this report to inform the Habitats Regulations Assessment (HRA) of the Broads Plan on behalf of the Broads Authority. The area covered by the Broads Authority, and the Broads Plan, is illustrated in **Figure 1.1**.

[1] The Broads Authority. March 2017. Broads Plan 2017. Partnership strategy for the Norfolk & Suffolk Broads. Available at: https://www.broads-authority.gov.uk/__data/assets/pdf_file/0023/240665/Broads-Plan-2017.pdf [Date Accessed: 04/04/22]

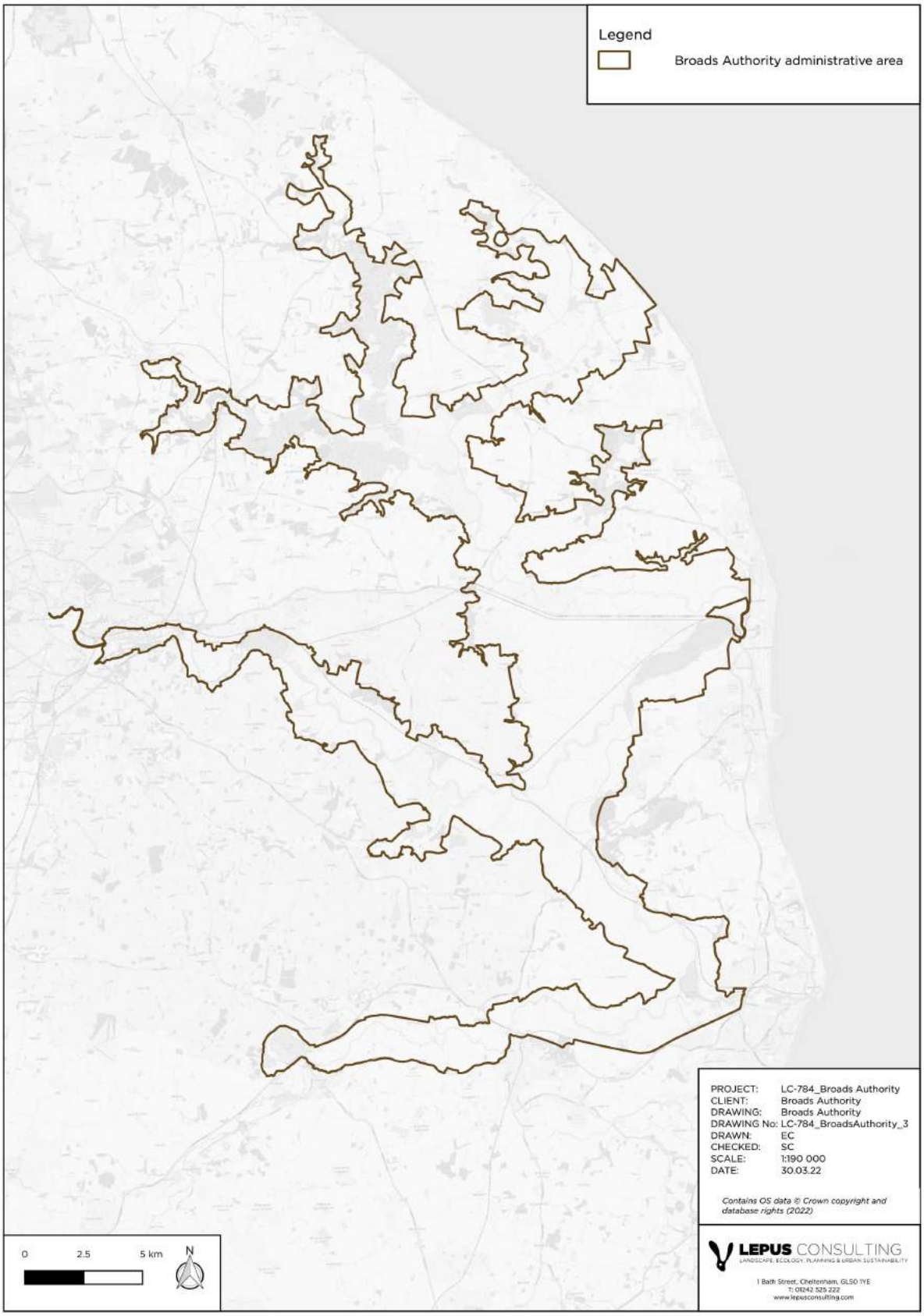

Figure 1.1: *The Broads Authority administrative area*

1.2 Purpose of this report

1.2.1 This HRA has been prepared in accordance with the Conservation of Habitats and Species Regulations 2017 (as amended)[2], known as the Habitats Regulations. When a plan is not directly connected with, or necessary for, the conservation management of a Habitats site, a competent authority is required to carry out an assessment under the Habitats Regulations, known as a Habitats Regulations Assessment (HRA), to test if that plan could significantly harm the designated features of a Habitats site[3].

1.2.2 The purpose of this report is to inform the HRA of the Broads Plan using best available information. The Broads Authority, as the Competent Authority, will have responsibility to make the Integrity Test. This can be undertaken in light of the conclusions set out in this report, having regard to representations made by Natural England under the provisions of Regulations 63(3) and 105(2) of the Habitats Regulations.

1.2.3 Given the strategic over-arching nature of the Broads Plan, this HRA provides a high-level assessment of potentially significant effects at Habitats sites due to the plan. Subsequent lower tier projects and plans will be able to use the outputs from this report to inform their HRA assessments in more detail. This HRA also outlines the types of mitigation that may be required to enable management measures across the Broads to be implemented in accordance with the Habitats Regulations.

[2] The Conservation of Habitats and Species Regulations 2017 SI No. 2017/1012, TSO (The Stationery Office), London. Available at: https://www.legislation.gov.uk/uksi/2017/1012/contents [Date Accessed: 29/01/21] as amended by The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019. Available at: https://www.legislation.gov.uk/ukdsi/2019/9780111176573 [Date Accessed: 24/02/22]

[3] Ministry of Housing, Communities and Local Government (July 2019) Planning Practice Guidance Note, Appropriate Assessment, Guidance on the use of Habitats Regulations Assessment

2 The Broads Plan

2.1 The Broads Authority

2.1.1 The Broads Authority is a statutory body with very similar responsibilities to those of the English, Welsh and Scottish National Park Authorities. The Authority was established under the Norfolk and Suffolk Broads Act 1988. Further provisions for the management of the navigation area were made through the Broads Authority Act 2009. The Broads Authority is the local planning authority, and a harbour and navigation authority.

2.1.2 The Broads Authority administrative area (**Figure 1.1**) extends around the flood plains and lower reaches of the main rivers which flow through the area (Bure, Yare and Waveney) and their tributaries (Thurne, Ant, Wensum and Chet).

2.1.3 The Authority has a duty to manage the Broads for the following three purposes:

- Conserving and enhancing the natural beauty, wildlife and cultural heritage of the Broads;
- Promoting opportunities for the understanding and enjoyment of the special qualities of the Broads by the public; and
- Protecting the interests of navigation.

2.2 The Broads Plan

2.2.1 The Broads Plan is the key management plan for the Broads National Park and provides an overarching strategy. It sets out a long-term vision for the area and shorter-term actions to benefit the environment, local communities and visitors. As a high-level overarching plan, it also draws together and guides a wide range of partnership plans, programmes and policies relevant to the area. These include the Local Plan for the Broads, which sets out spatial planning policies and proposals for development and land use in the Broads, and other guiding strategies as listed below[4]:

- Biodiversity and Water Strategy;
- Broadland Futures Initiative;
- Broadland Rivers Catchment Plan;
- Climate change and carbon reduction planning;
- Education Strategy;
- Fen Management Strategy;
- Integrated Access Strategy;
- Lake Restoration Strategy;
- Waterways Management Strategy; and
- Sustainable Tourism Strategy.

[4] Details available at: https://www.broads-authority.gov.uk/about-us/how-we-work/strategy#:~:text=The%20Broads%20Plan%20is%20the,covers%20the%20period%202017%2D22. [Date Accessed: 04/05/22]

2.2.2 The Broads Authority is currently in the process of undertaking its five yearly review of the Broads Plan. This review is intended to refresh and update actions for the next period and also take into consideration issues such as green recovery, biodiversity and a landscape style approach.

2.2.3 The revised Broads Plan sets out a long-term vision for the Broads National Park as detailed in **Box 1**.

Box 1: Vision for the Broads National Park to 2042

Our vision for the Broads National Park is that:

Biodiversity is at the heart of nature recovery. The natural environment and the beneficial goods, services and cultural values it provides from food and energy to landscape character and recreation are in good condition, used fairly and sustainably, and valued by society. In particular, the precious nature of plentiful, clean, fresh water as a fundamental resource is understood and respected by all.

We are meeting the challenges of climate change and sea level rise, and are on track to meet the carbon reduction targets of 'net zero' by 2040, with well-maintained peatland retaining and increasing its stored carbon.

Wildlife flourishes and habitats are maintained, restored, expanded and linked effectively to other ecological networks. Land and water are managed in an integrated way, with local and landscape-scale management creating resilience and space for nature and agriculture, enabling adaptive approaches to changing environmental, economic and social needs

The past and present importance of the waterways for navigation, biodiversity and recreation is recognised and cherished, and the asset is protected, maintained and enhanced. This living, working, 'big skies' landscape is notable for its natural beauty, distinctive local character and historic significance. People of all ages, abilities and circumstances enjoy it as a place of escape, adventure, work, learning and tranquillity, and as a source of national pride and identity. Sustainable living is seen in action, with a buoyant rural economy and a well-used public transport network.

The Broads National Park is forever recognised as fundamental to our prosperity and our mental and physical health and wellbeing, and is forever treasured as a unique and special place that provides a breathing space for the cure of souls.

2.2.4 The Broads Authority uses three fundamental principles to help guide the development and implementation of the Broads Plan as follows:

- **Principle 1:** Where there are likely threats of serious or irreversible damage to the environment, as a precaution, cost-effective measures are taken to prevent environmental degradation in the absence of full scientific certainty of the outcome of such threats. Such precautionary action is based on assessment of the costs and benefits of action, taking into account both the proportionality between the costs and benefits and the degree of certainty in their calculation, and transparency in decision making. Gaps in knowledge are addressed by research and, where feasible, precautionary measures taken while such knowledge is outstanding.
- **Principle 2:** We seek to understand and respect the complexity and biological limits of our ecosystems, and conserve their structures to maintain their health and productivity. Management is at a local scale, while recognizing the direct or indirect effects on wider, interconnected ecosystems and the public goods and services they provide. We manage for long-term, multiple benefits, not just for short-term or single interest gains.

- **Principle 3:** We plan and work in partnership to make the best use of shared knowledge and resources and to avoid duplication of effort. People are involved from an early stage, and throughout, in decisions that may interest or affect them. Decisions are supported with robust evidence, including scientific and local knowledge, innovation and best practice.

2.2.5 The Broads Plan sets out 28 strategic objectives for 2022 – 2027 under six headline themes, as detailed in **Table 2.1**, under which a number of key actions are provided to ensure their delivery over the plan period.

Table 2.1: *The Broads Plan Strategic Objectives 2022 - 2027*

Theme	Strategic Objective
A: Responding to climate change and flood risk	**A1.** Work towards making all Broads Authority operations carbon neutral by 2030 and carbon zero by 2040
	A2. Agree carbon reduction targets for the Broads National Park and promote action to reduce emissions
	A3. Prepare a long-term, integrated flood risk strategy for the Broads, Great Yarmouth and interrelated coastal frontage and maintain current adaptive coastal, tidal and fluvial flood risk management approaches for the area
B: Improving landscapes for biodiversity and agriculture	**B1.** Restore, maintain and enhance lakes and use monitoring evidence to trial and implement further innovative lake restoration techniques
	B2. Promote best practice water capture and usage across the Broadland rivers catchment and reduce point and diffuse pollution into the floodplain and water courses
	B3. Maintain, enhance and increase areas of priority fen, reed bed, grazing marsh and wet woodland, protecting peatland ecosystems as carbon sinks and seeking environmental net gain
	B4. Define, implement and monitor management regimes for priority species and invasive non-native species
	B5. Improve partnership coordination and communication of Broads biodiversity monitoring and research effort, linked to national biodiversity network
C: Maintaining and enhancing the navigation	**C1.** Maintain navigation water depths to defined specifications, reduce sediment input and dispose of dredged material in sustainable and beneficial ways
	C2. Maintain existing navigation water space and develop appropriate opportunities to extend access for various types of craft
	C3. Manage water plants and riverside trees and scrub, and seek resources to increase operational targets
	C4. Maintain and improve safety and security standards and user behaviour on the waterways

Theme	Strategic Objective
D: Protecting landscape character and the historic environment	**D1.** Record, protect and enhance local built and cultural features, archaeology, geodiversity and potential hidden heritage, including 'at risk' assets
	D2. Maintain an up-to-date Broads Landscape Character Assessment and use to inform conservation action plans
	D3. Maintain up-to-date Conservation Area designations, appraisals and management proposals
	D4. Reduce the impacts on the Broads of visual intrusion and noise and light pollution, and promote Dark Sky Discovery Sites
E: Promoting understanding and enjoyment	**E1.** Improve the integrated network of access routes and points (with easier access for people with mobility and sensory needs), linked to visitor facilities
	E2. Offer a coordinated and year-round programme of visitor activities that promote a 'Broads' experience', taking measures to prevent any adverse environmental impacts
	E3. Maintain and upgrade the range and provision of integrated multimedia interpretation about the special qualities of the Broads National Park, and 'point of need' information for visitors
	E4. Strengthen the quality and distinctiveness of the Broads tourism offer, including careers and skills training
F: Connecting and inspiring communities	**F1.** Increase and promote of accessible and 'taster' activities that foster physical and mental health and wellbeing for all, including under-represented groups
	F2. Offer varied, flexible and sustainable volunteering opportunities and skills training to suit diverse audiences
	F3. Provide and expand schools-based and outreach environmental education opportunities for young people, using the Broads as a learning resource
	F4. Provide up-to-date planning policy, site-specific allocations and planning guidance to support local community needs and ensure development happens within environmental limits
	F5. Increase income generation to support Broads-themed projects

3 The HRA process

3.1 Overview

3.1.1 The HRA process assesses the potential effects of a plan or project on the conservation objectives of Habitats sites designated under the Habitats[5] and Birds[6] Directives. These sites form a system of internationally important sites throughout Europe known collectively as the 'Natura 2000 Network'. In line with the Habitats Regulations, UK sites which were part of the Natura 2000 Network before leaving the EU, have become part of the National Site Network.

3.1.2 The Habitats Regulations[7] provide a definition of a 'Habitats site' at Regulation 8. These include Special Areas of Conservation (SAC), Sites of Community Importance, Special Protection Areas (SPA) and sites proposed to the European Commission in accordance with Article 4(1) of the Habitats Directive.

3.1.3 In addition, policy in England and Wales notes that the following sites should also be given the same level of protection as a 'Habitats site':

- A potential SPA (pSPA);
- A possible / proposed SAC (pSAC);
- Listed and proposed Ramsar Sites (Wetland of International Importance under the Ramsar Convention); and
- In England, sites identified or required as compensation measures for adverse effects on statutory European sites, pSPA, pSAC and listed or proposed Ramsar sites.

3.1.4 This report refers to both statutory sites and sites protected through national planning policy as a 'Habitats site' for ease of reference. Regulation 63 of the Habitats Regulations notes a competent authority, before deciding to undertake, or give any consent, permission or other authorisation for, a plan or project, must make an appropriate assessment of the implications of the plan or project for that site in view of its site conservation objectives. These tests are referred to collectively as a Habitats Regulations Assessment (HRA).

3.1.5 HRA applies to plans or projects which are likely to have a significant effect on a Habitats site (either alone or in combination with other plans or projects), and / or are not directly connected with or necessary to the management of that site.

[5] Official Journal of the European Communities (1992). Council Directive 92 /43 /EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora.

[6] Official Journal of the European Communities (2009). Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds.

[7] Conservation of Habitats and Species Regulations 2017 SI No. 2017/1012, TSO (The Stationery Office), London. Available at: https://www.legislation.gov.uk/uksi/2017/1012/contents [Date Accessed: 24/02/22] as amended by The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019. Available at: https://www.legislation.gov.uk/ukdsi/2019/9780111176573 [Date Accessed: 24/02/22]

3.1.6 There is no set methodology or specification for carrying out and recording the outcomes of the assessment process. The Habitats Regulations Assessment Handbook, produced by David Tyldesley Associates (referred to hereafter as the 'DTA Handbook'), provides an industry recognised good practice approach to HRA. The DTA Handbook, and in particular 'Practical Guidance for the Assessment of Plans under the Regulations'[8], which forms part F, has therefore been used to prepare this report, alongside reference to Government Guidance on Appropriate Assessment[9]. The DTA Handbook is used by Natural England, the Government's statutory nature conservation organisation and is widely considered to be an appropriate basis for the HRA of plans.

3.1.7 A step-by-step guide to the methodology adopted in this assessment, as outlined in the DTA Handbook, is illustrated in **Figure 3.1.** In summary, the four key stages of the HRA process are as follows:

- **Stage 1. Screening:** Screening to determine if the Broads Plan would be likely to have a significant effect on a Habitats site. This stage comprises the identification of potential effects associated with the Broads Plan on Habitats sites and an assessment of the likely significance of these effects.
- **Stage 2. Appropriate Assessment and the 'Integrity Test':** Assessment to ascertain whether or not the Broads Plan would have a significant adverse effect on the integrity of any Habitats site to be made by the Competent Authority (in this instance the Broads Authority). This stage comprises an impact assessment and evaluation in view of a Habitats site's conservation objectives. Where adverse impacts on site integrity are identified, consideration is given to alternative options and mitigation measures which are tested.
- **Stage 3. Alternative solutions:** Deciding whether there are alternative solutions which would avoid or have a lesser effect on a Habitats site.
- **Stage 4. Imperative reasons of overriding public interest and compensatory measures:** Considering imperative reasons of overriding public interest and securing compensatory measures.

[8] Tyldesley, D., and Chapman, C. (2013) The Habitats Regulations Assessment Handbook (September) (2013) edition UK: DTA Publications Limited. Available at: www.dtapublications.co.uk

[9] Government Guidance on Appropriate Assessment. July 2019. Guidance on the use of Habitats Regulations Assessment. Available at: https://www.gov.uk/guidance/appropriate-assessment

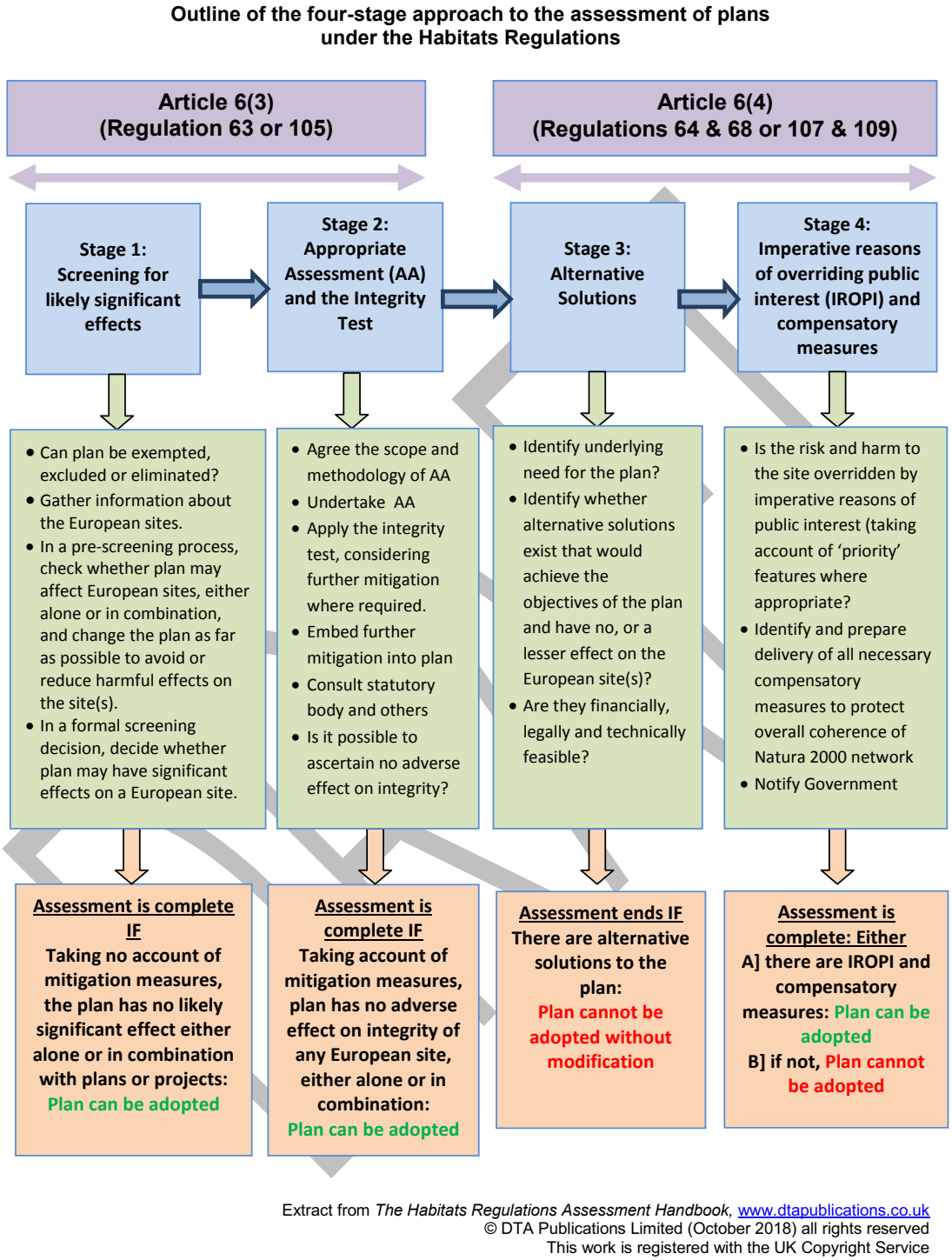

Figure 3.1: *Stages in the Habitats Regulations Assessment process*[10]

[10] Tyldesley, D., and Chapman, C. (2013) The Habitats Regulations Assessment Handbook (October) (2018) edition UK: DTA Publications Limited. Available at: www.dtapublications.co.uk

3.2 2017 Broads Plan HRA

3.2.1 The 2017 Broads Plan was supported by an HRA which was undertaken at both draft and final plan preparation stage[11]. The HRA comprised a screening of likely significant effects and provided wording and recommendations to inform the plan. It recognised the requirement for HRA of lower tiered plans and HRA at the project level. Subject to the incorporation of recommended plan modifications, it concluded that the final plan should be considered fully compliant with the requirements of the Habitats Regulations.

3.2.2 It looked at likely significant effects on a number of Habitats sites, listed below, from a number of risk areas including increased recreational impacts, dredging, development, flood risk management and navigation:

- Broadland SPA;
- Breydon Water SPA;
- Great Yarmouth North Denes SPA;
- Outer Thames Estuary SPA;
- The Broads SAC;
- Winterton-Horsey Dunes SAC;
- Haisborough, Hammond and Winterton SAC;
- Broadland Ramsar; and
- Breydon Water Ramsar.

[11] Liley, D., Hoskin, R., Panter, C. and Lake, S. 2016 Habitats Regulations Assessment (HRA) of the Broads Plan 2017 at Consultation of the 'Revised Draft'. Unpublished report by Footprint Ecology.

4 Methodology

4.1 HRA methodology

4.1.1 HRA is a rigorous precautionary process centred around the conservation objectives of a Habitats site's qualifying interests. It is intended to ensure that designated Habitats sites are protected from impacts that could adversely affect their integrity, as required by the Birds and Habitats Directives. A step-by-step guide to this methodology is outlined in the DTA Handbook and has been reproduced in **Figure 3.1**.

4.2 Stage 1: Screening for likely significant effects

4.2.1 The first stage in the HRA process comprises the screening stage. The purpose of the screening process is to firstly determine whether a plan is either (1) exempt (because it is directly connected with or necessary to the management of a Habitats site), (2) whether it can be excluded (because it is not a plan), or (3) eliminated (because there would be no conceivable effects), from the HRA process. If none of these conditions apply, it is next necessary to identify whether there are any aspects of the plan which may lead to likely significant effects at a Habitats site, either alone or in combination with other plans or projects.

4.2.2 Screening considers the potential 'significance' of adverse effects. Where elements of the Broads Plan will not result in a likely significant effect (LSE) on a Habitats site these are screened out and not considered in further detail in the process. The screening stage follows a number of steps which are outlined in **Figure 4.1.**

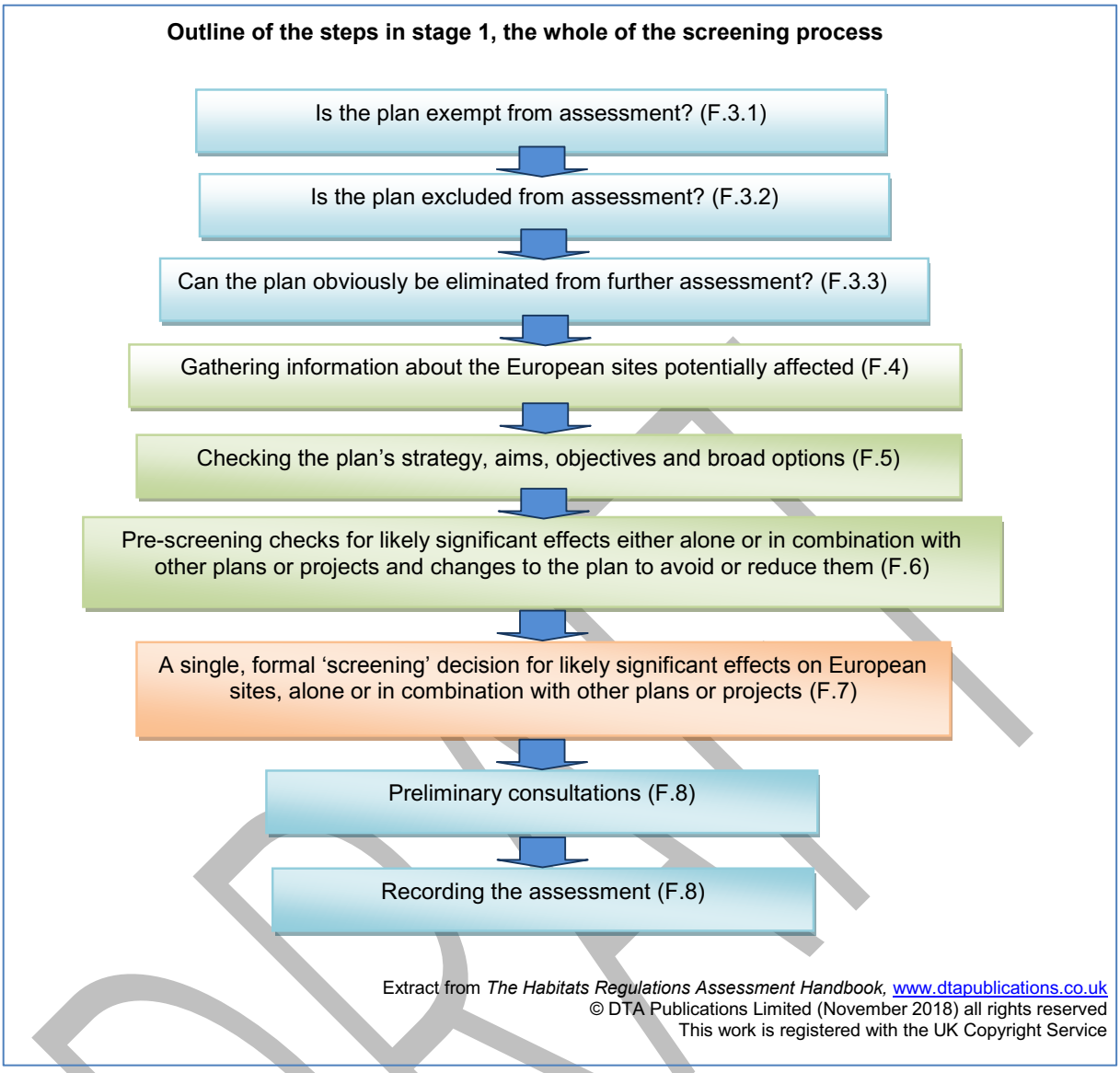

Figure 4.1: *Outline of steps in stage 1; the whole screening process*

4.2.3 Pre-screening the components of a plan at the early stage of the plan-making process helps to minimise or avoid LSEs upon any Habitats site and as such improve the plan. The pre-screening process has used a number of evaluation codes to summarise whether or not a component of the Broads Plan is likely to have LSEs alone or in-combination, see **Table 4.1,** and inform the formal screening decision.

Table 4.1: *Assessment and reasoning categories from Part F of the DTA Handbook*

Assessment and reasoning categories from Chapter F of The Habitats Regulations Assessment Handbook (DTA Publications, 2013) [12]:
A. General statements of policy / general aspirations.
B. Policies listing general criteria for testing the acceptability / sustainability of proposals.
C. Proposal referred to but not proposed by the plan.
D. General plan-wide environmental protection / site safeguarding / threshold policies
E. Policies or proposals that steer change in such a way as to protect European sites from adverse effects.
F. Policies or proposals that cannot lead to development or other change.
G. Policies or proposals that could not have any conceivable or adverse effect on a site.
H. Policies or proposals the (actual or theoretical) effects of which cannot undermine the conservation objectives (either alone or in combination with other aspects of this or other plans or projects).
I. Policies or proposals with a likely significant effect on a site alone.
J. Policies or proposals unlikely to have a significant effect alone.
K. Policies or proposals unlikely to have a significant effect either alone or in combination.
L. Policies or proposals which might be likely to have a significant effect in combination.
M. Bespoke area, site or case-specific policies or proposals intended to avoid or reduce harmful effects on a Habitats site.

4.3 What is a Likely Significant Effect?

4.3.1 HRA screening provides an analysis of LSEs identified during the HRA screening process. It considers the nature, magnitude and permanence of potential effects in order to inform the plan making process.

4.3.2 The DTA Handbook guidance provides the following interpretation of LSEs:

4.3.3 *"In this context, 'likely' means risk or possibility of effects occurring that cannot be ruled out on the basis of objective information. 'Significant' effects are those that would undermine the conservation objectives for the qualifying features potentially affected, either alone or in combination with other plans or projects … even a possibility of a significant effect occurring is sufficient to trigger an 'appropriate assessment'"* [13].

4.3.4 With reference to the conservation status of a given species in the Habitats or Birds Directives, the following examples would be considered to constitute a significant effect:

- Any event which contributes to the long-term decline of the population of the species on the site;
- Any event contributing to the reduction, or to the risk of reduction, of the range of the species within the site; and

[12] Tyldesley, D., and Chapman, C., (2013) The Habitats Regulations Assessment Handbook. December 2019 edition UK: DTA Publications Ltd, www.dtapublications.co.uk

[13] Tyldesley, D., and Chapman, C., (2013) The Habitats Regulations Assessment Handbook. December 2019 edition UK: DTA Publications Ltd, www.dtapublications.co.uk

- Any event which contributes to the reduction of the size of the habitat of the species within the site.

4.3.5 Rulings from the 2012 'Sweetman'[14] case provide further clarification:

4.3.6 *"The requirement that the effect in question be 'significant' exists in order to lay down a de minimis threshold. Plans or projects that have no appreciable effect on the site are thereby excluded. If all plans or projects capable of having any effect whatsoever on the site were to be caught by Article 6(3), activities on or near the site would risk being impossible by reason of legislative overkill".*

4.3.7 Therefore, it is not necessary for the Broads Authority to show that the Broads Plan will result in no effects whatsoever on any Habitats site. Instead, the Broads Authority is required to show that the Broads Plan, either alone or in-combination with other plans and projects, will not result in an effect which undermines the conservation objectives of one or more qualifying features.

4.3.8 Determining whether an effect is significant requires careful consideration of the environmental conditions and characteristics of the European site in question, as per the 2004 'Waddenzee'[15] case:

4.3.9 *"In assessing the potential effects of a plan or project, their significance must be established in the light, inter alia, of the characteristics and specific environmental conditions of the site concerned by that plan or project".*

4.4 In-combination effects

4.4.1 Where screening has concluded that there are no LSEs from the Broads Plan alone, it is next necessary to consider whether the effects of the policies in-combination with other plans and projects would combine to result in an LSE on any Habitats site. It may be that the Broads Plan alone may not have a significant effect but could have a residual effect that may contribute to in-combination effects on a Habitats site.

4.4.2 The DTA Handbook[16] notes that "*where an aspect of a plan could have some effect on the qualifying feature(s) of a European site, but that aspect of the plan alone are unlikely to be significant, the effects of that aspect of the plan will need to be checked in combination firstly, with other effects of the same plan, and then with the effects of other plans and projects*".

4.4.3 As such an in-combination assessment was undertaken as part of the HRA process at both the screening stage (where no LSE are considered possible alone, but in-combination effects are likely) and at the Appropriate Assessment stage (where, following Appropriate Assessment and mitigation, an insignificant adverse effect is still likely which has the potential to act in-combination with other plans and projects).

4.4.4 The in-combination assessment presented in Chapter F of the DTA Handbook comprises a ten-step approach as illustrated in **Figure 4.2** below.

[14] Source: EC Case C-258-11 Reference for a Preliminary Ruling, Opinion of Advocate General Sharpston 'Sweetman' delivered on 22nd November 2012 (para 48)

[15] Source: EC Case C-127/02 Reference for a Preliminary Ruling 'Waddenzee' 7th Sept 2004 (para 48)

[16] Tyldesley, D., and Chapman, C., (2013) The Habitats Regulations Assessment Handbook. December 2019 edition UK: DTA Publications Ltd, www.dtapublications.co.uk

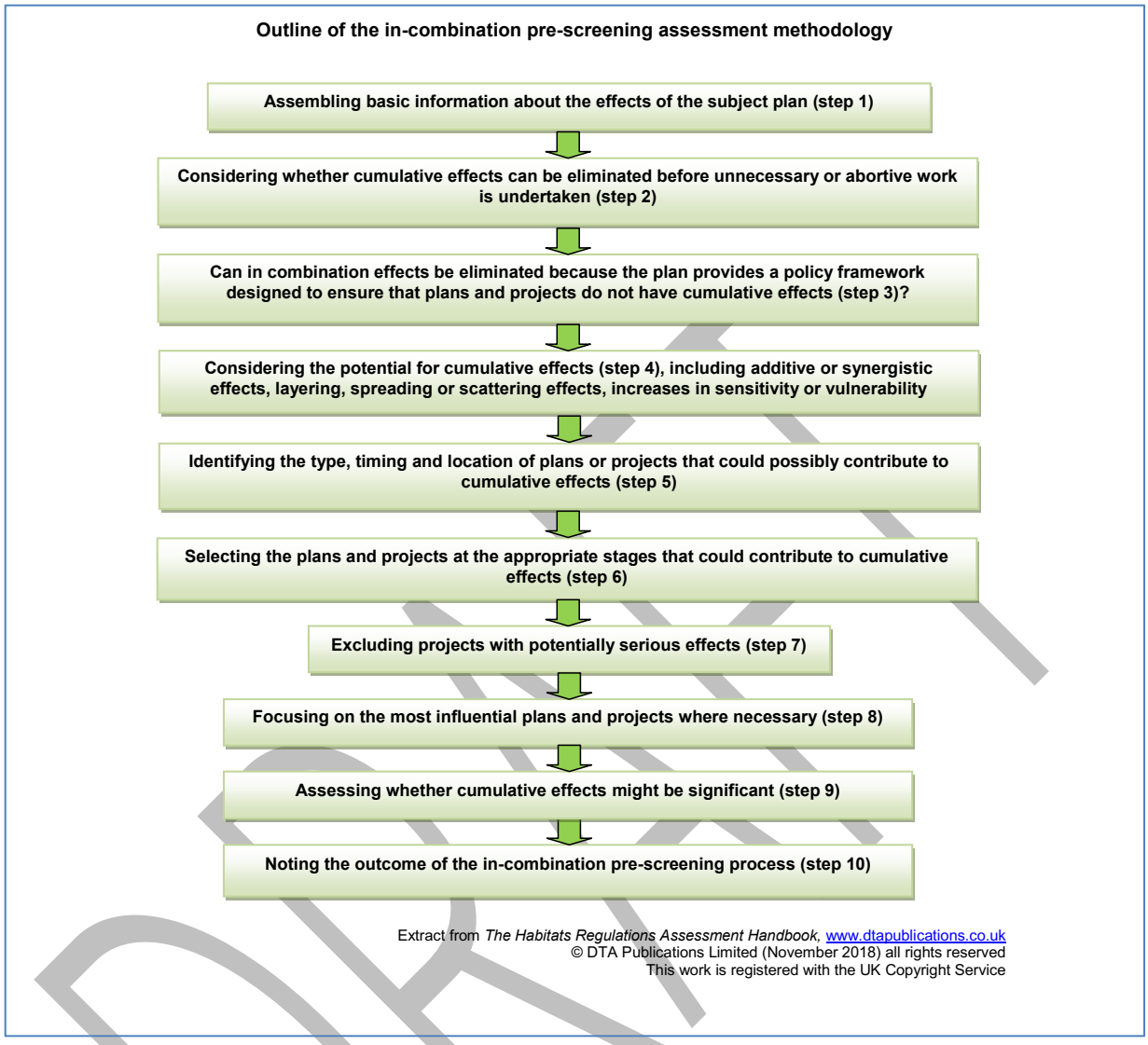

Figure 4.2: *Outline of the in-combination pre-screening assessment methodology*

4.4.5 Plans and projects which are considered to be of most relevance to the in-combination assessment of the Broads Plan include those that have similar impact pathways. These include those plans and projects which have the potential to increase development in the HRA study area, increase recreational pressures and result in hydrological change.

4.4.6 The assessment of potential in-combination effects has not resulted in additional impact pathways being screened in, however, a number of links between other plans and projects and the Broads Plan have been identified.

4.4.7 The following neighbouring local authorities' local plans, and other relevant plans and projects, and their HRA work have been reviewed as part of the screening assessment (see **Appendix A**).

- Anglian Draft Flood Risk Management Plan[17];

[17] Environment Agency (October 2021). Anglian River Basin District Draft Flood Risk Management Plan 2021 to 2027. Available at: https://consult.environment-agency.gov.uk/fcrm/draft-second-cycle-flood-risk-management-plans/supporting_documents/Anglian_FRMP_20212027WM.pdf [Date Accessed: 25/004/22]

- Anglian River Basin Management Plan[18];
- Anglian Water - Water Resource Management Plan[19];
- Broads Biodiversity and Water Strategy[20];
- Broadland Catchment Abstraction Licence Strategy[21];
- Broadland Flood Alleviation Project;
- Broads Futures Initiative[22];
- Broadland Rivers Catchment Plan[23];
- Broadland Catchment Abstraction Management Area[24]
- Education Strategy[25];
- Hoveton Great Broad Restoration Project;
- Integrated Access Strategy[26];
- Norfolk Water Strategy Programme[27];
- The Local Plan for the Broads[28];
- Sustainable Tourism Strategy[29];
- Waterways Management Strategy[30];
- Greater Norwich Local Plan[31];

[18] Environment Agency (2015). Water for life and livelihoods. Part 1Anglian River Basin District River Basin Management Plan. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/718327/Anglian_RBD_Part_1_river_basin_management_plan.pdf [Date Accessed 22/03/22]

[19] Anglian Water. 2019. Water Resources Management Plan 2019. Available at: https://www.anglianwater.co.uk/siteassets/household/about-us/wrmp-report-2019.pdf. [Date Accessed: 22/03/22]

[20] Broads Authority. Broads Biodiversity and Water Strategy 2019-2024. Available at: https://www.broads-authority.gov.uk/__data/assets/pdf_file/0029/180965/broads-biodiversity-strategy-2019.pdf [Date Accessed: 05/04/22]

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[23] Broadland Catchment Partnership (2014). Broadland Rivers Catchment Plan. Available at: https://broadlandcatchmentpartnership.org.uk/wp-content/uploads/2018/08/Catchment-Plan-website-final.pdf [Date Accessed: 22/03/22]

[24] Environment Agency. May 2017. Broadland Abstraction Licensing Strategy.

[25] Broads Authority. Education Strategy 2017 – 2022. Available at: https://www.broads-authority.gov.uk/__data/assets/pdf_file/0028/239554/Broads-Education-Strategy-2017-22-FINAL-APPENDIX-1.pdf [Date Accessed: 05/04/22]

[26] Broads Authority. 2019. Integrated Access Strategy. Available at: https://www.broads-authority.gov.uk/__data/assets/pdf_file/0020/260822/Appendix-Broads-Integrated-Access-Strategy-and-action-plan.pdf [Date Accessed: 05/04/22]

[27] Available at: https://wre.org.uk/projects/norfolk-water-strategy-programme/ [Date Accessed: 25/04/22]

[28] Broads Authority. Local Plan for the Broads Plan Period 2015 – 2036. Adopted May 2019. Available at: https://www.broads-authority.gov.uk/__data/assets/pdf_file/0036/259596/Local-Plan-for-the-Broads.pdf [Date Accessed: 22/03/22]

[29] The Tourism Company. 2016. Sustainable Tourism in the Broads. Available at: https://www.broads-authority.gov.uk/__data/assets/pdf_file/0023/226247/Sustainable-Tourism-in-the-Broads-2016-20-May-2016.pdf [Date Accessed: 22/03/22]

[30] Waterways Management Strategy and Action Plan 2022/23 – 2026/27. Available at: https://www.broads-authority.gov.uk/__data/assets/pdf_file/0027/399240/Waterways-Management-Strategy-v1.2.pdf [Date Accessed: 22/03/22]

[31] Available at: https://www.gnlp.org.uk/ [Date Accessed 25/04/22]

- North Norfolk Local Plan2016 - 2036[32];
- East Suffolk District - Waveney Local Plan[33];
- Norfolk County Council Minerals and Waste Local Plan Review[34]; and
- Norfolk County Council Local Transport Plan 4 Strategy 2021 – 2036[35].

4.4.8 The approach taken to the consideration of in-combination effects is compliant with the Wealden Judgement[36] which requires an in-combination approach that considers the development of neighbouring and nearby authorities when assessing likely significant effects.

4.5 Consideration of mitigation measures

4.5.1 The European Court Judgement on the interpretation of the Habitats Directive in the case of People Over Wind and Sweetman vs Coillte Teoranta (Case C-323/17[37]) determined that mitigation measures are only permitted to be considered as part of an appropriate assessment (**Box 2**).

Box 2: The Sweetman Case (April 2018)

A recent decision by the Court of Justice of the European Union (CJEU) People Over Wind and Sweetman v Coillte Teoranta (C-323/17) (from here on known as the 'Sweetman Case') has important consequences for the HRA process in the UK.

In summary, the ruling reinforces the position that if an LSE is identified during the HRA screening process it is not appropriate to incorporate mitigation measures to prevent the LSE at this stage. An appropriate assessment (AA) of the potential effects and the possible avoidance or mitigation measures must be undertaken. The 're-screening the Plan after mitigation has been applied' is no longer an option which would be legally compliant:

"Article 6(3) of Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora must be interpreted as meaning that, in order to determine whether it is necessary to carry out, subsequently, an appropriate assessment of the implications, for a site concerned, of a plan or project, it is not appropriate, at the screening stage, to take account of the measures intended to avoid or reduce the harmful effects of the plan or project on that site."

[32] North Norfolk District Council. January 2022. Publication Stage North Norfolk Local Plan2016 – 2036. Available at: https://www.north-norfolk.gov.uk/media/7466/local-plan-proposed-submission-version-reg-19-publication.pdf [Date Accessed: 25/04/22]

[33] East Suffolk Council. 2019. Waveney Local Plan. Covering the former Waveney Local Planning Authority Area. Available at: https://www.eastsuffolk.gov.uk/assets/Planning/Waveney-Local-Plan/Adopted-Waveney-Local-Plan-including-Erratum.pdf Date Accessed: 27/04/22]

[34] Norfolk County Council. Minerals and Waste Local Plan Review. Available at: https://www.norfolk.gov.uk/what-we-do-and-how-we-work/policy-performance-and-partnerships/policies-and-strategies/minerals-and-waste-planning-policies/norfolk-minerals-and-waste-local-plan-review [Date Accessed: 27/04/22]

[35] Norfolk County Council. Norfolk County Council Local Transport Plan 4 Strategy 2021 – 2036. Available at: https://www.norfolk.gov.uk/what-we-do-and-how-we-work/policy-performance-and-partnerships/policies-and-strategies/roads-and-travel-policies/local-transport-plan [Date Accessed: 27/04/22]

[36] Wealden District Council & Lewes District Council before Mr Justice Jay. Available at: http://www.bailii.org/ew/cases/EWHC/Admin/2017/351.html [Date Accessed: 02/02/22]

[37] InfoCuria (2018) Case C-323/17. Available at: http://curia.europa.eu/juris/document/document.jsf?docid=200970&doclang=EN [Date Accessed: 02/02/22]

4.5.2 In light of the above, it is necessary to further define mitigation measures. The DTA Handbook notes that there are two types of measures as follows[38]:

- *"Measures intended to avoid or reduce harmful effects on a European site; or*
- *Features or characteristics of a plan which are essential in defining the nature, scale, location, timing, frequency or duration of the plan's proposals, or they may be inseparable aspects of the plan, without which an assessment of the plan could not properly be made, in the screening decision, even though these features or characteristics may incidentally have the effect of avoiding or reducing some or all of the potentially adverse effects of a plan".*

4.5.3 The HRA screening process undertaken for the Broads Plan has not taken account of incorporated mitigation or avoidance measures that are intended to avoid or reduce harmful effects on a Habitats site when assessing the LSE of the Broads Plan on Habitats sites. These are measures, which if removed (i.e. should they no longer be required for the benefit of a Habitats site), would still allow the lawful and practical implementation of a plan.

4.6 Stage 2: Appropriate Assessment and Integrity Test

4.6.1 Where LSEs are identified from the Broads Plan either alone or in-combination it is necessary to move to Stage 2 of the HRA process – the Appropriate Assessment and Integrity Test.

4.6.2 The purpose of the Appropriate Assessment (as defined by the DTA Handbook) is to *"undertake an objective, scientific assessment of the implications for the European site qualifying features potentially affected by the plan in light of their consideration objectives and other information for assessment"* [39].

4.6.3 As part of this process decision makers should take account of the potential consequences of no action, the uncertainties inherent in scientific evaluation and should consult interested parties on the possible ways of managing the risk, for instance, through the adoption of mitigation measures. Mitigation measures should aim to avoid, minimise or reduce significant effects on Habitats sites. Mitigation measures may take the form of policies within the Broads Plan or mitigation proposed through other plans or regulatory mechanisms. All mitigation measures must be deliverable and able to mitigate adverse effects for which they are targeted.

4.6.4 The Appropriate Assessment aims to present information in respect of all aspects of the Broads Plan and ways in which it could, either alone or in-combination with other plans and projects, affect a Habitats site.

4.6.5 The Broads Authority (as the Competent Authority) must then ascertain, based on the findings of the Appropriate Assessment, whether the Broads Plan will adversely affect the integrity of a Habitats site either alone or in-combination with other plans and projects. This is referred to as the Integrity Test and will draw on the conclusions of this report and take into consideration representations made by Natural England.

[38] Tyldesley, D., and Chapman, C., (2013) The Habitats Regulations Assessment Handbook. November 2018 edition UK: DTA Publications Ltd, www.dtapublications.co.uk

[39] Tyldesley, D., and Chapman, C., (2013) The Habitats Regulations Assessment Handbook. November 2018 edition UK: DTA Publications Ltd, www.dtapublications.co.uk

4.7 Dealing with uncertainty

4.7.1 Uncertainty is an inherent characteristic of HRA, and decisions can be made only on currently available and relevant information. This concept is reinforced in the 7th September 2004 'Waddenzee' ruling[40]:

4.7.2 "*However, the necessary certainty cannot be construed as meaning absolute certainty since that is almost impossible to attain. Instead it is clear from the second sentence of Article 6(3) of the habitats directive that the competent authorities must take a decision having assessed all the relevant information which is set out in particular in the appropriate assessment. The conclusion of this assessment is, of necessity, subjective in nature. Therefore, the competent authorities can, from their point of view, be certain that there will be no adverse effects even though, from an objective point of view, there is no absolute certainty".*

4.8 The Precautionary Principle

4.8.1 The HRA process is characterised by the precautionary principle. This is described by the European Commission as being:

4.8.2 *"If a preliminary scientific evaluation shows that there are reasonable grounds for concern that a particular activity might lead to damaging effects on the environment, or on human, animal or plant health, which would be inconsistent with protection normally afforded to these within the European Community, the Precautionary Principle is triggered".*

[40]EC Case C-127/02 Reference for a Preliminary Ruling 'Waddenzee' 7th September 2004 Advocate General's Opinion (para 107)

5 Habitats sites

5.1 HRA Study Area

5.1.1 There is no guidance that defines the study area for inclusion in HRA. Planning Practice Guidance for Appropriate Assessment indicates that[41]:

5.1.2 "*The scope and content of an appropriate assessment will depend on the nature, location, duration and scale of the proposed plan or project and the interest features of the relevant site. 'Appropriate' is not a technical term. It indicates that an assessment needs to be proportionate and sufficient to support the task of the competent authority in determining whether the plan or project will adversely affect the integrity of the site*".

5.1.3 Therefore, in order to determine a study area for the HRA, consideration has been given to the nature and extent of potential impact pathways from the Broads Plan and its relationship to Habitats sites. Where impact pathways to Habitats sites have been identified these are considered further in the HRA.

5.1.4 The Broads Authority Executive Area forms the geographic extent of the Broads Plan (**Figure 1.1)**. However, impacts at Habitats sites often take place outside administrative boundaries, for instance where residents travel to tourist destinations beyond an administrative area, or where Habitats sites are hydrologically connected to a plan area.

5.2 Identification of Habitats sites

5.2.1 Habitats sites to be assessed in this HRA report are identified in **Table 5.1**. The inclusion of sites has taken into consideration a review of pathways of impact (for instance recreational zones of influence and hydrological connectivity) and previous HRA work undertaken in support of the current Broads Plan (see **Section 3.2**).

[41] Ministry of Housing, Communities and Local Government (July 2019) Planning Practice Guidance Note, Appropriate Assessment, Guidance on the use of Habitats Regulations Assessment. https://www.gov.uk/guidance/appropriate-assessment [Date Accessed: 02/02/22]

Table 5.1: *Habitats sites for consideration in HRA*

Habitats site	Location in relation to the Broads Authority administrative area
Broads SAC	Located within administrative area
Broadland SPA	Located within administrative area
Broadland Ramsar	Located within administrative area
Breydon Water SPA	Located within administrative area
Breydon Water Ramsar	Located within administrative area
Outer Thames Estuary SPA	Located within administrative area (extending along the River Bure)
Great Yarmouth North Denes SPA	Located immediately adjacent to administrative area
Winterton-Horsey Dunes SAC	Located immediately adjacent to administrative area
Southern North Sea SAC	Located immediately adjacent to administrative area
Greater Wash SPA	Located immediately adjacent to administrative area
Benacre to Easton Bavents SPA	Approximately 7.3km to the south of the Broads Authority administrative area
Norfolk Valley Fens SAC	Closest component is located approximately 8.7km to the northwest of the Broads Authority administrative boundary
The Wash and North Norfolk Coast SAC	Approximately 28.3km to the north of the Broads Authority administrative area
North Norfolk Coast SAC	Approximately 28.3km to the north of the Broads Authority administrative area
North Norfolk Coast SPA	Approximately 28.3km to the north of the Broads Authority administrative area
North Norfolk Coast Ramsar	Approximately 28.3km to the north of the Broads Authority administrative area

5.2.2 The locations of these sites are shown in **Figures 5.2, 5.3** and **5.4.**

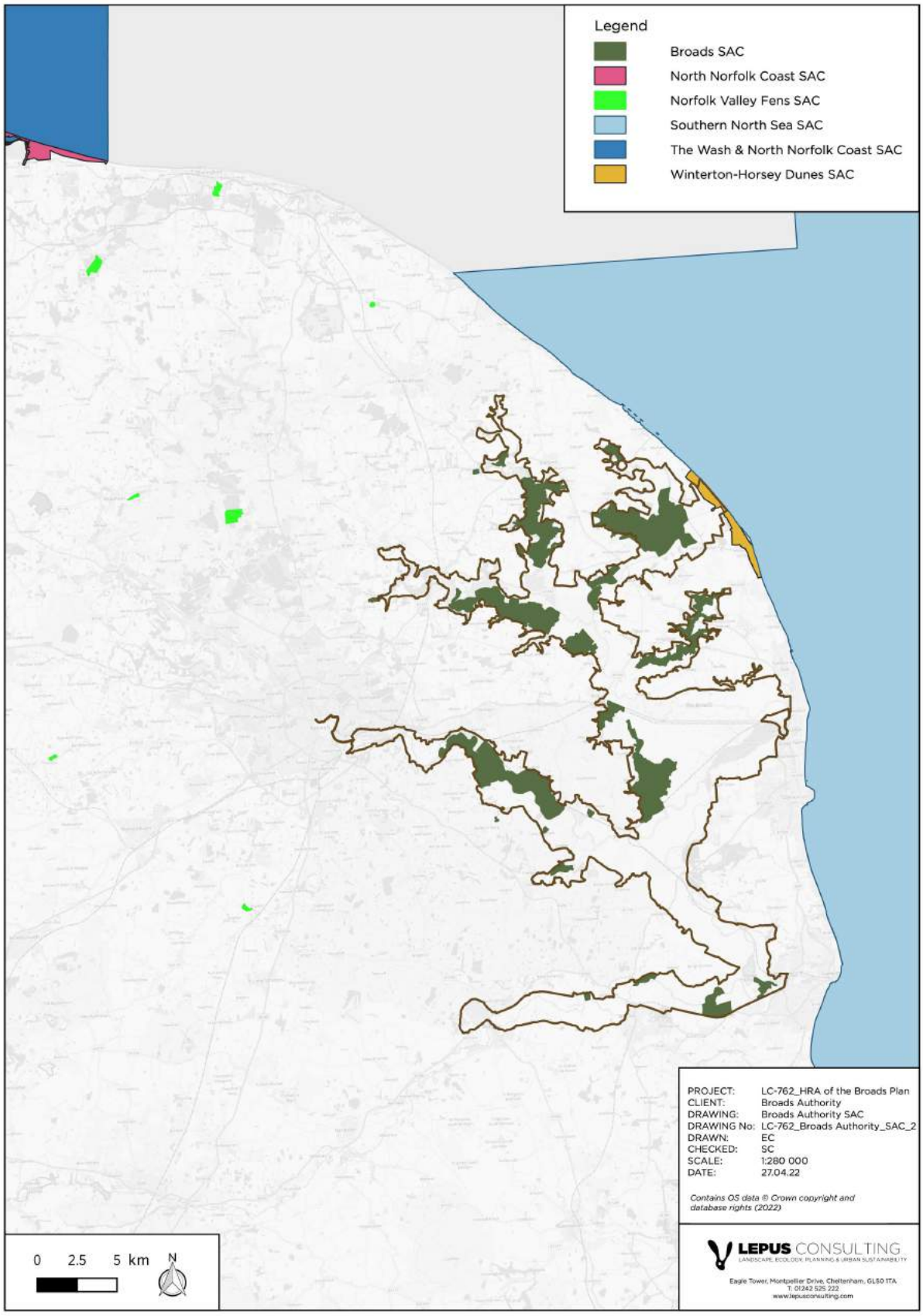

Figure 5.1: *SAC designations located within HRA study area*

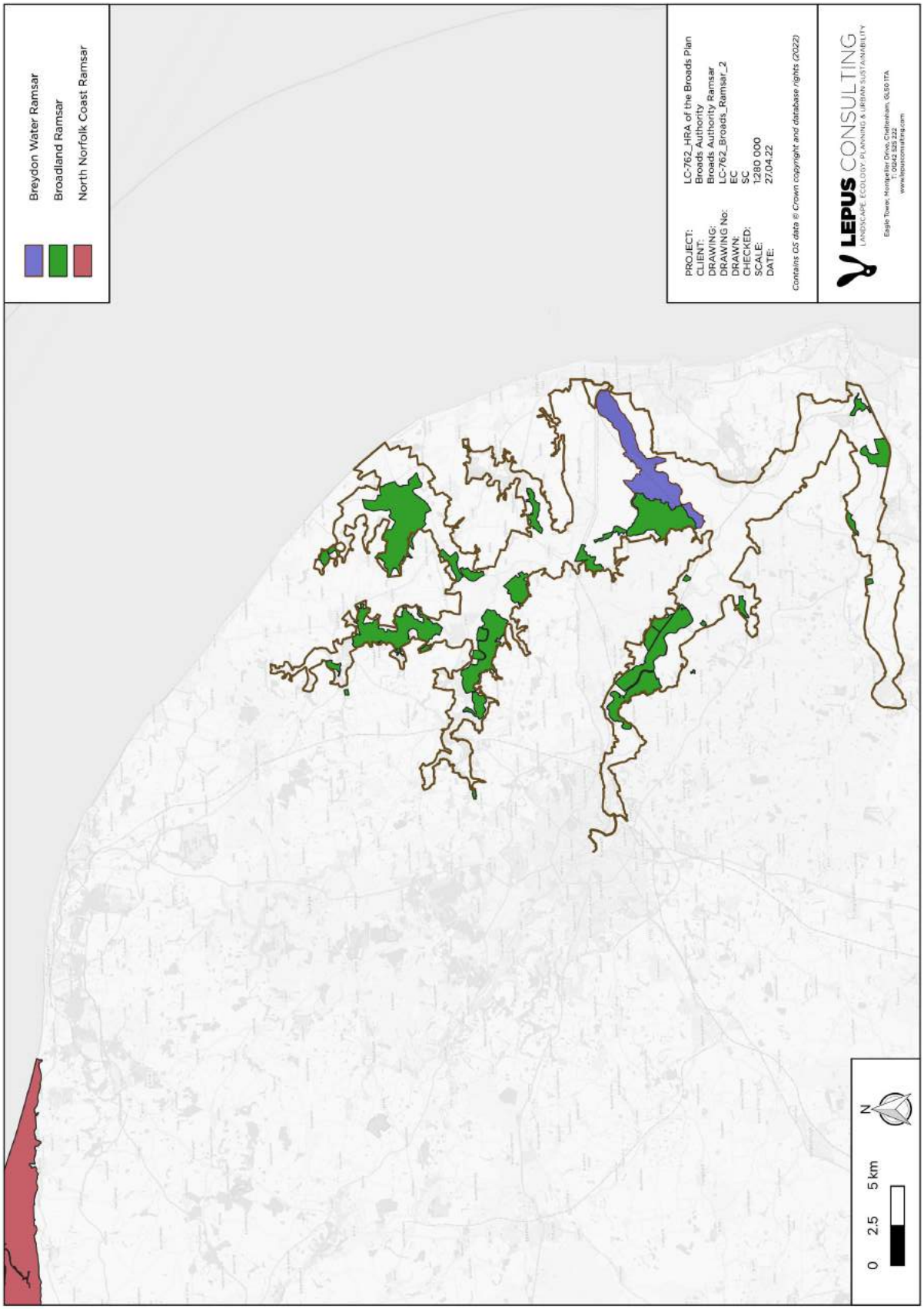

Figure 5.2: *Ramsar designations located within HRA study area*

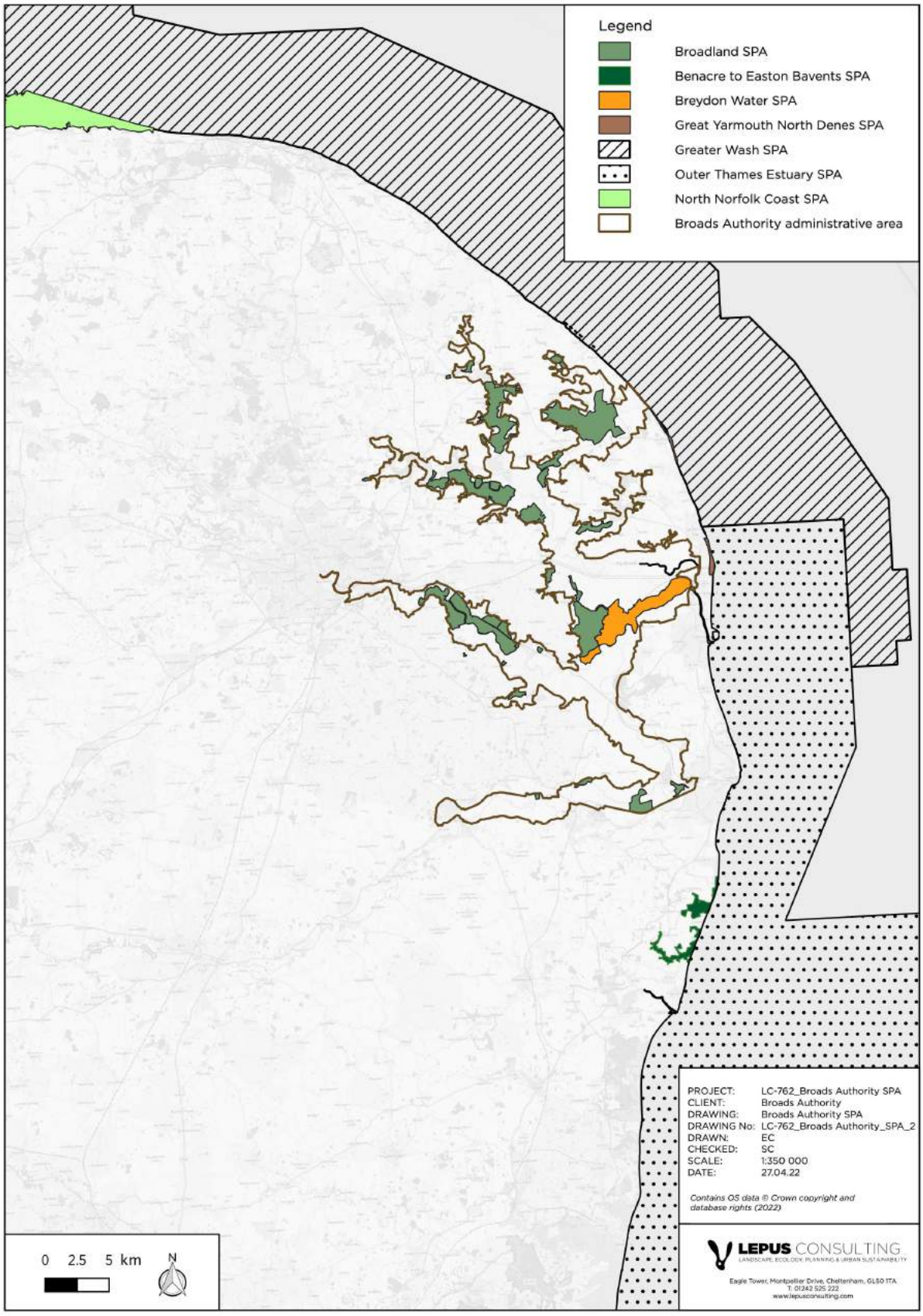

Figure 5.3: *SPA designations located within HRA study area*

5.2.3 Each Habitats site has its own intrinsic qualities, besides the habitats or species for which it has been designated, that enables the site to support the ecosystems that it does. An important aspect of this is that the ecological integrity of each site can be vulnerable to change from natural and human induced activities in the surrounding environment (known as pressures and threats).

5.2.4 An intrinsic quality of any Habitats site is its functionality at the landscape ecology scale. This refers to how the site interacts with the zone of influence of its immediate surroundings, as well as the wider area. Adverse effects may also occur via impacts to mobile species occurring outside a designated site, but which are qualifying features of the site. For example, there may be effects on protected birds that use land outside the designated site for foraging, feeding, roosting or other activities.

5.3 Ecological information

5.3.1 The CJEU ruling in the Holohan case (C-461/17[42]) confirmed that Appropriate Assessment should: (i) catalogue (i.e. list) all habitats and species for which the site is protected and (ii) include in its assessment other (i.e. non-protected) habitat types or species which are on the site and habitats and species located outside of the site if they are necessary to the conservation of the habitat types and species listed for the protected area (**Box 3**).

Box 3: Holohan v An Bord Pleanala (November 2018)

"Article 6(3) of Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora must be interpreted as meaning that an 'appropriate assessment' must, on the one hand, catalogue the entirety of habitat types and species for which a site is protected, and, on the other, identify and examine both the implications of the proposed project for the species present on that site, and for which that site has not been listed, and the implications for habitat types and species to be found outside the boundaries of that site, provided that those implications are liable to affect the conservation objectives of the site.

Article 6(3) of Directive 92/43 must be interpreted as meaning that the competent authority is permitted to grant to a plan or project consent which leaves the developer free to determine subsequently certain parameters relating to the construction phase, such as the location of the construction compound and haul routes, only if that authority is certain that the development consent granted establishes conditions that are strict enough to guarantee that those parameters will not adversely affect the integrity of the site.

Article 6(3) of Directive 92/43 must be interpreted as meaning that, where the competent authority rejects the findings in a scientific expert opinion recommending that additional information be obtained, the 'appropriate assessment' must include an explicit and detailed statement of reasons capable of dispelling all reasonable scientific doubt concerning the effects of the work envisaged on the site concerned".

5.3.2 This report fully considers the potential for effects on species and habitats. This includes those not listed as a qualifying feature for the Habitats site, but which may be important to achieving its conservation objectives. This ensures that the functional relationships underlying Habitats sites and the achievement of their conservation objectives are adequately understood.

[42] EUR-Lex (2018) Case C-461/17. Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:62017CJ0461&from=EN [Date Accessed02/02/22]

5.3.3 **Appendix B** identifies the qualifying features of each of these sites and presents details of their conservation objectives. This information is drawn from the Joint Nature Conservancy Council (JNCC)[43] and Natural England[44].

5.3.4 The overall objective of the Habitats Regulations is to maintain or restore, at favourable conservation status, natural habitats and species of wild fauna and flora of importance. Meeting site conservation objectives will ensure that the integrity of the National Site Network is maintained or restored as appropriate and ensures that each site contributes to achieving the 'favourable conservation status' of its qualifying features.

5.3.5 Natural England provides advice on what meeting conservation objectives means in terms of the environmental conditions (targets) and ecological requirements expected for designated habitats and species at sites which form the National Site Network. The targets are set to measure the condition of designated features, and progress towards meeting the objectives, is based on UK Common Standards for Monitoring Guidance (CSMG), published by the Joint Nature Conservation Committee.

5.3.6 Sites of Special Scientific Interest (SSSIs) are protected areas in the United Kingdom designated for conservation. SSSIs are the building blocks of site-based nature conservation in the UK. A SSSI will be designated based on the characteristics of its fauna, flora, geology and/or geomorphology. Whilst typically analogous in ecological function, the reasons for its designation can be entirely different to those for which the same area is designated as a SAC, SPA or Ramsar.

5.3.7 Natural England periodically assesses the conservation conditions of each SSSI unit against the CSMG standards. SSSIs located either entirely or partially within the Habitats sites considered in this report are listed in **Appendix C** along with their current conservation status. The conservation status of each SSSI highlights any SAC/SPA that is currently particularly vulnerable to threats/pressures. Conservation status is defined as follows:

- Favourable;
- Unfavourable – recovering;
- Unfavourable – no change; or
- Unfavourable – declining.

5.3.8 SSSI units in either an 'Unfavourable – no change' or 'Unfavourable – declining' condition indicate that the Euro Habitats pean site may be particularly vulnerable to certain threats or pressures. It is important to remember that the SSSI may be in an unfavourable state due to the condition of features unrelated to its Habitats designation. However, it is considered that the conservation status of SSSI units that overlap with Habitats designated sites offer a useful indicator of habitat health at that location.

[43] JNCC (2019) Available at: http://jncc.defra.gov.uk/page-1458 [Date Accessed: 02/02/22]

[44] Natural England (2019) Available at: http://publications.naturalengland.org.uk/ [Date Accessed: 02/02/22]

5.3.9 Natural England defines zones around each SSSI which may be at risk from specific types of development, these are known as Impact Risk Zones (IRZ). These IRZs are *"a GIS tool developed by Natural England to make a rapid initial assessment of the potential risks to SSSIs posed by development proposals. They define zones around each SSSI which reflect the particular sensitivities of the features for which it is notified and indicate the types of development proposal which could potentially have adverse impacts. The IRZs also cover the interest features and sensitivities of European sites, which are underpinned by the SSSI designation and "Compensation Sites", which have been secured as compensation for impacts on Natura 2000/Ramsar sites"*[45]. The location of IRZs has been taken into consideration in this assessment as they provide a useful guide as to the location of functionally linked land and likely vulnerabilities.

[45] Natural England (2019) Natural England's Impact Risk Zones for Sites of Special Scientific Interest User Guidance. Available at: https://magic.defra.gov.uk/Metadata_for_magic/SSSI%20IRZ%20User%20Guidance%20MAGIC.pdf [Date Accessed: 02/02/22]

6 Impact Pathways

6.1 Gathering information about Habitats sites and impact pathways

6.1.1 It is important to understand how the Broads Plan may affect a Habitats site to determine LSEs. Consideration must first be given to potential links or causal connections between the effects of the Broads Plan and Habitats sites. This section of the report therefore scopes potential impact pathways to Habitats sites.

6.1.2 As detailed in **Chapter 2**, the Broads Plan is a high-level overarching plan for the Broads Authority administrative area which aims to deliver its duties under the Broads Act. The plan ensures that management in the Broads is focused through actions set out under 28 strategic objectives.

6.1.3 Many management actions in the Broads Plan are designed to positively protect, conserve, and enhance the environment of the Broads and will indirectly benefit Habitats sites. Given the location of the Broads Authority, within a water environment, waterways management for navigation, responding to climate change and flood risk is a key theme throughout the Broads Plan. Actions for waterways management, such as dredging, flood and vegetation management, have the potential to result in hydrological change with direct / indirect impacts upon water dependent Habitats sites. In addition, the Broads Plan commits to review and update the Local Plan for the Broads which will set out a land use planning framework for the area. Increased development has the potential to result in a number of impacts such as atmospheric pollution (from traffic emissions), increased recreational pressures and changes in water flows and water quality at Habitats sites. Recreation is itself a key theme throughout the Broads Plan as the Broads Authority aims to promote understanding and enjoyment of the area. Promotion of the recreational offering and navigation itself can result in increased recreational pressures at Habitats sites.

6.1.4 As a high-level document, the Broads Plan does not provide details on the location and scale of actions but instead provides a framework within which lower tiered plans and projects will sit.

6.2 Threats and pressures

6.2.1 Threats and pressures to which each Habitats site is vulnerable have been identified through reference to data held by the JNCC and Natural England on Natura 2000 Data Forms, Ramsar Information Sheets and Site Improvement Plans (SIPs). This information provides current and predicted issues at each Habitats site. Supplementary advice notices prepared by Natural England provide more recent information on threats and pressures upon Habitats sites than SIPs and have therefore also been reviewed. A number of threats and pressures are unlikely to be exacerbated by the Broads Plan. Threats and pressures which could be affected by the by the Broads Plan at each Habitats site are provided at **Appendix B**.

6.2.2 Following a review of HRA assessment work undertaken for the current Broads Plan and an identification of causal connections and links, the following themes are considered to be within the scope of influence of the Broads Plan:

- **Air pollution:** Land use planning (through and update to the Local Plan for the Broads) and increased recreational pressure during peak seasons has the potential to increase atmospheric emissions of pollutants to the air. These can

result in adverse effects at Habitats sites such as eutrophication (nitrogen), acidification (nitrogen and sulphur) and direct toxicity (ozone, ammonia and nitrogen oxides)[46].

- **Water resources and water levels**: Urban development can change run off rates from urbanised areas to Habitats sites or watercourses which run through them. In addition, dredging and waterways management has the potential to influence water levels at water sensitive Habitats sites.
- **Water Quality**: Urbanisation run-off, waterways management techniques and dredging have the potential to reduce the quality of water entering a catchment. Water quality may also be reduced through effluent discharges from new development at Wastewater Treatment Works (WwTWs), release of toxic and non-toxic contamination and saline penetration.
- **Habitat loss, change in habitat type, degradation and fragmentation**: Urbanisation and waterways management has the potential to lead to the direct loss and / or degradation of Habitats sites and also impacts upon qualifying features which occur outside a designated site boundary.
- **Recreational impacts:** Increased development and the promotion of the Broads as a tourist destination has the potential to increase recreational pressure and navigational impacts upon Habitats sites which are accessible to the public.
- **Disturbance:** Urbanisation and waterways management techniques have the potential to result in disturbing activities (such as noise, lighting and visual disturbance). Disturbance effects may impact upon both Habitats sites and their qualifying features when outside a designated site boundary.

6.3 Air Pollution

6.3.1 Air pollution can affect Habitats sites if it has an adverse effect on the features of qualifying interest. The main mechanisms through which air pollution can have an adverse effect is through eutrophication (nitrogen), acidification (nitrogen and sulphur) and direct toxicity (ozone, ammonia and nitrogen oxides). Deposition of air pollutants can alter the soil and plant composition and species which depend upon these.

6.3.2 As highlighted through the review of threats and pressures at Habitats sites, (**Appendix B**) air pollution, and in particular atmospheric nitrogen deposition, has been identified as a threat or pressure for qualifying features of a number of Habitats sites within the relevant Natural England SIPs and Supplementary Advice Notes.

6.3.3 Excess atmospheric nitrogen deposition within an ecosystem or habitat can disrupt the delicate balance of ecological processes interacting with one another. As the availability of nitrogen increases in the local environment, some plants that are characteristic of that ecosystem may become competitively excluded in favour of more nitrophilic plants. It also upsets the ammonium and nitrate balance of the ecosystem, which disrupts the growth, structure and resilience of some plant species.

[46] APIS (2016) Ecosystem Services and air pollution impacts. Available at: http://www.apis.ac.uk/ecosystem-services-and-air-pollution-impacts [Date Accessed: 08/04/22]

6.3.4 Excess nitrogen deposition often leads to the acidification of soils and a reduction in the soils' buffering capacity (the ability of soil to resist pH changes). It can also render the ecosystem more susceptible to adverse effects of secondary stresses, such as frost or drought, and disturbance events, such as foraging by herbivores.

6.3.5 As an attempt to manage the negative consequences of atmospheric nitrogen deposition, 'critical loads' and 'critical levels' have been established for ecosystems in Europe. Each Habitats site is host to a variety of habitats and species, the features of which are often designated a critical load for nitrogen deposition. The critical loads of pollutants are defined as a "*...quantitative estimate of exposure to one or more pollutants below which significant harmful effects on specified sensitive elements of the environment do not occur according to present knowledge*"[47].

6.3.6 Critical levels are defined as "*concentrations of pollutants in the atmosphere above which direct adverse effects on receptors, such as human beings, plants, ecosystems or materials, may occur according to present knowledge*"[48].

6.3.7 Natural England has prepared a standard methodology for the assessment of traffic related air quality impacts under the Habitats Regulations which is relevant to the HRA of plans which may result in a change in traffic flows[49]. In addition, the Institute of Air Quality Management (IAQM)[50] and the Chartered Institute of Ecology and Environmental Management (CIEEM)[51] have also prepared advice on the assessment of air quality impacts at designated sites. This guidance sets thresholds for screening of likely significant (air quality) effects at the HRA screening stage (Stage 1 of the HRA process) and methodologies for further Appropriate Assessment (Stage 2 of the HRA process) of air quality impacts where relevant.

6.3.8 This advice from NE notes that for screening LSEs, an assessment of the risks from road traffic emissions can be expressed in terms of the average annual daily traffic flow (AADT) as a proxy for emissions. The use of the AADT screening threshold is advocated by Highways England in their Design Manual for Roads and Bridges (DMRB). This screening threshold is intended to be used as a guide to determine whether a more detailed assessment of the impact of emissions from road traffic is required. This non-statutory, or guideline threshold, is based on a predicted change of daily traffic flows of 1,000 AADT or more (or a change in heavy-duty vehicle (HDV) flows on motorways of 200 AADT or more).

[47] UNECE (date unavailable) ICP Modeling and Mapping Critical loads and levels approach. Available at: https://www.umweltbundesamt.de/en/Coordination_Centre_for_Effects [Date Accessed: 13/04/22]

[48] UNECE (date unavailable) ICP Modeling and Mapping Critical loads and levels approach. Available at: https://www.umweltbundesamt.de/en/Coordination_Centre_for_Effects [Date Accessed: 13/04/22]

[49] Natural England (2018) Natural England's approach to advising competent authorities on the assessment of road traffic emissions under the Habitats Regulations (NEA001). Available at: http://publications.naturalengland.org.uk/publication/4720542048845824 [Date Accessed: 13/04/22]

[50] Holman et al (2020). A guide to the assessment of air quality impacts on designated nature conservation sites – version 1.1, Institute of Air Quality Management, London.

[51] CIEEM (2021) Advice on Ecological Assessment of Air Quality Impacts. Chartered Institute of Ecology and Environmental Management. Winchester, UK.

6.3.9 The guidance also notes it is widely accepted that air quality impacts are greatest within 200m of a road source, decreasing with distance[52,53,54].

6.3.10 At the screening stage, and based on the level of information available at this high-level plan making stage, Natural England's guidance (in the form of a series of questions) has been applied to determine LSEs as follows:

- Does the Broads Plan give rise to emission which are likely to reach a Habitats site?
- Are the qualifying features of sites within 200m of a road sensitive to air pollution?
- Could the sensitive qualifying features of the site be exposed to emissions?

6.3.11 The Broads Plan through its requirement to review and update the Local Plan for the Broads will trigger development. In addition, it aims to promote the Broads as a tourist destination, increasing visitors to the area. The scale, location and nature of this development is however not known at this high-level plan making stage.

6.3.12 Baseline mapping data has been used to determine the proximity of Habitats sites, and their qualifying features, to roads which may result in an exceedance of Natural England's screening thresholds (A and B roads) within an approximate 10km buffer from the Broads Authority administrative area[55]. The UK Air Pollution Information System (APIS) provides information on all Habitats sites and the sensitivity of their qualifying features (habitats and / or species) to air pollution. This data has been interrogated, alongside a desk-based review of site-based data (**Appendix B**), to determine whether there may be pathways of impact from the Broads Plan to any Habitats site through a change in atmospheric emissions (**Table 6.1**).

[52] The Highways Agency, Transport Scotland, Welsh Assembly Government, The Department for Regional Development Northern Ireland (2007) Design Manual for Roads and Bridges, Volume 11, Section 3, Part 1: Air Quality.

[53] Natural England (2016) The ecological effects of air pollution from road transport: an updated review. Natural England Commissioned Report NECR 199.

[54] Bignal, K., Ashmore, M. & Power, S. (2004) The ecological effects of diffuse air pollution from road transport. English Nature Research Report No. 580, Peterborough.

[55] 10km covers a sufficiently precautionary area over which traffic flows may increase due to development in the Broads Authority area due to the rural nature of the area.

Table 6.1: Atmospheric pollution pathways of impact to Habitats sites[56]

Habitats site name	Is the Habitats site sensitive to air quality impacts (as indicated in SIP / NE Supplementary Advice – Appendix B)?	Is there a strategic road link (A and B roads) located within 200m of the Habitats site?	Is nitrogen deposition or acidification over critical loads at the Habitats site (based on a review of APIS data)?	Will the Habitats site be scoped in for further assessment in the HRA process
Broads SAC	Yes	Yes	Yes, for some qualifying features	Yes
Broadland SPA	Yes	Yes	Yes, for some qualifying features	Yes
Broadland Ramsar	Yes	Yes	Yes, for some qualifying features of the SAC and SPA for which the Ramsar site is designated	Yes
Breydon Water SPA	No	-	-	-
Breydon Water Ramsar	No	-	-	-
Outer Thames Estuary SPA	No	-	-	-
Great Yarmouth North Denes SPA	Yes	No	-	-
Winterton-Horsey Dunes SAC	Yes	No	-	-
Southern North Sea SAC	No	-	-	-
Greater Wash SPA	No	-	-	-
Benacre to Easton Bavents SPA	No	-	-	-
Norfolk Valley Fens SAC	Yes	No components within 10km buffer[57]	-	-

6.4 Hydrology (water resource and quality)

6.4.1 The Broads Authority is located with the Anglian River Basin District area. This is divided into several management catchments, with the Authority situated within the Broadland Rivers catchment management area[58].

[56] APIS does not provide air quality information on the sensitivity of specific Ramsar features. However, all Ramsar sites included in this HRA are coincident with either a SAC or SPA designation and therefore air quality information for these Habitats sites has been used for this scoping assessment.

[57] 10km covers a sufficiently precautionary area over which traffic flows may increase due to development in the Broads Authority area.

[58] https://environment.data.gov.uk/catchment-planning/RiverBasinDistrict/5

6.4.2 Urban development set out in lower tier plans required through the Broads Plan, such as the Local Plan for the Broads, can reduce catchment permeability and the presence of drainage networks may be expected to remove runoff from urbanised catchments. This may result in changes in run off rates from urbanised areas to Habitats sites or watercourses which run through them. Water mains leakage and sewer infiltration may also affect the water balance. In addition, new growth will increase water demand. Dredging and waterways management has the potential to influence water levels at designated sites. Features for which a Habitats site is designated are often sensitive to changes in water balance and levels. Therefore, any change to water flows through and water levels at a water sensitive Habitats site has the potential to adversely affect the features for which they are designated.

6.4.3 Urbanisation run-off, waterways management techniques and dredging all have the potential to reduce the quality of water entering a catchment. Water quality may also be reduced through effluent discharges at Wastewater Treatment Works (WwTWs), release of toxic and non-toxic contamination and cause saline penetration. Any change to water quality at a water sensitive Habitats site has the potential to adversely affect the features for which they are designated.

6.4.4 Advice from the Chief Planning Officer from the Department for Levelling Up, Housing and Communities (DLUHC) on 16 March 2022[59] and advice from Natural England on the same date, highlighted the importance of nutrient impacts on The Broads SAC and Broadlands Ramsar. This is relevant to components of the SAC and Ramsar which are in an unfavourable condition due to elevated and exceeded nutrient thresholds. These components include those underpinned by the following SSSIs:

- Ant Broads and Marshes SSSI
- Bure Broads and Marshes SSSI
- Trinity Broads and Marshes SSSI
- Upper Thurne Broads and Marshes SSSI
- Yare Broads and Marshes SSSI

6.4.5 Water quality data indicates that these SSSI designations are overall exceeding the targets for Total Phosphorus and Total Nitrogen. Within these areas, four units are achieving the target for Total Nitrogen (Cocksfoot Broad, Filby Broad, Ormesby Little Broad and Rollesby Broad Sailing Club).

6.4.6 Natural England's advice requires the Broads Authority (as the Competent Authority) to fully consider nutrients implications on these sites when determining relevant plans or projects and to secure appropriate mitigation measures. Natural England suggests that nutrient neutrality may be a potential solution to enable developments to proceed in the catchment(s) (see **Figure 6.1**) where an adverse effect on site integrity cannot be ruled out[60]. LSEs on water quality must be considered in the context of this advice.

[59] Letter from DLUHC to Chief Planning Officers and Local Planning Authorities affected by nutrient pollution. NUTRIENT POLLUTION: NEUTRALITY, SUPPORT AND FUNDING. 16 March 2022. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1061531/Chief_Planner_Letter_about_nutrient_pollution___March_2022.pdf [Date Accessed 16/03/22]

[60] Letter from Natural England to LPA Chief Executives & Heads of Planning, County Council Chief Executives and Heads of Planning, EA Area and National Team Directors, Planning Inspectorate, Natural Resources Wales (Cross border sites only) & Secretary of State for Department for

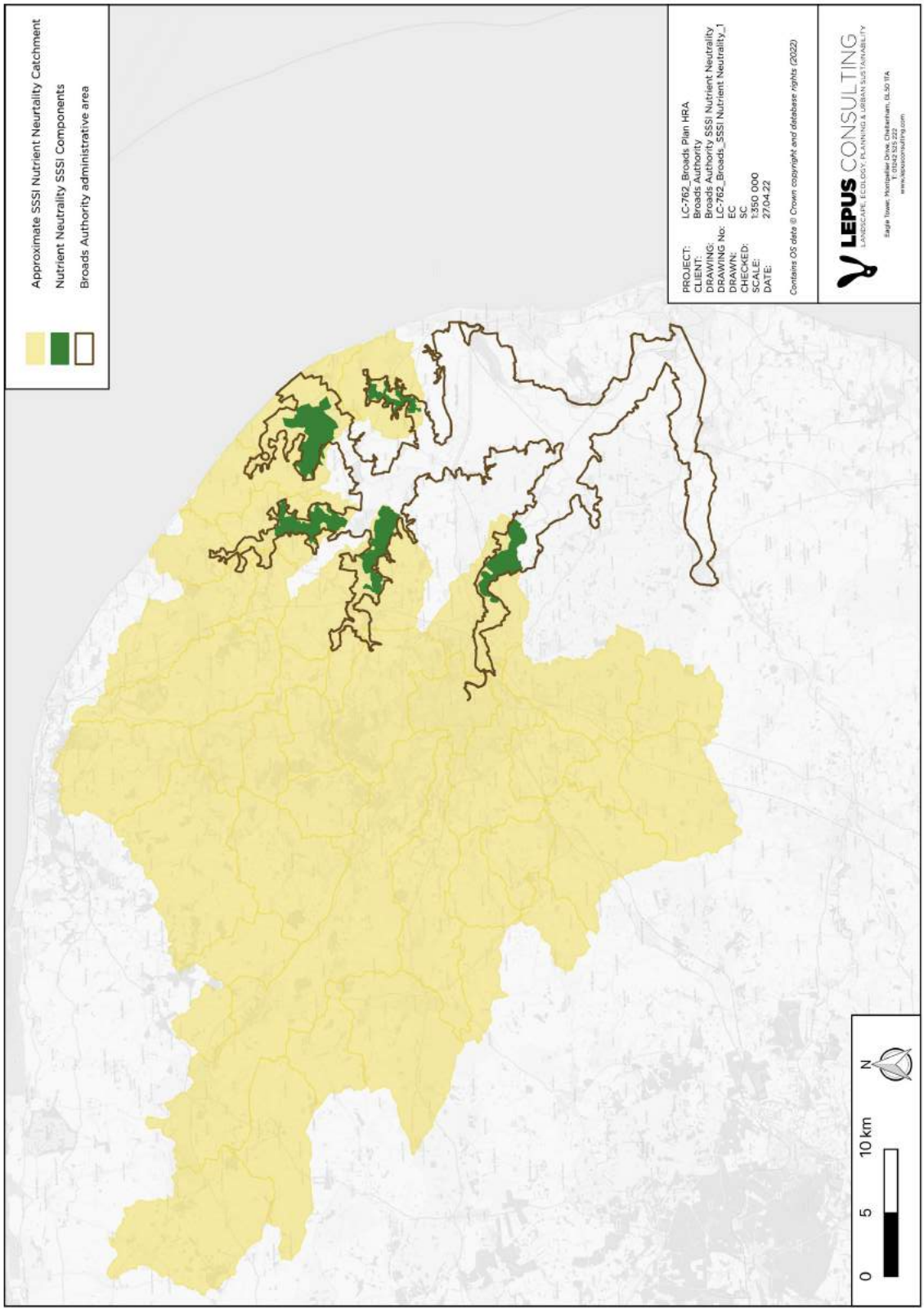

Figure 6.1: *Approximate SSSI Nutrient Neutrality Catchment area (based on Water Framework Directive catchments)*[61]

Levelling Up Housing & Communities (DLUHC). Advice for development proposals with the potential to affect water quality resulting in adverse nutrient impacts on habitats sites. 16 March 2022.

[61] https://environment.data.gov.uk/catchment-planning/

Table 6.2: *Water resource, levels and quality pathways of impact to Habitats sites*

Habitats site name	Is the Habitats site sensitive to a change in water quality and /or water level impacts and is it hydrologically connected to the plan area?	Will the Habitats site be scoped in for further assessment in the HRA process
Broads SAC	The Broads SAC is located within the Plan area and is formed of a network of naturally nutrient-rich lakes which were artificially created through peat extraction in medieval times. This network of lakes and ditches in areas of fen and drained marshlands support a range of water dependent habitats and species. Any change in water levels, flows or water quality (In particular in relation to nutrient inputs) has the potential to have direct / indirect effects on the features for which the SAC is designated.	Yes
Broadland SPA	Broadland SPA is located within the Plan area and comprises a low-lying wetland complex created by a series of flooded medieval peat cuttings. It lies within the floodplains of five principal river systems, including the River Bure, River Yare and River Waveney and their major tributaries. It comprises a complex and interlinked mosaic of wetland habitats. Any change in water levels, flows or water quality has the potential to have indirect effects on the features for which the SPA is designated for instance through a change in food resource availability.	Yes
Broadland Ramsar	Broadland Ramsar, similarly to the SAC and SPA is located within the Plan area, and comprises a series of flooded medieval peat cuttings which support a diverse range of habitat types and species. Any change in water levels, flows or water quality (In particular in relation to nutrient inputs) has the potential to have direct and indirect effects on the features for which the Ramsar has been notified.	Yes
Breydon Water SPA	Breydon Water SPA is a large stretch of sheltered estuary and wetland habitat which forms the lower reaches of the River Yare and River Waveney. It comprises an inland tidal estuary with extensive areas of mud flats that are exposed during low tide forming intertidal flats. These habitats provide important feeding areas for internationally important wildfowl and waders which overwinter at the site. Any change in water levels, flows or water quality may indirectly affect the qualifying features of the SAP such as through a change in the availability of food resource.	Yes
Breydon Water Ramsar	Breydon Water Ramsar is a large stretch of sheltered estuary and wetland habitat which forms the lower reaches of the River Yare and River Waveney. It comprises an inland tidal estuary with extensive areas of mud flats which support a diverse range of habitat types and species. Any change in water levels, flows or water quality has the potential to have direct and indirect effects on the features for which the Ramsar has been notified.	Yes
Outer Thames Estuary SPA	The Outer Thames Estuary SPA is located within the Plan area (extending along the River Bure) and stretching from Caister-on-Sea in Norfolk (Suffolk) to Sheerness in Kent, and reaching as far as Canvey Island into the Thames Estuary. Hydrology impacts from onshore sources are not identified as a threat which could impact upon the qualifying features of this SPA (**Appendix B**). Habitat requirements for the qualifying bird species are located at some distance away from the influence of the Broads Plan. As such water pathways of impact from the Broads Plan are not considered likely. This Habitats site is therefore not considered further in terms of water LSEs.	No
Great Yarmouth and North Denes SPA	Great Yarmouth and North Denes SPA is located immediately adjacent to the Plan Area and comprises two component areas, the Great Yarmouth North Denes actively accreting low dune system and beach, together with the beach and foredune ridge at Winterton-Horsey Dunes.	No

Habitats site name	Is the Habitats site sensitive to a change in water quality and /or water level impacts and is it hydrologically connected to the plan area?	Will the Habitats site be scoped in for further assessment in the HRA process
	Hydrology impacts are identified as a threat which could impact upon the qualifying features of this designation (**Appendix B**). However, habitat requirements for the little tern are located at some distance from the influence of the Broads Plan. As such water LSEs are not considered likely. This Habitats site is therefore not considered further in terms of this pathway of impact.	
Winterton-Horsey Dunes SAC	Winterton-Horsey Dunes SAC is located immediately adjacent to administrative area and comprises a large acidic dune system with associated areas of grazing marsh, dune slacks, dune heath, dune grassland and downy birch dominated woodland with oaks. Hydrology impacts are identified as a threat which could impact upon this designation (**Appendix B**). However, the dune system associated with the SAC is unlikely to be influenced by actions set out in the Broads Plans. As such this Habitats site is therefore not considered further in terms of this pathway of impact.	No
Southern North Sea SAC	The majority of the Southern North Sea SAC lies offshore, extending into coastal areas of Norfolk and Suffolk crossing the 12 nautical mile boundary and comprising a mix of habitats, such as sandbanks and gravel beds. Hydrology impacts from onshore sources are not identified as a threat which could impact upon the qualifying features of this designation (**Appendix B**). Habitat requirements for the harbour porpoise are located at some distance from the influence of the Broads Plan. As such pathways of impact are not considered likely. This Habitats site is therefore not considered further in terms of this pathway of impact.	No
Greater Wash SPA	The Greater Wash SPA is located in the mid-southern North Sea, immediately adjacent to administrative area. Extensive areas of subtidal sandbanks are present off The Wash as well as north and east Norfolk coasts which support the qualifying species of bird. The SPA is not hydrologically linked with the Plan area, being outside the Broadlands River management area. As such pathways of impact are not considered likely. This Habitats site is therefore not considered further in terms of this pathway of impact.	No
Benacre to Easton Bavents SPA	Benacre to Easton Bavents SPA is located approximately 7.3km to the south of the Broads Authority administrative area outside the Broadlands River management area. It is not hydrologically connected to the Plan area and as such hydrology pathways of impact are not considered likely. This Habitats site is therefore not considered further in terms of this pathway of impact.	No
Norfolk Valley Fens SAC	The closest component of the Norfolk Valley Fens SAC is located upstream of the Plan area. As such hydrology pathways of impact are not considered likely. This Habitats site is therefore not considered further in terms of this pathway of impact.	No
The Wash and North Norfolk Coast SAC	This SAC is located approximately 28.3km to the north of the Plan area and is not hydrologically linked. As such pathways of impact are not considered likely. This Habitats site is therefore not considered further in terms of this pathway of impact.	No
North Norfolk Coast SAC	This SAC is located approximately 28.3km to the north of the Plan area and is not hydrologically linked. As such pathways of impact are not considered likely. This Habitats site is therefore not considered further in terms of this pathway of impact.	No
North Norfolk Coast SPA	This SPA is located approximately 28.3km to the north of the Plan area and is not hydrologically linked. As such pathways of impact are not considered likely. This Habitats site is therefore not considered further in terms of this pathway of impact.	No

Habitats site name	Is the Habitats site sensitive to a change in water quality and /or water level impacts and is it hydrologically connected to the plan area?	Will the Habitats site be scoped in for further assessment in the HRA process
North Norfolk Coast Ramsar	This Ramsar is located approximately 28.3km to the north of the Plan area and is not hydrologically linked. As such pathways of impact are not considered likely. This Habitats site is therefore not considered further in terms of this pathway of impact.	No

6.5 Recreational impacts

6.5.1 Public access/disturbance can take a number of forms. It can include both physical disturbance, as a result of urbanisation (discussed further in **Section 6.6** below), and increased recreational pressure. These can result in damage to habitats through erosion and compaction, troubling of grazing stock, causing changes in behaviour to animals such as birds at nesting and feeding sites, spreading invasive species, cat predation, dog fouling, litter and fly-tipping, tree climbing, wildfire and arson, noise, vibration, light pollution and vandalism. Typically, disturbance of habitat and species is the unintentional consequence of people's presence which can impact breeding success and survival.

6.5.2 Increased development and the promotion of the Broads as a tourist destination has the potential to increase recreational and navigational pressures upon Habitats sites which are accessible to the public.

6.5.3 A common approach taken across the UK to address recreational impacts at Habitats sites is to establish a Zone of Influence (ZoI) based on detailed visitor survey data. The ZoI is the area within which there are likely to be significant effects arising from recreational activities undertaken by additional residents due to growth. This is often calculated by taking the distance at which 75% of interviewees surveyed have travelled to reach a particular site (based on a review of visitor survey data).

6.5.4 In 2015 and 2016 Norfolk County Council/the Norfolk Biodiversity Partnership (NBP) commissioned visitor surveys on behalf of all local planning authorities, to determine current and projected visitor patterns to Habitats sites across Norfolk[62]. Based on this work, a ZoI was established for each Habitats site within the study area based on resident and tourist visitors. Drawing on the visitor survey data, the Councils[63] and the Broads Authority (working together to address cross-boundary issues and offer a strategic solution through a Norfolk Strategic Planning Framework (NSPF)), prepared a Green Infrastructure (GI) and Recreational Impact Avoidance and Mitigation Strategy (RAMS)[64]. This strategy is referred to as GIRAMS and provides information to support Local Planning Authorities (LPAs) in Norfolk in their statutory requirement to produce 'sound' i.e. legally compliant Local Plans for their administrative or Plan making areas and is of relevance to the Broads Authority area[65]. Relevant ZoI which were established through the visitor survey work (for both residential and tourism development) have been applied in this assessment to determine recreational impact pathways from the Broads Plan to Habitats sites. These have informed Natural England's SSSI IRZs. An overall ZoI map has been prepared for the Norfolk RAMS which covers the whole county. The ZoI for tourist accommodation is countywide for all Habitats sites. Habitats sites covered by this mitigation strategy, and which will be scoped into this HRA in terms of potential recreational LSEs, include the following:

- Brecks sites: Breckland SPA and Breckland SAC;
- Broads sites: The Broads SAC and Broadland SPA;
- East Coast sites: Breydon Water SPA, Winterton-Horsey Dunes SAC and Great Yarmouth and North Denes SPA;
- North Coast sites: North Norfolk Coast SAC, North Norfolk Coast SPA, North Norfolk Coast Ramsar and the Wash and North Norfolk Coast SAC;
- Roydon and Dersingham Bog SAC and Ramsar;
- Norfolk Valley Fens SAC; and
- The Wash: The Wash SPA, The Wash Ramsar and The Wash and North Norfolk Coast SAC.

[62] Panter, C., Liley, D. & Lowen, S. (2016). Visitor surveys at European protected sites across Norfolk during 2015 and 2016. Unpublished report for Norfolk County Council. Footprint Ecology.

[63] Broadland District Council, Breckland District Council, Great Yarmouth Borough Council, The Borough Council of King's Lynn & West Norfolk, North Norfolk District Council, Norwich City Council, South Norfolk Council

[64] Place Services. March 2021. *Draft subject to approval by the Norfolk Strategic Planning Group.* Norfolk Green Infrastructure and Recreational Impact Avoidance and Mitigation Strategy (GIRAMS). Habitats Regulations Strategy Document.

[65] https://www.broads-authority.gov.uk/planning/other-planning-issues/habitat-mitigation and https://www.broads-authority.gov.uk/__data/assets/word_doc/0024/413754/Norfolk-RAMS-Habitats-Regulations-Assessment-HRA-record-template-DRAFT-002.docx

6.5.5 East Suffolk Council (formally Suffolk Coastal District Council and Waveney District Council), Ipswich Borough Council, Mid Suffolk District Council and Babergh District Council have set out a Recreational Disturbance Avoidance and Mitigation Strategy (RAMS) to address recreational pressure at Habitats sites within Suffolk[66,67]. This Strategy set outs a tariff-based approach to mitigating the impact of recreational disturbance on Habitat Sites resulting from increased residential development across the Local Authority areas. It also sets out the requirement for additional mitigation measures such as Suitable Alternative Natural Green Space (SANGS) or green infrastructure measures such as enhanced walking routes and connections to the Public Right of Way network. A ZoI for each Habitats site has been developed based on visitor survey data, to determine where likely significant recreational effects may take place. For all Habitats sites covered by the strategy this is defined as 13km. The Broads Plan is only located with 13km Benacre to Easton Bavents SPA. As such this Habitats site has been included in this assessment when considering recreational LSEs.

6.6 Disturbance

6.6.1 Urbanisation and waterways management techniques have the potential to result in disturbance within / adjacent to the Broads waterways (such as noise and visual disturbance). Disturbance effects may impact upon both designated sites and functionally linked habitat and species.

6.6.2 Urbanisation effects typically occur when development is located close to a Habitats site boundary. These may include impacts such as noise disturbance, lighting effects, cat predation, fly-tipping, wildfire, littering and vandalism. Strategic mitigation schemes elsewhere in the UK have set a presumption against development (i.e. no net increase in residential dwellings) on the basis of site-specific evidence to safeguard against these impacts of approximately 400m to 500m. As such this buffer distance will be applied in the case of urbanisation effects at the screening stage on a site-by-site basis, taking into consideration the sensitivities of each Habitats site individually. Habitats sites located within and immediately adjacent to the Broads Authority administrative area have been considered further in terms of disturbance impacts and include:

- The Broads SAC;
- Broadlands SPA;
- Broadlands Ramsar;
- Breydon Water SPA;
- Breydon Water Ramsar;
- Outer Thames Estuary SPA;
- Great Yarmouth North Denes SPA; and
- Winterton-Horsey Dues SAC.

[66] East Suffolk Council. May 2021. Recreational Disturbance Avoidance and Mitigation Strategy Supplementary Planning Document (SPD). A guide to implementing the Suffolk Coast Disturbance Avoidance and Mitigation Strategy.

[67] https://www.eastsuffolk.gov.uk/assets/Planning/Section-106/Habitat-mitigation/Suffolk-HRA-RAMS-Strategy.pdf

6.7 Habitat loss, change in habitat type, degradation and fragmentation

6.7.1 Land use planning and waterways management in particular have the potential to lead to direct loss and / or degradation at Habitats sites through the mechanisms described above, reduction in air quality, hydrology impacts and public access and disturbance. They also have the potential to result in impacts upon qualifying features (for instance mobile species of bird) when located outside a designation boundary, known as functionally linked habitat[68].

6.7.2 The term 'functional linkage' is defined by Natural England as "the role or 'function' that land or sea beyond the boundary of a European site might fulfil in terms of ecologically supporting the populations for which the site was designated or classified. Such land is therefore 'linked' to the European site in question because it provides an important role in maintaining or restoring the population of qualifying species at favourable conservation status"69.

6.7.3 In addition to direct loss or degradation of habitat (designated or functionally linked), development has the potential to result in the fragmentation of habitats through the loss of connecting corridors which would hinder the movement of mobile qualifying species which are associated with some designations.

6.7.4 The tests set out under Article 6(3) and 6(4) of the Habitats Regulations need to be applied in respect of plans or projects which may significantly affect functionally linked habitat that plays an important role in contributing to the favourable conservation status of the relevant species for which a European site is designated.

6.7.5 The CJEU ruling in the Holohan case (**Box 3**) confirmed that habitat and / or species which are located outside of a designated site, if they are necessary to the conservation of the habitat types and species listed for the protected area, must be considered in an Appropriate Assessment.

6.7.6 The HRA will therefore focus on Habitats sites, or associated areas of potentially functionally linked land, which are located within or adjacent to the Broads Authority administrative area. Impacts upon both designated and functionally linked sites / species will be considered in terms of water, public access and disturbance and air quality impacts as discussed in **Sections 6.3** to **6.6** above.

6.8 Summary

6.8.1 **Table 6.3** provides a summary of impact pathways which will be considered at each Habitats site in the test of likely significance.

[68] "The term 'functional linkage' refers to the role or 'function' that land or sea beyond the boundary of a European site might fulfil in terms of ecologically supporting the populations for which the site was designated or classified. Such land is therefore 'linked' to the European site in question because it provides an important role in maintaining or restoring the population of qualifying species at favourable conservation status". Source: Natural England. 2016. Commissioned Report. NECR207. Functional linkage: How areas that are functionally linked to European sites have been considered when they may be affected by plans and projects - a review of authoritative decisions.

[69] Natural England. 2016. Commissioned Report. NECR207. Functional linkage: How areas that are functionally linked to European sites have been considered when they may be affected by plans and projects - a review of authoritative decisions.

Table 6.3: Summary of pathways of impact at each Habitat site

Habitats Sites	Potential pathways of impact from the Broads Plan			
	Air Pollution	Water Resources and Water Levels and Water Quality	Recreational effects	Disturbance Effects
Broads SAC	✓	✓	✓	✓
Broadland SPA	✓	✓	✓	✓
Broadland Ramsar	✓	✓	✓	✓
Breydon Water SPA	×	✓	✓	✓
Breydon Water Ramsar	×	✓	✓	✓
Outer Thames Estuary SPA	×	×	✓	✓
Great Yarmouth North Denes SPA	×	×	✓	✓
Winterton-Horsey Dues SAC	×	×	✓	✓
Southern North Sea SAC	×	×	✓	×
Greater Wash SPA	×	×	✓	×
Benacre to Easton Bavents SPA	×	×	✓	×
Norfolk Valley Fens SAC	×	×	✓	×
The Wash and North Norfolk Coast SAC	×	×	✓	×
North Norfolk Coast SAC	×	×	✓	×
North Norfolk Coast SPA	×	×	✓	×
North Norfolk Coast Ramsar	×	×	✓	×

7 Screening (HRA Stage 1)

7.1 Pre-screening

7.1.1 Each element of the Draft Broads Plan has been appraised against the HRA pre-screening criteria (see **Table 4.1**), taking into consideration case law and best practice. **Appendix D** provides the output of this pre-screening exercise.

7.1.2 It is concluded that LSEs, either from the Broads Plan alone or in- combination with other plans or projects, could be screened out for most components. This is because components fell into the following categories (see **Table 4.1** for a description of each category):

- Category A: General statements of policy / general aspirations;
- Category D: Environmental protection / site safeguarding; and
- Category F: Proposals that cannot lead to development or other change.

7.1.3 A number of components were however considered likely to have an LSE on the basis of this assessment as they fell into the following categories:

- Category I: Proposals with a likely significant effect on a site alone;
- Category L: Proposals which might be likely to have a significant effect in combination; and
- Category M: Bespoke area, site or case-specific proposals intended to avoid or reduce harmful effects on a Habitats site.

7.1.4 The following components will therefore be explored in the Appropriate Assessment (Stage 2 of the HRA process) in more detail. **Table 7.1** provides a summary of policies that have been screened into the HRA.

Table 7.1: *Summary of pre-screening (Note: only elements of the Broads Plan that have been screened into the HRA have been included in the summary table below. The pre-screening outcome for all policies and allocations is provided at Appendix D).*

Broads Plan Component	Screening conclusion	Pre-Screening Category
A3: Prepare a long-term, integrated flood risk strategy for the Broads, Great Yarmouth and interrelated coastal frontage and maintain current adaptive coastal, tidal and fluvial flood risk management approaches for the area	Screen in	**I**
B1. Restore, maintain and enhance lakes and use monitoring evidence to trial and implement further innovative lake restoration techniques	Screen in	**I**
B2. Promote best practice water capture and usage across the Broadland rivers catchment and reduce point and diffuse pollution into the floodplain and water courses	Screen in	**I**
C1. Maintain navigation water depths to defined specifications, reduce sediment input and dispose of dredged material in sustainable and beneficial ways	Screen in	**I**
C2. Maintain existing navigation water space and develop appropriate opportunities to extend access for various types of craft	Screen in	**I**
C3. Manage water plants and riverside trees and scrub, and seek resources to increase operational targets	Screen in	**I**
C4. Maintain and improve safety and security standards and user behaviour on the waterways	Screen in	**I**
E1. Improve the integrated network of access routes and points (with easier access for people with mobility and sensory needs), linked to visitor facilities	Screen in	**L**
E2. Offer a coordinated and year-round programme of visitor activities that promote a 'Broads' experience', taking measures to prevent any adverse environmental impacts	Screen in	**L and M**
E3. Maintain and upgrade the range and provision of integrated multimedia interpretation about the special qualities of the Broads National Park, and 'point of need' information for visitors	Screen in	**L and M**

Broads Plan Component	Screening conclusion	Pre-Screening Category
F1. Increase and promote of accessible and 'taster' activities that foster physical and mental health and wellbeing for all, including under-represented groups	Screen in	**L**
F4. Provide up-to-date planning policy, site-specific allocations and planning guidance to support local community needs and ensure development happens within environmental limits	Screen in	**L and M**

7.1.5 Threats at each Habitats site are summarised above in **Table 6.3**.

7.2 Screening Conclusion

7.2.1 As required under Regulation 105 of the Habitats Regulations, an assessment has been undertaken of LSEs of the Broads Plan upon Habitats sites. The pre-screening checks (**Table 7.1**) indicate that several components of the Broads Plan have the potential to have LSEs on a number of Habitats sites, both alone and in-combination. The Broads Plan is not directly connected with or necessary to the management of any Habitats site. The screening assessment takes no account of mitigation measures that the Broads Plan may incorporate to mitigate adverse impacts upon Habitats sites. It is therefore concluded that the Broads Plan will be screened into the HRA process. The next stage of the HRA process is Stage 2 - Appropriate Assessment.

8 Overview of Mitigation

8.1 Introduction to mitigation

8.1.1 As set out in **Chapter 2**, the Broads Plan is the high-level overarching plan for the Broads National Park. It sets out a long-term vision for the area and shorter-term actions to benefit the environment, local communities and visitors. It draws together and guides a wide range of partnership plans, programmes and policies relevant to the area, several of relevance to this HRA being set out in **Appendix A**.

8.1.2 At this level of plan making, details around specific actions to deliver the long term and shorter-term priorities, in terms of scope, scale and locations, are not yet in a format which would allow a meaningful assessment of impacts at Habitats sites. As such it is only possible to predict and assess the potential effects the Broads Plan in the Appropriate Assessment with the details currently available.

8.1.3 Once detailed information on the exact nature, scope, timing, location and scale of effects is known, these will be assessed, and mitigation defined and secured to ensure compliance with the Habitats Regulations.

8.1.4 It is important to note that the Broads Plan does not remove the requirement for lower tier plans and projects to be subject to HRA through the Habitats Regulations. HRA of lower tiered plans and projects, is required as a matter of law and Government policy. This HRA sets out where lower tiered HRA will apply to ensure compliance with legislation and case law.

8.1.5 The Broads Plan outlines a range of actions which must be applied to lower tier plans and / or project level assessment to provide certainty that adverse effects will not occur. These measures give confidence that there are options available at the lower tier plan / project stage to adequately mitigate for any potential adverse impacts, notwithstanding the fact that lower tier HRA will still be required.

8.1.6 The Advocate General's opinion in the European Court of Justice case C-6/04 *European Commission v United Kingdom* confirmed the progression of assessment that must take place either from higher level to lower-level plans, or as the plan becomes more specific. She notes at paragraph 49:

8.1.7 *'adverse effects on areas of conservation must be assessed at every relevant stage of the procedure to the extent possible on the basis of the precision of the plan. This assessment is to be updated with increasing specificity in subsequent stages of the procedure*[70]*.*

8.1.8 Lower tier plan and project level assessment must have regard to the recommendations made in this HRA. All plans and projects taken forward by the Broads Authority and its partners must satisfy requirements under the Habitats Regulations.

[70] Opinion available at: https://curia.europa.eu/juris/showPdf.jsf;jsessionid=3D44C34DA890BCDA175840065B4AECE4?text=&docid=58359&pageIndex=0&doclang=en&mode=lst&dir=&occ=first&part=1&cid=3054642 [Date Accessed: 24/03/22]

9 Appropriate Assessment - Air Pollution

9.1 Introduction

9.1.1 The HRA screening process (**Appendix D**) concluded that the following components of the Broads Plan have the potential to result in LSEs at a number of Habitats sites as a result of changes to air quality:

- E1. Improve the integrated network of access routes and points (with easier access for people with mobility and sensory needs), linked to visitor facilities.
- E2. Offer a coordinated and year-round programme of visitor activities that promote a 'Broads' experience', taking measures to prevent any adverse environmental impacts.
- E3. Maintain and upgrade the range and provision of integrated multimedia interpretation about the special qualities of the Broads National Park, and 'point of need' information for visitors.
- F4. Provide up-to-date planning policy, site-specific allocations and planning guidance to support local community needs and ensure development happens within environmental limits.

9.1.2 These strategic objectives relate to the promotion of the Broads as a tourist destination and its land use planning function.

9.1.3 On the basis of the screening exercise (**Appendix D**), Habitats sites which were screened in and will be considered in this Appropriate Assessment in terms of air quality impacts include:

- The Broads SAC;
- Broadland SPA; and
- Broadland Ramsar.

9.1.4 The following Appropriate Assessment focuses on assessing more precisely the ecological impacts of the emissions at each Habitats site in view of its qualifying features and conservation objectives taking into account air quality information. This assessment follows Natural England's current guidance and therefore assesses the likely effects to inform a conclusion as to whether an adverse effect on site integrity can be ruled out. The following assessment also draws on Chartered Institute of Ecology and Environmental Management (CIEEM's) guidance following a six-step methodology. It includes consideration of factors such as: '*the action needed to achieve the conservation objectives for the SAC; the expected future trend in pollutants of concern (and the scientific reasonableness of any trend); the magnitude of any future 'in combination' dose and how it may change the trend; and the physical extent of the affected area as a proportion of that interest feature within the European site*'[71].

[71] CIEEM. January 2021. Paragraph 20. Advisory Note: Ecological Assessment of Air Quality Impacts

9.2 Air Pollutants

9.2.1 Nitrogen oxides (NOx) are produced during combustion processes, partly from nitrogen compounds in fuel, but mostly by direct combination of atmospheric oxygen and nitrogen in flames[72]. Road transport emissions of NOx in 2018 were the largest contributor to UK total emissions of NOx with most emissions related to diesel vehicles[73]. The introduction of catalytic converters has seen an overall reduction in emissions since 1990. NOx has the potential to impact habitats through direct toxicity and through their contribution to nitrogen deposition.

9.2.2 Ammonia originates from both natural and anthropogenic sources, with the main man-made source being agriculture. Other man-made sources of ammonia include industrial processes and vehicular emissions (from catalyst-equipped petrol vehicles and selective catalytic reduction on light and heavy goods diesel fuelled vehicles). As with NOx, elevated levels of ammonia can be directly toxic to plants and can also enrich a system with nitrogen causing eutrophication and acidification effects on habitats.

9.2.3 APIS describes nitrogen deposition as *the input of reactive nitrogen from the atmosphere to the biosphere both as gases, dry deposition and in precipitation as wet deposition*[74]. Anthropogenic sources of enhanced reactive nitrogen deposition come from emissions of oxidised nitrogen (NOx) and fossil fuel combustion and reduced nitrogen from agricultural sources.

9.2.4 Nitrogen is a major growth nutrient for plants. An increase in nitrogen can be toxic to plants and can lead to eutrophication which can cause species loss and changes in the structure and function of ecosystems. Nitrogen can also cause acidification of soils. Traffic related inputs of NOx and ammonia have an impact on the rates of nitrogen deposition. Nitrogen deposition rates are habitat specific as different habitats have different tolerances to different levels.

9.2.5 The Broads Plan indicates that most visitors to the National Park arrive to the Broads by car. In some areas, particularly at honeypot sites, this increased seasonal traffic can cause congestion and increased vehicle emissions with impacts upon air quality. Land use planning, and in particular development of land for employment or housing use, will result in increased traffic related emissions with impacts upon air quality. Whilst the increase in traffic emissions alone may not cause adverse impacts upon a Habitats site, when taken together with emissions from neighbouring authority development, they have the potential to have a cumulative adverse impact.

[72] Air Pollution Information Systems (2017) Pollutants, available at: http://www.apis.ac.uk/srcl/select-a-feature?site=UK9012171&SiteType=SPA&submit=Next [Date Accessed: 27/04/21]

[73] National Atmospheric Emissions Inventory. Available at: https://naei.beis.gov.uk/overview/pollutants?pollutant_id=6 [Date Accessed: 27/04/21]

[74] APIS. Nitrogen Deposition. Available at: http://www.apis.ac.uk/overview/pollutants/overview_N_deposition.htm [Date Accessed: 05/05/21]

9.3 Mitigation

9.3.1 The Broads Plan and other Broads Authority strategic plans and guiding strategies set out a series of measures which will have a positive impact and contribute towards the mitigation of air quality impacts from traffic sources at Habitats sites. Other plans and projects are set out in more detail in **Appendix A**. The Appropriate Assessment in respect of air quality therefore takes these into consideration.

- The Broads Plan. Several strategic objectives under the climate change theme aim to reduce climate emissions through initiatives such as replacing all Broads Authority operating vehicles with electric options (A1), initiatives such as 'Electrifying the Broads' and promotion of tourism hotspots with electric vehicle and alternative fuel strategies and visitor green travel (A2). Other objectives under the 'promoting understating and enjoyment' theme support initiatives for active travel around the Broads (E1).
- The Broads Authority Integrated Transport Strategy. This strategy aims to encourage sustainable travel choices such as public transport, walking, cycling and non-powered boating, and improve links between public transport provision, visitor destination points and access routes.
- Norfolk County Council Local Transport Plan (LTP) 4 Strategy. LTP4 aims to address issues such as air quality and carbon reduction and tackle infrastructure issues in relation to major road, bus and rail connections. It sets out a series of strategies and policies in relation to this. Policy 2 of LTPS4 notes the priority for reducing emissions will be to support a shift to more sustainable modes and more efficient vehicles, including lower carbon technology and cleaner fuels. Policy 3 notes that innovation and new technologies will be embraced and used proactively to meet new targets set by the recently adopted environmental policy. Policy 4 encourages a behaviour change and interventions that can help to increase the use of sustainable transport.

9.3.2 Acting together, the Broads Plans strategic objectives, guiding strategies and wider county initiatives will promote sustainable transport options with reductions in reliance on the private car and associated reductions in traffic emissions.

9.4 Assessment of impacts

9.4.1 **Appendix B** provides an overview of The Broads SAC, Broadland SPA and Broadland Ramsar, their qualifying features and threats and vulnerabilities.

9.4.2 The SIP covers The Broads SAC and Broadland SPA and indicates that features of both the SAC and SPA are sensitive to air quality impacts, in particular the impact of atmospheric nitrogen deposition[75]. It notes that nitrogen deposition exceeds the site relevant critical load for ecosystem protection and hence there is a risk of harmful effects, particularly in the light of a changing climate.

[75] Natural England (2018) Broadland SIP (covering Broadland SPA and The Broads SAC). Available at: http://publications.naturalengland.org.uk/file/6218680128241664 [Date Accessed: 11/04/22]

9.4.3 Natural England's Supplementary Advice[76] for the SAC notes that all qualifying features, with the exception of otter (*Lutra lutra*) and Alder woodland on floodplains, are sensitive to air pollution. It indicates that a change in air quality may modify the chemical status of its substrate, accelerate or damage plant growth, alter vegetation structure and composition and result in the loss of sensitive typical species associated with it. The management target for this habitat in terms of air quality is to '*maintain as necessary, the concentrations and deposition of air pollutants to at or below the site-relevant Critical Load or Level values given for this feature of the site on the Air Pollution Information System'.*

9.4.4 Broadland SPA is of international importance for a variety of wintering and breeding raptors and waterbirds associated with extensive lowland marshes. Natural England's Supplementary Advice for the SPA indicates that all qualifying features are sensitive to changes in air quality. It notes that '*the structure and function of the habitats which support this SPA feature may be sensitive to changes in air quality. Exceeding critical values for air pollutants may result in changes to the chemical status of its habitat substrate, accelerating or damaging plant growth, altering vegetation structure and composition and thereby affecting the quality and availability of nesting, feeding or roosting habitats'*. It has similar targets for air quality as The Broads SAC '*reduce concentrations and deposition of air pollutants for a site-relevant Critical Load or Level*[77]'. The Broadland Ramsar information sheet does not identify a threat from air quality[78].

9.4.5 APIS[79] provides current levels of nitrogen deposition and acidification at the SAC and SPA alongside critical loads for each qualifying feature, these are summarised in **Table 9.1** and **Table 9.2**.

9.4.6 At the SAC, Nitrogen deposition is currently exceeding the critical load for a number of qualifying features at an average of 18kg N/ha/yr. APIS has no comparable habitat with established critical load estimate available for a number of qualifying features e.g. water bodies.

Table 9.1: *Nitrogen Critical Load Information for The Broads SAC*

Qualifying Feature	Critical Load Class	Critical Load (N) kg/ha/yr	Current levels of deposition Kg/ha/yr	Source Attribution Data (local contributions)
Transition mires and quaking bogs	Valley mires, poor fens and transition mires	10-15	Maximum: 24.8 Minimum: 15.6 Average: 18	Livestock: 34.5% Fertiliser Application: 19.2% Others: 10.6% Other Transport: 10%
Liparis loeselii - Fen orchid	Moist to wet dune slacks	10-20	Maximum: 24.8 Minimum: 15.6 Average: 18	

[76] Natural England (2019) The Broads SAC Conservation Objectives Supplementary Advice. Available at: http://publications.naturalengland.org.uk/file/6067900213624832 [Date Accessed 11/04/22]

[77] Natural England (2019) Broadland SPA Conservation Objectives Supplementary Advice. Available at: http://publications.naturalengland.org.uk/publication/5310905998901248 [Date Accessed 19/04/22]

[78] Ramsar Information Sheet. Available at: https://jncc.gov.uk/jncc-assets/RIS/UK11010.pdf [Date Accessed 19/04/22]

[79] Air Pollution Information System. http://www.apis.ac.uk/srcl

Qualifying Feature	Critical Load Class	Critical Load (N) kg/ha/yr	Current levels of deposition Kg/ha/yr	Source Attribution Data (local contributions)
Molinia meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*)	Moist and wet oligotrophic grasslands: Molinia caerulea meadows	15-25	Maximum: 24.8 Minimum: 15.6 Average: 18	Europe Import: 9.55% Road Transport: 7.66% Non-agricultural non abatable: 5.07% Non-agricultural abatable: 3.28%
Calcareous fens with Cladium mariscus and species of the *Caricion davallianae*	Rich fens	15-30	Maximum: 24.8 Minimum: 15.6 Average: 18	
Alkaline fens	Rich fens	15-30	Maximum: 24.8 Minimum: 15.6 Average: 18	
Vertigo moulinsiana - Desmoulin`s whorl snail	No comparable habitat with established critical load estimate available	No critical loads available for this feature	Maximum: 12.9 Minimum: 9.5 Average: 10.3	
Lutra lutra - Otter	No comparable habitat with established critical load estimate available	No critical loads available for this feature	Maximum: 12.9 Minimum: 9.5 Average: 10.3	
Anisus vorticulus - Ramshorn snail	No comparable habitat with established critical load estimate available	No critical loads available for this feature	Maximum: 12.9 Minimum: 9.5 Average: 10.3	
Hard oligo-mesotrophic waters with benthic vegetation of *Chara spp*	No comparable habitat with established critical load estimate available	No critical loads available for this feature	Maximum: 12.9 Minimum: 9.5 Average: 10.3	
Natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation	No comparable habitat with established critical load estimate available	No critical loads available for this feature	Maximum: 12.9 Minimum: 9.5 Average: 10.3	

9.4.7 Acidity is currently exceeding the critical load for two qualifying features of the SAC: transition mires and quaking bogs; and Molinia meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*).

Table 9.2: *Acidity Critical Load Information for The Broads SAC (only qualifying features sensitive to acidity are included)*

Qualifying Feature	Critical Load Class	Critical Load **keq/ha/yr**	Current levels of deposition Nitrogen|Sulphur (keq/ha/yr):
Transition mires and quaking bogs	Bogs	Maximum: CLminN:.321 CLmaxN: .528 CLmaxS: .207 Minimum: CLminN: .321 CLmaxN: .497 CLmaxS: .176	Maximum: 1.79|0.2 Minimum: 1.09|0.14 Average: 1.29|0.16
Molinia meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*)	Acid grassland	Maximum: CLminN:.438 CLmaxN: 4.568 CLmaxS: 4.13 Minimum: CLminN: .223 CLmaxN: .542 CLmaxS: .176	Maximum: 1.79|0.2 Minimum: 1.09|0.14 Average: 1.29|0.16
Liparis loeselii - Fen orchid	Calcareous grassland (using base cation)	Maximum: CLminN:1.071 CLmaxN: 5.071 CLmaxS: 4 Minimum: CLminN: .856 CLmaxN: 4.856 CLmaxS: 4	Maximum: 1.79|0.2 Minimum: 1.09|0.14 Average: 1.29|0.16
Vertigo moulinsiana - Desmoulin`s whorl snail	Freshwater	Maximum: no critical loads available for this feature Minimum: no critical loads available for this feature	Maximum: 0.93|0.18 Minimum: 0.65|0.13 Average: 0.73|0.15
Lutra lutra - Otter	Freshwater	Maximum: no critical loads available for this feature Minimum: no critical loads available for this feature	Maximum: 0.93|0.18 Minimum: 0.65|0.13 Average: 0.73|0.15
Anisus vorticulus - Ramshorn snail	Freshwater	Maximum: no critical loads available for this feature Minimum: no critical loads available for this feature	Maximum: 0.93|0.18 Minimum: 0.65|0.13 Average: 0.73|0.15

9.4.8 APIS indicates that there would be no expected negative impact from increased nitrogen deposition on species broad habitat types for all qualifying features of the SPA, with the exception of Great bittern and Eurasian marsh harrier when using fen, marsh and swap habitat for reproducing and Eurasian wigeon when using literal sediment for wintering activity. For species using open standing water habitat type, the impact of nitrogen deposition will be dependent on whether the water body is nitrogen or phosphorus limited.

Table 9.3: *Nitrogen Critical Load Information for Broadlands SPA qualifying features broad habitat types*[80]

Broad Habitat Types for SPA Qualifying Features	Qualifying Features	Critical Load (N) kg/ha/yr	Current levels of deposition Kg/ha/yr	Source Attribution Data (local contributions)
Dwarf shrub heath	Hen harrier	10-20	Maximum: 24.8 Minimum: 15.6 Average: 17.8	Livestock: 34.5% Fertiliser Application: 19.2% Others: 10.6% Other Transport: 10% Europe Import: 9.55% Road Transport: 7.66% Non-agricultural non abatable: 5.07% Non-agricultural abatable: 3.28%
Fen, marsh and swamp	Hen harrier Great bitter Eurasian marsh harrier	15-30	Maximum: 24.8 Minimum: 15.6 Average: 17.8	
Littoral sediment	Hen harrier Eurasian wigeon Ruff	20-30	Maximum: 24.8 Minimum: 15.6 Average: 17.8	
Standing open water and canals	Eurasian wigeon Tundra swan Whooper swan Gadwall Northern shoveler	No Critical Load has been assigned to the EUNIS classes for meso/eutrophic systems. These systems are often P limited	Maximum: 12.9 Minimum: 9.5 Average: 10.2	
Neutral grassland	Ruff	20-30	Maximum: 24.8 Minimum: 15.6 Average: 17.8	

[80] Table only includes broad habitats which are sensitive to nitrogen.

9.4.9 APIS indicates there would be no expected negative impact from increased acid deposition on the species broad habitat types for all SPA qualifying features.

Table 9.4: *Acid deposition Information for Broadlands SPA qualifying features broad habitat types*[81]

Broad Habitat Types for SPA Qualifying Features	Qualifying Features	Acidity Critical Load **keq/ha/yr**	Current levels of deposition Nitrogen|Sulphur (keq/ha/yr):
Neutral grassland – acid grassland	Ruff	MinCLminN: 0.223 | MaxCLminN: 0.438 MinCLMaxS: 0.176 | MaxCLMaxS: 4.13 MinCLMaxN: 0.542 | MaxCLMaxN: 4.568	Maximum: 1.8 | 0.2 Minimum: 1.1 | 0.1 Average: 1.3 | 0.2
Neutral grassland – calcareous grassland	Ruff	MinCLminN: 0.856 | MaxCLminN: 1.071 MinCLMaxS: 4 | MaxCLMaxS: 4 MinCLMaxN: 4.856 | MaxCLMaxN: 5.071	Maximum: 1.8 | 0.2 Minimum: 1.1 | 0.1 Average: 1.3 | 0.2
Dwarf shrub heath	Hen harrier	MinCLminN: 0.499 | MaxCLminN: 1.035 MinCLMaxS: 0.176 | MaxCLMaxS: 4.13 MinCLMaxN: 0.837 | MaxCLMaxN: 5.165	Maximum: 1.8 | 0.2 Minimum: 1.1 | 0.1 Average: 1.3 | 0.2
Standing open water and canals	Tundra swan Whooper swan Eurasian wigeon Gadwall Northern shoveler	MinCLminN: 0 | MaxCLminN: 0 MinCLMaxS: 0 | MaxCLMaxS: 0 MinCLMaxN: 0 | MaxCLMaxN: 0	Maximum: 0.9 | 0.2 Minimum: 0.7 | 0.1 Average: 0.7 | 0.2

9.4.10 Source attribution data for nitrogen indicates that the farming sector (agriculture and livestock) represent the largest contribution to emissions, together over 50% of all contributions. This suggests that the SAC is located within an agricultural 'hotspot'. It is clear from this data that steps to avoid critical load exceedance and restore the site to 'at or below' critical loads, will require action to reduce emissions from existing agricultural sources as a priority. CIEEM's guidance notes that where *'road transport makes only a small contribution to the critical load exceedance, investment to encourage cleaner car technology may be sufficient to regard a new proposal which leads to a small increase in traffic on local roads as acceptable'*.

[81] Table only includes broad habitats which are sensitive to acidity.

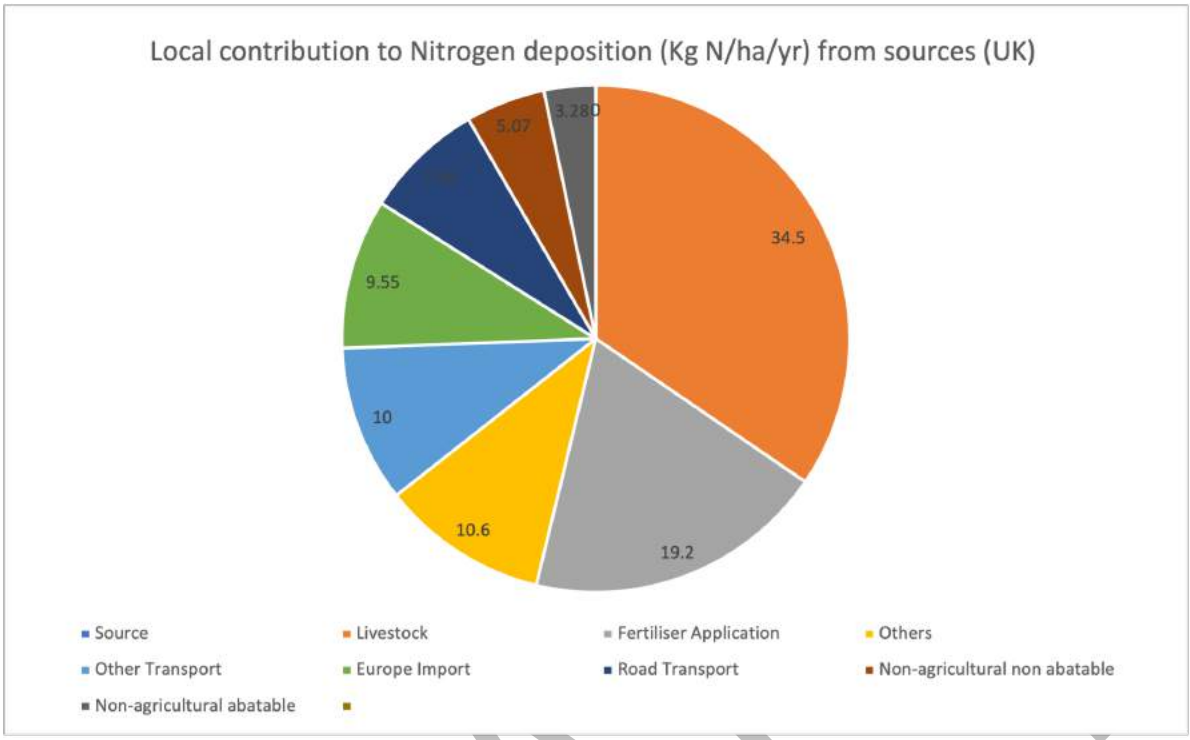

Figure 9.1: *Local contributions to source attribution data obtained from APIS for the The Broads SAC and Broadland SPA*[82]

9.4.11 As noted on APIS, CIEEM's air quality guidance also states that freshwater systems are often phosphorus, rather than nitrogen, limited. This requires careful consideration of the availability from sources such as wastewater treatment works. This is considered in more detail in the water appropriate assessment at **Chapter 10**.

9.4.12 A review of background air quality trends provided on APIS[83] indicates that there was an overall small decrease in nitrogen and acid deposition, at the SAC and SPA between 2005 and 2018. This may be attributed to national initiatives such as improvements in vehicle technologies (new standard Euro 6/VI vehicles) and implementation of other catchment wide initiatives.

9.4.13 The conservation objectives for the SAC and SPA in relation to air quality is that the integrity of the site is to maintain as necessary, the concentrations and deposition of air pollutants to at or below the site-relevant Critical Load or Level values given for this feature of the site on the APIS.

9.4.14 A review of source attribution data indicates that the key issue to ensure conservation objectives are achieved in relation to air quality, will be a strategic approach taken towards agricultural emissions.

[82] http://www.apis.ac.uk/app [Date Accessed: 14/04/22]

[83] http://www.apis.ac.uk/app [Date Accessed: 14/04/22]

9.4.15 Strategic road links within 200m of the SAC and SPA include the A416, A47, A1064, A149, B1150. The impact of development to be set out in the Local Plan for the Broads and promotion of the Broads as a tourism destination on traffic flows on these road links is not known at this stage in the Plan making process. Given the sensitivity of the SAC and SPA's qualifying features to changes in air quality, this impact will be further investigated within the HRA process at lower tier plan making levels, notably and HRA of the Local Plan for the Broads and the Sustainable Tourism Strategy. Consideration will also be given to effects upon areas of functionally linked land / water bodies and in-combination effects on air quality when considered with growth promoted in neighbouring LPA areas (see **Appendix A**).

9.4.16 As noted at **Section 9.3**, the Broads Plan and guiding strategies incorporate measures for sustainable transport and a requirement to encourage modal shift.

9.4.17 Taking into consideration the small contribution of traffic sources to baseline nitrogen and acidity levels, decreasing pollution trends, the positive contribution of policies in the Broads Plan, guiding strategies and other plans, lower tier plan requirements to undertake HRA and consider air quality implications once details on allocations (location and scale) is known, it is considered that there will be no adverse impact on site integrity at the SAC or SPA from the Broads Plan (either alone or in-combination) due to changes in air quality. It is noted that the key management issue at the SAC in terms of nitrogen and acid deposition is associated with management of agricultural sources.

9.4.18 It is recognised that the notified Ramsar features for the Broadland Ramsar are the same as the qualifying features of the SAC and SPA and the appropriate assessment above therefore also applies to the Broadland Ramsar designation.

10 Appropriate Assessment – Hydrology

10.1 Introduction

10.1.1 The HRA screening process (**Appendix D**) concluded that the following components of the Broads Plan have the potential to result in LSEs at a number of Habitats sites as a result of hydrology (changes in water quality or water resources / levels):

- A3: Prepare a long-term, integrated flood risk strategy for the Broads, Great Yarmouth and interrelated coastal frontage and maintain current adaptive coastal, tidal and fluvial flood risk management approaches for the area.
- B1: Restore, maintain and enhance lakes and use monitoring evidence to trial and implement further innovative lake restoration techniques.
- B2: Promote best practice water capture and usage across the Broadland rivers catchment and reduce point and diffuse pollution into the floodplain and water courses.
- C1: Maintain navigation water depths to defined specifications, reduce sediment input and dispose of dredged material in sustainable and beneficial ways.
- C2: Maintain existing navigation water space and develop appropriate opportunities to extend access for various types of craft.
- C3: Manage water plants and riverside trees and scrub, and seek resources to increase operational targets.
- C4: Maintain and improve safety and security standards and user behaviour on the waterways.
- E1. Improve the integrated network of access routes and points (with easier access for people with mobility and sensory needs), linked to visitor facilities.
- E2. Offer a coordinated and year-round programme of visitor activities that promote a 'Broads' experience', taking measures to prevent any adverse environmental impacts.
- E3. Maintain and upgrade the range and provision of integrated multimedia interpretation about the special qualities of the Broads National Park, and 'point of need' information for visitors.
- F1: Increase and promote of accessible and 'taster' activities that foster physical and mental health and wellbeing for all, including under-represented groups.
- F4. Provide up-to-date planning policy, site-specific allocations and planning guidance to support local community needs and ensure development happens within environmental limits.

10.1.2 These strategic objectives relate to the promotion of the Broads as a tourist destination, waterways management and its land use planning function.

10.1.3 On the basis of the screening exercise (**Appendix D**), Habitats sites which were screened in and will be considered in this Appropriate Assessment in terms of hydrology impacts include:

- The Broads SAC;
- Broadland SPA;
- Broadland Ramsar;

- Breydon Water SPA; and
- Breydon Water Ramsar.

10.1.4 The following Appropriate Assessment focuses on assessing more precisely the ecological impacts of hydrology changes at each Habitats site in view of their qualifying features and conservation objectives taking into account baseline information.

10.2 Water quality, water resources and water levels

10.2.1 As noted in **Section 6.4** increased urban growth, waterways management and increased water-based tourism, can lead to a deterioration of water quality and a change in water levels and flows at water sensitive Habitats sites.

10.2.2 Waterways management (in particular the process of dredging) has the potential to change tidal and flood water levels in open water bodies, marshes and fens and increase saline penetration. Urban development can reduce catchment permeability and the presence of drainage networks may be expected to remove runoff from urbanised catchments. This may result in changes in run off rates from urbanised areas to Habitats sites or watercourses which run through them. Water mains leakage and sewer infiltration may also affect the water balance. Increased development may also increase pressures upon water resources for supply.

10.2.3 Water quality can change through either polluted surface water run-off due to urban development, release of toxic and non-toxic contamination due to waterways management and recreational activities and increased discharges from WwTWs.

10.3 Mitigation

10.3.1 The Broads Plan itself and other Broads Authority strategic plans and guiding strategies set out a series of measures which will have a positive impact and contribute towards the mitigation of hydrology impacts at Habitats sites. The Appropriate Assessment in respect of water therefore takes these into consideration.

- The Broads Plan. Strategic Objective B2 aims to promote best practice water capture and usage across the Broadland Rivers catchment and reduce pollution. It also aims to adopt and implement objectives set out in other water-based plans (as detailed below and set out in **Appendix A**).
- Broadland Rivers Catchment Plan. This plan aims to reduce run-off of contaminants, soil and nutrients from entering the Broadland Rivers catchment. It also aims to increase water capture and manage water efficiency within the catchment.
- The Norfolk Water Strategy Programme. This Programme aims to look at the significant pressures on water resources in the eastern area and address the effects of climate change.
- The Waterways Management Strategy (WMS). Whilst the WMS will act in-combination with the Broads Plan to create water pathways of impact at Habitats sites, it also sets out a series of protective policies and mechanism within which work will take place to ensure water quality and water levels are protected. In particular it sets out the requirement for lower tier plan and project HRA.

10.3.2 A statutory plan and policy framework protects water quality and water resources across the UK. A review of these plans is presented in detail at **Appendix A** and discussed below. This strategic planning framework is subject to HRA to ensure compliance with the Habitats Regulations.

10.3.3 The Plan area lies within the Anglian River management basin and within the Broadland Rivers surface water management catchment area. The upper reaches of the Broadland Rivers' management catchment include the River Wensum and the River Waveney. The River Wensum is a calcareous groundwater dominated river which originates in northwest Norfolk, flowing in a south easterly direction before joining the River Yare to the south east of Norwich. Further down the catchment the land is mostly at or below sea level and forms an area of slow-flowing rivers and interconnected lakes and wetlands. These lower reaches are affected by tidal surges from the North Sea as well as upstream inputs. The Broadland Rivers management catchment is further divided into four operational management catchments associated with the River Bure, River Waveney, River Wensum and River Yare[84].

10.3.4 The Water Framework Directive (WFD) provides an indication of the health of the water environment and whether a water body is at good status or potential. This is determined through an assessment of a range of elements relating to the biology and chemical quality of surface waters and quantitative and chemical quality of groundwater. To achieve good ecological status or potential, good chemical status or good groundwater status every single element assessed must be at good status or better. If one element is below its threshold for good status, then the whole water body's status is classed below good. Surface water bodies can be classed as high, good, moderate, poor or bad status.

10.3.5 The WFD sets out areas which require special protection. These include areas (Habitats sites) designated for "*the protection of habitats or species where the maintenance or improvement of the status of water is an important factor in their protection including relevant Natura 2000 sites designated under Directive 92/43/EEC (the Habitats Directive) and Directive 79/409/EEC (the Birds Directive)*"[85].

10.3.6 Anglian Water and Essex & Suffolk Water are the potable water provider for the Broads catchment. The East of England is one of the driest regions of the UK with the Anglian region being classed by the Environment Agency as being under serious water stress[86]. Water companies divide their supply into Water Resource Zones (WRZs). The plan area lies within the Broads WRZ.

[84] Environment Agency. Catchment Data Explorer. https://environment.data.gov.uk/catchment-planning/RiverBasinDistrict/5 [Date Accessed: 10/04/22]

[85] Official Journal of the European Communities (2000) Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy. Available at: https://eur-lex.europa.eu/resource.html?uri=cellar:5c835afb-2ec6-4577-bdf8-756d3d694eeb.0004.02/DOC_1&format=PDF [Date Accessed: 19/04/22]

[86] Environment Agency. Areas of water stress: final classification. Available at: https://www.iow.gov.uk/azservices/documents/2782-FE1-Areas-of-Water-Stress.pdf [Date Accessed: 19/04/22].

10.3.7 It is a statutory requirement that every five years water companies produce and publish a Water Resources Management Plan (WRMP). A WRMP demonstrates long term plans to accommodate the impacts of population growth, drought, environmental obligations and climate change uncertainty in order to balance supply and demand. Anglian Water's WRMP[87] and Essex & Suffolk Water WRMP[88] set out a series of measures to ensure the water supply - demand balance is achieved whilst taking into consideration environmental water requirements. This includes measures such as smart metering, leakage reduction, water efficiency, strategic water planning / transfers. Following application of these measures the WRMPs conclude that adequate water supplies will be available up to the end of the plan periods and will cater for proposed levels of growth in the region.

10.3.8 An HRA was undertaken alongside the preparation of the Anglian Water WRMP[89]. This concluded there would be no adverse effects on the integrity of any Habitats site but highlighted the importance of lower tier project-level HRA of future plans, projects, or permissions which may act in-combination with WRMP options to refine mitigation strategies and assessment conclusions once appropriate detailed design is available. At the time of writing an HRA was not publicly available for the Essex & Suffolk Water WRMP.

10.3.9 The plan area falls within the Broadland Catchment Abstraction Management Area (CAMS)[90]. This indicates that all rivers are defined as having restricted or no water available for licensing during periods of low flow.

10.3.10 Wastewater treatment in the Plan area is provided via wastewater recycling centres (WRCs) operated and maintained by Anglian Water Services (AWS). Treated wastewater is ultimately discharged to nearby water bodies. Each WRC is connected to development by a network of wastewater pipes (the sewerage system) which collects wastewater generated by homes and businesses to the WRC. The Environment Agency control discharges to WRC through issue of permits.

10.3.11 The current Anglian River Basin Management Plan (RBMP)[91] provides a framework for protecting and enhancing the benefits provided by the water environment. To achieve this, and because water and land resources are closely linked, it also informs decisions on land-use planning. It provides strategic level policy guidance in relation to baseline classification of water bodies, statutory objectives for protected areas and water bodies and a summary of measures to achieve statutory protection. Draft RBMPs have been prepared and are out for consultation at the time of writing[92].

[87] Anglian Water. 2019. Water Resources Management Plan 2019. Available at: https://www.anglianwater.co.uk/siteassets/household/about-us/wrmp-report-2019.pdf. [Date Accessed: 19/04/22]

[88] Essex & Suffolk Water. August 2019. Final Water Resources Management Plan 2019. A Summary. Available at: https://www.nwg.co.uk/responsibility/environment/wrmp/current-wrmp-2015-2020/ [Date Accessed: 28/04/22]

[89] Mott McDonald. 2019. Anglian Water - Water Resources Management Plan Habitats Regulations Assessment Task II: Appropriate Assessment Final for Publication.

[90] Environment Agency. May 2017. Broadland Abstraction Licensing Strategy.

[91] Environment Agency (2015) Anglian River Basin Management Plan. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/718327/Anglian_RBD_Part_1_river_basin_management_plan.pdf [Date Accessed: 19/04/22]

[92] https://www.gov.uk/government/collections/draft-river-basin-management-plans-2021#anglian-rbd [Date Accessed: 19/04/22]

10.3.12 The current Anglian RBMP outlines a number of measures to tackle water management issues and achieve a series of environmental objectives set out within the plan. Local measures are set out on a catchment basis. The Plan area sits within the Broadland Rivers management catchment area. Within this catchment the priority river basin management issues include tackling diffuse pollution from rural areas, physical modification of rivers and lakes, and pollution from wastewater. An HRA was undertaken alongside the preparation of the current RBMP[93]. This HRA concluded that, at the strategic plan level, and given the range of potential mitigation options available, the RBMP is not likely to have any significant effects on any European sites, alone or in combination with other plans or projects. It notes the requirement for project level HRA where necessary for lower tier plans.

10.4 Assessment of impacts

10.4.1 The Broads SAC, Broadland SPA, Broadlands Ramsar, Breydon Water SPA and Breydon Water Ramsar are all situated within the Broadland Rivers catchment management area[94] and are hydrologically connected to the Plan area. They form a network of naturally nutrient-rich lakes which were artificially created through peat extraction in medieval times, with Breydon Water forming an inland tidal estuary in the lower reaches of the River Yare and River Waveney. This network supports a range of water dependent habitats and species unique to the local area. Any change in water levels, flows or water quality has the potential to have direct and indirect effects on the qualifying features, such as direct damage to habitat and change in food resource availability.

10.4.2 In terms of water quality, Natural England's Supplementary Advice notes that the target for the qualifying features is to '*maintain and where necessary restore water quality'*. DLUHC and Natural England's recent advice on nutrient loadings in the catchment of the SAC and Broadland Ramsar will apply to ensure that the conservation status of these designations is maintained and restored (**Section 6**). In relation to water levels and flows, the Supplementary Advice notes that the target is to '*maintain natural hydrological processes to provide the conditions necessary to sustain the feature within the site'*. In relation to sediment loading, the Supplementary Advice notes that the target is to '*maintain and where necessary restore the natural sediment load'*[95].

10.4.3 In relation to water quality and quantity Natural England's Supplementary advice for the Broadland SPA notes that where the supporting habitats of the SPA feature are dependent on surface water, *the target is to maintain and / or restore water quality and quantity to a standard which provides the necessary conditions to support the qualifying features of Broadland SPA in terms of their habitat requirements*[96].

[93] Environment Agency (2015). River basin management plan for the Anglian River Basin District Habitats Regulations Assessment Updated December 2015. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/496430/RBMP_HRA_Anglian_FINAL_Jan_2016.pdf [Date Accessed19/04/22]

[94] https://environment.data.gov.uk/catchment-planning/RiverBasinDistrict/5

[95] [95] Natural England (2019) The Broads SAC Conservation Objectives Supplementary Advice. Available at: http://publications.naturalengland.org.uk/file/6067900213624832 [Date Accessed 20/04/22]

[96] Natural England (2019) Broadland SPA Conservation Objectives Supplementary Advice. Available at: http://publications.naturalengland.org.uk/publication/5310905998901248 [Date Accessed 20/04/22]

10.4.4 Sediment management for navigation in the Broads is currently set out in the Sediment Management Strategy. This strategy sets out known issues and principles for addressing the task of sediment management[97]. The WMS will replace the Sediment Management Strategy and provide a framework and action plan for sustainable and cost-effective management of the Broads navigable waterways from 2022/23 to 2026/27. The WMS will contain a set of guiding principles to determine where and how operational activities will be carried out. The WMS has been subject to HRA [insert reference once WMS HRA has been finalised]. In addition, lower tiered plans and projects which stem from the WMS, will be subject to HRA as a matter of law and Government policy. All HRA work will need to take into consideration impacts upon functionally linked water bodies and also the in-combination impact upon the water environment. The WMS outlines a range of mitigation options which must be applied to lower tier plans and / or project level HRA to provide certainty that adverse effects will not occur. These include Broads Authority Environmental Standard Operating Procedures. Such measures give confidence that there are options available at the lower tier plan / project stage to adequately mitigate any potential adverse impacts, notwithstanding the fact that lower tier HRA will still be required.

10.4.5 Development planning is managed in the Broads through the Local Plan for the Broads which sets out planning policy and allocations for the local area. The current Local Plan for the Broads[98] provides a policy framework to protect water quality, ensure adequate sewage treatment provision is in place, control boat wash down facilities and surface water run-off, promote water efficiency and incorporate sustainable drainage (SuDS) (Policy DM2: Water quality and foul drainage, Policy DM3: Boar wash-down facilities, DM4: Water efficiency, Policy SP2: Strategic flood risk policy and DM6: Surface water run-off). This plan was subject to HRA[99]. The Broads Authority is in the process of reviewing the Local Plan for the Broads and undertaking an accompanying HRA, which will need to take into consideration impacts upon functionally linked water bodies and also the in-combination impact upon the water environment. This HRA will also need to have regard to advice from the Chief Planning Officer from DLUHC and Natural England on the importance of nutrient impacts at The Broads SAC and Broadlands Ramsar and requirements around nutrient neutrality. [Client recommendation: As per Appendix D, it would be beneficial to ensure this is reflected in the Broads Plan?]. It will also be necessary for the Broads Authority to liaise with Anglian Water and the Environment Agency as the Local Plan for the Broads is finalised and development progressed, to ensure that adequate water supply is available, and levels are maintained at water sensitive designated sites.

10.4.6 In addition, the wider strategic water planning and policy framework discussed in **Section 10.3**, will provide protective mechanisms for the water environment in terms of water quality, water resources and water levels.

[97] Broads Authority. 2010. Sediment Management Strategy Action Plan 2010/11.

[98] Broads Authority. 2019. Local Plan for the Broads 2015 – 2036. Available at: https://www.broads-authority.gov.uk/__data/assets/pdf_file/0036/259596/Local-Plan-for-the-Broads.pdf [Date Accessed: 19/04/22]

[99] : Liley, D., Hoskin, R., Lake, S. and Panter, C. 2019. Habitats Regulations Assessment of the Local Plan for the Broads at Modifications stage. Unpublished report by Footprint Ecology

10.4.7 When taking into consideration this protective high level land use and water planning framework, and the requirement for HRA of lower tiered plans and projects, it is considered that the Broads Plan will have no adverse impact upon the integrity of any Habitats site either alone or in-combination.

11 Appropriate Assessment – Public Access and Disturbance

11.1 Introduction

11.1.1 The HRA screening process (**Appendix D**) concluded that the following plan components have the potential to result in LSEs at a number of Habitats sites as a result of public access and disturbance impacts:

- E1. Improve the integrated network of access routes and points (with easier access for people with mobility and sensory needs), linked to visitor facilities.
- E2. Offer a coordinated and year-round programme of visitor activities that promote a 'Broads' experience', taking measures to prevent any adverse environmental impacts.
- E3. Maintain and upgrade the range and provision of integrated multimedia interpretation about the special qualities of the Broads National Park, and 'point of need' information for visitors.
- F1: Increase and promote of accessible and 'taster' activities that foster physical and mental health and wellbeing for all, including under-represented groups.
- F4. Provide up-to-date planning policy, site-specific allocations and planning guidance to support local community needs and ensure development happens within environmental limits.

11.1.2 These strategic objectives relate to the promotion of the Broads as a tourism destination and its land use planning function.

11.1.3 On the basis of the screening exercise (**Appendix D**), Habitats sites which were screened in and will be considered in this Appropriate Assessment in terms of public access and disturbance impacts include:

- The Broads SAC;
- Broadland SPA;
- Broadland Ramsar;
- Breydon Water SPA;
- Breydon Ramsar;
- Breckland SPA;
- Breckland SAC;
- Winterton-Horsey Dunes SAC;
- Great Yarmouth and North Denes SPA;
- North Norfolk Coast SAC;
- North Norfolk Coast SPA;
- North Norfolk Coast Ramsar;
- The Wash and North Norfolk Coast SAC;
- Roydon and Dersingham Bog SAC;
- Roydon and Dersingham Bog Ramsar;
- Norfolk Valley Fens SAC;

- The Wash SPA;
- The Wash Ramsar; and
- Benacre to Easton Bavents SPA.

11.1.4 The following Appropriate Assessment focuses on assessing more precisely the ecological impacts of public access and disturbance impacts at each Habitats site in view of their qualifying features and conservation objectives.

11.2 Public access and disturbance

11.2.1 The Broads Plan indicates that more than eight million people a year visit the Broads National Park for recreational activities[100]. These visitors are attracted by the inland waterways, coast and other recreational offerings in the area.

11.2.2 The Broads Plan indicates that in 2021 there were 12,639 craft licenced to use the Broads with the majority being privately owned but a large number also registered to the boat hire industry. Other popular recreational activities set out in the Broads Plan include angling, walking, cycling, horse riding, visiting local sites of interest and the draw of local wildlife interest.

11.2.3 Promotion of the Broads as a tourist destination and increased development have the potential to result in public access and disturbance pressures at Habitats sites, which can take the form of urbanisation and / or recreational impacts (as discussed in **Sections 6.6** to **6.7**).

11.3 Mitigation

11.3.1 The Broads Plan itself and other Broads Authority strategic plans and guiding strategies set out a series of measures which will have a positive impact and contribute towards the mitigation of public access and disturbance impacts at Habitats sites. The Appropriate Assessment in respect of public access and disturbance therefore takes these into consideration.

- The Broads Plan. Strategic Objective E2 aims to create and promote year-round high quality / low environmental impact 'experiential' itineraries. Strategic Objective E3 aims to provide information and other resources to encourage environmentally aware and responsible visitor behaviour which includes access to protected habitats. Strategic Objective E4 aims to implement measures to assess and guide quality and environmental sustainability standards. Strategic Objective F4 promotes the implementation of the Green Infrastructure and Recreational Disturbance Avoidance Mitigation Strategies to extend and protect biodiversity value of sites.
- The Sustainable Tourism Strategy. This strategy sets out the overall strategic direction for tourism in the Broads and is written to be in line with the requirements of the European Charter for Sustainable Tourism in Protected areas, which requires there to be a sustainable tourism strategy and action plan for the protected areas. This strategy is currently under review. The current

[100] STEAM data for Broads and area of influence

strategy, Sustainable Tourism in the Broads, has an overall aim to prevent negative impacts of tourism on the environment.

11.3.2 Recreational mitigation strategies (as outlined in **Section 6.6**) provide a package of mitigation measures to address alone and in-combination impacts of development (tourism and residential) on the Norfolk and Suffolk network of Habitats sites. This mitigation package will be taken into consideration in preparation of the Local Plan for the Broads and includes GIRAMS for the Norfolk Habitats sites and the RAMS to address recreational pressure at Habitats sites within Suffolk. This package of mitigation will be considered in the HRA which will be prepared to support the Local Plan for the Broads.

11.3.3 The HRA of the Local Plan for the Broads will also need to take into consideration the proximity of development to Habitats sites in terms of urbanisation impacts (outlined in **Section 6.7**). Urbanisation effects have the potential to impact upon both designated sites and parcels of functionally linked land and / or water bodies. As noted in **Section 6.7** urbanisation effects often occur within 400/500m of a Habitats site. Potential operational and construction related noise, visual and lighting will need to be addressed. Mitigation options may include the incorporation of screens, bunds, fencing, directional lighting, and low noise emitting equipment among other solutions. Further details on the nature of mitigation required will be better understood when the HRA of the Local Plan for the Broads is prepared. Given there are widely used techniques available to mitigate urbanisation impacts, there is no uncertainty over the deliverability of these allocations. This approach is compliant with case law which requires the Competent Authority to be satisfied that mitigation solutions can be achieved in practice[101],[102], whilst recognising the multi-staged planning and approval procedural approach to plan making[103].

11.3.4 The Broads Plan recognises the value of the National Park to tourism and aims to promote this in suitable locations in harmony with the special status and qualities of the area. It promotes regenerative tourism – which goes beyond sustainable tourism to contribute to the regeneration of the places and communities in which it operates. This will be captured in the Sustainable Tourism Strategy which is currently under review and will be subject to plan level HRA. The current Tourism Strategy[104] focuses on sustainable activity, with connected benefits for local communities and conservation. Its main aims are to raise awareness of this unique wetland, strengthen the tourism offer and manage the flow of visitors around the Broads, encouraging exploration and environmental awareness. The Broads Plan aims to promote more clearly the special qualities of the National Park and encourage visitors to value and care for it.

[101] Ltd (NANT Ltd) v Suffolk Coastal District Council, Court of Appeal, 17 February 2015. Available at: https://www.eastsuffolk.gov.uk/assets/Planning/Suffolk-Coastal-Local-Plan/Core-Strategy-and-DMP/No-Adastral-New-Town-Ltd-v-SCDC.pdf [Date Accessed: 20/04/22]

[102] Opinion of Advocate General Kokott delivered on 9 June 2005. Commission of the European Communities v United Kingdom of Great Britain and Northern Ireland. Failure of a Member State to fufil obligations - Directive 92/43/EEC - Conservation of natural habitats - Wild fauna and flora. Case C-6/04. Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A62004CC0006 [Date Accessed: 20/04/22].

[103] R (o a o Devon Wildlife Trust) v. Teignbridge DC [2015] EWHC 2159 (Admin). 28 July 2015. Available at: https://www.casemine.com/judgement/uk/5a8ff76460d03e7f57eac083 [Date Accessed: 20/04/22]

[104] The Tourism Company. 2016. Sustainable Tourism in the Broads. Available at: https://www.broads-authority.gov.uk/__data/assets/pdf_file/0023/226247/Sustainable-Tourism-in-the-Broads-2016-20-May-2016.pdf [Date Accessed: 22/03/22]

11.3.5 The Broads Authority already promotes environmentally friendly boating options within the Broads[105]. This includes low wash hulls, guidance on maintaining water quality (from detergents and anti-fouling paints), the Green Boat Mark which is an eco-accreditation scheme for motor cruisers and the promotion of electric day boats and charging points. In addition, there are codes of conduct for most waterway activities available on the Broads Authority website[106].

11.4 Assessment of impacts

11.4.1 Habitats sites within the recreational ZoI have the potential to be adversely impacted by the promotion of the Broads as a tourism destination, promotion of the waterways for navigation and increased residential development alone and in-combination with neighbouring LPA development.

11.4.2 These pressures are noted in the SIPs and Supplementary advice for the network of Habitats sites within Norfolk and Suffolk (**Appendix B**). Threats include increased recreational pressures and urbanisation which may have direct impacts upon qualifying features and also indirect impacts upon areas of functionally linked land and / or water bodies.

11.4.3 The current Tourism Strategy aims are to raise awareness of the environmental sensitivities of the Broads. This plan is currently under review and will be subject to HRA which will assess the impact of the next strategy in more detail.

11.4.4 The Local Plan for the Broads review will take into consideration mitigation strategies (Norfolk GIRAMS and Suffolk RAMS) to address alone and in-combination recreational impacts upon the network of Habitats site across Suffolk and Norfolk. This plan will also be subject to an HRA.

11.4.5 The Broads Plan itself provides a protective framework of policy wording which seeks to protect the environmental from public access and disturbance threats and pressures (as set out in **Section 11.3**).

11.4.6 When taking into consideration this protective planning framework, strategic recreational mitigation strategies and the requirement for HRA of lower tiered plans and projects, it is considered that the Broads Plan will have no adverse impact upon the integrity of any Habitats site either alone or in-combination.

[105] Available at: https://www.broads-authority.gov.uk/boating/owning-a-boat/environmentally-friendly-boating [Date Accessed: 27/04/22]

[106] Available at: https://www.broads-authority.gov.uk/boating/navigating-the-broads [Date Accessed: 27/04/22]

12 Conclusions

12.1 Summary

12.1.1 The Broads Plan is not directly connected with or necessary to the management of any Habitats site. A screening assessment was therefore undertaken which identified a number of likely significant effects associated with implementation of management techniques set out in the Broads Plan. Taking no account of mitigation measures these had the potential to affect the following Habitats sites:

- The Broads SAC;
- Broadlands SPA:
- Broadlands Ramsar;
- Breydon Water SPA;
- Breydon Water Ramsar;
- Outer Thames Estuary SPA;
- Great Yarmouth North Denes SPA;
- Winterton-Horsey Dunes SAC;
- Southern North Sea SAC;
- Greater Wash SPA;
- Benacre to Easton Bavents SPA;
- Norfolk Valley Fens SAC;
- The Wash and North Norfolk Coast SAC;
- North Norfolk Coast SAC;
- North Norfolk Coast SPA; and
- North Norfolk Coast Ramsar.

12.1.2 The HRA therefore progressed to an Appropriate Assessment which looked at the impacts of a change in air quality, hydrology and public access and disturbance effects upon the qualifying features and conservation objectives of each Habitats site. The assessment also looked at impacts upon functionally linked land and water bodies.

12.1.3 The appropriate assessment has drawn on the Precautionary Principle to identify a number of potential threats and pressures that might be exacerbated by proposals in the plan. Turning to mitigation considerations, the appropriate assessment has taken into consideration the hierarchical nature of plan making i.e. the requirement for HRA at lower tiered stages of the plan making process and project application stage. A number of existing protection measures are set out in high level strategic policy frameworks and strategic mitigation strategies that serve to help overcome the identified potential adverse effects. Local protective policy frameworks such as the Broads Authorities Environmental Standard Operating Procedures and codes of conduct are also relevant and apply to project level work within the Broads. The HRA has consequently made a series of recommendations to strengthen the wording of the Broads Plan to ensure adequate policy protection is provided (see recommendations in **Appendix D**), which are summarised in **Box 4**.

Box 4: Overview of Recommendations (taken from Appendix D)

- Include wording to note that work / projects within the administrative area will need to be undertaken in a manner which is sensitive to the environment and complies with relevant permits and controls.
- Include wording which sets out the requirement for lower tier plan and project level HRA, such as that required for the WMS and Sustainable Tourism Strategy.
- Incorporate reference to Natural England and DLUHC advice on neutrality requirements.
- Include reference to Suffolk Recreational Disturbance Avoidance and Mitigation Strategy (RAMS).

12.1.4 The Appropriate Assessment concluded that taking these into account, the Broads Plan would have no adverse impact on site integrity at any Habitats site either alone or in-combination.

12.2 Next Steps

12.2.1 The purpose of this report is to inform the Broads Plan using best available information.

12.2.2 The Broads Authority, as the Competent Authority, has responsibility to make the Integrity Test, which can be undertaken in light of the conclusions set out in this report.

12.2.3 This report will be submitted to Natural England, the statutory nature conservation body, for formal consultation. The Authority must 'have regard' to their representations under the provisions of Regulations 63(3) and 105(2) prior to making a final decision as to whether they will 'adopt' the conclusions set out within this report as their own.

Leave blank

Ecological Services

Green Infrastructure

Landscape and Visual Impact Assessment

Landscape Character Assessment

Habitats Regulations Assessment

Strategic Environmental Assessment

Sustainability Appraisal

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Appendix A: In-combination plans and projects

Plan / Project Name	Background and potential in-combination impact pathways
Anglian River Basin District Draft Flood Risk Management Plan 2021 - 2027[1]	The draft second cycle FRMP aims to manage significant flood risks in designated Flood Risk Areas (FRAs) within the Anglian River Basin District (RBD). The draft version of the plan has been subject to recent consultation. The FRMP focuses on the more significant areas of flooding and describe the risk of flooding now and in the future. These plans will help the EA to: • identify actions that will reduce the likelihood and consequences of flooding • update plans to improve resilience whilst informing the delivery of existing flood programmes • work in partnership to explore wider resilience measures, including nature-based solutions for flood and water • set longer-term, adaptive approaches to help improve the nation's resilience The measures set out in the FRMP will be displayed on an online map-based tool called flood plan explorer. This will show what flood risk management measures are proposed at a national and local scale and how they are progressing. The Broadland Rivers management catchment is looked at specifically in the draft FRMP. It notes that the area is at risk of flooding from both rivers and the sea. It notes that approx. 78% of SSSIs and 94% of Ramsar sites are at risk of flooding from rivers and the sea. It also notes that 11% of SSSIs and more than 7% of Ramsar sites are at risk of flooding from surface water sources. It states that the main areas of flood risk remain the three urban areas of Norwich, Great Yarmouth and Lowestoft. Due to the low-lying nature of the Broads, climate change will increase the probability of tidal flooding and increase the length of time watercourses will not be able to flow freely to the sea at high tide, causing tide-locking. In addition, surface water outfalls will remain tide-locked for lengthier durations where these discharge to tidal rivers via flapvalved sluices, heightening the risks of surface water flooding during storm rainfall events. The FRMP will be subject to an HRA. The FRMP will act positively alongside the Broads Plan to protect and enhance the benefits provided by the water environment with no new pathways of impact being introduced.

[1] Environment Agency (October 2021). Anglian River Basin District Draft Flood Risk Management Plan 2021 to 2027. Available at: https://consult.environment-agency.gov.uk/fcrm/draft-second-cycle-flood-risk-management-plans/supporting_documents/Anglian_FRMP_20212027WM.pdf [Date Accessed: 25/004/22]

Plan / Project Name	Background and potential in-combination impact pathways
Anglian River Basin Management Plan[2]	The Anglian River Basin Management Plan (RBMP) provides a framework for protecting and enhancing the benefits provided by the water environment. To achieve this, and because water and land resources are closely linked, it also informs decisions on land-use planning. It provides strategic level policy guidance in relation to baseline classification of water bodies, statutory objectives for protected areas and water bodies and a summary of measures to achieve statutory protection. The Anglian RBMP outlines a number of measures to tackle water management issues and achieve a series of environmental objectives set out within the plan. Local measures are set out on a catchment basis. The Plan area sits within the Broadland Rivers management catchment area. Within this catchment the priority river basin management issues include tackling diffuse pollution from rural areas, physical modification of rivers and lakes, and pollution from wastewater. An HRA was undertaken alongside the preparation of the RBMP[3]. This HRA concluded that, at the strategic plan level, and given the range of potential mitigation options available, the RBMP is not likely to have any significant effects on any European sites, alone or in combination with other plans or projects. It notes the requirement for project level HRA where necessary for lower tier plans. RBMPs are currently being reviewed and updated. The revised RMBP will be subject to HRA. The RBMP will act positively alongside the Broads Plan to protect and enhance the benefits provided by the water environment with no new pathways of impact being introduced.
Anglian Water - Water Resource Management Plan[4]	Anglian Water is the sole public sewerage provider in the catchment and also provides public drinking water supply to much of the catchment's population. It is a statutory requirement that every five years water companies produce and publish a Water Resources Management Plan (WRMP). The WRMP demonstrates long term plans to accommodate the impacts of population growth, drought, environmental obligations and climate change uncertainty in order to balance supply and demand. Anglian Water's WRMP, which covers the period to 2045, sets out a series of measures to ensure the water supply - demand balance is achieved. This includes measures such as smart metering, leakage reduction, water efficiency, strategic water planning / transfers. An HRA was undertaken alongside the preparation of the WRMP[5]. This concluded there would be no adverse effects on the integrity of any European site but highlighted the importance of lower tier project-level HRA of future plans, projects, or permissions which may act in-combination with WRMP options to refine mitigation strategies and assessment conclusions once appropriate detailed design is available. This plan will act positively alongside the Broads Plan to protect the water environment with no new pathways of impact being introduced.

[2] Environment Agency (2015). Water for life and livelihoods. Part 1Anglian River Basin District River Basin Management Plan. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/718327/Anglian_RBD_Part_1_river_basin_management_plan.pdf [Date Accessed 22/03/22]

[3] Environment Agency (2015). River basin management plan for the Anglian River Basin District Habitats Regulations Assessment Updated December 2015. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/496430/RBMP_HRA_Anglian_FINAL_Jan_2016.pdf [Date Accessed: 22/03/22]

[4] Anglian Water. 2019. Water Resources Management Plan 2019. Available at: https://www.anglianwater.co.uk/siteassets/household/about-us/wrmp-report-2019.pdf. [Date Accessed: 22/03/22]

[5] Mott McDonald. 2019. Anglian Water - Water Resources Management Plan Habitats Regulations Assessment Task II: Appropriate Assessment Final for Publication.

Plan / Project Name	Background and potential in-combination impact pathways
Essex & Suffolk Water WRMP[6]	Essex & Suffolk provides public drinking water supply to parts of Norfolk and Suffolk in the east of the catchment. Essex & Suffolk was prepared in 2019 and sets out long term plans to accommodate the impacts of population growth, drought, environmental obligations and climate change uncertainty in order to balance supply and demand. The Essex & Suffolk WRMP, which covers the period to 2060, and aims to forecast the demand for water in the future and consider this against the water that will be available. Decisions are then made to address any areas where there are shortfalls in supply. It provides an assessment of climate change on supply and provides actions to improve the environment on a five yearly basis in line with national requirements. It also looks at delivering innovative and effective water efficiency schemes and reduce leakage over the plan period. An HRA was not publicly available on the WRMP website at the time of writing. This plan will act positively alongside the Broads Plan to protect the water environment with no new pathways of impact being introduced.
Broads Biodiversity and Water Strategy[7]	The Broads Biodiversity and Water Strategy (BBWS) is produced by the Broads Authority. The BBWS focuses on working with partners on key projects led by other organisations working in the Broads. It helps to deliver work for habitat enhancement, creation and restoration in and around the Broads, with a focus on actions that create multiple benefits for biodiversity, water and people This plan will act positively alongside the Broads Plan to protect the natural environment with no new pathways of impact being introduced.
Broadland Abstraction Licence Strategy[8]	The abstraction licence strategy sets out the EA's approach to managing new and existing abstraction and impoundment within the Broadland catchment in the Anglian river basin district. This strategy ensures sustainable use of water resources to prevent a deterioration in the ecology of rivers, wetlands and estuaries or depletion of groundwater resources and takes into consideration Habitats sites within the licence area. This plan will act positively alongside the Broads Plan to prevent over abstraction with no new pathways of impact being introduced.
Broadland Flood Alleviation Project[9]	The Broadland Flood Alleviation Project aims to improve and maintain 240km of flood defences in the Norfolk Broads. This project has improved flood defences, maintenance and emergency response services in the tidal areas of the River Yare, River Bure and River Waveney. This plan will act positively alongside the Broads Plan to protect the area from flood risk whilst also safeguarding the natural environment with no new pathways of impact being introduced.

[6] Essex & Suffolk Water. August 2019. Final Water Resources Management Plan 2019. A Summary. Available at: https://www.nwg.co.uk/responsibility/environment/wrmp/current-wrmp-2015-2020/ [Date Accessed: 28/04/22]

[7] Broads Authority. Broads Biodiversity and Water Strategy 2019-2024. Available at: https://www.broads-authority.gov.uk/__data/assets/pdf_file/0029/180965/broads-biodiversity-strategy-2019.pdf [Date Accessed: 05/04/22]

[8] Environment Agency. May 2017. Broadland Abstraction Licensing Strategy.

[9] Available at: https://www.gov.uk/government/news/broadland-flood-alleviation-project-reaches-20-year-landmark [Date Accessed: 25/04/22]

Plan / Project Name	Background and potential in-combination impact pathways
Broadland Rivers Catchment Plan[10]	The goals of the Broadland Rivers Catchment Plan area as follows: 1. Land management to reduce run-off, and soil, nutrient and pesticide loss, and to link habitats and access 2. Waste water management to reduce nutrients in watercourses from public and private waste water 3. Water management to increase water capture and water efficiency 4. Flood risk management and sustainable drainage to reduce and slow run-off and increase aquifer recharge 5. River and floodplain management to increase connectivity, reduce fish barriers and control invasive species 6. Recreation and understanding to increase sustainable use of, and learning about, water and wetlands 7. Investment to increase, combine and attract funding for projects This plan will act positively alongside the Broads Plan to reduce sediment input and maintain water quality with no new pathways of impact being introduced.
Broads Futures Initiative[11]	The Broadland Futures Initiative (BFI) is a partnership for future flood risk management in the Broadland area. Its main goal is to agree a framework for future flood risk management that better copes with the changing climate and rising sea level. The BFI is driven by a series of objectives to manage flooding including: - Engagement and participation; - Built environment; - Cultural heritage and sense of place; - Integrated catchment management; - Healthy waters; - Climate adaption and mitigation; - Natural capital; - Economic viability and development; - Sustainable agriculture; and - Recreational, tourism and navigation. This plan will act positively alongside the Broads Plan to protect the water and natural environment with no new pathways of impact being introduced.
Broadland Catchment Abstraction Management Area[12]	The Plan area falls within the Broadland Catchment Abstraction Management Area (CAMS). This licensing strategy sets out how water resources are managed in the Broadland catchment. It provides information about where water is available for further abstraction. It also gives an indication of how reliable a new abstraction licence may be. This plan will act positively alongside the Broads Plan to prevent over abstraction from the water environment with no new pathways of impact being introduced.

[10] Broadland Catchment Partnership (2014). Broadland Rivers Catchment Plan. Available at: https://broadlandcatchmentpartnership.org.uk/wp-content/uploads/2018/08/Catchment-Plan-website-final.pdf [Date Accessed: 22/03/22]

[11] Available at: https://www.broads-authority.gov.uk/looking-after/climate-change/broadland-futures-initiative [Date Accessed: 05/04/22]

[12] Environment Agency. May 2017. Broadland Abstraction Licensing Strategy.

Plan / Project Name	Background and potential in-combination impact pathways
Education Strategy[13]	The Education Strategy for the Broads provides a framework for formal environmental education and wider outreach in the Broads National Park over the plan period. It takes into account the high level aims and objectives of the Broads Plan. This strategy will act positively alongside the Broads Plan, promoting the sensitivity of the Broad's environment with no new pathways of impact being introduced.
Hoveton Great Broad Restoration Project	This project aims to improve water quality in Hoveton Great Broad through sediment removal and biomanipulation. Taking no account of mitigation measures, this project has the potential to act in-combination with waterways management promoted in the Broads plan with in-combination effects on water quality and levels.
Integrated Access Strategy[14]	The Integrated Access Strategy aims to deliver aspects of the Broads Plan in relation to accessibility in terms of schemes to upgrade and improve the network of access points and routes that are linked to visitor facilities and include easier access for people with mobility and sensory needs. Improved visitor access to Habitats sites can increase recreational pressures upon these with potneital in-combination effects.
Norfolk Water Strategy Programme[15]	Water Resources East (WRE), Norfolk County Council, Anglian Water and The Nature Conservancy (TNC) have formed a partnership to prepare a sustainable Norfolk Water Strategy. This aims to address the significant pressures on water resources in the eastern area and address the effects of climate change. The objectives of the Norfolk Water Strategy Programme are to secure good quality, long-term water resources for all water users, while protecting the environment and showcasing the county as an international exemplar for collaborative water management. The Programme seeks to demonstrate how cross-sector, integrated water management action can deliver multiple benefits and help achieve the county's net zero targets. Early outputs and learnings from the project will feed into the development of the long-term WRMP. This plan will act positively alongside the Broads Plan to protect the water environment with no new pathways of impact being introduced.

[13] Broads Authority. Education Strategy 2017 – 2022. Available at: https://www.broads-authority.gov.uk/__data/assets/pdf_file/0028/239554/Broads-Education-Strategy-2017-22-FINAL-APPENDIX-1.pdf [Date Accessed: 05/04/22]

[14] Broads Authority. 2019. Integrated Access Strategy. Available at: https://www.broads-authority.gov.uk/__data/assets/pdf_file/0020/260822/Appendix-Broads-Integrated-Access-Strategy-and-action-plan.pdf [Date Accessed: 05/04/22]

[15] Available at: https://wre.org.uk/projects/norfolk-water-strategy-programme/ [Date Accessed: 25/04/22]

Plan / Project Name	Background and potential in-combination impact pathways
The Local Plan for the Broads[16]	The Local Plan for the Broads guides development and land use within the Broads, providing policy and land allocations. The current version of the plan was adopted in 2019 and is currently under review. The current Local Plan for the Broads was subject to HRA[17,18]. This concluded that, following incorporation of recommendations, the Local Plan would not lead to adverse effects on European site integrity, and would be compliant with the Habitats Regulations upon adoption. Urban development can reduce catchment permeability and the presence of drainage networks may be expected to remove runoff from urbanised catchments. This may result in changes in run off rates from urbanised areas to European sites or watercourses which run through them. Water mains leakage and sewer infiltration may also affect the water balance. In addition, urbanisation has the potential to reduce the quality of water entering a catchment during the construction of a development through processes such as sedimentation, accidental spillage of chemicals and materials. Water quality may also be reduced through effluent discharges and pollution as well as an increased water temperature. These hydrological impact pathways will be assessed in the HRA process. New development can also increase traffic flows on the road network which may contribute in-combination to a deterioration in air quality at Habitats sites. Depending on the location and proximity of new development to Habitats sites it can increase recreation (both at coastal and inland waterway sites) and urbanisation pressures upon qualifying features.
Sustainable Tourism Strategy (2016-2020)[19]	The Sustainable Tourism Strategy sets out the overall strategic direction for tourism in the Broads and is written to be in line with the requirements of the European Charter for Sustainable Tourism in Protected areas. It is currently under review. The current version of the plan was subject to HRA[20]. The HRA provided recommendations to plan wording and concluded that there would be no LSEs at any European site. Tourism has the potential to increase navigational and recreational pressures upon inland waterways and also at coastal sites a number of which are designated as Habitats sites or have the potential to provide supporting habitat.

[16] Broads Authority. Local Plan for the Broads Plan Period 2015 – 2036. Adopted May 2019. Available at: https://www.broads-authority.gov.uk/__data/assets/pdf_file/0036/259596/Local-Plan-for-the-Broads.pdf [Date Accessed: 22/03/22]

[17] Liley, D., Hoskin, R., Lake, S. and Panter, C. 2019. Habitats Regulations Assessment of the Local Plan for the Broads at Modifications stage. Unpublished report by Footprint Ecology.

[18] Hoskin, R.,2019. Broads Local Plan Habitats Regulations Assessment Addendum.

[19] The Tourism Company. 2016. Sustainable Tourism in the Broads. Available at: https://www.broads-authority.gov.uk/__data/assets/pdf_file/0023/226247/Sustainable-Tourism-in-the-Broads-2016-20-May-2016.pdf [Date Accessed: 22/03/22]

[20] Liley, D., Lake, S. & Panter, C. (2016). Habitats Regulations Assessment (HRA) of the Strategy for Sustainable Tourism in the Broads 2016-2020. Report by Footprint Ecology for the Broads Authority.

Plan / Project Name	Background and potential in-combination impact pathways
Waterways Management Strategy[21]	The Waterways Management Strategy (WMS) provides a framework for sustainable and cost effective management of the Broads navigable waterways from 2022/23 to 2026/27 in line with the long term vision and aspirations as set out in the Broads Plan. It outlines a number of management techniques which will be implemented across the Broads Authority administrative area as follows: • Sediment management. Removal of sedimentation accumulations to ensure adequate water depth for navigation. • Water plant management. Removal of significant water plant growth to provide clear access along the main rivers and within the marked channels. • Riverside tree management. Management of riverside trees and scrub to maintain safe and navigable waterways. • Bankside habitat and erosion management. Management to protect bankside erosion. • Channel marking. Channel marking to show where it is safe to navigate within a channel. Management of waterways has the potential to have in-combination effects upon water quality and water levels. This strategy may act cumulatively with increased recreational pressures from other aspects of the Broads Plan to have effects upon Habitats sites.

[21] Waterways Management Strategy and Action Plan 2022/23 – 2026/27. Available at: https://www.broads-authority.gov.uk/__data/assets/pdf_file/0027/399240/Waterways-Management-Strategy-v1.2.pdf [Date Accessed: 22/03/22]

Plan / Project Name	Background and potential in-combination impact pathways
Greater Norwich Local Plan[22]	The GNLP covers the three authorities of South Norfolk Council, Broadland Council and Norwich City Council. It was submitted to the Secretary of Stage for independent examination on 30 July 2021. The GNLP identifies how many homes need to be built across the three authorities of South Norfolk Council, Broadland Council and Norwich City Council between now and 2038, provides up to date policy to guide development and meet Government requirements set out in the National Planning Policy Framework (NPPF). It aims to deliver • a minimum of 49,492 new homes; • around 360 hectares of employment land; • supporting infrastructure; and • environmental protection and enhancement measures including further improvements to the green infrastructure network. The GNLP was supported by an HRA[23] of the Draft Submission Reg 19 stage v1.6 of the emerging GNLP. The HRA provided an assessment of impacts upon the same European sites as considered in 2017 and 2019 versions of the HRA. The HRA concluded that there would be no adverse effect upon the integrity of any European site acting alone, subject to the following outstanding matters: • Adoption of the Green Infrastructure and Recreational Impact Avoidance Mitigation Strategy (GIRAMS) to achieve mitigation for in-combination recreational effects. • The provision of suitable green space for developments over 50 homes. • Resolution of issues with Water Recycling Centres. • Clarification of policy with regard to tourism accommodation and development which would utilise a Habitats site. The HRA notes that in-combination effects would be taken into consideration through the adoption of the GIRAMS scheme. In summary it concludes that, subject to satisfactory resolution of the outstanding matters listed above, there would be no adverse effect upon the integrity of any Habitats site alone or in-combination. The combined impact of neighbouring authority growth, in-combination with the Broads Plan, on air quality, hydrology and public access and disturbance impacts will be considered further in the HRA process.

[22] Available at: https://www.gnlp.org.uk/ [Date Accessed 25/04/22]

[23] The Landscape Partnership. December 2020. Habitats Regulations Assessment of Greater Norwich Regulation 19 Draft Plan For Greater Norwich Development Partnership.

Plan / Project Name	Background and potential in-combination impact pathways
North Norfolk Local Plan2016 - 2036[24]	North Norfolk District Council is currently preparing a new Local Plan. A period of public consultation on the Proposed Submission Version Local Plan took place early 2022. This plan will aims to deliver a minimum of 9,600 new homes over the plan period 2016-2036 and a total of 272.07 hectares of land is designated/allocated and retained for employment generating developments. The Submission Version of the Plan was supported by an HRA[25]. Screening identified likely significant effects for a range of Habitats sites, in relation to urban effects, recreation and hydrological issues. These were taken to appropriate assessment. Following appropriate assessment, the HRA concluded that the North Norfolk Local Plan, proposed submission version, is in conformity with the Habitats Regulations, and at a plan level a conclusion of no adverse effects, alone or in-combination, on Habitats site integrity was concluded. The combined impact of neighbouring authority growth, in-combination with the Broads Plan, on air quality, hydrology and public access and disturbance impacts will be considered further in the HRA process.
Great Yarmouth Core Strategy (Local Plan Part 1)[26] Local Plan Part 2[27]	The Local Plan for Great Yarmouth is made up of two parts, the Core Strategy (Local Plan Part 1 - 2015) and the Local Plan Part 2 (2021). The Core Strategy (Local Plan Part 1) was adopted in 2015 and Part 2 in 2021. Part 2 makes provision for 5,303 new homes over the plan period. An HRA was undertaken in support of the Local Plan Part 2[28]. It refers to the HRA undertaken for the Great Yarmouth Local Plan Part 1: the Core Strategy[29]. It draws on mitigation provided through the Great Yarmouth Borough Monitoring and Mitigation Strategy which was put in place at the time of the Core Strategy HRA. Following input to policy wording it concludes no adverse effects on site integrity. The combined impact of neighbouring authority growth, in-combination with the Broads Plan, on air quality, hydrology and public access and disturbance impacts will be considered further in the HRA process.

[24] North Norfolk District Council. January 2022. Publication Stage North Norfolk Local Plan2016 – 2036. Available at: https://www.north-norfolk.gov.uk/media/7466/local-plan-proposed-submission-version-reg-19-publication.pdf [Date Accessed: 25/04/22]

[25] Liley, D., Saunders, P. & Panter, C. (2021) North Norfolk Local Plan HRA Submission Version. Unpublished Report for North Norfolk District Council. Available at: https://www.north-norfolk.gov.uk/media/7456/habitat-regulations-assessment-north-norfolk-local-plan-reg-19-publication.pdf [Date Accessed: 27/04/22]

[26] Great Yarmouth Borough Council. 2015. Great Yarmouth Local Plan. Core Strategy 2013 – 2030. Available at: https://www.great-yarmouth.gov.uk/article/2489/Current-Local-Plan [Date Accessed: 27/04/22]

[27] Great Yarmouth Borough Council. 2021. Great Yarmouth Local Plan Part 2. Available at: https://www.great-yarmouth.gov.uk/article/2489/Current-Local-Plan [Date Accessed: 27/04/22]

[28] Hoskin, R., Liley, D. & Caals, Z. 2019. Habitats Regulations Assessment of the Great Yarmouth Local Plan Part 2. Unpublished report for Great Yarmouth Borough Council.

[29] Footprint Ecology. 2015. Habitats Regulations Assessment of the Great Yarmouth Local Plan - Core Strategy at Submission for Examination. Report for Great Yarmouth Borough Council.

Plan / Project Name	Background and potential in-combination impact pathways
East Suffolk District - Waveney Local Plan[30] (East Suffolk District comprises Waveney District Council and Suffolk Coastal District)	The Wavenery Local Plan was adopted 20th March 2019 and allocates 8,223 new homes over the plan period. An HRA was undertaken in support of the local plan[31]. The HRA informed policy wording and recommended a mitigation approach for Minsmere – Walberswick SPA/SAC/Ramsar site and Benacre to Easton Bavents SPA/SAC, to mitigate for potential increased recreation pressure and disturbance of site interest features. Following incorporation of these measures it concluded no adverse effects on any European site integrity. The combined impact of neighbouring authority growth, in-combination with the Broads Plan, on air quality, hydrology and public access and disturbance impacts will be considered further in the HRA process.
Norfolk County Council Minerals and Waste Local Plan Review[32]	Norfolk County Council are re preparing a Norfolk Minerals and Waste Local Plan Review (M&WLPR), to consolidate the three adopted DPDs into one Local Plan, ensure that the policies within them remain up-to-date and to extend the plan period to the end of 2036. This plan has been subject to two stages of Regulation 18 consultation. The M&WLPR includes a vision and strategic objectives for waste management and minerals development for the Plan period to 2036. It includes a spatial strategy (allocating sites) for new waste management facilities and new minerals development. The M&WLPR was supported by a draft HRA[33]. It applied a 5km study area for consideration of LSEs at European sites. It concluded no LSEs from any policies forming the plan, noting that developers wanting to extract mineral from specific sites or land within a preferred area or area of search contained in the Norfolk Minerals and Waste Local Plan will still need to apply for and be granted planning permission before mineral extraction can take place. The combined impact of minerals and waste allocations, in-combination with Broads Plan growth, on air quality and hydrology will be considered further in the HRA process.

[30] East Suffolk Council. 2019. Waveney Local Plan. Covering the former Waveney Local Planning Authority Area. Available at: https://www.eastsuffolk.gov.uk/assets/Planning/Waveney-Local-Plan/Adopted-Waveney-Local-Plan-including-Erratum.pdf Date Accessed: 25/04/22]

[31] Hoskin, R. & Liley, D. 2018. Habitats Regulations Assessment of the Waveney Local Plan. Unpublished report for Waveney District Council.

[32] Norfolk County Council. Minerals and Waste Local Plan Review. Available at: https://www.norfolk.gov.uk/what-we-do-and-how-we-work/policy-performance-and-partnerships/policies-and-strategies/minerals-and-waste-planning-policies/norfolk-minerals-and-waste-local-plan-review [Date Accessed: 27/04/22]

[33] Norfolk County Council. 2019. Norfolk Minerals and Waste Local Plan Review. Draft Habitats Regulations Assessment. Available at: https://norfolk.oc2.uk/docfiles/50/draft_hra_task_1.pdf [Date Accessed: 27/04/22]

Plan / Project Name	Background and potential in-combination impact pathways
Norfolk County Council Local Transport Plan 4 Strategy 2021 – 2036[34]	The LTP4 was adopted in November 2021. The plan aims to address issues such as air quality and carbon reduction and tackles infrastructure issues in relation to major road, bus and rail connections. It sets out a series of strategies and policies. An HRA was prepared to support the LTP[35]. This HRA notes that given the strategic level of LTP4, there is insufficient detail to enable a more in-depth analysis to the degree required for Appropriate Assessment. Given the possibility of LSE associated with the screened-in policies, further, detailed assessment through Appropriate Assessment is therefore considered necessary at a project-level and on a case-by-case basis to satisfy the requirements of the Habitats Regulations. The HRA concludes that the LTP4 Strategy is compliant with the Habitats Regulations and will not result in likely significant effects on any Habitats Sites, either alone or in-combination with other plans or projects. For road schemes or associated development coming forward through implementation of policies, mitigation measures set out specific project-level HRA requirements, regulatory requirements and development management processes. The combined impact of Local Transport Plan strategies, in-combination with the Broads Plan, on traffic related air quality will be considered further in the HRA process.

[34] Norfolk County Council. Norfolk County Council Local Transport Plan 4 Strategy 2021 – 2036. Available at: https://www.norfolk.gov.uk/what-we-do-and-how-we-work/policy-performance-and-partnerships/policies-and-strategies/roads-and-travel-policies/local-transport-plan [Date Accessed: 27/04/22]

[35] WSP. June 2021. NORFOLK LOCAL TRANSPORT PLAN 4 STRATEGY 2021- 2036 INFORMATION TO INFORM HABITATS REGULATIONS SCREENING AND APPROPRIATE ASSESSMENT. Available at: https://www.norfolk.gov.uk/what-we-do-and-how-we-work/policy-performance-and-partnerships/policies-and-strategies/roads-and-travel-policies/local-transport-plan [Date Accessed: 27/04/22]

Appendix B: Habitats Site Conservation Objectives, Threats and Pressures

The Broads SAC[1]

Designation Overview

The Broads SAC is formed of a network of naturally nutrient-rich lakes which were artificially created through peat extraction in medieval times. This network of lakes and ditches in areas of fen and drained marshlands support relict vegetation of the original Fenland flora, and collectively this site contains one of the richest assemblages of rare and local aquatic species in the UK. The dyke (ditch) systems are a stronghold of little whirlpool ram's-horn snail (*Anisus vorticulus*) and Desmoulin's whorl snail (*Vertigo m*oulinsiana) in East Anglia. The range of wetlands and associated habitats also provides suitable conditions for otters (*Lutra lutra*). The Broads is the richest area for stoneworts (*charophytes*) in Britain and contains the largest blocks of alder (*Alnus glutinosa)* wood in England with a complete successional sequences from open water through reedswamp to alder woodland, which has developed on fen peat. There is a correspondingly wide range of flora, including uncommon species such as marsh fern (*Thelypteris palustris*).

The Broads network also contains the largest example of calcareous fens in the UK. Relatively small transition mires have developed in re-vegetated peat-cuttings as part of the complex habitat mosaic of fen, carr and open water.

A few areas of Erica tetralix - Sphagnum compactum wet heath, Molinia meadows and related communities remain where the floodplain is still hydraulically connected to seepage zones on the edge of the 'upland', particularly from crag aquifers[2].

Conservation objectives:

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring;

- The extent and distribution of qualifying natural habitats and habitats of qualifying species;
- The structure and function (including typical species) of qualifying natural habitats;
- The structure and function of the habitats of qualifying species;
- The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely;
- The populations of qualifying species; and;
- The distribution of qualifying species within the site.

Qualifying Features:

H3140. Hard oligo-mesotrophic waters with benthic vegetation of *Chara spp.*; Calcium-rich nutrient-poor lakes, lochs and pools

H3150. Natural eutrophic lakes with *Magnopotamion or Hydrocharition*-type vegetation; Naturally nutrient-rich lakes or lochs which are often dominated by pondweed

[1] Natural England (2018) The Broads SAC Conservation Objectives. Available at: http://publications.naturalengland.org.uk/file/6427605842788352 [Date Accessed: 08/03/22]

[2] Natural England (2019) The Broads SAC Conservation Objectives Supplementary Advice. Available at: http://publications.naturalengland.org.uk/file/6067900213624832 [Date Accessed: 08/03/22]

H6410. Molinia meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*); Purple moor-grass meadows

H7140. Transition mires and quaking bogs; Very wet mires often identified by an unstable `quaking` surface

H7210. Calcareous fens with *Cladium mariscus* and species of the *Caricion davallianae*; Calcium-rich fen dominated by great fen sedge (saw sedge)*

H7230. Alkaline fens; Calcium-rich springwater-fed fens

H91E0. Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion, Alnion incanae, Salicion albae*); Alder woodland on floodplains*

S1016. *Vertigo moulinsiana*; Desmoulin`s whorl snail

S1355. *Lutra lutra*; Otter

S1903. *Liparis loeselii*; Fen orchid

S4056. *Anisus vorticulus*; Little whirlpool ram's-horn snail

* Priority natural habitats or species

Threats and Pressures at Habitats site which may be affected by Broads Plan[3,4]:

- Water pollution;
- Climate change;
- Siltation;
- Inappropriate water levels;
- Adaptation to climate change;
- Inappropriate ditch management;
- Change in land management;
- Inappropriate scrub control;
- Drainage;
- Public access/disturbance;
- Air pollution (atmospheric nitrogen deposition); and
- Inappropriate coastal management.

[3] Natural England (2018) Broadland SIP (covering Broadland SPA and The Broads SAC). Available at: http://publications.naturalengland.org.uk/file/6218680128241664 [Date Accessed: 11/04/22]

[4] Natural England (2019) The Broads SAC Conservation Objectives Supplementary Advice. Available at: http://publications.naturalengland.org.uk/file/6067900213624832 [Date Accessed 11/04/22]

Broadlands SPA and Broadlands Ramsar[5]

Designation Overview

The Broadland SPA and Broadland Ramsar designations cover the same geographical area and are therefore discussed together below.

Broadland is a low-lying wetland complex created by a series of flooded medieval peat cuttings. They lie within the floodplains of five principal river systems, including the River Bure, River Yare and River Waveney and their major tributaries. They comprise a complex and interlinked mosaic of wetland habitats including open water, reedbeds, carr woodland, grazing marsh, tall herb fen, transition mire and fen meadow, forming one of the finest marshland complexes in the UK. This wetland mosaic has created a range of habitat types which in turn supports a variety of internationally important wintering and breeding raptors and waterbirds which are associated with the extensive lowland marshes. The estuary at the mouth of Broadland is designated as Breydon Water SPA and Breydon Water Ramsar site and the two sites adjoin each other at Halvergate Marshes. Breeding and wintering raptors, and wintering waterbirds spend time on feeding areas outside the Broadland SPA and Ramsar boundaries for instance within agricultural fields (on leftover potatoes and grain) and in adjacent grassland[6].

The internationally important bird populations are associated with a number of specific habitat types due to their nesting and feeding requirements. These include for instance reedbed, open water (freshwater pools and lakes, rivers and undisturbed creeks), emergent and floating vegetation, wetland fringe and open wetland habitat.

Conservation objectives:

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring;

- The extent and distribution of the habitats of the qualifying features;
- The structure and function of the habitats of the qualifying features:
- The supporting processes on which the habitats of the qualifying features rely:
- The population of each of the qualifying features; and
- The distribution of the qualifying features within the site.

[5] Natural England (2018) The Broads SAC Conservation Objectives. Available at: http://publications.naturalengland.org.uk/file/6427605842788352 [Date Accessed: 11/04/22]

[6] Natural England (2019) Broadland SPA Conservation Objectives Supplementary Advice. Available at: file:///Users/samanthacheater/Downloads/UK9009253_BroadlandSPA_Formal%20Published%208%20Feb%2019.pdf [Date Accessed: 11/04/22]

Qualifying Features:

The qualifying features of the SPA are set out below:

- *Botaurus stellaris*; Great bittern (Breeding)
- *Cygnus columbianus bewickii;* Bewick's swan (Non-breeding)
- *Cygnus cygnus;* Whooper swan (Non-breeding)
- *Anas penelope;* Eurasian wigeon (Non-breeding)
- *Anas strepera;* Gadwall (Non-breeding)
- *Anas clypeata;* Northern shoveler (Non-breeding)
- *Circus aeruginosus;* Eurasian marsh harrier (Breeding)
- *Circus cyaneus;* Hen harrier (Non-breeding)
- *Philomachus pugnax;* Ruff (Non-breeding)[7].

The site meets the following Ramsar criteria:

- Criteria Ramsar criterion 2 (rare species and habitats within the biogeographical zone context, including the following Habitats Directive Annex I features and Annex II species)
    - Calcareous fens with *Cladium mariscus* and species of the *Caricion davallianae*;
    - Alkaline fens Calcium-rich springwater-fed fens;
    - *Alluvial forests with Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion, Alnion incanae, Salicion albae*);
    - *Vertigo moulinsiana* Desmoulin`s whorl snail;
    - *Lutra lutra* Otter; and
    - *Liparis loeselii* Fen orchid.
- Criteria Ramsar criterion 6 (species/populations occurring at levels of international importance) - Qualifying Species/populations (as identified at designation): Species with peak counts in winter:
    - Tundra swan (*Cygnus columbianus bewicki*)i;
    - Eurasian wigeon (*Anas penelope*);
    - Gadwall (*Anas strepera strepera*); and
    - Northern shoveler (*Anas clypeata*).
- Criteria Ramsar criterion 6 (species/populations occurring at levels of international importance) - Species/populations identified subsequent to designation for possible future consideration under criterion 6. Species with peak counts in winter:
    - Pink-footed goose (*Anser brachyrhynchus*); and
    - Greylag goose (*Anser anser anser*).

The site also supports an outstanding assemblage of rare plants and invertebrates including nine British Red Data Book plants and 136 British Red Data Book invertebrates.

[7] Annex II species present as a qualifying feature, but not the primary reason for selection of this site

Threats and Pressures at Habitats site which may be affected by Broads Plan[8,9]:

- Water pollution;
- Climate change;
- Siltation;
- Inappropriate water levels;
- Adaptation to climate change;
- Inappropriate ditch management;
- Change in land management;
- Inappropriate scrub control;
- Drainage;
- Public Access/Disturbance;
- Air pollution (atmospheric nitrogen deposition); and
- Inappropriate coastal management.

[8] Natural England (2018) Broadland SIP (covering Broadland SPA and The Broads SAC). Available at: http://publications.naturalengland.org.uk/file/6218680128241664 [Date Accessed: 08/03/22]

[9] Natural England (2019) The Broads SAC Conservation Objectives Supplementary Advice. Available at: http://publications.naturalengland.org.uk/file/6067900213624832 [Date Accessed08/03/22]

Breydon Water SPA and Breydon Water Ramsar [10]

Designation Overview

Breydon Water SPA and Breydon Water Ramsar designations cover the same geographical area and are therefore discussed together below.

Breydon Water is a large stretch of sheltered estuary and wetland habitat and forms the lower reaches of the River Yare and River Waveney. It comprises an inland tidal estuary with extensive areas of mud flats that are exposed during low tide forming the only intertidal flats. The habtaits present are influenced strongly by the tidal influences. Large numbers of internationally important wildfowl and waders overwinter at the site. They are attracted to the site by the mosaic of habitats (including intertidal mudflats, saltmarsh and freshwater grazing marsh) which provide a diversity of nesting and feeding options and an abundance of food resource11. It is strongly linked with the upstream Broadland SPA designation and birds use both habitats interchangeably.

Conservation objectives:

Breydon Water SPA: Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring:

- The extent and distribution of the habitats of the qualifying features;
- The structure and function of the habitats of the qualifying features:
- The supporting processes on which the habitats of the qualifying features rely:
- The population of each of the qualifying features; and
- The distribution of the qualifying features within the site.

Qualifying Features:

The qualifying features of the SPA are set out below[12]:

- *Cygnus columbianus bewickii;* Bewick's swan (Non-breeding);
- *Recurvirostra avosetta*; Pied avocet (Non-breeding);
- *Pluvialis apricaria*; European golden plover (Non-breeding);
- *Vanellus vanellus*; Northern lapwing (Non-breeding);
- *Philomachus pugnax*; Ruff (Non-breeding);
- *Sterna hirundo*; Common tern (Breeding); and

[10] Natural England (2018) Breydon Water SPA SIP. Available at: http://publications.naturalengland.org.uk/file/5893824219447296 [Date Accessed: 11/04/22]

[11] Natural England (2018) Breydon Water SPA SIP. Available at: http://publications.naturalengland.org.uk/file/5893824219447296 [Date Accessed: 08/03/22]

[12] Natural England (2019) Breydon Water SPA Conservation Objectives. Available at: http://publications.naturalengland.org.uk/file/4822248376762368 [Date Accessed: 08/03/22]

- Waterbird assemblage.

The site meets the following Ramsar criteria:

- Criteria Ramsar criterion 5 (Assemblages of international importance) - Species with peak counts in winter: 68175 waterfowl (5 year peak mean 1998/99-2002/2003).
- Criteria Ramsar criterion 6 (species/populations occurring at levels of international importance) - Qualifying Species/populations (as identified at designation): Species with peak counts in winter:
    - Tundra swan (*Cygnus columbianus bewickii*); and
    - *Northern lapwing (Vanellus vanellus).*
- Criteria Ramsar criterion 6 (species/populations occurring at levels of international importance) - Species/populations identified subsequent to designation for possible future consideration under criterion 6. Species with peak counts in winter:
    - Pink-footed goose (*Anser brachyrhynchus*);
    - Eurasian wigeon (*Anas penelope*);
    - Northern shoveler (*Anas clypeata*);
    - European golden plover (*Pluvialis apricaria apricaria*, *P. a. altifrons*); and
    - Black-tailed godwit (*Limosa limosa islandica*).

Threats and Pressures at Habitats site which may be affected by Broads Plan[13,14]:

Breydon Water SPA;

- Change in land management;
- Public access/disturbance; and
- Hydrological changes.

No identified threats or pressures to Breydon Water Ramsar

[13] Natural England (2018) Breydon Water SPA SIP. Available at: http://publications.naturalengland.org.uk/file/5893824219447296 [Date Accessed: 11/04/22]

[14] JNCC. 2008. Information Sheet on Ramsar Wetlands. Breydon Water Ramsar https://jncc.gov.uk/jncc-assets/RIS/UK11008.pdf [Date Accessed: 11/04/22].

Outer Thames Estuary SPA[15]

Designation Overview

The Outer Thames Estuary SPA stretches from Caister-on-Sea in Norfolk (Suffolk) to Sheerness in Kent, and reaching as far as Canvey Island into the Thames Estuary. The SPA is divided into three discreet areas:

- The outer estuary of the Thames (including Kent and Essex coastal waters);
- The Suffolk and south Norfolk coastal waters; and
- The offshore area further northeast.

The site crosses the 12 nautical mile boundary and therefore lies partly in territorial and partly in offshore waters. The SPA consists of areas of shallow and deeper water, high tidal current streams and a range of mobile sediments. The seabed in the area of the Norfolk and Suffolk coast is of a similar composition to that in the main estuary with large shallow areas of mud, sand, silt and gravelly sediments. The coastal parts of the site consist of shingle and sand beaches, rapidly eroding low cliffs and mudflat-lined estuaries[16].

Conservation objectives:

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring:

- The extent and distribution of the habitats of the qualifying features;
- The structure and function of the habitats of the qualifying features;
- The supporting processes on which the habitats of the qualifying features rely;
- The population of each of the qualifying features; and
- The distribution of the qualifying features within the site.

Qualifying Features:

The qualifying features of the SPA are set out below[17]:

- *Gavia stellata;* Red-throated diver (Non-breeding);
- *Sterna hirundo*; Common tern (Breeding); and
- *Sternula albifrons*; Little tern (Breeding)

[15] Natural England (2015) Outer Thames Estuary SPA SIP. Available at: http://publications.naturalengland.org.uk/file/5877617494327296 [Date Accessed: 12/04/22]]

[16] Natural England. Designated Site Information for the Outer Thames Estuary SPA. Available at: https://designatedsites.naturalengland.org.uk/SiteGeneralDetail.aspx?SiteCode=UK9020309&SiteName=outer%20thames&countyCode=&responsiblePerson=&SeaArea=&IFCAArea= [Date Accessed: 12/04/22]

[17] Natural England (2019) Outer Thames Estuary SPA Conservation Objectives. Available at: http://publications.naturalengland.org.uk/file/5184120712069120 [Date Accessed: 12/04/22]

Threats and Pressures at Habitats site which may be affected by Broads Plan[18],[19]:

- Physical Loss (moderate vulnerability)
- Physical Damage (low vulnerability)
- Non-physical disturbance (high vulnerability)
- Toxic contamination (low - moderate vulnerability)
- Non-toxic contamination (example nutrient locading) (low vulnerability)
- Biological disturbance (low to moderate vulnerability)

[18] Natural England (2015) Outer Thames Estuary SPA SIP. Available at: http://publications.naturalengland.org.uk/file/5877617494327296 [Date Accessed: 12/04/22]]

[19] JNNC and NE. 2013. Draft advice under Regulation 35(3) of The Conservation of Habitats and Species Regulations 2010 (as amended) and Regulation 18 of The Offshore Marine Conservation (Natural Habitats, & c.) Regulations 2007 (as amended). Available at: http://publications.naturalengland.org.uk/publication/3233957 [Date Accessed: 13/04/22]

Great Yarmouth and North Denes SPA [20]

Designation Overview

Great Yarmouth and North Denes SPA is comprised of two component areas, the Great Yarmouth North Denes actively accreting low dune system and beach, together with the beach and foredune ridge at Winterton-Horsey Dunes (also designated as a SAC). These two component areas are linked, due to the high mobility of little terns, and to the dynamic nature of the beach shapes which influences suitability for breeding. Little tern populations found at Caister, Eccles, Kessingland and Scroby Sands are functionally linked to colonies protected within the Great Yarmouth North Denes SPA[21].

Conservation objectives:

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring:

- The extent and distribution of the habitats of the qualifying features;
- The structure and function of the habitats of the qualifying features;
- The supporting processes on which the habitats of the qualifying features rely;
- The population of each of the qualifying features; and
- The distribution of the qualifying features within the site.

Qualifying Features:

The qualifying feature of the SPA is little tern (Breeding - *Sternula albifrons*)[22]. These are present at the SPA from mid-April to mid-September.

Threats and Pressures at Habitats site which may be affected by Broads Plan[23]:

- Coastal Squeeze;
- Public Access/Disturbance;
- Hydrological change;
- Inappropriate scrub control; and
- Air pollution: impact of atmospheric nitrogen deposition.

[20] Natural England (2018) The Broads SAC Conservation Objectives. Available at: http://publications.naturalengland.org.uk/file/6427605842788352 [Date Accessed: 08/03/22]

[21] Natural England. Designated Site Information for the Great Yarmouth and North Denes SPA. Available at: https://designatedsites.naturalengland.org.uk/SiteGeneralDetail.aspx?SiteCode=UK9009271&SiteName=great%20Yarmouth&countyCode=&responsiblePerson=&SeaArea=&IFCAArea= [Date Accessed: 11/04/22]

[22] Natural England (2019) Great Yarmouth North Denes SPA Conservation Objectives. Available at: http://publications.naturalengland.org.uk/file/6450939770961920 [Date Accessed: 11/04/22]

[23] Natural England (2018) Great Yarmouth Winterton Horsey SIP (to cover Great Yarmouth North Denes SPA and Winterton-Horsey Dunes SAC). Available at: http://publications.naturalengland.org.uk/file/6277135286665216 [Date Accessed: 12/04/22]

Winterton-Horsey Dunes SAC[24]

Designation Overview

Winterton-Horsey Dunes SAC is a large acidic dune system with associated areas of grazing marsh, dune slacks, dune heath, dune grassland and downy birch dominated woodland with oaks. Actively accreting 'ness' features, support a full successional sequence of vegetation through foredune, mobile dune, semi fixed dune and dry acid dune grassland/ dune heath[25].

Conservation objectives:

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring:

- The extent and distribution of the qualifying natural habitats;
- The structure and function (including typical species) of the qualifying natural habitats; and
- The supporting processes on which the qualifying natural habitats rely.

Qualifying Features:

The qualifying feature of the SAC include[26].

- Embryonic shifting dunes;
- Shifting dunes along the shoreline with *Ammophila arenaria* ("white dunes"); Shifting dunes with marram;
- Atlantic decalcified fixed dunes (*Calluno-Ulicetea*); and
- Humid dune slacks.

Threats and Pressures at Habitats site which may be affected by Broads Plan[27]:

- Coastal Squeeze;
- Public Access/Disturbance;
- Hydrological change;
- Inappropriate scrub control; and
- Air pollution: impact of atmospheric nitrogen deposition.

[24] Natural England (2018) Winterton-Horsey Dunes SAC Conservation Objectives. Available at: http://publications.naturalengland.org.uk/publication/5518326646177792 [Date Accessed: 08/03/22]

[25] Natural England (2018) Winterton-Horsey Dunes SAC SIP (to cover Great Yarmouth North Denes SPA and Winterton-Horsey Dunes SAC). Available at: http://publications.naturalengland.org.uk/publication/5518326646177792 [Date Accessed: 08/03/22]

[26] Natural England (2018) Winterton-Horsey Dunes SAC Conservation Objectives. Available at: http://publications.naturalengland.org.uk/publication/5518326646177792 [Date Accessed: 08/03/22]

[27] Natural England (2018) Great Yarmouth Winterton Horsey SIP (to cover Great Yarmouth North Denes SPA and Winterton-Horsey Dunes SAC). Available at: http://publications.naturalengland.org.uk/file/6277135286665216 [Date Accessed: 12/04/22]

Southern North Sea SAC[28]

Designation Overview

The SAC designation stretches from the central North Sea (north of Dogger Bank) to the Straits of Dover in the south, covering an area of 36,951 km2. The majority of this site lies offshore, extending into coastal areas of Norfolk and Suffolk crossing the 12 nautical mile boundary. It comprises a mix of habitats, such as sandbanks and gravel beds, are included in the site[29].

Conservation objectives:

To ensure that the integrity of the site is maintained and that it makes the best possible contribution to maintaining Favourable Conservation Status (FCS) for Harbour Porpoise in UK waters.

In the context of natural change, this will be achieved by ensuring that:

- Harbour porpoise is a viable component of the site;
- There is no significant disturbance of the species; and
- The condition of supporting habitats and processes, and the availability of prey is maintained.

Qualifying Features:

The qualifying feature of the SAC is the Harbour porpoise (*Phocoena phocoena*) as it contains key winter and summer habitat for this species[30].

Threats and Pressures at Habitats site which may be affected by Broads Plan[31]:

- Recreational boating activity

[28] JNCC. (2019) Southern North Sea SAC. Available at: https://jncc.gov.uk/our-work/southern-north-sea-mpa/ [Date Accessed: 12/04/22]

[29] JNCC. (2019) Southern North Sea MPA. Available at: https://jncc.gov.uk/our-work/southern-north-sea-mpa [Date Accessed: 12/04/22]

[30] JNCC (2019) Southern North Sea SAC Conservation Objectives. Available at: http://data.jncc.gov.uk/data/206f2222-5c2b-4312-99ba-d59dfd1dec1d/SouthernNorthSea-conservation-advice.pdf [Date Accessed: 12/04/22]

[31] JNCC (2019) Southern North Sea SAC Conservation Objectives. Available at: http://data.jncc.gov.uk/data/206f2222-5c2b-4312-99ba-d59dfd1dec1d/SouthernNorthSea-conservation-advice.pdf [Date Accessed: 12/04/22]

Greater Wash SPA[32]

Designation Overview

The Greater Wash SPA is located in the mid-southern North Sea between Bridlington Bay in the north and the Outer Thames Estuary SPA in the south. To the north, off the Holderness coast in Yorkshire, seabed habitats primarily comprise coarse sediments, with occasional areas of sand, mud and mixed sediments. Subtidal sandbanks occur at the mouth of the Humber Estuary, primarily comprising sand and coarse sediments. Offshore, soft sediments dominate, with extensive areas of subtidal sandbanks off The Wash as well as north and east Norfolk coasts. Closer inshore at The Wash and north Norfolk coast, sediments comprise a mosaic of sand, muddy sand, mixed sediments and coarse sediments, as well as occasional Annex I reefs. The area off the Suffolk coast continues the mosaic habitats mostly dominated by soft sediment[33].

Conservation objectives:

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring;

- The extent and distribution of the habitats of the qualifying features;
- The structure and function of the habitats of the qualifying features;
- The supporting processes on which the habitats of the qualifying features rely;
- The population of each of the qualifying features; and
- The distribution of the qualifying features within the site.

Qualifying Features:

A001 *Gavia stellata*; Red-throated diver (Non-breeding)

A065 *Melanitta nigra*; Common scoter (Non-breeding)

A177 *Hydrocoloeus minutus*; Little gull (Non-breeding)

A191 *Sterna sandvicensis*; Sandwich tern (Breeding)

A193 *Sterna hirundo*; Common tern (Breeding)

A195 *Sternula albifrons*; Little tern (Breeding)

Threats and Pressures at Habitats site which may be affected by Broads Plan[34]:

No threats or pressures identified by Natural England.

[32] Natural England (2019) Conservation Objectives for Greater Wash SPA. Available at http://publications.naturalengland.org.uk/publication/4597871528116224 [Date Accessed: 12/04/22]

[33] Natural England (2018) Citation - Greater Wash SPA. Available at http://publications.naturalengland.org.uk/publication/4597871528116224 [Date Accessed: 12/04/22]

[34] Natural England (2018) Citation - Greater Wash SPA. Available at http://publications.naturalengland.org.uk/publication/4597871528116224 [Date Accessed: 12/04/22]

Benacre to Easton Bavents SPA [35]

Designation Overview

Benacre to Easton Bavents Lagoons is a series of percolation lagoons. The lagoons (the Denes, Benacre Broad, Covehithe Broad and Easton Broad) have formed behind shingle barriers and are a feature of a geomorphologically dynamic system. Sea water enters the lagoons by percolation through the barriers, or by overtopping them during storms and high spring tides. The three southern lagoons receive freshwater inputs from the local ditch and channel networks.

Benacre to Easton Bavents SPA supports internationally important populations of Bittern, Marsh harrier and Little tern. The site includes areas of shingle, vegetated shingle, reedbed, and wetland habitats as well as geological and geomorphological features [36].

Conservation objectives:

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring;

- The extent and distribution of the habitats of the qualifying features;
- The structure and function of the habitats of the qualifying features:
- The supporting processes on which the habitats of the qualifying features rely:
- The population of each of the qualifying features; and
- The distribution of the qualifying features within the site.

Qualifying Features:

A021 *Botaurus stellaris*; Great bittern (Breeding);

A081 *Circus aeruginosus*; Eurasian marsh harrier (Breeding); and

A195 *Sterna albifrons*; Little tern (Breeding)[37].

Threats and Pressures at Habitats site which may be affected by Broads Plan[38]:

- Public access/disturbance;
- Water pollution;
- Physical modification; and
- Changes in species distributions.

[35] Natural England (2017) Benacre to Easton Bavents SPA Conservation Objectives. Available at: http://publications.naturalengland.org.uk/publication/4812476415737856 [Date Accessed: 12/04/22]

[36] Natural England (2017) Benacre to Easton Bavents SPA SIP. Available at: http://publications.naturalengland.org.uk/publication/4812476415737856 [Date Accessed: 12/04/22]

[37] Natural England (2017) Benacre to Easton Bavents SPA Conservation Objectives. Available at: http://publications.naturalengland.org.uk/publication/4812476415737856 [Date Accessed: 12/04/22]

[38] Natural England (2017) Benacre to Easton Bavents SPA SIP. Available at: http://publications.naturalengland.org.uk/publication/4812476415737856 [Date Accessed: 12/04/22]

Norfolk Valley Fens SAC[39]

Designation Overview

Norfolk Valley Fens is one of two sites selected in East Anglia, in eastern England, where the main concentration of lowland Alkaline fens occurs. This site comprises a series of valley-head spring-fed fens. Such spring-fed flush fens are very rare in the lowlands. Most of the vegetation at this site is of the small sedge fen type, mainly referable to M13 *Schoenus nigricans – Juncus subnodulosus* mire, but there are transitions to reedswamp and other fen and wet grassland types.

The individual fens vary in their structure according to intensity of management and provide a wide range of variation. There is a rich flora associated with these fens, including species such as grass-of-Parnassus *Parnassia palustris*, common butterwort *Pinguicula vulgaris*, marsh helleborine *Epipactis palustris* and narrow-leaved marsh-orchid *Dactylorhiza traunsteineri*. Six other Annex I habitats are present as qualifying features, but are not a primary reason for the selection of this site.

Two Annex II species are present, narrow-mouthed whorl snail and Desmoulin's whorl snail are also a primary reason for the selection of the site.[40]

Conservation objectives:

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring;

- The extent and distribution of qualifying natural habitats and habitats of qualifying species;
- The structure and function (including typical species) of qualifying natural habitats;
- The structure and function of the habitats of qualifying species;
- The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely;
- he populations of qualifying species; and
- The distribution of qualifying species within the site.

Qualifying Features:

H4010. Northern Atlantic wet heaths with *Erica tetralix*; Wet heathland with cross-leaved heath

H4030. European dry heaths

H6210. Semi-natural dry grasslands and scrubland facies: on calcareous substrates (*Festuco-Brometalia*); Dry grasslands and scrublands on chalk or limestone

H6410. *Molinia* meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*); Purple moor-grass meadows

H7210. Calcareous fens with *Cladium mariscus* and species of the *Caricion davallianae*; Calcium-rich fen dominated by great fen sedge (saw sedge)*

H7230. Alkaline fens; Calcium-rich springwater-fed fens

[39] Natural England (2018) Norfolk Valley Fens SAC Conservation Objectives. Available at: http://publications.naturalengland.org.uk/publication/6684666086031360 [Date Accessed: 12/04/22]

[40] Natural England (2017) Norfolk Valley Fens SAC SIP. Available at: http://publications.naturalengland.org.uk/publication/6261291761008640 [Date Accessed: 12/04/22]

H91E0. Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion, Alnion incanae, Salicion albae*); Alder woodland on floodplains*

S1014. *Vertigo angustior*: Narrow-mouthed whorl snail

S1016. *Vertigo moulinsiana*; Desmoulin`s whorl snail[41]

Threats and Pressures at Habitats site which may be affected by Broads Plan[42]:

- Inappropriate water levels;
- Inappropriate scrub control:
- Hydrological changes:
- Water pollution:
- Inappropriate cutting/mowing:
- Water abstraction:
- Change in land management:
- Changes in species distribution; and
- Air pollution: impact of atmospheric nitrogen deposition.

[41] Natural England (2018) Norfolk Valley Fens SAC Conservation Objectives. Available at: http://publications.naturalengland.org.uk/publication/6684666086031360 [Date Accessed: 12/04/22]

[42] Natural England (2017) Norfolk Valley Fens SAC SIP. Available at: http://publications.naturalengland.org.uk/publication/6261291761008640 [Date Accessed: 12/04/22]

The Wash and North Norfolk Coast SAC [43]

Designation Overview

The Wash is the largest marine embayment in Britain, with the second largest expanse of intertidal sediment flats in the country. These include extensive fine sands and drying banks of coarser sand which support a community characterised by large numbers of polychaetes, bivalves, and crustaceans. Subtidal sandbanks vary in composition and include coarse sand through to mixed sediment at the mouth of the embayment. Unusual subtidal communities include large areas of dense brittlestar beds and the small but extensive colonies of the reef-building ross worm S*abellaria spinulosa* which supports a diverse associated fauna.

The North Norfolk coast provides the only typical British example of a barrier beach system. Extensive areas of salt marsh with characteristic creek patterns have developed behind sand and shingle spits and bars. The open coast is characterised by large areas of clean mobile sand subject to functioning coastal and marine processes. Communities vary from typical estuarine examples characterised by the bivalve peppery furrow shell *Scrobicularia plana*, to lugworm *Arenicola marina* dominated muddier sand in the lee of islands and spits, to a sparse infauna in more exposed open coast areas.

The Wash and North Norfolk coast EMS is important for breeding and moulting of one of Europe's largest populations of common seal *Phoca vitulina*. The intertidal mudflats and salt marshes represent one of Britain's most important winter feeding areas for waders and wildfowl outside of the breeding season.

Gibraltar Point (587ha) is of national importance for its sand dunes, other coastal habitats and associated fauna - notably invertebrates and passage and breeding birds. Other habitats present include; grassland, coastal lagoons, shingle, intertidal mud / sand and open water

Conservation objectives:

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring;

- The extent and distribution of qualifying natural habitats and habitats of qualifying species;
- The structure and function (including typical species) of qualifying natural habitats:
- The structure and function of the habitats of qualifying species:
- The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely:
- The populations of qualifying species; and
- The distribution of qualifying species within the site.

Qualifying Features:

H1110. Sandbanks which are slightly covered by sea water all the time; Subtidal sandbanks

H1140. Mudflats and sandflats not covered by seawater at low tide; Intertidal mudflats and sandflats

H1150. Coastal lagoons*

[43] Natural England (2018) The Wash & North Norfolk Coast SAC Conservation Objectives. Available at: http://publications.naturalengland.org.uk/publication/5950176598425600 [Date Accessed: 12/04/22]

H1160. Large shallow inlets and bays

H1170. Reefs

H1310. *Salicornia* and other annuals colonising mud and sand; Glasswort and other annuals colonising mud and sand

H1330. Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*)

H1420. Mediterranean and thermo-Atlantic halophilous scrubs (*Sarcocornetea fruticosi*); Mediterranean saltmarsh scrub

S1355. *Lutra lutra*; Otter

S1365. *Phoca vitulina*; Common seal[44]

Threats and Pressures at Habitats site which may be affected by Broads Plan[45]:

- Inappropriate water levels;
- Public access/disturbance;
- Siltation; and
- Coastal squeeze.

[44] Natural England (2018) The Wash & North Norfolk Coast SAC Conservation Objectives. Available at: http://publications.naturalengland.org.uk/publication/5950176598425600 [Date Accessed: 12/04/22]

[45] Natural England (2017) The Wash & North Norfolk Coast SAC SIP. Available at: http://publications.naturalengland.org.uk/publication/5327498292232192 [Date Accessed: 12/04/22]

North Norfolk Coast SAC, North Norfolk Coast SPA and North Norfolk Coast Ramsar

Designation Overview

The North Norfolk coast provides the only typical British example of a barrier beach system. Extensive areas of salt marsh with characteristic creek patterns have developed behind sand and shingle spits and bars. The open coast is characterised by large areas of clean mobile sand subject to functioning coastal and marine processes. Communities vary from typical estuarine examples characterised by the bivalve peppery furrow shell *Scrobicularia plana*, to lugworm *Arenicola marina* dominated muddier sand in the lee of islands and spits, to a sparse infauna in more exposed open coast areas.

Conservation objectives:

North Norfolk Coast SPA[46]:

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring;

- The extent and distribution of the habitats of the qualifying features;
- The structure and function of the habitats of the qualifying features;
- The supporting processes on which the habitats of the qualifying features rely;
- The population of each of the qualifying features; and
- The distribution of the qualifying features within the site.

North Norfolk Coast SAC[47]:

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring;

- The extent and distribution of qualifying natural habitats and habitats of qualifying species;
- The structure and function (including typical species) of qualifying natural habitats;
- The structure and function of the habitats of qualifying species;
- The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely;
- The populations of qualifying species; and
- The distribution of qualifying species within the site.

Qualifying Features:

North Norfolk Coast SPA[48]:

A021 *Botaurus stellaris*; Great bittern (Breeding)

A040 *Anser brachyrhynchus;* Pink-footed goose (Non-breeding)

[46] Natural England (2019) North Norfolk Coast SPA Conservation Objectives. Available at: http://publications.naturalengland.org.uk/publication/4732349359063040 [Date Accessed: 12/04/22]

[47] Natural England (2019) North Norfolk Coast SAC Conservation Objectives. Available at: http://publications.naturalengland.org.uk/publication/6270240262455296 [Date Accessed: 12/04/22]

[48] Natural England (2019) North Norfolk Coast SPA Conservation Objectives. Available at: http://publications.naturalengland.org.uk/publication/6270240262455296 [Date Accessed: 12/04/22]

A046a *Branta bernicla bernicla*; Dark-bellied brent goose (Non-breeding)

A050 *Anas penelope*; Eurasian wigeon (Non-breeding)

A081 *Circus aeruginosus*; Eurasian marsh harrier (Breeding)

A084 *Circus pygargus*; Montagu's harrier (Breeding)

A132 *Recurvirostra avosetta*; Pied avocet (Breeding)

A143 *Calidris canutus*; Red knot (Non-breeding)

A191 *Sterna sandvicensis*; Sandwich tern (Breeding)

A193 *Sterna hirundo*; Common tern (Breeding)

A195 *Sterna albifrons*; Little tern (Breeding)

Waterbird assemblage

North Norfolk Coast SAC[49]:

H1150. Coastal lagoons*

H1220. Perennial vegetation of stony banks; Coastal shingle vegetation outside the reach of waves

H1420. Mediterranean and thermo-Atlantic halophilous scrubs (*Sarcocornetea fruticosi*); Mediterranean saltmarsh scrub

H2110. Embryonic shifting dunes

H2120. Shifting dunes along the shoreline with *Ammophila arenaria* ("white dunes"); Shifting dunes with marram

H2130. Fixed dunes with herbaceous vegetation ("grey dunes"); Dune grassland*

H2190. Humid dune slacks

S1355. *Lutra lutra*; Otter

S1395. *Petalophyllum ralfsii*; Petalwort

North Norfolk Coast Ramsar[50]:

The site meets the following Ramsar criteria:

- Ramsar criterion 1:
  The site is one of the largest expanses of undeveloped coastal habitat of its type in Europe. It is a particularly good example of a marshland coast with intertidal sand and mud, saltmarshes, shingle banks and sand dunes. There are a series of brackish-water lagoons and extensive areas of freshwater grazing marsh and reed beds.
- Ramsar criterion 2:
  Supports at least three British Red Data Book and nine nationally scarce vascular plants, one British Red Data Book lichen and 38 British Red Data Book invertebrates.
- Ramsar criterion 5; and

[49] Natural England (2019) North Norfolk Coast SAC Conservation Objectives. Available at: http://publications.naturalengland.org.uk/publication/4732349359063040 [Date Accessed: 12/04/22]

[50] JNCC. 2008. Information Sheet on Ramsar Wetlands. North Norfolk Ramsar. Available at https://jncc.gov.uk/jncc-assets/RIS/UK11048.pdf [Date Accessed: 11/04/22].

Assemblages of international importance:
Species with peak counts in winter: 98462 waterfowl (5 year peak mean 1998/99-2002/2003)

- Ramsar criterion 6:
  Species/populations occurring at levels of international importance:
  - (*Thalasseus*) *sandvicensis sandvicensis*, W Europe;
  - Common tern, *Sterna hirundo hirundo*, N & E Europe:
  - Little tern, *Sterna albifrons albifrons*, W Europe:
  - Red knot, *Calidris canutus islandica*, W & Southern Africa:
  - Pink-footed goose, *Anser brachyrhynchus*, Greenland, Iceland/UK:
  - Dark-bellied brent goose, *Branta bernicla bernicla,:*
  - Eurasian wigeon, *Anas penelope*, NW Europe:
  - Northern pintail, *Anas acuta,* NW Europe:
  - Ringed plover, *Charadrius hiaticula,* Europe/Northwest Africa:
  - Sanderling, *Calidris alba,* Eastern Atlantic; and
  - Bar-tailed godwit, *Limosa lapponica lapponica*, W Palearctic.

Threats and Pressures at Habitats site which may be affected by Broads Plan[51]:

North Norfolk Coast SPA and North Norfolk Coast SAC:

- Inappropriate water levels;
- Public access/disturbance;
- Siltation; and
- Coastal squeeze

North Norfolk Coast Ramsar:

No threats or pressures were identified for North Norfolk Coast Ramsar.

[51] Natural England (2017) The Wash & North Norfolk Coast SAC SIP. Available at: http://publications.naturalengland.org.uk/publication/5327498292232192 [Date Accessed: 12/04/22]

Appendix C: Habitats sites and corresponding SSSI conservation status

Habitats site	SSSI Name	No. of SSSI Units	Conservation Status of SSSI Units[1]	Reason for unfavourable declining status where applicable.
The Broads SAC	Alderfen Broad SSSI	3	1 Favourable	n/a
			2 Unfavourable - recovering	n/a
	Ant Broads and Marshes SSSI	35	24 Favourable	n/a
			8 Unfavourable - recovering	n/a
			3 Unfavourable – declining	Possible nutrient enrichment.
	Barnby Broad and Marshes SSSI	24	11 Favourable	n/a
			13 Unfavourable - recovering	n/a
	Broad Fen, Dilham SSSI	1	1 Unfavourable - recovering	n/a
	Bure Broads and Marshes SSSI	14	5 Favourable	n/a
			4 Unfavourable – no change	n/a
			5 Unfavourable - recovering	n/a
	Burgh Common and Muckfleet Marshes SSSI	9	4 Favourable	n/a
			1 Unfavourable – no change	n/a
			4 Unfavourable - recovering	n/a
	Calthorpe Broad SSSI	3	2 Favourable	n/a
			1 Unfavourable - recovering	n/a
	Cantley Marshes SSSI	3	3 Favourable	n/a
	Crostwick Marsh SSSI	1	1 Unfavourable – no change	n/a
	Damgate Marshes, Acle SSSI	10	6 Favourable	n/a
			4 Unfavourable - recovering	n/a
	Decoy Car, Acle SSSI	6	4 Favourable	n/a

[1] Natural England. Designated Site View. https://designatedsites.naturalengland.org.uk/. Site condition data is provided for the SSSIs which legally underpin European site designations [Date Accessed: 23/04/21].

Habitats site	SSSI Name	No. of SSSI Units	Conservation Status of SSSI Units[1]	Reason for unfavourable declining status where applicable.
			2 Unfavourable - recovering	n/a
	Duncan's Marsh, Claxton SSSI	2	2 Unfavourable - recovering	n/a
	Geldeston Meadows SSSI	2	1 Unfavourable – no change	n/a
			1 Unfavourable – declining	No comment provided.
	Hall Farm Fen, Hemsby SSSI	1	1 Favourable	n/a
	Halvergate Marshes SSSI	36	25 Favourable	n/a
			2 Unfavourable – no change	n/a
			9 Unfavourable - recovering	n/a
	Hardley Flood SSSI	2	2 Favourable	n/a
	Limpenhoe Meadows SSSI	1	1 Unfavourable - recovering	n/a
	Ludham – Potter Heigham Marshes SSSI	6	6 Favourable	n/a
	Poplar Farm Meadows, Langley SSSI	1	1 Favourable	n/a
	Priory Meadows, Hickling SSSI	2	1 Favourable	n/a
			1 Unfavourable - recovering	n/a
	Shallam Dyke Marshes, Thurne SSSI	8	2 Favourable	n/a
			6 Unfavourable – no change	n/a
	Sprat's Water and Marshes, Carlton Colville SSSI	11	7 Favourable	n/a
			2 Unfavourable – no change	n/a
			2 Unfavourable - recovering	n/a
	Smallburgh Fen SSSI	1	1 Favourable	n/a
	Stanley and Alder Carrs, Aldeby SSSI	3	3 Unfavourable - recovering	n/a
	Trinity Broads SSSI	23	15 Favourable	n/a
			1 Unfavourable – no change	n/a
			7 Unfavourable - recovering	n/a
		19	11 Favourable	n/a

Habitats site	SSSI Name	No. of SSSI Units	Conservation Status of SSSI Units[1]	Reason for unfavourable declining status where applicable.
	Upper Thurne Broads and Marshes SSSI		3 Unfavourable – no change	n/a
			2 Unfavourable - recovering	n/a
			3 Unfavourable – declining	Water quality and abstraction.
	Upton Broad & Marshes SSSI	18	8 Favourable	n/a
			1 Unfavourable – no change	n/a
			9 Unfavourable - recovering	n/a
	Yare Broads and Marshes SSSI	28	7 Favourable	n/a
			10 Unfavourable – no change	n/a
			6 Unfavourable - recovering	n/a
			5 Unfavourable – declining	Nutrient enrichment. Overfeeding of duck for shooting with possible contribution from agricultural run-off.
Broadland SPA and Ramsar	Alderfen Broad SSSI	3	1 Favourable	n/a
			2 Unfavourable - recovering	n/a
	Ant Broads and Marshes SSSI	35	24 Favourable	n/a
			8 Unfavourable - recovering	n/a
			3 Unfavourable – declining	Possible nutrient enrichment.
	Barnby Broad and Marshes SSSI	24	11 Favourable	n/a
			13 Unfavourable - recovering	n/a
	Broad Fen, Dilham SSSI	1	1 Unfavourable - recovering	n/a
	Bure Broads and Marshes SSSI	14	5 Favourable	n/a
			4 Unfavourable – no change	n/a
			5 Unfavourable - recovering	n/a
	Burgh Common and Muckfleet Marshes SSSI	9	4 Favourable	n/a
			1 Unfavourable – no change	n/a
			4 Unfavourable - recovering	n/a
	Calthorpe Broad SSSI	3	2 Favourable	n/a

Habitats site	SSSI Name	No. of SSSI Units	Conservation Status of SSSI Units[1]	Reason for unfavourable declining status where applicable.
			1 Unfavourable - recovering	n/a
	Cantley Marshes SSSI	3	3 Favourable	n/a
	Crostwick Marsh SSSI	1	1 Unfavourable – no change	n/a
	Decoy Car, Acle SSSI	6	4 Favourable	n/a
			2 Unfavourable - recovering	n/a
	Duncan's Marsh, Claxton SSSI	2	2 Unfavourable - recovering	n/a
	Geldeston Meadows SSSI	2	1 Unfavourable – no change	n/a
			1 Unfavourable – declining	No comment provided.
	Hall Farm Fen, Hemsby SSSI	1	1 Favourable	n/a
	Halvergate Marshes SSSI	36	25 Favourable	n/a
			2 Unfavourable – no change	n/a
			9 Unfavourable - recovering	n/a
	Hardley Flood SSSI	2	2 Favourable	n/a
	Limpenhoe Meadows SSSI	1	1 Unfavourable - recovering	n/a
	Ludham – Potter Heigham Marshes SSSI	6	6 Favourable	n/a
	Poplar Farm Meadows, Langley SSSI	1	1 Favourable	n/a
	Priory Meadows, Hickling SSSI	2	1 Favourable	n/a
			1 Unfavourable - recovering	n/a
	Shallam Dyke Marshes, Thurne SSSI	8	2 Favourable	n/a
			6 Unfavourable – no change	n/a
	Sprat's Water and Marshes, Carlton Colville SSSI	12	7 Favourable	n/a
			2 Unfavourable – no change	n/a
			3 Unfavourable - recovering	n/a
	Smallburgh Fen SSSI	1	1 Favourable	n/a
	Stanley and Alder Carrs, Aldeby SSSI	3	3 Unfavourable - recovering	n/a
		19	11 Favourable	n/a

Habitats site	SSSI Name	No. of SSSI Units	Conservation Status of SSSI Units[1]	Reason for unfavourable declining status where applicable.
	Upper Thurne Broads and Marshes SSSI		3 Unfavourable – no change	n/a
			2 Unfavourable - recovering	n/a
			3 Unfavourable – declining	Water quality and abstraction.
	Upton Broad & Marshes SSSI	18	8 Favourable	n/a
			1 Unfavourable – no change	n/a
			9 Unfavourable - recovering	n/a
	Yare Broads and Marshes SSSI	28	7 Favourable	n/a
			9 Unfavourable – no change	n/a
			5 Unfavourable - recovering	n/a
			5 Unfavourable – declining	Nutrient enrichment. Overfeeding of duck for shooting with possible contribution from agricultural run-off.
Breydon Water SPA and Ramsar	Breydon Water SSSI	15	15 Favourable	n/a
	Halvergate Marshes SSSI	36	25 Favourable	n/a
			2 Unfavourable – no change	Pollution, lack of corrective works
			9 Unfavourable - recovering	n/a
Great Yarmouth North Denes SPA	Great Yarmouth North Denes SSSI	2	2 Favourable	n/a
	Winterton-Horsey Dunes SSSI	12	7 Favourable	n/a
			4 Unfavourable – no change	Inappropriate coastal management
			1 Unfavourable - recovering	n/a
Outer Thames Estuary SPA	Benfleet and Southend Marshes SSSI	10	1 Favourable	n/a
			2 Unfavourable – no change	Coastal squeeze
			7 Unfavourable - recovering	n/a
	Corton Cliffs SSSI	1	1 Favourable	n/a
	Crouch and Roach Estuaries SSSI	36	12 Favourable	n/a
			24 Unfavourable – recovering	n/a
	Dengie SSSI	8	5 Unfavourable - recovering	n/a

Habitats site	SSSI Name	No. of SSSI Units	Conservation Status of SSSI Units[1]	Reason for unfavourable declining status where applicable.
			3 Unfavourable - Declining	n/a
	Foulness SSSI	34	10 Favourable	n/a
			1 Unfavourable – no change	n/a
			1 Unfavourable - Declining	Undergrazing
			22 Unfavourable – recovering	n/a
	Great Yarmouth North Denes SSSI	2	2 Favourable	n/a
	Minsmere-Walberswick Heaths and Marshes SSSI	36	23 Favourable	n/a
			12 Unfavourable – recovering	n/a
			1 Unfavourable – no change	n/a
	Pakefield to Easton Bavents SSSI	33	23 Favourable	n/a
			1 Unfavourable – no change	Freshwater pollution, deer grazing
			8 Unfavourable - recovering	n/a
			1 Unfavourable - Declining	n/a
	The Cliff, Burnham-On-Crouch SSSI	1	23 Favourable	n/a
Southern North Sea SAC	SAC Monitored Features not allocated to unit(s)	n/a	n/a	n/a
Winterton-Horsey Dunes SAC	Winterton-Horsey Dunes SSSI	12	7 Favourable	n/a
			4 Unfavourable - No change	Inappropriate coastal management
			1 Unfavourable - Recovering	n/a
Greater Wash SPA	Beeston Cliffs SSSI	1	1 Unfavourable - Recovering	n/a
	Chapel Point - Wolla Bank SSSI	1	1 Favourable	n/a
	Dimlington Cliff SSSI	1	1 Favourable	n/a
	Gibraltar Point SSSI	5	2 Favourable	n/a
			2 Unfavourable - Recovering	n/a
			1 Unfavourable - Declining	Air pollution

Habitats site	SSSI Name	No. of SSSI Units	Conservation Status of SSSI Units[1]	Reason for unfavourable declining status where applicable.
	Happisburgh Cliffs SSSI	1	1 Favourable	n/a
	Humber Estuary - 2000480 SSSI	187	13 Favourable	n/a
			101 Unfavourable - Recovering	n/a
			36 Unfavourable - Declining	n/a
			2 Unknown	n/a
	Hunstanton Cliffs SSSI	1	1 Favourable	n/a
	Morston Cliff SSSI	1	1 Unfavourable - Recovering	n/a
	Mundesley Cliffs SSSI	1	1 Favourable	n/a
	North Norfolk Coast SSS	70	67 Favourable	n/a
			3 Unfavourable - Recovering	n/a
	Overstrand Cliffs SSSI	2	2 Favourable	n/a
	Saltfleetby - Theddlethorpe Dunes SSSI	2	1 Favourable	n/a
			1 Unfavourable - recovering	n/a
	Sidestrand and Trimingham Cliffs SSSI	3	2 Favourable	n/a
			1 Unfavourable – declining	Inappropriate coastal management
	The Lagoons SSSI	1	1 Unfavourable – no change	n/a
	The Wash SSSI	60	48 Favourable	n/a
			11 Unfavourable - Recovering	n/a
			1 Unfavourable - Declining	n/a
	West Runton Cliffs SSSI	1	1 Favourable	n/a
	Weybourne Cliffs SSSI	1	1 Favourable	n/a
	Winterton-Horsey Dunes SSSI	12	7 Favourable	n/a
			4 Unfavourable - No change	Inappropriate coastal management
			1 Unfavourable - Recovering	n/a
	Withow Gap, Skipsea SSSI	1	1 Favourable	
Benacre to Easton Bavents SPA	Pakefield to Easton Bavents SSSI	51	30 Favourable	n/a
			4 Unfavourable – no change	n/a

Habitats site	SSSI Name	No. of SSSI Units	Conservation Status of SSSI Units[1]	Reason for unfavourable declining status where applicable.
			17 Unfavourable - recovering	n/a
			1 Unfavourable – declining	Water pollution
			Partially destroyed	Coastal erosion
Norfolk Valley Fens SAC	Badley Moor SSSI	4	4 Favourable	n/a
	Booton Common SSSI	1	1 Unfavourable - Recovering	n/a
	Buxton Heath SSSI	1	1 Unfavourable - Recovering	n/a
	Coston Fen, Runhall SSSI	1	1 Unfavourable – No change	Freshwater drainage, lack of corrective works, inappropriate scrub control
	East Walton and Adcock's Common SSSI	3	3 Unfavourable - Recovering	n/a
	Flordon Common SSSI	2	1 Favourable	n/a
			1 Unfavourable - Recovering	n/a
	Foulden Common SSSI	7	2 Favourable	n/a
			4 Unfavourable - Recovering	n/a
			1 Unfavourable - Declining	Inappropriate water levels
	Great Cressingham Fen SSSI	1	1 Unfavourable - Recovering	n/a
	Holt Lowes SSSI	2	1 Favourable	n/a
			1 Unfavourable - Recovering	n/a
	Potter & Scarning Fens, East Dereham SSSI	2	2 Unfavourable - Recovering	n/a
	Sheringham and Beeston Regis Commons SSSI	2	2 Unfavourable - Recovering	n/a
	Southrepps Common SSSI	1	1 Unfavourable - Recovering	n/a
	Swangey Fen, Attleborough SSSI	6	5 Favourable	n/a
			1 Unfavourable - Declining	n/a
	Thompson Water, Carr and Common SSSI	11	8 Favourable	n/a
			2 Unfavourable - Recovering	n/a
			Unfavourable - Declining	Pollution

Habitats site	SSSI Name	No. of SSSI Units	Conservation Status of SSSI Units[1]	Reason for unfavourable declining status where applicable.
The Wash and North Norfolk Coast SAC	Gibraltar Point SSSI	5	2 Favourable	n/a
			2 Unfavourable - recovering	n/a
			1 Unfavourable - Declining	Air pollution
	North Norfolk Coast SSSI	70	67 Favourable	n/a
			3 Unfavourable - recovering	n/a
	The Wash SSSI	60	48 Favourable	n/a
			11 Unfavourable - Recovering	n/a
			1 Unfavourable - Declining	n/a
North Norfolk Coast SAC	North Norfolk Coast SSSI	70	67 Favourable	n/a
			3 Unfavourable - recovering	n/a
North Norfolk Coast SPA and Ramsar	North Norfolk Coast SSSI	70	67 Favourable	n/a
			3 Unfavourable - recovering	n/a
	Morston Cliff	1	1 Unfavourable - recovering	n/a

Appendix D: Broads Plan Pre-Screening Summary – Test of Likely Significance

The draft Broads Plan has been screened using the DTA HRA pre-screening categories[1] presented in **Table D.1**.

Table D.1: *Assessment and reasoning categories from Part F of the DTA Handbook*

Assessment and reasoning categories from Chapter F of The Habitats Regulations Assessment Handbook (DTA Publications, 2013):
A. General statements of policy / general aspirations.
B. Policies listing general criteria for testing the acceptability / sustainability of proposals.
C. Proposal referred to but not proposed by the plan.
D. General plan-wide environmental protection / site safeguarding / threshold policies
E. Policies or proposals that steer change in such a way as to protect European sites from adverse effects.
F. Policies or proposals that cannot lead to development or other change.
G. Policies or proposals that could not have any conceivable or adverse effect on a site.
H. Policies or proposals the (actual or theoretical) effects of which cannot undermine the conservation objectives (either alone or in combination with other aspects of this or other plans or projects).
I. Policies or proposals with a likely significant effect on a site alone.
J. Policies or proposals unlikely to have a significant effect alone.
K. Policies or proposals unlikely to have a significant effect either alone or in combination.
L. Policies or proposals which might be likely to have a significant effect in combination.
M. Bespoke area, site or case-specific policies or proposals intended to avoid or reduce harmful effects on a European site.

[1] Tyldesley, D., and Chapman, C. (2013) The Habitats Regulations Assessment Handbook (September) (2013) edition UK: DTA Publications Limited. Available at: www.dtapublications.co.uk

Chapter	Component	Sub-component	Summary of Plan Component	Screening Category	Habitats Site[2]	Screening Conclusion and Recommendations
Chapter 1 – Introduction	n/a	n/a	This chapter sets out administrative text and baseline information for the Plan.	**A**	n/a	Screen out **Recommendation**: Wording around HRA to be updated to include reference to Ramsar sites.
Chapter 2 – Vision and Principles	Long-term vision and fundamental principles	n/a	Section 2.1 of this chapter sets out the vision for the Broads National Park to 2042 and Section 2.2 sets out the fundamental principles. These are general aspirations of the Broads Plan.	**A**	n/a	Screen out
Chapter 3 – Strategic objectives	A. Responding to climate change and food risk.	Long term aim and background text.	This sets out the general statement / overall goal of this long-term objective to respond to climate change and flood risk.	**A**	n/a	Screen out
		A1: Work towards making all Broads Authority operations carbon neutral by 2030 and carbon zero by 2040	This strategic objective will be delivered through research and implementation of carbon reduction measures and also the identification and implementation of offsetting measures. It will have a positive environmental effect. It will not trigger development or any other change and as such will have no LSE on any Habitats site either alone or in-combination.	**D**	n/a	Screen out
		A2: Agree carbon reduction targets for the Broads National Park and promote	This strategic objective aims to develop common standards to achieve carbon reduction, undertake research and implement reduction initiatives. It will have a positive environmental effect. It will not trigger development or any other change and as such will have	**D**	n/a	Screen out

[2] Note: wider tourism zones of influence (at the county scale) have been applied to identify Habitats sites which may be affected by promotion of tourism across the Broads and potential development of tourism accommodation through the Local Plan for the Broads.

Chapter	Component	Sub-component	Summary of Plan Component	Screening Category	Habitats Site[2]	Screening Conclusion and Recommendations
		action to reduce emissions	no LSE on any Habitats site either alone or in-combination.			
		A3: Prepare a long-term, integrated flood risk strategy for the Broads, Great Yarmouth and interrelated coastal frontage and maintain current adaptive coastal, tidal and fluvial flood risk management approaches for the area	This strategic objective aims to develop research into flood risk, update flood risk assessments and look at options for natural flood management. It also supports flood risk mitigation measures as set out in adopted plans (see **Appendix A** for a review of flood management plans), and infrastructure maintenance works as set out in the Broadland Flood Alleviation Project. Implementation of infrastructure maintenance works has the potential to have LSEs (in particularly in relation to hydrology and disturbance) at water sensitive Habitats sites. These Habitats sites are set out in **Chapter 6**.	**I**	The Broads SAC Broadland SPA Broadland Ramsar Breydon Water SPA Breydon Ramsar	Screen in **Recommendation**: It may be beneficial to note that works will need to be undertaken in a manner which is sensitive to the environment, complies with relevant permits and controls and that plans and projects stemming from this objective / actions will be subject to lower tier HRA.
	B: Improving landscapes for biodiversity and agriculture	Long term aim and background text.	This long-term aim sets out a general statement / overall goal to improve landscapes for biodiversity and agriculture.	**A**	n/a	Screen out
		B1. Restore, maintain and enhance lakes and use monitoring evidence to trial and implement further innovative lake restoration techniques	This strategic objective aims to develop and implement lake restoration, maintenance and enhancement works. Restoration projects promoted in plans, such as the Hoveton Great Broad Restoration Project, will take place within areas designated as the Broads SAC, Broadlands SPA and Broadlands Ramsar. These works have the potential to have LSEs at water sensitive Habitats sites. These Habitats sites are set out in **Chapter 6**.	**I**	The Broads SAC Broadland SPA Broadland Ramsar Breydon Water SPA Breydon Ramsar	Screen in **Recommendation**: It may be beneficial to note that works will need to be undertaken in a manner which is sensitive to the environment, complies with relevant permits and controls and that plans and projects stemming from this objective / actions will be subject to lower tier HRA.

Chapter	Component	Sub-component	Summary of Plan Component	Screening Category	Habitats Site[2]	Screening Conclusion and Recommendations
		B2. Promote best practice water capture and usage across the Broadland rivers catchment and reduce point and diffuse pollution into the floodplain and water courses	This strategic objective aims to promote water efficiency measures to reduce pressures on water resources. It also promotes actions which are set out within other water resource management plans (such as abstraction licencing, WRMP, Drought Plans etc – see **Appendix A**). Promotion of water efficiency measures will have a positive environmental effect. Plans such as the drought plan and WRMPs may have the potential to have LSEs at water sensitive Habitats sites. These Habitats sites are set out in **Chapter 6**.	**I**	The Broads SAC Broadland SPA Broadland Ramsar Breydon Water SPA Breydon Ramsar	Screen in **Recommendation**: It may be beneficial to note that works will need to be undertaken in a manner which is sensitive to the environment, complies with relevant permits and controls and that plans and projects stemming from this objective / other plans (such as WRMP) will be subject to HRA.
		B3. Maintain, enhance and increase areas of priority fen, reed bed, grazing marsh and wet woodland, protecting peatland ecosystems as carbon sinks and seeking environmental net gain	This strategic objective aims to maintain enhance and increase habitats which act as carbon sinks. It will have a positive environmental effect. It will not trigger development or any other change and as such will have no LSE on any Habitats site either alone or in-combination.	**D**	n/a	Screen out
		B4. Define, implement and monitor management regimes for priority species and invasive non-native species	This strategic objective aims to manage priority species recovery and invasive species. It will have a positive environmental effect. It will not trigger development or any other change and as such will have no LSE on any Habitats site either alone or in-combination.	**D**	n/a	Screen out

Chapter	Component	Sub-component	Summary of Plan Component	Screening Category	Habitats Site[2]	Screening Conclusion and Recommendations
		B5. Improve partnership coordination and communication of Broads biodiversity monitoring and research effort, linked to national biodiversity network	This strategic objective promotes research and monitoring. It will have a positive environmental effect. It will not trigger development or any other change and as such will have no LSE on any Habitats site either alone or in-combination.	**D**	n/a	Screen out
	C: Maintaining and enhancing the navigation	Long term aim and background text.	This long-term objective sets out a general statement / overall goal to maintain and enhance navigation.	**A**	n/a	Screen out
		C1. Maintain navigation water depths to defined specifications, reduce sediment input and dispose of dredged material in sustainable and beneficial ways	This strategic objective aims to deliver the annual dredging programme, sediment management and identify and address erosion. A number of waterways within the Broads are designated as part of the Broads SAC, Broadlands SPA, Broadlands Ramsar, Breydon Water Ramsar and Breydon Water SPA or are located upstream of these designations. Works set out under this objective have the potential to have LSEs at water sensitive Habitats sites. These Habitats sites are set out in **Chapter 6**.	**I**	The Broads SAC Broadland SPA Broadland Ramsar Breydon Water SPA Breydon Ramsar	Screen in **Recommendation**: It may be beneficial to note that works under this strategic objective will be detailed in the Waterways Management Strategy which will be subject to an HRA to ensure no adverse impact on Habitats sites. Works will also need to comply with relevant permits and controls to ensure environmental protection.
		C2. Maintain existing navigation water space and develop appropriate opportunities to extend access for	This strategic objective aims to develop, extend and maintain navigation. A number of waterways are designated as part of the Broads SAC, Broadlands SPA, Broadlands Ramsar, Breydon Water Ramsar and Breydon Water SPA or are located upstream of these designations. Works set out under this objective have	**I**	The Broads SAC Broadland SPA Broadland Ramsar Breydon Water SPA Breydon Ramsar	Screen in **Recommendation**: It may be beneficial to note that works under this strategic objective will be detailed in the Waterways Management Strategy which will be subject

Chapter	Component	Sub-component	Summary of Plan Component	Screening Category	Habitats Site[2]	Screening Conclusion and Recommendations
		various types of craft	the potential to have LSEs at water sensitive Habitats sites. These Habitats sites are set out in **Chapter 6**.			to an HRA to ensure no adverse impact on Habitats sites. Works will also need to comply with relevant permits and controls to ensure environmental protection.
		C3. Manage water plants and riverside trees and scrub, and seek resources to increase operational targets	This strategic objective aims to manage water pants and riverside vegetation. A number of waterways are designated as part of the Broads SAC, Broadlands SPA, Broadlands Ramsar, Breydon Water Ramsar and Breydon Water SPA or are located upstream of these designations. Works set out under this objective have the potential to have LSEs at water sensitive Habitats sites. These Habitats sites are set out in **Chapter 6**.	**I**	The Broads SAC Broadland SPA Broadland Ramsar Breydon Water SPA Breydon Ramsar	Screen in **Recommendation**: It is noted that the contextual text outlines legislative protection for water plants. It may be beneficial to note that works under this strategic objective will be detailed in the Waterways Management Strategy which will be subject to an HRA to ensure no adverse impact on Habitats sites. Works will also need to comply with relevant permits and controls to ensure environmental protection. It is recommended that text be updated to include information on nutrient neutrality requirements associated with vegetation cuttings.
		C4. Maintain and improve safety and security standards	This strategic objective aims to maintain and improve navigation safety through, among other aspects, infrastructure inspection and maintenance. A number	**I**	The Broads SAC Broadland SPA Broadland Ramsar	Screen in **Recommendation**: It may be beneficial to note that works

Chapter	Component	Sub-component	Summary of Plan Component	Screening Category	Habitats Site[2]	Screening Conclusion and Recommendations
		and user behaviour on the waterways	of waterways are designated as part of the Broads SAC, Broadlands SPA, Broadlands Ramsar, Breydon Water Ramsar and Breydon Water SPA or are located upstream of these designations. Works set out under this objective have the potential to have LSEs at water sensitive Habitats sites. These Habitats sites are set out in **Chapter 6**.		Breydon Water SPA Breydon Ramsar	under this strategic objective will be detailed in the Waterways Management Strategy which will be subject to an HRA to ensure no adverse impact on Habitats sites. Works will also need to comply with relevant permits and controls to ensure environmental protection.
	D: Protecting landscape character and the historic environment	Long term aim and background text.	This long-term aim sets out a general statement / overall goal to protect landscape character and the historic environment.	**A**	n/a	Screen out
		D1. Record, protect and enhance local built and cultural features, archaeology, geodiversity and potential hidden heritage, including 'at risk' assets	This strategic objective aims to protect and enhance the historical features of the Broads, through recording, education and promoting awareness. It will have a positive environmental effect. It will not trigger development or any other change and as such will have no LSE on any Habitats site either alone or in-combination.	**D**	n/a	Screen out
		D2. Maintain an up-to-date Broads Landscape Character Assessment and use to inform conservation action plans	This strategic objective aims refresh and maintain landscape assessment data. It will have a positive environmental effect. It will not trigger development or any other change and as such will have no LSE on any Habitats site either alone or in-combination.	**D**	n/a	Screen out

Chapter	Component	Sub-component	Summary of Plan Component	Screening Category	Habitats Site[2]	Screening Conclusion and Recommendations
		D3. Maintain up-to-date Conservation Area designations, appraisals and management proposals	This strategic objective aims maintain Conservation Area information. It will have a positive environmental effect. It will not trigger development or any other change and as such will have no LSE on any Habitats site either alone or in-combination.	**D**	n/a	Screen out
		D4. Reduce the impacts on the Broads of visual intrusion and noise and light pollution, and promote Dark Sky Discovery Sites	This strategic objective aims promote reduction of visual, noise and light pollution and monitor this. It will have a positive environmental effect. It will not trigger development or any other change and as such will have no LSE on any Habitats site either alone or in-combination.	**D**	n/a	Screen out
	E: Promoting understanding and enjoyment	Long term aim and background text.	This long-term objective sets out a general statement / overall goal to promote understanding and enjoyment of the Broads National Park as a visitor destination.	**A**	n/a	Screen out
		E1. Improve the integrated network of access routes and points (with easier access for people with mobility and sensory needs), linked to visitor facilities	This strategic objective aims to improve access, facilities and information for visitors, including waterway users. A number of waterways are designated as part of the Broads SAC, Broadlands SPA, Broadlands Ramsar, Breydon Water Ramsar and Breydon Water SPA or are located upstream of these designations. In addition, a number of Habitats sites are located around the coastline. This objective has the potential to increase recreational pressures and have an adverse impact upon air quality with potential LSEs at inland and coastal Habitats sites. These Habitats sites are set out under atmospheric pollution, hydrology and recreational impacts in **Chapter 6**.	**L**	The Broads SAC Broadland SPA Broadland Ramsar Breydon Water SPA Breydon Ramsar Breckland SPA Breckland SAC Winterton-Horsey Dunes SAC Great Yarmouth and North Denes SPA North Norfolk Coast SAC	Screen in **Recommendation**: It may be beneficial to note that works under this strategic objective will be detailed in the Sustainable Tourism Strategy which will be subject to an HRA to ensure no adverse impact on Habitats sites.

Chapter	Component	Sub-component	Summary of Plan Component	Screening Category	Habitats Site[2]	Screening Conclusion and Recommendations
					North Norfolk Coast SPA North Norfolk Coast Ramsar The Wash and North Norfolk Coast SAC Roydon and Dersingham Bog SAC Roydon and Dersingham Bog Ramsar Norfolk Valley Fens SAC The Wash SPA The Wash Ramsar Benacre to Easton Bavents SPA	
		E2. Offer a coordinated and year-round programme of visitor activities that promote a 'Broads' experience', taking measures to prevent any adverse environmental impacts	This strategic objective aims to promote a 'Broads' visitor experience. A number of waterways are designated as part of the Broads SAC, Broadlands SPA, Broadlands Ramsar, Breydon Water Ramsar and Breydon Water SPA or are located upstream of these designations. In addition, a number of Habitats sites are located around the coastline. This objective has the potential to increase recreational pressures and have an adverse impact upon air quality with potential LSEs at inland and coastal Habitats sites. These Habitats	**L** and **M**	The Broads SAC Broadland SPA Broadland Ramsar Breydon Water SPA Breydon Ramsar Breckland SPA Breckland SAC Winterton-Horsey Dunes SAC	Screen in **Recommendation**: It may be beneficial to note that works under this strategic objective will be detailed in the Sustainable Tourism Strategy which will be subject to an HRA to ensure no adverse impact on Habitats sites.

Chapter	Component	Sub-component	Summary of Plan Component	Screening Category	Habitats Site[2]	Screening Conclusion and Recommendations
			sites are set out under atmospheric pollution, hydrology and recreational impacts in **Chapter 6**. This objective also provides some mitigating text (‘*taking measures to prevent any adverse environmental impacts*’) which is intended to avoid or reduce harmful effects on a Habitats site and has therefore been screened in under Category M.		Great Yarmouth and North Denes SPA North Norfolk Coast SAC North Norfolk Coast SPA North Norfolk Coast Ramsar The Wash and North Norfolk Coast SAC Roydon and Dersingham Bog SAC Roydon and Dersingham Bog Ramsar Norfolk Valley Fens SAC The Wash SPA The Wash Ramsar Benacre to Easton Bavents SPA	
		E3. Maintain and upgrade the range and provision of integrated multimedia interpretation about the special qualities	This strategic objective aims to promote the Broads as a visitor destination. A number of waterways are designated as part of the Broads SAC, Broadlands SPA, Broadlands Ramsar, Breydon Water Ramsar and Breydon Water SPA or are located upstream of these designations. In addition, a number of Habitats sites are located around the coastline. This objective has the	**L** and **M**	The Broads SAC Broadland SPA Broadland Ramsar Breydon Water SPA Breydon Ramsar	Screen in **Recommendation**: It may be beneficial to note that works under this strategic objective will be detailed in the Sustainable Tourism Strategy

Chapter	Component	Sub-component	Summary of Plan Component	Screening Category	Habitats Site[2]	Screening Conclusion and Recommendations
		of the Broads National Park, and 'point of need' information for visitors	potential to increase recreational pressures and have an adverse impact upon air quality with potential LSEs at inland and coastal Habitats sites. These Habitats sites are set out under atmospheric pollution, hydrology and recreational impacts in **Chapter 6**. This objective also provides some mitigating text in relation to encouraging environmentally aware and responsible visitor behaviour, which is intended to avoid or reduce harmful effects on a Habitats site and has therefore been screened in under Category M.		Breckland SPA Breckland SAC Winterton-Horsey Dunes SAC Great Yarmouth and North Denes SPA North Norfolk Coast SAC North Norfolk Coast SPA North Norfolk Coast Ramsar The Wash and North Norfolk Coast SAC Roydon and Dersingham Bog SAC Roydon and Dersingham Bog Ramsar Norfolk Valley Fens SAC The Wash SPA The Wash Ramsar Benacre to Easton Bavents SPA	which will be subject to an HRA to ensure no adverse impact on Habitats sites.
		E4. Strengthen the quality and	This strategic objective aims to develop skills and standards in the Broads tourism industry. It will not	**F**	n/a	Screen out

Chapter	Component	Sub-component	Summary of Plan Component	Screening Category	Habitats Site[2]	Screening Conclusion and Recommendations
		distinctiveness of the Broads tourism offer, including careers and skills training	trigger development or any other change and as such will have no LSE on any Habitats site either alone or in-combination.			
	F: Connecting and inspiring communities	Long term aim and background text.	This long-term objective sets out a general statement / overall goal to connect and inspire communities. It includes the requirement to provide strong planning frameworks and cross-boundary cooperation between local authorities on issues such as environmental sustainability.	**A**	n/a	Screen out
		F1. Increase and promote of accessible and 'taster' activities that foster physical and mental health and wellbeing for all, including under-represented groups	This strategic objective aims to promote the Broads to under-represented groups which may increase recreational pressure. A number of waterways are designated as part of the Broads SAC, Broadlands SPA, Broadlands Ramsar, Breydon Water Ramsar and Breydon Water SPA or are located upstream of these designations. In addition, a number of Habitats sites are located around the coastline. This objective has the potential to increase recreational pressures with potential LSEs at inland and coastal Habitats sites. These Habitats sites are set out under hydrology and recreational impacts in **Chapter 6**.	**L**	The Broads SAC Broadland SPA Broadland Ramsar Breydon Water SPA Breydon Ramsar Breckland SPA Breckland SAC Winterton-Horsey Dunes SAC Great Yarmouth and North Denes SPA North Norfolk Coast SAC North Norfolk Coast SPA North Norfolk Coast Ramsar	Screen in **Recommendation**: It may be beneficial to note that works under this strategic objective will be detailed in the Sustainable Tourism Strategy which will be subject to an HRA to ensure no adverse impact on Habitats sites.

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					The Wash and North Norfolk Coast SAC Roydon and Dersingham Bog SAC Roydon and Dersingham Bog Ramsar Norfolk Valley Fens SAC The Wash SPA The Wash Ramsar Benacre to Easton Bavents SPA	
		F2. Offer varied, flexible and sustainable volunteering opportunities and skills training to suit diverse audiences	This strategic objective aims to offer volunteering opportunities. It will not trigger development or any other change and as such will have no LSE on any Habitats site either alone or in-combination.	**F**	n/a	Screen out
		F3. Provide and expand schools-based and outreach environmental education opportunities for young people, using	This strategic objective aims to provide environmental education opportunities. It will not trigger development or any other change and as such will have no LSE on any Habitats site either alone or in-combination.	**F**	n/a	Screen out

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		the Broads as a learning resource				
		F4. Provide up-to-date planning policy, site-specific allocations and planning guidance to support local community needs and ensure development happens within environmental limits	This strategic objective makes provisions for a review and update of the Local Plan for the Broads and to provide guiding planning policy and masterplan information for new development. The text within this section estimates that approx. 320 new homes are needed for the Broads by 2036[3]. New development has the potential to have a number of LSEs including a change in air quality (from increased road traffic), increased recreational pressures, urbanisation impacts, hydrology impacts (water resources and water quality) and habitat loss / damage / fragmentation. Such impacts may affect both inland and coastal Habitats sites as set out in **Chapter 6**. This objective also provides some mitigating text in relation to addressing alone and in-combination effects of increased recreational pressures associated with new growth; 'Implement Green Infrastructure and Recreational Disturbance Avoidance Mitigation Strategies to extend and protect biodiversity value of sites'. This is intended to avoid or reduce harmful effects on Habitats sites and has therefore been screened in under Category M.	**L** and **M**	The Broads SAC Broadland SPA Broadland Ramsar Breydon Water SPA Breydon Ramsar Breckland SPA Breckland SAC Winterton-Horsey Dunes SAC Great Yarmouth and North Denes SPA North Norfolk Coast SAC North Norfolk Coast SPA North Norfolk Coast Ramsar The Wash and North Norfolk Coast SAC Roydon and Dersingham Bog SAC	Screen in **Recommendation**: It may be useful to note that the Local Plans for the Broads will be subject to its own HRA to ensure no adverse impact on Habitats sites. It may also be useful to update the text to include information on nutrient neutrality requirements. In addition to reference to GIRAMS, it may also be useful to include reference to the Recreational Disturbance Avoidance and Mitigation Strategy (RAMS) set out to address recreational pressure at Habitats sites within Suffolk.

[3] The Strategic Housing Market Assessment for Central Norfolk (2016) calculated a requirement for 320 new dwellings. This assessment is currently being updated and will inform the Local Plan for the Broads review.

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					Roydon and Dersingham Bog Ramsar Norfolk Valley Fens SAC The Wash SPA The Wash Ramsar Benacre to Easton Bavents SPA	
		F5. Increase income generation to support Broads-themed projects	This strategic objective aims to identify income generation including those aimed towards achieving environmental benefits (such as nature recovery and carbon credits). It will not trigger development or any other change but have a positive environmental effect. Therefore, it will have no LSE on any Habitats site either alone or in-combination.	**D**	n/a	Screen out
Appendices	n/a	n/a	The appendices provide administrative and explanatory text, information on monitoring aims and objectives and maps.	**A**	n/a	Screen out

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