

# **Task 2 Appropriate Assessment**

## **Joint Core Strategy for Broadland, Norwich and South Norfolk**

### **Regulation 48 of the Conservation (Natural Habitats etc.) Regulations 1994**

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## Summary

### The Joint Core Strategy

The JCS sets out the spatial vision for development in the Broadland, Norwich and South Norfolk areas. It will form the key document in the Local Development Framework (LDF) portfolio of planning documents for each local authority, which will set out the vision, objectives and spatial strategy for future development until 2026.

Broadland, Norwich and South Norfolk Council are working together under the Greater Norwich Development Partnership (GNDP) to prepare the Joint Core Strategy (JCS), a framework to plan for future development in Norwich city and the surrounding area.

### Task 1 Appropriate Assessment: Likely Significant Effects

Following the detailed review of the JCS and the formulation of the Task 1 Test of Likely Significance Appropriate Assessment screening matrix, a number of policies were identified which could potentially result in likely significant effects on European and Ramsar designated sites. These were:

Direct and Indirect Impacts on Designated Sites:

- The Broads SAC: potential impacts from the implementation of Policies 4 and 5 (all habitats and the species Desmoulin's whorl snail).
- Broadland Ramsar: potential impacts from the implementation of Policies 4 and 5 (to calcareous fens with *Cladium mariscus* and species of the *Caricion davalliana*, alkaline fens, alluvial forests with *Alnus aglutinosa* and *Fraxinus excelsior* and to Desmoulin's whorl snail).

In-combination and Cumulative Impacts on Designated Sites:

- Broadland SPA: potential in-combination impacts from the implementation of Policies 4, 5 and 7.
- River Wensum SAC: potential in-combination impacts from the implementation of Policies 4, 5, 7 and 16.
- The Broads SAC: potential in-combination impacts from the implementation of Policies 4, 5, 7 & 16.
- Broadland Ramsar: potential in-combination impacts from the implementation of Policies 4, 5, 7 and 16.

### Task 2 Appropriate Assessment Findings

After taking into consideration the findings from Task 1 Appropriate Assessment, the JCS policies were reviewed and revised. Subsequently, this Task 2 AA concludes that it is highly unlikely that significant direct and indirect impacts are anticipated from the implementation of the JCS alone. This is due to:

- The inclusion of two new policies (Policies 1 and 2) which offer protection to environmental assets in particular European and Ramsar designated sites, and;
- Compliance with the Water Framework Directive (WFD), which will avoid harm to water dependent habitats and species that they support. This should be achieved through: (i) enhancements to existing STW where an increase discharge is anticipated; (ii) amendment of water abstraction licences where applicable.

However, uncertainty remains regarding in-combination and cumulative impacts, for which it is deemed that there is insufficient information, at this stage to determine whether the impact would be significant or not.

## **Task 2 Appropriate Assessment Recommendations**

Following the undertaking of the Task 2 Appropriate Assessment a series of recommendations are made for modification to the JCS policies. These modifications would strengthen the policies to ensure no significant impacts:

- Policy 3, reference to be made of the Water Framework Directive. The WFD makes it very clear that all abstraction must be in compliance and have no adverse impacts on designated sites;
- Policy 7, revise text: “All access and transport developments will be undertaken in accordance with national planning guidance and have no significant adverse impact on European & Ramsar designated sites. Where possible all new access and transportation developments will seek, through appropriate mitigations, to provide benefits to biodiversity.”
- Policy 12, revise text: “A significant area north of Rackheath will be provided as green space to ensure no significant adverse impacts on the Broads SAC. This area is to act as an ecological buffer zone between the development area and the designated site. All new developments in the area will seek to result in a beneficial impact on biodiversity”, and;
- Policy 20, a Supplementary Development Plan is introduced which specifically deals with developments within the JCS area. This will have due regard to the required considerations to ensure the conservation of European & Ramsar designated sites and European protected species.

In addition, and regarding the uncertain in-combination and cumulative impacts, it is recommend that a more detailed assessment is undertaken to ascertain the impact and to identify appropriate mitigations, if they are required. It is recommended that the outcomes (appropriate mitigations) from the uncertain in-combination and cumulative assessment then feed into the Area Action Plans (AAPs) through the formulation of a Supplementary Development Plan, which covers the need to consider European and Ramsar designated sites and European protected species in planning and development processes.

The purpose of feeding into the AAPs would be to ensure proper implementation and enforcement of any potential incombination impacts, which may result following the further assessments. Further review of the JCS policies is not deemed necessary, as the JCS alone would not have any significant impact on European and Ramsar designated sites.

# 1 Introduction

## 1.1 Background

Broadland, Norwich and South Norfolk Council are working together under the Greater Norwich Development Partnership (GNDP) to prepare the Joint Core Strategy (JCS), a framework to plan for future development in Norwich city and the surrounding area.

In accordance with Article 6 paragraph (3) of the Council Directive 92/43/EEC (as amended) on the Conservation of Natural Habitats and of Wild Fauna and Flora (EC Habitats Directive), as transposed in to UK law under the Conservation (Natural Habitats etc.) Regulations 1994 (as amended), a Task 1 Appropriate Assessment was undertaken to identify any likely significant effects that might arise from the implementation of the JCS. The Test of Likely Significance (TOLS), submitted in April 2009 and finalised in July 2009, identified the potential for impact on the European designated sites within the Zone of Influence of the policies included in the JCS as issued in March 09 (Public Consultation document).

A summary of the Task 1 TOLS is presented in table 1.1.

**Table 1.1: JCS Task 1 AA Test of Likely Significance Summary**

Designated site	Likely significant effect	March 2009 Policy(s)	July 2009 Policy(s)
<b>Direct and Indirect Impacts</b>			
The Broads SAC	Potential impacts to all habitats and the species Desmoulin's whorl snail <i>Vertigo moulinsiana</i> .	Policy 4 & 5	Policy 11& 12
SPA	All features.	Policy 4 & 5	Policy 11& 12
Broadland Ramsar	Potential impacts to calcareous fens with <i>Cladium mariscus</i> and species of the <i>Caricion davallianae</i> , alkaline fens, alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> and to Desmoulin's whorl snail <i>Vertigo moulinsiana</i> .	Policy 4 & 5	Policy 11& 12
<b>In-combination and Cumulative Impacts</b>			
Broadland SPA	Potential in-combination impacts to all features.	Policy 4, 5 & 7	Policy 11, 12 & 14
River Wensum SAC	Potential in-combination impacts to all features.	Policy 4, 7 & 16	Policy 7, 11, 14

Designated site	Likely significant effect	March 2009 Policy(s)	July 2009 Policy(s)
	Potential in-combination impacts to water course of plain to montane levels with the <i>Ranunculion fluitantis</i> and Callitriche-Batrachion vegetation; white-clawed crayfish <i>Austropotamobius pallipes</i> , brook lamprey <i>Lampetra planeri</i> and bullhead <i>Cottus gobio</i> .	Policy 5	Policy 12
The Broads SAC	Potential in-combination impacts to all features.	Policy 4 & 16	Policy 7 & 11
	Potential in-combination impacts to all habitat features and Desmoulin's whorl snail <i>Vertigo moulinsiana</i> .	Policy 5 & 7	Policy 12 & 14
Broadland Ramsar	Potential in-combination impacts to all features.	Policy 4 & 16	Policy 7 & 11
	Potential in-combination impacts to: calcareous fens with <i>Cladium mariscus</i> and species of the <i>Caricion davalliana</i> ; alkaline fens; alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> ; Desmoulin's whorl snail <i>Vertigo moulinsiana</i> ; otter <i>Lutra lutra</i> ; Bewick's swan <i>Cygnus columbianus bewickii</i> ; wigeon <i>Anas penelope</i> ; gadwall <i>Anas atrepera strepera</i> and shoveler <i>Anas clypeata</i> .	Policy 5 & 7	Policy 12 & 14

## 1.2 Objectives of the Task 2 Appropriate Assessment

The purpose of this report is to provide the Competent Authority with the necessary information to undertake an Appropriate Assessment (Task 2) on the potential for the JCS to affect the Natura 2000 sites within or adjacent to the planning area.

The Task 2 Appropriate Assessment (AA) objective is to identify whether the integrity of the European and Ramsar designated sites may be affected by the Joint Core Strategy policies, and whether the conservation status of the primary interest features of the sites could be impacted.

## 1.3 Approach and Methodology

In undertaking this Task 2 Appropriate Assessment the following approach and specific activities were undertaken:

- A review of all of the Natura 2000 and Ramsar sites, their qualifying features (see Task 1, Vol III, Section 1) and the vulnerability of the qualifying features to disturbance (see Task 1, Vol III, Sections 2 and 3).
- A review of the JCS policies and the potential Likely Significant Effects of the strategy on the designated sites and their qualifying features (see Task 1, Vol I and II).

- An assessment of how the plan can impact on the designated sites through the identification of the pathway between the source of the impact and the interest features. The assessment will only address the Favoured Growth Option (represented in Figure 1.2).
- Identification of appropriate mitigation measures.

The Department for Communities and Local Government's '*Planning for the Protection of European Sites*' provides specific guidelines to local authorities for undertaking Appropriate Assessments for regional spatial strategies and local development documents. In addition to this guidance the following guidelines were adhered to when undertaking both the Task 1 and Task 2 AA:

- Natural England (1997) *Habitats Guidance Note Natura 2000* (May 1997);
- Department for Communities and Local Government (2006) *Planning for the Protection of European Sites: Appropriate Assessment. Guidance for regional spatial strategies and local development documents* (August 2006);
- EC (2000) *Managing Natura 2000 Sites*. The provisions of Article 6 of the Habitats Directive 92/43/EEC;
- EC (2001) *Assessment of plans and projects significantly affecting Natura 2000 sites*. Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC. Brussels (November 2001), and;
- Royal Society for the Protection of Birds (RSPB) guidance *The Appropriate Assessment of Spatial Plans in England* (Dodd, *et al.*, 2007).

Other relevant key policies that influence the ecology and nature conservation assessments and planning are:

- PPS1 *Delivering Sustainable Development* (sets out the Government's overarching planning policies on the delivery of sustainable development through the planning system);
- PPS1A *Planning and Climate Change* - Supplement to Planning Policy Statement 1;
- PPS9 *Planning for Biodiversity and Geological Conservation*;
- PPS11 *Regional Spatial Strategies guidance*, and;
- PPS12 *Local Development Frameworks*.

## 1.4 JCS Appropriate Assessment Process

Following the completion of the Task 1 AA, additional policies were added to the JCS, and in addition the existing JCS policies were revised and updated. The new policies were then issued in the JCS pre-submission document (July 2009). Subsequently, a Task 2 AA process was instigated and the new policies in the JCS pre-submission document reviewed. Following this review, this Task 2 AA report has been produced, and revisions of the JCS policies have been made.

A summary of the JCS Appropriate Assessment process is presented in Figure 1.1.

As the wording in the policies and policy numbers have been modified since the Public Consultation document (March 2009) upon which the Task 1 AA was undertaken, Table 1.2 summarises the changes between the two documents.

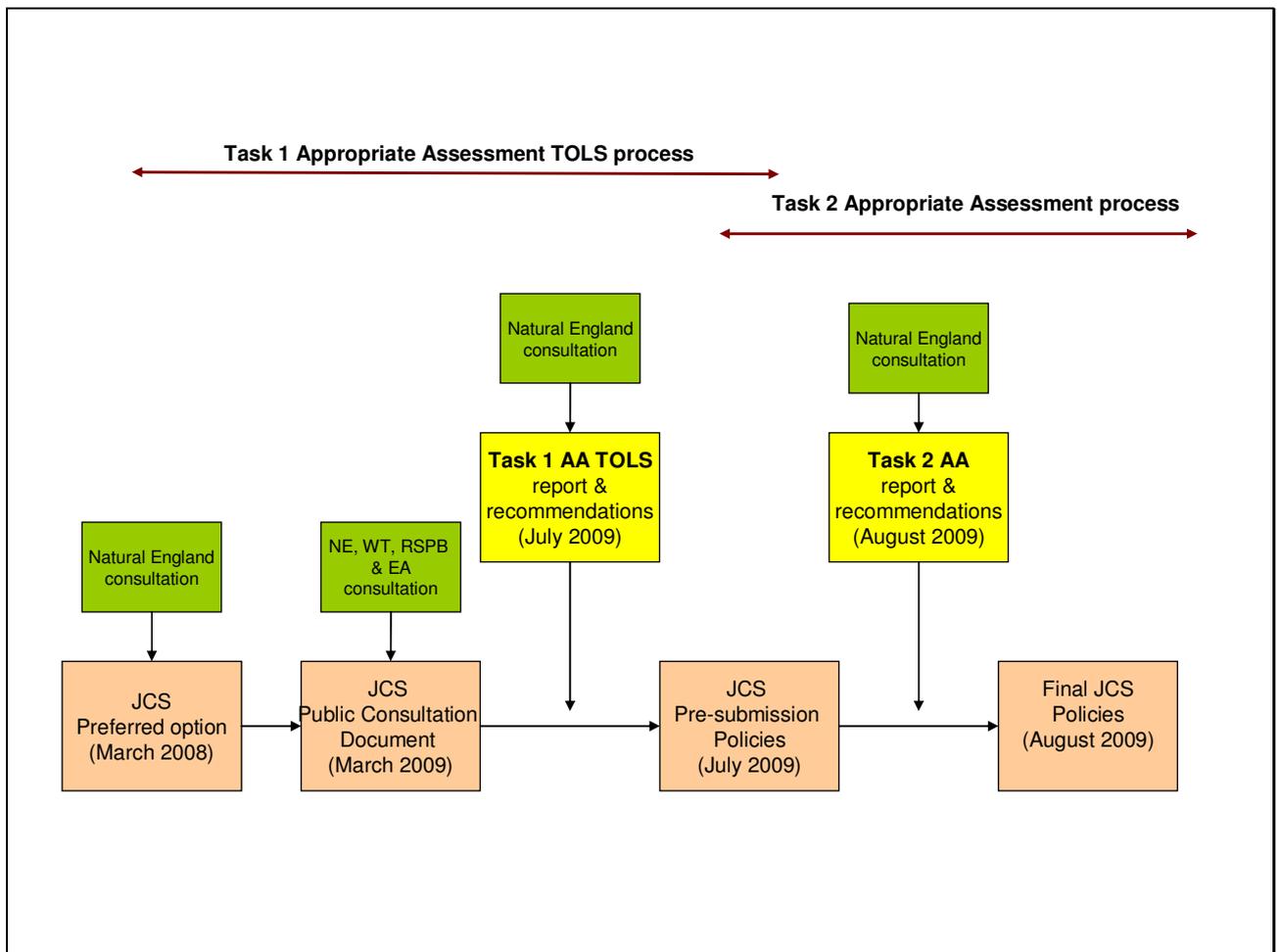
## 1.5 Consultation

Consultation with stakeholders is a key component of the Appropriate Assessment process. Under the AA guidance, consultation with Natural England (NE) is mandatory where there is the potential for a project or plan to impact on a European designated site. NE has been formally involved for the consultation in the production of both the Task 1 and Task 2 AA the JCS. A copy of the formal response from NE is provided in Appendix A.

In addition to the formal response from NE, the consultation process has also involved one to one meetings and discussions with NE (Helen Ward) and Norfolk Wildlife Trust (John Hiskett) and a consultation and workshop undertaken on 24th April 2009 between the environmental stakeholders (NE, EA, RSPB and NWT) and the GNDP planners.

Consultation regarding specific issues associated with this Task 2 AA is ongoing, and feedback and comments will be considered separately to this report.

**Figure 1.1: JCS Appropriate Assessment Process**



**Table 1.2: Policy Numbering and Objectives**

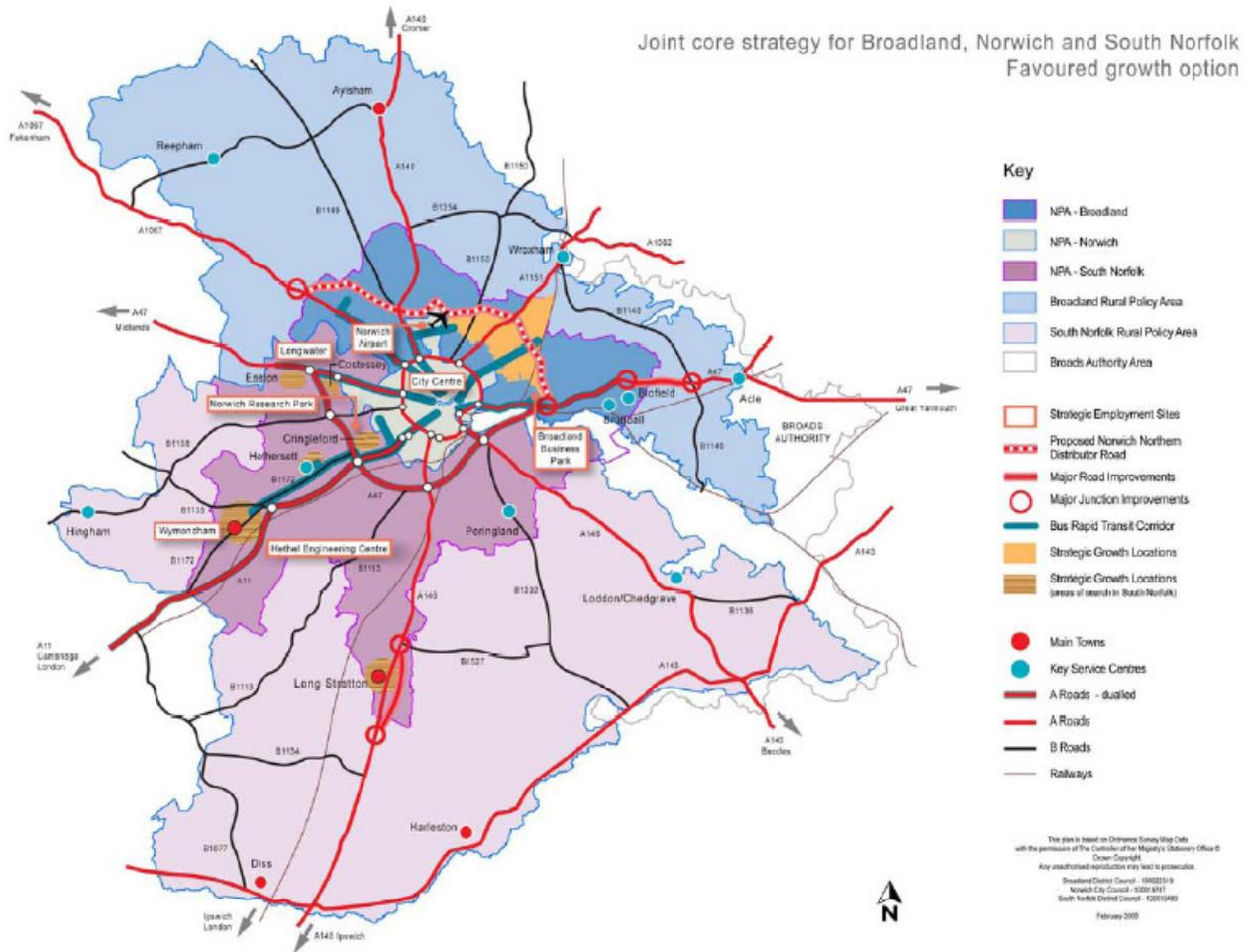
<b>Policy Number Pre-submission Document (July 2009)</b>	<b>Policy Number Public Consultation (March 2009)</b>	<b>Policy Title (July 2009)</b>	<b>Policy Objective (July 2009)</b>
Policy 1	<i>New: No direct equivalent, part covered by Policy 13, 15 &amp; 17</i>	Promoting sustainability and addressing climate change	All developments will be located and designed to use resources efficiently, minimise greenhouse gas emissions and be adapted to weather extremes.
Policy 2	<i>New: No direct equivalent, part covered by Policy 13</i>	Promoting good design	All developments will be designed to the highest possible standards to create a strong sense of place
Policy 3	<i>New: No direct equivalent, part covered by Policy 13 &amp; 17</i>	Energy, Water and ICT	Ensuring new communities can be low or zero carbon, along with provisions for sufficient environmentally protecting water infrastructure and broadband access
Policy 4	<i>New: No direct equivalent</i>	Culture, leisure and entertainment	Promotion of cultural life and enrichment of cultural heritage
Policy 5	Policy 18	Supporting communities	Maintenance and enhancement of the quality of life and well being of communities by developments
Policy 5	Policy 15	The economy	The economy will be developed in a sustainable way
Policy 6	Policy 14	Housing delivery	Provision for numbers of new houses to be built between 2008 – 2026, their distribution, affordable housing and provisions for gypsies and travellers

<b>Policy Number Pre-submission Document (July 2009)</b>	<b>Policy Number Public Consultation (March 2009)</b>	<b>Policy Title (July 2009)</b>	<b>Policy Objective (July 2009)</b>
Policy 7	Policy 16	Access and transportation	Enhancement and development of the transportation system to promote sustainable economic development, reduce contribution to climate change, promote healthy travel choices and minimise use of private car
Policy 9	Policy 2	Strategy for growth in Norwich Policy Area (NPA)	Strategy for accommodating areas of major growth and development
Policy 10	Policy 3	Norwich City Centre	Promotion of the role of Norwich as the regional centre and focus of development within city
Policy 11	Policy 4	The remainder of the Norwich urban area, including the fridge parishes	Opportunities for development in suburban areas including regeneration, green infrastructure and traffic impacts
Policy 12	Policy 5	Locations for major new or expanding communities in the Norwich Policy Area	Opportunities for development in the NPA including Wymondham, Old Catton, Sprowston, Rackheath, Thorpe St Andrewowth triangle, Hetersett, Cringleford, Long Stratton, Easton and Costessey areas.
Policy 13	Policy 1	Main Towns	Hierarchy of focus for new development in the area. Key towns to accommodate growth (Aylsham, Diss, Harleston and Wymondham)
Policy 14	Policy 7	Key Service Centres	Centres for modest scale residential development
Policy 15	Policy 8	Service Villages	Identification of service villages expected to accommodate further development

<b>Policy Number Pre-submission Document (July 2009)</b>	<b>Policy Number Public Consultation (March 2009)</b>	<b>Policy Title (July 2009)</b>	<b>Policy Objective (July 2009)</b>
Policy 16	Policy 9	Other Villages	Identification of villages with defined boundaries which will accommodate infill or small groups of dwellings and small scale business or services
Policy 17	Policy 10	Smaller rural communities and the countryside	Policies including affordable housing and farm diversification
Policy 18	Policy 11	The Broads	Enhancement and maintenance of the Broads
Policy 19	Policy 12	The hierarchy of centres	Hierarchy for the development of appropriate new retailing services, offices and town centre uses
Policy 20	Policy 19	Implementation and monitoring	Provision for subsequent maintenance of the appropriate infrastructure accompanying development

\* Note there are currently two Policy 5's in the July 2009 document.

**Figure 1.2: Joint Core Strategy –Favoured Growth Option**



Source: JCS for Broadland, Norwich and South Norfolk, Public Consultation – Regulation 25 March 2009

## 2 Appropriate Assessment

### 2.1 Background Information

For this Task 2 AA several sources of information were reviewed. Some were already included in the Task 1 assessment (see Vol. I Section III) such as:

- Water Cycle Study Stage 1;
- River Wensum Restoration Strategy;
- Great Yarmouth LDF AA, and;
- NNDR AA.

However, other studies were also used; these are described below.

#### 2.1.1 Draft River Basin Management Plan. Anglian River Basin District

The Water Framework Directive (WFD) sets a target of aiming to achieve at least ‘good’ status in all waters by 2015. The recently published Draft River Basin Management Plan (Draft RBMP) for the Anglian River Basin District, presents an assessment of the current status of the Anglia water bodies and in most cases postpones the achievement of this target to the subsequent cycles (2021 or 2027). In the specific case of the Natura 2000 sites the achievement of good status is a priority within the WFD. The WFD relies on the Natural England assessment of the designated sites conservation status to achieve favourable status. By doing this the designated sites conservation objectives are included in the WFD and as set out in the Draft RBMP:

*‘Achieving the protected areas objective is also a key part of the WFD and one of the priorities for the first cycle of the river basin management’.*

The Draft RBMP is a compilation of information on each of the water dependent Natura 2000 sites in the Anglian River Basin District and reasons for failing to achieve favourable status (where applicable). It also proposes measures to achieve favourable conservation status or to prevent deterioration from favourable conservation status.

#### 2.1.2 The Broads and Climate Change

The Broads and Climate Change study includes an assessment of the impact of climate change to natural assets of the Broads. It aims to identify the local responses required to safeguard the natural environment by ensuring that when decisions on the future of the Broads are made proper account is taken of the climate change impacts.

Major impacts due to climate change in the Broads will include:

- Reduction of freshwater habitats;
- An increase in the area of coastal and saline habitats;
- An increase in the frequency and duration of salt water ingress;
- Damage to wetlands habitats from repeated flooding and drought;

- Loss of biodiversity;
- Arrival of new plant and animal species including non-native and invasive species, pests and diseases;
- Reduced water quality due to saline incursion;
- Reduced summer water levels;
- Algal blooms, and
- A reduction in water resources available.

The Broads study also provides an explanation of the adaptation responses most relevant to The Broads. Amongst these, the most pertinent to this Task 2 Assessment are:

- Maintain the quality of existing habitats;
- Restore the function and structure of river channels;
- Extend existing habitats and create new areas. Due to limited opportunities the recreation of new freshwater areas will have to be somewhere else. Assess the likely increase in visitor numbers and identify areas most at risk from negative impacts from abstraction, and
- Use the spatial planning system to maintain adequate land for the natural environment.

Climate change could exacerbate existing pressures, such as water abstraction and discharges and consequent negative effects on water quality. This may prevent habitats from recovering and achieving favourable status.

### **2.1.3 Designated Sites Condition**

Information on SACs and SPA site condition was used, where relevant, to inform this assessment. Site conditions, with information on reasons for failure (where applicable), are published by Natural England for the SSSI components of the European designated sites.

## **2.2 Assessment of Impacts**

### **2.2.1 Direct and Indirect Impacts**

Direct and indirect impacts resulting from the implementation of the JCS alone were identified for The Broads SAC and Broadland SPA and Ramsar. These impacts are analysed in Table 2.1 – 2.3. Where possible measures are proposed to mitigate any potential impacts, reference is also made to policies which provide protection to the designated sites and therefore avoid the significant impacts.

**Table 2.1: Direct and Indirect Impacts Resulting from the Implementation of the JCS Alone – The Broads SAC**

Broads SAC		
Policies 11 and 12		
Designated features	Impact	Mitigation Measures
<p>Hard oligo-mesotrophic water with benthic vegetation of <i>Chara</i> spp.</p> <p>Natural eutrophic lakes with <i>Magnopotamion</i> or <i>Hydrocharition</i> type vegetation</p> <p>Transition mires and quaking bogs</p> <p>Calcareous fens with <i>Cladium mariscus</i> and species of the <i>Caricion davallianae</i></p> <p>Alkaline fens</p> <p>Alluvial forests with <i>Alnus aglutinosa</i> and <i>Fraxinus excelsior</i></p> <p><i>Molinia</i> meadows on calcareous, peaty or clayey-silt laden soils</p>	<p><b>Waste Water Discharges</b></p> <p>Main concerns relate to the potential increase in discharges from the Witlingham STW which is responsible for excess phosphate discharges into the River Yare, which in turn affects the Broads SAC in particular the Yare Broads and Marshes SSSI which is a component of the SAC. This SSSI is located within 1 km from Thorpe St Andrew one of the key areas for development under Policies 11 and 12.</p> <p>The condition of 70% of the Yare Broads and Marshes SSSI area is currently ‘unfavourable no change’ and 16% of the area is ‘unfavourable recovering’. The main reasons for adverse conditions are mostly related to water pollution from agriculture run off and from point discharges. Any development in this area could therefore increase phosphate loads in the SAC and aggravate the problem.</p> <p>Areas for development that have the potential to increase the amount of discharge from the Witlingham STW are, accordingly to the Water Cycle Stage 1, Sprowston (North East Sector); Cringleford South west sector; Costessey; Drayton; and Newton.</p> <p>Also discharging into River Yare through the River Wensum is the Wymondham STW. Any increase in the effluents from this STW might have potential impacts downstream on the habitats of the Yare Broads and Marshes SSSI. Provided that phosphorus removal is introduced to the STW the Broads SAC should not be affected.</p> <p>Developments proposed under Policies 11 and 12 in the Rackheath area have the potential to increase flows to the Rackheath STW. This</p>	<p>Technological modifications are required to ensure that no significant impacts on the Broads SAC to occur at the following STW:</p> <ul style="list-style-type: none"> <li>• Whitlingham STW;</li> <li>• Wymondham STW, and</li> <li>• Rackheath STW.</li> </ul> <p>Compliance with WFD will rely on all abstraction licences being amended or revoked by 2015. The expected increase in water abstraction due to proposed developments should be accommodated in these investigations to ensure that the conservation objectives of the SAC are not affected.</p> <p>To avoid disturbance to the designated species it is recommended that a significant area north of Rackheath should be provided as green space to ensure that there are no significant adverse impacts on the Broads SAC. This area is to act as an ecological buffer zone between the development area and the designated site.</p> <p>Policies 1 and 2 of the JCS aim to protect the environment specifically the European designated sites.</p> <p>Policy 1 clearly states that all new developments will ensure that there will be no adverse impacts on SACs due to:</p>

<b>Broads SAC</b>		
<b>Policies 11 and 12</b>		
<b>Designated features</b>	<b>Impact</b>	<b>Mitigation Measures</b>
	<p>STW would need to be upgraded to take any additional flows and there is a concern that without proper phosphate stripping the discharge would increase nutrient levels in the River Bure and downstream in the Bure Broads and Marshes SSSI. The majority (c.80%) of this SSSI is in 'unfavourable no change' status, mostly due to water pollution from agriculture run off. Any increase in untreated effluent might prevent the achievement of the conservation objectives of the designated sites.</p> <p><b>Water Abstraction</b></p> <p>Proposed developments under this policy will receive water from the River Wensum through the Heigham WTW. Growth beyond 10,000 dwellings would require investigation to ensure water resources are protected.</p> <p>According to the Water Cycle study there is available water to fulfil the increase in water demand. There is, however, the concern that increased abstraction in the River Wensum, which feeds the River Yare, might result in negative impacts in the Broads features through a decrease in flows.</p>	<ul style="list-style-type: none"> <li>• Storm water runoff;</li> <li>• Water abstraction, and</li> <li>• Sewage discharge.</li> </ul> <p>Compliance with this policy should avoid impacts previously identified due to the implementation of policies 11 and 12.</p> <p>Policy 2 aims at avoiding harmful impacts to the environment in particular to SACs through developments design.</p>
<p>Desmoulin's whorl snail <i>Vertigo moulinsiana</i></p>	<p>Desmoulin's whorl snail is sensitive to changes in hydrology due to water abstraction which might affect its favoured habitat (swampy and unshaded ground with tall plants).</p> <p>As such, impacts from increased abstraction on the River Wensum have the potential to affect flows downstream in the River Yare and indirectly affect this feature of the SAC through decrease in available habitat.</p>	<p>Technological modifications are required to ensure that no significant impacts on the Broads SAC to occur at the following STW:</p> <ul style="list-style-type: none"> <li>• Whitlingham STW</li> <li>• Wymondham STW</li> <li>• Rackheath STW</li> </ul> <p>Compliance with WFD will rely on all abstraction licences being amended or revoked by 2015. The expected increase in water abstraction due to proposed</p>

<b>Broads SAC</b>		
<b>Policies 11 and 12</b>		
<b>Designated features</b>	<b>Impact</b>	<b>Mitigation Measures</b>
		<p>developments should be accommodated in these investigations to ensure that the conservation objectives of the SAC are not affected.</p> <p>Policy 1 and 2 of the JCS aims to protect the environment specifically the European designated sites.</p> <p>Policy 1 clearly states that all new developments will ensure that there will be no adverse impacts on SACs due to:</p> <ul style="list-style-type: none"> <li>• Storm water runoff;</li> <li>• Water abstraction, and</li> <li>• Sewage discharge.</li> </ul> <p>Compliance with this policy should avoid impacts previously identified due to the implementation of policies 11 and 12.</p> <p>Policy 2 aims at avoiding harmful impacts to the environment in particular to SACs through developments design.</p>

**Table 2.2: Direct and Indirect Impacts Resulting from the Implementation of the JCS Alone – Broadland SPA**

<b>Broadland SPA</b>		
<b>Policies 11 and 12</b>		
<b>Designated feature</b>	<b>Impacts</b>	<b>Mitigation Measures</b>
<p>Bewick's swan <i>Cygnus columbianus bewickii</i></p> <p>Whooper swan <i>Cygnus cygnus</i></p> <p>Bittern <i>Botaurus stellaris</i></p> <p>Marsh harrier <i>Circus aeruginosus</i></p> <p>Hen harrier <i>Circus cyganeus</i></p>	<p>Impacts to the designated species of the SPA may occur indirectly through negative impacts on the habitats that support these species. These are most likely to be:</p> <ul style="list-style-type: none"> <li>• Water abstraction from the River Wensum and changes in flows in the Wensum and consequently in the River Yare.</li> <li>• Increase in nutrient levels from existing STW where increase discharges are anticipated (Whitlingham, STW Wymondham and STW Rackheath STW).</li> </ul> <p>Direct impacts from disturbance are unlikely as the main localities are outside the buffer zones established (3 km from the site boundary). The only exception is the proposed development at Rackheath, which is within the green and orange buffer zones. The area that overlaps with the orange buffer (the area within 2 km from the site boundary) is insignificant when compared to the overall SPA area and therefore any potential impacts should be localized and not affect the integrity of the site. Nevertheless this should be addressed at local level.</p>	<p>Technological modifications are required to ensure that no significant impacts on the Broads SAC to occur at the following STW:</p> <ul style="list-style-type: none"> <li>• Whitlingham STW;</li> <li>• Wymondham STW, and</li> <li>• Rackheath STW</li> </ul> <p>Compliance with WFD will rely on all abstraction licences being amended or revoked by 2015. The expected increase in water abstraction due to proposed developments should be accommodated in these investigations to ensure that the conservation objectives of the SPA are not affected.</p> <p>To avoid disturbance to the designated species it is recommended that a significant area north of Rackheath should be provided as green space to ensure no significant adverse impacts of Broadland SPA. This area is to act as an ecological buffer zone between the development area and the designated site.</p> <p>Policy 1 and 2 of the JCS aims to protect the environment specifically the European designated sited sites.</p>

<b>Broadland SPA</b>		
<b>Policies 11 and 12</b>		
<b>Designated feature</b>	<b>Impacts</b>	<b>Mitigation Measures</b>
		<p>Policy 1 clearly states that all new developments will ensure that there will be no adverse impacts on SACs due to:</p> <ul style="list-style-type: none"> <li>• Storm water runoff;</li> <li>• Water abstraction, and</li> <li>• Sewage discharge.</li> </ul> <p>Compliance with this policy should avoid impacts previously identified due to the implementation of policies 11 and 12.</p> <p>Policy 2 aims at avoiding harmful impacts to the environment in particular to SPAs through developments design.</p>

**Table 2.3: Direct and Indirect Impacts Resulting from the Implementation of the JCS Alone – Broadland Ramsar**

<b>Broadland Ramsar</b>		
<b>Policies 11 and 12</b>		
<b>Designated feature</b>	<b>Impacts</b>	<b>Mitigation Measures</b>
<p><b>CRITERION 5</b>                      Calcareous fens with <i>Cladium mariscus</i> and species of the <i>Caricion davallianae</i>                       Alkaline fens                       Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i></p>	<p><b>Waste Water Discharges</b></p> <p>Main concerns relate to the potential increase in discharges from the Wittingham STW which is responsible for excess phosphate discharges into the River Yare, which in turn affects the Broads SAC in particular the Yare Broads and Marshes SSSI, which is a component of the SAC. This SSSI is located within 1 km from Thorpe St Andrew one of the key areas for development under Policies 11 and 12.</p>	<p>Technological modifications are required to ensure that no significant impacts on the Broads SAC to occur at the following STW:</p> <ul style="list-style-type: none"> <li>• Wittingham STW;</li> <li>• Wymondham STW, and</li> <li>• Rackheath STW</li> </ul> <p>Compliance with WFD will</p>

<b>Broadland Ramsar</b>		
<b>Policies 11 and 12</b>		
<b>Designated feature</b>	<b>Impacts</b>	<b>Mitigation Measures</b>
<p>Desmoulin's whorl snail <i>Vertigo moulinsiana</i></p>	<p>The condition of 70% of the Yare Broads and Marshes SSSI area is currently 'unfavourable no change' and 16% of the area is 'unfavourable recovering'. The main reasons for adverse conditions are mostly related to water pollution from agriculture run off and from point discharges. Any development in this area could therefore increase phosphate loads in the SAC and aggravate the problem.</p> <p>Areas for development that have the potential to increase the amount of discharge from the Wittingham STW are, accordingly to the Water Cycle Stage 1, Sprowston (North East Sector); Cringleford South west sector; Costessey; Drayton; and Newton.</p> <p>Also discharging into River Yare through the River Wensum is the Wymondham STW. Any increase in the effluents from this STW might have potential impacts downstream on the habitats of the Yare Broads and Marshes SSSI. Provided that phosphorus removal is introduced to the STW the Broads SAC should not be affected.</p> <p>Developments proposed under Policies 11 and 12 in the Rackheath area have the potential to increase flows to the Rackheath STW. This STW would need to be upgraded to take any additional flows and there is a concern that without proper phosphate stripping the discharge would increase nutrient levels in the River Bure and downstream in the Bure Broads and Marshes SSSI. The majority (c.80%) of this SSSI is in 'unfavourable no change' status, mostly due to water pollution from agriculture run off. Any increase in untreated effluent might prevent the achievement of the conservation objectives of the designated sites.</p> <p><b>Water Abstraction</b></p> <p>Proposed developments under this policy will receive water from the River Wensum through the Heigham WTW. Growth beyond 10,000 dwellings would require investigation to ensure water resources are protected.</p>	<p>rely on all abstraction licences being amended or revoked by 2015. The expected increase in water abstraction due to proposed developments should be accommodated in these investigations to ensure that the conservation objectives of the Ramsar are not affected.</p> <p>To avoid disturbance to the designated species it is recommended that a significant area north of Rackheath should be provided as green space to ensure no significant adverse impacts of Broadland Ramsar. This area is to act as an ecological buffer zone between the development area and the designated site.</p> <p>Policy 1 and 2 of the JCS aims to protect the environment specifically the European designated sites including Ramsars.</p> <p>Policy 1 clearly states that all new developments will ensure that there will be no adverse impacts on SACs due to:</p> <ul style="list-style-type: none"> <li>• Storm water runoff;</li> <li>• Water abstraction, and</li> <li>• Sewage discharge.</li> </ul> <p>Compliance with this policy should avoid impacts previously identified due to the implementation of</p>

<b>Broadland Ramsar</b>		
<b>Policies 11 and 12</b>		
<b>Designated feature</b>	<b>Impacts</b>	<b>Mitigation Measures</b>
	<p>According to the Water Cycle study there is available water to fulfil the increase in water demand. There is, however, the concern that increased abstraction in the River Wensum, which feeds the River Yare, might result in negative impacts in the Broads features through a decrease in flows.</p> <p>Desmoulin's whorl snail is sensitive to changes in hydrology due to water abstraction which might affect its favoured habitat (swampy and unshaded ground with tall plants).</p> <p>As such, impacts from increased abstraction on the River Wensum have the potential to affect flows downstream in the River Yare and indirectly affect this feature of the SAC through decrease in available habitat.</p>	<p>policies 11 and 12.</p> <p>Policy 2 aims at avoiding harmful impacts to the environment in particular to Ramsars through developments design.</p>
<p><b>CRITERION 6</b></p> <p>Bewick's swan <i>Cygnus columbianus bewickii</i></p> <p>Whooper swan <i>Cygnus cygnus</i></p> <p>Bittern <i>Botaurus stellaris</i></p> <p>Marsh harrier <i>Circus aeruginosus</i></p> <p>Hen harrier <i>Circus cyganeus</i></p>	<p>Impacts to the designated species of the SPA may occur indirectly through negative impacts that support these species. These are most likely to be:</p> <ul style="list-style-type: none"> <li>• Water abstraction from the River Wensum and changes in flows in the Wensum and consequently in the River Yare.</li> <li>• Increase in nutrient levels from existing STW where increase discharges are anticipated (Whitlingham, STW Wymondham and STW Rackheath STW).</li> </ul> <p>Direct impacts from disturbance are unlikely as the main localities are outside the buffer zones established (3 km from the site boundary). The only exception is the proposed development at Rackheath which is within the green and orange buffer zones. The area which overlaps with the orange buffer (the area within 2 km from the site boundary) is insignificant when compared to the overall SPA area and therefore any potential impacts should be localized and not affect the integrity of the site. Nevertheless this should be addressed at local level.</p>	<p>Technological modifications are required to ensure that no significant impacts on the Broads SAC to occur at the following STW:</p> <ul style="list-style-type: none"> <li>• Whitlingham STW</li> <li>• Wymondham STW</li> <li>• Rackheath STW</li> </ul> <p>Compliance with WFD will rely on all abstraction licences being amended or revoked by 2015. The expected increase in water abstraction due to proposed developments should be accommodated in these investigations to ensure that the conservation objectives of the SAC are not affected.</p> <p>To avoid disturbance to the designated species it is recommended that a significant area north of</p>

<b>Broadland Ramsar</b>		
<b>Policies 11 and 12</b>		
<b>Designated feature</b>	<b>Impacts</b>	<b>Mitigation Measures</b>
		<p>Rackheath should be provided as green space to ensure no significant adverse impacts of Broadland Ramsar. This area is to act as an ecological buffer zone between the development area and the designated site.</p> <p>Policy 1 and 2 of the JCS aims to protect the environment specifically the European designated sites including Ramsars.</p> <p>Policy 1 clearly states that all new developments will ensure that there will be no adverse impacts on SACs due to:</p> <ul style="list-style-type: none"> <li>• Storm water runoff;</li> <li>• Water abstraction, and</li> <li>• Sewage discharge.</li> </ul> <p>Compliance with this policy should avoid impacts previously identified due to the implementation of policies 11 and 12.</p> <p>Policy 2 aims at avoiding harmful impacts to the environment in particular to Ramsars through developments design.</p>

## 2.2.2 In-combination, Cumulative and Uncertain Effects

A number of in-combination and cumulative impacts were identified at Task 1. Impacts result mainly from:

- Cumulative impacts from water abstraction due to the implementation of planned developments in different policies within the JCS (relevant to the River Wensum SAC, The Broads SAC and Broadland SPA/Ramsar);
- The implementation of the JCS and other plans such as Great Yarmouth LDF which might result in increased tourism pressure (relevant to The Broads SAC and Broadland SPA/Ramsar);
- Climate change which might intensify the impacts resulting from increased abstraction and discharges, and
- Increased traffic due to developments planned under policies 11 and 12 (most relevant to the River Wensum SAC).

Uncertain impacts were identified at 14 designated sites (see see Task 1, Vol I, section 4.3). The sources of impacts result from the implementation of the JCS alone and in-combination and include:

- Water abstraction increase;
- Sewage discharges increase;
- Disturbance;
- Tourism pressure;
- Climate change, and
- Increased traffic.

An impact was evaluated as uncertain where information necessary for an accurate estimation of the impact is not available.

## 2.3 Mitigation Recommendations

Following the assessment of impacts (Section 2.2), the JCS policies have been reviewed and revised to make it explicit that none of the JCS policies would lead to potential significant impacts on European and Ramsar designated sites. These are summarised in Tables 2.1 to 2.3 above.

In addition, it is recommended that the policies are also revised to increase their robustness. The impacts and proposed mitigations, through the refinement of the JCS policies, are summarised in Table 2.4 below.

Regarding the uncertain, in-combination and cumulative impacts, it is recommended that a more detailed assessment is undertaken to ascertain the impact and to identify appropriate mitigations, if they are required. It is recommended that the outcomes (appropriate mitigations) from the uncertain in-combination and cumulative assessment then feed into the Area Action Plans (AAPs), which would also be supported by a Supplementary Development Plan (as recommended under Policy 20).

The purpose of feeding into the AAPs would be to ensure proper implementation and enforcement of any potential in-combination impacts, which may result following the further assessments. Further review of the JCS policies is not deemed necessary, as the JCS alone would not have any significant impact on European and Ramsar designated sites.

**Table 2.4: Recommended Changes to Policies & Mitigations**

<b>Policy Number Pre-submission Document (July 2009)</b>	<b>Impacts and Task 2 AA Mitigations</b>
<b>Policy 1</b>	No significant impact.
<b>Policy 2</b>	No significant impact.
<b>Policy 3</b>	<p>No significant impact, but, recommended that reference is made to the Water Framework Directive. The WFD sets a target of aiming to achieve at least ‘good’ status in all waters by 2015. The recently published Draft River Basin Management Plan (Draft RBMP) for the Anglian River Basin District, presents an assessment of the current status of the Anglia water bodies and in most cases postpones the achievement of this target to the subsequent cycles (2021 or 2027).</p> <p>The WFD makes it very clear that all abstraction must be in compliance and have no adverse impacts on designated sites.</p>
<b>Policy 4</b>	No significant impacts, but recommend that leisure activities are developed in accordance with Policies 1 & 2.
<b>Policy 5</b>	No significant impacts, however the promotion of healthier lifestyle needs to be in compliance with Policies 1 & 2.
<b>Policy 5</b>	No impact, but ensure compliance with Policies 1 & 2.
<b>Policy 6</b>	No impact, but ensure compliance with Policies 1 & 2.
<b>Policy 7</b>	<p>Potential in-combination impacts. Need to ensure that this policy is in compliance with Policies 1 &amp; 2.</p> <p>Recommend wording such as: “All access and transport developments will be undertaken in accordance with national planning guidance and have no significant adverse impact on European &amp; Ramsar designated sites. Where possible all new access and transportation developments will seek, through appropriate mitigations, benefits to diversity.”</p>

<b>Policy Number Pre-submission Document (July 2009)</b>	<b>Impacts and Task 2 AA Mitigations</b>
<b>Policy 9</b>	No significant impact, ensure compliance with Policies 1 & 2.
<b>Policy 10</b>	No significant impact, ensure compliance with Policies 1 & 2.
<b>Policy 11</b>	Potential impacts at Task 1 AA. Ensure no significant impacts by ensuring compliance with Policies 1 & 2.
<b>Policy 12</b>	<p>Potential impacts identified at Task 1 AA. Ensure no significant impacts by ensuring compliance with Policies 1 &amp; 2.</p> <p>Recommend revising text: “A significant area north of Rackheath will be provided as green space to ensure no significant adverse impacts of the Broads SAC. This area is to act as an ecological buffer zone between the development area and the designated site. All new developments in the area will seek to result in a beneficial impact on biodiversity.</p>
<b>Policy 13</b>	No significant impact, so long as all new developments are in compliance with Policies 1 & 2.
<b>Policy 14</b>	No significant impact.
<b>Policy 15</b>	No significant impact.
<b>Policy 16</b>	No significant impact.
<b>Policy 17</b>	No significant impact.
<b>Policy 18</b>	No significant impact, potential long-term beneficial effects.
<b>Policy 19</b>	No significant impact.
<b>Policy 20</b>	Recommend that a Supplementary Development Plan is introduced, which specifically deals with developments within the JCS area. The SDP will have due regard to the required considerations to ensure the conservation of European & Ramsar designated sites and European protected species.

### 3 Conclusions

No significant direct and indirect impacts are anticipated from the implementation of the JCS alone. This is due to:

- Policies 1 and 2 offering protection to environmental assets, in particular European designated sites including Ramsar sites;
- Compliance with the WFD, which will avoid harm to water dependent habitats and species that they support. This should be achieved through: (i) enhancements to existing STW where an increase discharge is anticipated; (ii) amendment of water abstraction licences where applicable, and;
- The production of a Supplementary Planning Document, which will ensure that the JCS policies and any subsequent mitigations are implemented to cover the need to consider European and Ramsar designated sites and European protected species in planning and development processes and within Area Action Plans.

Regarding in-combination and cumulative impacts, there is insufficient information to be able to reasonably assess whether the impacts could be significant or not. Therefore it is recommended that further assessments are undertaken.

## 4 References

Department for Communities and Local Government (2006). *Planning for the Protection of European Sites: Appropriate Assessment. Guidance for regional spatial strategies and local development documents.* Available at:

<http://www.communities.gov.uk/archived/publications/planningandbuilding/planning2>

Dodd, A.M., Clearly B.E., Dawkins J.S., Byron H.J and Williams G.M. (2007). *The Appropriate Assessment of Spatial Plans in England: A Guide to why, when and how to do it.* The RSPB, Sandy.

EC (2000). *Managing Natura 2000 Sites. The provisions of Article 6 of the Habitats Directive 92/43/EEC.* Available at:

[http://ec.europa.eu/environment/nature/natura2000/management/docs/art6/provision\\_of\\_art6\\_en.pdf](http://ec.europa.eu/environment/nature/natura2000/management/docs/art6/provision_of_art6_en.pdf)

EC (2001). *Assessment of plans and projects significantly affecting Natura 2000 sites. Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC.* Brussels (November 2001).

Natural England (1997) *Habitats Guidance Note Natura 2000.*

Available at: [http://www.mceu.gov.uk/MCEU\\_LOCAL/Ref-Docs/EN-HabsRegs-SigEffect.pdf](http://www.mceu.gov.uk/MCEU_LOCAL/Ref-Docs/EN-HabsRegs-SigEffect.pdf)

## **Appendix A Natural England Consultation Letter**