

The South Humber Gateway Mitigation Strategy

Executive Summary

The South Humber Gateway (SHG) is located on the south bank of the Humber estuary in northern Lincolnshire. Covering an area of approximately 1,000 hectares it represents one of the largest potential development areas in the UK. In recent years there has been significant development interest in the area particularly from the emerging renewable energy industry on the Humber.

The area is immediately adjacent to the Humber Estuary which is recognised for its importance for wildlife at both national and international levels. The Humber Estuary is designated as a Special Area of Conservation, a Special Protection Area, a Ramsar site and a Site of Special Scientific Interest. These designations mean that great care is required when undertaking works which may result in negative impacts on the wildlife interest features of the Estuary. A potential conflict therefore exists between the need to develop the South Humber Gateway's economic potential for the benefit of the national economy and the legal obligation to ensure that its wildlife is protected.

This document sets out a mechanism which will resolve the potential conflicts within the South Humber Gateway. Details on the background to the strategy and the principles upon which it is founded are set out below. High level details of the mitigation measures that have been agreed, including their management and monitoring, are also provided. More detail on the specific arrangements for delivery within the areas of North Lincolnshire Council and North East Lincolnshire Council will be laid out in delivery plans for each Council.

Part I – The Strategy

Context

The South Humber Gateway (SHG) (Map 1) stretches from the outskirts of Grimsby to the East Halton Skitter on the South Bank of the Humber Estuary. Straddling the boundaries of North Lincolnshire and North East Lincolnshire councils, the SHG is one of the most exciting strategic development locations in the UK. Covering almost 1,000 hectares of development land it is attracting significant global interest and unprecedented levels of investment. Major investments under way or planned are estimated to be worth almost £2billion. If all goes to plan, upwards of 15,000 new quality jobs will be created over the next 10 years. The SHG already provides 27 per cent of the UK's refinery capacity and is home to the UK's busiest ports complex and one of the world's largest Combined Heat and Power (CHP) plants. Together with its sister Port of Grimsby, Immingham is the UK's largest port by tonnage.

At the same time an estimated 140,000 birds visit the estuary every winter (Frost et al. 2021), the Humber is one of the top six estuaries for migratory birds in the UK and one of the top ten in Europe. The estuary forms an essential link in a chain of wetland sites creating what is known as the East Atlantic Flyway, stretching from the Arctic Circle to southern Europe and Africa, via the estuaries of North West Europe. The Humber supports internationally important populations of a number of bird species (containing more than one per cent of the Western European non-breeding population) which are attracted by the plentiful food supplies of the salt-marsh and mudflats; often moving inland to roost and feed. In recognition of its value for biodiversity the Humber Estuary has been designated for its national, European and international importance. The Humber Estuary and the populations of wild birds it supports are afforded special protection being designated at national and international levels. The estuary includes several Sites of Special Scientific Interest (SSSI)

and is designated as a Special Area of Conservation (SAC)¹, Special Protection Area (SPA)² and Ramsar site. As such, the estuary and its special features are covered by The Conservation of Habitats and Species Regulations 2017 (the “Habitats Regulations”) (SI No. 2017/1012) as amended. Over the past 20 years, bird populations on the Humber have declined by 7% from 151,000 down to 140,000 (Musgrove et al. 2001, Frost et al. 2021).

Map 1. The South Humber Gateway industrial land allocation



A significant amount of effort has been expended on establishing the fact that large numbers of SPA birds rely upon terrestrial areas adjacent to the estuary for roosting, loafing and foraging especially at high tide. A suite of ecological surveys funded by the former regional development agency, Yorkshire Forward, North and North East Lincolnshire Councils, the Environment Agency and the RSPB and managed by Humber INCA (now Humber Nature Partnership) has established that these areas are of functional importance to the conservation of the SPA bird populations. Details of wintering and migratory wader surveys carried out to date are included in Box 1.

Much of the early survey information was used by consultants to carry out a field-by-field study of usage of the South Humber Gateway by waterbirds at that time (Mott Macdonald 2009). Fields that had supported at least 1% of the Humber population of given waterbird species on at least one survey visit were flagged as being potentially important in supporting the waterbird assemblage of the Humber Estuary SPA. 454 hectares of such fields were identified across the SHG in North and North East Lincolnshire. However this resource was clearly highly variable, with some fields only being used on a few occasions, and other fields being used regularly by significant numbers of one or more species. Habitats used varied from arable crops that might only be used at certain stages of growth or vegetation height to areas of permanent pasture that might be used more predictably from year to year.

¹ This strategy is being developed to address impacts on the SPA and Ramsar features. All other ecological issues will therefore still need to be assessed as part of the planning application process, for example impacts on the SAC, protected species and locally designated habitats.

² All future references to the SPA should also be taken as reference to the Ramsar designation unless otherwise stated.

Box 1. South Humber Gateway wintering and migratory bird surveys

- North Lincolnshire (allocated land) - January 07 - March 07. Weekly surveys on a field by field basis by Nyctea Consultants. Attached to this there were further targeted surveys during April 07 and May 07 to identify field usage by passage curlew, ruff and whimbrel.
- North Lincolnshire (allocated land) - July 07 - March 08. Weekly surveys on a field by field basis by Nyctea Consultants.
- North East Lincolnshire (allocated land plus additional area both North and South of A180) - November 2007 - March 2007. Weekly surveys on a field by fields basis by IECS.
- North East Lincolnshire (allocated land plus additional land both North and South of A180) - late July 2008 - November 2008. Weekly surveys on a field by field basis by Nyctea Consultants.
- North Lincolnshire (north and west of East Halton Skitter) - Jan 2009 - Mar 2009. Weekly surveys on a field by field basis by Nyctea Consultants.
- North Lincolnshire (north and west of East Halton Skitter) - August 2009 - March 2010. Weekly surveys on a field by field basis by Nyctea Consultants.
- Entire area (allocated land within North and North East Lincolnshire and area north and west of east Halton Skitter) - August 2010 - March 2011. Weekly surveys on a field by field basis by Nyctea Consultants.
- North Lincolnshire (Halton Marshes) – September 2019 – April 2020. Two surveys per month by Cutts & Hemingway Estuarine Ecology and Management Ltd.

The development of all or most of the SHG area is likely to lead to a significant loss of this supporting terrestrial habitat and it is not possible to conclude that an adverse effect on the integrity of the SPA will be avoided.

It has been determined that the most effective course of action in the SHG is to identify large areas of land which can be used to mitigate against the loss of land currently used by waders. In order to deliver this strategic mitigation, a South Humber Gateway Ecology Group was formed comprising local authorities, landowners and both statutory and non-statutory conservation bodies. It was tasked with the production of this mitigation strategy.

The Strategy is intended to create clarity and confidence that the impact of direct land take from within the South Humber Gateway can be mitigated primarily inside the SHG. Such an approach is the only viable solution to enable the local authorities' strategic planning documents to pass through their Habitats Regulations Assessments and allocate this area for future estuary related activity. This provides a clear framework for potential investors needing to provide mitigation for their developments in the area. The strategy establishes a link between the approaches used across the two unitary authorities, in place of an ad hoc site-by-site approach to mitigation.

Within the Ecology Group, the survey work was used to identify the actual area of land required by wintering and migratory birds in the SHG and from this a series of sites was identified which can then be managed appropriately to meet those birds' requirements.

The actual mechanism for delivery of these sites varies across the SHG. Part II of this document provides more information about delivery.

The scope of the strategy

Employment allocations in the SHG will lead to permanent loss of terrestrial habitat, known as "functionally-linked land," used by significant numbers of waterbirds for feeding, roosting and loafing. In addition, the construction and operation effects of development in this area could lead to disturbance and displacement of birds from suitable habitat surrounding the developed area, this habitat may be within or outside the designated site. Such impacts may lead to the displacement of birds from the nearby designated intertidal habitat or functionally linked land and thus will affect the achievement of the conservation objectives of the Humber Estuary SPA/ Ramsar. Therefore, Competent Authorities cannot record that such allocations would not have an adverse effect on the integrity (AEOI) of the Humber Estuary SPA/ Ramsar, alone or in combination with other plans and projects, unless the associated policies deliver and secure an adequate area of well-managed wet grassland habitat for waterbirds as mitigation for this loss.

The South Humber Gateway Strategic Mitigation Strategy provides a mechanism to deliver large areas of waterbird mitigation habitat to ensure that there will be no AEOI on the Humber Estuary SPA due to the loss of terrestrial habitat in the SHG. It does not address other impacts on the Humber Estuary SPA, such as coastal squeeze, noise and visual disturbance of birds within the designated site boundary or polluting discharges. Individual developments are likely to require Habitats Regulations Assessments in respect of these effects. Delivering large areas of wetland habitat may be expected to have additional benefits for water voles, farmland birds, bats, landscape enhancement and the public enjoyment of nature. However, these benefits are not the main purpose of the Strategy.

The role of the strategy

Strategic Planning Documents are prepared by the two Local Authorities; this includes both planning policies and land use allocations. These strategic documents need to be assessed against the Habitats Regulations. North Lincolnshire and North East Lincolnshire Councils have signed a Memorandum of Understanding (MoU) to commit to the delivery of South Humber Gateway Mitigation Strategy. This will be used to provide evidence to the appointed Inspector that the requirements of the Regulations are being met within strategic planning and to demonstrate compliance with the Duty to Cooperate. Both the MoU and this Strategy have considerable value in this context as they mean that it is possible to demonstrate to an Inspector that the potential impacts on the SPA arising from the SHG Policies and Allocations can be adequately mitigated and that therefore the Policies and Allocations are deliverable. A strategic and collaborative approach will save considerable time and cost to the Local Authorities and to the other regulators (such as NE) and NGOs (Lincolnshire Wildlife Trust and RSPB) in their engagement with the planning process in the medium to long term.

The strategy is also intended to simplify the Habitats Regulations Assessment process at the individual development level. Developers within the South Humber Gateway will be able to rely on the mitigation strategy as a means of delivering their mitigation requirements as

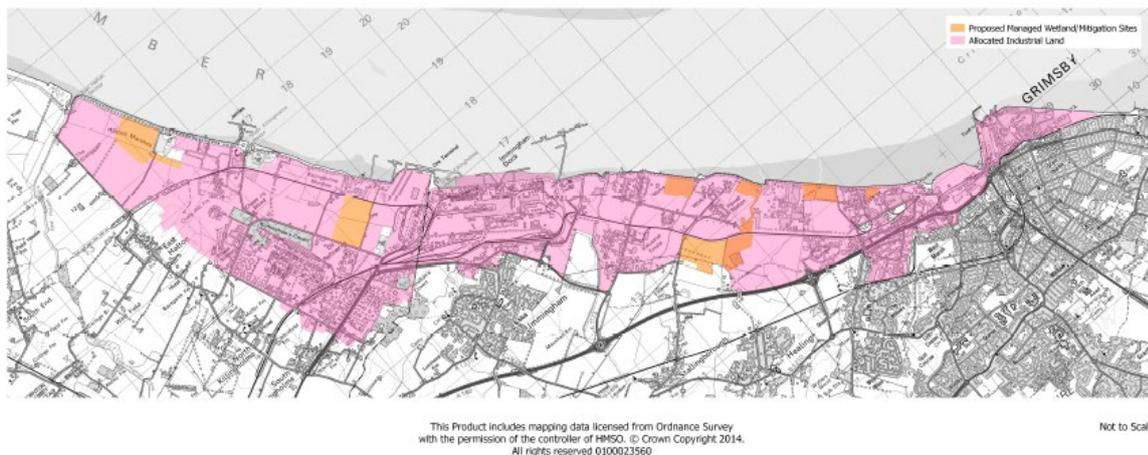
identified during the planning process. If sufficient habitat has already been delivered in advance of a development coming forward any subsequent developers would be able to contribute to the strategy at a pre-determined rate to allow further habitat creation and subsequent management to be carried out.

The mitigation principles

The mitigation sites

Map 2 illustrates the Ecology Group's preferred sizes and locations of mitigation sites across the South Humber Gateway and the context of these in relation to the employment land allocations.

Map 2. Indicative proposals for mitigation sites in the South Humber Gateway



Nb. The precise locations of some of these sites is subject to final agreements with landowners

The details of these sites have been agreed upon by working to a set of principles which will ensure that the sites deliver the required function for wintering and migratory waders. These principles are summarised in Box 2. This process concluded that four 20ha blocks of core wetland habitat, each surrounded by 150m wetland habitat buffers, would be sufficient to offset the potential loss of proposed development land within the South Humber Gateway. These should be located in close proximity to key intertidal feeding areas. These criteria led to the identification of a requirement for two of the above blocks to be provided in North Lincolnshire and two within North East Lincolnshire. Further discussion relating to North East Lincolnshire led to agreement on an approach which will see the delivery of a number of sites smaller than the proposed buffered 20ha sites. These sites will provide a network of sites for birds which reflects how birds are currently using the area. Whilst some of these sites are too small to function as mitigation alone, they are ecologically functional as part of the suite of mitigation sites. Further discussion relating to North Lincolnshire has led to an agreement for a single large block of mitigation habitat to be delivered at Halton Marsh, with the potential requirement for up to 50 hectares of habitat off-site.

Box 2: South Humber Gateway mitigation principles

Area (combined): The mitigation habitat required for continued development of the SHG will need to be sufficient to support the needs of the birds using the inland areas of the South Humber bank and adjacent intertidal areas.

Areas (individual): The size of individual mitigation areas will need to take account of a range of factors, such as the species and numbers of birds to be accommodated and the preferred roosting densities and scanning requirements of those species.

Location: Mitigation areas must be located within appropriate distances of both the intertidal areas of the south Humber bank, other mitigation/protection areas, and the 'potential development areas' currently used by SPA birds.

Availability and suitability: Potential mitigation areas must be available for use by the target species in the required numbers, in the right conditions, prior to development commencing.

Accessibility: Mitigation areas must be accessible to the birds they are to support and provide clear pathways between other mitigation areas and areas of the Humber bank.

Timing: The mitigation area required for any development must be ready to support SPA birds before that development commences. This should be addressed by the development of a balance sheet which ensures that the available habitat resource and its ecological function for birds is maintained [The balance sheet approach applies mainly in North East Lincolnshire].

Habitat type and management: Habitat type and management within mitigation areas should ensure that the needs of all target species are met, and that the potential of mitigation measures is maximised.

Efficacy: It is essential that adequate monitoring is undertaken to assess the development and subsequent management and use of these areas, and to inform the process of allocation of mitigation areas to individual developments on the basis of their impacts.

Durability: Arrangements for the ownership and management of mitigation areas must be secured for the lifetime of the planning authorities' development plans. Beyond this period, it is expected that impacts (loss of functionally linked land) will remain, and that ongoing long-term management of the mitigation areas will continue to be required and must be secured by the Local Authorities. If these areas cannot be secured then sufficient alternative mitigation areas will be needed to address the impacts.

Source: Adapted from: RSPB, 2009. The South Humber Bank: Principles to underpin a strategic approach.

Part II – Delivering the Strategy

Parties to the Strategy

The following organisations have all been involved in the development of this strategy and are committed to ensuring its delivery:

- North Lincolnshire Council
- North East Lincolnshire Council
- Natural England
- Environment Agency
- RSPB
- Lincolnshire Wildlife Trust
- Humber Nature Partnership (formerly Humber INCA)

Due to the differing nature of both land ownership and development timetables in the two local authorities, very different approaches to the delivery of the required mitigation will be adopted in each local authority.

The Approach to Delivery in North Lincolnshire

To recap, the original approach devised by the SHG Ecology Group was to deliver two blocks of mitigation habitat in North Lincolnshire: one block for Killingholme Marsh and one block for Halton Marsh. Each would comprise 20 hectares of core habitat, plus buffer, making an estimated total of 50 hectares per block.

In North Lincolnshire, the majority of the area of waterbird mitigation has now been constructed through implementation of two large developments (See Table 1). Waterbird mitigation for the Able Marine Energy Park delivers 16.7 hectares of wet grassland core habitat plus a grassland habitat buffer, representing the majority of the 20 hectares core habitat plus buffer required to mitigate fully for the loss of terrestrial habitat on Killingholme Marsh. Conditions attached to the Able Logistics Park development (ref PA/2009/0600 & PA/2015/1264) permission required the developer to carry out one of two options to deliver all of the waterbird mitigation required as a result of the loss of feeding, roosting and loafing habitat on Halton Marsh.

In May 2017, Able UK gained consent (PA/2016/649) to create around 90 hectares of wet grassland at Halton Marsh. This area is intended to deliver all 20 hectares of core habitat plus buffer relating to the loss of terrestrial habitat on Killingholme Marsh, the two options for delivery of the waterbird mitigation required as a result of the loss habitat on Halton Marsh and 20 hectares of core habitat plus buffer for overcompensation habitat for black tailed godwits required as a consequence of the Able Marine Energy Park. By spring 2019, this habitat had been created, ongoing management of the site had begun and monitoring of the results was underway. Table 1 below summarises the mitigation requirements of the Strategy relating to North Lincolnshire, as expressed through the delivery of Able UK developments and the creation of the Halton Marsh Wet Grassland.

Table 1: Mitigation Requirements and Delivery Proposals in North Lincolnshire

Mitigation Requirement: Site of Habitat Loss & Area Required	Original Proposal	Current Solution
Able Logistics Park, Halton Marsh: 32 hectares of core habitat + Area of buffer	Option A: 32 hectares of “core” mitigation habitat + 42 hectares of wetland buffer habitat on Halton Marsh. Option B: 20 hectares of core habitat and 35 hectares of buffer on Halton Marsh + 20 hectares of core habitat and 30 hectares of buffer off-site.	12 hectares of core habitat and area of buffer on Halton Marsh + 20 hectares of core habitat and 30 hectares of buffer off-site. OR 32 hectares of core habitat and area of buffer on Halton Marsh if over-compensation is no longer required (see below).
Able Marine Energy Park, Killingholme Marsh: 16.7 ha core habitat + Area of buffer	16.7 ha core habitat + Area of buffer on Killingholme Marsh (Area A)	16.7 ha core habitat + Area of buffer on Halton Marsh
Remainder of Employment Allocation, Killingholme Marsh: 3.3 ha core habitat + Area of buffer	3.3 ha core habitat + Area of buffer on Killingholme Marsh	3.3 ha core habitat + Area of buffer on Halton Marsh or equivalent proposal with evidence.
Able Marine Energy Park, Foreshore: 38.5 hectares of wetland habitat (over-compensation for black-tailed godwit)*	38.5 hectares of wetland habitat at Halton Marsh	20 ha core habitat + Area of buffer on Halton Marsh

* Note that the black-tailed godwit over-compensation requirement arises from the Able Marine Energy Park Development Consent Order (DCO), not The South Humber Gateway Mitigation Strategy

Areas identified as mitigation for these projects have been accepted by Natural England as appropriate mitigation for the projects, and importantly, would also be acceptable mitigation for alternative development proposals covering the same development footprints. In North Lincolnshire, options remain open about the delivery of the further 3.3 hectares of core habitat plus wet grassland habitat buffer that will be required to allow the development of the remaining land on Killingholme Marsh, which also supports significant numbers of curlew. Although each development will be assessed on its merits, it is likely that any further major development on Killingholme Marsh would trigger the need to provide the full 3.3 hectares of core habitat, there is no certainty that any remaining grassland could support significant numbers of curlew. Developers at the southern end of Killingholme Marsh may opt to create mitigation habitat in one of the following ways:

1. By “buying in” to waterbird mitigation on Halton Marsh, through agreement with the landowners.
2. By increasing the area of wet grassland habitat around Rosper Road Pools at Killingholme Marsh through agreement with landowners.
3. By providing waterbird mitigation land outside the South Humber Gateway if it can be demonstrated that the distance between curlew intertidal habitat and curlew terrestrial habitat is consistent with the conservation objectives for the Humber Estuary SPA and that the proposed mitigation is functional for curlew.

The optimal solution, ecologically, to delivery of the further 3.3 hectares of core habitat would be either of Options 1 or 2 above. Selection of either of these options would allow the Habitats Regulations Assessments for the associated developments, and that for the Local Plan, to rely on the evidence base and assessments contained within this Strategic Mitigation Plan. The use of either Option 3 would require developers to produce their own evidence base to inform the Habitats Regulations Assessment and, potentially, require greater areas of mitigation habitat.

It is anticipated that this remaining waterbird mitigation land can be delivered employing conventional planning obligations, without the need to create complex habitat banking mechanisms to govern the phasing, funding and delivery of habitat as may be required elsewhere in the South Humber Gateway.

The Approach to Delivery in North East Lincolnshire

Within North East Lincolnshire, the patchwork of existing industrial uses and patterns of existing bird usage raised particular difficulties and considerations. An assessment of site options was undertaken, and an 'Area of Search' identified, within which it was agreed the mitigation could be provided. Further detailed consideration of specific sites based upon the Area of Search resulted in an initial preferred approach being identified.

Subsequent discussions with landowners and environmental organisations focused upon the delivery and management of the strategic mitigation sites and refined the boundaries of individual sites. The final total gross area to be safeguarded and delivered as mitigation equates to c. 128ha. The mitigation sites are identified in the North East Lincolnshire Local Plan 2013-2032 (adopted 2018). The mitigation sites will be safeguarded against development with appropriate habitat being delivered and managed on these sites.

The approach to development planning in the North East Lincolnshire part of the South Humber Gateway is set out in Policy 9 of the North East Lincolnshire Local Plan 2013-2032 (adopted 2018). This policy requires that development proposals on greenfield land within the South Humber Bank area make financial contributions towards the provision and management of the identified mitigation sites based on a proportional approach relating to the development site area. North East Lincolnshire Council maintains a 'balance sheet' detailing the amount of habitat delivered against the amount of land developed in the South Humber Bank to ensure that sufficient mitigation habitat has been delivered prior to the commencement of development.

In 2017 North East Lincolnshire Council secured funding from the Humber and Greater Lincolnshire Local Enterprise Partnerships for the South Humber Industrial Investment

Programme (SHIP) which includes funds for the delivery of the mitigation sites. Construction of the first phase of one of the mitigation sites was completed in December 2018. This has delivered c. 40 ha of wet grassland and open water habitat at a site known as 'Cress Marsh' near Stallingborough. Construction of the second site, c.12ha just north of Grimsby was completed in September 2019. Discussions with landowners to secure the land required for the delivery of the rest of the mitigation sites are ongoing.

Management of Mitigation Land in North Lincolnshire

To mitigate impacts of development within the SHG, the most appropriate land use for foraging, loafing and roosting wintering and passage waterbirds is considered to be wet grassland, optimally managed at the appropriate times of year for the necessary numbers of the target species.

The main target species within the SHG include, but are not exclusive to curlew, black-tailed godwit, ruff, whimbrel, golden plover and lapwing. Their specific ecological requirements vary between and even within species. The function required of the wet grassland habitat will also vary between different times of year and under different environmental conditions. Optimally managed wet grassland should be designed to create foraging, loafing and roosting opportunities for the target species in the required numbers.

Optimally managed mitigation land must be supported by appropriate legal and financial instruments which secure the design, implementation and ongoing management of the area. A site-specific conservation management plan which sets out how optimal management will be delivered, managed and monitored must also be in place for each site. Features to be considered in the design of each site-specific management plan should include:

- Ditches & water features
- Water supply
- Water level management
- Sward characteristics
- Sight lines
- Access
- Disturbance

Monitoring the effectiveness of the mitigation

In order to demonstrate the effectiveness of the mitigation measures once they have been delivered it is essential to have robust data on the suitability of habitat, including site wetness, and the bird usage for the mitigation areas. Within North Lincolnshire monitoring is required as a condition of major planning applications. The approach to monitoring in North East Lincolnshire is as yet unclear but is expected to be similar

Factors to be considered when designing a monitoring programme include:

- timing of bird monitoring including seasonal timing, frequency of counts, tidal state during counts, starting points and end points
- reporting standards, including format of annual reports, interim reports and measures to be derived from the raw data
- measures of favourable condition with reference to bird populations and assemblages using the created wetland mitigation areas,

- mechanisms for implementing any necessary remedial measures

There are likely to be benefits in the adoption of a single monitoring programme across both Local Authority areas, however if this is not possible, the use of comparable monitoring methods and standards will ensure that the effectiveness of the mitigation across the SHG can still be assessed. The results of monitoring will be reviewed by members of the South Humber Gateway Ecology group which will continue to meet to monitor its delivery and the effectiveness of the mitigation.

Conclusion

The South Humber Gateway Mitigation Strategy sets out an approach which will ensure that feeding and roosting habitat for waterbirds can be provided and maintained to mitigate for the loss of such habitat to development. The two interdependent delivery approaches, for North and North East Lincolnshire will set out adequate requirements to enable development aspirations to be met throughout the SHG, whilst ensuring that there will be no adverse effect on the integrity of the Humber Estuary SPA / Ramsar site due to the loss of feeding and roosting habitat.

Appendix 2B - Appropriate Assessment Supporting Documents: The South Humber Gateway Mitigation Strategy: North Lincolnshire Delivery Plan

Part 1- Background

The purpose of this document

The South Humber Gateway Mitigation Strategy is an over-arching document applying to both North and North East Lincolnshire. It sets out a strategic mechanism to mitigate for losses of waterbird feeding and roosting habitat due to employment allocations in both boroughs.

The North Lincolnshire Delivery Plan sets out the specific issues and measures that apply only in North Lincolnshire. A comparable delivery plan has been produced for North East Lincolnshire (“South Humber Gateway Ecological Mitigation: North East Lincolnshire Delivery Plan”, dated January 2019).

Wintering and Migratory Waterbirds in North Lincolnshire

In North Lincolnshire, bird surveys to date have revealed concentrations of wintering and migratory waterbirds on Halton Marsh and Killingholme Marsh as set out in the following sections:

Halton Marsh

Ruff

Passage ruff are an interest feature of the Humber Estuary SPA, with a population of 128 individuals at the time of citation representing more than 1% of the Great Britain population. Holt et. al (2012) give a peak number of 60 ruff for the Humber Estuary in 2010/11. Up to 14 ruff have been recorded using Halton Marsh and the adjacent intertidal area between January and April 2007 and 2008 (Catley 2007a, 2008a). Applying BTO definitions, these data largely lie within the winter period. However, the UK spring passage for ruff is considered to begin in February, peaking in March and April (Wymenga 1998). The SHG survey results broadly reflect this. In the peak months of March and April in 2007 and 2008, Halton Marsh held >1% of the Humber citation population for this species. The main fields used were those nearest the Estuary and East Halton Pits. In 2010/11, no ruff were recorded on Halton Marsh (Catley 2011).

Curlew

Curlew used Halton Marsh and nearby fields primarily for feeding throughout the passage and winter survey periods in January-March 2007, 2007/08 and 2010/11. Feeding effort appears to be concentrated in pasture fields, flooded pools in arable fields and in the “tram-lines” of arable fields (Alab 2009a, Catley, G. 2007a & 2008a + pers. obs.). Curlews use a wider spread of fields in Halton Marsh than is the case for ruff. The area frequently holds >1% of the Humber Estuary 5 year peak mean (4,005) (Holt et al. 2012) for this species with numbers regularly around 85-100, peaking at 177 in January 2007.

There have also been counts of up to 76 birds at East Halton Pits and 2 in the ISI intertidal area with greater numbers being found further south in sector ISJ. Curlew using Halton Marsh are not related to the adjacent inter-tidal area, but fly to the site from roosting areas on the north bank of the Humber (Catley 2007a, 2008a).

Golden Plover

In 2007/08, up to 617 Golden Plover were recorded using Halton Marsh in winter, with up to 443 during passage. The main fields used were at the north end of the area, near East Halton Skitter. A peak of 4,200 Golden Plover used this area in 2010/11. During periods of hard frost, golden plover appear to leave Halton Marshes for other feeding and roosting sites. Birds recorded in the hundreds are invariably roosting flocks; much smaller flocks of ten or so are occasionally recorded feeding (Catley 2007a, 2008a). However, there have been no formal studies of nocturnal behaviour.

No golden plover have been recorded in the adjacent intertidal area, though they do regularly occur in the WeBS sector to the north (IECS in Mott Macdonald 2009, pers.obs.). Large numbers of golden plover have been recorded moving in numbers of up to 8,500 birds from the north bank of the Humber, to fields between East Halton Skitter and Goxhill and then inland (Catley 2007a). Around 20,000 birds were observed on the North Bank of the Humber in January 2008, during site surveys (Catley 2008a). Similarly, analysis of low tide data shows that WeBS sectors on the north bank of the Humber are the nearest inter-tidal areas supporting large concentrations of golden plover (IECS in Mott Macdonald 2009). These areas are around 3-5 km from Halton Marsh.

Lapwing

The Humber Estuary SPA/Ramsar citation population for wintering lapwing was 22,765, representing more than 1% of the Great Britain population. There were lower numbers of autumn and spring passage birds (7,188 and 196 respectively) (Allen et al. 2003). In the period from 2006/07 to 2010/11, the 5 year mean peak had reduced to 15,296 birds, though the British Trust for Ornithology (BTO) acknowledges that incomplete counts will have affected this figure. In winter, Halton Marsh frequently holds >1% of the Humber Estuary 5 year mean peak figure for this species with numbers frequently over 400, peaking at 3892 in February 2008, with 266 on the adjacent intertidal at the same time (Catley 2007a, 2008a). The main fields used are those nearest the estuary and around East Halton Pits. At certain times, these birds feed in the fields at night and roost in the fields and intertidal areas during the day (Catley 2007a, 2008a). However, recent surveys show a high proportion of records relate to both feeding and roosting on fields in the day (ibid, Taylor 2010b). There are regularly 1,000-2,500 lapwing in intertidal areas ISI and ISJ (ibid.).

In the winter of 2010/11, the numbers of lapwing were generally lower than those given above, with a peak for Halton Marsh of around 500 birds in November.

Killingholme Marsh

North Lincolnshire surveys have revealed flocks of around 80-100 curlew regularly moving between various fields in Killingholme Marsh and the adjacent intertidal area. Similar numbers have been recorded at North Killingholme Haven Pits. Such flocks represent over 2% of the Humber Estuary 5 year peak mean (4,005). Lapwing have been recorded in numbers >1% of the Humber Estuary spring passage population on one occasion. Significant assemblages of waterbirds also gather at North Killingholme Haven Pits and Rosper Road Pools.

The role of the North Lincolnshire Delivery Plan

This document is to be used alongside the Local Plan and the over-arching South Humber Gateway Mitigation Strategy. An equivalent Local Plan and Delivery Plan has been produced by North East Lincolnshire Council. The overall strategy relies on the whole suite of waterbird mitigation areas, provided across both Boroughs' portions of the SHG.

This strategy will help to ensure that the Local Plan is compliant with the requirements of the Habitats Regulations, whilst allowing significant areas of land to be allocated for port-related industrial uses. The same principles apply in North East Lincolnshire.

The strategy is also intended to simplify the Habitats Regulations Assessment process at the individual development level. Developers within the South Humber Gateway will be able to rely on the mitigation strategy as a means of delivering their mitigation requirements as identified during the planning process. If sufficient habitat has already been delivered in advance of a development coming forward any subsequent developers would be able to contribute to the strategy..

Part II – Delivering the Strategy

The Approach to Delivery in North Lincolnshire

The original approach devised by the SHG Ecology Group was to deliver two blocks of mitigation habitat in North Lincolnshire: one block for Killingholme Marsh and one block for Halton Marsh. Each would comprise 20 hectares of core habitat, plus buffer, making an estimated total of 50 hectares per block.

In North Lincolnshire, the majority of the area of waterbird mitigation has now been constructed through implementation of two large developments (See Table 1). Waterbird mitigation for the Able Marine Energy Park delivers 16.7 hectares of wet grassland core habitat plus a grassland habitat buffer, representing the majority of the 20 hectares core habitat plus buffer required to mitigate fully for the loss of terrestrial habitat on Killingholme Marsh. Conditions attached to the Able Logistics Park development (ref PA/2009/0600 & PA/2015/1264) permission required the developer to carry out one of two options to deliver all of the waterbird mitigation required as a result of the loss of feeding, roosting and loafing habitat on Halton Marsh.

In May 2017, Able UK gained consent (PA/2016/649) to create around 90 hectares of wet grassland at Halton Marsh. This area is intended to deliver all 20 hectares of core habitat plus buffer relating to the loss of terrestrial habitat on Killingholme Marsh, the two options for delivery of the waterbird mitigation required as a result of the loss habitat on Halton Marsh and 20 hectares of core habitat plus buffer for overcompensation habitat for black tailed godwits required as a consequence of the Able Marine Energy Park. By spring 2019, this habitat had been created, ongoing management of the site had begun and monitoring of the results was underway. Table 1 below summarises the mitigation requirements of the Strategy relating to North Lincolnshire, as expressed through the delivery of Able UK developments and the creation of the Halton Marsh Wet Grassland.

Table 1: Mitigation Requirements and Delivery Proposals in North Lincolnshire

Mitigation Requirement: Site of Habitat Loss & Area Required	Original Proposal	Current Solution
Able Logistics Park, Halton Marsh: 32 hectares of core habitat + Area of buffer	Option A: 32 hectares of “core” mitigation habitat + 42 hectares of wetland buffer habitat on Halton Marsh. Option B: 20 hectares of core habitat and 35 hectares of buffer on Halton Marsh + 20 hectares of core habitat and 30 hectares of buffer off-site.	12 hectares of core habitat and area of buffer on Halton Marsh + 20 hectares of core habitat and 30 hectares of buffer off-site. OR 32 hectares of core habitat and area of buffer on Halton Marsh if over-compensation is no longer required (see below).
Able Marine Energy Park, Killingholme Marsh: 16.7 ha core habitat + Area of buffer	16.7 ha core habitat + Area of buffer on Killingholme Marsh (Area A)	16.7 ha core habitat + Area of buffer on Halton Marsh
Remainder of Employment Allocation, Killingholme Marsh: 3.3 ha core habitat + Area of buffer	3.3 ha core habitat + Area of buffer on Killingholme Marsh	3.3 ha core habitat + Area of buffer on Halton Marsh or equivalent proposal with evidence.
Able Marine Energy Park, Foreshore: 38.5 hectares of wetland habitat (over-compensation for black-tailed godwit)*	38.5 hectares of wetland habitat at Halton Marsh	20 ha core habitat + Area of buffer on Halton Marsh

* Note that the black-tailed godwit over-compensation requirement arises from the Able Marine Energy Park Development Consent Order (DCO), not The South Humber Gateway Mitigation Strategy

Areas identified as mitigation for these projects have been accepted by Natural England as appropriate mitigation for the projects, and importantly, would also be acceptable mitigation for alternative development proposals covering the same development footprints. In North Lincolnshire, options remain open about the delivery of the further 3.3 hectares of core habitat plus wet grassland habitat buffer that will be required to allow the development of the remaining land on Killingholme Marsh, which also supports significant numbers of curlew. Although each development will be assessed on its merits, it is likely that any further major development on Killingholme Marsh would trigger the need to provide the full 3.3 hectares of core habitat, there is no certainty that any remaining grassland could support significant numbers of curlew. Developers at the southern end of Killingholme Marsh may opt to create mitigation habitat in one of the following ways:

1. By “buying in” to waterbird mitigation on Halton Marsh, through agreement with the landowners.
2. By increasing the area of wet grassland habitat around Rosper Road Pools at Killingholme Marsh through agreement with landowners.
3. By providing waterbird mitigation land outside the South Humber Gateway if it can be demonstrated that the distance between curlew intertidal habitat and curlew terrestrial habitat is consistent with the conservation objectives for the Humber Estuary SPA and that the proposed mitigation is functional for curlew.

The optimal solution, ecologically, to delivery of the further 3.3 hectares of core habitat would be either of Options 1 or 2 above. Selection of either of these options would allow the Habitats Regulations Assessments for the associated developments, and that for the Local Plan, to rely on the evidence base and assessments contained within this Strategic Mitigation Plan. The use of either Option 3 would require developers to produce their own evidence base to inform the Habitats Regulations Assessment and, potentially, require greater areas of mitigation habitat.

It is anticipated that this remaining waterbird mitigation land can be delivered employing conventional planning obligations, without the need to create complex habitat banking mechanisms to govern the phasing, funding and delivery of habitat as may be required elsewhere in the South Humber Gateway.

Management plans of Mitigation Land in North Lincolnshire

For Halton Marsh, condition 51 of the Able Logistics Park planning permission states that:

“No development shall take place until a conservation management plan for waterbird mitigation areas has been submitted to and agreed in writing with the local planning authority. The plan shall include:

- the aims and objectives of the plan, including proposed indicators of success;
- details of the ecological requirements of target species and the ecological trends affecting them;
- plans and details of habitats to be created and managed to support the target species, including details of earthworks, ground levels, islands, scrapes, soil properties, water control structures, ditches, waterbodies, target grassland sward types and any screening banks, hedgerows or reedbeds;
- ongoing management measures to be implemented to maintain habitats in favourable condition;
- detailed grazing prescriptions for wetland mitigation areas, including the means by which cattle shall have access to the proposed grassland areas;
- details of measures required to ensure the welfare of grazing animals;
- confirmation that areas of grass, rush and sedge shall be managed by cattle grazing, rather than mowing, unless agreed in writing by the local planning authority;
- detailed prescriptions for control of water levels, inputs and output, including water budgets for average, dry and wet years;
- timing of proposed works;
- details of remedial measures to be carried out in the event of water levels or other target measures rising or falling beyond agreed limits;
- persons responsible for:

- compliance with legal consents relating to nature conservation;
- compliance with planning conditions relating to nature conservation;
- installation of physical protection measures during construction;
- implementation of sensitive working practices during construction;
- regular inspection and maintenance of physical protection measures and monitoring of working practices during construction;
- implementation of the management plan.

The conservation management plan shall be reviewed by the applicant or their successor in title every five years in order to achieve the stated aims and objectives. Following such five yearly reviews, any changes agreed between the applicant or their successor in title and the local planning authority shall be incorporated into a revised conservation management plan which shall thereafter be the conservation management plan for the purposes of all associated planning conditions.

The agreed conservation management plan shall be implemented in its entirety, in accordance with agreed timings, unless otherwise agreed in writing by the local planning authority. The features provided through implementation of the plan shall be retained and managed as agreed thereafter.

Reason

To protect features of the Humber Estuary SPA and Ramsar site in accordance with policies LC1 and LC2 of the North Lincolnshire Local Plan.”

The same condition is applied in the form of conditions 9 and 10 on permission PA/2016/649, which grants permission for the creation of Halton Marshes wet grassland.

For Killingholme Marsh, requirement 19 of The Able Marine Energy Park Development Consent Order 2014 is as follows:

“Environmental management and monitoring plans

19.—(1) The authorised development must not commence until the compensation environmental management and monitoring plan reflecting the survey results and ecological mitigation and enhancement measures included in the environmental statement, has been submitted to and approved by Natural England after consultation with the Environment Agency and the relevant planning authority.

(2) The authorised development must not commence until a marine environmental management and monitoring plan, reflecting the survey results and ecological mitigation and enhancement measures included in the environmental statement, has been submitted to and approved by the MMO after consultation with the Environment Agency, Natural England and the relevant planning authority.

(3) The authorised development must not commence until a terrestrial environmental management and monitoring plan, reflecting the survey results and ecological mitigation and enhancement measures included in the environmental statement, has been submitted to and approved by Natural England after consultation with the Environment Agency and the relevant planning authority.”

. The terrestrial environmental management and monitoring plan would originally have secured the positive management of a site known AS “Area A” on Killingholme Marsh. The relevant habitat will now be provided at Halton Marsh. Any development proposals for the remainder of Killingholme Marsh will bring requirements for further waterbird mitigation based on management plans to be agreed with the local planning authority in consultation with Natural England and other interested parties.

The Terrestrial Environmental Management and Monitoring Plan (TEMMP) Revision I dated April 2018 sets out the following management actions for waterbirds:

- Objective SPA1: Maintenance of suitable habitat for curlew within Mitigation Area A (see SPA2 and SPA3). This will comprise 46.4 ha of which 44.720 ha core area ha is predominantly wet grassland and 3.06 ha is neutral grassland to be provided within the buffer area .
- Objective SPA 2:
 - Sowing with a wet grassland seed mix (for example mix EM8 from Emorsgate) to be agreed with NLC and leaving uncut and un-grazed for 3 to 6 months, as appropriate .
 - 0.2 livestock units per hectare per year in April to August inclusive in Year 1; and
 - 0.3 livestock units per hectare per year in April to August inclusive in all subsequent years; or
 - Equivalent management by cutting the grassland.
 - No fertilisers to be used except if needed to boost earthworm biomass.
 - No herbicides to be used except if needed to control problem plant species, with application by knapsack sprayer or weed-wipe.
- Objective SPA 3 : Maintenance of damp but un-flooded grassland through appropriate management of site drainage; for example: blocking of field drains; raising or lowering sluice heights; or pumping water onto the site.

For Able Logistics Park and Able Marine Energy Park, the conservation management plan for waterbird mitigation areas and Terrestrial Environmental Management and Monitoring Plan have both been submitted and signed off by the competent authorities.

Securing the mitigation

Existing proposals for waterbird mitigation in North Lincolnshire are secured by planning obligations. It is anticipated that any remaining waterbird mitigation land can be delivered employing conventional planning obligations, without the need to create complex habitat banking mechanisms. Such obligations will need to ensure that the 3.3 hectares of core wetland habitat plus buffer habitat are functioning as waterbird feeding and roosting habitat prior to the loss of the original habitat.

Delivery of the remaining waterbird mitigation land is expected to bring with it the following requirements in terms of finance or other resources:

- Land purchase, long-term lease or other legal agreements with landowners;
- Ecological, physical and archaeological survey of mitigation site(s);
- Detailed management planning;

- Habitat creation, including earthworks and water control structures;
- Ongoing-site management, including grazing;
- Ongoing monitoring;
- Implementation of any remedial works where monitoring reveals a need.

It is the responsibility of each developer to provide the necessary mitigation for their development. Therefore the above requirements will fall primarily on those developers. It is possible that funding for some of these works may be available in the future from one or more bodies supporting economic development. However, it is beyond the scope of this document to set out such opportunities in detail.

Monitoring the effectiveness of the mitigation

For Halton Marsh, condition 53 of the Able Logistics Park planning permission states that:

“No development shall take place until a bird monitoring programme has been submitted to and agreed in writing by the local planning authority. The programme shall include:

- (i) bird monitoring methods and prescriptions for created wetland mitigation areas, WeBS sectors ISI, NG2, NG3, NG4, NG5 and NG6, the proposed landscape buffer and the application site prior to and during development
- (ii) timing of bird monitoring including seasonal timing, frequency of counts, tidal state during counts, starting points and end points
- iii) reporting standards, including format of annual reports, interim reports and measures to be derived from the raw data
- (iv) measures of favourable condition with reference to bird populations and assemblages using the created wetland mitigation areas, WeBS sectors ISI, NG2, NG3, NG4, NG5 and NG6 and the proposed landscape buffer
- (v) bird population and assemblage thresholds that indicate the presence or absence of adverse effect on the integrity of the Humber Estuary SPA and Ramsar sites
- (vi) mechanisms for implementing any necessary remedial measures

The agreed bird monitoring programme shall be implemented in its entirety, in accordance with agreed timings and methods, unless otherwise agreed in writing by the local planning authority.

Reason

To protect features of the Humber Estuary SPA and Ramsar Site in accordance with policies LC1 and LC2 of the North Lincolnshire Local Plan.

The same condition is applied in the form of condition 14 on permission PA/2016/649, which grants permission for the creation of Halton Marshes wet grassland.

This approach requires the developer to monitor the effectiveness of habitat creation, the use of the mitigation site by waterbirds and any possible changes on the designated intertidal habitats that are functionally connected to the mitigation land. Remedial measures are required where necessary. This approach to monitoring is recommended for other mitigation sites, as it allows assessment of any effects on bird populations on the Humber Estuary, not just the created habitat.

For the AMEP development, the Terrestrial Environmental Management and Monitoring Plan (TEMMP) Revision I dated April 2018 sets out the following monitoring actions for waterbirds:

- Objective SPA1: Monthly counts of birds using fields within the site around the high tide. Counts to include details of any disturbance and disturbance response behaviour (especially alert and flushing distances).
- Objective SPA 2:
 - 15 permanent quadrats to be established measuring 2m x 2m within the wet grassland area.
 - Plant species and abundance to be recorded for each quadrat.
 - Visual assessment of the extent of wet or damp grassland; and species rich grassland.
- Objective SPA 3 : Annual collection of 50 soil samples measuring 25 x 25 x 10 cm at standard sample locations, with subsequent soil biomass calculations..

The TEMMP also sets monitoring standards in relation to site wetness and the softness of the ground.

For both AMEP and ALP developments, Able UK are required to establish an environmental steering group to oversee the implementation of mitigation measures and sensitive working practices.

In spring 2019, the monitoring programmes had been submitted and signed off and the environmental steering group was up and running.

Conclusion

The overarching South Humber Gateway Mitigation Strategy sets out the manner in which feeding and roosting habitat for waterbirds can be provided and maintained, prior to the loss of such habitat to development. The two interdependent delivery documents, for North and North East Lincolnshire set out adequate requirements to enable development aspirations to be met throughout the SHG, whilst ensuring that there will be no adverse effect on the integrity of the Humber Estuary SPA/Ramsar site due to the loss of feeding and roosting habitat.

At the point of production of this document, North East Lincolnshire Council's approach to the strategic mitigation has been agreed. This document identifies North Lincolnshire Council's requirements, contribution and commitments to the overarching South Humber Gateway Mitigation Strategy in a manner that is appropriate to the areas of land allocated for development in North Lincolnshire Council's portion of the SHG. It further identifies the means by which these requirements are secured and delivered. It is therefore considered to accord with the South Humber Gateway Mitigation principles and its implementation will be sufficient to ensure that there will be no AEOL on the Humber Estuary SPA due to loss of terrestrial habitat in North Lincolnshire Council's allocated portion of the SHG.

References

Alab Environmental Services Ltd 2009a Able Humber Ports Facility:Northern Area Environmental Statement

Allen et al. 2003 The Humber Estuary: A comprehensive review of its nature conservation interest. English Nature Research Report 547.

Catley, G. 2007a Winter bird survey of East Halton and Killingholme Marshes and inland fields encompassed by North Lincolnshire Council boundary; January to March 2007

Catley, G. 2007b Wetland sites. (Spreadsheet of bird counts)

Catley, G. 2007c Waders inter-tidal. (Spreadsheet of bird counts)

Catley, G. 2007d Waders fields (Spreadsheet of bird counts)

Catley, G. 2008a Winter bird survey of East Halton and Killingholme Marshes and inland fields encompassed by North Lincolnshire Council boundary; July 1st to March 31st 2007 – 2008

Catley, G. 2008b E Halton – Killingholme Winter 07-08 (Spreadsheet of bird counts)

Catley, G. 2008c North-east Lincolnshire winter bird surveys July – October 2008

Catley, G. 2011 Humber INCA North and North-east Lincolnshire autumn and winter bird surveys September 2010 - April 2011

Cutts,, N. D. and Hemingway, K.L 2020. Halton Marshes Wet Grassland Ornithological Utilisation Autumn 2019-Spring 2020. Full Programme Final Report. Cutts & Hemingway Estuarine Ecology and Management Ltd. (CHEEM), UK. Report to Able UK Ltd; Report No. CHEEM004-F1-2019.

Environment Agency 2008 Planning for the Rising Tides- The Humber Flood Risk Management Strategy

Environment Agency 2005 Humber Estuary Coastal Habitat Management Plan. May 2005

Frost, T.M., Calbrade, N.A., Birtles, G.A., Hall, C., Robinson, A.E., Wotton, S.R., Balmer, D.E. & Austin, G.E. 2021. Waterbirds in the UK 2019/20: The Wetland Bird Survey. BTO, RSPB and JNCC, in association with WWT. British Trust for Ornithology, Thetford.

Halcrow Group Ltd 2009 Environment Agency Humber Flood Risk Management Strategy Habitats Regulations Assessment. Vol1 Appendix B3 Halton Marshes FINAL Mar09.

Halcrow Group Ltd 2011 Environment Agency Humber Flood Risk Management Strategy Habitats Regulations Assessment. Vol1

Holt, C., Austin, G., Calbrade, N., Mellan, H., Hearn, R., Stroud, D., Wotton, S. & Musgrove, A. 2012 Waterbirds in the UK 2010/11 The Wetland Bird Survey BTO, RSPB and JNCC, in association with WWT. British Trust for Ornithology, Thetford.

Milsom, T.P., Ennis, D.C., Haskell, D.J., Langton, S.D. & McKay, H.V. 1998 Design of grassland feeding areas for waders during winter: The relative importance of sward, landscape factors and human disturbance. *Biological Conservation* 84: 119-129.

Musgrove, A., Pollitt, M., Hall, C., Hearn, R., Holloway, S., Marshall, P., Robinson, J. & Cranswick, P. 2001 The Wetland Bird Survey 1999-2000 Wildfowl and Wader Counts. BTO, WWT, RSPB & JNCC.

Mott Macdonald 2009 South Humber Bank Zone Final Report: Field Usage by Bird Species from the Humber Estuary SPA

North Lincolnshire Council 2013 Housing and Employment Land Allocations Development Plan Document. Revised Submission Draft.

North Lincolnshire Council 2020 North Lincolnshire Local Plan Preferred Options

Office of the Deputy Prime Minister 2005 Government Circular: Biodiversity And Geological Conservation – Statutory Obligations And Their Impact Within The Planning System. *ODPM Circular 06/2005*

Santos, C.D., Miranda, A.C., Granadeiro, J.P., Lourenço, P.M., Saraiva, S., Palmeirim, J.M. 2010 Effects of artificial illumination on the nocturnal foraging of waders. *Acta Oecologica* 36:166-172.

Taylor, A. 2010b PA/2009/0600 Able UK, Land between East Halton Skitter and Chase Hill Road, North Killingholme. A quantitative assessment of the use of the application site as feeding habitat by five species of passage and wintering waterbirds and associated estimate of the carrying capacity of the proposed wetland mitigation sites for these species.

Wymenga, E. 1998 Migrating ruffs *Philomachus pugnax* through Europe, spring 1998. *Wader Study Group Bull.* 88:43-48.

<https://www.gov.uk/guidance/habitats-regulations-assessments-protecting-a-european-site>