North Norfolk Site Specific Proposals

Appropriate Assessment (Final Report)

North Norfolk District Council

February 2010

Final Report for Submission

9T5537

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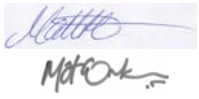


SUMMARY

The need for an 'Appropriate Assessment' arises from the EC *Habitats Directive* (92/43/EEC) and its implementation in the UK under the *Conservation (Natural Habitats &c.) Regulations 1994*. Appropriate Assessment is required for a plan or project which, either alone or in combination with other plans or projects, is likely to have a significant effect on the integrity of a European site (one that forms part of the Natura 2000 network, plus Ramsar sites (collectively 'International sites') and which is not directly connected with the management of the site.

North Norfolk District Council's Site Specific Proposals (SSP) included 98 sites at 24 settlements across the district, including residential development, commercial development, car parks and open spaces. The majority of the sites were for residential development. Therefore the Appropriate Assessment was carried out at settlement level. It was determined that all sites (when considered collectively, as a plan) had the potential to cause a Likely Significant Effect and as such an Appropriate Assessment has been developed for this plan.

Following discussion with NNDC and Natural England, and based on the sensitivities of the interest features of the International sites around North Norfolk three potential mechanisms by which new development could impact sites form the focus of this assessment. These are:

- Impacts on water quality;
- Impacts on water resources; and
- Disturbance associated with human presence, residence or visitation.

Each settlement proposed may have an impact both alone and in-combination with other plans or projects.

On the basis of available information, it was not possible to demonstrate 'no adverse impact on the integrity' of designated sites for 19 of the settlements. Measures have however been specified which will ensure that any actual adverse effect is avoided (avoidance measures).

These measures include the early creation and implementation of a monitoring programme to assess a baseline and any change in visitation/disturbance impact on designated sites on the North Norfolk Coast or on the Broads as a result of development specified in the SSP. This combined approach allows for a quick response if any impacts are identified which have the potential to lead to an adverse effect on the integrity of international sites. Further consideration and possible assessment of water quality information arising from ongoing or commissioned studies will also be required, initiated by the publication of the findings of the Environment Agency Review of Consents process later in 2009. ***Further assessment has subsequently been carried out and the 'Water Infrastructure Statement' prepared by NNDC should be referred to for the up to date situation in terms of water resources***.

Overall and taking into account commitment to implement and respond to the mitigation / avoidance measures specified, we conclude that there will be no adverse impact of the developments assessed on the integrity of the International sites considered.

CONTENTS

			Page
1	INTRODUCTION		5
	1.1	The Habitats Regulations and the Appropriate Assessment	5
	1.2	Appropriate Assessment in the land use plan context	5
	1.3	Requirement for an Appropriate Assessment for the Local Development Framework Site Specific Proposals (SSP)	6
	1.4	Context of this study	7
	1.4.1	Assessment of the East of England Plan	7
	1.4.2	Assessment of the NNDC Core Strategy	7
	1.4.3	Assessment of NNDC Site Specific Proposals	7
2	METHODOLOGY		8
	2.1	Policy Screening	8
	2.2	The Appropriate Assessment: Determination, Preventative, Avoidance and Mitigation Measures	8
	2.2.1	Provision of an 'in combination' assessment	9
	2.2.2	Consideration of preventative, avoidance, and mitigation measures	9
	2.2.3	Determination of alternative solutions and imperative reasons of overriding public interest	10
	2.3	Provision of an Appropriate Assessment Report	10
3	SITES AND FEATURES CONSIDERED WITHIN THE APPROPRIATE ASSESSMENT		11
	3.1	Sites within or adjacent to North Norfolk	11
	3.2	Site descriptions	13
	3.2.1	Broadland SPA, Broads SAC and Broadland Ramsar site	14
	3.2.2	Great Yarmouth- North Denes SPA	15
	3.2.3	North Norfolk Coast SPA, North Norfolk Coast SAC and North Norfolk Coast Ramsar site	15
	3.2.4	The Wash SPA, the Wash Ramsar site and the Wash and North Norfolk Coast SAC	16
	3.2.5	Breydon Water SPA	18
	3.2.6	Norfolk Valley Fens SAC	18
	3.2.7	Overstrand Cliffs SAC	19
	3.2.8	Paston Great Barn SAC	20
	3.2.9	River Wensum SAC	20
	3.2.10	Winterton- Horsey Dunes SAC	21
	3.2.11	Roydon Common and Dersingham Bog SAC, Dersingham Bog Ramsar and Roydon Common Ramsar sites	21
4	KEY ISSUES OF RELEVANCE TO INTERNATIONAL SITES POTENTIALLY AFFECTED BY THE SITE SPECIFIC PROPOSALS		23
	4.1	Physical disturbance, and visual and noise disturbance from recreation	23
	4.2	Impacts on Water Resources	24
	4.3	Impacts on Water Quality	26

	4.3.1	River Wensum	27
	4.3.2	River Burn	29
	4.3.3	River Glaven	30
	4.3.4	River Stiffkey	31
	4.3.5	River Ant	31
	4.3.6	River Thurne	32
	4.3.7	River Bure	34
	4.4	Air quality	35
5	DETERMINATION OF LIKELY SIGNIFICANT EFFECT		37
	5.1	Proposed developments determined as having Likely Significant Effect	37
6	APPROPRIATE ASSESSMENT OF NORTH NORFOLK SITE SPECIFIC PROPOSALS		38
	6.1	Impacts associated with population growth due to increases in housing	38
	6.2	Site Specific Proposals	38
	6.2.1	Aldborough	38
	6.2.2	Bacton	39
	6.2.3	Blakeney	40
	6.2.4	Briston	41
	6.2.5	Catfield	43
	6.2.6	Cromer	44
	6.2.7	Corpusty and Saxthorpe	45
	6.2.8	Fakenham	46
	6.2.9	Happisburgh	48
	6.2.10	Holt	50
	6.2.11	Horning	51
	6.2.12	Hoveton	52
	6.2.13	Ludham	53
	6.2.14	Mundesley	55
	6.2.15	North Walsham	56
	6.2.16	Overstrand	57
	6.2.17	Roughton	58
	6.2.18	Sheringham	59
	6.2.19	Little Snoring	60
	6.2.20	Southrepps	61
	6.2.21	Stalham	62
	6.2.22	Walsingham	64
	6.2.23	Wells-Next-The-Sea	65
	6.2.24	Weybourne	66
	6.3	Summary of findings	67
	6.4	Generic sustainability issues of relevance to international sites	68
7	IN COMBINATION IMPACTS		70
	7.1	In combination assessment ‘at the plan level’	70
	7.2	Consideration of Neighbouring Authorities’ policies	70
	7.2.1	Broadland District Council	71
	7.2.2	Breckland District Council	72
	7.2.3	Great Yarmouth Borough Council	72

7.2.4 Norwich City Council 74
7.2.5 Kings Lynn and West Norfolk District Council 75
7.3 In-combination assessment 76
7.4 In-combination conclusion 76

8 MEASURES REQUIRED FOR COMPLIANCE WITH THE HABITATS REGULATIONS, AND OTHER RECOMMENDATIONS 77
8.1 Overall conclusion 77
8.1.1 Programme of visitor activity and impacts at designated sites, and identification of targetted management responses 77
8.1.2 Further water quality assessments 79
8.2 Allocating responsibility for required mitigation 80
8.2.1 Financing of Measures 81

9 REFERENCES 82

Appendix A: Qualifying Features of International Sites 83
Appendix B: Condition of SSSI underpinning the international sites. 94
Appendix C: Condition of SSSI units comprising the European designated sites within the North Norfolk District. 96
Appendix D: Correspondence (water resources). 115
Appendix E: Schedule of consultation responses 118
Appendix F: Feature and impact assessment tables 136

1 INTRODUCTION

1.1 The Habitats Regulations and the Appropriate Assessment

The need for an 'Appropriate Assessment' arises from the EC *Habitats Directive* (92/43/EEC) and its implementation in the UK under the *Conservation (Natural Habitats &c.) Regulations 1994* (the 'Habitats Regulations' or 'Regulations' within this report).

Under Regulation 48(1) an Appropriate Assessment is required for a plan or project which, either alone or in combination with other plans or projects, is likely to have a significant effect on the integrity of a European site and which is not directly connected with the management of the site. European sites - either a Special Area of Conservation (SAC, or candidate Special Area of Conservation (cSAC)), designated under the Habitats Directive or a Special Protection Area (SPA) designated under the *Birds Directive* (79/409/EEC) - form part of the EU-wide Natura 2000 network. UK Government policy, as stated in *Planning Policy Statement 9: Biodiversity and Geological Conservation* (PPS 9 (DCLG 2005)) requires that 'Ramsar sites', designated under the Ramsar Convention (*The Convention on Wetlands of International Importance, especially as Waterfowl Habitat*) are also subject to the provisions of the Habitats Regulations.

An Appropriate Assessment is a determination by the 'Competent Authority', in this case North Norfolk District Council (NNDC), as to whether a proposed plan or project will result in an adverse effect on the integrity of any European sites. *Planning Policy Guidance Note 9* (PPG9, the precursor to PPS9) (Department of the Environment, 1994) defined a site's integrity as "*the coherence of the site's ecological structure and function, across its whole area, or the habitats, complex of habitats and/or population of the species for which the site is classified*".

An adverse effect on integrity is likely to be one that prevents the site from maintaining the same contribution to 'favourable status' of the relevant feature(s) as it did when the site was designated. A plan can only be allowed to proceed once the competent authority can determine that it will not adversely affect site integrity, or where imperative reasons of overriding public interest can be demonstrated, and compensation provided (IROPI).

The favourable status of the site is defined through its conservation objectives; it is against these objectives that the effects of the plan or project must be assessed. Regulation 48(2) requires that a person applying to carry out a plan or project which requires Appropriate Assessment shall provide such information to the Competent Authority as may be reasonably required for the assessment.

1.2 Appropriate Assessment in the land use plan context

On the 20th October 2005, the European Court of Justice (ECJ) ruled that the UK had not transposed the *Habitats Directive* into law in the proper manner. Land use plans were incorrectly described under the UK Habitats Regulations as not requiring an Appropriate Assessment to determine impacts on sites designated under the *Habitats* and *Birds Directives*.

Appropriate assessment is considered to be a risk-based assessment, drawing on available information. The Department for Communities and Local Government (DCLG)

has produced draft guidance on carrying out Appropriate Assessment for the protection of European sites for Regional Planning Bodies and Local Planning Authorities. It addresses determining the need for an Appropriate Assessment for a given plan and the provision of an assessment if one is required. The UK Habitats Regulations have also been amended to include provisions for land use plans (the *Conservation (Natural Habitats &c.) (Amendment) (England and Wales) Regulations (2007)*). There is draft Natural England (formerly English Nature) guidance on the provision of Appropriate Assessments for Regional Spatial Strategies and Sub-Regional Strategies. These two documents: "*Planning for the Protection of European Sites: Appropriate Assessment*" (DCLG, 2006) and "*The Assessment of Regional Spatial Strategies under the Provisions of the Habitats Regulations – Draft Guidance*" (English Nature, 2006), currently provide the most cohesive source of guidance relating to Appropriate Assessments of land use plans. Further documents which have provided scope to this work are the Royal Society for the Protection of Birds (RSPB) publication "*The Appropriate Assessment of Land Use Plans in England*" (2007) and recent guidance for competent authorities (Tyldesley and Hoskin 2008).

1.3 Requirement for an Appropriate Assessment for the Local Development Framework Site Specific Proposals (SSP)

A number of International sites (Natura 2000 and Ramsar sites) occur within the boundaries of North Norfolk District, and several others lie in adjoining districts or within reasonable catchments of the settlements where growth is proposed. NNDC is therefore taking a proactive and precautionary approach in ensuring that these sites will not be adversely affected by proposed future growth. They also recognise the potential for 'in-combination' impacts resulting from interactions between their Site Specific Proposals (SSP) and factors associated with the Local Development Frameworks of nearby authorities.

Following guidance by NNDC and discussion with Natural England three potential mechanisms by which the SSP could impact on International sites form the main focus of this assessment. Each of these factors potentially may act alone and in-combination with each other, and with changes resulting from other plans and policies:

- Impacts on water quality;
- Impacts on water resources; and
- Disturbance associated with human presence, residence or visitation.

These mechanisms were identified based upon the sensitivities, vulnerabilities and conservation objectives of each site (detailed assessment tables are included at Appendix F), and were confirmed through the discussions above. Direct habitat loss does not result from any of the proposals being considered, and the potential for disturbance from residential development adjacent to international sites applies only to two settlements – Blakeney and Wells-Next-The-Sea. Within these settlements none of the proposed development sites immediately abuts an International site.

Given these potential impacts it is necessary to consider SSPs in light of the Habitats Regulations to ensure their compliance. Where site proposals are determined as having a likely significant effect, alone or "in-combination" with other plans or projects, they will be subject to a full Appropriate Assessment. Whether or not a policy is determined *via* the assessment as having an adverse effect on site integrity will establish the requirement for preventative or mitigation measures, and the nature and extent of these.

1.4 Context of this study

1.4.1 Assessment of the East of England Plan

The Appropriate Assessment of the East of England Plan (EEP) (ERM 2006) concluded that no policies within the Regional Spatial Strategy (RSS) could be determined as having an adverse effect on the integrity of international sites. It did however state that a number of policies may need further assessment depending on their implementation at LDD level.

EEP policy *H1 Regional Housing provision* requires that 26,380 new houses per year to 2021 are built. The Appropriate Assessment concluded that new housing provision does not constitute an adverse effect on the integrity of international sites. However it recommends that in developing LDDs local authorities give consideration to housing where international sites fall within 5km of proposed Key Centres for Development Changes (KCDC). Areas specifically identified as having an effect included Norwich and Great Yarmouth. It also suggests that an increase in housing will cause an increase in recreational usage of designated sites but the inclusion of open spaces in development plans can reduce this.

This highlights an inconsistency in vesting responsibility for housing allocations. Some appropriate assessments have accepted housing allocations deriving from Ross as an unavoidable responsibility, stating that the responsibility for ensuring compatibility with the Habitats Regulations resides at the RSS Stage. In other cases e.g. the Appropriate Assessment of the EEP, the Appropriate Assessment concluded no adverse effect on integrity of international sites, but highlighted that local development frameworks may need to adopt measures to avoid adverse impacts.

1.4.2 Assessment of the NNDC Core Strategy

The Appropriate Assessment of the North Norfolk Local Development Framework Core Strategy (incorporating development control policies (North Norfolk District Council Planning Policy Team 2007) concluded that no policies, including Housing Allocation (SS3) or local policies, would have an adverse effect on the integrity of any international sites. However a number of policies were dependent on re-wording of policies specifying that development plans should demonstrate no significant adverse impacts on designated nature conservation interests.

1.4.3 Assessment of NNDC Site Specific Proposals

The issues of residential and recreational pressure have been considered in this Appropriate Assessment of the North Norfolk District Council Site Specific Proposals. The EEP recommended applying a 5km ‘cordon’ around proposed development sites in order to identify sensitive receptors. In this study we have applied a significantly larger area of search – influenced by pathways (transport routes and river systems), the size of the proposed developments and, in the case of disturbance, the attraction of the site. This ensures an appropriately precautionary approach is taken to assessing any impacts of development on the area’s internationally-designated sites.

2 METHODOLOGY

The methodology for this exercise has been developed in accordance with DCLG and Natural England guidance, as well as that offered by the RSPB. The approach developed has also been tailored to ensure that the requirements of the Habitats Regulations and supporting guidance are met. Additionally, Appropriate Assessment methodologies devised for large scale developments have been evaluated to ensure that our approach is based on practical implementation of the Habitats Regulations.

Given that the application of Appropriate Assessments to land use plans in the UK remains in its early stages we have taken a carefully-considered approach to developing the methodology to ensure that the process is as simple and transparent as possible. The need to ensure that the assessment is 'appropriate' to the evaluation of policy is also recognised.

The process has been broken down into a series of clearly defined steps that will provide a transparent and accountable assessment of the proposed sites. These steps are outlined below and where necessary references are provided to the specific guidance utilised in informing the process

2.1 Policy Screening

Habitats Regulation Stage Addressed
Test of Likely Significant Effect (LSE)

This screening stage undertakes two levels of assessment prior to Appropriate Assessment. It:

- Determines which options have Likely Significant Effect and will therefore be subject to full Appropriate Assessment; and
- Provides a discussion on the implications of each option where appropriate

This stage is provided as a coarse filter based on available information and a consideration of the likely effects of policy (both positive and negative) in regard to the sensitivities of the sites in question. This stage considers the effects both alone and in combination with other plans and projects.

2.2 The Appropriate Assessment: Determination, Preventative, Avoidance and Mitigation Measures

Habitats Regulation Stage Addressed
Assessment of Effects on the Integrity of the Site(s) – The 'Appropriate Assessment'

Where sites are determined to have a Likely Significant Effect they will be subject to Appropriate Assessment. It should be stressed however, that the assessment is provided at the plan level. Policies and allocated sites need to be considered at this individual level and then as a whole. It is possible however, to establish policies and sites where any effect can be discounted. Sites for which 'no adverse effect on the integrity of the site' cannot be determined (alone, or in-combination with other plans and projects), alternative solutions and mitigation and avoidance measures will be pursued. Where it is not possible to avoid adverse effects of site integrity through adopting

mitigation and avoidance measures the case for pursuing particular development sites on the basis of imperative reasons of over-riding public importance (IROPI) may be made. At all stages, site integrity and conservation objectives for each international site will be a central consideration; justification for the (un)acceptability of options makes reference to these. Greater detail on the full assessment is provided below.

2.2.1 Provision of an 'in combination' assessment

The 'in combination' assessment builds on the assessment of individual sites (the 'alone' stage). As this assessment of Site Specific Proposals differs significantly from an assessment of, for example, an LDF Core Strategy, the approach taken to the in-combination assessment differs from previous studies. As there is the potential for many interactions between sites, with compound effects on particular International sites, the assessment focuses on the receptor (the site) and identifies those settlement proposals which might be considered to contribute to an in-combination impact. The additional impact of other policies or approved projects yet to be implemented is also incorporated at this stage.

The in-combination assessment will provide an account of all Site Specific Proposals collectively (assessment at the plan level) and in-combination with other plans and policies.

2.2.2 Consideration of preventative, avoidance, and mitigation measures

If the assessment concludes that no sites, considered alone or 'in combination' with other plans or projects, will have an adverse effect on the international sites then the assessment would end at this stage. It would be possible to recommend that the proposed sites can be brought forward for development.

However, if following completion of the above stages sites remain where an adverse effect on site integrity cannot be ruled out, preventative, avoidance and mitigation measures must be considered.

Working with the Planning Departments of NNDC and other relevant authorities, available guidance and best practice would be used to determine measures which are both practically implementable and acceptable in terms of the Habitats Regulations. Broad classes of measures, employed in Appropriate Assessments elsewhere, are outlined below by way of example:

- **Monitoring public use** on international sites in response to new housing development, so that implementing other measures (e.g. SANG, site management) can be based on evidence that disturbance thresholds are being exceeded;

- **Management of access** to international sites e.g. restriction of public access certain times of year or to specific locations, requirements to keep dogs on leads, limiting parking to key areas where site information /management can be supplied/implemented;

- **Allocation of Sustainable Accessible Natural Greenspace** (SANG) to attract residents away from undertaking informal recreation on International sites;

- **Highlighting** within Appropriate Assessments that compliance with water quality and water resources requirements on international sites is dependant on water infrastructure development, which needs to be sanctioned by OFWAT;

- **Limitations on the keeping of cats** in new housing residential properties in close proximity to sites where bird populations are of international importance; and

- **Implementation of additional policies** within development planning documents which will avoid or offset other policies or developments which have potential to adversely affect the integrity of European Sites.

2.2.3 Determination of alternative solutions and imperative reasons of overriding public interest

As outlined above if options/sites have been identified as potentially having an adverse impact on the integrity of the site(s), and preventive measures or mitigation are not adequate or appropriate, further consideration should include:

Firstly, alternative solutions should be considered. Can another site which meets local needs but also avoids potential impacts on International sites be identified instead? Consideration of alternatives will require the combined efforts of the Appropriate Assessment project team and the local planning officers: and

Secondly, if a viable alternative is not available, then the matter of whether it is required in the interests of overriding public interest should be considered. Claims for policy adoption on the grounds of imperative reasons of overriding public interest need to be carefully considered in regard to Regulations 85C and E (of the amended Habitats Regulations). The procedure is well defined in the Habitats Regulations and in associated guidance. Particulars will depend both on the reasons for the IROPI claim and the priority attached to the species or habitat in question. Claims for IROPI must be submitted to Central Government with clear reasoning, and with compensatory mechanisms fully defined. This process would be followed according to regulation.

2.3 Provision of an Appropriate Assessment Report

This document represents the final report, prepared following consultation on a draft document in February/March 2009. Comments received from NNDC, Natural England, the Environment Agency and the RSPB have informed this final document. No comments were received from Anglian Water Services, although they were engaged during the development of this study. A schedule of comments and subsequent actions is attached in Appendix E.

Sections of the report have been updated to accompany the submission DPD. These include references to further work carried out to investigate issues of visitor disturbance and water quality, are indicated by bold text. References to neighbouring authorities stage of LDF production have also been updated.

3 SITES AND FEATURES CONSIDERED WITHIN THE APPROPRIATE ASSESSMENT

3.1 Sites within or adjacent to North Norfolk

North Norfolk includes all or part of 15 internationally designated sites; an additional 4 sites outside the district are also considered within the scope of this assessment. These sites are listed below and their locations are shown in **Figure 3.1**.

Sites Designated under the **Birds Directive**:

- Broadland SPA
- Great Yarmouth North Denes SPA
- North Norfolk Coast SPA
- The Wash SPA
- Breydon Water SPA (Great Yarmouth District)

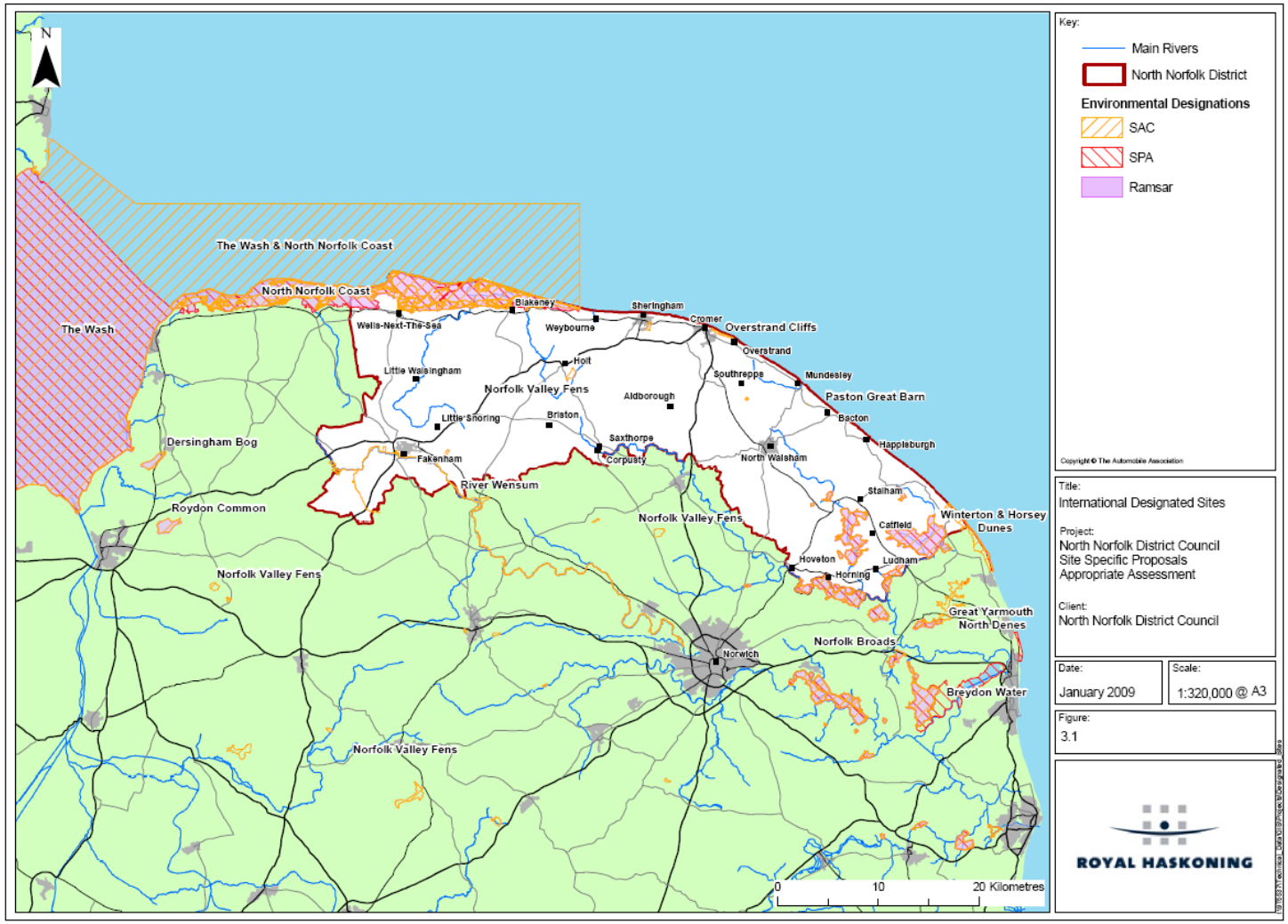
Sites designated under the **Habitats Directive**:

- The Broads SAC
- North Norfolk Coast SAC
- Norfolk Valley Fens SAC
- Paston Great Barn SAC
- Overstrand Cliff SAC
- River Wensum SAC
- The Wash and North Norfolk Coast SAC
- Winterton- Horsey Dunes SAC
- Roydon Common and Dersingham Bog SAC (Kings Lynn and West Norfolk District)

Sites designated under the **Ramsar Convention**:

- Broadland Ramsar Site
- North Norfolk Coast Ramsar Site
- The Wash Ramsar Site
- Dersingham Bog Ramsar Site (Kings Lynn and West Norfolk District)
- Roydon Common Ramsar Site (Kings Lynn and West Norfolk District)

Figure 3.1 – International sites within and adjacent to North Norfolk District



3.2 Site descriptions

Full details of the qualifying features for each site are provided in **Appendix A.** The information in the table below is sourced from the designated sites citations. Although there are 19 internationally designated sites which fall within or close to North Norfolk's boundaries, many of them occupy the same area of land and as such have been grouped together where appropriate.

Much of the data available for assessing condition relates to component SSSIs rather than features for which an international site was designated. However SSSI condition is a useful tool for assessing international sites, and identifying if issues relevant to the appropriate assessment are causing unfavourable condition. The site conditions for the SSSIs underlying the international sites in North Norfolk are outlined in **Appendix B**. More information is provided a condition summary in **Appendix C**.

For each of the European sites Natural England has provided a series of Conservation Objectives which relate to the features for which the site was designated. The overarching generic objective for all European sites is

"subject to natural change maintain the site in favourable condition".

For each site a more specific interpretation of this is provided via favourable condition tables. These detail targets and thresholds for a range of environmental and biological parameters which should be met in order to attain favourable condition. This is synonymous with attaining or maintaining site integrity. Favourable condition tables are referred to when assessing impacts.

Although Ramsar features do not themselves have Conservation Objectives, SPA/SAC objectives are produced to protect the environmental conditions required by the qualifying habitats and species. Thus SPA/SAC features are generally adequate to protect Ramsar features. Where Ramsar features need consideration over and above European features the generic conservation objective above will be applied to them.

For qualifying **species**, Conservation Objectives can be generalised as:

- To avoid deterioration of the Habitats of the qualifying species or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained; and
- To ensure for the qualifying species that the following are maintained in the long term:
    - Populations of the species as a viable component of the site;
    - Distribution of the species within the site;
    - Distribution and extent of habitats supporting the species;
    - Structure, function and supporting processes of habitats supporting the species; and
    - No significant disturbance of the species.

For qualifying **habitats** Conservation Objectives can be generalised as**:**

- To ensure for the qualifying habitats the following are maintained in the long term:
    - Extent of habitat on the site;
    - Distribution of habitat within the site;
    - Structure and function of the habitat;

- Processes supporting the habitat;
- Distribution of typical species of the habitat;
- Viability of typical species as components of the habitat; and
- No significant disturbance of typical species of habitat.

Natural England has produced Conservation Objectives for SSSIs. These relate to all designated features on the SSSI, whether designated as SSSI, SPA, SAC or Ramsar features.

3.2.1 Broadland SPA, Broads SAC and Broadland Ramsar site

The SPA site is designated due to the presence of breeding bitterns and marsh harriers and also for the presence of wintering birds including hen harriers, gadwall, Bewick swans and whopper swans.

The Broads SAC is designated for the following habitats and species:

- Hard oligo-mesotrophic waters with benthic vegetation of *Chara* spp;
- Natural eutrophic lakes with *Magnopotamion* or *Hydrocharition*-type vegetation;
- Transition mires and quaking bogs;
- Calcareous fens with *Cladium mariscus* and species of the *Caricion davallianae*;
- Alkaline fens;
- Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion*, *Alnion incanae*, *Salicion albae*);
- *Molinia* meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*);
- Desmoulin's whorl snail;
- Fen orchid; and
- Otter.

The Ramsar site is designated under criterions 2 and 6. The site supports a number of rare species and habitats including outstanding assemblages of rare plants and invertebrates including nine British Red Data Book plants and 136 British Red Data Book invertebrates. It also supports bird species occurring at levels of international importance.

Majority of the Broadland SPA and SAC site falls within North Norfolk. The site comprises a number of separate areas of habitat rather than one large area. Thirteen SSSIs make up the European designated areas. Eight fall entirely within North Norfolk (Smallburgh Fen, Broad Fen at Dilham, Ant Broads and Marshes, Ludham-Potter Heigham Marshes, Upper Thurne Broads and Marshes, Calthorpe Broads, Alderfen Broad, and Priory Meadow at Hickling).

Bure Broads and Marshes is a large site with only a small part within North Norfolk; however the whole SSSI is included in this assessment. Shallam Dyke Marshes at Thurne is also just outside the district but is attached to Ludham-Potter Heigham Marshes and is considered in this assessment.

The site has suffered from management neglect and natural succession during this century. Sea level rise and reduced summer flows in the river Bure brought about by abstraction are resulting in increasing saline intrusion into the site and generally drier summer conditions (water resources). The site also suffers from eutrophication, brought through the build up of nutrients over a long period, primarily through sewage outfalls

and, to a lesser degree, agriculture (water quality). The region as a whole is a centre for tourism and recreation; however this pressure is now starting to be brought under control by the Broads Authority via the Broads Plan (disturbance).

The Conservation Objectives for this site are, subject to natural change, to maintain the following habitats and geological features in favourable condition, with particular reference to any dependent component special interest features (habitats, vegetation types, species, species assemblages etc.) for which the land is designated (SSSI, SAC, SPA, Ramsar).

Habitat Types represented (Biodiversity Action Plan categories)

- Broadleaved, Mixed and Yew Woodland
- Fen, Marsh and Swamp
- Standing Open Water and Canals
- Lowland Acid Grassland
- Lowland Neutral Grassland
- Lowland Dwarf Shrub Heath

3.2.2 Great Yarmouth- North Denes SPA

Great Yarmouth- North Denes SPA is designated due to the presence of breeding colonies of little terns. The corresponding SSSI is comprised of 2 units both of which are in favourable condition. One unit falls with the North Norfolk District boundary.

The little tern colonies within the Great Yarmouth North Denes are dependent upon the maintenance of high accreting beaches. Coast protection schemes have the potential to disrupt or reduce sediment supply to the SPA. The success of the colony is dependent upon wardening in order to exclude people and dogs and the control of predators.

The Conservation Objectives for this site are, subject to natural change, to maintain the following habitats and geological features in favourable condition, with particular reference to any dependent component special interest features (habitats, vegetation types, species, species assemblages etc.) for which the land is designated (SSSI, SAC, SPA, Ramsar).

Habitat Types represented (Biodiversity Action Plan categories)

- Supralittoral Sediment

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

The North Norfolk SPA was designated for populations of avocet, wigeon, pink footed geese, Brent geese and knot that use the site over winter. It also has breeding populations of bittern, marsh harrier, avocet, little tern, common tern and sandwich tern. The area also supports an assemblage of 91,536 waterfowl over winter.

The North Norfolk Coast SAC is designated for the following habitats and species:

- Coastal lagoons;
- Perennial vegetation of stony banks;
- Mediterranean and thermo-Atlantic *halophilous* scrubs;
- Embryonic shifting dunes;
- Shifting dunes across the shoreline with *Ammophila arenaria* (“white dunes”);

- Fixed dunes with herbaceous vegetation (“grey dunes”);
- Humid dune slacks;
- Otter; and
- Petalwort.

The Ramsar site meets the following 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- Waterfowl assemblage of international importance: 98462 waterfowl (5 year peak mean 1998/99-2002/2003).
- Ramsar criterion 6- Various named bird species occurring at levels of international importance.

The SPA, SAC and Ramsar site comprises an extensive area, and is divided into 73 SSSI units. Thirty-five fall within the boundaries of the North Norfolk District. The majority are in favourable condition.

The site is vulnerable to natural sea level rise, storm surges and changes in erosion patterns which are increasingly likely to affect the freshwater grazing marsh and reedbed habitats. Increasing interest in abstraction of groundwater for irrigation of arable land may affect freshwater spring flows onto grazing marshes (water resources). The site is visited by a large number of tourists especially in the summer (disturbance). A visitor management strategy has been developed through the Norfolk Coast Project.

The Conservation Objectives for this site are, subject to natural change, to maintain the following habitats and geological features in favourable condition, with particular reference to any dependent component special interest features (habitats, vegetation types, species, species assemblages etc.) for which the land is designated (SSSI, SAC, SPA, Ramsar).

Habitat Types represented (Biodiversity Action Plan categories)

- Coastal Lagoons
- Sabellaria spinulosa reefs
- Sublittoral Sands and Gravels
- Littoral Sediment
- Supralittoral Sediment
- Fen, Marsh and Swamp
- Lowland Neutral Grasslands

Geological features (Geological Site Types)

- Coastal Geomorphology (IA)
- Saltmarsh Morphology (IA)

3.2.4 The Wash SPA, the Wash Ramsar site and the Wash and North Norfolk Coast SAC

The Wash SPA was designated for populations of avocet, bar tailed godwit, golden plover, whooper swan, dark bellied brent geese, dunlin, grey plover, pink footed geese,

oystercatcher, pintail, redshank, Shelduck, turnstone, curlew and knot that use the site over winter. It also has breeding populations of marsh harrier, little tern and common tern. On passage birds include sanderling and ringed plover. The area also supports an assemblage of 400,723 waterfowl over winter.

The Wash Ramsar site is designated for meeting the following criteria:

- Ramsar criterion 1- The Wash is a large shallow bay comprising very extensive saltmarshes, major intertidal banks of sand and mud, shallow water and deep channels.
- Ramsar criterion 3- Qualifies because of the inter-relationship between its various components including saltmarshes, intertidal sand and mud flats and the estuarine waters. The saltmarshes and the plankton in the estuarine water provide a primary source of organic material which, together with other organic matter, forms the basis for the high productivity of the estuary.
- Ramsar criterion 5- Assemblages of international importance.
- Species with peak counts in winter: 292541 waterfowl (5 year peak mean 1998/99-2002/2003).
- Ramsar criterion 6- Various named bird species occurring at levels of international importance

The Wash and North Norfolk Coast SAC is designated for the following habitats and species:

- Sandbanks which are slightly covered by sea water all the time;
- Mudflats and sandflats not covered by seawater at low tide;
- Large shallow inlets and bays;
- Reefs;
- *Salicornia* and other annuals colonising mud and sand;
- Atlantic salt meadows;
- Mediterranean and thermo-Atlantic *halophilous* scrubs;
- Coastal lagoons;
- Common Seal; and
- Otter.

The Wash SPA and Ramsar site is a large area comprised of two SSSIs - the Wash, and Hunstanton Cliffs. The Wash SSSI falls completely within the SPA boundary and is comprised of 60 units. The majority are in favorable condition although some are recovering and a small percentage is declining.

Hunstanton Cliffs SSSI is a small SSSI comprising one unit. It is an earth heritage site, known for its exposed formations of red chalk and ferriby chalk, in favourable condition.

The Wash and North Norfolk SAC comprises the above SSSI and also the same SSSI units as the North Norfolk Coast SPA and SAC.

The Conservation Objectives for this site are, subject to natural change, to maintain the following habitats and geological features in favourable condition, with particular reference to any dependent component special interest features (habitats, vegetation types, species, species assemblages etc.) for which the land is designated (SSSI, cSAC, SPA, Ramsar).

Habitat Types represented (Biodiversity Action Plan categories)

- Coastal Saltmarsh
- Saline Lagoon

- Vegetated shingle
- Littoral sediment
- Sub-littoral sands and gravels
- *Sabellaria* reefs

The biological richness of the Wash is largely dependant on the physical processes that dominate the natural systems and consequently the ecological vulnerability is closely linked to the physical environment. The intertidal zone is vulnerable to coastal squeeze as a result of land-claim, coastal defence works, sea-level rise, and storm surges. Intertidal habitats are potentially affected by changes in sediment budget caused by dredging and coastal protection, construction of river training walls and flood defence works. The volume and quality of water entering the Wash is dependent on the use made of these rivers for water abstraction and agricultural and domestic effluents.

3.2.5 Breydon Water SPA

Breydon Water SPA was designated for the populations of wintering birds such as avocet, Bewick swan and golden plover and the breeding populations of common tern. The site is also of importance due to the number of waterfowl it receives, approximately 43,225 waterfowl over winter.

Breydon Water SPA is comprised of two SSSIs, Breydon Water SSSI and Halvergate Marshes SSSI. Breydon Water SSSI comprises 15 units all of which are in favourable condition. The majority of Halvergate Marshes SSSI falls within the SPA boundary (25 of 42 units); 12 units are unfavourable recovering, 7 are in favourable condition and 6 are in unfavourable condition with no change. The reason for unfavourable or unfavourable, recovering condition is due to lack of grazing or correct management and water level issues.

The Breydon Water estuary is a robust ecosystem, the most sensitive feature being the high tide roost at its northern end. However recent droughts and poor water management systems have adversely affected the wet grassland part of the site (Halvergate Marshes). The Environmentally Sensitive Area scheme has helped to raise water levels and encouraged sensitive management, particularly of the ditches.

The Conservation Objectives for this site are, subject to natural change, to maintain the following habitats and geological features in favourable condition, with particular reference to any dependent component special interest features (habitats, vegetation types, species, species assemblages etc.) for which the land is designated (SSSI, SAC, SPA, Ramsar).

Habitat Types represented (Biodiversity Action Plan categories)

- Littoral Sediment

3.2.6 Norfolk Valley Fens SAC

The Norfolk Valley Fens SAC is designated for the following habitats and species:

- Alkaline fens;
- North Atlantic wet heaths with *Erica tetralix*;
- European dry heaths;
- Semi-natural dry grasslands and scrubland facies: on calcareous substrates (*Festuco-Brometalia*);

- *Molinia* meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*);
- Calcareous fens with *Cladium mariscus* and species of the *Caricion davallianae*;
- Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion*, *Alnion incanae*, *Salicion albae*);
- Narrow-mouthed whorl snail; and
- Desmoulin's whorl snail.

Norfolk Valley Fens SAC is comprised of a number of small alkaline fens. 15 SSSIs in total make up the components of the SAC. The majority of the SAC is outside North Norfolk; however a number of small sites are within the district. The SSSIs comprising these areas are Holt Lowes, Sheringham and Beeston Regis Commons, and Southrepps Common. All of these are in unfavourable condition, primarily due to scrub regeneration but Sheringham and Beeston Regis Commons suffers from hydrological problems due to abstraction. Southrepps Common is in recovering condition.

These alkaline fens are generally small in area and surrounded by intensively-farmed land. They are very vulnerable to reductions on the water table and a decrease in the volume of spring flows arising from groundwater abstraction (water resources).

The Conservation Objectives for this site are, subject to natural change, to maintain the following habitats and geological features in favourable condition, with particular reference to any dependent component special interest features (habitats, vegetation types, species, species assemblages etc.) for which the land is designated (SSSI, SAC, SPA, Ramsar).

Habitat Types represented (Biodiversity Action Plan categories)

- Dwarf Shrub Heath
- Fen, Marsh and Swamp

3.2.7 Overstrand Cliffs SAC

Overstrand Cliffs SAC is designated for the presence of vegetated sea cliffs of the Atlantic and Baltic coast. Overstrand Cliff SSSI falls wholly within North Norfolk district. The SSSI comprises 2 units, both in favourable condition, and is designated for their earth heritage and supralittoral rock.

Overstrand Cliffs are composed of Pleistocene sands and clays with seepages which result in moderately frequent landslips. Sea defences are limited to a few groynes except at the extreme eastern and western ends. The site is most vulnerable to coastal protection measures.

The Conservation Objectives for this site are, subject to natural change, to maintain the following habitats and geological features in favourable condition, with particular reference to any dependent component special interest features (habitats, vegetation types, species, species assemblages etc.) for which the land is designated (SSSI, SAC, SPA, Ramsar).

Habitat Types represented (Biodiversity Action Plan categories)

- Supra-littoral Rock

Geological features (Geological Site Types)

- Coastal Cliffs and Foreshore (EC)

3.2.8 Paston Great Barn SAC

Paston Great Barn SAC is designated due to the presence of Barbestelle bats including the presence of a maternity colony. This small site comprises a single SSSI unit containing a large medieval thatched barn and gardens. It is a very important site for the Barbastelle bat (one of three known maternity colony sites in Britain). The SSSI's current condition is favourable.

Barbastelles are considered to be sensitive to disturbance throughout their range. Paston Great Barn is used by a maternity colony between May and September, but their whereabouts at other times is not known. They roost in the main barn, but also utilise some of the outbuildings when entering and leaving. The Great Barn is a medieval building which is scheduled as an ancient monument.

The Conservation Objectives for this site are, subject to natural change, to maintain the following habitats in favourable condition, with particular reference to any dependent component special interest features (habitats, vegetation types, species, species assemblages etc.) for which the land is designated (SSSI, SAC, SPA, Ramsar).

Habitat Types represented (Biodiversity Action Plan categories)

- Great Barn and adjacent buildings

3.2.9 River Wensum SAC

The River Wensum SAC is designated for the following habitats and species:

- Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation;
- White- clawed crayfish;
- Desmoulin's whorl snail;
- Brook lamprey; and
- Bullhead.

A large section of the River Wensum SAC is within North Norfolk, primarily around Fakenham. The River Wensum SSSI comprises 55 units, 26 of which are in the district. Majority of these are in favourable conditions and any that are in unfavourable or unfavourable, recovering are due to the lack of a grazing regime.

Habitat diversity has been reduced by the modification of the channel form. The input of silt and agricultural chemicals as a result of arable farming practices are a concern and the reversion of arable fields to low-input grassland should be encouraged. At adjacent sewage treatment works, phosphorous removal will be a statutory requirement by 2004 (water quality).

The Conservation Objectives for this site are, subject to natural change, to maintain the following habitats and geological features in favourable condition, with particular reference to any dependent component special interest features (habitats, vegetation types, species, species assemblages etc.) for which the land is designated (SSSI, SAC, SPA, Ramsar).

Habitat Types represented (Biodiversity Action Plan categories)

- Rivers & Streams

3.2.10 Winterton- Horsey Dunes SAC

Winterton-Horsey Dunes SAC is designated for the following habitats:

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

Winterton-Horsey Dunes SSSI falls wholly within North Norfolk district. The SSSI is comprised of 12 units. Majority of these units are in unfavourable, recovering condition with 4 in favourable and 3 in unfavourable, no change condition.

A concrete wall constructed in the 1960s, together with sea defence works up-drift which reduce sediment supply, constrain and prevent the site from responding naturally to coastal processes. The embryonic shifting dune communities are most vulnerable. The site is backed by intensively-farmed arable land, and water abstraction from this area is a threat to the humid dune slack communities. Visitor pressures are high especially in the summer, resulting in erosion, fire and disturbance impacts.

The Conservation Objectives for this site are, subject to natural change, to maintain the following habitats and geological features in favourable condition, with particular reference to any dependent component special interest features (habitats, vegetation types, species, species assemblages etc.) for which the land is designated (SSSI, SAC, SPA, Ramsar).

Habitat Types represented (Biodiversity Action Plan categories)

- Dwarf Shrub Heath
- Supralittoral Sediment

3.2.11 Roydon Common and Dersingham Bog SAC, Dersingham Bog Ramsar and Roydon Common Ramsar sites

Roydon Common and Dersingham Bog SAC is designated for the following habitats:

- North Atlantic wet heath with *Erica tetralix*;
- Depressions on peat substrate with *Rhynchosporion*.

Dersingham Bog Ramsar site is designated because it meets criterion 2, by supporting an important assemblage of invertebrates. Nine British Red Data Book species have been recorded.

Roydon Common Ramsar site is designated for the following criterion:
Ramsar criterion 1- The site is the most extensive example of valley mire-heathland biotope within East Anglia. It is a mixed valley mire holding vegetation communities which reflect the influence of both base-poor and base-rich water.
Ramsar criterion 3- The vegetation communities have a restricted distribution within Britain. It also supports a number of acidophilic invertebrates outside their normal geographic range and six British Red Data Book invertebrates.

Roydon Common SSSI and Dersingham Bog SSSI are two separate areas that together comprise the SAC. Roydon Common SSSI is comprised of two units; one is in unfavourable recovering condition, the other in a declining condition. These conditions

are mainly due to the presence of scrub and the need for its control; grazing is required to prevent further scrub and heather spread.

Dersingham Bog SSSI is made up of 4 units, 2 are in favourable condition and the other 2 are unfavourable but recovering. Again scrub encroachment and lack of grazing are the main reasons for the site not achieving full favourable condition.

The conservation objectives for the SAC / Ramsar are to maintain the acid bogs on peat substrates whilst being surrounded by intensively farmed arable land. The site needs to be managed for its water supply; in particular pollution to the catchment by agricultural run-off and spreading of sludge on the nearby fields needs to be controlled. Groundwater abstraction from the underlying greens and aquifer is also a potential threat to the mire communities that needs to be managed to protect the conservation objectives.

These two acid bogs on peat substrates are surrounded by intensively-farmed arable land. They are dependent on the catchment for water supply and are vulnerable to pollution of the catchment by agricultural run-off. Groundwater abstraction from the underlying greens and aquifer is also a potential threat to the mire communities.

4 KEY ISSUES OF RELEVANCE TO INTERNATIONAL SITES POTENTIALLY AFFECTED BY THE SITE SPECIFIC PROPOSALS

Based on provisional analysis both of the identified international sites and the size and nature of the various proposed developments, the following potential issues were identified.

- **Physical disturbance, and visual & noise disturbance from recreation;**
- **Impacts on water resources;**
- **Impacts on water quality.**

These are the issues that need consideration in establishing the nature of any adverse effects on the integrity of international sites. They are discussed in more detail in following sections. This list of issues was established at the outset of the exercise, determined by the sensitivities of the qualifying features of each designated site (see **Appendix A** and **Appendix F**), and confirmed through discussion with NNDC and Natural England; although subsequent assessment has not identified additional issues, individual proposals may not all cause these effects.

4.1 Physical disturbance, and visual and noise disturbance from recreation

Physical disturbance is a potential effect of visitation and recreational activities. It relates to impacts of repeated pedestrian passage which may cause localised vegetation and soil damage. Physical disturbance can also clearly be an issue with other practices such as trail and mountain bikes. These can originate from some distance away and, in this context; the effects of physical disturbance may include a wide catchment area.

Two of the designated areas considered within this assessment – the North Norfolk Coast (SAC and SPA), and the Wash and North Norfolk Coast (SAC/SPA/Ramsar) and the Broads (SAC, and Broadland SPA/Ramsar) – are significant tourist attractions. They are heavily-visited, and visitors are currently relatively heavily-managed (eg with managed car-parks, parking restrictions elsewhere, identified footpaths, information/interpretation boards, and a number of particular 'honeypot' attractions). This assessment considers the impact of additional effects resulting from development at NNDC proposed sites.

Visual and noise disturbance may be greatly exacerbated where people are accompanied by dogs. Although effects can be reduced by keeping dogs on leads, this is unlikely to completely avoid impacts. Wider recreational pressures also need consideration. The extent to which new development in North Norfolk might increase these will need to be established. Local residents may visit international sites to walk their dog on weekends etc; however other users such as windsurfers, kitesurfers or anglers may come from a large catchment area.

In the case of International sites within this study birds are the most prevalent qualifying animal species, and are also the group where concerns over disturbance are most commonly expressed. Disturbance can cause birds to temporarily vacate an area, increasing energy expenditure and reducing foraging opportunities. Chronic disturbance of this type may constitute effective habitat loss. Time of year is a key factor determining the sensitivity of qualifying bird features, and the extent to which recreation might cause disturbance. Sensitivities of relevant international sites with relation to wintering,

breeding (spring and early summer) and passage (autumn and spring) populations, and key periods of sensitivity, are outlined in **Table 4.1**.

A further factor which needs consideration where residential development lies adjacent to sites designated for ground-nesting bird species (for example Little Tern) is predation from domestic cats. Previous discussion with the Royal Society for the Protection for Birds (RSPB) has indicated that this is considered an issue only where houses lie within 1km of nesting sites. In the context of the site allocations in this plan, cat predation is considered unlikely.

Table 4.1 Seasonality and vulnerability of qualifying species on international sites potentially affected by North Norfolk Core strategy policies.

Qualifying feature	Presence / vulnerability	Site
Wintering birds	November -March	Breydon Water SPA Broadland Ramsar North Norfolk Coast Ramsar North Norfolk Coast SPA The Wash Ramsar The Wash SPA
Breeding birds	May- July	Breydon Water SPA Broadland Ramsar Broadland SPA Great Yarmouth North Denes SPA North Norfolk Coast Ramsar North Norfolk Coast SPA The Wash SPA
Migratory birds	April – May; September-October	Breydon Water SPA[1]

4.2 Impacts on Water Resources

In simple terms any increase in levels of residential or other development is likely to increases the demand for supplied water. This is likely to be the case even where water minimisation and water capture/reuse techniques are employed unless a broader policy requiring water neutrality[2] is successfully applied. Potential issues may occur if increased levels of water abstraction affects aquifers and surface water flows having a negative effect on the integrity of aquatic or other habitats (usually as a result of limiting water availability, although reduced river flows can also exacerbate water quality issues through reducing the dilution of pollutants (nutrients, contaminants and sediments).

There are 24 abstraction points relevant to the developments assessed here. Most settlements receive water from more than one supply point. Exceptions are:

- Fakenham, Briston and Melton Constable, Little Snoring and Walsingham (all supplied solely from Houghton St Giles Water Treatment Works (WTW));

[1] Although this is the only site where 'on passage' birds are mentioned in the citation (the Natura 2000 Standard Data form), during consultation RSPB commented that '*migratory birds are a feature of all sites, not just Breydon Water*'.

[2] Water neutrality is a concept whereby new development results in no net increase in water supply requirements in a defined area, as compared with levels before that development.

- Stalham (Royston Bridge WTW);
- Happisburgh (East Ruston WTW);
- Wells-next-the-sea (Wighton WTW); and
- Mundesley (Mundesley WTW).

In discussion with Anglian Water and the Environment Agency it appears that there is sufficient water available within North Norfolk to support current and future use. Where increased abstraction from one supply point might lead to an adverse effect on a designated site, as above there are often alternative supplies. Moreover both Anglian Water and the Environment Agency confirm that any alteration to water supply will be subject to further assessment under the Habitats Regulations. There is therefore a pre-existing mechanism to ensure that any changes to abstraction regimes are compliant with the requirement to ensure no adverse effect on the integrity of international sites. Excerpts from relevant correspondence from Anglian Water and the Environment Agency are presented below (more complete information is included in **Appendix D**).

We have produced our Water Resources Management Plan to describe the proposals to maintain a secure balance between suppliers and demand in the Region, including the area of N Norfolk. In doing this we have produced a Strategic Environmental Assessment that has influenced the WRMP.

We do not consider that an Appropriate Assessment is required for the WRMP, but may be required to promote a specific scheme. At this stage there are no specific new schemes in the North Norfolk area that would appear to fall under Habitats Regs. This is on the basis that all of our current abstraction licences in the North Norfolk area have been considered in the Review of Consents under the Habitats Directive. We await the outcome of the RoC and this may effect the WRMP. If so, and the effect is significant, we will review the WRMP accordingly. We are required to produce a WRMP that will satisfy the need to maintain the security of public water supplies from existing and new customers. Any solutions that we implement will have to comply with the Habitats Directive for Natura 200 sites and with the WFD.

Gary Parsons, Anglian Water, 6 February 2009.

The RoC process in Stage 4 will look at all the licensed abstractions which could potentially affect the N Norfolk Coast European sites. The RoC assessment will take account of the full licensed abstraction rates and measures will be put in place to ensure that all authorised abstractions, including those for public water supply, will be modified in such a way that they will not have an adverse effect on the integrity of the European sites.

I think the important point is that in RoC we look at the full licensed quantity, not just what has been abstracted historically, so some PWS "headroom" is included which may be used for ne development. If the headroom is not sufficient, the water company would have to apply to increase their abstraction, which would have to be taken through Reg 48 of the Habs Regs. The integrity of the European site will therefore be protected.

Marian Martin, Environment Agency, 11 February 2009-02-13

4.3 Impacts on Water Quality

New residential development has the potential to affect water quality in the catchment of international sites primarily through sewage derived nutrient enrichment. Increases in housing can therefore lead to increased nutrient levels discharged. Nutrient enrichment has the potential to affect the integrity of international sites through shifts in habitat and species composition and/or eutrophication. Some, and particularly larger, sewage treatment works (STW) currently remove some but not all nutrients (particularly phosphates) from treated water.

The Environment Agency's General Quality Assessment (GQA) scheme provides an accurate and consistent assessment for classifying the water quality of rivers and canals. It results in a biological water quality grade of a to f indicating 'very good' to 'bad' for each stretch of river.

The River Ecosystem (RE) Classification comprises five classes of decreasing quality, from RE1 "water of very good quality and suitable for all fish species" to RE5 "water of poor quality which is likely to limit coarse fish populations". These are used as targets for water quality, and river water samples are checked against standards for each RE target; standards include those for Ammonia, Biological Oxygen Demand, Dissolved Oxygen, acidity (pH) and some metals.

Siltation of riverine sediments, caused by high particulate loads and/or reduced scour within the channel, is a threat to interest features. Elevated silt levels can interfere with the establishment of *Ranunculus* plants, and with egg and fry survival in brook lamprey and bullhead. Elevated levels of suspended solids can clog the respiratory structures of the listed species. The target of $25mgl^{-1}$ is based on the EC Freshwater Fish Directive.

Elevated phosphorus levels may interfere with competitive interactions between different higher plant species and between higher plants and algae, leading to the loss of characteristic higher plants and large diurnal sags in dissolved oxygen levels. Excessive phosphorus leads to excessive plant growth and favours species indicative of unfavourable conditions. This is particularly apparent in headwaters, where channels become dominated by emergent species, and in turn, this changes the physical nature of the watercourse by increased retention of silt. *Ranunculus* habitat is extremely vulnerable and can be replaced by *Potamogeton pectinatus*. The respiration of artificially large growths of benthic algae may generate poor substrate conditions for species such as the brook lamprey (in the larval stage).

According to the favourable condition table drawn up by Natural England (**Table 4.2**) the following designated SAC features have specific targets for good water quality.

Table 4.2 Favourable condition targets

Feature	Target	Designated sites with features present
Natural eutrophic lakes with *Magnopotamion* or *Hydrocharition*-type vegetation	0.1mg/l total phosphorus or below. *Note This target also applied when the natural eutrophic feature is a ditch or dyke.*	Broads SAC
Hard oligomesotrophic waters with benthic vegetation of *Chara* formations	0.03 mg/l total phosphorus or below.	Broads SAC
Otter (*Lutra lutra*)	'Good', with no pollution incidents	Broads SAC
Desmoulin's whorl snail (*Vertigo moulinsiana*)	GQA biology class >='b' River Ecosystem classification >='RE3'	River Wensum SAC

In addition to these, targets have been created for specific SAC and SPA lakes. The target for SAC lakes is 0.05mg/l total phosphorus. The target for SPA lakes is 0.1mg/l phosphorus.

Within this assessment current water quality standards in rivers potentially affected by new development in the SSP areas are reported. The information below is sourced from Environment Agency assessments produced during the Review of Consents process.

4.3.1 River Wensum

Specific targets for water quality have been created for the river's interest features to ensure that they are maintained. **Table 4.3** below shows these features and their targets.

Table 4.3 Targets for sites interest features

Indicator	Feature and Target
Biological class - GQA class	Bullhead, brook lamprey, white-clawed crayfish and Desmoulin's whorl snail all >='b' Also no drop in class from existing situation
River Ecosystem (RE) Class	Bullhead, brook lamprey, and Desmoulin's whorl snail >=RE2; white-clawed crayfish>=RE3 Also no drop in class from existing situation
Suspended solids (annual average).	Bullhead, brook lamprey and white-clawed crayfish <=25 mgl l^{-1}
Soluble Reactive Phosphorus (annual mean)	An annual average phosphate concentration of 0.05mg/l from the upstream limits of the SSSI to the confluence of the River Wensum with the White Water and 0.1mg/l from that confluence to the downstream limit of the SSSI

GQA

Sampling at certain points along the length of the River Wensum indicate that the biological GQA of the River Wensum has been class a (very good) from 2000 to 2004.

As the target for all features is class b (good) or better all reaches have been compliant since 2000. The current consents can therefore be concluded to be appropriate to maintain the necessary levels of biological GQA for the site's interest features.

River Ecosystem classification

Table 4.4 RE classes along the River Wensum

	2000	2001	2002	2003	2004
WEN010 (River Tat)	RE4	RE3	RE2	RE2	RE2
WEN040	RE2	RE2	RE2	RE2	RE2
WEN070	RE2	RE1	RE1	RE2	RE2
WEN180	RE1	RE1	RE1	RE2	RE2
WEN200	RE1	RE1	RE1	RE1	RE2
WEN235	RE1	RE2	RE1	RE1	RE2
WEN240	RE1	RE1	RE1	RE1	RE2

The targets identified above are RE2 or better for Bullhead, Lamprey and Desmoulins whorl snail, and RE3 or better for the crayfish. These targets have been complied with since 2000, except around Fakenham where a lower RE class was reported in 2000 and 2001. Poor water quality in these years was due to problems with the sampling point and impacts from licensed discharges. These issues now appear to have been rectified,

and the consented discharges are no longer having an adverse impact on the required River Ecosystem classification targets.

Suspended solids
The target is for annual average of 25 mg/l or less and sampling at various points along the River Wensum indicates that this target is not being exceeded. The largest sample in 2005 was 9.04 mg/l. One exceptional exceedence in 2002 is thought to be due to the river being impounded at regular intervals. It can therefore be concluded that the consents remaining after screening will have no turbidity/siltation impact on the interest features of the River Wensum SAC.

Phosphate standards
Phosphate standards have been developed for SAC rivers and guidelines are described in the Habitats WQTAG papers, including WQTAG048b (Guideline Phosphate Standards for SAC rivers), WQTAG048apA (Phosphorus standards for SAC rivers in England and Wales) and WQTAG048apB (Phosphorus standards for each region). These papers result in the following targets for phosphorus levels in the River Wensum.

Table 4.5 Targets for phosphorus

Indicator	Standard
Soluble Reactive Phosphorus (annual mean) (equivalent to Total Reactive Phosphorus / Orthophosphorus)	An annual average phosphate concentration of 0.04mg/l from the upstream limits of the SSSI to Sculthorpe
	0.06mg/l from Sculthorpe to Taverham Bridge; and 0.1mg/l from Taverham Bridge to the downstream limit of the SSSI

Under the Urban Waste Water Treatment Directive the River Wensum has been designated as a Sensitive Area (Eutrophic). Under the AMP4 investment programme (2005-2010) seven small sewage treatment works that discharge to the catchment are to begin phosphate stripping. This is already done at the larger Dereham and Fakenham works.

A significant decline in the phosphorus concentrations in the River Wensum has been seen since the introduction of phosphorus removal. The reduced levels are however not thought to be low enough to promote a major change in the biology of the system; it is thought elevated levels of phosphorus support increased filamentous and epiphytic algal growth with potential impacts on vegetation.

Surveying has indicated that in the upper reaches of the river the standard has been exceeded in all years, by nearly 4 times the 0.04mg/l standard. Phosphate levels do not show any strong declines over this time. In the lower reaches of the river (Sculthorpe to Taverham Bridge) sampling also indicates that phosphorus target are exceeded but are showing a slight decline in 2004 and 2005 from previous years.

For the majority of the river phosphate standards are exceeded, often by a substantial amount. Therefore it cannot be concluded that consents are not having an impact on the phosphate concentrations in the river. Modeling also indicates that the planned phosphate stripping will not be enough to reduce levels to below the targets. Further investigation of the major inputs is required for further assessment and appraisal. Additional discharges from the planned developments will only add to this in the future.

At the end of Stage 3 of the Environment Agency's Review of Consents it was not possible to conclude 'no adverse effect' for fifteen discharge consents for their contribution to exceedances of the phosphorus target in the River Wensum. These have now been subject to more detailed consideration at Stage 4. None of the discharge consents that require modification following the appraisal are at sites relevant to the site specific proposals. It has been demonstrated that for the larger sewage treatment works, for example Fakenham, it will not be necessary to amend the existing consented flows.

4.3.2 River Burn

The River Burn is one of the rivers which flow into the North Norfolk Coast designated areas. The interest features of the European designated site have been assessed against water quality and specific targets for each feature have been created which if followed will ensure that this feature is maintained on the site.

Table 4.6 Water quality targets and requirements for site interest features

Feature	Target
SPA bird species	Food availability: Presence/abundance of fish crustaceans, molluscs and worms. Food availability: Presence/abundance of eel grass and/or green algae.
Coastal Lagoons	Average seasonal salinity and seasonal maxima/ minima should not deviate significantly from established baseline (subject to natural change).
Otter	Water quality: GQA grade "Good" (i.e. Grade B or above). No pollution incidents.
Coastal waters	Nutrient status: No significant increase in phytoplankton concentration.
Sand and shingle	Maintain characteristic vegetation communities. May be affected by changes to nutrient status
Intertidal mudflats and sandflats	Nutrient enrichment: algal mat cover should not deviate significantly from an established baseline Organic content and deoxygenation: should not deviate significantly from usual baseline
Saltmarsh	Maintain characteristic vegetation communities. May be affected by changes to nutrient status
Swamp, marginal and inundation communities, and marshy grassland	Maintain characteristic vegetation communities. May be affected by changes to nutrient status Water salinity should not deviate significantly from a reference level

Data from the River Burn show that quality was classified as 'good' or 'fairly good' over the last 6 years (see **Table 4.7**). It complies with the target for otters in 2005 and 3 of the other 5 years.

Table 4.7 River Burn Biological and chemical GQA

2005		2004		2003		2002		2001		2000	
Chemical	Biological	Chem	Bio	Chem	Bio	Chem	Bio	Chem	Bio	Chem	Bio
b	b	a	b	c	b	b	b	b	-	b	c

Table 4.8 River Burn GQA nutrient levels

2004		2003		2002		2001		2000	
N (Nitrogen)	P (Phosphate)	N	P	N	P	N	P	N	P
6 (very high)	5 (very high)	6	5	6	4 (high)	6	5	6	5

GQA results (**Table 4.8**) show nitrate and phosphate results ranging from moderate to very high, indicating that the river is nutrient enriched. However, this does not necessarily indicate that the site would be vulnerable to eutrophication, as productivity is dependent also on factors such as light (turbidity) and residence times. The waters around the site are turbid and well mixed, and there is low light penetration which will prevent excessive algal growth. The risk from nutrient concentrations is assessed as moderate.

Sampling from 1990-2005 shows decreasing concentrations of soluble reactive phosphorus in the River Burn. Guidance paper WQTAG089a (Guidance on appropriate assessments - Assessing risks and impacts of eutrophication in SAC and SPA estuaries) states that 0.025–0.039 mg/l defines “enriched” estuaries in the UK (depending on the region specific background concentrations). Although these values have been exceeded in the River Burn, as there concentrations are declining the impact of these nutrients can be considered to be low.

4.3.3 River Glaven

As the River Glaven flows into the North Norfolk Coast designated area its quality will impact the interest features. **Table 4.6** above shows the relevant targets for their successful maintenance. The River Glaven is regularly tested for water quality. Data in **Table 4.9** show that water quality has been classified as ‘good’ or ‘very good’ over the last 6 years, complying with the target for otters in all years shown.

Table 4.9 River Glaven Biological and Chemical GQA results

2005		2004		2003		2002		2001		2000	
Chemical	Biological	Chem	Bio	Chem	Bio	Chem	Bio	Chem	Bio	Chem	Bio
a	b	a	a	a	a	a	a	a	-	a	a

Table 4.10 River Glaven nutrient GQA results

2004		2003		2002		2001		2000	
N	P	N	P	N	P	N	P	N	P
4 (moderate)	4 (high)	4	4	4	4	4	4	4	5 (very high)

GQA results in **Table 4.10** show both nitrate and phosphate levels range from moderate to very high, indicating nutrient enrichment. However, this does not necessarily indicate that the site would be vulnerable to eutrophication, and as waters around the site are turbid and well mixed, with low light penetration, the risk from nutrient concentrations is assessed as moderate.

Guidance paper WQTAG089a sets out specific phosphorus levels that should not be exceeded. The River Glaven has exceeded these by quite a significant amount since 1990. However concentrations are also showing some sign of decrease (although not as

great as the River Burn) and the impact of these levels on the designated area can be considered to be low.

4.3.4 River Stiffkey

The River Stiffkey also flows into the North Norfolk Coast designated area, potentially affecting the designated site's interest features. **Table 4.6** shows the requirements for successful maintenance of the interest features on the site.

Table 4.11 River Stiffkey Chemical and biological GQA results

2005		2004		2003		2002		2001		2000	
Chemical	Biological	Chem	Bio	Chem	Bio	Chem	Bio	Chem	Bio	Chem	Bio
a	b	a	a	a	a	a	a	a	-	a	a
b	a	b	a	b	a	a	a	a	-	a	a

Table 4.12 River Stiffkey nutrient GQA results

2004		2003		2002		2001		2000	
N	P	N	P	N	P	N	P	N	P
5 (very high)	3 (moderate)	5	3	5	3	5	4 (high)	5	4

The data in the table above shows that for the River Stiffkey the water quality has been 'good' or 'very good' over the last 6 years, and complied with the target for otters.

GQA results in **Table 4.12** indicate that the both the nitrate and phosphate results range from moderate to very high, again indicative of nutrient enrichment. However as above the risk from nutrients is assessed as moderate.

Guidance paper WQTAG089a described previously set out specific phosphorus levels that the site should not exceed. The River Stiffkey has exceeded these but not by as much as the two other rivers which flow into the North Norfolk Coast area. As the River Stiffkey concentrations are also showing sign of decline the impact on the designated area can again be concluded to be low.

At the end of the Stage 3 RoC Water Quality Assessment Appropriate Assessment it was possible to demonstrate that due to the limited connectivity between discharges and SAC habitats, existing discharge consents are not having an adverse effect on the features of the North Norfolk Coast SAC and SPA.

4.3.5 River Ant

Before the 1970s, phosphate levels in the system were much higher than now. Since then phosphate stripping equipment has been installed in larger sewage treatment works in the catchment. This has significantly reduced phosphate loading. Monitored levels still show some fluctuation due to historic phosphate being released from sediments. The tables below show the phosphate level, GQA classes and River Ecosystem class results from a number of locations along the River Ant.

Table 4.13 River Ant water quality results

Site	Total Phosphate Result (mg/l)		
	2003	2004	2005
ANT120 (Ant upstream of site)	0.056	0.047	0.040
ANT130 (Ant at upstream edge of site)	0.078	0.047	0.044
ANT160 (Barton Broad)	0.074	0.064	0.037
ANT16020 (Barton Broad outflow)	0.075	0.072	0.039
ANT170 (Cromes Broad)	0.186	0.130	0.077
ANT170A (Neatishead Stream tributary)	0.148	0.171	0.087

ANT180 is the stretch of the river through the Ant Broads and Marshes SSSI. The river at this point complies with the targets for otters and Desmoulin's whorl snail (see **Table 4.2**). The RE target for this stretch of watercourse is also compliant with the targets. Compliance with RE3 standards should ensure that no adverse effect will occur to the site's European features during flooding episodes.

Table 4.14 River Ant Biological and Chemical GQA results

	Biological GQA	Chemical GQA	River Ecosystem class	Number of pollution incidents
ANT180	b (good)	c (fairly good)	RE3	One oil incident 2004 categorised as minimal impact.

The River Ant and Barton Broad also comply with the total phosphate target for eutrophic waters (**Table 4.2**). The SAC lake target was complied with in Barton Broad and the River Ant in 2005 but not before. None of the results comply with the oligomesotrophic target.

Table 4.15 Ecological status results for Barton Broad

Macrophytes status	Phytoplankton status	Transparency status	Phosphorus status	Overall status and comments
Poor	Moderate	Moderate	Moderate	Plankton biomass, macrophytes and transparency indicate impact. Conclude an adverse impact, but suggest site is recovering.

At the end of the RoC Stage 3 Appropriate Assessment, it was not possible to conclude 'no adverse effect' for fourteen discharge consents for their contribution to exceedances of the phosphorus targets. These have now been subject to more detailed consideration at Stage 4.

The Stage 4 Options Appraisal for Ant Broads is yet to be completed as there are issues with achieving the Review of Consents point source target. It has been possible to demonstrate that all discharges in the catchment have no adverse effect on the integrity of the site, with the exception of Stalham STW. Work is ongoing to identify whether there are options that will remove the contribution of Stalham STW to the phosphorus target exceedances. This includes consideration of increasing river flows to provide increased dilution.

4.3.6 River Thurne

Routine water quality monitoring results from the River Thurne at Potter Heigham Bridge (THR080) - the stretch of the River Thurne at the site - indicate that the River Thurne complies with its River Ecosystem and GQA water quality targets (**Table 4.16**). It is therefore considered suitable for otters, a known feature of the area. The Upper Thurne broads and marshes SSSI site along the River Thurne consists of the following sites; Martham Broads, Horsey Mere, Hickling Broad and Heigham Sound.

Table 4.16 River Thurne water quality results

Determinand	Date of result	Result
River Ecosystem	2004	RE3
Chemistry GQA	2004	c (fairly good)
Pollution incidents	Since January 2003	One in 2004- oil in the River Thurne, classified of minimal impact

Table 4.17 shows current total phosphate results for Martham Broad at the sampling points. Martham Broad is classified as a natural eutrophic lake and oligomesotrophic water and phosphate levels should therefore not exceed the targets in **Table 4.6**.

Table 4.17 Total phosphate results for Martham Broads

Sampling point	Total phosphate mg/l
Martham north broad (THR060)	0.030
Martham south broad (THR061)	0.027

The Broads comply with the targets for oligomesotrophic waters, SAC lakes and eutrophic lakes. As shown in **Table 4.18**, the current ecological status of the Martham Broads enables the conclusion that there is no ecological impact; all targets for the interest features are being met.

Table 4.18 North and South Broads ecological status results

Site	Macrophytes status	Phytoplankton status	Transparency status	Phosphorus status	Overall status and comments
North Broad	High	Good	Good	Good	Ecological impact not shown. Site in High or Good status.
South Broad	High	Good	-	High	As above

Horsey Mere is classified as a natural eutrophic lake and oligomesotrophic water. **Table 4.19** below shows the phosphate levels at several sampling points within the site. The Broad and dykes comply with the target for eutrophic lakes but not for oligomesotrophic waters. The Broad complies with the target for SAC lakes.

Table 4.19 Total phosphate results

Site	Total phosphate mg/l (average over 2 years)
Horsey Mere (THR020)	0.049
Brograve pump (THR007)	0.071
Horsey Mill pump (THR010)	0.099
Stubbs Mill pump (THR025)	0.060

Table 4.20 Horsey Mere ecological status results

Macropytes status	Phytoplankton status	Transparency status	Phosphorus status	Overall status and comments
Moderate	Moderate	Poor	Good	Ecological impact possibly shown. Phosphate target exceeded. Site shows evidence of multiple stable states and biological impact. Moderate Status, but brief periods of Good.

Discharges further away from the Horsey Mere area will therefore have a minimal effect on, and will adversely impact, the interest features of the Upper Thurne Broads and Marshes SSSI alone or in combination. For discharges that are closer to the site it cannot be concluded that they will not cause an adverse impact on the interest features of the Upper Thurne Broads and Marshes SSSI alone or in combination.

Hickling and Heigham Broads are classified as natural eutrophic lakes and oligomesotrophic waters. **Table 4.21** below shows sampled phosphate levels indicating

that the broads, dykes and the River comply with the target for eutrophic lakes but not oligomesotrophic waters. The broads do not comply with the target for SAC lakes. **Table 4.22** shows ecological status of the sites. It can be concluded that the current discharges and/or diffuse inputs are having an effect on the broads.

Table 4.21 Total phosphate results for Hickling and Heigham Broads

Site	Total phosphate mg/l
Hickling Broad (THR030A)	0.070
Heigham Sound (THR040)	0.078
Catfield/Guttermere pump (THR030)	0.075
River Thurne Martham Ferry (THR065)	0.064

Table 4.22 Hickling and Heigham Broads ecological status results

Macrophytes status	Phytoplankton status	Transparency status	Phosphorus status	Overall status and comments
Good	Poor	Poor	Moderate	Ecological impact shown. Site shows clear evidence of multiple stable states, with periods of macrophyte dominance and clear water. Likely to be Moderate Status.

These results indicate that overall there is there is currently an impact on the River Thurne section of the Broadland/Broads European designated site. This may be exacerbated by increased housing development in the area.

At the end of the RoC Stage 3 Appropriate Assessment it was not possible to conclude 'no adverse effect' for sixteen discharge consents for their contribution to exceedances of the phosphorus target in at least one of the three main Broads areas: Martham, Horsey and Hickling/ Heigham. Moreover, it was considered that there were possible in-combination effects with water resource licenses. The discharges have now been subject to more detailed consideration at Stage 4. Early results from the Stage 4 modelling work demonstrated that under fully consented discharge and abstraction conditions, the target in Martham Broad will be met. The modelling work also demonstrated that the greatest influence on phosphorus loads to Horsey and Hickling/ Heigham Broads would be changes to diffuse inputs e.g. changes to catchment land-use, and that no changes in consents will be required.

4.3.7 River Bure

Routine monitoring results are available at two points on the River Bure and are shown in **Table 4.23**. These show that the targets for Desmoulin's whorl snail, known to occur in the river, are being complied with.

Table 4.23 River Bure routine water quality monitoring results

Determinand	BUR140 (Wroxham Rail Bridge)	BUR170 (Horning Ferry)
River Ecosystem class	RE3	RE3
GQA biological quality	a (very good)	a (very good)
GQA chemical quality	c (fairly good)	c (fairly good)
Number of pollution incidents since 1993	3 incidents of sewage and diesel reported in 2004	

Routine monitoring results indicate that the River Bure complies with its River Ecosystem target and is of good water quality.

Table 4.24 River Bure annual average phosphate results

Monitoring point	Orthophosphate mg/l (* are filtered samples)			Total phosphate mg/l		
	2003	2004	2005)	2003	2004	2005
River Bure at Wroxham (u/s site) (BUR140)	0.047	0.036	0.030	0.069	0.064	0.050
River Bure d/s Wroxham Broad (BUR150)	0.015*	0.028*	0.015*	0.074	0.075	0.037
Turf Pond on Woodbastwick Marshes (BUR15905)	-	-	0.005*	-	-	0.035
Cockshoot Broad (BUR160A)	-	0.009*	0.015*	0.095	0.045	0.041
Inflow to Cockshoot Broad (BUR161)	0.019	0.031	0.024	0.095	0.106	0.038
Ranwoth Broad (BUR170A)	0.007*	0.006*	0.008*	0.108	0.075	0.054
River Bure at Horning (within site) (BUR170)	0.034	0.026	0.028	0.082	0.074	0.039
River Bure at Horning intake (within site) (BUR171)	0.034	0.024	0.025	-	-	-
River Bure at St Benet's Abbey (d/s site) (BUR175)	0.015	0.013	0.027*	0.087	0.079	0.063

Phosphate levels shown in **Table 4.24** indicate that Cockshoot Broad complies with the favourable condition target for total phosphate for eutrophic lakes as does the River Bure upstream of and within the site. Cockshoot Broad and the River Bure within the site have also complied with the SAC lake target in 2005 but not in some of the previous years.

At the end of the Stage 3 Appropriate Assessment it was not possible to conclude 'no adverse effect' for seven discharge consents for their contribution to exceedances of the phosphorus target. The discharges have now been subject to more detailed consideration at Stage 4. Following more detailed modelling, it had been possible to demonstrate that no further consent modifications are required. Since the Review of Consents baseline year (2000), substantial improvements in the form of phosphorus stripping have been made at several of the discharges in the Bure Broads and Marshes SSSI catchment. The largest point source discharges already operate to 'Best Available Technology' which has delivered a 67% reduction in point source phosphorus loads since the RoC baseline year, 2000.

4.4 Air quality

As well as the three likely direct impacts considered above, there are additional potential impacts relating to the wider issue of air quality. Linking these with increased development, and particularly the relatively low levels proposed in North Norfolk, is not easy largely due to the transboundary nature of the impacts; however due consideration of these further two factors should also be acknowledged.

Acidification and eutrophication

Reductions in air quality can result from a range of activities related to development, including increased road traffic resulting from increased travel associated with employment and housing allocations. Main concerns associated with international sites are acidification and nutrient enrichment, particularly from Nitrogen oxides (NOx). In general, coastal and marine habitats have high buffering capacity against acidification, and are not highly sensitive to eutrophication from aerial deposition of Nitrogen. It is considered that it is unlikely that air quality will be an issue for the international sites identified within this assessment.

Greenhouse gas emissions

This aspect of housing expansion has received little attention in terms of appropriate assessment of land use plans. Although the impact of new development within North Norfolk will have a very small relative contribution to climate change, that very small impact per site does occur globally, affecting every international site. Whilst we do not

feel a legislative basis exists for determining likely significant effect, and ultimately adverse effect on integrity, resulting from the greenhouse gas emissions associated with these proposed developments, Royal Haskoning feels that these effects should be noted so that the findings of this assessment can feed into broader measures to address these issues, such as are addressed through *Core Strategy Policy EN6 Sustainable Construction and Energy Efficiency* (North Norfolk District Council 2008) and others.

5 DETERMINATION OF LIKELY SIGNIFICANT EFFECT

In carrying out Appropriate Assessments on, for example, planning policy documents it is usual to identify policies or options which fall into one of three categories:

- Those which can be said to certainly have a likely significant effect (LSE);
- Those which are less certain to have LSE, but which have been included on the basis of their potential significant effect;
- Those which are not considered to have a likely significant effect.

The first two categories are then taken forward to Appropriate Assessment; the latter options can be progressed without further consideration. The nature of any impacts will be highly dependent on the way in which housing (and other development) is delivered. This includes whether any requirements are placed on individual or all developments to limit their wider impact, or whether measures are enacted to mitigate the impact of development. This assessment addressed proposals at face value.

5.1 Proposed developments determined as having Likely Significant Effect

Due to the nature of the developments proposed in the North Norfolk District Council SSP all have been considered to have a likely significant effect on one or more of the designated sites in the area.

6 APPROPRIATE ASSESSMENT OF NORTH NORFOLK SITE SPECIFIC PROPOSALS

The appropriate assessment addresses all development sites identified by North Norfolk District Council as being likely to be progressed. In addition the general issue of housing growth is considered first.

6.1 Impacts associated with population growth due to increases in housing

The population increases that will result from the North Norfolk SSP housing allocations comprise only a proportion of the total housing allocations of the wider area which has the potential to impact upon international sites. Consideration of impacts 'in combination' is given in Section 7. However, as regards the "alone" assessment, the increased population is a key factor in assessing disturbance as well as impacts on water quality and resource availability. These assessments are made below on a site-by-site basis.

6.2 Site Specific Proposals

In the assessments below, conclusions are colour-coded according to the following scheme.

Can proceed. No adverse effect on integrity.
Can proceed, accompanied by identified preventative measures.
Awaiting further information or study, and subsequent provision of preventative measures.
Irresolvable adverse impact on the integrity of a site. Consider alternative solutions or consider claim under IROPI.

It should be noted that the amber category (***Awaiting further information or study, and subsequent identification of preventative measures***) represents a pragmatic approach, enabling the progression of the plan and its proposals in the interim. However, as described in more detail in section 8, progression is dependent on the authority's commitment to re-assess proposals in the light of the additional studies which are either already commissioned or are committed to as a result of this assessment, and to implement any identified preventative measures. ***Update note: Since publication of the 2009 AA report the Council has undertaken detailed discussions with relevant parties to investigate the issues surrounding visitor disturbance and water quality. A Water Infrastructure Statement has been prepared to summarise the up to date information and support discussion at examination. The text in the following tables has not been updated following receipt of the information and the Water Infrastructure Statement should be referred to for the latest situation. Discussions have also been held with Natural England and the RSPB in relation to visitor pressure on the Norfolk Coast SAC.***

6.2.1 Aldborough

Maximum number of houses, and other developments: 26 dwellings
Site codes: ALD01, ALD02, ALD07, ALD13
Designated sites potentially affected: Norfolk Valley Fens SAC, Overstrand Cliffs SAC

and Paston Great Barns SAC.
Disturbance: Aldborough is approximately 8km from Norfolk Valley Fens SAC, 9km from Overstrand Cliffs SAC and 14km from Paston Great Barns SAC. • In the Norfolk Valley Fens SAC site closest to Aldborough there are no interest features which will be affected by an increase in visitor numbers. Due to the nature of site and the limited visitation it receives it can be concluded that any disturbance will be very minimal. • Paston Great Barns SAC is a very small, managed site that does not receive large visitor numbers at the moment and this is unlikely to increase in the future. • Overstrand Cliffs is designated for their earth heritage and supralittoral rock and as such is not susceptible to disturbance. **Therefore we conclude that there is no adverse effect from disturbance on the integrity of any sites as a result of the proposed development in Aldborough.**
Water quality: Aldborough STW discharges into Scarrow Beck, a tributary of the River Bure at TG 1858 3359. The River Bure currently has good water quality and meets the favourable condition targets to ensure that the Broadlands/ Broads designated sites interest features are maintained. Any changes to water treatment regimes affecting the River Bure will be subject to further assessment (through for instance Periodic Review). **Therefore we conclude that there is no adverse effect from water quality impacts on the integrity of any sites as a result of the proposed development in Aldborough.**
Water resources: Aldborough receives its water from Metton, including Matlaske bores, Glandford and Sheringham. Weybourne, Cromer, Corpusty and Saxthorpe, Holt, Roughton, Southrepps and Overstrand also receive water from Metton. Cromer, Holt, Roughton, Southrepps, Overstrand, Sheringham and Blakeney also receive water from Glandford and Sheringham. Although the increase in dwellings will have some effect on water demand, statements from the Environment Agency and Anglian Water (see **Section 4.2**) support the view that increased demand will be met without negatively affecting any international sites. **Therefore we conclude that there is no adverse effect from changing water availability on the integrity of any sites as a result of the proposed development in Aldborough.**
Preventative measures/ Mitigation: Whilst it is important to ensure that management measures of designated sites are maintained no preventative measures are required.
Conclusion: We conclude that the proposed development in Aldborough will have no adverse effect on the integrity of any Natura 2000 or Ramsar sites.
Comments/ Additional notes: There are no distinctions between the different sites proposed for development.

6.2.2 Bacton

Maximum number of houses, and other developments: 26 dwellings
Site codes: BACT03, BACT05
Designated sites potentially affected: Norfolk Valley Fens SAC, Broads SAC, Broadland SPA/ Ramsar and Paston Great Barns SAC.
Disturbance: Bacton is approximately 8.5km from Norfolk Valley Fens SAC, 8km from the Broads SAC, Broadlands SPA/Ramsar, and 2.5km from Paston Great Barns SAC.

• At the Norfolk Valley Fens SAC site closest to Bacton there are no interest features which will be affected by an increase in visitor numbers. Due to the nature of site and the limited visitation it receives it can be concluded that any disturbance will be very minimal. • At Paston Great Barns SAC increased disturbance is also considered highly unlikely. • At the Broads SAC whilst there is potential for effects on otter and fen orchid, disturbance is considered to be extremely limited due to distance from settlement, and the site's proximity to the coast. This is also the case for the Broadlands site. **Therefore we conclude that there is no adverse effect from disturbance on the integrity of any sites as a result of the proposed development in Bacton.**
Water quality: Water is discharged from Bacton straight into the North Sea at Mundesley STW (TG 3263 3782). The quantity of water being discharged into the North Sea is minimal when compared to the greater coastal processes in that area. The site of discharge is outside the North Norfolk Coast designated area, and water quality data collected in 2008 (Defra site number 10300, supporting Mundesley's Blue Flag status) indicates that there is no sewage contamination of the nearby beach. **Therefore we conclude that there is no adverse effect from water quality impacts on the integrity of any sites as a result of the proposed development in Bacton.**
Water resources: Bacton receives its water from Royston Bridge and East Ruston. North Walsham, Stalham, Catfield, and Ludham also receive their water from Royston Bridge. Happisburgh is the only other place that receives their water from East Ruston. Although the increase in dwellings will have some effect on water demand, statements from the Environment Agency and Anglian Water (see **Section 4.3**) support the view that increased demand will be met without negatively affecting any international sites. **Therefore we conclude that there is no adverse effect from changing water availability on the integrity of any sites as a result of the proposed development in Bacton.**
Preventative measures/ Mitigation: Whilst it is important to ensure that management measures of designated sites are maintained no preventative measures are required.
Conclusion: We conclude that the proposed development in Bacton will have no adverse effect on the integrity of any Natura 2000 or Ramsar sites.
Comments/ Additional notes: There are no distinctions between the different sites proposed for development.

6.2.3 Blakeney

Maximum number of houses, and other developments: 26 dwellings
Site codes: BLA03, BLA04
Designated sites potentially affected: Norfolk Valley Fens SAC, North Norfolk Coast SAC/ SPA/ Ramsar, The Wash Ramsar and The Wash and North Norfolk Coast SAC.
Disturbance: Blakeney is within the boundary of the North Norfolk Coast SAC/SPA/ Ramsar, the Wash Ramsar and the Wash and North Norfolk Coast SAC. It is approximately 10km from the Norfolk Valley Fens SAC. • At the Norfolk Valley Fens SAC site nearest to the development there is the potential for disturbance to fen orchid. However due to the nature of site and the limited visitation that it receives it can be concluded that levels of disturbance will be very low and there will be no adverse effect.

• At the North Norfolk Coast and Wash designated sites there is potential for disturbance of otter, bird populations (breeding, overwintering, migrant, and wetland assemblage) perennial vegetation, and petalwort, including by trampling. The exact amount of disturbance is dependent on the exact location of interest features, and whilst development could lead to increased visitation, access to these features is difficult. Cat predation is considered unlikely due to distance of the proposed development from the SPA interest features (maximum predation range considered to be 1km, and typically 500m), and also location of the proposed development relative to existing dwellings. **An adverse effect from disturbance on the North Norfolk Coast SPA cannot be ruled out.**
Water quality: Water is discharged from Blakeney into the River Glaven at TG 0454 4247. Although nutrient levels in the Glaven are current moderate, any changes to water treatment regimes will be subject to further assessment (through for instance Periodic Review). **Therefore we conclude that there is no adverse effect from water quality impacts on the integrity of any sites as a result of the proposed development in Blakeney.**
Water resources: Blakeney receives its water from Glandford, Sheringham and Hougton St Giles. Cromer, Holt, Roughton, Southrepps. Aldborough, Overstrand and Sheringham also receive their water from Glandford and Sheringham. Fakenham, Briston and Melton Constable, Little Snoring, and Walsingham also receive water from Houghton St Giles. Although the increase in dwellings will have some effect on water demand, statements from the Environment Agency and Anglian Water (see **Section 4.2**) support the view that sufficient water is available to meet this demand without negatively affecting any international sites. **Therefore we conclude that there is no adverse effect from changing water availability on the integrity of any sites as a result of the proposed development in Blakeney.**
Preventative measures/ Mitigation: It is not considered that an adverse effect on the integrity of the site's interest features is likely as a result of these proposals. However, in light of the uncertain behaviour of future residents we recommend a programme of monitoring be initiated to assess impacts of development on the North Norfolk Coast site. This is described in more detail in **Section 8**, and will enable targetted and appropriate management responses to be developed and implemented quickly if likely adverse impacts of visitation are identified. This will require discussion between North Norfolk District Council and Natural England, potentially with further advice from other organisations.
Conclusion: Providing that appropriate mitigation means described above are implemented, we conclude that the proposed development in Blakeney will have no adverse effect on the integrity of any Natura 2000 or Ramsar sites.
Comments/ Additional notes: There are no distinctions between the different sites proposed for development.

6.2.4 Briston

Maximum number of houses, and other developments: 50 dwellings
Site codes: BRI01, BRI02, BRI03, BRI24, BRI25, BRI26, BRI27
Designated sites potentially affected: Norfolk Valley Fens SAC, North Norfolk Coast SAC/ SPA/ Ramsar and the River Wensum SAC.

Disturbance: Briston is approximately 5.5km from the Norfolk Valley Fens SAC, 12km from the North Norfolk Coast SAC/SPA/Ramsar and 9.5km from the River Wensum SAC.

- In the Norfolk Valley Fens SAC site closest to Briston there are no interest features which will be affected by an increase in visitor numbers, due to the nature of site and the limited visitation that the site receives it can be concluded that any disturbance will be very minimal.
- At the North Norfolk Coast designated sites there is potential for disturbance of otter, bird populations (breeding, overwintering, migrant, and wetland assemblage) perennial vegetation, and petalwort, including by trampling. The exact amount of disturbance is dependent on the exact location of interest features, and whilst development could lead to increased visitation, access to these features is difficult.
- It is highly unlikely that the increased development will have any disturbance issues on the River Wensum, due to the aquatic nature of the area and the difficulty in accessing any of the interest features.

Whilst an adverse effect from disturbance to the North Norfolk Coast sites is unlikely, it cannot be ruled out.

Water quality: The Briston STW discharges into the River Bure at TG 0730 3140. The River Bure is currently of good water quality and meets the favourable condition targets to ensure that the Broadlands/ Broads designated sites interest features are maintained.

Any changes to water treatment regimes affecting the River Bure will be subject to further assessment (through for instance Periodic Review).

Therefore we conclude that there is no adverse effect from water quality impacts on the integrity of any sites as a result of the proposed development in Briston.

Water resources: Briston receives its water from Hougton St Giles. Fakenham, Blakeney, Little Snoring, and Walsingham also receive water from Houghton St Giles.

Although the increase in dwellings will have some effect on water demand, statements from the Environment Agency and Anglian Water (see **Section 4.2**) support the view that sufficient water is available to meet this demand without negatively affecting any international sites. **Therefore we conclude that there is no adverse effect from changing water availability on the integrity of any sites as a result of the proposed development in Briston.**

Preventative measures/ Mitigation: It is not considered that an adverse effect on the integrity of the site's interest features is likely as a result of these proposals. However, in light of the uncertain behaviour of future residents we recommend a programme of monitoring be initiated to assess impacts of development on the North Norfolk Coast site. This is described in more detail in **Section 8**, and will enable targetted and appropriate management responses to be developed and implemented quickly if likely adverse impacts of visitation are identified. This will require discussion between North Norfolk District Council and Natural England, potentially with further advice from other organisations.

Conclusion: Providing that appropriate mitigation means described above are implemented, we conclude that the proposed development in Briston will have no adverse effect on the integrity of any Natura 2000 or Ramsar sites.

Comments/ Additional notes: There are no distinctions between the different sites proposed for development.

6.2.5 Catfield

Maximum number of houses, and other developments: 26 dwellings
Site codes: CAT01, CAT07, CAT09
Designated sites potentially affected: Broads SAC, Broadlands Ramsar/SPA, Great Yarmouth North Denes SPA, Winterton-Horsey Dunes SAC and Breydon Water SPA.
Disturbance: Catfield is approximately 2km from the Broads SAC and Broadlands Ramsar/ SPA, 18.5km from the Great Yarmouth North Denes SPA, 10km from Winterton-Horsey Dunes SAC and 18km from the Breydon Water SPA. • At the Broads SAC and Broadlands SPA/ Ramsar sites there is potential for effects on otter, fen orchid and important bird species such as bitterns and marsh harriers although disturbance is considered to be extremely limited due to distance from settlement, and proximity of settlement to other areas of coast. Also much of the Broads and Broadlands site is inaccessible to visitors further decreasing the impact of disturbance. • There is limited potential for increased visitation, due to the coastal nature of the site, to impact the population of little terns at the Great Yarmouth North Denes SPA. • It is considered that there will be no impact of disturbance on Breydon Water SPA and Winterton-Horsey Dunes SAC due to the distance of the site from the settlement and nature of the interest features. **An adverse effect from disturbance at the Broads SAC/Broadland SPA and Ramsar site, and Great Yarmouth North Denes, cannot be ruled out.**
Water quality: Catfield discharges its water to Ludham STW which enters Womack Water leading to the River Thurne. The River Thurne runs into the Broads/Broadlands designated sites. The grid reference for this discharge is TG 3964 1747. The River Thurne is discussed in **Section 4.3.6** above. The water quality assessment indicates that the stretch of river to which the STW discharges is currently enriched. There is therefore the potential for an increased effect as a result of development. At this stage **we cannot conclude that there will be no adverse effect from water quality impacts resulting from enrichment of the River Thurne.** However, initial outputs from the Review of Consents suggest that there is no requirement for any change in discharge consents from Ludham STW. If these results are confirmed when the Review of Consents is published, and there is sufficient 'headroom' allowance for the new development (bearing in mind that the RoC does not consider future development) then it could be concluded that there will be no adverse effect from water quality impacts. Pending production of the final Review of Consents we suggest that development should not commence and that, depending on the RoC findings, additional water study may be required, assessing impacts on the River Thurne and its dependent sites.
Water resources: Catfield receives its water from Royston Bridge and Ludham. North Walsham, Stalham, Ludham and Bacton also receive their water from Royston Bridge. Also Ludham receives water from Ludham. Although the increase in dwellings will have some effect on water demand, statements from the Environment Agency and Anglian Water (see **Section 4.2**) support the view that sufficient water is available to meet this demand without negatively affecting any international sites. **Therefore we conclude that there is no adverse effect from changing water availability on the integrity of any sites as a result of the proposed development in Catfield.**

Preventative measures/ Mitigation: Water quality issues must be reconsidered following completion of the Review of Consents and an assessment of available 'headroom' for development. Whilst this is likely to be a simple check, if changes to consents are required this could have implications for the amount of development that can be allowed to proceed. Any necessary local level study should involve Natural England, the Environment Agency and Anglian Water, and seek to resolve any limits on growth through identifying appropriate avoidance measures and ensuring continued compliance with appropriate discharge levels. It is not considered that an adverse effect on the integrity of the site's interest features is likely as a result of these proposals. However, in light of the uncertain behaviour of future residents we recommend a programme of monitoring be initiated to assess impacts of development on the Broads SAC/Broadland SPA and be considered for Winterton-Horsey Dunes SAC (although this site is already wardened to maintain its integrity). These are described in more detail in **Section 8**, and will enable targetted and appropriate management responses to be developed and implemented quickly if likely adverse impacts of visitation are identified. This will require discussion between North Norfolk District Council and Natural England, potentially with further advice from other organisations.
Conclusion: We cannot conclude that the proposed development in Catfield will have no adverse effect on the integrity of any Natura 2000 or Ramsar sites. However providing that the mitigation measures described above are implemented, we conclude that there are no adverse effects on the integrity of any Natura 2000 or Ramsar sites.
Comments/ Additional notes: There are no distinctions between the different sites proposed for development.

6.2.6 Cromer

Maximum number of houses, and other developments: 400-450 dwellings and 3 retail opportunity sites
Site codes: C01, C04, C07, C08, C10, C14, C15, C16, C17, C19, C30 (ED2), ROS2, ROS3, ROS4
Designated sites potentially affected: Overstrand Cliffs SAC, North Norfolk Coast SAC/ SPA/ Ramsar, Broads SAC and Broadlands SPA/ Ramsar.
Disturbance: Cromer is approximately 1km from Overstrand Cliff SAC, 12.5km from the North Norfolk Coast SAC/ SPA/ Ramsar, and 20km from the Broads SAC and Broadlands SPA/Ramsar. • Overstrand Cliffs are designated for their earth heritage and supralittoral rock and as such is not susceptible to disturbance. • At the North Norfolk Coast designated sites there is potential for disturbance of otter, bird populations (breeding, overwintering, migrant, and wetland assemblage) perennial vegetation, and petalwort, including by trampling. The exact amount of disturbance is dependent on the exact location of interest features, and whilst development could lead to increased visitation, access to these features is not easy. • The Broads SAC and Broadlands SPA/Ramsar is a considerable distance from Cromer but is a popular visitor destination. The majority of the sites are also not easily accessible and the locations of the interest features make disturbance unlikely. **An adverse effect from disturbance to the North Norfolk Coast sites cannot be ruled out.**

Water quality: Water is discharged from Cromer straight into the North Sea (TG1883 4551). The quantity of water being discharged into the North Sea is minimal when compared to the greater coastal processes in that area. The site of discharge is outside the North Norfolk Coast designated area, and water quality data collected in 2008 (Defra site number 10200, supporting Cromer's Blue Flag status) indicates that despite occasional high readings there is no sewage contamination of the nearby beach. **Therefore we conclude that there is no adverse effect from water quality impacts on the integrity of any sites as a result of the proposed development in Cromer.**
Water resources: Cromer receives its water from Metton, including Matlaske bores, Glandford and Sheringham. Weybourne, Aldborough, Corpusty and Saxthorpe, Holt, Roughton, Southrepps and Overstrand also receive water from Metton. Aldborough, Holt, Roughton, Southrepps, Overstrand, Sheringham and Blakeney also receive water from Glandford and Sheringham. Although the increase in dwellings will have some effect on water demand, statements from the Environment Agency and Anglian Water (see **Section 4.2**) support the view that sufficient water is available to meet this demand without negatively affecting any international sites. **Therefore we conclude that there is no adverse effect from changing water availability on the integrity of any sites as a result of the proposed development in Cromer.**
Preventative measures/ Mitigation: It is not considered that an adverse effect on the integrity of the site's interest features is likely as a result of these proposals. However, in light of the uncertain behaviour of future residents we recommend a programme of monitoring be initiated to assess impacts of development on the North Norfolk Coast site. This is described in more detail in **Section 8**, and will enable targetted and appropriate management responses to be developed and implemented quickly if likely adverse impacts of visitation are identified. This will require discussion between North Norfolk District Council and Natural England, potentially with further advice from other organisations.
Conclusion: Providing that appropriate mitigation means described above are implemented, we conclude that the proposed development in Cromer will have no adverse effect on the integrity of any Natura 2000 or Ramsar sites.
Comments/ Additional notes: The impact of the retail opportunity sites on international sites are considered to be minimal when compared with those of residential development. It is not considered that they will, in themselves, increase visitation, and legislative mechanisms enable the impacts of commercial operations on water supply and quality to be appropriately managed.

6.2.7 Corpusty and Saxthorpe

Maximum number of houses, and other developments: 26 dwellings
Site codes: COR01, COR02, COR03
Designated sites potentially affected: Norfolk Valley Fens SAC, North Norfolk Coast SAC/ SPA/ Ramsar and the Overstrand Cliffs SAC.
Disturbance: Corpusty and Saxthorpe are approximately 7.5km from the Norfolk Valley Fens SAC, 14km from the North Norfolk Coast SAC/SPA/Ramsar and 16.5km from the Overstrand Cliffs SAC. • At the Norfolk Valley Fens SAC site closest to Corpusty and Saxthorpe there are no

interest features which will be affected by an increase in visitor numbers. Due to the nature of site and the limited visitation that it site receives it can be concluded that any disturbance will be minimal. • At the North Norfolk Coast designated sites there is potential for disturbance of otter, bird populations (breeding, overwintering, migrant, and wetland assemblage) perennial vegetation, and petalwort, including by trampling. The amount of disturbance is dependent on the exact location of interest features, and whilst development could lead to increased visitation, access to these features is difficult. • Overstrand Cliffs are designated for their earth heritage and supralittoral rock and as such is not susceptible to disturbance. **An adverse effect from disturbance at the North Norfolk Coast sites cannot be ruled out.**
Water quality: Water from Corpusty and Saxthorpe discharges to the Corpusty STW which goes into a tributary of the River Bure at TG 1179 2977. The River Bure is currently of good water quality and meets the favourable condition targets to ensure that the Broadlands/ Broads designated sites interest features are maintained. More details on the River Bure can be found in **Section 4.3.7**. Any changes to water treatment regimes affecting the River Bure will be subject to further assessment (through for instance Periodic Review). **Therefore we conclude that there is no adverse effect from water quality impacts on the integrity of any sites**.
Water resources: Corpusty and Saxthorpe receive their water from Metton, including Matlaske bores. Weybourne, Aldborough, Cromer, Holt, Roughton, Southrepps and Overstrand also receive water from Metton. Although the increase in dwellings will have some effect on water demand, statements from the Environment Agency and Anglian Water (see **Section 4.2**) support the view that sufficient water is available to meet this demand without negatively affecting any international sites. **Therefore we conclude that there is no adverse effect from changing water availability on the integrity of any sites**.
Preventative measures/ Mitigation: It is not considered that an adverse effect on the integrity of the site's interest features is likely as a result of these proposals. However, in light of the uncertain behaviour of future residents we recommend a programme of monitoring be initiated to assess impacts of development on the North Norfolk Coast site. This is described in more detail in **Section 8**, and will enable targetted and appropriate management responses to be developed and implemented quickly if likely adverse impacts of visitation are identified. This will require discussion between North Norfolk District Council and Natural England, potentially with further advice from other organisations.
Conclusion: Providing that appropriate mitigation means described above are implemented, we conclude that the proposed development in Corpusty and Saxthorpe will have no adverse effect on the integrity of any Natura 2000 or Ramsar sites.
Comments/ Additional notes: There are no distinctions between the development sites.

6.2.8 Fakenham

Maximum number of houses, and other developments: 800-900 dwellings, 2 retail opportunity sites and 2 public open spaces.
Site codes: F01, F04, F05, F11, F12, F13, ROS6, ROS7, POS1, POS2

Designated sites potentially affected: River Wensum SAC, North Norfolk Coast SAC/ SPA/ Ramsar, Norfolk Valley Fens SAC, Roydon Common and Dersingham Bog SAC, The Wash SPA/Ramsar, The Wash and North Norfolk Coast SAC, Dersingham Bog Ramsar and Roydon Common Ramsar.

Disturbance: Fakenham is approximately 0.5km from the River Wensum SAC, 17.5km from the Norfolk Valley Fens SAC, 14km from the North Norfolk Coast SAC/SPA/Ramsar, the Wash SPA/Ramsar and the Wash and North Norfolk Coast SAC, 24km from Roydon Common and Dersingham Bog SAC and Dersingham Bog Ramsar, and 23km from the Roydon Common Ramsar.

- It is highly unlikely that the increased development will have any disturbance issues on the River Wensum, due to the aquatic nature of the area and the difficulty in accessing the interest features.
- In the Norfolk Valley Fens SAC site closest to Fakenham there are no interest features which will be affected by an increase in visitor numbers. Due to the nature of site and the limited visitation that the site receives it can be concluded that any disturbance will be very minimal.
- At the North Norfolk Coast and the Wash designated sites there is potential for disturbance of otter, bird populations (breeding, overwintering, migrant, and wetland assemblage) perennial vegetation, and petalwort, including by trampling. The exact amount of disturbance is dependent on the exact location of interest features, and whilst development could lead to increased visitation, access to these features is not easy.
- Due to the distance to the Dersingham Bog and Roydon Common designated sites it is unlikely that the increase in people in Fakenham will impact the site. Also the presence of 2 public open spaces is likely to provide the required area for recreational activities further decreasing the need for the increased population of Fakenham to visit other areas.

Given the size of the development an adverse effect from disturbance at the North Norfolk Coast sites cannot be ruled out.

Water quality: Fakenham STW discharges into the River Wensum at TF 9226 2918. Details of the River Wensum water quality and existing issues are detailed in **Section 4.3.1**. A Water Cycle Study has been commissioned to investigate the future management of water supply and treatment at Fakenham, bearing in mind development, but this is pending completion of the Environment Agency's Review of Consents (RoC) procedure. This is expected to report in late 2009.

At this stage we cannot conclude that there will be no adverse effect from water quality impacts on the integrity of the River Wensum. Initial outputs from the Review of Consents suggest that there will be no need to alter discharge consents into the River Wensum. If the final report confirms this then, if sufficient 'headroom' remains in the consent to allow the development, it could be concluded that there will be no adverse effect.

However a Water Cycle Study to assess the implications of development in Fakenham has been commissioned, and we suggest that development of Fakenham should not proceed until the issue of water quality has been resolved through this (and subsequent to the final RoC report). This should include determination that development will have no adverse effect on the integrity of any international sites to the agreement of the Environment Agency and Natural England.

Water resources: Fakenham receives its water from Hougton St Giles. Briston, Blakeney,

Little Snoring, and Walsingham also receive water from Houghton St Giles. Although the increase in dwellings will have some effect on water demand, statements from the Environment Agency and Anglian Water (see **Section 4.2**) support the view that sufficient water is available to meet this demand without negatively affecting any international sites. Therefore we conclude that there is no **adverse effect from changing water availability on the integrity of any sites** as a result of the proposed development in Fakenham.
Preventative measures/ Mitigation: Water quality issues must be addressed through additional local level study (already commissioned), involving Natural England, the Environment Agency and Anglian Water, in order to resolve any limits on growth. This should be carried out following the Review of Consents report, and future development should be consented only in the light of any preventative/avoidance measures identified. It is not considered that an adverse effect from disturbance on the integrity of the site's interest features is likely as a result of these proposals. However, in light of the uncertain behaviour of future residents we recommend a programme of monitoring be initiated to assess impacts of development on the North Norfolk Coast site. This is described in more detail in **Section 8**, and will enable targetted and appropriate management responses to be developed and implemented quickly if likely adverse impacts of visitation are identified. This will require discussion between North Norfolk District Council and Natural England, potentially with further advice from other organisations.
Conclusion: We cannot conclude that the proposed development in Fakenham will have no adverse effect on the integrity of any Natura 2000 or Ramsar sites. However providing that the mitigation measures described above are implemented, we conclude that there are no adverse effects on the integrity of any Natura 2000 or Ramsar sites.
Comments/ Additional notes: F01 is the principal site for development and, whilst representing the greatest source of water for treatment could also represent the greatest opportunity for local innovative solutions. Public open space provision should serve to reduce some visitation pressure at the North Norfolk designated sites.

6.2.9 Happisburgh

Maximum number of houses, and other developments: 26 dwellings
Site codes: HAP04, HAP07
Designated sites potentially affected: Broads SAC, Broadlands Ramsar/SPA, and Winterton-Horsey Dunes SAC.
Disturbance: Happisburgh is approximately 5.5km from the Broads SAC and Broadlands Ramsar/ SPA, and 10km from Winterton-Horsey Dunes SAC. • At the Broads SAC and Broadlands SPA/ Ramsar sites there is potential for effects on otter, fen orchid and important bird species such as bitterns and marsh harriers although disturbance is considered to be extremely limited due to the distance from Happisburgh, and proximity of the settlement to other areas of coast. Much of the Broads and Broadlands site is inaccessible to visitors further decreasing the impact of disturbance. • It is considered that there will be no impact of disturbance on Winterton-Horsey Dunes SAC due to the distance of the site from the settlement and nature of the interest

features.

An adverse effect from disturbance at the Broads SAC/Broadland SPA and Ramsar site cannot be ruled out.

Water quality: Happisburgh discharges its water to Stalham STW which enters the River Ant. The grid reference for this discharge is TG35712428.The River Ant is discussed in **Section 4.3.5** above. The River Ant is currently of good water quality and meets the favourable condition targets to ensure that the Broadlands/ Broads designated sites interest features are maintained, except for the oligomesotrophic habitat target.

At this stage we cannot conclude that there will be no adverse effect from water quality impacts on the integrity of the River Ant. However, we consider that measures are available or underway to ensure these are properly addressed, and any changes to water treatment regimes affecting the River Ant will be subject to further assessment.

The Review of Consents has not yet concluded work in this area and it is unclear to what degree future development will be constrained by discharge consents. Additional detailed study, post-RoC; assessing the impacts on the River Ant may be required, in particular to address innovative mechanisms for dealing with water management. These could include:

- Re-routing to alternative treatment works;
- Local management of waste waters, including pre-treatment; and
- Appropriate phasing of development, in line with changes to water treatment capacity and technologies.

Development of Happisburgh should not proceed until the issue of water quality has been resolved – to ensure no adverse effect on the integrity of any international sites - to the agreement of the Environment Agency and Natural England.

Water resources: Happisburgh receives its water from East Ruston as does Bacton.

Although the increase in dwellings will have some effect on water demand, statements from the Environment Agency and Anglian Water (see **Section 4.2**) support the view that sufficient water is available to meet this demand without negatively affecting any international sites.

Therefore we conclude that there is no adverse effect from changing water availability on the integrity of any sites as a result of the proposed development in Happisburgh.

Preventative measures/ Mitigation: Water quality issues should be re-assessed post-conclusion of the RoC. This may require additional local level study, involving Natural England, the Environment Agency and Anglian Water, and identification and implementation of appropriate avoidance measures in order to resolve any limits on growth, and ensure continued future compliance with appropriate discharges.

It is not considered that an adverse effect on the integrity of the site's interest features is likely as a result of these proposals. However, in light of the uncertain behaviour of future residents we recommend a programme of monitoring be initiated to assess impacts of development on the Broads SAC/Broadland SPA sites. These are described in more detail in **Section 8**, and will enable targetted and appropriate management responses to be developed and implemented quickly if likely adverse impacts of visitation are identified. This will require discussion between North Norfolk District Council and Natural England, potentially with further advice from other organisations.

Conclusion: We cannot conclude that the proposed development in Happisburgh will have no adverse effect on the integrity of any Natura 2000 or Ramsar sites. However providing that the mitigation measures described above are implemented, we conclude that there are no adverse effects on the integrity of any Natura 2000 or Ramsar sites.
Comments/ Additional notes: There are no distinctions between the different sites proposed for development.

6.2.10 Holt

Maximum number of houses, and other developments: 400-650 dwellings, 2 small employment allocations and a car-park
Site codes: H01, H02, H09, H10, H11, H12, H13, H14, H15, H21, CP10
Designated sites potentially affected: Norfolk Valley Fens SAC and North Norfolk Coast SAC/ SPA/ Ramsar.
Disturbance: Holt is approximately 1km from the Norfolk Valley Fens SAC, and 5.5km from the North Norfolk Coast SAC/SPA/Ramsar. • In the Norfolk Valley Fens SAC site closest to Holt there are no interest features which will be affected by an increase in visitor numbers, due to the nature of site and the limited visitation that the site receives it can be concluded that any disturbance will be minimal. • At the North Norfolk Coast designated sites there is potential for disturbance of otter, bird populations (breeding, overwintering, migrant, and wetland assemblage) perennial vegetation, and petalwort, including by trampling. The exact amount of disturbance is dependent on the exact location of interest features, and whilst development could lead to increased visitation, access to these features is not easy. **An adverse effect from disturbance at the North Norfolk Coast sites cannot be ruled out.**
Water quality: Water from Holt discharges to the Holt STW which goes into a tributary of the River Glaven at TG 0683 3886. Details of the River Glaven's water quality can be found in **Section 4.3.3**. Any changes to water treatment regimes affecting the River Glaven will be subject to further assessment (through for instance Review of Consents and Periodic Review). **Therefore we conclude that there is no adverse effect from water quality impacts on the integrity of any sites as a result of the proposed development in Holt.**
Water resources: Holt receives its water from Metton, including Matlaske bores, Glandford and Sheringham. Weybourne, Cromer, Corpusty and Saxthorpe, Aldborough, Roughton, Southrepps and Overstrand also receive water from Metton. Cromer, Aldborough, Roughton, Southrepps, Overstrand, Sheringham and Blakeney also receive water from Glandford and Sheringham. Although the increase in dwellings will have some effect on water demand, statements from the Environment Agency and Anglian Water (see **Section 4.2**) support the view that sufficient water is available to meet this demand without negatively affecting any international sites. **Therefore we conclude that there is no adverse effect from changing water availability on the integrity of any sites as a result of the proposed development in Holt.**

Preventative measures/ Mitigation: It is not considered that an adverse effect on the integrity of the site's interest features is likely as a result of these proposals. However, in light of the uncertain behaviour of future residents we recommend a programme of monitoring be initiated to assess impacts of development on the North Norfolk Coast site. This is described in more detail in **Section 8**, and will enable targetted and appropriate management responses to be developed and implemented quickly if likely adverse impacts of visitation are identified. This will require discussion between North Norfolk District Council and Natural England, potentially with further advice from other organisations.
Conclusion: Providing that appropriate mitigation means described above are implemented, we conclude that the proposed development in Holt will have no adverse effect on the integrity of any Natura 2000 or Ramsar sites.
Comments/ Additional notes: Whilst it is possible that HO9 could have a slightly greater impact on the Norfolk Valley Fens SAC, due to its proximity, this effect is not considered to be adverse and the effect could be lessened by encouraging the use of alternative open spaces.

6.2.11 Horning

Maximum number of houses, and other developments: 26 dwellings
Site codes: HOR06, HOR08, HOR11
Designated sites potentially affected: Broads SAC and Broadlands Ramsar/ SPA.
Disturbance: Horning is approximately 0.5km from the Broads SAC and Broadlands Ramsar/ SPA. • At the Broads SAC and Broadlands SPA/ Ramsar sites there is potential for effects on otter, fen orchid and important bird species such as bitterns and marsh harriers. Despite the size of the settlement and the fact that much of the Broads and Broadlands site is inaccessible to visitors (decreasing the impact of disturbance) the possibility of adverse effect cannot be ruled out. **An adverse effect from disturbance at the Broad/Broadland sites cannot be ruled out.**
Water quality: Horning STW discharges into the River Ant at TG 3621 1808. The River Ant is discussed in **Section 4.3.5** above. The River Ant is currently of good water quality and meets the favourable condition targets to ensure that the Broadlands/ Broads designated sites interest features are maintained, except for the oligomesotrophic habitat target. **At this stage we cannot conclude that there will be no adverse effect from water quality impacts on the integrity of the River Ant (which leads into the Broads/Broadland designated sites).** Initial outputs from the RoC indicate that no changes to consents will be required at Horning STW. If the final report confirms this finding, and adequate 'headroom' is available within the existing consent to accommodate the development, it could be concluded that there will be no adverse effect. However, if this is not the case additional local level study, post-RoC, may be required to assess impacts on the River Ant and its dependent sites. Development of Horning should not proceed until the issue of water quality has been resolved – to ensure no adverse effect on the integrity of any international sites - to the agreement of the Environment Agency and Natural England.
Water resources: Horning receives its water from Thorpe Bores and Heigham as does Hoveton.

Although the increase in dwellings will have some effect on water demand, statements from the Environment Agency and Anglian Water (see **Section 4.2**) support the view that sufficient water is available to meet this demand without negatively affecting any international sites. **Therefore we conclude that there is no adverse effect from changing water availability on the integrity of any sites as a result of the proposed development in Horning.**
Preventative measures/ Mitigation: Depending upon final findings of the Review of Consents report, water quality issues may need to be addressed through additional local level study, involving Natural England, the Environment Agency and Anglian Water, in order to resolve any limits on growth and ensure the implementation of suitable avoidance measures to ensure compliance with appropriate discharge levels. It is not considered that an adverse effect on the integrity of the site's interest features is likely as a result of these proposals. However, in light of the uncertain behaviour of future residents we recommend a programme of monitoring be initiated to assess impacts of development on the Broads SAC/Broadland SPA sites. This is described in more detail in **Section 8**, and will enable targetted and appropriate management responses to be developed and implemented quickly if likely adverse impacts of visitation are identified. This will require discussion between North Norfolk District Council and Natural England, potentially with further advice from other organisations. We further recommend a programme of monitoring be initiated to assess impacts of development on the, with appropriate management responses developed if adverse impacts of visitation are determined. This will require North Norfolk District Council and Natural England agreement.
Conclusion: We cannot conclude that the proposed development in Horning will have no adverse effect on the integrity of any Natura 2000 or Ramsar sites. However providing that the mitigation measures described above are implemented, we conclude that there are no adverse effects on the integrity of any Natura 2000 or Ramsar sites.
Comments/ Additional notes: There are no distinctions between the different sites proposed for development.

6.2.12 Hoveton

Maximum number of houses, and other developments: 100-150 dwellings
Site codes: HV01, HV02, HV03
Designated sites potentially affected: Broads SAC and Broadlands Ramsar/ SPA.
Disturbance: Hoveton is approximately 1.5km from the Broads SAC and Broadlands Ramsar/ SPA. • At the Broads SAC and Broadlands SPA/ Ramsar sites there is potential for effects on otter, fen orchid and important bird species such as bitterns and marsh harriers. Although disturbance is considered to be extremely limited as much of the Broads and Broadlands site is inaccessible to visitors the larger scale of development means a potential effect can be identified. **An adverse effect from disturbance at the Broad/Broadland sites cannot be ruled out.**
Water quality: Hoveton discharges to Belaugh STW which enters the River Bure at TG 2944 1837.

The River Bure is currently of good water quality and meets the favourable condition targets to ensure that the Broadlands/ Broads designated sites interest features are maintained. More details on the River Bure can be found in **Section 4.3.7**. Any changes to water treatment regimes affecting the River Bure will be subject to further assessment. **Therefore we conclude that there is no adverse effect from water quality impacts on the integrity of any sites as a result of the proposed development in Hoveton.**
Water resources: Hoveton receives its water from Thorpe Bores and Heigham as does Horning. Although the increase in dwellings will have some effect on water demand, statements from the Environment Agency and Anglian Water (see **Section 4.2**) support the view that sufficient water is available to meet this demand without negatively affecting any international sites. **Therefore we conclude that there is no adverse effect from changing water availability on the integrity of any sites as a result of the proposed development in Hoveton.**
Preventative measures/ Mitigation: It is not considered that an adverse effect on the integrity of the site's interest features is likely as a result of these proposals. However, in light of the uncertain behaviour of future residents we recommend a programme of monitoring be initiated to assess impacts of development on the Broads SAC/Broadland SPA sites. This is described in more detail in **Section 8**, and will enable targetted and appropriate management responses to be developed and implemented quickly if likely adverse impacts of visitation are identified. This will require discussion between North Norfolk District Council and Natural England, potentially with further advice from other organisations.
Conclusion: Providing that appropriate mitigation means described above are implemented, we conclude that the proposed development in Hoveton will have no adverse effect on the integrity of any Natura 2000 or Ramsar sites.
Comments/ Additional notes: There are no distinctions between the different sites proposed for development.

6.2.13 Ludham

Maximum number of houses, and other developments: 26 dwellings
Site codes: LUD01, LUD02, LUD06
Designated sites potentially affected: Broads SAC and Broadlands Ramsar/ SPA, Great Yarmouth North Denes SPA, Winterton-Horsey Dunes SAC and Breydon Water SPA.
Disturbance: Ludham is approximately 0.5km from the Broads SAC and Broadlands Ramsar/ SPA, 4km from Great Yarmouth North Denes SPA, 9km from Winterton-Horsey Dunes SAC and 15km from Breydon Water SPA. • At the Broads SAC and Broadlands SPA/ Ramsar sites there is potential for effects on otter, fen orchid and important bird species such as bitterns and marsh harriers although disturbance is considered to be extremely limited due to distance from settlement, and proximity of settlement to other areas of coast. Also much of the Broads and Broadlands site is inaccessible to visitors further decreasing the impact of disturbance. The relatively small increase in dwellings in Hoveton and the distance from the designated areas results in a very low likelihood of impact on the site. • There is the potential for increased visitation, due to the coastal nature of the site, to impact the breeding population of little terns at Great Yarmouth North Denes SPA.

• It is considered that there will be no impact of disturbance on Breydon Water SPA and Winterton-Horsey Dunes SAC due to the distance of the site from the settlement and nature of the interest features. **An adverse effect from disturbance at the Broad/Broadland sites and Great Yarmouth North Denes cannot be ruled out.**
Water quality: Ludham discharges its water to Ludham STW which enters Womack Water leading to River Thurne. The River Thurne runs into the Broads/Broadlands designated sites. The grid reference for this discharge is TG 3964 1747. The River Thurne is discussed in **Section 4.3.6** above. The water quality assessment indicates that the stretch of river to which the STW discharges is currently enriched. There is therefore the potential for an increased effect as a result of development. At this stage **we cannot conclude that there will be no adverse effect from water quality impacts resulting from enrichment of the River Thurne.** However, initial outputs from the Review of Consents suggest that there is no requirement for any change in discharge consents from Ludham STW. If these results are confirmed when the Review of Consents is published, and there is sufficient 'headroom' allowance for the new development (bearing in mind that the RoC does not consider future development) then it could be concluded that there will be no adverse effect from water quality impacts. Pending production of the final Review of Consents we suggest that development should not commence and that, depending on the RoC findings, additional water study may be required, assessing impacts on the River Thurne and its dependent sites.
Water resources: Ludham receives its water from Royston Bridge and Ludham. North Walsham, Stalham, Catfield and Bacton also receive their water from Royston Bridge. Also Catfield receives water from Ludham. Although the increase in dwellings will have some effect on water demand, statements from the Environment Agency and Anglian Water (see **Section 4.2**) support the view that sufficient water is available to meet this demand without negatively affecting any international sites. **Therefore we conclude that there is no adverse effect from changing water availability on the integrity of any sites as a result of the proposed development in Ludham.**
Preventative measures/ Mitigation: Water quality issues must be reconsidered following completion of the Review of Consents and an assessment of available 'headroom' for development. Whilst this is likely to be a simple check, if changes to consents are required this could have implications for the amount of development that can be allowed to proceed. Any necessary local level study should involve Natural England, the Environment Agency and Anglian Water, and seek to resolve any limits on growth through identifying appropriate avoidance measures and ensuring continued compliance with appropriate discharge levels. It is not considered that an adverse effect from disturbance on the integrity of interest features is likely as a result of these proposals. However, in light of the uncertain behaviour of future residents we recommend a programme of monitoring be initiated to assess impacts of development on the Broads SAC/Broadland SPA sites and be considered at Great Yarmouth North Denes (outside the North Norfolk district). This is described in more detail in **Section 8**, and will enable targetted and appropriate management responses to be developed and implemented quickly if likely adverse impacts of visitation are identified. This will require discussion between North Norfolk District Council and Natural England, Great Yarmouth Borough Council, potentially with further advice from other organisations.

Conclusion: We cannot conclude that the proposed development in Ludham will have no adverse effect on the integrity of any Natura 2000 or Ramsar sites. However providing that the mitigation measures described above are implemented, we conclude that there are no adverse effects on the integrity of any Natura 2000 or Ramsar sites.
Comments/ Additional notes: There are no distinctions between the different sites proposed for development.

6.2.14 Mundesley

Maximum number of houses, and other developments: 50 dwellings
Site codes: MUN04, MUN06, MUN07
Designated sites potentially affected: Norfolk Valley Fens SAC, Overstrand Cliffs SAC and Paston Great Barns SAC.
Disturbance: Mundesley is approximately 5km from Norfolk Valley Fens SAC, 8km from Overstrand Cliffs SAC and 2km from Paston Great Barns SAC. • In the Norfolk Valley Fens SAC site closest to Mundesley there are no interest features which will be affected by an increase in visitor numbers. Due to the nature of site and the limited visitation it receives it can be concluded that any disturbance will be very minimal. • Paston Great Barns SAC is a very small, managed site that does not receive large visitor numbers at the moment and this is unlikely to increase in the future. • Overstrand Cliffs are designated for their earth heritage and supralittoral rock and as such are not susceptible to disturbance **Therefore we conclude that there is no adverse effect from disturbance on the integrity of any sites as a result of the proposed development in Mundesley.**
Water quality: The Mundesley STW discharges directly into the North Sea at TG 3263 3782. The quantity of water being discharged into the North Sea is minimal when compared to the greater coastal processes in that area. The site of discharge is outside the North Norfolk Coast designated area, and water quality data collected in 2008 (Defra site number 10300, supporting Mundesley's Blue Flag status) indicates that there is no sewage contamination of the nearby beach. **Therefore we conclude that there is no adverse effect from water quality impacts on the integrity of any sites as a result of the proposed development in Mundesley.**
Water resources: Mundesley receives its water from Mundesley WTW. Although the increase in dwellings will have some effect on water demand, statements from the Environment Agency and Anglian Water (see **Section 4.2**) support the view that sufficient water is available to meet this demand without negatively affecting any international sites. **Therefore we conclude that there is no adverse effect from changing water availability on the integrity of any sites as a result of the proposed development in Mundesley.**
Preventative measures/ Mitigation: Whilst it is important to ensure that management measures of designated sites are maintained no preventative measures are required.
Conclusion: We conclude that the proposed development in Mundesley will have no adverse effect on the integrity of any Natura 2000 or Ramsar sites.

Comments/ Additional notes: There are no distinctions between the different sites proposed for development.

6.2.15 North Walsham

Maximum number of houses, and other developments: 400-650 dwellings, education and town centre proposals, including retail opportunities
Site codes: NW01, NWO3, NW04, NW05, NW06, NW07, NW15, NW16, NW24, NW25, NW28, NW30, NW44, ROS8, ED1, TC2
Designated sites potentially affected: Norfolk Valley Fens SAC, Broads SAC, Broadland SPA/ Ramsar, Overstrand Cliffs SAC and Paston Great Barns SAC.
Disturbance: North Walsham is approximately 5km from Norfolk Valley Fens SAC, 8km from the Broads SAC and Broadlands SPA/Ramsar, 11km from Overstrand Cliffs SAC and 5.5km from Paston Great Barns SAC. • In the Norfolk Valley Fens SAC site closest to North Walsham there are no interest features which will be affected by an increase in visitor numbers, due to the nature of site and the limited visitation that the site receives it can be concluded that any disturbance will be very minimal. • At the Broads SAC there is potential for effects on otter and fen orchid, although disturbance is considered to be extremely limited due to distance from settlement, and proximity of settlement to other areas of coast. This is also the case for the interest features found at the Broadlands site. • Overstrand Cliffs are designated for their earth heritage and supralittoral rock and as such are not susceptible to disturbance • At Paston Great Barns SAC disturbance is considered highly unlikely. **Although likely to be minimal, an adverse effect from disturbance at the Broad/Broadland sites cannot be ruled out.**
Water quality: Water is discharged from North Walsham straight into the North Sea at Mundesley STW (TG 3263 3782). The quantity of water being discharged into the North Sea is minimal when compared to the greater coastal processes in that area. The site of discharge is outside the North Norfolk Coast designated area, and water quality data collected in 2008 (Defra site number 10300, supporting Mundesley's Blue Flag status) indicates that there is no sewage contamination of the nearby beach. **Therefore we conclude that there is no adverse effect from water quality impacts on the integrity of any sites as a result of the proposed development in North Walsham.**
Water resources: North Walsham receives its water from Aylsham Coldham Hall, North Walsham and Royston Bridge. Bacton, Stalham, Catfield, and Ludham also receive their water from Royston Bridge. Although the increase in dwellings will have some effect on water demand, statements from the Environment Agency and Anglian Water (see **Section 4.2**) support the view that sufficient water is available to meet this demand without negatively affecting any international sites. **Therefore we conclude that there is no adverse effect from changing water availability on the integrity of any sites as a result of the proposed development in North Walsham.**
Preventative measures/ Mitigation: It is not considered that an adverse effect on the integrity of the site's interest features is likely as a result of these proposals. However, in light

of the uncertain behaviour of future residents we recommend a programme of monitoring be initiated to assess impacts of development on the Broads SAC/Broadland SPA sites. This is described in more detail in **Section 8**, and will enable targetted and appropriate management responses to be developed and implemented quickly if likely adverse impacts of visitation are identified. This will require discussion between North Norfolk District Council and Natural England, potentially with further advice from other organisations.
Conclusion: Providing that appropriate mitigation means described above are implemented, we conclude that the proposed development in North Walsham will have no adverse effect on the integrity of any Natura 2000 or Ramsar sites.
Comments/ Additional notes: The impact of the retail opportunity and education sites on international sites is considered to be minimal when compared with those of residential development. It is not considered that they will, in themselves, increase visitation. Education provision could also serve to benefit international sites.

6.2.16 Overstrand

Maximum number of houses, and other developments: 26 dwellings
Site codes: OVS03, 0VS04
Designated sites potentially affected: Overstrand Cliffs SAC.
Disturbance: Overstrand is approximately 0.2km from Overstrand Cliffs SAC. • Overstrand Cliffs are designated for their earth heritage and supralittoral rock and as such are not susceptible to disturbance **We conclude that there is no adverse effect from disturbance on the integrity of any sites as a result of the proposed development in Overstrand.**
Water quality: Water is discharged from Overstrand straight into the North Sea at Cromer STW (TG 1883 4551). The quantity of water being discharged into the North Sea is minimal when compared to the greater coastal processes in that area. The site of discharge is outside the North Norfolk Coast designated area, and water quality data collected in 2008 (Defra site number 10200, supporting Cromer's Blue Flag status) indicates that there is no sewage contamination of the nearby beach. **Therefore we conclude that there is no adverse effect from water quality impacts on the integrity of any sites as a result of the proposed development in Overstrand.**
Water resources: Overstrand receives its water from Metton, including Matlaske bores, Glandford and Sheringham. Weybourne, Cromer, Corpusty and Saxthorpe, Aldborough, Roughton, Southrepps and Holt also receive water from Metton. Cromer, Aldborough, Roughton, Southrepps, Holt, Sheringham and Blakeney also receive water from Glandford and Sheringham. Although the increase in dwellings will have some effect on water demand, statements from the Environment Agency and Anglian Water (see **Section 4.2**) support the view that sufficient water is available to meet this demand without negatively affecting any international sites. **Therefore we conclude that there is no adverse effect from changing water availability on the integrity of any sites as a result of the proposed development in Overstrand.**
Preventative measures/ Mitigation: Whilst it is important to ensure that management

measures of designated sites are maintained no preventative measures are required.
Conclusion: We conclude that the proposed development in Overstrand will have no adverse effect on the integrity of any Natura 2000 or Ramsar sites.
Comments/ Additional notes: There are no distinctions between the different sites proposed for development or different types of development.

6.2.17 Roughton

Maximum number of houses, and other developments: 26 dwellings
Site codes: ROU01, ROU02, ROU03, ROU09, ROU10
Designated sites potentially affected: Norfolk Valley Fens SAC, Overstrand Cliffs SAC and Paston Great Barns SAC.
Disturbance: Roughton is approximately 5km from Norfolk Valley Fens SAC, 5km from Overstrand Cliffs SAC and 9km from Paston Great Barns SAC. • In the Norfolk Valley Fens SAC site closest to Roughton there are no interest features which will be affected by an increase in visitor numbers. Due to the nature of site and the limited visitation it receives it can be concluded that any disturbance will be very minimal. • Paston Great Barns SAC is a very small, managed site that does not receive large visitor numbers at the moment and this is unlikely to increase in the future. • Overstrand Cliffs are designated for their earth heritage and supralittoral rock and as such is not susceptible to disturbance. **Therefore we conclude that there is no adverse effect from disturbance on the integrity of any sites as a result of the proposed development in Roughton.**
Water quality: Roughton STW discharges into Hagon Beck, which ultimately goes to the River Bure at TG 2217 3485. The River Bure currently has good water quality and meets the favourable condition targets to ensure that the Broadlands/ Broads designated sites interest features are maintained. Any changes to water treatment regimes affecting the River Bure will be subject to further assessment (through for instance Periodic Review). **Therefore we conclude that there is no adverse effect from water quality impacts on the integrity of any sites as a result of the proposed development in Roughton.**
Water resources: Roughton receives its water from Metton, including Matlaske bores, Glandford and Sheringham. Weybourne, Cromer, Corpusty and Saxthorpe, Holt, Aldborough, Southrepps and Overstrand also receive water from Metton. Cromer, Holt, Aldborough, Southrepps, Overstrand, Sheringham and Blakeney also receive water from Glandford and Sheringham. Although the increase in dwellings will have some effect on water demand, statements from the Environment Agency and Anglian Water (see **Section 4.2**) support the view that increased demand will be met without negatively affecting any international sites. **Therefore we conclude that there is no adverse effect from changing water availability on the integrity of any sites as a result of the proposed development in Roughton.**
Preventative measures/ Mitigation: Whilst it is important to ensure that management measures of designated sites are maintained no preventative measures are required.
Conclusion: We conclude that the proposed development in Roughton will have no

adverse effect on the integrity of any Natura 2000 or Ramsar sites.
Comments/ Additional notes: There are no distinctions between the different sites proposed for development.

6.2.18 Sheringham

Maximum number of houses, and other developments: 200-250 dwellings, public open space & retail opportunity sites
Site codes: SHO4, SHO5, SHO6, SHO9, SH13, SH14, POS3, ROS5
Designated sites potentially affected: Norfolk Valley Fens SAC, North Norfolk Coast SAC/ SPA/ Ramsar and the Overstrand Cliffs SAC.
Disturbance: Sheringham is approximately 1km from the Norfolk Valley Fens SAC, 6km from the North Norfolk Coast SAC/SPA/Ramsar and 7km from the Overstrand Cliffs SAC. • In the Norfolk Valley Fens SAC site closest to Sheringham there is the potential for disturbance to several orchid species. However due to the nature of site and the limited visitation that the site receives it can be concluded that levels of disturbance will be very low. • At the North Norfolk Coast designated sites there is potential for disturbance of otter, bird populations (breeding, overwintering, migrant, and wetland assemblage) perennial vegetation, and petalwort, including by trampling. The exact amount of disturbance is dependent on the exact location of interest features, and whilst development could lead to increased visitation, access to these features is not easy. • Overstrand Cliffs are designated for their earth heritage and supralittoral rock and as such are not susceptible to disturbance **Although likely to be minimal, an adverse effect from disturbance at the North Norfolk Coast sites cannot be ruled out.**
Water quality: Although Sheringham's beach lost Blue Flag status in 2007 (Polly Wake, NNDC, *pers. comm*.), waste water from the settlement goes into the North Sea at Cromer STW (TG 1883 4551). The quantity of water being discharged into the North Sea is minimal when compared to the greater coastal processes in that area. The site of discharge is outside the North Norfolk Coast designated area, and water quality data collected in 2008 (supporting Cromer's Blue Flag status) indicates that there is no sewage contamination of the nearby beach. **Therefore we conclude that there is no adverse effect from water quality impacts on the integrity of any sites as a result of the proposed development in Sheringham.**
Water resources: Sheringham receives its water from Glandford and Sheringham. Cromer, Holt, Roughton, Southrepps. Aldborough, Overstrand and Blakeney also receive their water from Glandford and Sheringham. Although the increase in dwellings will have some effect on water demand, statements from the Environment Agency and Anglian Water (see **Section 4.2**) support the view that sufficient water is available to meet this demand without negatively affecting any international sites. This should also address a previously-noted concern regarding site SH06 and an impact on Sheringham and Beeston Common. **Therefore we conclude that there is no adverse effect from changing water availability on the integrity of any sites as a result of the proposed development in Sheringham.**

Preventative measures/ Mitigation: It is not considered that an adverse effect on the integrity of the site's interest features is likely as a result of these proposals. However, in light of the uncertain behaviour of future residents we recommend a programme of monitoring be initiated to assess impacts of development on the North Norfolk Coast site. This is described in more detail in **Section 8**, and will enable targetted and appropriate management responses to be developed and implemented quickly if likely adverse impacts of visitation are identified. This will require discussion between North Norfolk District Council and Natural England, potentially with further advice from other organisations.
Conclusion: Providing that appropriate mitigation means described above are implemented, we conclude that the proposed development in Sheringham will have no adverse effect on the integrity of any Natura 2000 or Ramsar sites.
Comments/ Additional notes: The impact of the retail opportunity sites on international sites are considered to be minimal when compared with those of residential development. Public open space provision should also serve to reduce some visitation pressure at the North Norfolk designated sites.

6.2.19 Little Snoring

Maximum number of houses, and other developments: 26 dwellings
Site codes: SN01, SN05
Designated sites potentially affected: North Norfolk Coast SAC/ SPA/ Ramsar, Norfolk Valley Fens SAC, and the River Wensum SAC.
Disturbance: Little Snoring is approximately 13km from the North Norfolk Coast SAC/SPA/Ramsar, 14km from Norfolk Valley Fens SAC and 4km from the River Wensum SAC. • In the Norfolk Valley Fens SAC site closest to Little Snoring there are no interest features which will be affected by an increase in visitor numbers. Due to the nature of the site and the limited visitation it receives it can be concluded that disturbance will be minimal. • At the North Norfolk Coast designated sites there is potential for disturbance of otter, bird populations (breeding, overwintering, migrant, and wetland assemblage) perennial vegetation, and petalwort, including by trampling. The exact amount of disturbance is dependent on the exact location of interest features, and whilst development could lead to increased visitation, access to these features is difficult. • It is highly unlikely that the increased development will have any disturbance issues on the River Wensum, due to the aquatic nature of the site and the difficulty in accessing any of the interest features. **Although likely to be minimal, an adverse effect from disturbance at the North Norfolk Coast sites cannot be ruled out.**
Water quality: The Little Snoring STW discharges into a tributary of the River Stiffkey at TF 9461 3233. Although water quality in the River Stiffkey has exceeded phosphate levels in the past, these are declining and any changes to water treatment regimes affecting the River Stiffkey, or its tributaries, will be subject to further assessment (through for instance Periodic Review). They will also need to be compliant with the findings of the Review of Consents. **Therefore we conclude that there is no adverse effect from water quality impacts on the integrity of any sites as a result of the proposed development in Little Snoring.**

Water resources: Little Snoring receives its water from Hougton St Giles. Fakenham, Blakeney, Briston, and Walsingham also receive water from Houghton St Giles. Although the increase in dwellings will have some effect on water demand, statements from the Environment Agency and Anglian Water (see **Section 4.2**) support the view that sufficient water is available to meet this demand without negatively affecting any international sites. **Therefore we conclude that there is no adverse effect from changing water availability on the integrity of any sites as a result of the proposed development in Little Snoring.**
Preventative measures/ Mitigation: It is not considered that an adverse effect on the integrity of the site's interest features is likely as a result of these proposals. However, in light of the uncertain behaviour of future residents we recommend a programme of monitoring be initiated to assess impacts of development on the North Norfolk Coast site. This is described in more detail in **Section 8**, and will enable targetted and appropriate management responses to be developed and implemented quickly if likely adverse impacts of visitation are identified. This will require discussion between North Norfolk District Council and Natural England, potentially with further advice from other organisations.
Conclusion: Providing that appropriate mitigation means described above are implemented, we conclude that the proposed development in Little Snoring will have no adverse effect on the integrity of any Natura 2000 or Ramsar sites.
Comments/ Additional notes: There are no distinctions between the different sites proposed for development.

6.2.20 Southrepps

Maximum number of houses, and other developments: 26 dwellings
Site codes: SOU02, SOU07
Designated sites potentially affected: Norfolk Valley Fens SAC, Overstrand Cliffs SAC and Paston Great Barns SAC.
Disturbance: Southrepps is approximately 0.2km from Norfolk Valley Fens SAC, 6km from Overstrand Cliffs SAC and 7km from Paston Great Barns SAC. • In the Norfolk Valley Fens SAC site closest to Southrepps there are no interest features which will be affected by an increase in visitor numbers. Due to the nature of the site and the limited visitation it site receives it can be concluded that any disturbance will be minimal. • Paston Great Barns SAC is a very small, managed site that does not receive large visitor numbers at the moment and this is unlikely to increase in the future. • Overstrand Cliffs are designated for their earth heritage and supralittoral rock and as such are not susceptible to disturbance **Therefore we conclude that there is no adverse effect from disturbance on the integrity of any sites as a result of the proposed development in Southrepps.**

Water quality: The Southrepps STW discharges into Foxes Beck, a tributary of the River Ant at TG 2654 3485. The River Ant is discussed in **Section 4.3.5** above. The River Ant is currently of good water quality and meets the favourable condition targets to ensure that the Broadlands/ Broads designated sites interest features are maintained, except for the oligomesotrophic habitat target. **At this stage we cannot conclude that there will be no adverse effect from further enrichment of the River Ant. However, we consider that measures are available or underway to ensure these are properly addressed, and any changes to water treatment regimes affecting the River Ant will be subject to further assessment.** Initial outputs from the RoC indicate that no changes to consents will be required at Southrepps STW. If the final report confirms this finding, and adequate 'headroom' is available within the existing consent to accommodate the development, it could be concluded that there will be no adverse effect. However, if this is not the case additional local level study, post-RoC, may be required to assess impacts on the River Ant and its dependent sites. Development of Southrepps should not proceed until the issue of water quality has been resolved – to ensure no adverse effect on the integrity of any international sites - to the agreement of the Environment Agency and Natural England.
Water resources: Southrepps receives its water from Metton, including Matlaske bores, Glandford and Sheringham. Weybourne, Cromer, Corpusty and Saxthorpe, Aldborough, Roughton, Overstrand and Holt also receive water from Metton. Cromer, Aldborough, Roughton, Overstrand, Holt, Sheringham and Blakeney also receive water from Glandford and Sheringham. Although the increase in dwellings will have some effect on water demand, statements from the Environment Agency and Anglian Water (see **Section 4.2**) support the view that sufficient water is available to meet this demand without negatively affecting any international sites. **Therefore we conclude that there is no adverse effect from changing water availability on the integrity of any sites as a result of the proposed development in Southrepps.**
Preventative measures/ Mitigation: Depending upon final findings of the Review of Consents report, water quality issues may need to be addressed through additional local level study, involving Natural England, the Environment Agency and Anglian Water, in order to resolve any limits on growth and ensure the implementation of suitable avoidance measures to ensure compliance with appropriate discharge levels.
Conclusion: We cannot conclude that the proposed development in Southrepps will have no adverse effect on the integrity of any Natura 2000 or Ramsar sites. However providing that the mitigation measures described above are implemented, we conclude that there are no adverse effects on the integrity of any Natura 2000 or Ramsar sites.
Comments/ Additional notes: There are no distinctions between the different sites proposed for development.

6.2.21 Stalham

Maximum number of houses, and other developments: 150-200 dwellings
Site codes: ST01, ST02, ST16, E11, E12, E13, E14, E15

Designated sites potentially affected: Broads SAC and Broadlands Ramsar/ SPA, Great Yarmouth North Denes SPA, Winterton-Horsey Dunes SAC.

Disturbance: Stalham is approximately 1.2km from the Broads SAC and Broadlands Ramsar/ SPA, 21km from Great Yarmouth North Denes SPA, and 8.4km from Winterton-Horsey Dunes SAC.

- At the Broads SAC and Broadlands SPA/ Ramsar sites there is potential for effects on otter, fen orchid and important bird species such as bitterns and marsh harriers although disturbance is considered to be limited due to distance from settlement. Also much of the Broads and Broadlands site is inaccessible to visitors further decreasing the impact of disturbance.
- There is the potential for increased visitation, due to the coastal nature of the site, to impact the breeding population of little terns at the Great Yarmouth North Denes SPA.
- It is considered that there will be no impact of disturbance on Winterton-Horsey Dunes SAC due to the nature of the interest features.

Although likely to be minimal, an adverse effect from disturbance at the Broads/Broadland sites, and at Great Yarmouth North Denes cannot be ruled out.

Water quality: Stalham discharges its water to the Stalham STW which enters the River Ant. The grid reference for this discharge is TG 357 12428. The River Ant is discussed in **Section 4.3.5** above. The River Ant is currently of good water quality and meets the favourable condition targets to ensure that the Broadlands/ Broads designated sites interest features are maintained, except for the oligomesotrophic habitat target.

At this stage we cannot conclude that there will be no adverse effect from further enrichment of the River Ant. However, we consider that measures are available or underway to ensure these are properly addressed, and any changes to water treatment regimes affecting the River Ant will be subject to further assessment.

The Review of Consents has not yet concluded work in this area and it is unclear to what degree future development will be constrained by discharge consents. Additional detailed study, post-RoC; assessing the impacts on the River Ant may be required, in particular to address innovative mechanisms for dealing with water management. These could include:

- Re-routing to alternative treatment works;
- Local management of waste waters, including pre-treatment; and
- Appropriate phasing of development, in line with changes to water treatment capacity and technologies.

Development of Stalham should not proceed until the issue of water quality has been resolved – to ensure no adverse effect on the integrity of any international sites - to the agreement of the Environment Agency and Natural England.

Water resources: Stalham receives its water from Royston Bridge and East Ruston. North Walsham, Bacton, Catfield, and Ludham also receive their water from Royston Bridge.

Although the increase in dwellings will have some effect on water demand, statements from the Environment Agency and Anglian Water (see **Section 4.2**) support the view that sufficient water is available to meet this demand without negatively affecting any international sites.

Therefore we conclude that there is no adverse effect from changing water availability on the integrity of any sites as a result of the proposed development in Stalham.

Preventative measures/ Mitigation: Water quality issues should be re-assessed post-conclusion of the RoC. This may require additional local level study, involving Natural England, the Environment Agency and Anglian Water, and identification and implementation of appropriate avoidance measures in order to resolve any limits on growth, and ensure continued future compliance with appropriate discharges. It is not considered that an adverse effect on the integrity of the site's interest features is likely as a result of these proposals. However, in light of the uncertain behaviour of future residents we recommend a programme of monitoring be initiated to assess impacts of development on the Broads SAC/Broadland SPA sites and be considered at Great Yarmouth North Denes (outside the North Norfolk district). This is described in more detail in **Section 8**, and will enable targetted and appropriate management responses to be developed and implemented quickly if likely adverse impacts of visitation are identified. This will require discussion between North Norfolk District Council and Natural England, Great Yarmouth Borough Council, potentially with further advice from other organisations.
Conclusion: We cannot conclude that the proposed development in Stalham will have no adverse effect on the integrity of any Natura 2000 or Ramsar sites. However providing that the mitigation measures described above are implemented, we conclude that there are no adverse effects on the integrity of any Natura 2000 or Ramsar sites.
Comments/ Additional notes: There are no distinctions between the different sites proposed for development.

6.2.22 Walsingham

Maximum number of houses, and other developments: 26 dwellings
Site codes: WAL01
Designated sites potentially affected: North Norfolk Coast SAC/ SPA/ Ramsar, and the River Wensum SAC.
Disturbance: Walsingham is approximately 7km from the North Norfolk Coast SAC/SPA/Ramsar, and 7.5km from the River Wensum SAC. • At the North Norfolk Coast designated sites there is potential for disturbance of otter, bird populations (breeding, overwintering, migrant, and wetland assemblage) perennial vegetation, and petalwort, including by trampling. The exact amount of disturbance is dependent on the exact location of interest features, and whilst development could lead to increased visitation, access to these features is difficult. • It is highly unlikely that the increased development will have any disturbance issues on the River Wensum, due to the nature of the area and the difficulty in accessing any of the interest features due to the aquatic nature of the site. **Although likely to be minimal, an adverse effect from disturbance at the North Norfolk sites cannot be ruled out.**
Water quality: Walsingham discharges to the Great Walsingham STW which goes to the River Stiffkey at TF 9395 3875. Although water quality in the River Stiffkey has exceeded phosphate levels in the past, these are declining and any changes to water treatment regimes affecting the River Stiffkey, or its tributaries, will be subject to further assessment (through for instance Periodic Review). They will also need to be compliant with the findings of the Review of Consents.

Therefore we conclude that there is no adverse effect from water quality impacts on the integrity of any sites as a result of the proposed development in Walsingham.
Water resources: Walsingham receives its water from Hougton St Giles. Fakenham, Blakeney, Briston, and Little Snoring also receive water from Houghton St Giles. Although the increase in dwellings will have some effect on water demand, statements from the Environment Agency and Anglian Water (see **Section 4.2**) support the view that sufficient water is available to meet this demand without negatively affecting any international sites. **Therefore we conclude that there is no adverse effect from changing water availability on the integrity of any sites as a result of the proposed development in Walsingham.**
Preventative measures/ Mitigation: It is not considered that an adverse effect on the integrity of the site's interest features is likely as a result of these proposals. However, in light of the uncertain behaviour of future residents we recommend a programme of monitoring be initiated to assess impacts of development on the North Norfolk Coast site. This is described in more detail in **Section 8**, and will enable targetted and appropriate management responses to be developed and implemented quickly if likely adverse impacts of visitation are identified. This will require discussion between North Norfolk District Council and Natural England, potentially with further advice from other organisations.
Conclusion: Providing that appropriate mitigation means described above are implemented, we conclude that the proposed development in Walsingham will have no adverse effect on the integrity of any Natura 2000 or Ramsar sites.
Comments/ Additional notes: There are no distinctions between the different sites proposed for development.

6.2.23 Wells-Next-The-Sea

Maximum number of houses, and other developments: 100-150 dwellings, and 1 car park.
Site codes: W01,W02, CP2
Designated sites potentially affected: North Norfolk Coast SAC/ SPA/ Ramsar, The Wash SPA/Ramsar, and The Wash and North Norfolk Coast SAC
Disturbance: Wells-next the-Sea is located within the boundary of the North Norfolk Coast SAC/SPA/Ramsar, and the Wash and North Norfolk Coast SAC and is 23.5km from the Wash SPA/Ramsar. • At the North Norfolk Coast and the Wash designated sites there is potential for disturbance of otter, bird populations (breeding, overwintering, migrant, and wetland assemblage) perennial vegetation, and petalwort, including by trampling. The exact amount of disturbance is dependent on the exact location of interest features, and whilst development could lead to increased visitation, access to these features is not easy. Cat predation is considered unlikely due to distance from proposed development from SPA (maximum predation range considered to be 1km, and typically 500m), and also the location of the proposed development relative to existing dwellings. The car park development may be considered to facilitate visitation (and subsequent disturbance) although this could be managed. **We cannot conclude that there is no adverse effect from disturbance on the integrity of any sites as a result of the proposed development.**

Water quality: Wells-next the-Sea STW discharges into a tributary of the Wells Creek at TF 9128 4408 which goes into the North Sea. Although the site of discharge is within The Wash and North Norfolk Coast SAC it is just outside the other designated areas (North Norfolk Coast SAC and SPA) the additional quantity of water being discharged into the North Sea is minimal when compared to the greater coastal processes in that area. Water quality data collected in 2008 at Wells beach, opposite the coastguard lookout (Defra site number 10000), indicates that pollutant concentrations are significantly below the values which would represent pollution from sewerage (despite several occurrences of intermediate bathing water quality). **Therefore we conclude that there is no adverse effect from water quality impacts on the integrity of any sites as a result of the proposed development in Wells-next the-Sea.**
Water resources: Well-next the-Sea receives its water from Wighton WTW. Although the increase in dwellings will have some effect on water demand, statements from the Environment Agency and Anglian Water (see **Section 4.2**) support the view that sufficient water is available to meet this demand without negatively affecting any international sites. **Therefore we conclude that there is no adverse effect from changing water availability on the integrity of any sites as a result of the proposed development in Wells-next the-Sea.**
Preventative measures/ Mitigation: It is not considered that an adverse effect on the integrity of the site's interest features is likely as a result of these proposals. However, in light of the uncertain behaviour of future residents we recommend a programme of monitoring be initiated to assess impacts of development on the North Norfolk Coast site. This is described in more detail in **Section 8**, and will enable targetted and appropriate management responses to be developed and implemented quickly if likely adverse impacts of visitation are identified. This will require discussion between North Norfolk District Council and Natural England, potentially with further advice from other organisations.
Conclusion: Providing that appropriate mitigation means described above are implemented, we conclude that the proposed development in Wells-next-the-sea will have no adverse effect on the integrity of any Natura 2000 or Ramsar sites.
Comments/ Additional notes: Impacts of the car park development, and effects on disturbance, are unclear. Whilst increased parking can facilitate visitation, appropriate signage and visitor management could serve to limit the impacts of this.

6.2.24 Weybourne

Maximum number of houses, and other developments: 26 dwellings
Site codes: WEY03, WEY04, WEY09
Designated sites potentially affected: North Norfolk Coast SAC/ SPA/ Ramsar, and Norfolk Valley Fens SAC.
Disturbance: Weybourne is approximately 1.8km from the North Norfolk Coast SAC/SPA/Ramsar, and 5.3km from Norfolk Valley Fens SAC. • In the Norfolk Valley Fens SAC site closest to Weybourne there are no interest features which will be affected by an increase in visitor numbers. Due to the nature of site and the limited visitation that it receives it can be concluded that any disturbance will be minimal.

• At the North Norfolk Coast designated sites there is potential for disturbance of otter, bird populations (breeding, overwintering, migrant, and wetland assemblage) perennial vegetation, and petalwort, including by trampling. The exact amount of disturbance is dependent on the exact location of interest features, and whilst development could lead to increased visitation, access to these features is not easy. Cat predation is considered unlikely due to distance from the proposed development **Although likely to be minimal, an adverse effect from disturbance at the North Norfolk sites cannot be ruled out.**
Water quality: Water is discharged from Weybourne straight into the North Sea at Cromer STW (TG 1883 4551). The quantity of water being discharged into the North Sea is minimal when compared to the greater coastal processes in that area. The site of discharge is outside the North Norfolk Coast designated area, and water quality data collected in 2008 (Defra site number 10200, supporting Cromer's Blue Flag status) indicates that there is no sewage contamination of the nearby beach. **Therefore we conclude that there is no adverse effect from water quality impacts on the integrity of any sites as a result of the proposed development in Weybourne.**
Water resources: Weybourne receives its water from Metton, including Matlaske bores. Southrepps, Cromer, Corpusty and Saxthorpe, Aldborough, Roughton, Overstrand and Holt also receive water from Metton. Although the increase in dwellings will have some effect on water demand, statements from the Environment Agency and Anglian Water (see **Section 4.2**) support the view that sufficient water is available to meet this demand without negatively affecting any international sites. **Therefore we conclude that there is no adverse effect from changing water availability on the integrity of any sites as a result of the proposed development in Weybourne.**
Preventative measures/ Mitigation: It is not considered that an adverse effect on the integrity of the site's interest features is likely as a result of these proposals. However, in light of the uncertain behaviour of future residents we recommend a programme of monitoring be initiated to assess impacts of development on the North Norfolk Coast site. This is described in more detail in **Section 8**, and will enable targetted and appropriate management responses to be developed and implemented quickly if likely adverse impacts of visitation are identified. This will require discussion between North Norfolk District Council and Natural England, potentially with further advice from other organisations.
Conclusion: Providing that appropriate mitigation means described above are implemented, we conclude that the proposed development in Weybourne will have no adverse effect on the integrity of any Natura 2000 or Ramsar sites.
Comments/ Additional notes: There are no distinctions between the different sites proposed for development.

6.3 Summary of findings

The table below summaries the findings of the above assessments, indicating means to progress the proposed developments and using the same colour-coding as before.

Settlement	Required preventative measures						
	Monitor and respond				Further water quality study (River)		
	North Norfolk	Broads / Broadland	Great Yarmouth North Denes[3]	Winterton-Horsey Dunes[3]	Wensum (already commissioned)	Thurne (may be required)	Ant (may be required)
Aldborough							
Bacton							
Mundesley							
Overstrand							
Roughton							
Blakeney	✓						
Briston	✓						
Cromer	✓						
Corpusty and Saxthorpe	✓						
Holt	✓						
Hoveton		✓					
North Walsham		✓					
Sheringham	✓						
Little Snoring	✓						
Walsingham	✓						
Wells-next the-Sea	✓						
Weybourne	✓						
Catfield		✓		✓		✓	
Fakenham	✓				✓		
Happisburgh		✓					✓
Horning		✓					✓
Ludham		✓	✓			✓	
Southrepps							✓
Stalham		✓	✓				✓

6.4 Generic sustainability issues of relevance to international sites

Often impacts on international sites are indirect rather than direct. These include general 'sustainability' issues which have a broad scale impact on international sites and include impacts on carbon dioxide emissions associated with commuting and travel. Given the implication of these for international sites, the issue arises as to how they should be addressed within an appropriate assessment, and what form positive approaches to reducing carbon dioxide emissions can take in mitigating other adverse effects.

[3] Since these sites are (at least partly) outside North Norfolk District, greater engagement with neighbouring authorities will be required (as discussed in more detail in **Section 8**).

Although there is no reason for excluding such impacts on international sites, to date these have not been addressed in appropriate assessments, probably due to a) the difficulty in assigning a tangible impact on a given international site increased carbon dioxide emissions; and b) any impacts on a given international site will be of such a nature that they are easy to dismiss.

However, Royal Haskoning suggests that recognition of the positive impact that carbon dioxide emission reduction implications may have on international sites is made. Therefore we support adoption of policies or measures which can limit or offset any additional adverse impacts of development. This includes the uptake of more-sustainable building standards, reducing the emission of carbon dioxide, and also addressing issues such as site runoff and water management which can reduce wider stresses on the water environment.

7 IN COMBINATION IMPACTS

7.1 In combination assessment 'at the plan level'

As well as assessing the individual (alone) impacts of the settlement proposals, as addressed in **Section 6**, it is important to consider the combined effects of the proposed site allocations (to enable the plan to be assessed as a whole). In regard to the site specific allocations within North Norfolk this can include re-consideration of those settlements considered to have no impact individually (those coloured green in **Section 6.3**).

Although an adverse effect individually has been assessed as unlikely, there are a number of settlement allocation whose potential disturbance impacts could combine to affect both the North Norfolk Coast sites (11 settlements, incorporating up to 2630 dwellings, excluding those sites identified as having no adverse effect individually) and the Broads/Broadland sites (7 settlements, incorporating up to 1104 dwellings, excluding those sites identified as having no adverse effect individually). This potential impact should still be considered within the context of these being heavily-visited and managed areas already, as noted previously. **Section 6.3** also shows where more than one site has the potential to influence water quality in identified areas.

Although these in combination effects at the plan level cannot be concluded to have no adverse effect on integrity, largely due to uncertainty as to the behaviour of future residents, it is considered that the interaction between sites will be additive (any existing effect may be compounded) rather than introducing a new effect. To this end it is felt that any in-combination effects do not introduce a need for additional management intervention. The measures noted as appropriate in **Section 6**, and described in more detail in **Section 8**, are felt adequate to avoid (considered as a part of mitigation in Tyldesley and Hoskin (2008)) adverse impact on the integrity of the designated sites. The justification for this is that:

- Effects of disturbance, considered collectively, are addressed via the commitment to undertake a programme of monitoring, to include baseline assessment and ongoing monitoring of the impacts of development as it progresses, to identify any potential emerging effects and to initiate appropriate and targetted management responses at the site level; and
- Issues relating to water quality and water resources are addressed at the catchment or treatment point level. As such measures listed in **Section 8** to address any potential effects are considered the most appropriate approach.

Therefore, at the plan level, provided that the measures specified are implemented, the site allocations plan can be considered to not have an adverse effect on the integrity of international sites.

7.2 Consideration of Neighbouring Authorities' policies

The in-combination assessment should also consider other plans and projects which may also affect the sites. "*Where an in-combination is necessary … it is the plans and projects,*

which are likely to contribute to an increased likelihood or significance of the effects of the subject project that need to be combined" (Tyldesley and Hoskin 2008: B.2.5). In the context of this assessment this includes relevant plans from neighbouring authorities.

Several neighbouring local authorities' plans were identified at the appropriate assessment stage as having a potential compounding or interacting effect on possible threats to site integrity. In particular they are relevant where policies relate to any increase in residential development or encourage increased visitation to international sites. For the purposes of the assessing in-combination effects, policies of adjacent authorities have been considered at face value, i.e. assuming no mitigation, prevention or avoidance has been applied. The in-combination effects of neighbouring plans can be summarised as being common to those of North Norfolk district namely:

- Disturbance;
- Water quality; and
- Water resources.

The sections below provide the results of an assessment of other local authority plans, and identify policies which have the potential to act in combination with the NNDC SSPs.

7.2.1 Broadland District Council

In 2006 Broadland District Council adopted a replacement Local Plan.

A Joint Core Strategy is being developed for Broadland, Norwich and South Norfolk Councils. The proposed submission document was produced in November 2009 containing the following policies which are relevant to the North Norfolk Site Specific Proposals. The document will go to public examination in October 2010 and is expected to be adopted in December 2010.

Table 7.1 Broadland District Council Core Strategy policies and their potential for in-combination effect

Policy	Potential impact	International site affected
Policy 4: Housing delivery Housing allocation of 9,000 (NPA) and 690-1,080 (outside NPA) dwellings up to 2026	Disturbance Water quality Water Resource	Broads SAC Broadlands SPA/ Ramsar
Policy 5: The economy	Disturbance Water quality	Broads SAC Broadlands SPA/ Ramsar
Policy 13: Main Towns	Disturbance Water quality	Broads SAC Broadlands SPA/ Ramsar
Policy 14: Key service centres Residential and retail development - Acle, Wroxham, Aylsham, Reepham	Disturbance Water quality	Broads SAC Broadlands SPA/ Ramsar
Policy 18: The Broads Maintaining and enhancing economy, environment and setting	Water quality Disturbance	Broads SAC Broadlands SPA/ Ramsar

Broadland District Council have completed a second stage of public consultation on their Site Allocations DPD. The Council is now assessing the suitability of potential sites and will be producing a Draft Plan for consultation during 2010. According to the East of England Plan the district has a total of 12,200 dwellings to be built by 2021.

7.2.2 Breckland District Council

The Council formally adopted their Core Strategy and Development Control Policies DPD on the 17th December 2009. The District has a housing allocation of over 19,000 to be built by 2026. The key areas of development are Thetford, Dereham, Swaffham, Attleborough and Watton. A second phase of sites consultation was undertaken in Spring 2009 for their Site Specific Proposals Development Plan Document following an initial Issues and Options Consultation held between July and September 2008. A further preferred options consultation is expected to take place in April 2010.

The Habitats Regulation Assessment for the Core Strategy identifies that development in Breckland will generate a recreational and visitor impact which has the potential to effect European sites beyond the boundary of the District. The North Norfolk Coast is less than 20km from the north of the District. Breckland Council is committed to working in partnership with adjoining Districts whose growth will also increase recreational and visitor pressure on the North Norfolk coast to consider necessary measures to manage visitor pressure.

Table 7.2 Breckland District Council Core Strategy policies and their potential for in-combination impacts

Policy	Potential impact	International site affected
Policy CP1: Housing Housing allocation of 19,211 dwellings up to 2026. Particular areas with potential impact: Dereham - 2,000 Attleborough - 4,500	Disturbance Water quality Water Resource	River Wensum SAC Norfolk Valley Fens SAC North Norfolk Coast SAC/SPA/Ramsar
Policy CP3: Employment Location of business development	Water quality	River Wensum SAC Norfolk Valley Fens SAC
Policy CP7: Town centres Maintaining and enhancing town centres	Water quality	River Wensum SAC Norfolk Valley Fens SAC
Policy DC8: Tourism related developments	Disturbance Water quality	River Wensum SAC

7.2.3 Great Yarmouth Borough Council

Great Yarmouth Borough Council released a consultation document for their Core Strategy preferred option in August 2006. The council has subsequently published the Amendment to the Core Strategy for Reg 25 consultation which was held between February and April 2009. Further consultation is expected to take place in Spring 2010. Regarding their Site Specific Allocations DPD, an initial Issues and Options consultation was held in 2006, and the Council are now preparing the document for a second stage of consultation. The key areas of housing development are Great Yarmouth and Gorleston which have an allocation of

4,800 houses between them. The rest of the allocation will be split between the Key Service Centres of Bradwell and Caister-on-Sea, and larger villages which include Belton, Hemsby, Hopton-on-Sea, Martham and Ormesby St Margaret.

Table 7.3 Great Yarmouth Borough Council Core Strategy policies and their potential for in-combination impacts

Policy	Potential impact	International site affected
Policy CS2: Settlement hierarchy	Disturbance Water quality	Broads SAC Broadlands SPA/ Ramsar Breydon Water SAC/ Ramsar Great Yarmouth North Denes SPA
Policy CS3: Regeneration and Renaissance	Disturbance	Broads SAC Broadlands SPA/ Ramsar Breydon Water SAC/ Ramsar Great Yarmouth North Denes SPA
Policy CS9: Location of housing development	Disturbance Water quality	Broads SAC Broadlands SPA/ Ramsar Breydon Water SAC/ Ramsar Great Yarmouth North Denes SPA
Policy CS12: Sustainable transport, accessibility and development	Disturbance Water quality	Breydon Water SAC/ Ramsar Great Yarmouth North Denes SPA
Housing allocation of 7,240 dwellings up to 2025. 60-70% of this located within Great Yarmouth and Gorleston	Disturbance Water quality Water Resource	Broads SAC Broadlands SPA/ Ramsar Breydon Water SAC/ Ramsar Great Yarmouth North Denes SPA

7.2.4 Norwich City Council

The City of Norwich replacement Local Plan was created in November 2006 and shows the policies and proposals for development within the city up to 2011.

A Joint Core Strategy is being developed for Broadland, Norwich and South Norfolk Councils. The proposed submission document was produced in November 2009 containing the following policies which are relevant to the North Norfolk Site Specific Proposals. The document will go to public examination in October 2010 and is expected to be adopted in December 2010.

Table 7.4 Norwich City Council Core Strategy policies and their potential for in-combination impacts

Policy	Potential impact	International site affected
Policy 5: The economy Policy 9: Strategy for growth in the Norwich Policy Area Policy 11: Norwich City Centre Employment and business development	Water quality Disturbance	River Wensum SAC Broads SAC Broadlands SPA/ Ramsar
Policy 5: The economy Policy 11: Norwich City Centre Waterborne tourism and associated development	Water quality Disturbance	River Wensum SAC
Policy 5: The economy	Water quality	River Wensum SAC

Policy 9: Strategy for growth in the Norwich Policy Area Policy 11: Norwich City Centre Retail Development		
Policy 4: Housing delivery Policy 9: Strategy for growth in the Norwich Policy Area Housing allocation of 3,467 dwellings by 2011 (Local Plan) Housing allocation of 3,000 dwellings up to 2026 (Joint Core Strategy)	Water quality Disturbance Water resource	River Wensum SAC Broads SAC Broadlands SPA/ Ramsar

The Council is at an early stage in production of their Site Allocations Plan. The first consultation on possible sites will take place between 30th November 2009 and 5th February 2010.

The appropriate assessment report made recommendations for a number of measures, which if adopted would enable a conclusion of no adverse effect on site integrity for those policies and the Replacement Local Plan as a whole.

7.2.5 Kings Lynn and West Norfolk District Council

Kings Lynn and West Norfolk District Council are currently preparing their Local Development Framework. The Core Strategy was approved for publication prior to examination, on the 26th November 2009, and is undergoing Reg 27 consultation between 13th January and 24th February 2010. The Council has published a Call for Sites for their Site Specific Allocations and Policies DPD which underwent public consultation between the 15th May and 26th June 2009. A draft Site Specific Allocations and Policies DPD is being prepared for early 2010.

The housing developments planned for this district are approximately 12,000 dwellings by 2026. The main amount of this development will be situated in Kings Lynn and Downham Market.

Table 7.5 Kings Lynn and West Norfolk District Council Core Strategy policies and their potential for in-combination impacts

Policy	Potential impact	International site affected
Policies CS01 and CS05: Development to Hunstanton Town Centre	Water quality Disturbance Water resource	The Wash SPA/Ramsar The Wash and North Norfolk Coast SAC
Policy CS07: Development in Coastal Areas	Water quality Disturbance	The Wash SPA/Ramsar The Wash and North Norfolk Coast SAC North Norfolk Coast SAC/SPA/Ramsar
Policy CS10: Holiday accommodation development	Water quality Disturbance Water resource	The Wash SPA/Ramsar The Wash and North Norfolk Coast SAC
Policy CS09: Housing Housing allocations of	Water quality Disturbance	The Wash SPA/Ramsar The Wash and North Norfolk Coast SAC

15,840 dwellings by 2025 Particular points with potential impact: Hunstanton - 560 Key Rural Service Centres - 2,800 Rural villages – 1,260	Water resources	North Norfolk Coast SAC/SPA/Ramsar

7.2.6 Broads Authority

The Broads Authority formally adopted their Core Strategy on the 28th September 2007. A Development Control Policies DPD is currently being prepared having undergone preferred options consultation.

7.3 In-combination assessment

It is considered that the effect of these policies and activities represent a further contribution to a pressure identified at the individual proposal level (rather than representing a 'new' pressure). For the same reasons as described above, issues relating to in-combination effects pertinent to water quality and water resources are more appropriately addressed via wider mechanisms specific to each issue.

The in-combination effects of disturbance are not however covered by any such wider process. **Where the potential effects of disturbance are considered in combination with those of neighbouring authorities, an adverse effect cannot be ruled out.** However, as the locations in question are already heavily-visited and managed, the issues are similar to those of increased development within North Norfolk. In order for any potential adverse effects from disturbance to be ruled out, in an equitable manner, **it is the recommendation of this assessment that the monitoring/response programme should be developed as a joint exercise as described in Section 8.** This would ensure that in-combination effects can be identified and considered as/if they emerge and appropriate, targeted management measures applied, according to the issues at hand, to prevent adverse effects and **enable a determination of no adverse effect on integrity**.

7.4 In-combination conclusion

Providing that the measures described within this report (**Section 8**) are implemented, it is considered that the site allocations in North Norfolk, alone and in combination with other plans and projects, can be determined as having no adverse effect on site integrity.

8 MEASURES REQUIRED FOR COMPLIANCE WITH THE HABITATS REGULATIONS, AND OTHER RECOMMENDATIONS

8.1 Overall conclusion

> "A project may include a range of measures to counteract possible effects on European sites (***counteracting measures***). Some will be designed to avoid any, or specific types of, effects on a European site (***avoidance measures***). Some will be designed to minimise or reduce adverse effects (***reduction measures***). Together, avoidance and reduction measures are referred to as ***mitigation measures***" (Tyldesley and Hoskin 2008: B.1.6).

It is the overall conclusion of this assessment that, both alone and in combination with other plans and policies, that there is no adverse effect on the integrity of international sites from the North Norfolk District Council Site Specific Proposals assessed. However this is dependent on a commitment by NNDC to undertake two series of measures, where the existence of a potential impact is unclear, and to respond to additional information they produce in such a way as to avoid future impacts, identified in the report and detailed below.

This represents a pragmatic approach to plan assessment and development, tailored to enable the plan to be progressed in the interim, but requiring that final development approval considers data and information that it is anticipated will become available and does not proceed where uncertainty as to the impact on designated sites remains. This approach in particular acknowledges that developments will be phased through the planning period and may not actually occur for some years; it has been used to good effect elsewhere, and is a factor in the recent Appropriate Assessment of the Breckland DC Core Strategy (Liley *et al*. 2008).

Therefore the conclusions of this report are on commitment by NNDC to acknowledge and undertake the two measures describe below.

8.1.1 Programme of visitor activity and impacts at designated sites, and identification of targeted management responses

North Norfolk DC has policies requiring provision of public open space in all schemes of more than 10 dwellings (Core Strategy policies SS4 Environment, CT1 Open Space Designations, CT2 Developer Contributions, and Appendix A provide detail) (NNDC 2008). Whilst this will not necessarily create new accessible open space – the policy allows for site-specific application, and where appropriate contributions towards improvement of existing open space may be sought instead – open space associated with new development is assumed to have some effect on limiting additional pressure on designated sites (particularly with regard to day-to-day use for dog walking and other activities). Such open space should be provided early in the development of a site to establish its use among residents and ensure this limiting effect on designated sites is realised.

Several of the SSPs also propose additional public open space. It is assumed that such sites will have a role as 'interceptor sites', again having some limiting effect on pressures on

designated sites. The role of both green infrastructure provision and interceptor sites in limiting disturbance pressures on international sites again has precedent (e.g. see appropriate assessments carried out for Tendring DC and Colchester BC).

However, in adopting a precautionary approach to enabling future development and recognising the limited information relating to visitor behaviour and impact, NNDC should further commit to a programme of monitoring at designated sites within the district. Although disturbance has not been considered to have an adverse effect, such a programme would enable early identification of any future pressure before an adverse effect occurred. Targeted actions could be determined and implemented to counter those pressures.

Early implementation of this programme (so that it includes the visitor season) will enable pre-development baseline information to be collated. Over time it will be possible to assess the impact, if any, of future development on visitation and behaviour (information which could usefully inform other assessments in North Norfolk and other areas). Where the potential for an adverse effect on integrity has been identified, but its likelihood is uncertain, the use of monitoring as a form of up-front mitigation has precedent (for example see Breckland DC). An alternative approach, the implementation of management measures in the absence of a certain adverse impact, could be considered over-cautious, and depending on the level of application could have a negative effect on the attractiveness of the area and on its economy. The most robust option would seem to be the suggested approach of monitoring the sites and responding to localised effects at the earliest stage in order to prevent adverse effects occurring. Particularly in light of the phasing of future development, seeking to 'guess' effects now and provide management measures on this basis would seem at best likely to require a wide suite of measures (many or all of which may not be required) and at worst offer measures which bear no relation to actual management requirements.

Areas within designated sites are currently owned or managed by a number of bodies (including Natural England and RSPB), and some monitoring will already be undertaken. This new monitoring programme should be targeted, and designed so as to be integrated with, or complementary to, any existing monitoring and management. Duplication of effort should be avoided. Consultation with interested parties, and in particular advice from Natural England, should be sought to ensure appropriate design of the monitoring strategy and to ensure the programme's ambitions are met. Programmes should be developed for:

- The North Norfolk Coast sites;
- The Broads / Broadland sites;

Whilst adverse impacts are considered even less likely, similar mechanisms should also be considered for two further sites. Further engagement with neighbouring authorities, especially Great Yarmouth Borough Council, would be required for this as they fall (at least partly, outside North Norfolk district). However NNDC's more advanced progress through the planning cycle, and the commitment to initiate the schemes above, offers an opportunity to take a lead on the issue in support of other authorities. The two additional sites are:

- Great Yarmouth North Denes (although this site is already wardened to maintain its integrity).; and
- Winterton-Horsey Dunes.

If emerging impacts are identified, responses could include:

- Adoption of interpretation materials and other means of visitor education;
- Restrictions on the activities of dog walkers;
- Implement site and access management. The extent of these will need to be agreed amongst Natural England and the relevant local authorities;
- Closing or re-routing of unofficial paths;
- Permanent or seasonal restrictions and or closures of sites, or adoption of new fencing;
- Operation of new car parking areas to draw visitors away from heavily-used or vulnerable sites; and
- Allocating further Sustainable Accessible Natural Greenspace (SANG). Recommendations by Natural England, most notably in relation to the Thames Basin Heaths are that 16 ha and 8 ha of SANG should be allocated per 1000 population resulting from new houses (within 0.4-2km and 2-5km of an SPA respectively) and further monitoring to determine its effectiveness. A particular issue with the SANG is that it is unproven as a means of deflecting recreational activity away from international sites. Further consideration would need to be given to this option.

Other commonly-applied site management tools could also be appropriate to effect changes in visitor behaviour and avoid adverse effect on the integrity of the site's interest features.

Consultation and engagement to develop these programmes and determine means of funding should be led by NNDC and implemented as far as possible during the 2009 visitor season. This will enable the collection of useful baseline data to inform future assessments.

Update note: Detailed discussions are ongoing between the Council, Natural England and the RSPB to investigate issues around the impact of visitors on designated sites.

8.1.2 Further water quality assessments

Development in the district is expected to be phased over the planning period and more information affecting settlements and site allocations may become available during that time. Additionally several pieces of work relating to water quality are ongoing. Interim findings from the Review of Consents (RoC) were made available for Appropriate Assessment printed in April 2009, and these were confirmed and updated by the Environment Agency in November 2009 (see Appendix F for updates). The previous AA said that whilst it was considered pragmatic to determine no adverse effect in the interim, development should not proceed if the findings of the RoC highlight adverse impacts. Where the ongoing work confirms the currently understood situation, the conclusion of the previous report will hold. This is the case and therefore the original conclusion is still valid. The previous report included the following specific detail relating to studies on the three rivers:

- The River Wensum (SAC) - A Water Cycle Study (WCS) assessing growth in Fakenham has already been commissioned. Therefore, post-RoC (the findings of which will feed into the WCS) future development in the town should be mindful of WCS's findings and recommendations, which should include any measures required to ensure no adverse effect on the integrity of the River Wensum SAC. *Update note: Agents for the major allocation in Fakenham are investigating water quality issues and further discussions are underway between NNDC, the EA and AW.;.*
- The River Thurne (Broads/Broadlands) – If the final RoC report confirms interim findings further study may not be required. Development could proceed within current discharge consents (assuming 'available headroom') as these have been determined to be having no adverse effect on site integrity; and
- The River Ant (Broads/Broadlands) – Work remains ongoing associated with the area around Stalham STW. Depending on the findings of RoC, any alterations in current discharge consents, and consequently available headroom, that may be required. It is possible that additional local level study may be required to enable development to proceed without adverse effect on the integrity of the Broads/Broadlands. Development should not proceed until this issue is clarified, and any constraints required should be informed by these studies. *Update note: Stage 4 RoC for Ant Broads and Marshes has been completed. It has been concluded that the current consent for Stalham STW can be affirmed, i.e. no changes to be made.*

NNDC should commit to acknowledging and acting upon the findings of these studies, and if necessary reviewing the site specific allocations in the light of new information. If the studies identify that there is the potential for adverse effect on the integrity of international sites, measures such as re-routing water for treatment elsewhere; local management of waste waters, including forms of pre-treatment such as reedbed systems; and more appropriate phasing of development, in line with changes to water treatment capacity and technologies should also be investigated. Additional studies may be required to determine the most appropriate approaches.

Update note: Detailed discussions are ongoing between the Council, AW and the EA to investigate issues around the capacity of STWs to accommodate the proposed growth. A Water Infrastructure Statement has been prepared to summarise the latest available information and support discussion at examination.

8.2 Allocating responsibility for required mitigation

The impacts of development in any given local authority area cannot be considered or rectified in isolation from impacts of neighbouring authorities. This is particularly the case for disturbance-related impacts. Strategies for preventing and mitigating impacts need to be developed together. Mechanisms exist already for the discussion and agreement of joint working. **NNDC should take a lead in developing a partnership approach to the activities required by this study**.

8.2.1 Financing of Measures

A key issue to be resolved through early discussions is the allocation of particularly financial responsibility for implementing proposals. This needs to be agreed between the various local authorities. As in the design of monitoring strategies, Natural England may again have an advisory role, since the requirements of monitoring strategies will be dependent on existing work.

It is suggested that an agreement is formed via a memorandum of understanding between the authorities. Financial responsibility could be allocated taking into account both proximity of each authority's housing and development allocations to international sites, and the relative magnitude of that allocation and the pressure associated with it. This task is beyond the scope of this report, but a meeting of the relevant parties could begin to resolve the scope and mechanism to resolve this issue. Early discussion between some local authorities suggests that a solution could be found, and as above NNDC should commit to leading this process.

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SSSI citations are available online at:
http://www.sssi.naturalengland.org.uk/Special/sssi/index.cfm

Natura 2000 data forms are available at:
http://www.jncc.gov.uk/page-4

Appendix A: Qualifying Features of International Sites

Broadland SPA

ARTICLE 4.1 QUALIFICATION (79/409/EEC)

During the breeding season the area regularly supports:

Botaurus stellaris	At least 10% of the population in Great Britain 1996-1998
Circus aeruginosus	10.2% of the population in Great Britain1987/8-1991/2

Over winter the area regularly supports:

Circus cyaneus	2.9% of the population in Great Britain 1987/8 to 1991/2
Cygnus columbianus bewickii	At least 8.2% of the population in Great Britain 1996/7
Cygnus cygnus	1.8% of the population in Great Britain1996/7

ARTICLE 4.2 QUALIFICATION (79/409/EEC)

Over winter the area regularly supports:

Anas strepera	0.8% of the population1991/2 to 1995/6

North Norfolk Coast SPA

ARTICLE 4.1 QUALIFICATION (79/409/EEC)

During the breeding season the area regularly supports:

Botaurus stellaris	at least 5% of the Great Britain breeding population 1992-1997
Circus aeruginosus	6.4% of the Great Britain breeding population at 1992-1997
Recurvirostra avosetta	30% of the Great Britain breeding population count, as at late 1980s
Sterna albifrons	At least 13.8% of the Great Britain breeding population 1992-1996
Sterna hirundo	At least 3.7% of the Great Britain breeding population count, as at 1996
Sterna sandvicensis	26.4% of the Great Britain breeding population, 1992-1996

Over winter the area regularly supports:

Recurvirostra avosetta	9.9% of the GB population 1991/92-1995/96

ARTICLE 4.2 QUALIFICATION (79/409/EEC)

Over winter the area regularly supports:

Anas penelope	1.1% of the population 1991/92-1995/96
Anser brachyrhynchus	10.6% of the population 1991/92-1995/96
Branta bernicla bernicla	3.8% of the population 1991/92-1995/96
Calidris canutus	3.1% of the population 1991/92-1995/96

ARTICLE 4.2 QUALIFICATION (79/409/EEC): AN INTERNATIONALLY IMPORTANT ASSEMBLAGE OF BIRDS

Over winter the area regularly supports:
91536 waterfowl (5 year peak mean 01/04/1998)
Anser brachyrhynchus, Branta bernicla bernicla, Anas penelope, Recurvirostra avosetta, Calidris canutus.

Great Yarmouth North Denes SPA

ARTICLE 4.1 QUALIFICATION (79/409/EEC)

During the breeding season the area regularly supports:

Sterna albifrons	9.2% of the GB breeding population 1992-1996

Breydon Water SPA

ARTICLE 4.1 QUALIFICATION (79/409/EEC)

During the breeding season the area regularly supports:

Sterna hirundo	1.3% of the GB breeding population 1992 to 1994 & 1996

Over winter the area regularly supports:

Pluvialis apricaria	2% of the GB population 1991/92 to 1995/96
Cygnus columbianus bewickii	5.6% of the population in Great Britain 1991/92 to 1995/96
Recurvirostra avosetta	3.3% of the population in Great Britain 1991/92 to 1995/96
On passage the area regularly supports:	
Philomachus pugnax	7.7% of the population in Great Britain 1991/92 to 1995/96

ARTICLE 4.2 QUALIFICATION (79/409/EEC)

Over winter the area regularly supports:

Vanellus vanellus	1.2% of the population in Great Britain 1991/92 to 1995/96

ARTICLE 4.2 QUALIFICATION (79/409/EEC): AN INTERNATIONALLY IMPORTANT ASSEMBLAGE OF BIRDS

Over winter the area regularly supports:
43225 waterfowl (5 year peak mean 01/04/1998)

Cygnus columbianus bewickii , Recurvirostra avosetta , Pluvialis apricaria , Vanellus vanellus

The Wash SPA

ARTICLE 4.1 QUALIFICATION (79/409/EEC)

During the breeding season the area regularly supports:

Sterna albifrons	At least 1.4% of the Great Britain breeding population 1992-1996
Sterna hirundo	1.2% of the Great Britain breeding population count, as at 1996

Over winter the area regularly supports:

Cygnus columbianus bewickii	0.9% of the GB population 1991/92-1995/96
Limosa lapponica	21.4% of the GB population 1991/92-1995/96

ARTICLE 4.2 QUALIFICATION (79/409/EEC)

Over winter the area regularly supports:

Anas acuta	1.5% of the population 1991/92-1995/96
Anas penelope	1.2% of the population 1991/92-1995/96
Anas strepera	0.9% of the population 1991/92-1995/96
Anser brachyrhynchus	14.8% of the population 1991/92-1995/96
Arenaria interpres	1.1% of the population 1991/92-1995/96
Branta bernicla bernicla	7.4% of the population 1991/92-1995/96
Bucephala clangula	0.7% of the population 1991/92-1995/96
Calidris alba	0.3% of the population 1991/92-1995/96
Calidris alpina alpina	2.6% of the population 1991/92-1995/96
Calidris canutus	3.1% of the population 1991/92-1995/96
Haematopus ostralegus	2.9% of the population 1991/92-1995/96
Limosa limosa islandica	11.6% of the population 1991/92-1995/96
Melanitta nigra	0.2% of the population 1991/92-1995/96
Numenius arquata	1.1% of the population 1991/92-1995/96
Pluvialis squatarola	5.8% of the population 1991/92-1995/96
Tadorna tadorna	5.3% of the population 1991/92-1995/96
Tringa totanus	1.7% of the population 1991/92-1995/96

ARTICLE 4.2 QUALIFICATION (79/409/EEC): AN INTERNATIONALLY IMPORTANT ASSEMBLAGE OF BIRDS

Over winter the area regularly supports:
400367 waterfowl (5 year peak mean 01/04/1998)
Including:
Cygnus columbianus bewickii , Anser brachyrhynchus , Branta bernicla bernicla , Tadorna tadorna , Anas penelope , Anas strepera , Anas acuta , Melanitta nigra , Bucephala clangula , Haematopus ostralegus , Pluvialis squatarola , Calidris canutus , Calidris alba , Calidris alpina alpina , Limosa limosa islandica , Limosa lapponica , Numenius arquata , Tringa totanus , Arenaria interpres .

North Norfolk SAC

Annex 1 Habitats that are a primary reason for selection of this site

1150 Coastal lagoons * Priority feature	This site encompasses a number of small percolation lagoons on the east coast of England; together with Orfordness - Shingle Street and Benacre to Easton Bavents, it forms a significant part of the percolation lagoon resource concentrated in this part of the UK. The most notable of the lagoons at this site are Blakeney Spit Pools, a lagoon system of six small pools between a shingle ridge and saltmarsh. The bottom of each pool is shingle overlain by soft mud. The fauna of the lagoons includes a nationally rare species, the lagoonal mysid shrimp (*Paramysis nouveli*).
1220 Perennial vegetation of stony banks	Perennial vegetation of stony banks occurs at Blakeney Point, a shingle spit on the east coast of England with a series of recurves partly covered by sand dunes. This extensive site has a typical sequence of shingle vegetation, which includes open communities of pioneer species on the exposed ridge and more continuous grassland communities on the more sheltered shingle recurves. It also includes some of the best examples of transitions between shingle and saltmarsh, with characteristic but rare species more typical of the Mediterranean. These include one of the best examples of the transition from sand and shingle to vegetation dominated by shrubby sea-blite *Suaeda vera* (1420 Mediterranean and thermo-Atlantic halophilous scrubs). Blakeney Point is part of a multiple-interest site. The shingle structure forms a highly significant component of the geomorphological structure of the North Norfolk Coast and helps to maintain a series of interrelated habitats.
1420 Mediterranean and thermo-Atlantic halophilous scrubs (*Sarcocornetea fruticosi*)	The North Norfolk Coast, together with The Wash and North Norfolk Coast, comprises the only area in the UK where all the more typically Mediterranean species that characterise Mediterranean and thermo-Atlantic halophilous scrubs occur together. The vegetation is dominated by a shrubby cover up to 40 cm high of scattered bushes of shrubby sea-blite *Suaeda vera* and sea-purslane *Atriplex portulacoides*, with a patchy cover of herbaceous plants and bryophytes. This scrub vegetation often forms an important feature of the upper saltmarshes, and extensive examples occur where the drift-line slopes gradually and provides a transition to dune, shingle or reclaimed sections of the coast. At a number of locations on this coast perennial glasswort *Sarcocornia perennis* forms an open mosaic with other species at the lower limit of the sea-purslane community.
2110 Embryonic shifting dunes	North Norfolk Coast in East Anglia is one of two sites representing Embryonic shifting dunes in the east of England (the other being Winterton – Horsey Dunes). It is a long, thin dune system, displaying both progradation and erosion. The exceptional length and variety of the dune/beach interface is reflected in the high total area of embryonic dune (over 40 ha or at least 14% of the national total). The process of continued progradation is central to the conservation of this habitat type at this site. Sand couch (*Elytrigia juncea*) is the most prominent sand-binding grass.
2120 Shifting dunes along the shoreline with *Ammophila arenaria* (`white dunes`)	Shifting dunes form a major component of the complex of often linear dune systems that make up the North Norfolk Coast, which is representative of Shifting dunes along the shoreline with *Ammophila arenaria* in East Anglia. The site supports over 100 ha of shifting dune vegetation, 8% of the estimated total area of this habitat type in Britain. The shifting dune vegetation is also varied, containing examples of all the main variants found in the southern part of the geographical range.
2130 Fixed dunes with	North Norfolk Coast on the east coast of England contains a large, active series of

Annex 1 Habitats that are a primary reason for selection of this site	
herbaceous vegetation (`grey dunes`) * Priority feature	dunes on shingle barrier islands and spits and is little affected by development. The fixed dunes with herbaceous vegetation represents one of the principal variants of this vegetation type in the UK, as many of the swards are rich in lichens and drought-avoiding winter annuals such as common whitlowgrass *Erophila verna*, early forget-me-not *Myosotis ramosissima* and common cornsalad *Valerianella locusta*. The main communities represented are marram *Ammophila arenaria* with red fescue *Festuca rubra* and sand sedge *Carex arenaria*, with lichens such as *Cornicularia aculeata*.
2190 Humid dune slacks	The slacks within this site are comparatively small and the Yorkshire-fog *Holcus lanatus* community predominates. The site represents Humid dune slacks on the dry east coast of England and present an extreme of the geographical range and ecological variation of the habitat within the UK. They are calcareous and complement the acidic dune slacks at Winterton – Horsey Dunes, also in eastern England. The dune slack communities occur in association with swamp communities.
Annex II species present as a qualifying feature, but not a primary reason for site selection	
Otter (*Lutra lutra*)	
Petalwort (*Petalophyllum ralfsii*)	

The Broads SAC

Annex 1 Habitats that are a primary reason for selection of this site	
3140 Hard oligo-mesotrophic waters with benthic vegetation of *Chara* spp.	The Broads is the richest area for charophytes in Britain (Stewart 1996). Twenty species have been recorded, which represents over 65% of the British flora. The core of this interest is the Thurne Broads and particularly Hickling Broad which is the richest site in the UK. Sixteen species have been recorded within Hickling Broad, a large shallow brackish lake. Within the Broads examples of *Chara* vegetation are also found within fen pools (turf ponds) and fen and marsh ditch systems. The Broads supports a number of rare and local charophyte species, including *Chara aspera*, *C. baltica*, *C. connivens*, *C. contraria*, *C. curta*, *C. intermedia*, *C. pedunculata*, *Nitella mucronata*, *Nitellopsis obtusa*, *Tolypella glomerata* and *T. intricata*.
3150 Natural eutrophic lakes with *Magnopotamion* or *Hydrocharition*-type vegetation.	The Broads in East Anglia contain several examples of southern natural eutrophic lakes. Although artificial, having arisen from peat digging in medieval times, these lakes and the 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 stonewort – pondweed – water-milfoil – water-lily *Characeae* – *Potamogeton* – *Myriophyllum* – *Nuphar* associations are well-represented, as are club-rush – common reed *Scirpo* – *Phragmitetum* associations. Some Broads, such as Martham North, Martham South and Upton Broad, have escaped the problem of enrichment that has so affected the flora and fauna on many of the other Broads. Others, such as Hickling Broad, are recovering from these effects as a result of remedial measures. Martham North, Martham South, Upton and Hickling Broad contain holly-leaved naiad *Najas marina*, a national rarity. The dyke (ditch) systems support vegetation characterised by water-soldier *Stratiotes aloides*, whorled water-milfoil *Myriophyllum verticillatum* and broad-leaved pondweed *Potamogeton natans*.
7140 Transition mires and quaking bogs	The Broads contain examples of transition mire in a flood plain in the south-eastern part of the UK, where the habitat is rare. The areas of transition mire, mainly of

Annex 1 Habitats that are a primary reason for selection of this site	
	M5 *Carex rostrata – Sphagnum squarrosum* mire, M9 *Carex rostrata – Calliergon cuspidatum/giganteum* mire and S27 *Carex rostrata – Potentilla palustris* tall-herb fen, are relatively small, having developed in re-vegetated peat-cuttings as part of a complex habitat mosaic of fen, carr and open water.
7210 Calcareous fens with *Cladium mariscus* and species of the *Caricion davallianae*. ***** Priority feature	This flood plain mire site in East Anglia has the largest example of calcareous fens in the UK and possibly the largest occurrence in the EU outside Sweden. The *Cladium* habitat occurs in a diverse set of conditions that maintain its species-richness, including managed *Cladium* fen, contacts between *Cladium* beds and small sedge mires, and situations where *Cladium* occurs at the limits of its ecological range. The habitat type forms large-scale mosaics with other fen types, open water and woodland, and important associated plant species are the Annex II 1903 Fen orchid *Liparis loeselii* (found at Upton Fen), marsh helleborine *Epipactis palustris*, lesser tussock-sedge *Carex diandra*, slender sedge *C. lasiocarpa* and fibrous tussock-sedge *C. appropinquata*.
7230 Alkaline fens.	The Broads is one of two sites selected for Alkaline fens in East Anglia, in eastern England, where a main concentration of lowland fen occurs. There are areas of short sedge fen (both M13 *Schoenus nigricans – Juncus subnodulosus* mire and M9 *Carex rostrata – Calliergon cuspidatum/giganteum* mire), which in places form a mosaic with S24 *Phragmites australis – Peucedanum palustris* fen. There are complex zonations present and many differences exist between the individual fens that comprise the site. The fens are principally of the flood plain mire type. The site contains a range of rare and local plant species, including the Annex II 1903 Fen orchid (*Liparis loeselii*), lesser tussock-sedge (*Carex diandra*) and slender sedge (*C. lasiocarpa)*.
91E0 Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion*, *Alnion incanae*, *Salicion albae*). ***** Priority feature	The complex of sites in the Broads of East Anglia contains the largest blocks of alder (*Alnus glutinosa*) wood in England. Within the complex complete successional sequences occur from open water through reedswamp to alder woodland, which has developed on fen peat. There is a correspondingly wide range of flora, including a number of uncommon species such as marsh fern *Thelypteris palustris*.
Annex I habitats present as a qualifying feature but not a primary feature for selection of this site	
6410 *Molinia* meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*).	

Annex II species that are a primary reason for selection of this site	
Desmoulin's whorl snail *(Vertigo moulinsiana)*	The Broads is the main stronghold of Desmoulin's whorl snail (*Vertigo moulinsiana*) in East Anglia and is one of several sites selected in this part of its range. Several large populations are known, associated with standing and flowing water and ditch systems. This is a very important area for its wetland invertebrate fauna, and many Red Data Book and Nationally Scarce species occur here.
Fen orchid (*Liparis loeselii*)	The Broads in eastern England provide representation of the Fenland form of fen orchid *Liparis loeselii* in the eastern part of its UK range. Three small populations of var. *loeselii* are known to occur on this site, and 242 plants were found in 1996.
Annex II species present as a qualifying feature, but not a primary reason for site selection	
Otter (*Lutra lutra*)	

The Wash and North Norfolk Coast SAC

Annex 1 Habitats that are a primary reason for selection of this site

Annex 1 Habitats that are a primary reason for selection of this site	
1110 Sandbanks which are slightly covered by sea water all the time	On this site sandy sediments occupy most of the subtidal area, resulting in one of the largest expanses of sublittoral sandbanks in the UK. It provides a representative example of this habitat type on the more sheltered east coast of England. The subtidal sandbanks vary in composition and include coarse sand through to mixed sediment at the mouth of the embayment. Sublittoral communities present include large dense beds of brittlestars *Ophiothrix fragilis*. Species include the sand-mason worm *Lanice conchilega* and the tellin *Angulus tenuis*. Benthic communities on sandflats in the deeper, central part of the Wash are particularly diverse. The subtidal sandbanks provide important nursery grounds for young commercial fish species, including plaice *Pleuronectes platessa*, cod *Gadus morhua* and sole *Solea solea*.
1140 Mudflats and sandflats not covered by seawater at low tide	The Wash, on the east coast of England, is the second-largest area of intertidal flats in the UK. The sandflats in the embayment of the Wash include extensive fine sands and drying banks of coarse sand, and this diversity of substrates, coupled with variety in degree of exposure, means that there is a high diversity relative to other east coast sites. Sandy intertidal flats predominate, with some soft mudflats in the areas sheltered by barrier beaches and islands along the north Norfolk coast. The biota includes large numbers of polychaetes, bivalves and crustaceans. Salinity ranges from that of the open coast in most of the area (supporting rich invertebrate communities) to estuarine close to the rivers. Smaller, sheltered and diverse areas of intertidal sediment, with a rich variety of communities, including some eelgrass *Zostera* spp. beds and large shallow pools, are protected by the north Norfolk barrier islands and sand spits.
1160 Large shallow inlets and bays	The Wash is the largest embayment in the UK, and represents Large shallow inlets and bays on the east coast of England. It is connected via sediment transfer systems to the north Norfolk coast. Together, the Wash and North Norfolk Coast form one of the most important marine areas in the UK and European North Sea coast, and include extensive areas of varying, but predominantly sandy, sediments subject to a range of conditions. Communities in the intertidal include those characterised by large numbers of polychaetes, bivalve and crustaceans. Sublittoral communities cover a diverse range from the shallow to the deeper parts of the embayments and include dense brittlestar beds and areas of an abundant reef-building worm ('ross worm') *Sabellaria spinulosa*. The embayment supports a variety of mobile species, including a range of fish and 1365 Common seal *Phoca vitulina*.
1170 Reefs	The Wash is the largest embayment in the UK with extensive areas of subtidal mixed sediment. In the tide-swept approaches to the Wash, with a high loading of suspended sand, the relatively common tube-dwelling polychaete worm *Sabellaria spinulosa* forms areas of biogenic **reef**. These structures are varied in nature, and include reefs which stand up to 30 cm proud of the seabed and which extend for hundreds of metres (Foster-Smith & Sotheran 1999). The reefs are thought to extend into The Wash where super-abundant *S. spinulosa* occurs and where reef-like structures such as concretions and crusts have been recorded. The site and its surrounding waters is considered particularly important as it is the only currently known location of well-developed stable *Sabellaria* reef in the UK. The reefs are particularly important components of the sublittoral as they are diverse and productive habitats which support many associated species (including epibenthos and crevice fauna) that would not otherwise be found in predominantly sedimentary areas. As such, the fauna is quite distinct from other biotopes found in the site. Associated motile species include large numbers of

Annex 1 Habitats that are a primary reason for selection of this site	
	polychaetes, mysid shrimps, the pink shrimp *Pandalus montagui*, and crabs. *S. spinulosa* is considered to be an important food source for the commercially important pink shrimp *P. montagui* (see overview in Holt *et al*. 1998).
1310 *Salicornia* and other annuals colonising mud and sand	The largest single area of this vegetation in the UK occurs at this site on the east coast of England, which is one of the few areas in the UK where saltmarshes are generally accreting. The proportion of the total saltmarsh vegetation represented by *Salicornia* and other annuals colonising mud and sand is high because of the extensive enclosure of marsh in this site. The vegetation is also unusual in that it forms a pioneer community with common cord-grass *Spartina anglica* in which it is an equal component. The inter-relationship with other habitats is significant, forming a transition to important dune, saltmeadow and halophytic scrub communities.
1330 Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*)	This site on the east coast of England is selected both for the extensive ungrazed saltmarshes of the North Norfolk Coast and for the contrasting, traditionally grazed saltmarshes around the Wash. The Wash saltmarshes represent the largest single area of the habitat type in the UK. The Atlantic salt meadows form part of a sequence of vegetation types that are unparalleled among coastal sites in the UK for their diversity and are amongst the most important in Europe. Saltmarsh swards dominated by sea-lavenders *Limonium* spp. are particularly well-represented on this site. In addition to typical lower and middle saltmarsh communities, in North Norfolk there are transitions from upper marsh to freshwater reedswamp, sand dunes, shingle beaches and mud/sandflats.
1420 Mediterranean and thermo-Atlantic halophilous scrubs (*Sarcocornetea fruticosi*)	The Wash and North Norfolk Coast, together with the North Norfolk Coast, comprises the only area in the UK where all the more typically Mediterranean species that characterise Mediterranean and thermo-Atlantic halophilous scrubs occur together. The vegetation is dominated by a shrubby cover up to 40 cm high of scattered bushes of shrubby sea-blite *Suaeda vera* and sea-purslane *Atriplex portulacoides*, with a patchy cover of herbaceous plants and bryophytes. This scrub vegetation often forms an important feature of the upper saltmarshes, and extensive examples occur where the drift-line slopes gradually and provides a transition to dune, shingle or reclaimed sections of the coast. At a number of locations on this coast perennial glasswort *Sarcocornia perennis* forms an open mosaic with other species at the lower limit of the sea-purslane community.
Annex I habitat present as a qualifying feature but not a primary reason for selection of site	
1150 Coastal lagoons	
Annex II species that are a primary reason for selection of site	
Common seal (*Phoca vitulina*)	
Annex II species present as a qualifying feature, but not a primary reason for site selection	
Otter (*Lutra lutra*)	

Winterton- Horsey Dunes SAC

Annex 1 Habitats that are a primary reason for selection of this site	
2150 Atlantic decalcified fixed dunes (*Calluno-Ulicetea*) ***** Priority feature	Winterton – Horsey Dunes is the only significant area of dune heath on the east coast of England and also includes areas of acidic dune grassland as an associated acidic habitat. The contrast with the nearby calcareous and species-rich dunes of north Norfolk is marked. The Atlantic decalcified fixed dunes (*Calluno-Ulicetea*) vegetation is characteristic of dune heath in an eastern locality with low rainfall. The drought-resistant grey hair-grass *Corynephorus*

	canescens is a characteristic species of the open dry dune soils.
2190 Humid dune slacks	Winterton – Horsey Dunes is the only significant area of dune heath on the east coast of England and also includes areas of acidic dune grassland as an associated acidic habitat. The contrast with the nearby calcareous and species-rich dunes of north Norfolk is marked. The Atlantic decalcified fixed dunes (*Calluno-Ulicetea*) vegetation is characteristic of dune heath in an eastern locality with low rainfall. The drought-resistant grey hair-grass *Corynephorus canescens* is a characteristic species of the open dry dune soils.

Annex I habitat present as a qualifying feature but not a primary reason for selection of site
2110 Embryonic shifting dunes
2120 Shifting dunes along the shoreline with *Ammophila arenaria* (`white dunes`)

Norfolk Valley Fens SAC

Annex 1 Habitats that are a primary reason for selection of this site	
7230 Alkaline fens	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*.

Annex I habitat present as a qualifying feature but not a primary reason for selection of site
North Atlantic wet heaths with *Erica tetralix*
European dry heaths
Semi-natural dry grasslands and scrubland facies: on calcareous substrates (*Festuco-Brometalia*)
Molinia meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*)
Calcareous fens with *Cladium mariscus* and species of the *Caricion davallianae*
Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion*, *Alnion incanae*, *Salicion albae*)

Annex II species that are a primary reason for selection of site	
Narrow-mouthed whorl snail (*Vertigo angustior*)	Norfolk Valley Fens represents narrow-mouthed whorl snail *Vertigo angustior* in East Anglia. At Flordon Common a strong population occurs in flushed grassland with yellow iris *Iris pseudacorus* maintained by light grazing.
Desmoulin`s whorl snail (*Vertigo moulinsiana*)	Norfolk Valley Fens is one of several sites representing Desmoulin's whorl snail *Vertigo moulinsiana* in East Anglia. Within Norfolk Valley Fens there are a number of marginal fens around pingos – pools that formed in hollows left when large blocks of ice melted at the end of the last Ice Age. These are very ancient wetlands and several support strong populations of *V. moulinsiana* as part of a rich assemblage of Red Data Book and Nationally Scarce species in standing water habitat.

River Wensum SAC

Annex 1 Habitats that are a primary reason for selection of this site	
3260 Water courses of plain to montane levels with the *Ranunculion fluitantis* and	The Wensum represents sub-type 1 in lowland eastern England. Although the river is extensively regulated by weirs, *Ranunculus* vegetation occurs sporadically throughout much of the river's length. Stream water-crowfoot *R. penicillatus* ssp. *pseudofluitans* is

Callitricho-Batrachion vegetation	the dominant *Ranunculus* species but thread-leaved water-crowfoot *R. trichophyllus* and fan-leaved water-crowfoot *R. circinatus* also occur.
Annex II species that are a primary reason for selection of site	
White-clawed (or Atlantic stream) crayfish (Au*stropotamobius pallipes*)	The Wensum is a chalk-fed river in eastern England, and is an eastern example of riverine white-clawed crayfish *Austropotamobius pallipes* populations. As with most of the remaining crayfish populations in the south and east of England, the threats from non-native crayfish species and crayfish plague are severe. Designation of the river as a SAC provides as much protection as can be afforded to such vulnerable populations.
Annex II species present as a qualifying feature but not a primary reason for selection of site	
Desmoulin`s whorl snail (*Vertigo moulinsiana*)	
Brook lamprey (*Lampetra planeri*)	
Bullhead (*Cottus gobio*)	

Overstrand Cliffs SAC

Annex 1 Habitats that are a primary reason for selection of this site	
1230 Vegetated sea cliffs of the Atlantic and Baltic coast	Overstrand cliffs are one of the best examples of unprotected vegetated soft cliffs on the North Sea coast in the most easterly part of the UK. The cliffs are up to 70 m high and are composed of Pleistocene sands and clays with freshwater seepages in places and are subject to moderately frequent cliff-falls and landslips. Much of the length is unprotected by sea defences and is therefore natural in character. The vegetation exhibits cycles of succession with ruderal communities developing on the newly-exposed sands and mud followed by partially-stabilised grasslands and scrub. Seepage areas support wet fen communities and in places perched reedbeds occur. The diverse range of habitats supports an outstanding range of invertebrates.

Paston Great Barn SAC

Annex II species that are a primary reason for selection of site	
Barbastelle (*Barbastella barbastellus*)	Paston Great Barn is the only known example of a maternity roost of barbastelles (*Barbastella barbastellus*) in a building. The Barn is a 16th century thatched barn with associated outbuildings. A maternity colony of barbastelles utilises a range of cracks and crevices in the roof timbers for roosting.

Roydon Common and Dersingham Bog SAC

Annex 1 Habitats that are a primary reason for selection of this site	
4010 Northern Atlantic wet heaths with *Erica tetralix*	Roydon Common and Dersingham Bog represent the largest and best examples of M16 Erica tetralix – Sphagnum compactum wet heath in East Anglia. This vegetation community is part of a lowland mixed valley mire, a complex series of plant communities grading from wet acid heath through valley mire to calcareous fen. This gradation is of outstanding interest. The mire is extremely diverse and supports many rare plants, birds and insects, including the dragonfly Sympetrum scoticum, a northern species with a very local distribution in south-east England. Birds protected at European level occurring in the heathland at this site include European nightjar Caprimulgus europaeus, hen harrier Circus cyaneus and merlin Falco columbarius.
7150 Depressions on peat substrates of the *Rhynchosporion*	Dersingham Bog represents Depressions on peat substrates of the Rhynchosporion in eastern England. There are examples of this habitat type present in natural bog pools of patterned valley mire, in flushes on the margins of valley mire and locally in disturbed areas associated with trackways and paths in mire and wet heath. Mosaics containing

Annex 1 Habitats that are a primary reason for selection of this site	
	this habitat type are important for bog orchid Hammarbya paludosa.
Annex I habitat present as a qualifying feature but not a primary reason for selection of site	
European dry heaths	

North Norfolk Coast Ramsar Site

Ramsar Criterion 6: species/populations occurring at levels of international importance	
Breeding species:	
Sandwich tern	275 apparently occupied nests, representing an average of 7.7% of the breeding population
Common tern	408 apparently occupied nests, representing an average of 4% of the GB population
Little tern	291 apparently occupied nests, representing an average of 2.5% of the breeding population
Wintering species:	
Knot	30781 individuals, representing an average of 6.8% of the population
Pink-footed goose	16787 individuals, representing an average of 6.9% of the population
Dark-bellied brent goose	8690 individuals, representing an average of 4% of the population
Wigeon	17940 individuals, representing an average of 1.1% of the population
Pintail	1148 individuals, representing an average of 1.9% of the population

Broadland Ramsar Site

Ramsar Criterion 6: species/populations occurring at levels of international importance	
Wintering species:	
Tundra swan	196 individuals, representing an average of 2.4% of the GB population
Wigeon	6769 individuals, representing an average of 1.6% of the GB population
Gadwall	545 individuals, representing an average of 3.1% of the GB population
Shoveler	247 individuals, representing an average of 1.6% of the GB population

The Wash Ramsar Site

Ramsar Criterion 6: species/populations occurring at levels of international importance	
Spring/ autumn species:	
Eurasian oystercatcher	15616 individuals, representing an average of 1.5% of the population
Grey plover	13129 individuals, representing an average of 5.3% of the population
Red knot	68987 individuals, representing an average of 15.3% of the population

Sanderling	3505 individuals, representing an average of 2.8% of the population
Curlew	9438 individuals, representing an average of 2.2% of the population
Redshank	6373 individuals, representing an average of 2.5% of the population
Ruddy turnstone	888 individuals, representing an average of 1.7% of the GB population
Wintering species:	
Dunlin	36600 individuals, representing an average of 2.7% of the population
Pink-footed goose	29099 individuals, representing an average of 12.1% of the population
Dark-bellied brent goose	20861 individuals, representing an average of 9.7% of the population
Shelduck	9746 individuals, representing an average of 3.2% of the population
Pintail	431 individuals, representing an average of 1.5% of the GB population
Bar tailed godwit	16546 individuals, representing an average of 13.7% of the population

Appendix B: Condition of SSSI underpinning the international sites.

Table 1 Condition summaries of overall SSSIs underpinning international sites in the North Norfolk district

SSSI	Corresponding International Sites	% Area favourable (in blue= within North Norfolk)	% Area unfavourable recovering (in blue= within North Norfolk)	% Area unfavourable no change (in blue= within North Norfolk)	% Area unfavourable declining (in blue= within North Norfolk)	% Area destroyed / part destroyed (in blue= within North Norfolk)
North Norfolk Coast	North Norfolk Coast SPA/SAC/Ramsar and the Wash and North Norfolk Coast SAC	**96.62**	**2.80**	**0.58**	0.00	0.00
		94.30	**2.85**	**2.85**	0.00	0.00
Overstrand Cliff	Overstrand Cliffs SAC	**100**	0.00	0.00	0.00	0.00
Winterton-Horsey Dunes	Winterton-Horsey Dunes SAC	**29.96**	**55.86**	**14.18**	0.00	0.00
Great Yarmouth North Denes	Great Yarmouth North Denes SPA	**50**	0.00	0.00	0.00	0.00
		50	0.00	0.00	0.00	0.00
River Wensum	River Wensum SAC	**41.22**	**26.78**	**1.82**	**30.18**	0.00
		46.16	**26.92**	**3.84**	**23.08**	0.00
Paston Great Barn	Paston Great Barn SAC	**100**	0.00	0.00	0.00	0.00
Holt Lowes	Norfolk Valley Fens SAC	0.00	0.00	0.00	**100**	0.00
Sheringham-Beeston Regis Common	Norfolk Valley Fens SAC	0.00	0.00	0.00	**100**	0.00
Southrepps Common	Norfolk Valley Fens SAC	0.00	**100**	0.00	0.00	0.00
Smallburgh Fen	Broadlands SPA/Ramsar and Broads SAC	0.00	0.00	**100**	0.00	0.00
Broad Fen	Broadlands SPA/Ramsar and Broads SAC	0.00	0.00	**100**	0.00	0.00
Ant Broads and Marshes	Broadlands SPA/Ramsar and Broads SAC	**21.12**	**44.75**	**33.71**	**0.42**	0.00
Bure Broads and Marshes	Broadlands SPA/Ramsar and Broads SAC	**12.49**	**6.58**	**80.93**	0.00	0.00
		16.67	**16.67**	**66.66**	0.00	0.00
Ludham-Potter Heigham Marshes	Broadlands SPA/Ramsar and Broads SAC	0.00	0.00	**100**	0.00	0.00
Upper Thurne Broads	Broadlands SPA/Ramsar and	**40.46**	0.00	**20.34**	**39.20**	0.00

SSSI	Corresponding International Sites	% Area favourable (in blue= within North Norfolk)	% Area unfavourable recovering (in blue= within North Norfolk)	% Area unfavourable no change (in blue= within North Norfolk)	% Area unfavourable declining (in blue= within North Norfolk)	% Area destroyed / part destroyed (in blue= within North Norfolk)
and Marshes	Broads SAC					
Calthorpe Broad	Broadlands SPA/Ramsar and Broads SAC	0.00	**100**	0.00	0.00	0.00
Alderfen Broad	Broadlands SPA/Ramsar and Broads SAC	**8.38**	**24.85**	**66.77**	0.00	0.00
Shallam Dyke Marshes	Broadlands SPA/Ramsar and Broads SAC	**1.22**	**3.12**	**78.87**	**16.79**	0.00
Priory Meadows	Broadlands SPA/Ramsar and Broads SAC	**29.64**	0.00	0.00	**70.36**	0.00
Breydon Water	Breydon Water SPA	**100**	0.00	0.00	0.00	0.00
Halvergate Marshes	Breydon Water SPA	**31.80**	**43.20**	**25.00**	0.00	0.00
Roydon Common	Roydon Common and Dersingham Bog SAC and Roydon Common Ramsar Site	0.00	**95.53**	0.00	**4.47**	0.00
Dersingham Bog	Roydon Common and Dersingham Bog SAC and Dersingham Bog Ramsar Site	**37.74**	**62.26**	0.00	0.00	0.00
The Wash	The Wash SPA	**62.24**	**37.25**	0.00	**0.51**	0.00
Hunstanton Cliffs	The Wash SPA	**100**	0.00	0.00	0.00	0.00

Appendix C: Condition of SSSI units comprising the European designated sites within the North Norfolk District.

Table 1 Condition of SSSI units in the North Norfolk Coast SSSI

Main Habitat	Unit No.	Unit area (ha)	Latest assessment date	Assessment description	Condition assessment comment
Littoral sediment	34	229.83	2 August 2004	Favourable	This unit needs dividing as the bay has developed into Limonium dominated saltmarsh over the last 10 years and is clearly very different from the outer beach in habitat.
Supralittoral sediment	35	118.71	2 August 2004	Favourable	
Supralittoral sediment	36	118.85	16 September 2003	Favourable	A difficult site to assess because of the long standing pines but considered to be in favourable condition overall. However, the dell an important dune slack is increasingly being covered in young birch. There will be a need to clear this regeneration. The dune frontage shows signs of accretion because the formation of the dune ridge in front continues.
Coastal lagoon	37	0.45	23 March 2005	Favourable	The water of the lagoon is clear and the sandy substrate remains firm. Plenty of evidence of lugworms and live lagoon cockles. No reduction of area since last visit.
Coastal lagoon	38	5.65	17 May 2002	Favourable	This is a preliminary assessment of the condition of the site, no faunal survey was undertaken and salinity not measured. This needs to be done by next April. However, the water was clear, lugworm casts seen and the area and water level were as normal.
Neutral grassland-lowland	40	136.42	2 August 2004	Unfavourable, recovering	Includes areas which were arable c5 years ago. These are now naturally regenerating with an interesting mixed flora depending on degree of drainage. The management involves topping at this time of year to control the inevitable thistles and ragwort.
Neutral grassland-lowland	41	34.2	2 August 2004	Favourable	This unit is grazed by large numbers of wildfowl in winter and is managed primarily for this interest
Littoral sediment	42	493.77	23 March 2005	Favourable	Viewed from Wells harbour side plus used aerial photographs. A very extensive area of tidal sand flats. No obvious negative factors.
Supralittoral sediment	43	52.52	6 September 2003	Favourable	Walked over at low tide. Other than the pine regeneration continuing there are no problems here. The sycamores at the western end are the main place for migrants and saw 3 pied flycatchers and a red breasted flycatcher there.
Littoral sediment	44	281.21	6 September 2003	Favourable	Walked across at low tide. The marsh is in good condition with all the principle NVC communities recorded as still present.
Littoral sediment	45	375.01	2 August 2004	Favourable	Remains a wonderful example of saltmarsh.
Littoral sediment	46	410.61	33 March 2005	Favourable	Visited at low tide. Extensive sandflats. Also checked on aerial photos. At the eastern end of the unit some evidence of old saltmarsh surrounded by sandflats. Consider this is natural change due to Blakeney Point moving westwards. This was also evident at the last visit and is nothing new.
Littoral sediment	47	169.87	11 July 2003	Favourable	Detailed assessment of the marsh. It easily met all attributes.
Littoral sediment	48	376.46	23 March 2005	Favourable	Extensive area of sandflats visited at low tide. Evidence of former saltmarsh now sandflat but not a new process and probably related to western extension of Blakeney.
Littoral sediment	49	245.32	11 July 2003	Favourable	Detailed survey of the marsh testing methodology. The site easily made all of the attributes.
Neutral grassland-lowland	50	87.93	5 November 2004	Favourable	The site is being grazed and water levels are quite high. The sward is suitable for wintering wildfowl.

Main Habitat	Unit No.	Unit area (ha)	Latest assessment date	Assessment description	Condition assessment comment
Neutral grassland-lowland	51	35.67	5 November 2004	Favourable	The site looks in good condition. It has been grazed and water levels are quite high.
Littoral sediment	52	555.11	1 November 2006	Favourable	The harbour area remains much as on previous visits though increasing numbers of unregulated moorings are becoming a concern and may require discussions between the various parties.
Supralittoral sediment	53	107.84	1 November 2006	Favourable	Visit after high tides. Site unaltered by human activity. Full functionality in relation to coastal processes
Supralittoral sediment	54	68.52	23 March 2005	Favourable	Compared with the unit to the east the shingle ridge is in natural condition with no bulldozing.
Littoral sediment	55	94.88	1 November 2006	Favourable	Spartina dominates large areas of this marsh and a full survey may be needed to determine whether it affects its condition status. The reality though is that management to control it is probably unrealistic
Littoral sediment	56	40.34	21 August 2006	Favourable	Walked up the east bank of Blakeney Freshes and made a number of sorties into the marsh to sample the vegetation. Meets all attributes. Will be affected by the River Glaven diversion with small scale losses but considered necessary for the conservation management of the site.
Fen, marsh and swamp- lowland	57	121.52	30 April 2004	Favourable	Visit with NWT staff. Some concern expressed about water levels in reed beds and degree of grazing on marshes. Need to address some of these issues through discussions with grazier.
Supralittoral sediment	58	45.78	21 August 2003	Unfavourable, no change	The shingle ridge remains in unfavourable condition because of flood defence management by The Environment Agency. The shingle is still bulldozed up at t5he start of winter and after any events. At present a return to less interference with the ridge is scheduled for 2005-6.
Coastal lagoon	59	35.64	30 April 2004	Favourable	Visit as part of assessment of NWT land
Fen, marsh and swamp- lowland	60	44.15	16 Dec 2003	Favourable	Visited the unit to consider future approaches to management. The owner would like to burn areas of reed if EN do not cut it. The reed is in a condition which is fine for bittern and other reed bed birds. However at the time of visit water levels were below ground level by several centimetres. We need to consider with the owner whether there are opportunities to put in more ditches.
Coastal lagoon	61	29.76	30 April 2004	Favourable	Some issues about grazing. There are stretches which have not been grazed for a considerable period because of lack of access over the ditches and lack of freshwater but large areas of this unit are not strictly grazing marsh and we may therefore need to review objectives for this unit.
Neutral grassland-lowland	62	18.74	30 April 2004	Favourable	Visited as part of review of NWT holdings
Neutral grassland-lowland	63	20.83	30 April 2004	Favourable	Visited as part of assessment of NWT & NOA holdings. Perhaps more grazing needed on NWT land but within favourable condition at the moment
Neutral grassland-lowland	64	8.32	1 November 2006	Favourable	
Neutral grassland-lowland	65	25.7	20 May 2004	Favourable	Main reason for unfavourable the flight ponds have been filled in and grazing along this stretch is at acceptable levels
Supralittoral sediment	70	54.64	11 July 2003	Favourable	These low dunes and gravel ridges all in good condition.
Neutral grassland-lowland	71	26.8	5 November 2004	Favourable	Marshes look in good condition with water in places. Generally sward good for wildfowl.
Neutral grassland-lowland	72	9.82	5 November 2004	Favourable	The marsh looked in good condition. Water levels are quite high and the sward has been grazed to a suitable height for wintering wildfowl.
Neutral grassland-lowland	73	5.72	5 November 2004	Favourable	Follow up visit to one in September. Marsh generally well grazed and water levels high.

Table 2 Condition of SSSI units in Winterton- Horsey Dunes SSSI

Main Habitat	Unit No.	Unit area (ha)	Latest assessment date	Assessment description	Condition assessment comment
Supralittoral sediment	1	34.26	20 November 2000	Favourable	Sand from beach feeding operations at Waxham is appearing, contains shell fragments.
Supralittoral sediment	2	42.18	23 March 2005	Unfavourable, recovering	Site recovering following installation of fencing and re-introduction of grazing on the southern compartment.
Supralittoral sediment	3	17.67	4 September 2003	Unfavourable, no change	Inappropriate coastal management. Shoreline MP: presence of seawall.
Supralittoral sediment	4	74.07	18 March 2003	Unfavourable, recovering	Reassessment following discussion with Rick Southwood taking into consideration recent observations. WE now feel sheep grazing management is meeting objectives. The site is unfavourable recovering but there remains a water quantity issue which is not as acute as previously, hence we can keep in unfavourable recovering.
Supralittoral sediment	5	20.31	20 November 2000	Unfavourable, no change	Inappropriate coastal management. Shoreline MP: presence of seawall.
Supralittoral sediment	13	88.73	20 November 2000	Unfavourable, recovering	Rhododendron & birch scrub removal continues.

Table 3 Condition of SSSI units in River Wensum SSSI

Main Habitat	Unit No.	Unit area (ha)	Latest assessment date	Assessment description	Condition assessment comment
Neutral grassland-lowland	1	2.41	25 July 2002	Favourable	This compartment was visited by Richard Leishman and Louise Oliver. The criterion sheet for the SSSI indicates that this site unit was included for unimproved meadow. This site unit forms part of a larger management unit with MG6 on higher ground outwith the boundary of the site. When site units 1 & 2 were visited in the summer of 2001, the ground had been severely poached as a result of stock being marooned by foot & mouth movement restrictions. A vegetation map of the unit was drawn up by Tim Smith of ESL in the autumn and this demonstrated that the compartment was dominated by MG10 with poached areas dominated by S22. However, on this site visit it was apparent that the grazing regime had normalised, and that the site was receiving an appropriate level of grazing and the area of S22 appeared to have reduced in size. At the time of our site visit, the gate between compartments 1 & 2 was open and the 15 or so suckler cows and followers were able to roam freely between the two.
Neutral grassland-lowland	2	11.34	25 July 2002	Favourable	The site unit was visited by Richard Leishman and Louise Oliver. The Criterion Sheet indicates that this site unit was included for unimproved meadow. When site units 1 & 2 were visited in the summer of 2001, the ground had been severely poached as a result of stock having been marred by foot & mouth movement restrictions. A vegetation map of the unit was drawn up by Tim Smith of ESL in the autumn and this demonstrated that the compartment was dominated by a mosaic of MG10 with smaller areas of M22 and comment was made with regard to the level of poaching at that time On this site visit however, it was apparent that the grazing regime had normalised, and that the site was receiving an appropriate level of grazing. At the time of our site visit, the gate between site units 1 & 2 was open and the 15 or so suckler cows and followers were able to roam freely between the two.
Neutral grassland-lowland	3	19.44	25 July 2002	Favourable	This compartment was visited by Richard Leishman and Louise Oliver Site Units 3 & 4 form a single management unit consisting of what were formerly a series of smaller fields. A complex system of dykes criss-cross the unit and it is apparent that there have been considerable efforts to drain the meadow in the past. However, despite this it is dominated by marsh and swamp communities. At the time of the visit the site was grazed very extensively by relatively few cattle. it may be necessary to graze this compartment at a low stock density so that there is an abundance of vegetation on dryer and marshy ground and in this way stock are not tempted onto the swampier ground. The vegetation was dominated by a mosaic of MG10 rush-pasture with extensive areas of M22 and M23 rush pasture and wetter ground dominated by S7 swamps. The movement of stock across the site, and their preferences are such that there is a diversity of grazing intensities across the site. Small areas of oak woodland have been included within the boundary of the site and small areas of scrub have developed on dryer ground (particularly W23), adding further diversity to the habitat mosaic. This was a very rich site, and a number of plant species were indicative on quite base rich conditions e.g. *Breza media*. Notable species seen during the visit included *Dactylorhiza fuchsii, D. praetermissa* and *Valeriana dioica*.
Broadleaved, mix and yew woodland-lowland	4	3.77	25 July 2002	Favourable	This site unit was visited by Richard Leishman and Louise Oliver The compartment is dominated by unimproved meadow. Site Units 3 & 4 form a single management unit consisting of what were formerly a series of small fields separated by dykes and it is a dyke which forms the boundary between the two compartments. At the time of the visit the site was grazed very extensively by relatively few cattle. The vegetation was dominated by a mosaic of MG10 and M22 rush pastures

Main Habitat	Unit No.	Unit area (ha)	Latest assessment date	Assessment description	Condition assessment comment
					with wetter areas picked out by S7. Small areas of scrub have developed on dryer ground adding further diversity to the habitat mosaic.
Fen, marsh and swamp- lowland	5	4.63	8 August 2002	Favourable	This unit was visited by Richard Leishman and Louise Oliver. In this compartment the fen vegetation has become almost totally encroached upon by scrub. However, it would seem that the unit must have been selected for this seral process and it has therefore been concluded that the unit is in favourable condition. However, further consideration is needed with regard to the possibility that a program of scrub clearance should be instigated. It should be noted that this compartment is located between the river and a deep IDB drain and is therefore difficult to access. Once on the compartment progress is hampered by dry reed beds with nettles growing well above head height, bramble and scrub.
Fen, marsh and swamp- lowland	6	3.53	8 August 2002	Favourable	This unit was visited by Richard Leishman and Louise Oliver. This unit is dominated by open fen habitats. It is therefore concluded that scrub does not form part of the special interest for this unit and that the management objectives should be to maintain this unit as open fen. However, it should be noted that the small block of scrub in the western corner of the site provides additional habitat diversity. Further consideration should be given with regard to the long-term management of this site. It should be noted that this compartment is located between the river and a deep IDB drain and is therefore difficult to access.
Neutral grassland-lowland	7	2.64	5 September 2005	Unfavourable, recovering	The Hawk & Owl Trust have instigated management work under the Broads ESA scheme including fencing, scrub clearance and the reintroduction of cattle grazing.
Broadleaved, mix and yew woodland-lowland	8	13.16	14 June 2004	Unfavourable, recovering	Significant progress has been made with regard to scrub clearance, water level management and management of the sedgebeds and reedbeds so as to restore these to favourable condition. The objectives with regard to the water level management of the site have been achieved, with clearance of choked drains and the installation of water control structures under the ESA scheme. However, scrub clearance work needs to continue.
Fen, marsh and swamp- lowland	9	1.41	22 July 2003	Favourable	With the new fence, four bullocks have been recently introduced onto the site.
Fen, marsh and swamp- lowland	10	1.06	22 July 2003	Favourable	The site has obviously not been grazed this year and is rank, particularly with dock. The re-introduction of grazing is urgently required.
Fen, marsh and swamp- lowland	11	2.69	22 July 2003	Favourable	The site has not been grazed this year and the vegetation is rank.
Fen, marsh and swamp- lowland	12	3.33	23 May 2003	Unfavourable, declining	Inappropriate scrub control.
Broadleaved, mix and yew woodland-lowland	13	2.14	7 June 2007	Unfavourable, recovering	Current management is compatible with the river interests of the River Wensum. The compartment supports semi-natural vegetation. Scrub clearance has been completed around the periphery of the fragment of heathland within this compartment.
Fen, marsh and swamp- lowland	14	1.95	23 May 2003	Unfavourable, no change	Inappropriate scrub control.
Broadleaved, mix and yew woodland-lowland	15	1.64	5 July 2002	Favourable	This site unit was visited by Richard Leishman and Louise Oliver An enclosure has been erected for captive cranes includes parts of compartment 15 & 16 and which bisects the compartment in two. No grazing appears to have occurred either within or outwith the enclosure for a number of years resulting in rank grassland and invasion of scrub and bramble. This area could benefit from the reintroduction of grazing or from the introduction of a cutting regime.

Main Habitat	Unit No.	Unit area (ha)	Latest assessment date	Assessment description	Condition assessment comment
Neutral grassland-lowland	16	2.05	15 March 2005	Unfavourable, recovering	Re-introduction of grazing leading to recovery.
Neutral grassland-lowland	17	3.92	19 August 2003	Favourable	Needed grazing at time of visit, but infrastructure and grazing requirements being addressed.
Fen, marsh and swamp- lowland	18	2.94	19 August 2003	Favourable	Needed grazing at time of visit, but infrastructure and grazing requirements being addressed.
Fen, marsh and swamp- lowland	19	5.39	11 March 2005	Unfavourable, recovering	Re-introduction of grazing leading to recovery.
Neutral grassland-lowland	20	11.81	11 March 2005	Unfavourable, recovering	Re-introduction of grazing leading to recovery.
Neutral grassland-lowland	21	2.55	11 March 2005	Unfavourable, recovering	Re-introduction of grazing leading to recovery.
Rivers and stream	45	3.5	23 December 2002	Unfavourable, declining	Inappropriate water levels, inappropriate weirs dams and other structures, siltation, water abstraction, water pollution - agriculture/run off, water pollution – discharge.
Rivers and stream	46	1.76	23 December 2002	Unfavourable, declining	Inappropriate water levels, inappropriate weirs dams and other structures, siltation, water abstraction, water pollution - agriculture/run off, water pollution – discharge.
Rivers and stream	47	4.95	23 December 2002	Unfavourable, declining	Inappropriate water levels, inappropriate weirs dams and other structures, siltation, water abstraction, water pollution - agriculture/run off, water pollution – discharge.
Rivers and stream	48	6.37	23 December 2002	Unfavourable, declining	Inappropriate water levels, inappropriate weirs dams and other structures, siltation, water abstraction, water pollution - agriculture/run off, water pollution – discharge.
Rivers and stream	49	6.15	23 December 2002	Unfavourable, declining	Inappropriate water levels, inappropriate weirs dams and other structures, siltation, water abstraction, water pollution - agriculture/run off, water pollution – discharge.

Table 4 Condition of SSSIs comprising the Norfolk Valley Fens SAC within North Norfolk

Site	Main Habitat	Unit No.	Unit area (ha)	Latest assessment date	Assessment description	Condition assessment comment
Holt Lowes	Fen, marsh and swamp- lowland	1	15.13	13 June 2007	Unfavourable, declining	Mire areas that were cleared of scrub over recent years are becoming invaded by regeneration of scrub.
	Fen, marsh and swamp- lowland	2	34.49	13 June 2007	Unfavourable, declining	Program of scrub clearance not completed under RES as per 5 year management plan. An HLS agreement will need to be negotiated in order to take this work forward.
Sheringham and Beeston Regis Common	Fen, marsh and swamp- lowland	1	4.92	20 September 2006	Unfavourable, declining	AMP 4 investigations ongoing into hydrological relationship between the Sheringham AW abstraction the special interest on the site. Stage 3 of the Environment Agency Review of Consents for the Norfolk Valley Fens SAC has indicated that it can not be concluded that consented activities will not have an adverse impact on integrity of the site.
	Fen, marsh and swamp- lowland	2	20.02	20 September 2006	Unfavourable, declining	As above
Southrepps Common	Fen, marsh and swamp- lowland	1	5.46	16 March 2004	Unfavourable, recovering	Visit with Adrian to meet the local management group and discuss possibilities of them managing the whole site and therefore implications for buying a cutter. Paul Ryan also attended from Norfolk County Council.

Table 5 Condition of SSSIs comprising the Broadlands and Broads designated areas

Site	Main Habitat	Unit No.	Unit area (ha)	Latest assessment date	Assessment description	Condition assessment comment
Smallburgh Fen	Fen, marsh and swamp- lowland	1	7.63	9 May 2006	Unfavourable, no change	The site is well managed and met all its targets in this regard. The assessment however failed on two hydrological targets for the M13 vegetation. If this pressure is not alleviated the site will continue to degrade in quality over time.
Broad Fen, Dilham	Fen, marsh and swamp- lowland	1	38.55	20 September 2006	Unfavourable, no change	Site likely to be affected by water quality and water resource issues.
Ant Broads and Marshes	Fen, marsh and swamp - lowland	1	10.41	15 Dec 2004	Favourable	
	Fen, marsh and swamp - lowland	2	30.58	15 Dec 2004	Favourable	Some scrub regeneration but this will be controlled this winter. Still some clearance to be done in the Moor Grass area at the margin of the site.
	Fen, marsh and swamp - lowland	3	25.25	16 Jun 2004	Favourable	Good balance in the management on this site , both short and longer rotations.
	Fen, marsh and swamp - lowland	4	18.29	20 Sep 2006	Unfavourable no change	Site likely to be impacted by water abstraction.
	Fen, marsh and swamp - lowland	5	121.82	20 Sep 2006	Unfavourable no change	Clayrack part of site likely to be affected by water abstraction
	Fen, marsh and swamp - lowland	6	16.65	13 Nov 2003	Unfavourable recovering	Catfield Fen looked in good condition, Little Fen starting to scrub up again, work is required in the next two years to prevent site moving to the unfavourable category. The land manager has been informed of the need for works.
	Fen, marsh and swamp - lowland	7	0.60	18 Feb 2000	Favourable	
	Fen, marsh and swamp - lowland	8	36.00	28 May 2003	Unfavourable recovering	Restoration complete or near complete. Turf pond to the south still poorly vegetated. Sluice to the Northern block set the wrong way around, i.e. draining the site. Adrian to take this issue up.
	Fen, marsh and swamp - lowland	9	5.30	07 Sep 2004	Favourable	Area of naturally functioning floodplain fen.
	Fen, marsh and swamp - lowland	10	123.00	19 May 2004	Unfavourable recovering	Further phase of restoration complete. Further phase this year. Water quality and quantity issues will be dealt with by EA RoC.
	Fen, marsh and swamp - lowland	11	35.84	20 Sep 2006	Unfavourable no change	Site likely to be affected by water abstraction
	Fen, marsh and swamp - lowland	12	7.40	28 Jan 2005	Unfavourable recovering	This unit has recovered well following restoration and regular fen management carried out.
	Fen, marsh and swamp - lowland	13	2.63	21 Dec 2004	Favourable	
	Fen, marsh and swamp - lowland	16	7.94	21 Dec 2004	Favourable	
	Fen, marsh and swamp - lowland	17	9.76	05 Nov 2003	Unfavourable recovering	Visited site with owner and managing agent - management of the reed and fen progressing well under ESA fen tier; continuation of scrub rogueing; very extensive signs of otter activity
	Fen, marsh and	18	8.41	28 Jan 2005	Unfavourable	Recovering well following restoration.

Site	Main Habitat	Unit No.	Unit area (ha)	Latest assessment date	Assessment description	Condition assessment comment
	swamp - lowland				recovering	
	Fen, marsh and swamp - lowland	19	0.43	01 Sep 2000	Favourable	overseen from Barton Broad
	Fen, marsh and swamp - lowland	20	1.99	21 Dec 2004	Favourable	
	Fen, marsh and swamp - lowland	21	5.73	19 May 2004	Unfavourable recovering	Restoration complete.
	Fen, marsh and swamp - lowland	22	27.73	21 Dec 2004	Favourable	
	Fen, marsh and swamp - lowland	23	12.05	12 May 2003	Favourable	Site restored, recovered, reedbed returned strongly. Isolated from river ant by dredging bank so judgment is the unit is favourable. The other part of the unit is east of the River Ant is non intervention alder woodland.
	Fen, marsh and swamp - lowland	24	24.05	28 May 2003	Unfavourable recovering	Much scrub removed, more to go!
	Fen, marsh and swamp - lowland	25	16.94	01 Sep 2000	Unfavourable recovering	
	Fen, marsh and swamp - lowland	26	68.15	17 Sep 2003	Unfavourable recovering	Water quality in Barton Broad is improving in response to improvements to Sewage treatment Works. I am not sure if this will be enough, and a recent report has highlighted the importance of diffuse pollution in catchments such as the Ant. So while the unit is recorded as unfavourable recovering the situation is that diffuse pollution might need to be tackled before favourable condition is achieved. NB first time rural sewage and small point sources may also require further work.
	Fen, marsh and swamp - lowland	27	16.43	12 Apr 1999	Unfavourable recovering	Much of the site unit has been cleared of scrub. Further blocks remain.
	Fen, marsh and swamp - lowland	28	1.95	25 May 2005	Favourable	Excellent area of wet alder carr being managed ideally under a no-intervention regime.
	Fen, marsh and swamp - lowland	29	1.72	14 Jun 1999	Favourable	
	Fen, marsh and swamp - lowland	30	3.10	26 May 2005	Unfavourable declining	Ochre discharge from an adjacent IDB pump affecting both dyke and fen habitats.
	Fen, marsh and swamp - lowland	31	24.31	15 Dec 2004	Favourable	Some scrub developing close to upland however much of this will be cleared in coming year. *Crassula helmsii* found in pond close to margin.
	Fen, marsh and swamp - lowland	32	0.11	02 Aug 2000	Favourable	Small unit, largely managed as carr woodland, with some clearance of young scrub to maintain fen vegetation and maintain the unit in favourable condition.
	Standing open water and canals	33	71.26	15 Dec 2005	Unfavourable no change	Otter feature now favourable on this unit.
	Standing open water and canals	34	0.44	17 Sep 2004	Favourable	
	Standing open water and canals	35	1.25	17 Sep 2004	Unfavourable recovering	
	Standing open	36	4.22	20 Sep 2006	Unfavourable no	Diffuse pollution represents 38% of the P at the site. Water abstraction may be affecting

Site	Main Habitat	Unit No.	Unit area (ha)	Latest assessment date	Assessment description	Condition assessment comment
	water and canals				change	this unit.
	Standing open water and canals	37	4.04	17 Sep 2004	Favourable	
Bure Broads and Marshes	Fen, marsh and swamp- lowland	1	77.70	08 Jul 2004	Favourable	
	Fen, marsh and swamp- lowland	2	204.34	21 Sep 2006	Unfavourable no change	Unit likely suffering from water resource and water quality issues.
	Fen, marsh and swamp- lowland	3	183.45	20 Sep 2006	Unfavourable no change	Unit affected by water abstraction and water quality issues.
	Standing open water and canals	4	9.07	08 Jul 2004	Unfavourable no change	Lake restoration required.
	Fen, marsh and swamp- lowland	5	43.42	12 May 2000	Unfavourable recovering	
	Fen, marsh and swamp- lowland	6	42.25	20 Sep 2006	Unfavourable no change	Water quality and water resource issues may be affecting this unit
	Broadleaved, mixed and yew woodland - lowland	7	11.18	12 May 2000	Favourable	
	Fen, marsh and swamp- lowland	8	9.08	21 Sep 2006	Unfavourable no change	Unit likely suffering water quality and water resource problems.
	Fen, marsh and swamp- lowland	9	86.59	21 Sep 2006	Unfavourable no change	Unit likely suffering from water resource and water quality issues.
	Standing open water and canals	10	32.01	08 Jul 2004	Unfavourable no change	Lake restoration and possibly silt removal required.
	Standing open water and canals	11	4.50	08 Jul 2004	Unfavourable no change	
	Standing open water and canals	12	28.74	10 Mar 2005	Unfavourable no change	Agreed that lake in an unfavourable condition after a review of plant and chemical data at a Lakes PSA meeting.
	Standing open water and canals	13	5.38	08 Jul 2004	Unfavourable recovering	
	Standing open water and canals	14	3.72	12 Jan 2006	Favourable	Local lakes PSA group agreed that this water bodies should be rated now as favourable.
Ludham-Potter Heigham Marshes	Acid grassland - lowland	1	3.58	22 Sep 2006	Unfavourable no change	Site likely affected by water abstraction.
	Broadleaved, mixed and yew woodland - lowland	2	2.34	22 Sep 2006	Unfavourable no change	Site likely affected by water abstraction.
	Standing open water and canals	3	83.52	22 Sep 2006	Unfavourable no change	Site likely affected by water abstraction

Site	Main Habitat	Unit No.	Unit area (ha)	Latest assessment date	Assessment description	Condition assessment comment
	Fen, marsh and swamp - lowland	4	0.54	22 Sep 2006	Unfavourable no change	Site likely to be affected by water abstraction
	Standing open water and canals	5	8.35	22 Sep 2006	Unfavourable no change	Site likely to be affected by water abstraction
	Standing open water and canals	6	1.05	22 Sep 2006	Unfavourable no change	Site likely affected by water abstraction
	Broadleaved, mixed and yew woodland - lowland	7	2.16	22 Sep 2006	Unfavourable no change	Site likely affected by water abstraction
	Standing open water and canals	8	2.19	22 Sep 2006	Unfavourable no change	Site likely affected by water abstraction
Upper Thurne Broads and Marshes	Standing open water and canals	1	5.41	24 Nov 2000	Unfavourable no change	Drainage and consequent low water levels still a problem. Awaiting implementation of WLMP - construction and operation of water control structure.
	Standing open water and canals	2	10.52	24 Nov 2000	Unfavourable no change	Drainage leading to low water levels is still an issue. Awaiting implementation of WLMP - construction and operation of water control structure.
	Broadleaved, mixed and yew woodland - lowland	3	2.83	10 May 2000	Favourable	
	Fen, marsh and swamp - lowland	4	8.92	12 May 2000	Favourable	Bittern booming.
	Fen, marsh and swamp - lowland	5	5.08	13 Apr 1999	Favourable	Site recovered from scrub invasion in recent past, entered into ESA fen tier so as to maintain the recovered state. Would question if money enough to achieve sustainable ongoing management.
	Standing open water and canals	6	10.62	26 Sep 2006	Unfavourable no change	Water levels too low to meet conservation objectives.
	Standing open water and canals	7	3.31	21 Jul 2000	Favourable	
	Fen, marsh and swamp - lowland	9	134.43	26 Sep 2006	Unfavourable no change	Fens adjacent to the waterways in direct connection, and experience the same impacts as the lakes and rivers.
	Fen, marsh and swamp - lowland	10	8.43	31 May 2001	Favourable	Still considered favourable however scrub becoming a problem, unless management is undertaken unfavourable next time.
	Fen, marsh and swamp - lowland	11	434.82	09 Jul 2004	Favourable	
	Fen, marsh and swamp - lowland	12	337.57	09 Jul 2004	Unfavourable declining	Water levels due to land drainage to the south of Hickling Broad are way too low. Need WLMP to be implemented.
	Standing open water and canals	14	10.97	03 Jul 2002	Unfavourable no change	Land in managed in ESA tier 2: A hay crop is taken and then aftermath grazing occurs. There is good structure in the vegetation which is providing good hunting ground for raptors - 3 marsh harriers were seen on this visit. There was a lot of rush present in the wetter field and we told the land manager that we suggested he contact RDS if he

Site	Main Habitat	Unit No.	Unit area (ha)	Latest assessment date	Assessment description	Condition assessment comment
						wished to control the rushes and that we would need to give consent for this activity. Winter water level prescriptions under tier 2 are the main reason for the condition recorded against this land.
	Standing open water and canals	15	33.18	26 Sep 2006	Unfavourable no change	Lake with excessive nutrients, turbid conditions and lack of plants.
	Standing open water and canals	16	127.72	12 Jan 2006	Unfavourable declining	For the past four years both water quality and the aquatic plant beds of European importance have been in severe decline. The objectives are now clearly not being met.
	Standing open water and canals	17	36.32	09 Jul 2004	Unfavourable no change	The IDB Brograve project looks to find a solution to the problem of ochre and salinity entering the lake. Disturbance to the SPA winter waterfowl refuge is a serious problem.
	Standing open water and canals	18	8.56	09 Jul 2004	Favourable	
	Standing open water and canals	19	8.27	09 Jul 2004	Favourable	Need to maintain/restore reed islands between broad and navigation channel in the near future, so as to maintain winter wildfowl refuge.
Calthorpe Broad	Acid grassland - lowland	1	10.12	19 February 2008	Unfavourable recovering	WLMP works now being implemented on the ground by Broads IDB
	Broadleaved, mixed and yew woodland - lowland	2	33.22	19 February 2008	Unfavourable recovering	Broads IDB now implementing scheme on the ground
	Fen, marsh and swamp - lowland	3	1.01	19 February 2008	Unfavourable recovering	Broads IDB now implementing scheme on the ground
Alderfen Broad	Broadleaved, mixed and yew woodland - lowland	1	1.81	16 May 2003	Favourable	
	Fen, marsh and swamp - lowland	2	14.43	20 September 2006	Unfavourable, no change	Groundwater abstraction making alder woodland goes out of hydrological regime.
	Standing open water and canals	3	5.37	8 July 2004	Unfavourable, recovering	
Shallam Dyke Marshes	Standing open water and canals	1	2.56	03 Sep 2007	Unfavourable no change	Ditches unfavourable due largely to heavy shading by *Phragmites*. Breeding bird numbers declined significantly between 1990 and 2006.
	Standing open water and canals	2	2.18	03 Sep 2007	Unfavourable recovering	Dyke assessment showed good species richness in dyke - condition changed to recovering; water quality issues not shown to be present.
	Standing open water and canals	3	11.73	03 Sep 2007	Unfavourable declining	Ditches largely OK, though water quality issues in soke dyke and adjacent dykes. Breeding bird numbers declined significantly between 1990 and 2006.
	Boundary and linear features	4	0.85	03 Sep 2007	Favourable	
	Standing open water and canals	5	21.34	03 Sep 2007	Unfavourable no change	Ditches unfavourable due largely to heavy shading by *Phragmites* and water quality issues. Breeding bird numbers declined significantly between 1990 and 2006.
	Standing open water and canals	6	9.01	03 Sep 2007	Unfavourable no change	Ditches unfavourable due largely to heavy shading by *Phragmites* and water quality issues. Breeding bird numbers declined significantly between 1990 and 2006.

Site	Main Habitat	Unit No.	Unit area (ha)	Latest assessment date	Assessment description	Condition assessment comment
	Standing open water and canals	7	13.67	03 Sep 2007	Unfavourable no change	Ditches unfavourable due largely to low species richness for mid succession dykes. Breeding bird numbers declined significantly between 1990 and 2006.
	Standing open water and canals	8	8.52	03 Sep 2007	Unfavourable no change	Ditches unfavourable due largely to low species richness for mid succession dykes and algal cover. Breeding bird numbers declined significantly between 1990 and 2006.
Priory Meadows	Acid grassland-lowland	1	17.19	01 Oct 2003	Unfavourable declining	Wthe lowest I have seen it - ever. Ditches very overgrown with reed and scrub. Only three of the marshes mown this year and no evidence of grazing. Pond at back of site recently extended.
	Acid grassland-lowland	2	7.24	21 Dec 2004	Unfavourable recovering	

Table 6 conditon of SSSI units comprising the Breydon Water SPA

Site	Main Habitat	Unit No.	Unit area (ha)	Latest assessment date	Assessment description	Condition assessment comment
Breydon Water	Littoral sediment	1	3.92	06 July 2006	Favourable	Site assessed by site visit and examination of bird numbers.
	Neutral grassland - lowland	2	0.65	06 July 2006	Favourable	Site assessed by site visit and examination of bird numbers.
	Neutral grassland - lowland	3	0.81	06 July 2006	Favourable	Site assessed by site visit and examination of bird numbers.
	Neutral grassland - lowland	4	1.18	06 July 2006	Favourable	Site assessed by site visit and examination of bird numbers.
	Littoral sediment	5	398.17	06 July 2006	Favourable	Site assessed by site visit and examination of bird numbers.
	Littoral sediment	6	60.10	06 July 2006	Favourable	Site assessed by site visit and examination of bird numbers.
	Littoral sediment	7	8.51	06 July 2006	Favourable	Site assessed by site visit and examination of bird numbers.
	Neutral grassland - lowland	8	0.32	06 July 2006	Favourable	Site assessed by site visit and examination of bird numbers.
	Littoral sediment	9	3.30	06 July 2006	Favourable	Site assessed by site visit and examination of bird numbers.
	Neutral grassland - lowland	10	9.02	06 July 2006	Favourable	Site assessed by site visit and examination of bird numbers.
	Neutral grassland - lowland	11	11.17	06 July 2006	Favourable	Site assessed by site visit and examination of bird numbers.
	Neutral grassland - lowland	12	2.73	06 July 2006	Favourable	Site assessed by site visit and examination of bird numbers.
	Neutral grassland - lowland	13	3.85	06 July 2006	Favourable	Site assessed by site visit and examination of bird numbers.
	Neutral grassland - lowland	14	5.14	06 July 2006	Favourable	Site assessed by site visit and examination of bird numbers.
	Littoral sediment	15	3.48	06 July 2006	Favourable	Site assessed by site visit and examination of bird numbers.

Site	Main Habitat	Unit No.	Unit area (ha)	Latest assessment date	Assessment description	Condition assessment comment
Halvergate Marshes	Standing open water and canals	2	58.06	28 June 2005	Unfavourable, recovering	
	Standing open water and canals	5	55.8	10 September 2007	Unfavourable, recovering	The northern block of unit 5 is favourable; the central block is unfavourable recovering as IDB still need to deliver summer levels through the winter
	Standing open water and canals	9	210.65	28 June 2005	Unfavourable, recovering	
	Standing open water and canals	10	3.2	28 June 2005	Unfavourable, recovering	
	Standing open water and canals	11	40.24	18 July 2003	Unfavourable, no change	WLMP and fleet Scheme needs to be implemented. ESA prescription is inappropriate
	Standing open water and canals	12	8.67	10 September 2007	Favourable	
	Standing open water and canals	15	7.96	4 July 2005	Unfavourable, recovering	
	Standing open water and canals	19	11.52	17 June 2003	Favourable	Conservation plan completed, supplied with spring water and IDB have reduced their winter pumping
	Littoral sediment	21	5.93	15 May 2002	Favourable	
	Standing open water and canals	23	11.67	10 September 2007	Favourable	
	Standing open water and canals	24	2.49	10 July 2002	Unfavourable, no change	Generally ditches bounding rail track are not well managed, as the site is also fenced. Water levels during the year but particularly the winter too low.
	Standing open water and canals	25	18,68	04 July 2005	Unfavourable, recovering	
	Standing open water and canals	26	283.97	21 September 2006	Unfavourable, no change	This part of the site is likely to be affected by water abstraction
	Standing open water and canals	28	7.53	17 June 2003	Favourable	
	Standing open water and canals	30	1.28	10 July 2002	Unfavourable, no change	A hay cut had been taken from part of the unit. Dykes are very overgrown with reed and in need of some clearance. EN to write to owner to discuss future management possibilities. Water levels were also very low
	Standing open water and canals	36	10.83	04 July 2005	Unfavourable recovering	
	Standing open water and canals	38	9.58	10 September 2007	Favourable	
	Standing open water and canals	39	5.3	10 September 2007	Unfavourable, no change	Dykes in this unit not recently managed, high algal dominance in some and low species richness.
	Standing open water and canals	40	24.31	04 July 2005	Unfavourable recovering	
	Standing open water and canals	41	77.66	04 July 2005	Unfavourable recovering	
	Standing open	42	333.5	23 June 2003	Favourable	RSPB managing to water level near constantly with the aid of own extra pumping.

Site	Main Habitat	Unit No.	Unit area (ha)	Latest assessment date	Assessment description	Condition assessment comment
	water and canals					Ditches and water structures in good condition. Wintering bird numbers increasing.
	Standing open water and canals	43	11.11	10 September 2007	Unfavourable recovering	Dykes recovering; still moving to maintaining summer levels through the winter
	Standing open water and canals	44	42.78	04 July 2005	Unfavourable recovering	
	Standing open water and canals	45	65.65	04 July 2005	Unfavourable recovering	
	Standing open water and canals	47	6.64	10 July 2002	Unfavourable, no change	Lack of management of dykes, water levels too low particularly during the winter

Main Habitat	Unit No.	Unit area (ha)	Latest assessment date	Assessment description	Condition assessment comment
Littoral sediment	1	374.92	14 Jan 2004	Favourable	Saltmarsh is not grazed. Some farm vegetatable spoil has been dumped on sea bank in two isolated localities.
Littoral sediment	2	131.36	01 Jul 2004	Unfavourable recovering	Management plan being successfully implemented over grazing enclosure.
Littoral sediment	3	153.60	27 Mar 2008	Favourable	
Littoral sediment	4	104.20	27 Mar 2008	Favourable	
Littoral sediment	5	109.20	27 Mar 2008	Favourable	
Littoral sediment	6	110.25	19 Feb 2008	Favourable	
Littoral sediment	7	73.42	04 Nov 2003	Favourable	Unit is now managed by RSPB under a new managment plan. Unit has now recovered and should be maintained in favourable condition as grazing management is now being undertaken during summer at appropriate levels using both cattle and sheep.
Littoral sediment	8	31.50	04 Nov 2003	Favourable	Unit now being managed by RSPB under a new manamgent plan. Unit should be maintained in favourable condition as the area is being graze by cattle during summer at appropriate levels.
Littoral sediment	9	43.05	30 Apr 2003	Unfavourable declining	Saltmarsh is being heavily overgrazed by horses.
Littoral sediment	10	245.52	28 Apr 2003	Favourable	
Littoral sediment	11	373.14	21 May 2003	Favourable	
Littoral sediment	12	240.87	21 May 2003	Favourable	
Littoral	13	70.12	23 Jul 2003	Favourable	This saltmarsh is not grazed by cattle and the vegetation succession clearly reflects this management regime.

Main Habitat	Unit No.	Unit area (ha)	Latest assessment date	Assessment description	Condition assessment comment
sediment					
Littoral sediment	14	237.15	23 Jul 2003	Favourable	This saltmarsh is not grazed by cattle and the vegetation succession clearly reflects this management regime.
Littoral sediment	15	391.49	24 Jul 2003	Favourable	The saltmarsh is not grazed by cattle and the vegetation succession clearly reflects this management regime.
Littoral sediment	16	446.22	24 Jul 2003	Favourable	This saltmarsh is not grazed by cattle and the vegetation succession clearly reflects this management
Littoral sediment	17	253.16	07 Jul 2003	Favourable	Area outside NNR is grazed, while area within NNR is not grazed.
Littoral sediment	18	494.95	07 Jul 2003	Favourable	Whole unit covered by NNR managment plan.
Littoral sediment	19	437.80	07 Sep 2005	Favourable	This unit contains two grazed compartments and one ungrazed compartment.
Littoral sediment	20	152.98	21 Oct 2003	Favourable	Management being undertaken as agreed in managemtn plan
Littoral sediment	21	255.85	07 Feb 2003	Favourable	The unit borders an area which has been extensively developed to provide holiday accommodation behind the dune ridge. This has increased the need for more robust coastal defences and at the time of my site visit the Environment Agency was actively constructing new solid coastal defences adjacent to holday chalets. Whilst the unit is currently assessed as favourable, the future prognosis for this area is unclear because the fragile coastal habitats both within and adjacent to the SSSi are under threat from further encroachment by development pressure and increased human activity.
Littoral sediment	22	537.98	07 Feb 2003	Favourable	The unit is adjacent to an intensively developed coastline and subject to a high level of human activity throughout the year. Essentially the environmental damage to this part of the SSSI has been done and is now likely to have reached a threshold level.
Littoral sediment	23	2106.59	26 Mar 2003	Favourable	
Littoral sediment	24	1659.23	10 Dec 2007	Unfavourable recovering	ESFJC, through iterative discussion with The Wash fishing industry and Natural England, have developed Shellfish Management Policies which ensure sustainable management of Wash shellfish stocks and that conservation objectives for the site can be met. The Policies were signed off by ESF Committee on 7 Dec and with these in place we have now changed the unit condition to unfavourable recovering.
Littoral sediment	25	1016.59	10 Dec 2007	Unfavourable recovering	ESFJC, through iterative discussion with The Wash fishing industry and Natural England, have developed Shellfish Management Policies which ensure sustainable management of Wash shellfish stocks and that conservation objectives for the site can be met. The Policies were signed off by ESF Committee on 7 Dec and with these in place we have now changed the unit condition to unfavourable recovering.
Littoral sediment	26	619.66	10 Dec 2007	Unfavourable recovering	ESFJC, through iterative discussion with The Wash fishing industry and Natural England, have developed Shellfish Management Policies which ensure sustainable management of Wash shellfish stocks and that conservation objectives for the site can be met. The Policies were signed off by ESF Committee on 7 Dec and with these in place we have now changed the unit condition to unfavourable recovering.
Littoral sediment	27	601.33	10 Dec 2007	Unfavourable recovering	ESFJC, through iterative discussion with The Wash fishing industry and Natural England, have developed Shellfish Management Policies which ensure sustainable management of Wash shellfish stocks and that conservation objectives for the site can be met. The Policies were signed off by ESF Committee on 7 Dec and with these in place we have now

Main Habitat	Unit No.	Unit area (ha)	Latest assessment date	Assessment description	Condition assessment comment
					changed the unit condition to unfavourable recovering.
Littoral sediment	28	487.18	10 Dec 2007	Unfavourable recovering	ESFJC, through iterative discussion with The Wash fishing industry and Natural England, have developed Shellfish Management Policies which ensure sustainable management of Wash shellfish stocks and that conservation objectives for the site can be met. The Policies were signed off by ESF Committee on 7 Dec and with these in place we have now changed the unit condition to unfavourable recovering.
Littoral sediment	29	190.39	10 Dec 2007	Unfavourable recovering	ESFJC, through iterative discussion with The Wash fishing industry and Natural England, have developed Shellfish Management Policies which ensure sustainable management of Wash shellfish stocks and that conservation objectives for the site can be met. The Policies were signed off by ESF Committee on 7 Dec and with these in place we have now changed the unit condition to unfavourable recovering.
Littoral sediment	30	35.15	10 Dec 2007	Unfavourable recovering	ESFJC, through iterative discussion with The Wash fishing industry and Natural England, have developed Shellfish Management Policies which ensure sustainable management of Wash shellfish stocks and that conservation objectives for the site can be met. The Policies were signed off by ESF Committee on 7 Dec and with these in place we have now changed the unit condition to unfavourable recovering.
Littoral sediment	31	57.78	27 Mar 2003	Favourable	This data was taken from "The Wash and North Norfolk Coast European Marine Site Management Scheme- Jan 2002" and "The Wash Embayment Report for Reasoned Opinion. EA 2002"
Littoral sediment	32	9.43	27 Mar 2003	Favourable	This data was taken from "The Wash and North Norfolk Coast European Marine Site Management Scheme- Jan 2002" and "The Wash Embayment Report for Reasoned Opinion. EA 2002"
Littoral sediment	33	40.08	27 Mar 2003	Favourable	This data was taken from "The Wash and North Norfolk Coast European Marine Site Management Scheme- Jan 2002" and "The Wash Embayment Report for Reasoned Opinion. EA 2002"
Littoral sediment	34	1404.64	10 Dec 2007	Unfavourable recovering	ESFJC, through iterative discussion with The Wash fishing industry and Natural England, have developed Shellfish Management Policies which ensure sustainable management of Wash shellfish stocks and that conservation objectives for the site can be met. The Policies were signed off by ESF Committee on 7 Dec and with these in place we have now changed the unit condition to unfavourable recovering.
Littoral sediment	35	1235.58	10 Dec 2007	Unfavourable recovering	ESFJC, through iterative discussion with The Wash fishing industry and Natural England, have developed Shellfish Management Policies which ensure sustainable management of Wash shellfish stocks and that conservation objectives for the site can be met. The Policies were signed off by ESF Committee on 7 Dec and with these in place we have now changed the unit condition to unfavourable recovering.
Littoral sediment	36	1277.08	10 Dec 2007	Unfavourable recovering	ESFJC, through iterative discussion with The Wash fishing industry and Natural England, have developed Shellfish Management Policies which ensure sustainable management of Wash shellfish stocks and that conservation objectives for the site can be met. The Policies were signed off by ESF Committee on 7 Dec and with these in place we have now changed the unit condition to unfavourable recovering.
Littoral sediment	37	502.29	10 Dec 2007	Unfavourable recovering	ESFJC, through iterative discussion with The Wash fishing industry and Natural England, have developed Shellfish Management Policies which ensure sustainable management of Wash shellfish stocks and that conservation objectives for the site can be met. The Policies were signed off by ESF Committee on 7 Dec and with these in place we have now changed the unit condition to unfavourable recovering.
Littoral sediment	38	2453.52	10 Dec 2007	Unfavourable recovering	ESFJC, through iterative discussion with The Wash fishing industry and Natural England, have developed Shellfish Management Policies which ensure sustainable management of Wash shellfish stocks and that conservation objectives for the site can be met. The Policies were signed off by ESF Committee on 7 Dec and with these in place we have now changed the unit condition to unfavourable recovering.
Littoral	39	1177.62	27 Mar 2003	Favourable	

Main Habitat	Unit No.	Unit area (ha)	Latest assessment date	Assessment description	Condition assessment comment
sediment					
Littoral sediment	40	1441.77	07 Dec 2005	Favourable	Unit previously classed as unfavourable due to cockle dredge fishing activities. Fishery occurs further north - in unit 41. Please note Unit 41 has also been changed.
Littoral sediment	41	256.48	13 Nov 2006	Unfavourable declining	Existing historic consent is allowing unsustainable fishing practices.
Littoral sediment	42	1073.48	27 Mar 2003	Favourable	The Wash Embayment. Report for Reasoned Opinion. EA 2002
Littoral sediment	43	2076.55	27 Mar 2003	Favourable	The Wash Embayment. Report for Reasoned Opinion. EA 2002
Littoral sediment	44	2610.08	10 Dec 2007	Unfavourable recovering	ESFJC, through iterative discussion with The Wash fishing industry and Natural England, have developed Shellfish Management Policies which ensure sustainable management of Wash shellfish stocks and that conservation objectives for the site can be met. The Policies were signed off by ESF Committee on 7 Dec and with these in place we have now changed the unit condition to unfavourable recovering.
Littoral sediment	45	219.89	27 Mar 2003	Favourable	
Littoral sediment	46	856.52	27 Mar 2003	Favourable	
Littoral sediment	47	243.00	27 Mar 2003	Favourable	
Littoral sediment	48	69.07	27 Mar 2003	Favourable	
Littoral sediment	49	407.66	27 Mar 2003	Favourable	
Littoral sediment	50	1627.83	10 Dec 2007	Unfavourable recovering	ESFJC, through iterative discussion with The Wash fishing industry and Natural England, have developed Shellfish Management Policies which ensure sustainable management of Wash shellfish stocks and that conservation objectives for the site can be met. The Policies were signed off by ESF Committee on 7 Dec and with these in place we have now changed the unit condition to unfavourable recovering.
Littoral sediment	51	491.22	27 Mar 2003	Favourable	and "The Wash Embayment Report for Reasoned Opinion. EA 2002"
Littoral sediment	52	508.77	27 Mar 2003	Favourable	
Littoral sediment	53	243.52	27 Mar 2003	Favourable	
Littoral sediment	54	2936.10	27 Mar 2003	Favourable	and "The Wash Embayment Report for Reasoned Opinion. EA 2002"
Littoral sediment	55	17565.47	27 Mar 2003	Favourable	
Littoral sediment	56	780.58	27 Mar 2003	Favourable	This data was taken from "The Wash and North Norfolk Coast European Marine Site Management Scheme- Jan 2002"
Littoral	57	1170.74	27 Mar 2003	Favourable	This data was taken from "The Wash and North Norfolk Coast European Marine Site Management Scheme- Jan 2002"

Main Habitat	Unit No.	Unit area (ha)	Latest assessment date	Assessment description	Condition assessment comment
sediment					
Littoral sediment	58	7260.56	08 Mar 2006	Unfavourable recovering	08/03/2006. Eastern Sea Fisheries Byelaw Committee agreed to develop byelaw to close areas of identified reef to protect it from trawling and dredging activities
Littoral sediment	59	45.13	21 Oct 2003	Favourable	Management being undertaken is consistent with agreed management plan
Littoral sediment	60	19.54	21 Oct 2003	Unfavourable declining	Nutrient enrichment from unknown source and incremental development from adjacent residential properties is having an adverse affect on the site.

Appendix D: Correspondence (water resources).

Environment Agency

From: Martin, Marion
Sent: 11 February 2009 17:25
To: Cork, M. (Mat)
Subject: RE: WR issues in North Norfolk DC

Mat,

The RoC process in Stage 4 will look at all the licensed abstractions which could potentially affect the N Norfolk Coast European sites. The RoC assessment will take account of the full licensed abstraction rates and measures will be put in place to ensure that all authorised abstractions, including those for public water supply, will be modified in such a way that they will not have an adverse effect on the integrity of the European sites.

I think the important point is that in RoC we look at the full licensed quantity, not just what has been abstracted historically, so some PWS "headroom" is included which may be used for ne development. If the headroom is not sufficient, the water company would have to apply to increase their abstraction, which would have to be taken through Reg 48 of the Habs Regs. The integrity of the European site will therefor be protected.

Hope this addresses the issue - I will not be in the office again until Monday.

Regards
Marion

From: Cork, M. (Mat)
Sent: 11 February 2009 15:34
To: Martin, Marion
Cc: Hunt, M G (Matthew)
Subject: RE: WR issues in North Norfolk DC

No problem Marion, thanks for the reply.

I think that does help, but the question NE are asking is whether you can say that the RoC process in Stage 4 will look at the abstraction licenses for the area, and put measures in place to ensure that all existing and anticipated supply (under the Anglian Water licenses) will be addressed in a manner that will not have an adverse effect on the integrity of international sites. So in other words, the additional housing in North Norfolk and it's supply would be addressed within this wider process and we could conclude no adverse effect.

Would you be able to say that (happy for you to use some/all of the above text if you wish)? We're not trying in any way to ask EA to say anything they're not happy with...we just need to know if that can be concluded?

If you could clarify this Marion it would be a huge help...many thanks

Mat

From: Martin, Marion
Sent: 11 February 2009 15:06
To: Cork, M. (Mat)
Subject: RE: WR issues in North Norfolk DC

Mat,

Apologies for my e-mail of a few minutes ago - I have been out of the office for a few days and opened the later one first!

To confirm our conversation, I am currently working on Stage 4 of RoC for the North Norfolk Coast. Stage 3 concluded that it could not be ascertained that licensed abstractions did not have an adverse impact on the European site and we are now identifying options for licence modifications to ensure that there will be no adverse impact and are aimimg to complete the Site Action Plan by June 2009.

Please let me know if you need anything more.

Regards
Marion

From: Cork, M. (Mat)
Sent: 10 February 2009 10:10
To: Martin, Marion
Subject: WR issues in North Norfolk DC

Marion,

Just following up on our chat of a few weeks back regarding the fallout of RoC and the AA of the housing allocations of North Norfolk.

NE have suggested that if we can obtain an email or letter off yourself/EA to suggest that WR issues will be addressed by RoC in this area (it's simply a matter of making sure that the water provided is sourced so as not to have an adverse effect on N2K sites) then the AA can progress.

Would you be able to provide a simple email to that effect do you think?

Sorry to have to trouble you again...kindest regards,

Mat

Anglian water

From: Parsons Gary
Sent: 06 February 2009 10:03
To: Hunt, M G (Matthew)
Cc: Harker Dave
Subject: RE: Water resources: North Norfolk District

Matthew,

We have produced our Water Resources Management Plan to describe the proposals to maintain a secure balance between suppliers and demand in the Region, including the area of N Norfolk. In doing this we have produced a Strategic Environmental Assessment that has influenced the WRMP.

We do not consider that an Appropriate Assessment is required for the WRMP, but may be required to promote a specific scheme. At this stage there are no specific new schemes in the North Norfolk area that would appear to fall under Habitats Regs. This is on the basis that all of our current abstraction licences in the North Norfolk area have been considered in the Review of Consents under the Habitats Directive. We await the outcome of the RoC and this may effect the WRMP. If so, and the effect is significant, we will review the WRMP accordingly. We are required to produce a WRMP that will satisfy the need to maintain the security of public water supplies from existing and new customers. Any solutions that we implement will have to comply with the Habitats Directive for Natura 200 sites and with the WFD.

I hope that answers your query.

Regards

Gary

From: Hunt, M G (Matthew)
Sent: 04 February 2009 16:17
To: Parsons Gary
Cc: Cork, M. (Mat)
Subject: Water resources: North Norfolk District

Gary

As we just discussed, and following on from our meeting in December, Natural England have recently contacted us and indicated that they could be supportive of water resources being 'scoped out' as a source of Significant Effect in our Appropriate Assessment of Site Specific Plans in North Norfolk district.

They would be happy for us to conclude No Adverse Effect (from water resources) if this was supported by written comment from AWS that both alone and in combination (i.e. without drawing on excess water resources from other catchments where growth is also planned), there is sufficient water available to meet the growth needs without affecting the Natura 2000 sites. This would usefully also acknowledge that more stringent targets are likely to result from the implementation of the Water Framework Directive.

I appreciate the other pressures at AWS at the moment, but would be grateful if you could provide something appropriate - as we discussed on the telephone, some comments reflecting the above and pointing to the draft Water Resources Management Plan could be sufficient. We hope otherwise to have completed the assessment report and submitted to the client next week, and would appreciate your early consideration.

Thanks and best regards
Matthew

Appendix E: Schedule of consultation responses

The tables below summarise responses received through consultation on a draft version of this report.

		Comments	Action
1.1	**Natural England (NE)**	For quite a number of the site specific proposals, disturbance has been identified as an issue, with the potential to have an adverse impact on one or more International sites. For each site where an adverse effect from disturbance cannot be ruled out, virtually the same mitigation measure has been proposed "a programme of monitoring be initiated to assess the impacts of development on XX site(s), with appropriate management responses developed if adverse impacts of visitation are determined". It is generally accepted that monitoring is regarded as a tool used to ensure that mitigation measures are successful rather than being a mitigation measure.	The avoidance measures seek to monitor the site, and respond to effects if/as they occur. More detail as to how this process would work are now provided in section *. The intention is for monitoring to commence pre-development (ideally in 2009) to provide much needed baseline information (as to, eg visitor behaviour) and inform future management. Moreover it is important to note that management intervention would be expected if changes that may have an adverse effect if they continue are identified, not to wait until an adverse effect is clear. More detail on response mechanisms is also given. This approach has been applied elsewhere.
1.2	**NE**	For monitoring to be effective baseline data needs to exist, against which future trends can be monitored. Some studies have been produced about the impacts of recreation on birds on the North Norfolk coast. However, we are not aware that robust baseline data exists currently against which any future potential disturbance impacts, arising from these site proposals, could be monitored satisfactorily.	Early commencement of the monitoring would be expected to develop a baseline, against which any change could be monitored. This monitoring data would also be useful for other purposes and would provide an invaluable source of information as to the linkages between disparate developments and visitor impacts at designated sites. As development will be phased over relatively long periods, now is seen as an appropriate time to trigger this action.
1.3	**NE**	The monitoring approach outlined in the AA is reactive in that it seeks to identify potential impacts once development has been built. Part of the AA process should be to identify mitigation measures that will prevent harm to an international site, rather than seeking to adopt measures to rectify harm once it has occurred. We recommend that NNDC adopts a more proactive approach and identifies measures that can be front loaded in the AA report. This should include identifying where green infrastructure provision is required and how it will be delivered before development within the respective site is completed. For example, under the proposal for Fakenham (6.2.8) there are 800 – 900 dwellings proposed with two public open spaces although it is unclear how the proposed greenspace will "reduce some visitation pressure at the North Norfolk designated sites" successfully as stated within the draft AA without further details being provided. How has it been determined that the two public open spaces will be sufficient? Has their scale and location been identified and there be room for biodiversity? How will they link to other existing green infrastructure? Have the long-term funding implications of managing green infrastructure been considered?	More detail on the provision of open space is now given in Section 8, as well as being contained in NNDC's Core Strategy. Additionally, it is not the intention of monitoring and response to attempt to rectify damage once it has occurred, but rather to provide more information as to the nature of any additional visitation pressure as/when it starts to become apparent, and to apply management responses to ensure adverse effects are averted.
1.4	**NE**	In 8.1.1 only limited details have been provided about "the appropriate management responses" that would be used if disturbance was shown to be having an adverse impact. With the exception of Wells-next-the-Sea (6.2.21), it appears that little consideration has been given to using access management as	More detail is now provided in Section 8. However at this stage this is indicative as it is felt that management responses should be tailored to an identified threat, rather than applied in a blanket way. It is recommended that NE have an advisory capacity in the development of both the monitoring

		Comments	Action
		a mitigation tool, and monitoring has been selected as the only 'mitigation measure' (bearing our comments made in 1.1 above) for the majority of site proposals. To be certain that the management responses are appropriate, likely to be effective in avoiding impacts, and timescale for their delivery is correct, further information should be included in the AA report about the different mitigation measures that could be deployed, how, where, by whom, their funding, and importantly, the timescale for their implementation. If as a result of its LDF, an adverse impact on an International site were to be identified, then NNDC needs to be able to demonstrate that adequate measures could be deployed quickly to remedy any impact.	programme and identification of management options in the different areas.
1.5	**Environment Agency (EA)**	We are pleased that the significance of disturbance on interest features of protected areas is acknowledged and that some of the potential impacts have been identified.	Noted.
2			
2.1	**NE**	We are satisfied that the impact of this issue on international sites has been dealt with adequately and will be addressed through various mechanisms led by Anglian Water and the Environment Agency.	Noted.
2.2	**NE**	In addition to the Anglian Water and the Environment Agency correspondence extracts included in 4.2, we suggest that full copies of the relevant correspondence should be included in an appendix. Please note that we understand that Anglian Water's Water Resources Management Plan will be subject to an AA contrary to the comments made in Gary Parsons' correspondence dated 6 February 2009.	This has now been added at Appendix D, although does not alter or add significantly to the excerpt presented. Noted.
3.	**Air Quality (Section 4.4)**		
	EA	We concur with the report recommendation that the effects of greenhouse gases should be noted and fed into broader measures to address these issues.	Noted
4.			
4.1	**NE**	Although this impact has been adequately addressed through various mechanisms outlined in section 6 for most site specific proposals, there appears to be some conflict between different sections of the report for some sites. For example, under 4.3.1 for the River Wensum Special Area of Conservation (SAC) the report states (on p32-33) that "...the planned phosphate stripping will not be enough to reduce levels to below the targets" and "...discharges from the planned developments will only add to this large phosphorus quantity in the future". Under 6.2.8 for Fakenham it is recognised that no adverse effect from water quality impacts on the integrity of the River Wensum can be concluded. However, in the same section, it goes on to conclude that subject to additional detailed study and implementation of innovative mechanisms, it is possible to conclude that there are no outstanding adverse effects on the integrity of any Natura 2000 or Ramsar sites. As there is uncertainty, at present, over whether the mitigation mechanisms outlined will be sufficiently resourced and if there is adequate commitment on behalf of the parties responsible for their implementation, we are unable to concur with this view.	Point has been clarified, and new information which has come to light has been incorporated. Where information will be forthcoming as a result of ongoing studies we suggest that this be factored into considerations at an appropriate point. This is considered a pragmatic approach which enables plan progression in the interim..

		Comments	Action
4.2	**NE**	Within the AA report we recommend that more clarity is provided about the mechanisms that have been identified including how, where, by whom, their funding, and the likely timescale for their implementation, for the relevant site specific proposals where water quality has been identified as a key issue.	More information in Section 8. NNDC will be required to commit to appropriate action in order for the overall conclusion of the report to be sound.
4.3	**NNDC**	In terms of water quality the report recommends that further studies are carried out once the RoC has been published, which I believe is due in Autumn 2009. Can this study be carried out for individual sites at time of application or does it need a study by NNDC looking at all sites comprehensively prior to LDF examination?	In light of the information which will be forthcoming it is likely that the most appropriate study (if required) will take the form of a Water Cycle Study, addressing the area, rather than site-specific studies which would possibly miss interacting/compounding effects.
4.4	**EA**	**River Wensum** The Stage 4 RoC Water Quality Assessment for the River Wensum is complete. At the end of the Stage 3 AA it was not possible to conclude 'no adverse effect' for fifteen discharge consents for their contribution to exceedances of the phosphorus target in the River. These have now been subject to more detailed consideration at Stage 4. Following completion of the Stage 4 Options Appraisal, 8 discharge consents are to be modified. Two modifications are to reduce the consented flow; the remaining six modifications are to introduce phosphorus stripping. These have been put forward for consideration in PR09, to be implemented through AMP5 (2010 – 2015). The consented Dry Weather Flow is to be reduced at Weasenham All Saints Sewage Treatment Works (STW) and Weasenham St Peter STW. Consent limits for phosphorus are to be introduced at Sculthorpe STW, East Rudham STW, Foulsham STW, North Elmham STW, Bylaugh and Reepham. It has been demonstrated that for the larger STWs it will not be necessary to amend the existing consents in terms of consented flow. However, it was not the purpose of the RoC to assess the extent to which the existing consented flow accommodates proposed growth. It is likely that any increase in consented flow at these works will require tightening of other consented parameters.	Noted. Text amended taking this information into account. Thank you.
4.5	**EA**	**North Norfolk Coast** The Environment Agency RoC Water Quality Assessment for the North Norfolk Coast is complete. At the end of the Stage 3 AA it was possible to demonstrate that due to the limited connectivity between discharges and SAC habitats, discharge consents will not have an adverse effect on the features of the SAC. In terms of the SPA features, following detailed consideration, particularly in terms of nutrient enrichment, it was also possible to demonstrate that there is no adverse effect on the features of the SPA.	Noted. Text amended taking this information into account. Thank you.
	EA	**The Broads SAC/ Broadlands SPA** Due to the archipelago nature of The Broads SAC/ Broadland SPA it was decided to undertake the Review of Consents at a SSSI site level as follows:	Noted.
4.6	**EA**	**Ant Broads and Marshes & Broad Fen SSSIs** The Stage 4 RoC Water Quality Assessment for the Ant Broads and Marshes and Broad Fen is nearing completion. At the end of the Stage 3 AA, it was not possible to conclude 'no adverse effect' for fourteen discharge consents for their contribution	Noted. Text amended taking this information into account, and the report's conclusions make reference. Thank you.

		Comments	Action
		to exceedances of the phosphorus targets. These have now been subject to more detailed consideration at Stage 4. The Stage 4 Options Appraisal is completed for Broad Fen SSSI, no modifications are required to achieve targets here. The Stage 4 Options Appraisal for Ant Broads however is yet to be completed as there are issues with achieving the RoC point source target. It has been possible to demonstrate that all discharges in the catchment have no adverse effect on the integrity of the site, with the exception of Stalham STW. Work is ongoing to identify whether there are options that will remove the contribution of Stalham STW to the phosphorus target exceedances at the Ant Broads and Marshes SSSI. This includes consideration of increasing river flows (thereby reducing abstraction) to provide increased dilution.	
4.7	**EA**	**Upper Thurne Broads and Marshes SSSI** The Stage 4 RoC Water Quality Assessment for the Upper Thurne Broads and Marshes is complete. At the end of the Stage 3 AA it was not possible to conclude 'no adverse effect' for sixteen discharge consents for their contribution to exceedances of the phosphorus target in at least one of the three main Broads areas: Martham, Horsey and Hickling/ Heigham. Moreover, it was considered that there were possible in-combination effects with water resource licenses. The discharges have now been subject to more detailed consideration at Stage 4. The Stage 4 modelling work demonstrated that under fully consented discharge and abstraction conditions, i.e. 'in-combination', the target in Martham Broad will be met. The modelling work also demonstrated that the greatest influence on phosphorus loads to Horsey and Hickling/ Heigham Broads would be changes to diffuse inputs e.g. changes to catchment land-use. Modelled changes to point sources, including switching the discharges 'off', had an inconsequential influence on phosphorus loads to the Broads. Consequently, no consent modifications of discharges to the Upper Thurne Broad and Marshes SSSI are necessary.	Noted. Text amended taking this information into account, and the report's conclusions make reference. Thank you.
4.8	**EA**	**Bure Broads and Marshes SSSI** The Stage 4 RoC Water Quality Assessment for the Bure Broads and Marshes is complete. At the end of the Stage 3 AA it was not possible to conclude 'no adverse effect' for seven discharge consents for their contribution to exceedances of the phosphorus target. The discharges have now been subject to more detailed consideration at Stage 4. Following more detailed modelling, it had been possible to demonstrate that no further consent modifications are required. Since the RoC baseline year (2000), substantial improvements in the form of phosphorus stripping have been made at several of the discharges in the Bure Broads and Marshes SSSI catchment. The largest point source discharges already operate to 'Best Available Technology' which has delivered a 67% reduction in point source phosphorus loads since the RoC baseline year, 2000.	Noted. Text amended taking this information into account, and the report's conclusions make reference. Thank you.
5.			
5.1	**NE**	We recommend that the in combination impacts of all the site specific proposals	The in-combination assessment has been revisited, although I is not felt that

		Comments	Action
		within the North Norfolk district need to assessed and included in section 7.	the conclusions are altered.
6	**The role of Natural England**		
6.1	**NE**	We would like to clarify that our role is an advisory one, both in the Habitat Regulations Assessment process, and in the implementation of the identified mitigation measures and monitoring, that will enable NNDC to conclude no adverse effect on the integrity of international sites as a result of its site specific proposals. Responsibility for instigating and delivering the actions that have been identified in the draft AA lies with NNDC, the adjoining local authorities and other appropriate bodies. We recommend that the report is re-worded to emphasise this more clearly in sections 7 and 8. Otherwise, it could be construed that NE will be initiating and co-ordinating the necessary actions which is clearly not our responsibility.	The report will be reworded.
		In section 8 further details should to be provided about how NNDC and the adjoining local authorities are going to work together to allocate responsibility and finances as this plan cannot proceed unless mitigation measures can be implemented integrally to development as it proceeds.	Section * includes more detail, although refinement will be required through discussion between the authorities. Early discussion has been positive.
		As NNDC's LDF is at a more advanced stage than other adjoining districts, it may be necessary for NNDC to take the lead and start convening the meetings between relevant parties that have been highlighted in its draft AA.	Noted and agreed. The text now reflects this view.
7		The screening process	
7.1	**RSPB**	The AA does not outline the full screening process that was conducted in order to determine the key factors that would be affected by any of the proposed developments. Our concern lies in the fact that some of the proposed developments will be built close to Natura 2000 sites, and the consideration of the impact that land loss and potential habitat fragmentation may have on international sites has not been shown clearly. The process needs to be fully transparent. We would like to see a full list of all the factors considered, with explanations for why only water quality, water resources and disturbance were used to assess each proposal.	Full assessment tables have now been provided, although due to their physical size they are presented on CD, at Appendix F.
8	**RSPB**	The North Norfolk Coast and The Broads as visitor hot spots	
8.1	**RSPB**	The North Norfolk Coast and The Broads have an intrinsic value that attracts visitors from considerable distances[4,5]. Footprint Ecology (2008) assessed the impacts of development on the North Norfolk Coast and suggest that new housing developments "at locations such as Kings Lynn, Norwich, Thetford, or	This issue has been discussed with the RSPB and it is suggested that it is integrated with the monitoring programme proposed. Commencing as soon as possible, this would provide pre-development baseline and could be a souce of invaluable information as to the links between development, visitation and

4 Liley, D., (1999). Predicting the consequences of human disturbance, predation and sea-level rise for Ringed Plover population size. PhD, University of East Anglia, Norwich.

5 Liley, D., (2008). Development and the North Norfolk Coast. Scoping document on the issues relating to access. Unpublished report commissioned by RSPB. Footprint Ecology, Wareham, Dorset.

		Comments	Action
		potentially further afield are likely to result in changes in visitor numbers to the North Norfolk Coast area."2 The RSPB considers that the influence of The Broads, although not currently evaluated, is also likely to be as wide ranging as the North Norfolk Coast. The beaches of the North Norfolk Coast are easily accessible, and a coastal footpath allows visitors to access large parts of the area. The Broads have limited access by foot, but are used extensively by boat and canoe users, either for day trips or for boating holidays. The AA has failed to highlight these facts and, consequently, does not appear to assess fully the likely impacts that the proposed developments could have on disturbance to birds in the North Norfolk Coast and The Broads SPAs. Further work should be done to identify problem areas within these sites and to work out whether people from these areas are visiting the international sites, and how often (see section 4 of appendix 1). This may be linked to the lack of a fully transparent screening process. The intrinsic appeal of these two sites supports the need for a rigorous assessment of visitor numbers to the area, with estimates made on how this may change with the proposed developments. The RSPB would be happy to advise on suitable methods for such an assessment.	disturbance.
9	**RSPB**	Monitoring the influence of visitor numbers	
9.1	**RSPB**	The RSPB considers that monitoring of an effect after development is not a suitable mitigation method (as it does not avoid or reduce the risk of harm to the international site), and cannot be used to state that there will not be an adverse effect on international sites. Monitoring of visitor numbers should have been undertaken as part of the assessment process and used to estimate the likely additional impact on visitor pressure to the North Norfolk Coast and The Broads SPAs from the developments. Without this monitoring it is not possible to ascertain that an adverse effect will not occur. If baseline data indicated that no adverse effects were expected, on-going monitoring would still be needed to assess future visitor impacts. If an adverse impact cannot be excluded, it will be important to devise a strategy for implementing suitable site and access controls. Consideration would need to be given to the speed with which mitigation measures could be implemented.	Greater detail as to the nature of the proposed monitoring is now given. This has been discussed with RSPB (telephone call with Philip Pearson, 9 April 2009) and is detailed above and elsewhere. It has been agreed that this could be a suitable approach.
10	**RSPB**	**The likely impact of the proposed developments on international sites**	
10.1	**RSPB**	For seven of the proposed sites (Catfield, Fakenham, Happisburgh, Horning, Ludham, Southrepps and Stalham) the AA has determined that it "…cannot conclude that the proposed development will have no adverse effect on the integrity of any Natura 2000 or Ramsar sites. However providing that the	Point addressed above, and now in greater detail in Section 8.

		Comments	Action
		mitigation measures described above are implemented, we conclude that there are no outstanding adverse effects on the integrity of any Natura 2000 or Ramsar sites." It is unclear how the conclusions about individual site impacts were derived. No baseline data appears to have been used during this process. A lack of such information limits the ability to conclude, using a precautionary approach, that the proposed developments will have no adverse effects on international sites. The RSPB considers that adequate assessment of the cumulative effect of multiple developments within the plan's area has not been undertaken. For example, an assessment of the combined effect of Bacton, Catfield, Happisburgh, Horning, Hoveton, Ludham, North Walsham and Stalham (a maximum of 454 new dwellings) on The Broads SPA should be undertaken to determine the full impact of the proposed developments. As such, we do not believe that there is sufficient information to safely state that the plan will not have an adverse effect to both the North Norfolk Coast and The Broads SPAs.	
11		**Amendment to amber sites awaiting further information or study, and preventative measures**	
11.1	**RSPB**	**We do not consider that whilst sites remain in the amber category that it is possible to conclude that this plan will not have an adverse effect upon an international site.** **Whilst the Council is reviewing the further research work that needs to be undertaken, we recommend that Blakeney and Hoveton are moved into the amber category ("Awaiting further information or study, and preventative measures") due to their proximity to the North Norfolk Coast and The Broads SPAs and their potential cumulative effect with other proposed developments close by. Once further research has been undertaken that enables *these and the other locations to be removed from the amber category (which should then be excised from the report) it may be possible to conclude, dependent on the findings of the research work, that the plan will not have an adverse effect upon international sites.***	The approach proposed is felt to be robust, and has subsequently been discussed with RSPB (as above).
12	**EA**	**Site Specific Proposals (Section 6.2)**	
12.1	**EA**	**Water Quality** It is appreciated that this Appropriate Assessment must focus on potential impacts on sites designated under the Habitats and Birds Directives only, however, it will be necessary to assess the potential impacts of increased wastewater on other sensitive receptors e.g. designated Bathing Waters/ Shellfish Waters and in light of other environmental standards e.g. those introduced under the Water Framework Directive. For detailed comments see Table 1 appended to this response.	NNDC to note this point.
12.2	**EA**	**Water Resources** All locations are in the AWS North Norfolk Coast Water Resource Zone (WRZ)	It is suggested that this will be addressed through the appropriate phasing of development, and existing planning mechanisms exist to ensure that such

		Comments	Action
		with the exception of Horning and Hoveton, which are supplied from Heigham and Thorpe sources in AWS Norwich & The Broads WRZ. AWS has made allowances for future housing growth in its draft Water Resource Management Plan (dWRMP); it needs to be confirmed whether the growth discussed in this Appropriate Assessment has already been considered. It is acknowledged that it may be necessary to seek alternative water supplies when adverse effects on a designated site are identified. However, it should be emphasised that where licence modifications or revocations may be required under the Habitats Directive, this could in the short term impact on supplies to some areas whilst alternative sources are secured. There is a possibility that Anglian Waters' licences at Ludham, Houghton St. Giles, Wighton, Sheringham and Glandford may require modification in order to satisfy Habitats Directive Review of Consents requirements. This could impact on water supply to the following settlements if alternative sources are not secured within the required time frame: AWS Ludham: Bacton, Catfield, Happisburgh & Stalham. AWS Sheringham: Blakeney, Cromer, Holt, Roughton & Overstrand. AWS Wighton: Wells. AWS Houghton St Giles: Walsingham, Little Snoring, Fakenham, Blakeney& Briston. AWS Glandford: Blakeney, Cromer, Holt, Roughton & Sheringham. For detailed comments see Table 1 appended to this response.	impacts on supply shoul be avoided.
13	**EA**	**Summary of findings (Section 6.3)**	
		There are seven sites where further water quality study is highlighted as necessary. The Water Quality RoC Options Appraisal is yet to be completed which will have implications for Stalham STW and therefore the proposals in Happisburgh and Stalham. It is agreed that further water quality study is necessary for these sites. For the remaining five sites the EA water quality RoC is complete. Therefore further water quality study is not necessarily required for these sites (please see our comments below for section 8.1.2).	This draft information is noted and the report findings have been amended appropriately. Some further studies may not be required for the Rivers Thurne and Ant, assuming the final RoC report confirms these outputs.
14	**EA**	**Generic sustainability issues of relevance to international sites (Section 6.4)**	
		We agree with the adoption of policies and measures to limit/ offset any additional adverse impacts of development. We strongly support the use of more sustainable building standards, such as those set out in the Code for Sustainable Homes, and consideration of water management methods.	Noted.
15	**EA**	**Monitoring and Response (Section 8.1.1)**	
		We welcome a commitment to monitoring the disturbance and specific affects of development at selected location. However, whilst we understand that monitoring is essential in order to inform decisions regarding mitigation and prevention measures, we do not feel that monitoring itself is mitigation. Therefore we would like to see suggestions for	Noted – these suggestions and others are provided in discussion in Section 8. The early initiation of monitoring is felt a robust approach to dealing with the uncertain behaviour of future residents and visitors. NNDC to commit to initiating the programme and responding to its findings.

		Comments	Action
		reducing impacts of disturbance from the outset, both in general and site specific. This would follow a precautionary approach and be compatible with the requirements of Natura 2000. Suggestions might include re-direction/closure of unofficial paths; restrictions on dog walking - timing and location; creation of alternative dedicated dog-walking routes; and, closure or provision of alternative car parking areas.	
16	**EA**	**Further water quality assessments (Section 8.1.2)**	
		What must be established is whether the increase in flows arising from the proposed developments can be accommodated within existing consents, including those for STWs that discharge to the North Norfolk Rivers. This should be agreed with the water company. If the increase in flows can not be accommodated within the existing consent then further water quality study will be required, including an assessment of whether there are alternative environments for the increased wastewater flow.	
17	**Terminology**		
	NNDC	Habitat Regs include term 'significant adverse effect' but the AA assesses if the proposed development has 'adverse effects' rather than 'significant adverse effects'. E.g. In several of the villages the conclusion that 'an adverse effect cannot be ruled out'. Therefore a programme of monitoring is recommended to assess the impacts of development on these sites. As development is only for a max of 26 dwellings it seems unlikely that it will have a significant adverse effect on European sites. Is it therefore possible that a threshold could be set for possible effects, such as 50 dwellings and above? This would change the conclusion for some of the villages.	Point clarified In discussion and in the report.
	NNDC	It is agreed that monitoring the condition of European sites could be relevant for the larger housing sites, although of course any changes in condition at these sites would be very difficult to assign to development proposed through the LDF. Other factors such as provision of, and location of. Car parking at sites, signage, changes in management etc would be far more likely to have an impact. It could, however, be possible to require contributions towards the monitoring of Natura 200 sites from developers of larger sites in order to support the monitoring work that natural England carries out. Would including a standard developer requirement within the policy applied to these sites requesting contributions towards the monitoring of Natura 200 sites satisfy the requirements of the AA? The details of the contributions and monitoring requires further work and would probably be resolved at the time of application.	The particular mechanics of the monitoring programme is considered beyond the scope of this report, but discussion with NE and adjoining authorities would help determine roles and responsibilities.
18			
	NNDC	Can the following sites be included in the tables which summarise the AA findings: Briston: BRI24 Cromer: C30 Fakenham: F04, F13 Holt: H21, CP10	Noted. As these sites do not amend the otherall settlement targets, and do not represent particular threats, they have been integrated into the report. Conclusions remain unaltered.

		Comments	Action
		Horning: HOR08, HOR11 Hoveton: HV02, HV03 Ludham: LUD06 North Walsham: NW44 Stalham: ST16 Weybourne: WEY09	
19	**NNDC**	**Points Specific to individual settlements** (no reference to these points is included in the AA report. Can it be confirmed in the report that these have been considered and found to have no adverse effect.	
19.1	**NNDC**	**Horning:** lie close to the Bure Broads and Marshes SSSI, part of the Broads SAC and Broadland SPA. It should be noted that the river Bure already fails its SAC water quality targets, and this proposal will still further impact this Natura 2000 site. The AA report only talks about the River Ant. Should it have considered the Broads?	This has been clarified..
19.2	**NNDC**	**Sheringham SH06:** This site lies within the groundwater catchment of Sheringham and Beeston Common SSSI/SAC and NE said that an AA should examine impacts on hydrology/water balance. The AA report does not appear to have covered this.	This falls within the statements provided by EA and AWS.
20	**NNDC**	**Para 6.2.12 Hoveton** There has been a copy and paste error in the water quality box. The last sentence is incomplete and the bold text refers to Horning rather than Hoveton. Previous Natural England comments have said that the River Bure fails its SAC water quality targets, but the AA report says it is of good water quality. Can you explain the conflict?	Noted and altered. Apologies.
21	**NNDC**	**Page 7** What does final paragraph on p.7 about the 5km cordon mean? Does it mean that settlements within 5 km of a SAC have been assessed for their impact on it, but those beyond it not?	Now clarified. The 5km cordon is interpreted to be an area of search. This report has taken a more precautionary approach and so has extended the area of influence of a new settlement beyond 5km.
22	**NNDC**	**Page 69** The 'summary of findings' table on pg 69 has a tick under great Yarmouth North Denes for Blakeney. Is this a mistake? It's a long distance away, and great Yarmouth isn't mentioned in the Blakeney table on pg 44.	Noted and altered. Apologies.

Table 2. Specific Issues in the Draft AA Document from the RSPB.

Pg No.		Section (Para No.)	Comments	Action
6	**RSPB**	1.3 (3)	Please identify the two settlements that will result in disturbance to international sites.	Added.
7	**RSPB**	1.4 (5)	Is the "cordon" mentioned a buffer zone? If so, how does it operate?	Explanation added
9	**RSPB**	2.2.2	As indicated in Appendix 1, a more comprehensive list of mitigation measures should be identified at this stage.	More detail provided
11-26	**RSPB**	3	We would recommend that the information for each protected site is grouped together, rather than split across several sections. This would make it easier to identify the relevant information for each site and make it easier to assess the key issues that affect them.	Report amended
27	**RSPB**	4.1 (2)	The sentence should read: "The extent to which new development in North Norfolk **would increase** these will need to be established."	Report amended
28	**RSPB**	Table 4.1	Wintering bird species should be noted as present from **November** to March. Migratory birds are a feature of all sites, not just Breydon Water SPA.	Amended and explanation included
28	**RSPB**	4.2 (1)	Sentence should read: "In simple terms**,** any increase in levels of residential or other development is likely to **increase** the demand for supplied water."	Report amended
28	**RSPB**	4.2 (2)	Is Wighton a Water Treatment Works (WTW)?	Report amended
29-39	**RSPB**	4.3	There is no clear indication of the problems affecting each site, and no indication of the severity of the problems. This clearly has implications for development. Data on this should be readily available and must be included to give a full assessment of the impact that new development would have on the water quality of these key watercourses. Where data is insufficient, suitable measures should be taken during the AA process to address this.	
42	**RSPB**	6	The approach to assessment here is unhelpful. There are many boxes covering certain effects that then conclude that there are not any problems, largely because the sites are not susceptible in the first place. For example, if sensitivity had been focussed on the susceptibility for disturbance of the Overstrand Cliffs when initially considering its designation there would be no need to keep repeating it. In addition, there does not appear to be a clear link between the proximity of a site and the risk of recreational disturbance (the sort of thing that visitor survey work would provide information on). This means that there is lots of repetition of similar text, without clearly justified conclusions. The phrase "…no **outstanding** adverse effect…" does not appear within the Habitats Directive, and should be amended to **no adverse effect**.	The intention of the boxes is to provided a settlement-specific summary of the assessment findings (the alone assessment). As many settlements potentially impact similar designated sites, some repetition is unavoidable. The link between distance and disturbance impact is influenced by factors such as ease of access, transport routes, etc. This is now addressed in Section 1.
	RSPB	6.2.5 Catfield	It is unclear whether the current level of enrichment is harming a Natura 2000 site. The site that could be affected should be clearly identified, followed by an assessment on whether the site is currently in an unfavourable condition. It is only after this work that it is necessary to examine the potential impacts of extra nutrient contributions. If it would tip the site into unfavourable condition then it would have an adverse effect. If the site is already in an unfavourable condition, any extra contribution will automatically be an adverse effect. It is only after the risk of an adverse effect has been identified that mitigation needs to be considered.	
	RSPB	6.2.6	It is not sufficient to simply state that the coastal processes in the area will offset the impact of waste water	Report updated with local water quality data.

Pg No.		Section (Para No.)	Comments	Action
		Cromer	being discharged into the North Sea. The statement that no adverse effect will occur must be based on an evaluative process. As such, it must be based on data and research: the water quality information used for bathing beach purposes may be adequate to demonstrate that there are no problems in the area, but should be followed up by further work if any doubt remains.	
	RSPB	6.2.9 Happisburgh	The River Ant is not a Natura 2000 site, so the assessment needs to identify the designated site(s) it feeds into. Please also refer to comments regarding Catfield at 6.2.5 above.	Report amended
	RSPB	6.2.11 Horning	The River Ant is not a Natura 2000 site, so the assessment needs to identify the designated site(s) it feeds into. Please also refer to comments regarding Catfield at 6.2.5 above.	Report amended
	RSPB	6.2.13 Ludham	The River Thurne is not a Natura 2000 site, so the assessment needs to identify the designated site(s) it feeds into. Please refer to comments regarding Catfield at 6.2.5 above.	Report amended
	RSPB	6.2.14 Mundesley	Please refer to comments regarding Cromer at 6.2.6 above.	Report amended
	RSPB	6.2.15 North Walsham	Please refer to comments regarding Cromer at 6.2.6 above.	Report amended
	RSPB	6.2.16 Overstrand	Please refer to comments regarding Cromer at 6.2.6 above.	Report amended
	RSPB	6.2.19 Southrepps	The River Ant is not a Natura 2000 site, so the assessment needs to identify the designated site(s) it feeds into. Please refer to comments regarding Catfield at 6.2.5 above.	Report amended
	RSPB	6.2.20 Stalham	The River Ant is not a Natura 2000 site, so the assessment needs to identify the designated site(s) it feeds into. Please refer to comments regarding Catfield at 6.2.5 above.	Report amended
	RSPB	6.2.21 Wells-next-the-Sea	Please refer to comments regarding Cromer at 6.2.6 above.	Report amended
	RSPB	6.2.23 Weybourne	Please refer to comments regarding Cromer at 6.2.6 above.	Report amended
72	**RSPB**	7	As highlighted in Appendix 1, there is insufficient information provided to conclude that the overall impact of the plan will not have an adverse impact on Natura 2000 sites. To state otherwise would seem inaccurate given that twelve proposals are likely to have recreational disturbance issues on the North Norfolk Coast SPA (a total of 2080-2580 dwellings), and nine proposals are likely to have recreational disturbance issues on The Broads SPA (a total of 1150-1580 dwellings). In addition, seven proposals will flush sewage directly into the North Sea (a total of 1128-1478 dwellings). This section should be revised in light of a re-assessment of the cumulative pressure of the proposed sites.	This point is addressed under the in-combination assessment. It is considered that with the implementation of a robust and early monitoring programme this issue can be avoided. It has been discussed with RSPB as noted above.
75	**RSPB**	Table 7.3	Dereham and Attleborough are covered by policies produced by Breckland District Council, and not Great Yarmouth Borough Council.	Report amended
76	**RSPB**	7.2	Mitigation measures put in place by other local authorities should be considered in helping to determine what could be done to address the issues facing North Norfolk due to the proposed developments. It is uncertain that a joint approach will work, particularly as authorities such as Breckland, which has an extremely thorough AA for its Core Strategy, have concluded that their plans will **not** have an adverse	Breckland's AA considers an impact on NNC sites and considers a joint approach,

Pg No.		Section (Para No.)	Comments	Action
			effect upon any of North Norfolk's SPAs.	including monitoring, to be appropriate.
76	**RSPB**	7.2 (2)	Sentence should read: "The effects of allocations within North Norfolk have been shown in this assessment to have no adverse effects on site integrity providing that a monitoring and response programme is **developed for** international sites at risk of disturbance."	Report amended
78	**RSPB**	8.1	Given the lack of baseline data available (visitor information and additional environmental data), and the failure to consider the in combination effect of the proposed developments, we disagree that no adverse effect can currently be proven. The phrase "…no **outstanding** adverse effect…" does not appear within the Habitats Directive, and should be amended. The removal of 'outstanding' should also further highlight the inability given the current information to conclude that there will not be an adverse effect cannot be accepted.	This point is addressed above. Noted. Report amended.
78	**RSPB**	8.1.1	As highlighted in Appendix 1, visitor monitoring should have been undertaken as part of the AA process. Without monitoring there is no baseline data available to adequately assess the likely impact of the proposed developments. Additional mitigation measures should also be outlined.	This point has been addressed in Section 8. Baseline data will be available as a result of early initiation of monitoring (as discussed and agreed with RSPB). More suggested management responses have been added.
79	**RSPB**	8.2	This is unlikely to be viable if neighbouring authorities have not identified developments in their own plans to have an adverse effect on the North Norfolk Coast or The Broads SPAs.	Liaison between planning officers will b key in implementing these proposals. NNDC's early position in the planning process introduces an opportunity to lead these and other joint activities.

Table 3. Additional comments from EA on Site Specific Proposals with regards to water quality and water resources. Updated with highlighted text received from Environment Agency in November 2009

Location	Proposals	Water Quality Comments/ Information (for more detail on EA RoC outcomes refer to letter	Water Resources Comments/ Information	Action
Aldborough	26 dwellings	The EA Stage 4 RoC WQ assessment concluded that the consent for Aldborough STW can be affirmed. Whether the proposed growth can be accommodated within the existing consented flow is for the water company to confirm. It may be necessary for additional wastewater flows to be routed to a different receiving environment.	Sheringham and Glandford abstraction licences will require modification to enable a conclusion of no adverse effects. This could impact on water supply to the settlements if alternative sources are not secured within the required time frame.	All points noted and the final report reflects this information received. The lack of complete information from RoC is a factor in the need for later consideration of development issues affecting the water environment.
Bacton	26 dwellings	Mundesley STW not assessed at Stage 4 RoC.	The Water Resources Review of Consents for the Upper Thurne is ongoing. Ludham abstraction licence may require modification to enable a conclusion of no adverse effects. This could impact on water supply to the settlements if alternative sources are not secured within the	

Location	Proposals	Water Quality Comments/ Information (for more detail on EA RoC outcomes refer to letter	Water Resources Comments/ Information	Action
			required time frame.	
Blakeney	26 dwellings	Wastewater flows from Blakeney are pumped to Cley STW, which discharges to the River Glaven. The EA RoC WQ assessment for the North Norfolk Coast is complete. The Stage 3 Appropriate Assessment demonstrated that under current consent conditions, Cley STW does not have an adverse effect alone or in-combination on the features of the North Norfolk Coast SAC or SPA. Whether the proposed growth can be accommodated within the existing consented flow is for the water company to confirm.	Sheringham, Houghton St Giles and Glandford abstraction licences will require modification to enable a conclusion of no adverse effects. This could impact on water supply to the settlements if alternative sources are not secured within the required time frame.	
Briston	50 dwellings	Briston STW was considered to be too small and distant from the Bure Broads and Marshes to have a significant effect on the site.	Houghton St Giles abstraction licence may require modification to enable a conclusion of no adverse effects. This could impact on water supply to the settlements if alternative sources are not secured within the required time frame.	
Catfield	26 dwellings	The current consent for Ludham STW was assessed at Stage 3 of RoC. The works operates at BAT. Stage 3 RoC modelling showed that under current consent conditions the discharge contributes less than 1% of phosphorus loads to the Upper Thurne Broads and Marshes, and therefore does not cause adverse effect alone or in combination. Whether the proposed growth can be accommodated within the existing consented flow is for the water company to confirm.	The Water Resources Review of Consents for the Upper Thurne is ongoing. Ludham abstraction licence may require modification to enable a conclusion of no adverse effects. This could impact on water supply to the settlements if alternative sources are not secured within the required time frame.	
Corpusty and Saxthorpe	26 dwellings	Corpusty STW was considered to be too small and distant from the Bure Broads and Marshes to have a significant effect on the site.		
Cromer	400-450 dwellings and 3 retail opportunity sites	Cromer STW not assessed at Stage 4 RoC.	Sheringham and Glandford abstraction licences will require modification to enable a conclusion of no adverse effects. This could impact on water supply to the settlements if alternative sources are not secured within the required time frame.	
Fakenham	800-900 dwellings, 2 retail opportunity sites and 2 public open spaces.	Fakenham STW has been assess under the EA RoC. The works operates at BAT. Following completion of Stage 4 WQ RoC it has been concluded that the existing Fakenham STW consent can be affirmed. Whether the proposed growth can be accommodated within the existing consented flow is for the water company to confirm.	Houghton St Giles abstraction licence will require modification to enable a conclusion of no adverse effects. This could impact on water supply to the settlements if alternative sources are not secured within the required time frame.	

Location	Proposals	Water Quality Comments/ Information (for more detail on EA RoC outcomes refer to letter	Water Resources Comments/ Information	Action
		It may be necessary for additional wastewater flows to be routed to a different receiving environment.		
Happisburgh	26 dwellings	Stage 4 RoC for Ant Broads and Marshes has been completed. It has been concluded that the current consent for Stalham STW can be affirmed, i.e. no changes to be made. Stage 4 RoC for Ant Broads and Marshes is yet to be completed. There are issues with achieving the Review of Consents point source target. It has not been possible to demonstrate that Stalham STW will not have an adverse effect on the integrity of the site. Work is ongoing to identify whether there are options that will remove the contribution of Stalham STW to the phosphorus target exceedances at the SSSI. It may be necessary for additional wastewater flows to be routed to a different receiving environment.	The Water Resources Review of Consents for the Upper Thurne is ongoing. Ludham abstraction licence may require modification to enable a conclusion of no adverse effects. This could impact on water supply to the settlements if alternative sources are not secured within the required time frame.	
Holt	400-650 dwellings, 2 small employment allocations	Holt STW discharges to the River Glaven. The EA RoC WQ assessment for the North Norfolk Coast is complete. The Stage 3 Appropriate Assessment demonstrated that under current consent conditions, Holt STW does not have an adverse effect alone or in-combination on the features of the North Norfolk Coast SAC or SPA. Whether the proposed growth can be accommodated within the existing consented flow is for the water company to confirm.	Sheringham and Glandford abstraction licences will require modification to enable a conclusion of no adverse effects. This could impact on water supply to the settlements if alternative sources are not secured within the required time frame.	
Horning	26 dwellings	Stage 4 RoC for Ant Broads and Marshes has been completed. Horning STW operates at BAT. It has been demonstrated that under current consent conditions, Horning STW has no adverse effect alone or in combination of the features of the Ant Broads and Marshes. Stage 4 RoC for Ant Broads and Marshes is yet to be completed. Horning STW operates at BAT. It has been demonstrated that under current consent conditions, Horning STW has no adverse effect alone or in combination of the features of the Ant Broads and Marshes. Whether the proposed growth can be accommodated within the existing consented flow is for the water company to confirm. It may be necessary for additional wastewater flows to be routed to a different receiving environment.		

Location	Proposals	Water Quality Comments/ Information (for more detail on EA RoC outcomes refer to letter	Water Resources Comments/ Information	Action
Hoveton	100-150 dwellings	The EA Stage 4 RoC WQ assessment concluded that the consent for Belaugh STW can be affirmed. Whether the proposed growth can be accommodated within the existing consented flow is for the water company to confirm. It may be necessary for additional wastewater flows to be routed to a different receiving environment.		
Little Snoring	26 dwellings	Little Snoring STW discharges to the River Stiffkey. The EA RoC WQ assessment for the North Norfolk Coast is complete. The Stage 3 Appropriate Assessment demonstrated that under current consent conditions, Little Snoring STW does not have an adverse effect alone or in-combination on the features of the North Norfolk Coast SAC or SPA. Whether the proposed growth can be accommodated within the existing consented flow is for the water company to confirm.	Houghton St Giles abstraction licence will require modification to enable a conclusion of no adverse effects. This could impact on water supply to the settlements if alternative sources are not secured within the required time frame.	
Ludham	26 dwellings	The current consent for Ludham STW was assessed at Stage 3 of RoC. The works operates at BAT. Stage 3 RoC modelling showed that under current consent conditions the discharge contributes less than 1% of phosphorus loads to the Upper Thurne Broads and Marshes, and therefore does not cause adverse effect alone or in combination. Whether the proposed growth can be accommodated within the existing consented flow is for the water company to confirm.	The Water Resources Review of Consents for the Upper Thurne is ongoing. Ludham abstraction licence may require modification to enable a conclusion of no adverse effects. This could impact on water supply to the settlements if alternative sources are not secured within the required time frame.	
Mundesley	50 dwellings	Mundesley STW not assessed at Stage 4 RoC.		
North Walsham	400-650 dwellings, education and town centre proposals, including retail opportunities	Mundesley STW not assessed at Stage 4 RoC.		
Overstrand	26 dwellings	Cromer STW not assessed at Stage 4 RoC.	Sheringham and Glandford abstraction licences may require modification to enable a conclusion of no adverse effects. This could impact on water supply to the settlements if alternative	

Location	Proposals	Water Quality Comments/ Information (for more detail on EA RoC outcomes refer to letter	Water Resources Comments/ Information	Action
			sources are not secured within the required time frame.	
Roughton	26 dwellings	The EA Stage 4 RoC WQ assessment concluded that the consent for Roughton STW can be affirmed. Whether the proposed growth can be accommodated within the existing consented flow is for the water company to confirm. It may be necessary for additional wastewater flows to be routed to a different receiving environment.	Sheringham and Glandford abstraction licences may require modification to enable a conclusion of no adverse effects. This could impact on water supply to the settlements if alternative sources are not secured within the required time frame.	
Sheringham	200-250 dwellings, public open space & retail opportunity sites	Cromer STW not assessed at Stage 4 RoC.	Sheringham and Glandford abstraction licences will require modification to enable a conclusion of no adverse effects. This could impact on water supply to the settlements if alternative sources are not secured within the required time frame.	
Southrepps	26 dwellings	Southrepps STW was considered to be too small and distant from the Ant Broads and Marshes to have a significant effect on the site.	Sheringham and Glandford abstraction licences will require modification to enable a conclusion of no adverse effects. This could impact on water supply to the settlements if alternative sources are not secured within the required time frame.	
Stalham	150-200 dwellings	Stage 4 RoC for Ant Broads and Marshes has been completed. Horning STW operates at BAT. It has been demonstrated that under current consent conditions, Horning STW has no adverse effect alone or in combination of the features of the Ant Broads and Marshes. Stage 4 RoC for Ant Broads and Marshes is yet to be completed. There are issues with achieving the Review of Consents point source target. It has not been possible to demonstrate that Stalham STW will not have an adverse effect on the integrity of the site. Work is ongoing to identify whether there are options that will remove the contribution of Stalham STW to the phosphorus target exceedances at the SSSI. It may be necessary for additional wastewater flows to be routed to a different receiving environment.		
Walsingham	26 dwellings	Gt Walsingham STW discharges to the River Stiffkey. The EA RoC WQ assessment for the North Norfolk Coast is	Houghton St Giles abstraction licence will require modification to enable a conclusion of	

Location	Proposals	Water Quality Comments/ Information (for more detail on EA RoC outcomes refer to letter	Water Resources Comments/ Information	Action
		complete. The Stage 3 Appropriate Assessment demonstrated that under current consent conditions, Gt. Walsingham STW does not have an adverse effect alone or in-combination on the features of the North Norfolk Coast SAC or SPA. Whether the proposed growth can be accommodated within the existing consented flow is for the water company to confirm.	no adverse effects. This could impact on water supply to the settlements if alternative sources are not secured within the required time frame.	
Wells-next the-Sea	100-150 dwellings, and 1 car park.	The EA RoC WQ assessment for the North Norfolk Coast is complete. The Stage 3 Appropriate Assessment demonstrated that under current consent conditions, Wells-next-the-Sea STW does not have an adverse effect alone or in-combination on the features of the North Norfolk Coast SAC or SPA.	The Water Resources Review of Consents for the North Norfolk Coast has been completed. The Wighton abstraction licence will be affirmed..	
Weybourne	26 dwellings	Cromer STW not assessed at Stage 4 RoC.		

Appendix F: Feature and impact assessment tables

Assessment tables used to consider Likely Significant Empact and the nature of any impact of individual site specific proposals on the designated sites in the North Norfolk District Council area are presented on this CD. Due to their physical size they are no included in this hard copy of the report. They form a stage of the decision-making/assessment process undertaken through this study. Findings are summarised in this report, and in particular in **Section 6**.

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