



## European Site Conservation Objectives for Eversden and Wimpole Woods Special Area of Conservation Site code: UK0030331

With regard to the SAC and the natural habitats and/or species for which the site has been designated (the 'Qualifying Features' listed below), and subject to natural change;

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

- **The extent and distribution of the habitats of qualifying species**
- **The structure and function of the habitats of qualifying species**
- **The supporting processes on which the habitats of qualifying species rely**
- **The populations of qualifying species, and,**
- **The distribution of qualifying species within the site.**

This document should be read in conjunction with the accompanying *Supplementary Advice* document, which provides more detailed advice and information to enable the application and achievement of the Objectives set out above.

### **Qualifying Features:**

S1308. *Barbastella barbastellus*; Barbastelle bat

## Explanatory Notes: European Site Conservation Objectives

These Conservation Objectives are those referred to in the Conservation of Habitats and Species Regulations 2010 (the “Habitats Regulations”) and Article 6(3) of the Habitats Directive. They must be considered when a competent authority is required to make a ‘Habitats Regulations Assessment’, including an Appropriate Assessment, under the relevant parts of this legislation.

These Conservation Objectives and the accompanying Supplementary Advice (where this is available) will also provide a framework to inform the measures needed to conserve or restore the European Site and the prevention of deterioration or significant disturbance of its qualifying features as required by the provisions of Article 6(1) and 6(2) of the Directive.

These Conservation Objectives are set for each habitat or species of a [Special Area of Conservation \(SAC\)](#). Where the objectives are met, the site will be considered to exhibit a high degree of integrity and to be contributing to achieving Favourable Conservation Status for that species or habitat type at a UK level. The term ‘favourable conservation status’ is defined in Article 1 of the Habitats Directive.

**Publication date:** 30 June 2014 – version 2. This document updates and replaces an earlier version dated 29 May 2012 to reflect Natural England’s Strategic Standard on European Site Conservation Objectives 2014.

# Site Improvement Plan

## Eversden and Wimpole Woods

Site Improvement Plans (SIPs) have been developed for each Natura 2000 site in England as part of the Improvement Programme for England's Natura 2000 sites (IPENS). Natura 2000 sites is the combined term for sites designated as Special Areas of Conservation (SAC) and Special Protected Areas (SPA). This work has been financially supported by LIFE, a financial instrument of the European Community.

The plan provides a high level overview of the issues (both current and predicted) affecting the condition of the Natura 2000 features on the site(s) and outlines the priority measures required to improve the condition of the features. It does not cover issues where remedial actions are already in place or ongoing management activities which are required for maintenance.

The SIP consists of three parts: a Summary table, which sets out the priority Issues and Measures; a detailed Actions table, which sets out who needs to do what, when and how much it is estimated to cost; and a set of tables containing contextual information and links.

Once this current programme ends, it is anticipated that Natural England and others, working with landowners and managers, will all play a role in delivering the priority measures to improve the condition of the features on these sites.

The SIPs are based on Natural England's current evidence and knowledge. The SIPs are not legal documents, they are live documents that will be updated to reflect changes in our evidence/knowledge and as actions get underway. The information in the SIPs will be used to update England's contribution to the UK's Prioritised Action Framework (PAF).

The SIPs are not formal consultation documents, but if you have any comments about the SIP or would like more information please email us at [IPENSLIFEProject@naturalengland.org.uk](mailto:IPENSLIFEProject@naturalengland.org.uk), or contact Natural England's Responsible Officer for the site via our enquiry service 0300 060 3900, or [enquiries@naturalengland.org.uk](mailto:enquiries@naturalengland.org.uk)

**This Site Improvement Plan covers the following Natura 2000 site(s)**

**UK0030331 Eversden and Wimpole Woods SAC**

## Site description

Eversden Wood is an ancient woodland of ash-maple type which is now very localised in extent, both locally and in lowland England as a whole. The site is one of the largest remaining areas of such woods on the chalky boulder clay in Cambridge and contains a rich assemblage of woodland plants including some uncommon species. The site holds colonies of Barbastelle bat *Barbastella barbastellus*, the sole European designated feature of the site. The bats are associated with the trees in Wimpole woods, these trees are used as a summer maternity roost where female bats gather to give birth to their young. The bats also use the site as a foraging area. Some of the woodland is also used as a flight path when bats forage outside the site.

## Plan Summary

*This table shows the prioritised issues for the site(s), the features they affect, the proposed measures to address the issues and the delivery bodies whose involvement is required to deliver the measures. The list of delivery bodies will include those who have agreed to the actions as well as those where discussions over their role in delivering the actions is on-going.*

Priority & Issue	Pressure or Threat	Feature(s) affected	Measure	Delivery Bodies
1 Feature location/ extent/ condition unknown	Pressure/ Threat	S1308 Barbastelle bat	Survey additional areas for Barbastelle bats	Natural England
2 Offsite habitat availability/ management	Pressure/ Threat	S1308 Barbastelle bat	Research to identify areas and habitats used by the bats off the SAC, and secure suitable management in order to maintain, enhance and increase the supporting habitat	Natural England, Volunteers, Cambridge Bat Group
3 Forestry and woodland management	Threat	S1308 Barbastelle bat	Manage the woodland appropriately	Forestry Commission, Natural England
4 Air Pollution: impact of atmospheric nitrogen deposition	Pressure	S1308 Barbastelle bat	Investigate effects of atmospheric nitrogen on the site	Natural England (CSF)

## Issues and Actions

*This table outlines the prioritised issues that are currently impacting or threatening the condition of the features, and the outstanding actions required to address them. It also shows, where possible, the estimated cost of the action and the delivery bodies whose involvement will be required to implement the action. Lead delivery bodies will be responsible for coordinating the implementation of the action, but not necessarily funding it. Delivery partners will need to support the lead delivery body in implementing the action. In the process of developing the SIPs Natural England has approached the delivery bodies to seek agreement on the actions and their roles in delivering them, although in some cases these discussions have not yet been concluded. Other interested parties, including landowners and managers, will be involved as the detailed actions are agreed and delivered. Funding options are indicated as potential (but not necessarily agreed or secured) sources to fund the actions.*

### 1 Feature location/ extent/ condition unknown

Two transects within the site are monitored each year as part of the National Bat Monitoring Programme (NBMP). However there is some evidence that there could be other Barbastelle roosts or important foraging sites close to but not within the site. If this is the case then potentially important sites for the bats in the area are not protected.

Action	Action description	Cost estimate	Timescale	Mechanism	Funding option	Delivery lead body	Delivery partner(s)
1A	Survey for Barbastelle bats (roosts/important foraging sites) in likely places close to the SAC. Consider increasing the SAC to include newly identified important areas.	£20,000	2015-20	Investigation / Research / Monitoring	Not yet determined	Natural England	n/a

### 2 Offsite habitat availability/ management

The bats have a limited area in which to roost and forage within the site and it is unclear which habitats they use in the wider countryside. In order to maintain a sustainable population, additional suitable habitat should be identified and to maintain/improve its value, suitable long-term management secured.

Action	Action description	Cost estimate	Timescale	Mechanism	Funding option	Delivery lead body	Delivery partner(s)
2A	Investigate the use the bats make of the surrounding countryside currently so that providing additional habitat can be targeted appropriately.	Included in costs for Action 1A	2015	Investigation / Research / Monitoring	Not yet determined	Natural England	Volunteers, Cambridge Bat Group

<i>Action</i>	<i>Action description</i>	<i>Cost estimate</i>	<i>Timescale</i>	<i>Mechanism</i>	<i>Funding option</i>	<i>Delivery lead body</i>	<i>Delivery partner(s)</i>
<b>2B</b>	Develop and implement a plan to provide and appropriately manage roosting and foraging habitat in the wider countryside.	Not yet determined	2020	Rural Development Programme for England (RDPE): Common Agricultural Policy 2014-20 (New Environmental Land Management Scheme)	Rural Development Programme (RDPE)	Natural England	Landowner(s), Farming & Wildlife Advisory Group (FWAG), West Cambridgeshire Hundreds
<i>Action</i>	<i>Action description</i>	<i>Cost estimate</i>	<i>Timescale</i>	<i>Mechanism</i>	<i>Funding option</i>	<i>Delivery lead body</i>	<i>Delivery partner(s)</i>
<b>2C</b>	Provide advice to local landowners on how to manage important bat habitat in the surrounding countryside.	Staff time	2020	Advice: Education & awareness raising	Staff time	Natural England	Local bat group(s)

### 3 Forestry and woodland management

The woodland upon which the bats depend must be maintained in the medium to longer term by ensuring that tall trees, especially oak, grow up to replace those currently in place.

<i>Action</i>	<i>Action description</i>	<i>Cost estimate</i>	<i>Timescale</i>	<i>Mechanism</i>	<i>Funding option</i>	<i>Delivery lead body</i>	<i>Delivery partner(s)</i>
<b>3A</b>	Ensure that the woodland within the SAC is appropriately managed in the medium and long term to benefit Barbastelle bats.	£15,000	2015-20	Rural Development Programme for England (RDPE): Common Agricultural Policy 2014-20 (New Environmental Land Management Scheme)	Rural Development Programme (RDPE)	Forestry Commission	Natural England

#### 4 Air Pollution: impact of atmospheric nitrogen deposition

Nitrogen deposition exceeds site-relevant critical loads.

<i>Action</i>	<i>Action description</i>	<i>Cost estimate</i>	<i>Timescale</i>	<i>Mechanism</i>	<i>Funding option</i>	<i>Delivery lead body</i>	<i>Delivery partner(s)</i>
<b>4A</b>	Control, reduce and ameliorate atmospheric nitrogen impacts.	Not yet determined	2015-20	Site Nitrogen Action Plan	Not yet determined	Natural England	Not yet determined

## Site details

The tables in this section contain site-relevant contextual information and links

### Qualifying features

#UK Special responsibility

**Eversden and Wimpole Woods SAC** S1308 *Barbastella barbastellus*: Barbastelle bat

### Site location and links

#### Eversden and Wimpole Woods SAC

Area (ha) **66.48**      Grid reference **TL340526**      [Map link](#)

Local Authorities      Cambridgeshire

Site Conservation Objectives      [European Site Conservation Objectives for Eversden and Wimpole Woods SAC](#)

European Marine Site conservation advice      [n/a](#)

Regulation 33/35 Package      [n/a](#)

Marine Management Organisation site plan      [n/a](#)

## Water Framework Directive (WFD)

*The Water Framework Directive (WFD) provides the main framework for managing the water environment throughout Europe. Under the WFD a management plan must be developed for each river basin district. The River Basin Management Plans (RMBP) include a summary of the measures needed for water dependent Natura 2000 sites to meet their conservation objectives. For the second round of RBMPs, SIPs are being used to capture the priorities and new measures required for water dependent habitats on Natura 2000 sites. SIP actions for non-water dependent sites/habitats do not form part of the RBMPs and associated consultation.*

### **Eversden and Wimpole Woods SAC**

*River basin*

[Anglian RBMP](#)

*WFD Management catchment*

Cam and Ely Ouse (including South Level)

*WFD Waterbody ID (Cycle 2 draft)*

n/a

## Overlapping or adjacent protected sites

Site(s) of Special Scientific Interest (SSSI)	
Eversden and Wimpole Woods SAC	Eversden and Wimpole Woods SSSI

National Nature Reserve (NNR)	
Eversden and Wimpole Woods SAC	n/a

Ramsar	
Eversden and Wimpole Woods SAC	n/a

Special Areas of Conservation (SAC) and Special Protection Areas (SPA)	
Eversden and Wimpole Woods SAC	n/a

<i>Version</i>	<i>Date</i>	<i>Comment</i>
1.0	12/05/2015	

[www.naturalengland.org.uk/ipens2000](http://www.naturalengland.org.uk/ipens2000)



# EC Directive 92/43 on the Conservation of Natural Habitats and of Wild Fauna and Flora

## Citation for Special Area of Conservation (SAC)

**Name:** Eversden and Wimpole Woods  
**Unitary Authority/County:** Cambridgeshire  
**SAC status:** Designated on 1 April 2005  
**Grid reference:** TL340526  
**SAC EU code:** UK0030331  
**Area (ha):** 66.48  
**Component SSSI:** Eversden and Wimpole Woods SSSI

### Site description:

The site comprises a mixture of ancient coppice woodland (Eversden Wood) and high forest woods likely to be of more recent origin (Wimpole Woods). A colony of barbastelle bats *Barbastella barbastellus* is associated with the trees in Wimpole Woods. These trees are used as a summer maternity roost where the female bats gather to give birth and rear their young. Most of the roost sites are within tree crevices. The bats also use the site as a foraging area. Some of the woodland is also used as a flight path when bats forage outside the site.

**Qualifying species:** The site is designated under **article 4(4)** of the Directive (92/43/EEC) as it hosts the following species listed in Annex II:

- Barbastelle bat *Barbastella barbastellus*

This citation relates to a site entered in the Register of European Sites for Great Britain.  
Register reference number: UK0030331  
Date of registration: 14 June 2005

Signed: *Trevor Salmon*

On behalf of the Secretary of State for Environment,  
Food and Rural Affairs



## **European Site Conservation Objectives: Draft Supplementary Advice on Conserving and Restoring Site Features**

**Lee Valley Special Protection Area (SPA)  
Site code: UK9012111**



Photo of Amwell Quarry by Flying Fern - Herts & Middlesex Wildlife Trust

**Date of Publication: 5 February 2018**

## **About this document**

This document provides Natural England's supplementary advice for the European Site Conservation Objectives relating to Lee Valley SPA. This advice should therefore be read together with the SPA Conservation Objectives available [here](#).

**This advice is draft pending comments from the site's stakeholders.** In the interim you should use the Conservation Objectives, this Supplementary Advice and any case-specific advice given by Natural England, when developing, proposing or assessing an activity, plan or project that may affect this site.

This Supplementary Advice to the Conservation Objectives presents attributes which are ecological characteristics of the designated species and habitats within a site. The listed attributes are considered to be those that best describe the site's ecological integrity and which, if safeguarded, will enable achievement of the Conservation Objectives. Each attribute has a target which is either quantified or qualitative depending on the available evidence. The target identifies as far as possible the desired state to be achieved for the attribute.

The tables provided below bring together the findings of the best available scientific evidence relating to the site's qualifying features, which may be updated or supplemented in further publications from Natural England and other sources. The local evidence used in preparing this supplementary advice has been cited. The references to the national evidence used are available on request. Where evidence and references have not been indicated, Natural England has applied ecological knowledge and expert judgement. You may decide to use other additional sources of information.

In many cases, the attribute targets shown in the tables indicate whether the current objective is to 'maintain' or 'restore' the attribute. This is based on the best available information, including that gathered during monitoring of the feature's current condition. As new information on feature condition becomes available, this will be added so that the advice remains up to date.

The targets given for each attribute do not represent thresholds to assess the significance of any given impact in Habitats Regulations Assessments. You will need to assess this on a case-by-case basis using the most current information available.

Some, but not all, of these attributes can also be used for regular monitoring of the actual condition of the designated features. The attributes selected for monitoring the features, and the standards used to assess their condition, are listed in separate monitoring documents, which will be available from Natural England.

These tables do not give advice about SSSI features or other legally protected species which may also be present within the European Site.

**If you have any comments or queries about this Supplementary Advice document please contact your local Natural England adviser or email [HDIRConservationObjectivesNE@naturalengland.org.uk](mailto:HDIRConservationObjectivesNE@naturalengland.org.uk)**

## About this site

### European Site information

<b>Name of European Site</b>	Lee Valley Special Protection Area (SPA)
<b>Location</b>	Essex, Hertfordshire, London Borough of Haringey and London Borough of Waltham Forest
<b>Site Maps</b>	The designated boundary of this site can be viewed <a href="#">here</a> on the MAGIC website
<b>Classification Date</b>	22 September 2000
<b>Qualifying Features</b>	See section below
<b>Designation Area</b>	447.87 ha
<b>Designation Changes</b>	Not applicable
<b>Feature Condition Status</b>	Details of the feature condition assessments made at this site can be found using Natural England's <a href="#">Designated Sites System</a>
<b>Names of component Sites of Special Scientific Interest (SSSIs)</b>	Amwell Quarry SSSI , Rye Meads SSSI, Turnford & Cheshunt Pits SSSI and Walthamstow Reservoirs SSSI
<b>Relationship with other European or International Site designations</b>	The boundary of this SPA overlaps that of the Lee Valley Ramsar site
<b>Other information</b>	<a href="#">Natura 2000 Standard Data Form</a> for Lee Valley SPA

### Site background and geography

The Lee Valley SPA comprises a series of embanked water supply reservoirs, sewage treatment lagoons and former gravel pits that display a range of man-made and semi-natural wetland and valley bottom habitats. The site stretches over a distance of 16 miles northward along the River Lea to the north of London and is with the [North Thames Basin National Character Area](#).

Lee Valley SPA lies roughly parallel and to the east of the A10 between Finsbury Park, London and Ware in Hertfordshire. Walthamstow Reservoirs are situated to the south of the M25 motorway which cuts across the site. The SPA crosses both the East Anglian Plain and London Basin Natural Areas. All of the component SSSIs lie within the [Lee Valley Regional Park](#).

Parts of the SPA are managed as nature reserves by the Herts and Middlesex Wildlife Trust (HMWT) and the RSPB.

All the habitats within the SPA are man-made. Walthamstow Reservoir, constructed in the latter half of the nineteenth century, comprises of ten relatively small and shallow water storage basins. Several of these are fringed by sloping earth banks and together with the presence of wooded islands form distinctive habitat features.

Rye Meads SSSI comprises of wet meadows, disused and operational effluent lagoons and Rye House marsh. These three areas provide a variety of different habitats including open water habitats swamp communities, tall fen communities, marshy grassland and scrub. The meadows are the last substantial remnants of ancient floodplain on the rich alluvial soils of the Lee Valley. The site supports one of the

largest areas of tall fen vegetation in the county and provides a valuable habitat for birds and locally uncommon plants.

Amwell Quarry SSSI is a former gravel pit site in the Lee Valley near Ware, which supports nationally important numbers of wintering wildfowl, along with outstanding assemblages of breeding birds and of dragonflies and damselflies. The site includes two large lakes which were excavated between 1973 and 1990, and a variety of associated wetland, grassland and woodland habitats.

The Turnford and Cheshunt Pits SSSI include ten former gravel pits ranging in age from North Metropolitan Pit which is among the oldest pits in the Lee Valley to Hooks Marsh Lake which was not excavated until the 1970s, and cover a span of over 40 years. Because of the profusion of pits and islands, several of the pits have extensive shorelines; North Metropolitan Pit alone having an estimated shoreline of about 7.2km. Also included in the site are all the associated areas of marsh, grassland, ruderal herbs, scrub and woodland; part of the Small River Lee; and a further water body, Hall Marsh Scrape, which was constructed specifically for use by waterfowl. The pits are of national importance for wintering gadwall and shoveler.

## **About the qualifying features of the SPA**

The following section gives you additional, site-specific information about this SPA's qualifying features. These are the individual species of wild birds listed on Annex I of the European Wild Birds Directive, and/or the individual regularly-occurring migratory species, and/or the assemblages (groups of different species occurring together) of wild birds for which the SPA was classified for.

- **Qualifying individual species listed in Annex I of the Wild Birds Directive (Article 4.1)**

During the non-breeding season the SPA regularly supports:

**A021 *Botaurus stellaris*; Great bittern**

This site supports nationally important numbers of this Annex 1 species during the winter months and when the SPA was classified in 2000 this represented 6% of the total British wintering population.

The reed-bed habitat is vital to the species, providing them with feeding areas and locations to hide. The majority of bittern are found in the Turnford and Cheshunt Pits site while Amwell Quarry and Rye Meads also support the species. Walthamstow Reservoirs also occasionally supports bittern.

- **Qualifying individual species not listed in Annex I of the Wild Birds Directive (Article 4.2)**

During the non-breeding season the SPA regularly supports:

**A051 *Anas strepera*; Gadwall (Non-breeding)**

The site supports internationally important numbers of gadwall during the wintering period and when the SPA was classified in 2000 this represented 1.5% of the North West European wintering population.

Gadwall favour gravel pits and reservoirs during the winter period where they feed on seeds, leaves and stems of water plants. Each of the supporting SSSIs support gadwall in numbers which are sufficient to qualify them as being of national importance.

**A056 *Anas clypeata*; Northern shoveler (Non-breeding)**

The site supports internationally important numbers of shoveler during the winter period, and when the SPA was classified in 2000 this represented 1.0% of the North West/Central European wintering population.

Shoveler are found throughout the site and in winter they frequent shallow water areas on marshes, flooded pasture, reservoirs and lakes with plentiful, marginal reeds or emergent vegetation.

## Site-specific seasonality of SPA features

The table below highlights in grey those months in which significant numbers of each mobile qualifying feature are most likely to be present at the SPA during a typical calendar year. This table is provided as a general guide only.

Unless otherwise indicated, the months shown below are primarily based on information relating to the general months of occurrence of the feature in the UK. Where site-based evidence is available and has been used to indicate below that significant numbers of the feature are typically present at this SPA outside of the general period, the site-specific references have been added to indicate this.

Applicants considering projects and plans scheduled in the periods highlighted in grey would benefit from early consultation with Natural England given the greater scope for there to be likely significant effects that require consideration of mitigation to minimise impacts to qualifying bird features during the principal periods of site usage by those features. The months which are *not* highlighted in grey are not ones in which the features are necessarily absent, rather that features may be present in less significant numbers in typical years. Furthermore, in any given year, features may occur in significant numbers in months in which typically they do not. Thus, applicants should not conclude that projects or plans scheduled in months not highlighted in grey cannot have a significant effect on the features. There may be a lower likelihood of significant effects in those months which nonetheless will also require prior consideration.

Any assessment of potential impacts on the features must be based on up-to-date count data and take account of population trends evident from these data and any other available information. Additional site-based surveys may be required. Non-breeding water bird monthly maxima data gathered for this site through the Wetland Bird Survey ('WeBS') may be available upon request from the [British Trust for Ornithology](#).

Feature	Season	Period	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Site-specific references where available
Gadwall	Non-breeding	Winter													
Great bittern	Non-breeding	Winter													
Shoveler	Non-breeding	Winter													

### Guide to terms:

**Breeding** – present on a site during the normal breeding period for that species

**Non-breeding** - present on a site outside of the normal breeding period for that species (includes passage and winter periods).

**Summer** – the period generally from April to July inclusive

**Passage** - the periods during the autumn and spring when migratory birds are moving between breeding areas and wintering areas. These periods are not strictly defined but generally include the months of July – October inclusive (autumn passage) and March – April inclusive (spring passage).

**Winter** - the period generally from November to February inclusive.

**Table 1: Supplementary Advice for Qualifying Features: A021. *Botaurus stellaris*; Great bittern (Non-breeding)**

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
<b>Supporting habitat (both within and outside the SPA): extent and distribution</b>	<b>Extent and distribution of supporting non-breeding habitat</b>	<p>Restore the extent and distribution of suitable supporting habitat (either within or outside the site boundary) which supports Great bittern for all necessary stages of the non-breeding/wintering period (moulting, roosting, loafing, feeding).</p> <p>The habitat mosaic within the Lee Valley SPA includes:</p> <p>Standing open water and canals: (345 hectares) Fen, reedbed, marsh and swamp (19.2 hectares)</p>	<p>Conserving or restoring the extent of supporting habitats and their range will be key to maintaining the site's ability and capacity to support the SPA population.</p> <p>The information available on the extent and distribution of supporting habitat used by the feature may be approximate depending to the nature, age and accuracy of data collection.</p> <p>Bittern roost at a number of locations within the Lee Valley and mainly feed within or near reedbeds of large waterbodies. Whilst the habitat target is SPA focused, it should be noted the SPA population of overwintering bittern may also be reliant on supporting habitat which lies outside the SPA boundary but mostly within the Lee Valley Park boundary. For example, the LVRPA managed wetlands of Stanstead Innings are adjacent to the northern boundary of Rye Meads SSSI, and coupled with the non-SSSI, SPA northern wetland areas of the HMWT Rye Meads nature reserve provide additional and complementary reedbed habitat for overwintering bittern. This whole area has been enhanced for bittern and its nature conservation interest since the early 2000's in accordance with a national LIFE bid and is now included in the Lee Valley wide Bittern roost watch with regular winter sightings of bittern (pers comm, RSPB and Rye Meads Ringing Group).</p>	<p>Habitat extent based on estimates made from habitat maps and aerial photographs in 2006 (held by Natural England).</p> <p>WHITE &amp; HARRIS 2010.</p> <p>LEE VALLEY REGIONAL PARK AUTHORITY, 2000; 2016 (see <a href="#">Biodiversity Objectives</a>)</p>
<b>Supporting habitat (both within and outside the SPA): function /supporting process</b>	<b>Water quality/ quantity</b>	<p>Where the supporting habitats of Great Bittern are dependent on surface water ensure water quality and quantity is maintained to a standard which provides the necessary conditions to support the feature</p>	<p>For many SPA features which are dependent on wetland habitats supported by surface water, maintaining the quality and quantity of water supply will be critical, especially at certain times of year during key stages of their life cycle. Poor water quality and inadequate quantities of water can adversely affect the availability and suitability of feeding and roosting habitats.</p> <p>Typically, meeting the surface water and groundwater environmental standards set out by the Water Framework Directive (WFD 2000/60/EC) will also be sufficient to support the SPA Conservation Objectives but in some cases more stringent standards may be needed to support the SPA feature. Further site-specific investigations may be required to establish appropriate standards for the SPA.</p>	<p>NATURAL ENGLAND, 2015.</p>

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
<b>Supporting habitat (both within and outside the SPA): function/supporting process</b>	<b>Conservation measures</b>	Maintain management or other measures (whether within and/or outside the site boundary as appropriate) necessary to maintain the structure, function and/or the supporting processes associated with Great Bittern and its supporting habitats.	<p>Active and ongoing conservation management is often needed to protect, maintain or restore this feature at this site. Other measures may also be required, and in some cases, these measures may apply to areas outside of the designated site boundary in order to achieve this target.</p> <p>Further details about the necessary conservation measures for this site will typically be found within, where applicable, supporting documents such as Natura 2000 Site Improvement Plan, Site Management Strategies or Plans, the Views about Management Statement for the underpinning SSSI and/or management agreements.</p> <p>In general, these measures currently include dynamic wetland management (water level control, pool and ditch creation), rotational reedbed cutting and scrub/tree management. There may be a need to provide supplementary food (e.g. rudd), notably in hard weather.</p>	<p>NATURAL ENGLAND, 2015.</p> <p>ENGLISH NATURE, 2005.</p> <p>RSPB, 2016.</p> <p>HMWT, 2014</p>
<b>Supporting habitat (both within and outside the SPA): function/supporting process</b>	<b>Air quality</b>	Maintain concentrations and deposition of air pollutants to at or below the site-relevant Critical Load or Level values given for this feature of the site on the Air Pollution Information System ( <a href="http://www.apis.ac.uk">www.apis.ac.uk</a> ).	<p>The structure and function of habitats which support this SPA feature may be sensitive to changes in air quality. Exceeding critical values for air pollutants may result in changes to the chemical status of its habitat substrate, accelerating or damaging plant growth, altering vegetation structure and composition and thereby affecting the quality and availability of nesting, feeding or roosting habitats.</p> <p>Critical Loads and Levels are thresholds below which such harmful effects on sensitive UK habitats will not occur to a noteworthy level, according to current levels of scientific understanding. There are critical levels for ammonia (NH3), oxides of nitrogen (NOx) and sulphur dioxide (SO2), and critical loads for nutrient nitrogen deposition and acid deposition.</p> <p>It is recognised that achieving this target may be subject to the development, availability and effectiveness of abatement technology and measures to tackle diffuse air pollution, within realistic timescales. There are currently no critical loads or levels for other pollutants such as Halogens, Heavy Metals, POPs, VOCs or Dusts. These should be considered as appropriate on a case-by-case basis. Ground level ozone is regionally important as a toxic air pollutant but flux-based critical levels for the protection of semi-natural habitats are still under development.</p>	<p>More information about site-relevant Critical Loads and Levels for this SPA is available by using the 'search by site' tool on <a href="http://www.apis.ac.uk">www.apis.ac.uk</a> .</p>

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
<b>Non-breeding population</b>	<b>Population abundance</b>	Restore the size of the non-breeding Great Bittern population to a level which is consistently above an average of 6 individuals (5 year peak mean count), [whilst avoiding deterioration from its current level as indicated by the latest mean peak count or equivalent.	<p>This will sustain the site's population and contribute to a viable local, national and bio-geographic population. Due to the mobility of birds and the dynamic nature of population change, the target-value given for the abundance of this feature is considered to be the minimum standard for conservation/ restoration measures to achieve. This minimum-value may be revised where there is evidence to show that a population's abundance has significantly changed as a result of natural factors or management measures and has been stable at or above a new level over a considerable period. The values given here may also be updated in future to reflect any strategic objectives which may be set at a national level for this feature.</p> <p>Given the likely fluctuations in numbers over time, any impact-assessments should focus on the current abundance of the site's population, as derived from the latest known or estimated level established using the best available data. This advice accords with the obligation to avoid deterioration of the site or significant disturbance of the species for which the site is classified, and seeks to avoid plans or projects that may affect the site giving rise to the risk of deterioration. Similarly, where there is evidence to show that a feature has historically been more abundant than the stated minimum target and its current level, the ongoing capacity of the site to accommodate the feature at such higher levels in future should also be taken into account.</p> <p>Maintaining or restoring bird abundance depends on the suitability of the site. However, factors affecting suitability can also determine other demographic rates of birds using the site including survival (dependent on factors such as body condition which influences the ability to breed or make foraging and/or migration movements) and breeding productivity. Adverse anthropogenic impacts on either of these rates may precede changes in population abundance (e.g. by changing proportions of birds of different ages) but eventually may negatively affect abundance. These rates can be measured/estimated to inform judgements of likely impacts on abundance targets. Unless otherwise stated, the population size will be that measured using standard methods such as peak mean counts. This value is also provided recognising there will be inherent variability as a result of natural fluctuations and margins of error during data collection. Whilst we will endeavour to keep these values as up to date as possible, local Natural England staff can advise on whether the figures stated are the best available.</p> <p>The figures referenced are those WeBS counts submitted to BTO.</p> <p>Survey results suggest the SPA's over-wintering Great Bittern population declined</p>	<p>JNCC, 2000.</p> <p>WHITE &amp; HARRIS 2010.</p>

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			<p>between 1999/2000- 2008/09 (White &amp; Harris 2010). The Mean of Peaks of consecutive 5 Year periods during this time is 7 (99/00-04/05) and 4.2 (05/06 – 08/09). The key factor affecting the number of wintering Great Bitterns in the Lee Valley appears to be milder winter weather. The two peak counts of 11 and 7 during the 1999/2000 – 2008/09 period were in the coldest winters of 2002/03 and 2008/09 respectively. Habitat quality is regarded to be a secondary factor, with reedbed quality having improved in a number of Valley sites.</p> <p>Since 2008/09, the Mean of Peaks for the latest 5 Year period 2009/10 – 2014/15 is as low as 2, with count peaks of 4 and 5 during 2011/12 and 2012/13 respectively. This indicates an ongoing decline in the population of over-wintering Great Bittern.</p> <p>It should be noted that the Lee Valley remains a good place to see bittern and additional sightings and records (obtained as part of the Lee Valley Bittern Roost Watch counts and site survey activities) suggest there are more Great Bitterns over-wintering than the WeBS figures indicate. However, the apparent declining population is regarded as a concern requiring targeted restoration.</p>	
<b>Supporting habitat (both within and outside the SPA): structure</b>	<b>Vegetation characteristics</b>	Maintain the cover of scrub-free areas of reed-bed with common reed <i>Phragmites australis</i> at or above 90% cover and with a diverse age structure (typically at least 30% of the reedbed should be uncut with the remainder <7 years old with <20% cut in any year).	<p>The height, cover, variation and composition of vegetation are often important characteristics of habitats supporting this feature which enable successful feeding/concealment and roosting.</p> <p>Many bird species will have specific requirements that conservation measures will aim to maintain, for others such requirements will be less clear. Activities that may directly or indirectly affect the vegetation of supporting habitats and modify these characteristics may adversely affect the feature.</p> <p>Rotational reedbed management is undertaken in accordance with site management plans.</p>	<p>NATURAL ENGLAND 2015</p> <p>RSPB 2016</p> <p>HMWT 2014</p> <p>LEE VALLEY REGIONAL PARK AUTHORITY, 2000; 2016.(see <a href="#">Biodiversity Objectives</a>)</p>
<b>Supporting habitat (both within and outside</b>	<b>Minimising disturbance caused by human activity</b>	Restrict the frequency, duration and/or intensity of disturbance affecting roosting, foraging, feeding	The nature, scale, timing and duration of some human activities can result in the disturbance of birds at a level that may substantially affect their behaviour, and consequently affect the long-term viability of the population.	<p>NATURAL ENGLAND 2015</p> <p>RSPB 2016</p>

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
<b>the SPA): minimising disturbance</b>		and/or loafing birds so that the Great Bittern feature is not significantly disturbed	<p>Such disturbing effects can for example result in changes to feeding or roosting behaviour, increases in energy expenditure due to increased flight and desertion of supporting habitat (both within or outside the designated site boundary where appropriate). This may undermine successful feeding and/or roosting, and/or may reduce the availability of suitable habitat as birds are displaced and their distribution within the site contracts. Disturbance associated with human activity may take a variety of forms including noise, light, sound, vibration, trampling, the presence of people, animals and structures.</p> <p>Great Bitterns spend a significant amount of time in and amongst reedbed areas with low human disturbance. The favoured reedbeds within the key Lee Valley sites are generally areas not subject to recreational disturbance, although distance from bankside will be a factor that may affect the behaviour of individual birds.</p>	HMWT 2014  LEE VALLEY REGIONAL PARK AUTHORITY. (2000), (2016),
<b>Supporting habitat (both within and outside the SPA): structure</b>	<b>Landform</b>	Maintain the extent of wet ditches and/or pools with suitable profiles (typically, with a deep central channel of 1.5-2.5 m deep and one or more 1 m deep with 5 m wide shallow margins).	<p>The physical topography and landform of a site will strongly influence the quality and extent of supporting habitats used by this feature for nesting/rearing, feeding and/or roosting as appropriate. This will also influence the interactions with underlying supporting processes on which the supporting habitat may rely.</p> <p>Any changes or modifications to site topography may adversely affect the ability of the supporting habitats to support and sustain this feature.</p> <p>Rotational management within reedbed and adjacent wetland areas is undertaken in accordance with site management plans.</p>	

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
<b>Supporting habitat (both within and outside the SPA): function/ supporting process</b>	<b>Connectivity with supporting habitats</b>	Maintain the safe passage of Bitterns moving between roosting and feeding areas	<p>The ability of the feature to safely and successfully move to and from feeding and roosting areas is critical to their adult fitness and survival.</p> <p>This objective will apply both within the site boundary and where birds regularly move to and from off-site habitat where this is relevant.</p> <p>Bitterns clearly move between sites within the Lee Valley and to do this they will need to move safely to and from supporting habitat between individual waterbodies and above/across land outside the SPA. The key SSSI areas within the Valley are Turnford &amp; Cheshunt Pits, Amwell Quarry and Rye Meads. WeBS counts indicate that single birds generally visit Walthamstow Reservoirs once in every five years and this southernmost site probably serves as a harsh winter refuge.</p> <p>The three SSSIs north of the M25 arguably provide adequately connected suitable habitat capable of supporting a favourable SPA population however this is regarded as a baseline requirement for this SPA feature because there are significant barriers to movement between these three SSSI's and the Walthamstow Reservoirs SSSI south of the M25. For example, Bitterns are known to collide with overhead power lines (RSPB Rye Meads record March 2016). , Whilst this situation within the Lee Valley existed at SPA classification it should be recognised that the small populations recorded for and since classification are significant and vulnerable so suitable opportunities to reduce barriers between available sites should be considered and implemented where possible. This is recognised in the landscape section below.</p>	WHITE & HARRIS, 2010.
<b>Supporting habitat (both within and outside the SPA): function/ supporting process</b>	<b>Water area</b>	Maintain the number of open waterbodies of optimal size ( >0.5 ha), and the percentage cover of pools overall, with shallow water extending at least 30 m landward into surrounding dense vegetation.	This feature depends on the presence and continuity of open water habitat; often requiring water bodies of a particular size to in order to successfully nest, rear their young, feed and/or roost. Changes in water area, and associated marginal habitat, can adversely affect the suitability of supporting open water habitat.	NATURAL ENGLAND, 2015  RSPB 2016  HMWT 2014
<b>Supporting habitat (both within and outside the SPA): structure</b>	<b>Landscape</b>	Restore an open and unobstructed terrain which provides safe passage for Bitterns moving between roosting and feeding areas across	<p>This feature is known to favour large areas of open terrain, largely free of obstructions, in and around its nesting, roosting and feeding areas. Often there is a need to maintain an unobstructed line of sight within nesting, feeding or roosting habitat to detect approaching predators, or to ensure visibility of displaying behaviour.</p> <p>An open landscape may also be required to facilitate movement of birds between the</p>	WHITE & HARRIS, 2010.

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
		the site.	<p>SPA and any off-site supporting habitat.</p> <p>Bitterns clearly move between sites within the Lee Valley and to do this they need to move safely to and from supporting habitat between individual waterbodies and above/across land outside the SPA. The key SSSI areas within the Valley are Turnford &amp; Cheshunt Pits, Amwell Quarry and Rye Meads. WeBS counts indicate that single birds generally visit Walthamstow Reservoirs once in every five years and is probably serving as a harsh winter refuge.</p> <p>At a landscape level across the whole SPA site, there are significant barriers to movement between the three SSSI's north of the M25 and the Walthamstow Reservoirs south of the M25. For example, Bitterns have been known to collide with overhead power lines (RSPB Rye Meads record March 2016). Whilst this situation within the Lee Valley existed at SPA classification it should be recognised that the small population is significant and vulnerable so suitable opportunities to reduce barriers between available sites should be considered and implemented where possible.</p>	
<b>Supporting habitat (both within and outside the SPA): function/supporting process</b>	<b>Water depth</b>	Maintain the overall depth of swamp and marginal water which is typically between 30-100cms, and/or within pools and dykes at typically 200-400cms deep.	This feature is known to require extensive areas of water in which to feed. Birds are visual predators, with some having the ability to dive or to feed from the surface. As they will rely on detecting their prey within the water to hunt, the depth of water at critical times of year may be paramount for successful feeding and therefore their fitness and survival.	<p>NATURAL ENGLAND 2015</p> <p>RSPB 2016</p> <p>HMWT 2014</p>
<b>Supporting habitat (both within and outside the SPA): function/supporting process</b>	<b>Food availability within supporting habitat</b>	Restore the distribution, abundance and availability of key prey items (e.g. eel, rudd, roach, frogs, toads) at preferred prey sizes (e.g. roach of 6-35 cm).	<p>The availability of an abundant food supply is critically important for successful breeding, adult fitness and survival and the overall sustainability of the population. As a result, inappropriate management and direct or indirect impacts which may affect the distribution, abundance and availability of prey may adversely affect the population.</p> <p>Bitterns are known to favour fish, amphibians and invertebrates.</p>	<p>NATURAL ENGLAND 2015</p> <p>RSPB 2016</p> <p>HMWT 2014</p>
<b>Version Control</b> Advice last updated: Not applicable				
<b>Variations from national feature-framework of integrity-guidance:</b> The attribute for 'Salinity' has not been applied to the Supplementary Advice for Great Bittern within the Lee Valley SPA because the site is entirely freshwater.				

**Table 2: Supplementary Advice for Qualifying Features: A051. *Anas strepera* Gadwall (Non-breeding)**

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
<b>Supporting habitat (both within and outside the SPA): extent and distribution</b>	<b>Extent and distribution of supporting non-breeding habitat</b>	Maintain the extent and distribution of suitable habitat (either within or outside the site boundary) which supports Gadwall for all necessary stages of the non-breeding/wintering period (moulting, roosting, loafing, feeding):  Standing open water: 345 hectares	Conserving or restoring the extent of supporting habitats and their range will be key to maintaining the site's ability and capacity to support the SPA population.  The information available on the extent and distribution of supporting habitat used by the feature may be approximate depending to the nature, age and accuracy of data collection.  Gadwalls overwinter at a number of waterbodies within the Lee Valley. Whilst the habitat target is SPA focused, it should be noted the population of overwintering gadwall may be reliant on supporting habitat which lies outside the SPA boundary but mostly within the Lee Valley Park boundary (eg King George V Reservoir and Holyfield Lake).	NATURAL ENGLAND, 2006. Habitat extent estimated from habitat maps and aerial photographs.
<b>Supporting habitat (both within and outside the SPA): function/ supporting process</b>	<b>Water quality/ quantity</b>	Where the supporting habitats of the SPA feature are dependent on surface water, ensure water quality and quantity is maintained to a standard which provides the necessary conditions to support Gadwall.	See the notes for these attributes in Table 1 above.	NATURAL ENGLAND 2015  RSPB 2016  HMWT 2014
<b>Supporting habitat (both within and outside the SPA): function/ supporting process</b>	<b>Conservation measures</b>	Maintain management or other measures (whether within and/or outside the site boundary as appropriate) necessary to Maintain the structure, function and/or the supporting processes associated with non-breeding Gadwall and its supporting habitats.		
<b>Supporting habitat (both within and outside the SPA): function/sup porting</b>	<b>Air quality</b>	Maintain concentrations and deposition of air pollutants to at or below the site-relevant Critical Load or Level values given for this feature of the site on the Air Pollution Information System ( <a href="http://www.apis.ac.uk">www.apis.ac.uk</a> ).		More information about site-relevant Critical Loads and Levels for this SPA is available by using the 'search by site' tool on the

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
process				Air Pollution Information System (www.apis.ac.uk).
<b>Non-breeding population</b>	<b>Population abundance</b>	Maintain the size of the non-breeding Gadwall population at a level which is above an average of 456 individuals (5 year peak mean), whilst avoiding deterioration from its current level as indicated by the latest mean peak count or equivalent.	<p>See the notes for these attributes in Table 1 above.</p> <p>The population of Gadwall within the SPA has shown an increase since Classification. The bulk of the population is centred on the gravel pits, although Rye Meads does support significant numbers and birds may visit the deeper reservoirs of the Lee Valley in severe weather conditions (White &amp; Harris 2010).</p> <p>There is some evidence during the 1999/00 – 2008/09 period that indicate gadwall numbers spread away from the more established sites of the Lee Valley. Of these, the SPA sites Rye Meads, Walthamstow Reservoirs and the non-SPA King George V Reservoir showed an increasing trend, while other notable sites, such as Amwell Quarry and Turnford &amp; Cheshunt Pits were stable or slightly declining.</p> <p>Availability of food is regarded as a key factor affecting distribution. For example, changes in the abundance of aquatic weed in one of the older gravel pits, (Holyfield Lake) has been attributed to the number of birds present (White &amp; Harris 2010). Regardless, the proportion of birds within the SPA sites has remained steady between 60% and 80% of the total Lee Valley population, with an average between 1999/00 – 2008/09 of 73%</p>	JNCC, 2000. WHITE & HARRIS, 2010.

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
<b>Supporting habitat (both within and outside the SPA): minimising disturbance</b>	<b>Minimising disturbance caused by human activity</b>	Restrict the frequency, duration and/or intensity of disturbance affecting roosting, foraging, feeding, or loafing birds so that the Gadwall feature is not significantly disturbed	<p>See notes for this attribute in table 1 above.</p> <p>Gadwalls habitually gather in numbers in the larger waterbodies in locations that are a reasonable distance from the bankside to feed on submerged aquatic weeds. The key concentrations within the SPA are within the Amwell Quarry and Rye Meads nature reserves and the gravel pits of Turnford &amp; Cheshunt Pits (part of the LVRPA River Lee Country Park). Whilst there are measures in place to manage and minimise recreational disturbance within these sites these should be subject to review in accordance with Management Plan processes.</p> <p>Additional supporting habitat may be provided by the SPA Walthamstow Reservoirs and functionally linked non-SPA sites within the Lee Valley Park, such as the gravel pits Netherhall, Holyfield, Stanstead Abbots and King George V reservoir. The banksides and waterbodies of most of these sites are subject to higher levels of recreational pressure which may impact on gadwall habitat and population without targeted management.</p>	<p>NATURAL ENGLAND 2015</p> <p>RSPB 2016</p> <p>HMWT 2014</p> <p>LEE VALLEY REGIONAL PARK AUTHORITY, 2000; 2016.(see <a href="#">Biodiversity Objectives</a>)</p>
<b>Supporting habitat (both within and outside the SPA): function/supporting process</b>	<b>Water depth</b>	Maintain the availability of standing water of optimal depth, typically <0.25 m deep, over at least 50% of the total standing water area.	Gadwall are known to require extensive areas of water in which to feed. Birds are visual predators, with some having the ability to dive or to feed from the surface. As they will rely on detecting their prey within the water to hunt, the depth of water at critical times of year may be paramount for successful feeding and therefore their fitness and survival.	<p>NATURAL ENGLAND 2015</p> <p>RSPB 2016</p> <p>HMWT 2014</p>
<b>Supporting habitat (both within and outside the SPA): function/supporting process</b>	<b>Food availability within supporting habitat</b>	Maintain a high cover/abundance of preferred food plants (e.g. sweet-grass <i>Glyceria fluitans</i> , creeping bent <i>Agrostis stolonifera</i> , stoneworts <i>Chara</i> , pondweeds <i>Potamogeton</i> , <i>Ceratophyllum</i> spp., <i>Ruppia</i> ).	<p>The availability of an abundant food supply is critically important for successful adult fitness and survival and the overall sustainability of the population. As a result, inappropriate management and direct or indirect impacts which may affect the distribution, abundance and availability of prey may adversely affect the population.</p> <p>Gadwalls gather in numbers where there is abundant food in the form of submerged aquatic weeds. In the Lee Valley, the extensive rafts of Nuttall's Pondweed <i>Elodea nuttallii</i> are a favoured food source. They tend to disperse from a site when the food resource is depleted, or may be forced out by hard weather.</p>	<p>NATURAL ENGLAND 2015</p> <p>RSPB 2016</p> <p>HMWT 2014</p> <p>LEE VALLEY REGIONAL PARK AUTHORITY, 2000; 2016.(see <a href="#">Biodiversity</a>)</p>

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			Availability of food is regarded as a key factor affecting distribution. For example, changes in the abundance of aquatic weed in Holyfield (one of the older Lee Valley gravel pits) has been linked to the number of birds present (White & Harris 2010).	<a href="#">Objectives</a> WHITE & HARRIS, 2010.
<b>Version Control</b>				
Advice last updated: n/a				
<b>Variations from national feature-framework of integrity-guidance:</b> none				

**Table 3: Supplementary Advice for Qualifying Features: A056. *Anas clypeata*; Northern shoveler (Non-breeding)**

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
<b>Supporting habitat (both within and outside the SPA): extent and distribution</b>	<b>Extent and distribution of supporting non-breeding habitat</b>	<p>Restore the extent and distribution of suitable habitat (either within or outside the site boundary) which supports Northern Shoveler for all necessary stages of the non-breeding/wintering period (moulting, roosting, loafing, feeding):</p> <p>Standing open water: 345 hectares</p>	<p>Conserving or restoring the extent of supporting habitats and their range will be key to maintaining the site's ability and capacity to support the SPA population. The information available on the extent and distribution of supporting habitat used by the feature may be approximate depending to the nature, age and accuracy of data collection. This target may apply to supporting habitat which also lies outside the site boundary.</p> <p>The key sites for Northern Shoveler in the Lee Valley SPA are the component SSSI's, namely: Walthamstow Reservoirs, Turnford &amp; Cheshunt Pits, Rye Meads and Amwell Quarry. Whilst the habitat target is SPA focused, it should be noted the population of overwintering Northern Shoveler may occasionally be reliant on supporting habitat which lies outside the SPA boundary but mostly within the Lee Valley Park boundary (eg King George V Reservoir, William Girling Reservoirs and Ponders End Lake).</p>	Estimated from aerial photographs and habitat mapping in 2006.
<b>Supporting habitat (both within and outside the SPA): function/ supporting process</b>	<b>Water quality/ quantity</b>	Where the supporting habitats of the SPA feature are dependent on surface water, ensure water quality and quantity is maintained to a standard which provides the necessary conditions to support Northern Shoveler	See notes for this attribute in table 1 above.	NATURAL ENGLAND 2015
<b>Supporting habitat (both within and outside the SPA): function/ supporting process</b>	<b>Conservation measures</b>	Maintain management or other measures (whether within and/or outside the site boundary as appropriate) necessary to maintain the structure, function and/or the supporting processes associated with Shoveler and its supporting habitats.	<p>See notes for this attribute in table 1 above.</p> <p>The Shoveler is a surface feeding duck, using its large spatulate bill to feed on zooplankton in the shallow margins of waterbodies. In the Lee Valley, this species may be highly mobile as food resources are depleted and will often utilise different roosting and feeding sites, accounting for levels of disturbance (White &amp; Harris 2010).</p> <p>With the cessation of gravel winning in the valley, there has been a loss of the associated early-successional habitats, notably the shallow deltas of silt and sands produced from the gravel washing process. However, the major habitat change has been the rapid and continuing growth of tree cover around the gravel pit lakes. Shoveler is a key species most likely to be</p>	<p>NATURAL ENGLAND 2015</p> <p>RSPB 2016</p> <p>HMWT 2014</p>

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			<p>affected by the loss of early successional habitats.</p> <p>Targeted rotational management including scrub / tree clearance and provision of shallow margins is necessary throughout the Valley to ensure adequate habitat is available. This should specifically include SPA sites, (notably Turnford &amp; Cheshunt Pits, Amwell Quarry) and functionally linked Lee Valley Park sites. Furthermore, this should be coupled with adequate measures to manage recreational activities on banksides and open water to ensure an adequate extent of suitable feeding and roosting areas.</p>	
<b>Supporting habitat (both within and outside the SPA): function/supporting process</b>	<b>Air quality</b>	Maintain concentrations and deposition of air pollutants at or below the site-relevant Critical Load or Level values given for this feature of the site on the Air Pollution Information System ( <a href="http://www.apis.ac.uk">www.apis.ac.uk</a> ).	See Air Quality attribute in Table 1	More information about site-relevant Critical Loads and Levels for this SPA is available by using the 'search by site' tool on the Air Pollution Information System ( <a href="http://www.apis.ac.uk">www.apis.ac.uk</a> ).
<b>Non-breeding population</b>	<b>Population abundance</b>	Restore the size of the non-breeding Shoveler population to a level which is above an average of 406 individuals (5 year peak mean), whilst avoiding deterioration from its current level as indicated by the latest mean peak count or equivalent.	<p>See notes for this attribute in table 1 above.</p> <p>The key sites in the Lee Valley are the component SSSIs, namely: Walthamstow Reservoirs, Turnford &amp; Cheshunt Pits, Rye Meads and Amwell Quarry.</p> <p>The population of Northern Shoveler within Lee Valley SPA has shown a slight decrease since Classification. The key SPA sites at Amwell and Turnford &amp; Cheshunt Pits experienced a population decline during the 1999/00 – 2008/09 period, along with the functionally linked non- SPA Holyfield gravel pits. The SPA Walthamstow reservoirs and non-SPA Chingford reservoirs show population trends that appear to be related to water levels and available food resource. For example, after draining at King George V (Chingford reservoirs) the low water levels may initially benefit Northern Shoveler by providing an abundant food resource until depleted. Once levels are raised the habitats will take time to replenish the available food (White &amp; Harris 2010).</p>	<p>JNCC, 2000</p> <p>WHITE &amp; HARRIS 2010</p>

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			<p>The reason for the decline within key SPA and functionally linked sites may involve the availability of suitable feeding areas, the loss of which may be the result, in part, of the maturing habitats in the Lee Valley. The increased population counts at Amwell Quarry since active management intervention after 2010 broadly support this theory.</p> <p>Overall, the proportion of Northern Shoveler within the SPA sites has remained steady between 70% and 90% of the total Valley population, with an average between 1999/2000 – 2008/09 of 83%.</p>	
<b>Supporting habitat (both within and outside the SPA): minimising disturbance</b>	<b>Minimising disturbance caused by human activity</b>	Restrict the frequency, duration and/or intensity of disturbance affecting roosting, foraging, feeding, or loafing birds so that the Shoveler feature is not significantly disturbed	<p>See notes for this attribute in table 1 above.</p> <p>Northern Shoveler frequently feed in shallower waters and muddy margins which may bring them into closer proximity to bankside activity. Evidence indicates that Northern Shoveler frequently have differing roosting and feeding sites in urban-fringe locations. Birds tending to move to feed in shallow productive wetlands at night or when undisturbed.</p> <p>Their preference for shallower waters, also means wintering Northern Shoveler are often forced to move on during freezing conditions in search of food. This suggests they are less able to tolerate severe weather and more vulnerable to disturbance by bankside and open water activities.</p> <p>The SPA sites Rye Meads and Amwell Quarry can provide refuge during periods of severe weather and/or high disturbance in the Valley. Other key SPA sites include Walthamstow Reservoirs and Turnford &amp; Cheshunt Pits (part of the LVRPA River Lee Country Park). Whilst measures are in place to manage and minimise recreational disturbance within these sites, the increased sensitivity of Shoveler to bankside activities requires measures to be implemented and regularly reviewed in accordance with Management Plan processes.</p> <p>Additional supporting habitat may be provided by the functionally linked non-SPA sites within the Lee Valley Park, such as Holyfield gravel pit and the King George V Reservoir. The banksides and open water of the latter may be subject to higher levels of recreational pressure which may impact on Shoveler habitat and population without targeted management.</p>	WHITE & HARRIS 2010 WHITE, 1993.

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
<b>Supporting habitat (both within and outside the SPA): function/supporting process</b>	<b>Water depth</b>	Maintain the availability of standing water at optimal depth, typically <0.3 m deep, over at least 50% of the total standing water area.	This feature is known to require extensive areas of water in which to feed. Birds are visual predators, with some having the ability to dive or to feed from the surface. As they will rely on detecting their prey within the water to hunt, the depth of water at critical times of year may be paramount for successful feeding and therefore their fitness and survival.	NATURAL ENGLAND 2015  RSPB 2016  HMWT 2014
<b>Supporting habitat (both within and outside the SPA): function/supporting process</b>	<b>Connectivity with supporting habitats</b>	Maintain the safe passage of Shoveler moving between roosting and feeding areas	The ability of Northern Shoveler to safely and successfully move to and from feeding and roosting areas is critical to their adult fitness and survival. This target will apply within the site boundary and where birds regularly move to and from off-site habitat where this is relevant.  Evidence indicates that Northern Shoveler may utilise several sites in order to meet all its requirements and may adapt to changing circumstances, notably disturbance, freezing conditions and low water levels.  Shoveler frequently have differing roosting and feeding sites In urban-fringe location, tending to move to feed in shallow productive wetlands at night or when undisturbed. Their preference for shallower waters, also means wintering Shoveler are often forced to move on during freezing conditions in search of food.	WHITE, 1993; WHITE & HARRIS, 2010.
<b>Supporting habitat (both within and outside the SPA): function/supporting process</b>	<b>Food availability within supporting habitat</b>	Restore high cover/abundance of preferred food plants (e.g. <i>Scirpus</i> , <i>Eleocharis</i> , <i>Carex</i> , <i>Potamogeton</i> , <i>Glyceria</i> , surface plankton).  Restore the distribution, abundance and availability of key prey items (e.g. <i>Hydrobia</i> , crustaceans, caddisflies, <i>Diptera</i> , beetles) at preferred prey sizes.	The availability of an abundant food supply is critically important for successful breeding, adult fitness and survival and the overall sustainability of the population. As a result, inappropriate management and direct or indirect impacts which may affect the distribution, abundance and availability of prey may adversely affect the population.  These food plants are linked with early successional stages of waterbodies. With reference to the notes in the Conservation Measures section above, it is recognised that targeted rotational management is necessary throughout the Lee Valley and specifically within the SPA sites, (notably Turnford & Cheshunt Pits, Amwell Quarry) and functionally linked Lee Valley Park sites.	NATURAL ENGLAND 2015 RSPB 2016 HMWT 2014 WHITE & HARRIS, 2010.

Attributes	Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
<b>Version Control</b> Advice last updated: N/A			
<b>Variations from national feature-framework of integrity-guidance:</b> None			

## References

NATURAL ENGLAND, 2015. Site Improvement Plan for Lee Valley SPA ([SIP118](#)).

RSPB, 2016. Rye Meads Management Plan 2016-2021.

HERTS AND MIDDLESEX WILDLIFE TRUST. 2014. Amwell Nature Reserve Management Plan 2014 – 2024.

WHITE, 1993. An assessment of the Wetland Resource of the Lee Valley Park with special reference to waterbirds (White 1993)

WHITE & HARRIS, 2010. The wetland resource of the Lee Valley: an assessment of its importance to nature conservation, with special reference to water birds.

LEE VALLEY REGIONAL PARK AUTHORITY, 2000. The Lee Valley Regional Park Plan. Available at <http://www.leevalleypark.org.uk/en/content/cms/corporate/enhancing-the-valley/park-plan/>

LEE VALLEY REGIONAL PARK AUTHORITY, 2016. The Lee Valley Regional Park Development Framework. Available at <http://www.leevalleypark.org.uk/en/content/cms/corporate/enhancing-the-valley/park-development-framework/>

ENGLISH NATURE, 2005. Views on the management of Amwell Quarry SSSI, Rye Meads SSSI, Turnford & Cheshunt Pits SSSI and Walthamstow Reservoirs SSSI. Available from [NE Designated Sites View](#).

JNCC, 2000. Lee Valley SPA citation.

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# Site Improvement Plan

## Lee Valley

Site Improvement Plans (SIPs) have been developed for each Natura 2000 site in England as part of the Improvement Programme for England's Natura 2000 sites (IPENS). Natura 2000 sites is the combined term for sites designated as Special Areas of Conservation (SAC) and Special Protected Areas (SPA). This work has been financially supported by LIFE, a financial instrument of the European Community.

The plan provides a high level overview of the issues (both current and predicted) affecting the condition of the Natura 2000 features on the site(s) and outlines the priority measures required to improve the condition of the features. It does not cover issues where remedial actions are already in place or ongoing management activities which are required for maintenance.

The SIP consists of three parts: a Summary table, which sets out the priority Issues and Measures; a detailed Actions table, which sets out who needs to do what, when and how much it is estimated to cost; and a set of tables containing contextual information and links.

Once this current programme ends, it is anticipated that Natural England and others, working with landowners and managers, will all play a role in delivering the priority measures to improve the condition of the features on these sites.

The SIPs are based on Natural England's current evidence and knowledge. The SIPs are not legal documents, they are live documents that will be updated to reflect changes in our evidence/knowledge and as actions get underway. The information in the SIPs will be used to update England's contribution to the UK's Prioritised Action Framework (PAF).

The SIPs are not formal consultation documents, but if you have any comments about the SIP or would like more information please email us at [IPENSLIFEProject@naturalengland.org.uk](mailto:IPENSLIFEProject@naturalengland.org.uk), or contact Natural England's Responsible Officer for the site via our enquiry service 0300 060 3900, or [enquiries@naturalengland.org.uk](mailto:enquiries@naturalengland.org.uk)

**This Site Improvement Plan covers the following Natura 2000 site(s)**

**UK9012111 Lee Valley SPA**

## Site description

The Lee Valley SPA comprises a series of embanked water supply reservoirs, sewage treatment lagoons and former gravel pits that display a range of man-made and semi-natural wetland and valley bottom habitats. The site is important for overwintering bittern as well as an internationally important population of two duck species.

## Plan Summary

*This table shows the prioritised issues for the site(s), the features they affect, the proposed measures to address the issues and the delivery bodies whose involvement is required to deliver the measures. The list of delivery bodies will include those who have agreed to the actions as well as those where discussions over their role in delivering the actions is on-going.*

Priority & Issue	Pressure or Threat	Feature(s) affected	Measure	Delivery Bodies
1 Water Pollution	Threat	A021(NB) Bittern, A051(NB) Gadwall, A056(NB) Shoveler	Investigate and agree appropriate water quality	Environment Agency, Natural England, Thames Water Utilities Ltd, Lee Valley Regional Park Authority (LVRPA)
2 Hydrological changes	Threat	A021(NB) Bittern, A051(NB) Gadwall, A056(NB) Shoveler	Investigate and agree appropriate water levels	Natural England, Thames Water Utilities Ltd, Lee Valley Regional Park Authority (LVRPA)
3 Public Access/Disturbance	Threat	A021(NB) Bittern, A051(NB) Gadwall, A056(NB) Shoveler	Investigate recreational pressure priority areas and agree management measures	Environment Agency, Hertfordshire and Middlesex Wildlife Trust, Natural England, RSPB, Thames Water Utilities Ltd, Lee Valley Regional Park Authority (LVRPA)
4 Inappropriate scrub control	Threat	A021(NB) Bittern, A051(NB) Gadwall, A056(NB) Shoveler	Manage scrub to required levels to maintain/restore habitat	Environment Agency, Hertfordshire and Middlesex Wildlife Trust, Natural England, RSPB, Thames Water Utilities Ltd, Lee Valley Regional Park Authority (LVRPA)

5 Fisheries: Fish stocking	Threat	A021(NB) Bittern, A051(NB) Gadwall, A056(NB) Shoveler	Investigate and agree appropriate fish stocking	Environment Agency, Natural England, RSPB, Thames Water Utilities Ltd, Lee Valley Regional Park Authority (LVRPA)
6 Invasive species	Threat	A021(NB) Bittern, A051(NB) Gadwall, A056(NB) Shoveler	Investigate and agree appropriate management response	Environment Agency, Hertfordshire and Middlesex Wildlife Trust, Natural England, RSPB, Thames Water Utilities Ltd, Lee Valley Regional Park Authority (LVRPA)
7 Inappropriate cutting/mowing	Threat	A021(NB) Bittern	Manage reed beds for bitterns	Environment Agency, Hertfordshire and Middlesex Wildlife Trust, Natural England, RSPB, Thames Water Utilities Ltd, Lee Valley Regional Park Authority (LVRPA)
8 Air Pollution: risk of atmospheric nitrogen deposition	Threat	A021(NB) Bittern	Investigate the potential impacts of air pollution	Natural England

## Issues and Actions

*This table outlines the prioritised issues that are currently impacting or threatening the condition of the features, and the outstanding actions required to address them. It also shows, where possible, the estimated cost of the action and the delivery bodies whose involvement will be required to implement the action. Lead delivery bodies will be responsible for coordinating the implementation of the action, but not necessarily funding it. Delivery partners will need to support the lead delivery body in implementing the action. In the process of developing the SIPs Natural England has approached the delivery bodies to seek agreement on the actions and their roles in delivering them, although in some cases these discussions have not yet been concluded. Other interested parties, including landowners and managers, will be involved as the detailed actions are agreed and delivered. Funding options are indicated as potential (but not necessarily agreed or secured) sources to fund the actions.*

### 1 Water Pollution

The vegetation and invertebrates provide food for the ducks, while fish provide food for the bitterns; and the habitat mosaic needs to vary from clear open water with abundant aquatic vegetation to moderately eutrophic conditions. Changes in water quality need to be managed to prevent loss of suitable habitat and food sources.

<i>Action</i>	<i>Action description</i>	<i>Cost estimate</i>	<i>Timescale</i>	<i>Mechanism</i>	<i>Funding option</i>	<i>Delivery lead body</i>	<i>Delivery partner(s)</i>
<b>1A</b>	Define the appropriate water quality standards for significant water bodies to inform management of changes in water quality.	Not yet determined	2015-17	Investigation / Research / Monitoring	Not yet determined	Environment Agency	Natural England, Thames Water Utilities Ltd, Lee Valley Regional Park Authority (LVRPA)
<i>Action</i>	<i>Action description</i>	<i>Cost estimate</i>	<i>Timescale</i>	<i>Mechanism</i>	<i>Funding option</i>	<i>Delivery lead body</i>	<i>Delivery partner(s)</i>
<b>1B</b>	Agree water quality management for significant water bodies with key stakeholders.	Not yet determined	2017-29	Partnership agreement	Heritage Lottery Fund (HLF)	Environment Agency	Natural England, Thames Water Utilities Ltd, Lee Valley Regional Park Authority (LVRPA)
<i>Action</i>	<i>Action description</i>	<i>Cost estimate</i>	<i>Timescale</i>	<i>Mechanism</i>	<i>Funding option</i>	<i>Delivery lead body</i>	<i>Delivery partner(s)</i>
<b>1C</b>	Develop and implement a Diffuse Water Pollution Plan	Not yet determined	2017-20	Diffuse Water Pollution Plan	Heritage Lottery Fund (HLF)	Environment Agency	Natural England, Thames Water Utilities Ltd, Lee Valley Regional Park Authority (LVRPA)

## 2 Hydrological changes

Reservoir levels linked to operational requirements and all water bodies subject to natural fluctuations accounting for abstraction and climatic change.

<i>Action</i>	<i>Action description</i>	<i>Cost estimate</i>	<i>Timescale</i>	<i>Mechanism</i>	<i>Funding option</i>	<i>Delivery lead body</i>	<i>Delivery partner(s)</i>
<b>2A</b>	Define more clearly the water level requirements for the habitats supporting the SPA bird features.	Not yet determined	2015-17	Investigation / Research / Monitoring	Not yet determined	Natural England	Thames Water Utilities Ltd, Lee Valley Regional Park Authority (LVRPA)
<b>2B</b>	As a follow up to action 2A, agree the necessary water level management with key stakeholders for significant water bodies.	Not yet determined	2017-20	Water Level Management Plan	Heritage Lottery Fund (HLF)	Natural England	Thames Water Utilities Ltd, Lee Valley Regional Park Authority (LVRPA)

## 3 Public Access/Disturbance

Areas of the SPA are subject to a range of recreational pressures including watersports, angling and dog walking. This has the potential to affect SPA populations directly or indirectly.

<i>Action</i>	<i>Action description</i>	<i>Cost estimate</i>	<i>Timescale</i>	<i>Mechanism</i>	<i>Funding option</i>	<i>Delivery lead body</i>	<i>Delivery partner(s)</i>
<b>3A</b>	Investigate whether there is a need for change to access management.	Not yet determined	2015-18	Investigation / Research / Monitoring	Not yet determined	Lee Valley Regional Park Authority (LVRPA)	Environment Agency, Hertfordshire and Middlesex Wildlife Trust, Natural England, RSPB, Thames Water Utilities Ltd

<i>Action</i>	<i>Action description</i>	<i>Cost estimate</i>	<i>Timescale</i>	<i>Mechanism</i>	<i>Funding option</i>	<i>Delivery lead body</i>	<i>Delivery partner(s)</i>
<b>3B</b>	Agree appropriate management measures with stakeholders to align with best practice.	Not yet determined	2018-20	Partnership agreement	Heritage Lottery Fund (HLF)	Lee Valley Regional Park Authority (LVRPA)	Environment Agency, Hertfordshire and Middlesex Wildlife Trust, Natural England, RSPB, Thames Water Utilities Ltd

#### 4 Inappropriate scrub control

The reedbed habitats, muddy fringes, and bankside all provide habitat as part of the mosaic for the SPA birds. Scrub control is necessary to ensure these habitats are maintained.

<i>Action</i>	<i>Action description</i>	<i>Cost estimate</i>	<i>Timescale</i>	<i>Mechanism</i>	<i>Funding option</i>	<i>Delivery lead body</i>	<i>Delivery partner(s)</i>
<b>4A</b>	Secure resources to target management delivery.	Not yet determined	2015-20	Habitat creation / restoration strategy: Habitat restoration	Heritage Lottery Fund (HLF)	Lee Valley Regional Park Authority (LVRPA)	Environment Agency, Hertfordshire and Middlesex Wildlife Trust, Natural England, RSPB, Thames Water Utilities Ltd

#### 5 Fisheries: Fish stocking

Fish population and species composition needs to be appropriate to ensure suitable habitats including food resource and water quality are maintained for SPA bird species.

<i>Action</i>	<i>Action description</i>	<i>Cost estimate</i>	<i>Timescale</i>	<i>Mechanism</i>	<i>Funding option</i>	<i>Delivery lead body</i>	<i>Delivery partner(s)</i>
<b>5A</b>	Define the appropriate fish community targets for significant water bodies.	Not yet determined	2015-18	Investigation / Research / Monitoring	Not yet determined	Environment Agency	Natural England, RSPB, Thames Water Utilities Ltd, Lee Valley Regional Park Authority (LVRPA)

<i>Action</i>	<i>Action description</i>	<i>Cost estimate</i>	<i>Timescale</i>	<i>Mechanism</i>	<i>Funding option</i>	<i>Delivery lead body</i>	<i>Delivery partner(s)</i>
<b>5B</b>	Action a plan to agree necessary fisheries management for significant water bodies.	Not yet determined	2018-20	Partnership agreement	Heritage Lottery Fund (HLF)	Environment Agency	Natural England, Thames Water Utilities Ltd

## 6 Invasive species

*Azolla* and/or invasive aquatic blanket weeds will adversely affect aquatic habitat (food sources).

<i>Action</i>	<i>Action description</i>	<i>Cost estimate</i>	<i>Timescale</i>	<i>Mechanism</i>	<i>Funding option</i>	<i>Delivery lead body</i>	<i>Delivery partner(s)</i>
<b>6A</b>	Review and update management control of invasive aquatic plant species, and agree regular review process. This needs a more strategic approach that is more planned and less reactive to outbreaks.	Not yet determined	2015-17	Investigation / Research / Monitoring	Not yet determined	Environment Agency	Hertfordshire and Middlesex Wildlife Trust, Natural England, RSPB, Thames Water Utilities Ltd, Lee Valley Regional Park Authority (LVRPA)

## 7 Inappropriate cutting/mowing

The reedbed requires rotational management for bittern. This is dependent upon funding availability.

<i>Action</i>	<i>Action description</i>	<i>Cost estimate</i>	<i>Timescale</i>	<i>Mechanism</i>	<i>Funding option</i>	<i>Delivery lead body</i>	<i>Delivery partner(s)</i>
<b>7A</b>	Secure resources to target management delivery.	Not yet determined	2015-20	Habitat creation / restoration strategy: Habitat restoration	Heritage Lottery Fund (HLF)	Lee Valley Regional Park Authority (LVRPA)	Environment Agency, Hertfordshire and Middlesex Wildlife Trust, Natural England, RSPB, Thames Water Utilities Ltd

## 8 Air Pollution: risk of atmospheric nitrogen deposition

Nitrogen deposition exceeds site relevant critical loads.

<i>Action</i>	<i>Action description</i>	<i>Cost estimate</i>	<i>Timescale</i>	<i>Mechanism</i>	<i>Funding option</i>	<i>Delivery lead body</i>	<i>Delivery partner(s)</i>
<b>8A</b>	Further investigate potential atmospheric nitrogen impacts on the site based on application of guidance from Chief Scientist Group Nitrogen Task and Finish Group.	Not yet determined	2017	Investigation / Research / Monitoring	Not yet determined	Natural England	n/a

## Site details

The tables in this section contain site-relevant contextual information and links

### Qualifying features

#UK Special responsibility

<b>Lee Valley SPA</b>	A021(NB) <i>Botaurus stellaris</i> : Great bittern
	A051(NB) <i>Anas strepera</i> : Gadwall
	A056(NB) <i>Anas clypeata</i> : Northern shoveler

### Site location and links

#### Lee Valley SPA

Area (ha) <b>447.87</b>	Grid reference <b>TQ351887</b>	<a href="#">Map link</a>
Local Authorities	Essex; Greater London; Hertfordshire	
Site Conservation Objectives	<a href="#">European Site Conservation Objectives for Lee Valley SPA</a>	
European Marine Site conservation advice	<a href="#">n/a</a>	
Regulation 33/35 Package	<a href="#">n/a</a>	
Marine Management Organisation site plan	<a href="#">n/a</a>	

## Water Framework Directive (WFD)

*The Water Framework Directive (WFD) provides the main framework for managing the water environment throughout Europe. Under the WFD a management plan must be developed for each river basin district. The River Basin Management Plans (RBMP) include a summary of the measures needed for water dependent Natura 2000 sites to meet their conservation objectives. For the second round of RBMPs, SIPs are being used to capture the priorities and new measures required for water dependent habitats on Natura 2000 sites. SIP actions for non-water dependent sites/habitats do not form part of the RBMPs and associated consultation.*

### Lee Valley SPA

River basin

[Thames RBMP](#)

WFD Management catchment

London

WFD Waterbody ID (Cycle 2 draft)

GB106038033200, GB30641193, GB30641198, GB30641274, GB30641313, GB30641865, GB30641884, GB30641900, GB30641922, GB30641924, GB30641939, GB30641956

## Overlapping or adjacent protected sites

Site(s) of Special Scientific Interest (SSSI)	
Lee Valley SPA	Amwell Quarry SSSI Turnford & Cheshunt Pits SSSI Rye Meads SSSI Walthamstow Reservoirs SSSI
National Nature Reserve (NNR)	
Lee Valley SPA	n/a
Ramsar	
Lee Valley SPA	Lee Valley
Special Areas of Conservation (SAC) and Special Protection Areas (SPA)	
Lee Valley SPA	n/a

<i>Version</i>	<i>Date</i>	<i>Comment</i>
1.0	18/12/2014	

[www.naturalengland.org.uk/ipens2000](http://www.naturalengland.org.uk/ipens2000)



## EC Directive 79/409 on the Conservation of Wild Birds: Special Protection Area (SPA)

**Name:** Lee Valley

**Unitary Authority/County:** Essex, Hertfordshire, London Borough of Haringey and London Borough of Waltham Forest.

**Consultation proposal:** Amwell Quarry Site of Special Scientific Interest (SSSI), Rye Meads SSSI, Turnford & Cheshunt Pits SSSI and Walthamstow Reservoirs SSSI have been recommended as a Special Protection Area because of the site's European ornithological interest.

The Lee Valley SPA comprises a series of embanked water supply reservoirs, sewage treatment lagoons and former gravel pits that display a range of man-made and semi-natural wetland and valley bottom habitats.

**Boundary of SPA:** The SPA boundary is coincident with the above SSSI boundaries. See SPA map for further detail.

**Size of SPA:** The SPA covers an area of 447.87 ha.

**European ornithological interest of SPA:** The SPA is of European importance because:

- a) the site qualifies under **article 4.1** of the Directive (79/409/EEC) as it is used regularly by 1% or more of the Great Britain population of a species listed on Annex I, in any season:

Annex I species	5 year peak mean 1992/93 - 1996/97	% GB population
Bittern <i>Botaurus stellaris</i>	6 individuals - wintering	6%

- b) the site qualifies under **article 4.2** of the Directive (79/409/EEC) as it is used regularly by 1% or more of the biogeographical populations of the following regularly occurring migratory species (other than those listed on Annex I), in any season:

Migratory species	5 year peak mean 1993/94 -1997/98	% of population
Shoveler <i>Anas clypeata</i>	406 individuals - wintering	1.0% NW/Central Europe
Gadwall <i>Anas strepera</i>	456 individuals - wintering	1.5% NW Europe

Bird figures from: Wetland Bird Survey (WeBS) database.

### Non-qualifying species of interest

In addition, the site supports nationally important numbers of Cormorant *Phalacrocorax carbo*, Great Crested Grebe *Podiceps cristatus*, Tufted Duck *Aythya fuligula*, Pochard *Aythya ferina* and Grey Heron *Ardea cinerea*.

### Status of SPA

Lee Valley was classified as a Special Protection Area on 22 September 2000.



## European Site Conservation Objectives for Lee Valley Special Protection Area Site Code: UK9012111

With regard to the SPA and the individual species and/or assemblage of species for which the site has been classified (the 'Qualifying Features' listed below), and subject to natural change;

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

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

This document should be read in conjunction with the accompanying *Supplementary Advice* document, which provides more detailed advice and information to enable the application and achievement of the Objectives set out above.

### **Qualifying Features:**

- A021 *Botaurus stellaris*; Great bittern (Non-breeding)
- A051 *Anas strepera*; Gadwall (Non-breeding)
- A056 *Anas clypeata*; Northern shoveler (Non-breeding)

## Explanatory Notes: European Site Conservation Objectives

These Conservation Objectives are those referred to in the Conservation of Habitats and Species Regulations 2010 (the “Habitats Regulations”) and Article 6(3) of the Habitats Directive. They must be considered when a competent authority is required to make a ‘Habitats Regulations Assessment’ including an Appropriate Assessment, under the relevant parts of this legislation.

These Conservation Objectives and the accompanying Supplementary Advice (where this is available) will also provide a framework to inform the management of the European Site under the provisions of Articles 4(1) and 4(2) of the Wild Birds Directive, and the prevention of deterioration of habitats and significant disturbance of its qualifying features required under Article 6(2) of the Habitats Directive.

These Conservation Objectives are set for each bird feature for a [Special Protection Area \(SPA\)](#). Where the objectives are met, the site will be considered to exhibit a high degree of integrity and to be contributing to achieving the aims of the Wild Birds Directive.

**Publication date:** 30 June 2014 (Version 2). This document updates and replaces an earlier version dated 29 May 2012 to reflect Natural England’s Strategic Standard on European Site Conservation Objectives 2014. Previous references to additional features identified in the 2001 UK SPA Review have also been removed.

# Information Sheet on Ramsar Wetlands (RIS)

*Categories approved by Recommendation 4.7 (1990), as amended by Resolution VIII.13 of the 8<sup>th</sup> Conference of the Contracting Parties (2002) and Resolutions IX.1 Annex B, IX.6, IX.21 and IX. 22 of the 9<sup>th</sup> Conference of the Contracting Parties (2005).*

## Notes for compilers:

1. The RIS should be completed in accordance with the attached *Explanatory Notes and Guidelines for completing the Information Sheet on Ramsar Wetlands*. Compilers are strongly advised to read this guidance before filling in the RIS.
2. Further information and guidance in support of Ramsar site designations are provided in the *Strategic Framework for the future development of the List of Wetlands of International Importance* (Ramsar Wise Use Handbook 7, 2nd edition, as amended by COP9 Resolution IX.1 Annex B). A 3rd edition of the Handbook, incorporating these amendments, is in preparation and will be available in 2006.
3. Once completed, the RIS (and accompanying map(s)) should be submitted to the Ramsar Secretariat. Compilers should provide an electronic (MS Word) copy of the RIS and, where possible, digital copies of all maps.

---

## 1. Name and address of the compiler of this form:

### Joint Nature Conservation Committee

Monkstone House

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Cambridgeshire PE1 1JY

UK

Telephone/Fax: +44 (0)1733 – 562 626 / +44 (0)1733 – 555 948

Email: [RIS@JNCC.gov.uk](mailto:RIS@JNCC.gov.uk)

FOR OFFICE USE ONLY.

DD MM YY

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Designation date

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Site Reference Number

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## 2. Date this sheet was completed/updated:

Designated: 22 September 2000

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## 3. Country:

UK (England)

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## 4. Name of the Ramsar site:

Lee Valley

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## 5. Designation of new Ramsar site or update of existing site:

**This RIS is for:** Updated information on an existing Ramsar site

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## 6. For RIS updates only, changes to the site since its designation or earlier update:

### a) Site boundary and area:

\*\* Important note: If the boundary and/or area of the designated site is being restricted/reduced, the Contracting Party should have followed the procedures established by the Conference of the Parties in the Annex to COP9 Resolution IX.6 and provided a report in line with paragraph 28 of that Annex, prior to the submission of an updated RIS.

### b) Describe briefly any major changes to the ecological character of the Ramsar site, including in the application of the Criteria, since the previous RIS for the site:

**7. Map of site included:**

Refer to Annex III of the *Explanatory Notes and Guidelines*, for detailed guidance on provision of suitable maps, including digital maps.

**a) A map of the site, with clearly delineated boundaries, is included as:**

- i) **hard copy** (required for inclusion of site in the Ramsar List): *yes* ✓ -or- *no* ☐;
- ii) **an electronic format** (e.g. a JPEG or ArcView image) *Yes*
- iii) **a GIS file providing geo-referenced site boundary vectors and attribute tables** *yes* ✓ -or- *no* ☐;

**b) Describe briefly the type of boundary delineation applied:**

e.g. the boundary is the same as an existing protected area (nature reserve, national park etc.), or follows a catchment boundary, or follows a geopolitical boundary such as a local government jurisdiction, follows physical boundaries such as roads, follows the shoreline of a waterbody, etc.

The site boundary is the same as, or falls within, an existing protected area.

For precise boundary details, please refer to paper map provided at designation

**8. Geographical coordinates (latitude/longitude):**

51 34 51 N                      00 02 58 W

**9. General location:**

Include in which part of the country and which large administrative region(s), and the location of the nearest large town.

The Lee Valley site comprises four SSSIs spaced along the valley from just downstream of Ware in Hertfordshire to Finsbury Park in London, a total distance of about 24 km. The whole site is contained within the Lee Valley Regional Park.

**Administrative region:** Essex; Greater London; Hertfordshire

**10. Elevation (average and/or max. & min.) (metres):** **11. Area (hectares):** 447.87

Min.	10
Max.	29
Mean	20

**12. General overview of the site:**

Provide a short paragraph giving a summary description of the principal ecological characteristics and importance of the wetland.

The Lee Valley comprises a series of embanked water supply reservoirs, sewage treatment lagoons and former gravel pits along approximately 24 km of the valley. These waterbodies support internationally important numbers of wintering gadwall and shoveler and nationally important numbers of several other bird species.

The site also contains a range of wetland and valley bottom habitats, both man-made and semi-natural, which support a diverse range of wetland fauna and flora.

**13. Ramsar Criteria:**

Circle or underline each Criterion applied to the designation of the Ramsar site. See Annex II of the *Explanatory Notes and Guidelines* for the Criteria and guidelines for their application (adopted by Resolution VII.11).

**2, 6**

**14. Justification for the application of each Criterion listed in 13 above:**

Provide justification for each Criterion in turn, clearly identifying to which Criterion the justification applies (see Annex II for guidance on acceptable forms of justification).

Ramsar Criterion 2

The site supports the nationally scarce plant species whorled water-milfoil *Myriophyllum verticillatum* and the rare or vulnerable invertebrate *Micronecta minutissima* (a water-boatman).

**Ramsar criterion 6 – species/populations occurring at levels of international importance.**

**Qualifying Species/populations (as identified at designation):**

**Species with peak counts in spring/autumn:**

Northern shoveler , *Anas clypeata*, NW & C Europe 287 individuals, representing an average of 1.9% of the GB population (5 year peak mean 1998/9-2002/3)

**Species with peak counts in winter:**

Gadwall , *Anas strepera strepera*, NW Europe 445 individuals, representing an average of 2.6% of the GB population (5 year peak mean 1998/9-2002/3)

Contemporary data and information on waterbird trends at this site and their regional (sub-national) and national contexts can be found in the Wetland Bird Survey report, which is updated annually. See [www.bto.org/survey/webs/webs-alerts-index.htm](http://www.bto.org/survey/webs/webs-alerts-index.htm).

**15. Biogeography** (required when Criteria 1 and/or 3 and /or certain applications of Criterion 2 are applied to the designation):

Name the relevant biogeographic region that includes the Ramsar site, and identify the biogeographic regionalisation system that has been applied.

**a) biogeographic region:**

Atlantic

**b) biogeographic regionalisation scheme** (include reference citation):

Council Directive 92/43/EEC

**16. Physical features of the site:**

Describe, as appropriate, the geology, geomorphology; origins - natural or artificial; hydrology; soil type; water quality; water depth, water permanence; fluctuations in water level; tidal variations; downstream area; general climate, etc.

Soil & geology	neutral, mud, clay, alluvium, nutrient-rich, gravel
Geomorphology and landscape	lowland, valley, floodplain
Nutrient status	highly eutrophic
pH	circumneutral
Salinity	fresh
Soil	no information
Water permanence	usually permanent
Summary of main climatic features	Annual averages (Greenwich, 1971–2000) ( <a href="http://www.metoffice.com/climate/uk/averages/19712000/sites/greenwich.html">www.metoffice.com/climate/uk/averages/19712000/sites/greenwich.html</a> ) Max. daily temperature: 14.8° C Min. daily temperature: 7.2° C Days of air frost: 29.1 Rainfall: 583.6 mm Hrs. of sunshine: 1461.0

**General description of the Physical Features:**

A series of wetlands and reservoirs occupy about 20 km of the Lee valley. The site comprises embanked water supply reservoirs, sewage treatment lagoons and former gravel pits that support a range of man-made, semi-natural and valley bottom habitats.

**17. Physical features of the catchment area:**

Describe the surface area, general geology and geomorphological features, general soil types, general land use, and climate (including climate type).

A series of wetlands and reservoirs occupy about 20 km of the Lee valley. The site comprises embanked water supply reservoirs, sewage treatment lagoons and former gravel pits that support a range of man-made, semi-natural and valley bottom habitats.

**18. Hydrological values:**

Describe the functions and values of the wetland in groundwater recharge, flood control, sediment trapping, shoreline stabilization, etc.

Other, Maintenance of water quality (removal of nutrients), Water supply

**19. Wetland types:**

Human-made wetland, Inland wetland

Code	Name	% Area
7	Gravel / brick / clay pits	30
6	Reservoirs / barrages / dams	30
Other	Other	29
8	Sewage farms	7
U	Peatlands (including peat bogs swamps, fens)	4

**20. General ecological features:**

Provide further description, as appropriate, of the main habitats, vegetation types, plant and animal communities present in the Ramsar site, and the ecosystem services of the site and the benefits derived from them.

Open water, plus associated wetland habitats including reedbeds, fen grassland and woodland supporting a number of wetland plant and animal species including internationally important numbers of wintering wildfowl.

Ecosystem services

**21. Noteworthy flora:**

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in 12. Justification for the application of the Criteria) indicating, e.g. which species/communities are unique, rare, endangered or biogeographically important, etc. *Do not include here taxonomic lists of species present – these may be supplied as supplementary information to the RIS.*

Nationally important species occurring on the site

Higher Plant

*Myriophyllum verticillatum* (nationally scarce)

Invasive non-natives:

*Impatiens glandulifera, Fallopia japonica*

**22. Noteworthy fauna:**

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in 12. Justification for the application of the Criteria) indicating, e.g. which species/communities are unique, rare, endangered or biogeographically important, etc., including count data. *Do not include here taxonomic lists of species present – these may be supplied as supplementary information to the RIS.*

**Birds****Species currently occurring at levels of national importance:****Species with peak counts in spring/autumn:**

Great cormorant , <i>Phalacrocorax carbo carbo</i> , NW Europe	419 individuals, representing an average of 1.8% of the GB population (5 year peak mean 1998/9- 2002/3 - spring peak)
Tufted duck , <i>Aythya fuligula</i> , NW Europe	2081 individuals, representing an average of 2.3% of the GB population (5 year peak mean 1998/9- 2002/3)
Common coot , <i>Fulica atra atra</i> , NW Europe	2032 individuals, representing an average of 1.1% of the GB population (5 year peak mean 1998/9- 2002/3)

**Species with peak counts in winter:**

Great bittern , <i>Botaurus stellaris stellaris</i> , W Europe, NW Africa	1 individuals, representing an average of 1% of the GB population (5 year peak mean 1998/9- 2002/3)
Smew , <i>Mergellus albellus</i> , NW & C Europe	14 individuals, representing an average of 3.7% of the GB population (5 year peak mean 1998/9- 2002/3)
Water rail , <i>Rallus aquaticus</i> , Europe	17 individuals, representing an average of 3.7% of the GB population (5 year peak mean 1998/9- 2002/3)

**Species Information**

Nationally important species occurring on the site

Invertebrate

*Micronecta minutissima* (RDB3)

Invasive non-native:

*Mustela vison*

**23. Social and cultural values:**

Describe if the site has any general social and/or cultural values e.g. fisheries production, forestry, religious importance, archaeological sites, social relations with the wetland, etc. Distinguish between historical/archaeological/religious significance and current socio-economic values.

Aesthetic

Environmental education/ interpretation

Non-consumptive recreation

Scientific research

Sport fishing

Tourism

**b)** Is the site considered of international importance for holding, in addition to relevant ecological values, examples of significant cultural values, whether material or non-material, linked to its origin, conservation and/or ecological functioning? No

If Yes, describe this importance under one or more of the following categories:

- i) sites which provide a model of wetland wise use, demonstrating the application of traditional knowledge and methods of management and use that maintain the ecological character of the wetland:
- ii) sites which have exceptional cultural traditions or records of former civilizations that have influenced the ecological character of the wetland:
- iii) sites where the ecological character of the wetland depends on the interaction with local communities or indigenous peoples:
- iv) sites where relevant non-material values such as sacred sites are present and their existence is strongly linked with the maintenance of the ecological character of the wetland:

**24. Land tenure/ownership:**

Ownership category	On-site	Off-site
Non-governmental organisation (NGO)	+	+
Local authority, municipality etc.	+	+
Private	+	+
Other	+	+

**25. Current land (including water) use:**

Activity	On-site	Off-site
Nature conservation	+	+
Tourism	+	+
Recreation	+	+
Current scientific research	+	+
Fishing: recreational/sport	+	+
Freshwater aquaculture		+
Grazing (unspecified)		+
Industry		+
Sewage treatment/disposal	+	+
Flood control		+
Mineral exploration (excl. hydrocarbons)		+
Transport route		+
Domestic water supply	+	+
Urban development		+
Non-urbanised settlements		+

**26. Factors (past, present or potential) adversely affecting the site’s ecological character, including changes in land (including water) use and development projects:**

Explanation of reporting category:

1. Those factors that are still operating, but it is unclear if they are under control, as there is a lag in showing the management or regulatory regime to be successful.
2. Those factors that are not currently being managed, or where the regulatory regime appears to have been ineffective so far.

NA = Not Applicable because no factors have been reported.

Adverse Factor Category	Reporting Category	Description of the problem (Newly reported Factors only)	On-Site	Off-Site	Major Impact?
No factors reported	NA				

For category 2 factors only.

What measures have been taken / are planned / regulatory processes invoked, to mitigate the effect of these factors?

Is the site subject to adverse ecological change? NO

**27. Conservation measures taken:**

List national category and legal status of protected areas, including boundary relationships with the Ramsar site; management practices; whether an officially approved management plan exists and whether it is being implemented.

Conservation measure	On-site	Off-site
Site/ Area of Special Scientific Interest (SSSI/ASSI)	+	+
Special Protection Area (SPA)	+	
Land owned by a non-governmental organisation for nature conservation	+	+
Site management statement/plan implemented	+	

**b)** Describe any other current management practices:

The management of Ramsar sites in the UK is determined by either a formal management plan or through other management planning processes, and is overseen by the relevant statutory conservation agency. Details of the precise management practises are given in these documents.

**28. Conservation measures proposed but not yet implemented:**

e.g. management plan in preparation; official proposal as a legally protected area, etc.

No information available

**29. Current scientific research and facilities:**

e.g. details of current research projects, including biodiversity monitoring; existence of a field research station, etc.

- Wetland Bird Survey counts
- Various University of Hertfordshire projects
- Ongoing SSSI unit monitoring

- Rye Meads used for experimental study of fish predation by cormorants
- Monitoring of recently created reedbed at Rye Meads

**30. Current communications, education and public awareness (CEPA) activities related to or benefiting the site:**

e.g. visitor centre, observation hides and nature trails, information booklets, facilities for school visits, etc.

Various activities organised by Lee Valley Regional Park Authority. Schools visits to Rye Meads RSPB reserve. Projects by University of Hertfordshire students. The Heritage Lottery Fund is considering a partnership bid for funds for a new visitor centre at Rye Meads.

**31. Current recreation and tourism:**

State if the wetland is used for recreation/tourism; indicate type(s) and their frequency/intensity.

The whole site is within the Lee Valley Regional Park, with a large area forming the River Lee Country Park. The whole site supports high levels of visitor pressure; principally for purposes of angling, walking, cycling and birdwatching; with boating on the adjacent canal. These activities are mostly well regulated and at current levels are not considered to threaten the interest (although they may reduce the potential for enhancing the interest).

**32. Jurisdiction:**

Include territorial, e.g. state/region, and functional/sectoral, e.g. Dept. of Agriculture/Dept. of Environment, etc.

Head, Natura 2000 and Ramsar Team, Department for Environment, Food and Rural Affairs, European Wildlife Division, Zone 1/07, Temple Quay House, 2 The Square, Temple Quay, Bristol, BS1 6EB

**33. Management authority:**

Provide the name and address of the local office(s) of the agency(ies) or organisation(s) directly responsible for managing the wetland. Wherever possible provide also the title and/or name of the person or persons in this office with responsibility for the wetland.

Site Designations Manager, English Nature, Sites and Surveillance Team, Northminster House, Northminster Road, Peterborough, PE1 1UA, UK

**34. Bibliographical references:**

Scientific/technical references only. If biogeographic regionalisation scheme applied (see 15 above), list full reference citation for the scheme.

**Site-relevant references**

- Batten, LA, Bibby, CJ, Clement, P, Elliot, GD & Porter, RF (1990) *Red Data Birds in Britain. Action for rare, threatened and important species*. Poyser, London, for Nature Conservancy Council and Royal Society for the Protection of Birds
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- Fox, AD (1988) Breeding status of the gadwall in Britain and Ireland. *British Birds*, **81**(1), 51-66
- Musgrove, AJ, Pollitt, MS, Hall, C, Hearn, RD, Holloway, SJ, Marshall, PE, Robinson, JA & Cranswick, PA (2001) *The Wetland Bird Survey 1999-2000: wildfowl and wader counts*. British Trust for Ornithology, Wildfowl and Wetlands Trust, Royal Society for the Protection of Birds & Joint Nature Conservation Committee, Slimbridge. [www.wwt.org.uk/publications/default.asp?PubID=14](http://www.wwt.org.uk/publications/default.asp?PubID=14)
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- Stroud, DA, Chambers, D, Cook, S, Buxton, N, Fraser, B, Clement, P, Lewis, P, McLean, I, Baker, H & Whitehead, S (eds.) (2001) *The UK SPA network: its scope and content*. Joint Nature Conservation Committee, Peterborough (3 vols.) [www.jncc.gov.uk/UKSPA/default.htm](http://www.jncc.gov.uk/UKSPA/default.htm)
- Stroud, DA, Mudge, GP & Pienkowski, MW (eds.) (1990) *Protecting internationally important bird sites: a review of the EEC Special Protection Area Network in Great Britain*. Nature Conservancy Council, Peterborough
- Tucker, GM & Heath, MF (1994) *Birds in Europe: their conservation status*. BirdLife International, Cambridge (BirdLife Conservation Series, No. 3)

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## European Site Conservation Objectives for Wormley Hoddesdonpark Woods Special Area of Conservation Site Code: UK0013696

With regard to the SAC and the natural habitats and/or species for which the site has been designated (the 'Qualifying Features' listed below), and subject to natural change;

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

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

This document should be read in conjunction with the accompanying *Supplementary Advice* document, which provides more detailed advice and information to enable the application and achievement of the Objectives set out above.

### **Qualifying Features:**

H9160. Sub-Atlantic and medio-European oak or oak-hornbeam forests of the *Carpinion betuli*

## Explanatory Notes: European Site Conservation Objectives

These Conservation Objectives are those referred to in the Conservation of Habitats and Species Regulations 2010 (the “Habitats Regulations”) and Article 6(3) of the Habitats Directive. They must be considered when a competent authority is required to make a ‘Habitats Regulations Assessment’, including an Appropriate Assessment, under the relevant parts of this legislation.

These Conservation Objectives and the accompanying Supplementary Advice (where available) will also provide a framework to inform the measures needed to conserve or restore the European Site and the prevention of deterioration or significant disturbance of its qualifying features as required by the provisions of Article 6(1) and 6(2) of the Directive.

These Conservation Objectives are set for each habitat or species of a [Special Area of Conservation \(SAC\)](#). Where the objectives are met, the site will be considered to exhibit a high degree of integrity and to be contributing to achieving Favourable Conservation Status for that species or habitat type at a UK level. The term ‘favourable conservation status’ is defined in Article 1 of the Habitats Directive.

**Publication date:** 30 June 2014 – version 2. This document updates and replaces an earlier version dated 29 May 2012 to reflect Natural England’s Strategic Standard on European Site Conservation Objectives 2014.

**EC Directive 92/43 on the Conservation of Natural Habitats and of Wild  
Fauna and Flora**

**Citation for Special Area of Conservation (SAC)**

**Name:** Wormley Hoddesdonpark Woods  
**Unitary Authority/County:** Hertfordshire  
**SAC status:** Designated on 1 April 2005  
**Grid reference:** TL320059  
**SAC EU code:** UK0013696  
**Area (ha):** 335.53  
**Component SSSI:** Wormley Hoddesdonpark Wood North SSSI, Wormley  
Hoddesdonpark Wood South SSSI

**Site description:**

Wormley Hoddesdonpark Woods has large stands of almost pure hornbeam *Carpinus betulus* (former coppice), with sessile oak *Quercus petraea* standards. Areas dominated by bluebell *Hyacinthoides non-scripta* do occur, but elsewhere there are stands of great wood-rush *Luzula sylvatica* with carpets of the mosses *Dicranum majus* and *Leucobryum glaucum*. Locally, a bryophyte community more typical of continental Europe occurs, including the mosses *Dicranum montanum*, *D. flagellare* and *D. tauricum*.

**Qualifying habitats:** The site is designated under **article 4(4)** of the Directive (92/43/EEC) as it hosts the following habitats listed in Annex I:

- Sub-Atlantic and medio-European oak or oak-hornbeam forests of the *Carpinion betuli*. (Oak-hornbeam forests)

This citation relates to a site entered in the Register of European Sites for Great Britain.

Register reference number: UK0013696

Date of registration: 14 June 2005

Signed: *Trevor Salmon*

On behalf of the Secretary of State for Environment,  
Food and Rural Affairs

## Site Improvement Plan

# Wormley-Hoddesdonpark Woods

Site Improvement Plans (SIPs) have been developed for each Natura 2000 site in England as part of the Improvement Programme for England's Natura 2000 sites (IPENS). Natura 2000 sites is the combined term for sites designated as Special Areas of Conservation (SAC) and Special Protected Areas (SPA). This work has been financially supported by LIFE, a financial instrument of the European Community.

The plan provides a high level overview of the issues (both current and predicted) affecting the condition of the Natura 2000 features on the site(s) and outlines the priority measures required to improve the condition of the features. It does not cover issues where remedial actions are already in place or ongoing management activities which are required for maintenance.

The SIP consists of three parts: a Summary table, which sets out the priority Issues and Measures; a detailed Actions table, which sets out who needs to do what, when and how much it is estimated to cost; and a set of tables containing contextual information and links.

Once this current programme ends, it is anticipated that Natural England and others, working with landowners and managers, will all play a role in delivering the priority measures to improve the condition of the features on these sites.

The SIPs are based on Natural England's current evidence and knowledge. The SIPs are not legal documents, they are live documents that will be updated to reflect changes in our evidence/knowledge and as actions get underway. The information in the SIPs will be used to update England's contribution to the UK's Prioritised Action Framework (PAF).

The SIPs are not formal consultation documents, but if you have any comments about the SIP or would like more information please email us at [IPENSLIFEProject@naturalengland.org.uk](mailto:IPENSLIFEProject@naturalengland.org.uk), or contact Natural England's Responsible Officer for the site via our enquiry service 0300 060 3900, or [enquiries@naturalengland.org.uk](mailto:enquiries@naturalengland.org.uk)

### **This Site Improvement Plan covers the following Natura 2000 site(s)**

**UK0013696    Wormley-Hoddesdonpark Woods SAC**

## Site description

Wormley-Hoddesdonpark Woods is one of two outstanding examples in England of a type of oak-hornbeam forest mainly found in central Europe. Sessile and pedunculate oaks are key components of the canopy. Hornbeam is mixed with oaks and other trees in areas of high forest and is also present as almost pure stands of stored coppice, some of which are being brought back into a coppice cycle. Over 95% of the site is ancient woodland. It includes areas of wood-pasture and many veteran pollards and coppice stools. Distinctive features of the ground flora include stands of great wood-rush and an unusual moss community more typical of continental Europe.

## Plan Summary

*This table shows the prioritised issues for the site(s), the features they affect, the proposed measures to address the issues and the delivery bodies whose involvement is required to deliver the measures. The list of delivery bodies will include those who have agreed to the actions as well as those where discussions over their role in delivering the actions is on-going.*

Priority & Issue	Pressure or Threat	Feature(s) affected	Measure	Delivery Bodies
1 Disease	Threat	H9160 Oak-hornbeam forests	Survey SAC and adjacent woodlands for disease, and advise owners	Forestry Commission, Hertfordshire and Middlesex Wildlife Trust, Hertfordshire County Council, Natural England, Woodland Trust
2 Invasive species	Threat	H9160 Oak-hornbeam forests	Survey SAC and adjacent woodlands for invasive species, advise owners	Forestry Commission, Hertfordshire and Middlesex Wildlife Trust, Hertfordshire County Council, Natural England, Woodland Trust, Hertfordshire Environmental Records Centre, Hertfordshire Natural History Society
3 Air Pollution: risk of atmospheric nitrogen deposition	Threat	H9160 Oak-hornbeam forests	Further investigate the impacts of atmospheric nitrogen deposition	Hertfordshire and Middlesex Wildlife Trust, Hertfordshire County Council, Natural England, Woodland Trust, Hertfordshire Natural History Society

4 Deer	Threat	H9160 Oak-hornbeam forests	Improve and extend monitoring of deer impacts, advise owners	Forestry Commission, Hertfordshire and Middlesex Wildlife Trust, Hertfordshire County Council, Natural England, Woodland Trust
5 Vehicles: illicit	Pressure	H9160 Oak-hornbeam forests	Identify areas still being damaged and take remedial action	Broxbourne Borough Council, East Hertfordshire District Council, Forestry Commission, Hertfordshire and Middlesex Wildlife Trust, Hertfordshire Constabulary, Hertfordshire County Council, Natural England, Woodland Trust
6 Forestry and woodland management	Threat	H9160 Oak-hornbeam forests	Promote Countryside Stewardship Scheme woodland management options for units requiring active management	Forestry Commission, Hertfordshire and Middlesex Wildlife Trust, Hertfordshire County Council, Natural England, Woodland Trust
7 Public Access/Disturbance	Threat	H9160 Oak-hornbeam forests	Monitor site features sensitive to disturbance and take remedial action	Forestry Commission, Hertfordshire and Middlesex Wildlife Trust, Hertfordshire County Council, Natural England, Woodland Trust

## Issues and Actions

*This table outlines the prioritised issues that are currently impacting or threatening the condition of the features, and the outstanding actions required to address them. It also shows, where possible, the estimated cost of the action and the delivery bodies whose involvement will be required to implement the action. Lead delivery bodies will be responsible for coordinating the implementation of the action, but not necessarily funding it. Delivery partners will need to support the lead delivery body in implementing the action. In the process of developing the SIPs Natural England has approached the delivery bodies to seek agreement on the actions and their roles in delivering them, although in some cases these discussions have not yet been concluded. Other interested parties, including landowners and managers, will be involved as the detailed actions are agreed and delivered. Funding options are indicated as potential (but not necessarily agreed or secured) sources to fund the actions.*

### 1 Disease

Acute Oak Decline (AOD) is present in at least two parts of the site and affects both native oak species, which are key components of this woodland type. Oaks can be killed by AOD within 5 years of symptoms appearing. Research is underway on the causal agents and spread of the disease. Based on current knowledge AOD has the potential in the long-term to cause high oak mortality right across the site.

Action	Action description	Cost estimate	Timescale	Mechanism	Funding option	Delivery lead body	Delivery partner(s)
1A	Carry out a comprehensive survey for Acute Oak Decline, including privately-owned land and woods outside but close to the SAC boundary.	£7,500	2015-17	Investigation / Research / Monitoring	Not yet determined	Forestry Commission	Hertfordshire and Middlesex Wildlife Trust, Hertfordshire County Council, Natural England, Woodland Trust
Action	Action description	Cost estimate	Timescale	Mechanism	Funding option	Delivery lead body	Delivery partner(s)
1B	Inform all owners/managers of the local distribution and symptoms of Acute Oak Decline and, where necessary, of control recommendations.	£1,000	2015-18	Advice: Education & awareness raising	Not yet determined	Forestry Commission	Hertfordshire and Middlesex Wildlife Trust, Hertfordshire County Council, Natural England, Woodland Trust

## 2 Invasive species

Several tree and shrub species not native to the site are present. Where they are not being actively controlled, they are gradually spreading. The more invasive of these include sycamore, turkey oak, rhododendron and snowberry.

<i>Action</i>	<i>Action description</i>	<i>Cost estimate</i>	<i>Timescale</i>	<i>Mechanism</i>	<i>Funding option</i>	<i>Delivery lead body</i>	<i>Delivery partner(s)</i>
<b>2A</b>	Carry out a comprehensive survey of non-native invasive plant species, including privately-owned land and woods outside but close to the SAC boundary.	£5,000	2015-17	Investigation / Research / Monitoring	Not yet determined	Natural England	Forestry Commission, Hertfordshire and Middlesex Wildlife Trust, Hertfordshire County Council, Woodland Trust, Hertfordshire Environmental Records Centre, Hertfordshire Natural History Society
<i>Action</i>	<i>Action description</i>	<i>Cost estimate</i>	<i>Timescale</i>	<i>Mechanism</i>	<i>Funding option</i>	<i>Delivery lead body</i>	<i>Delivery partner(s)</i>
<b>2B</b>	Inform all owners/managers of the local distribution and identification of the main invasive species and, where necessary, of control recommendations and funding options under Countryside Stewardship.	£1,000	2015-18	Advice: Education & awareness raising	Not yet determined	Natural England	Forestry Commission, Hertfordshire and Middlesex Wildlife Trust, Hertfordshire County Council, Woodland Trust

## 3 Air Pollution: risk of atmospheric nitrogen deposition

Nitrogen deposition exceeds the site-relevant critical load for ecosystem protection and hence there is a risk of harmful effects, but the sensitive features are currently considered to be in favourable condition on the site. This requires further investigation.

<i>Action</i>	<i>Action description</i>	<i>Cost estimate</i>	<i>Timescale</i>	<i>Mechanism</i>	<i>Funding option</i>	<i>Delivery lead body</i>	<i>Delivery partner(s)</i>
<b>3A</b>	Further investigate the impacts of atmospheric nitrogen deposition, based on the application of guidance from the Chief Scientist's Group Nitrogen Task and Finish Group.	Not yet determined	2015-17	Investigation / Research / Monitoring	Not yet determined	Natural England	n/a

<i>Action</i>	<i>Action description</i>	<i>Cost estimate</i>	<i>Timescale</i>	<i>Mechanism</i>	<i>Funding option</i>	<i>Delivery lead body</i>	<i>Delivery partner(s)</i>
<b>3B</b>	Establish a 'lightweight' monitoring system for species or other site features likely to be sensitive to N deposition (eg. N-sensitive bryophytes at selected locations).	£5,000	2015-18	Investigation / Research / Monitoring	Not yet determined	Natural England	Forestry Commission, Hertfordshire and Middlesex Wildlife Trust, Hertfordshire County Council, Woodland Trust, Hertfordshire Natural History Society

#### 4 Deer

Browsing and grazing by deer can reduce tree regeneration (from seedlings or coppice stools) and damage the woodland understorey and ground flora. At this site, deer damage levels are currently only moderate and do not appear to be affecting tree regeneration, habitat structure or species composition greatly. However, subtle damaging effects can be difficult to identify and monitor, and deer populations can increase rapidly.

<i>Action</i>	<i>Action description</i>	<i>Cost estimate</i>	<i>Timescale</i>	<i>Mechanism</i>	<i>Funding option</i>	<i>Delivery lead body</i>	<i>Delivery partner(s)</i>
<b>4A</b>	Establish more small (4m x 4m) deer exclosures to monitor effects of deer on ground flora and tree/shrub regeneration.	Not yet determined	2015-17	Investigation / Research / Monitoring	Rural Development Programme (RDPE)	Forestry Commission	Hertfordshire and Middlesex Wildlife Trust, Hertfordshire County Council, Natural England, Woodland Trust

<i>Action</i>	<i>Action description</i>	<i>Cost estimate</i>	<i>Timescale</i>	<i>Mechanism</i>	<i>Funding option</i>	<i>Delivery lead body</i>	<i>Delivery partner(s)</i>
<b>4B</b>	Improve monitoring of deer numbers and damage, extending it to include privately-owned land and woods outside but close to the SAC boundary. Identify and focus on locations, species and other site features likely to be particularly sensitive to deer damage (eg. recently coppiced areas or those with scarce, palatable ground flora species). Monitor impacts of other potentially damaging species such as squirrels, if initial findings suggest they may also be reducing natural regeneration significantly.	Not yet determined	2015-20	Investigation / Research / Monitoring	Not yet determined	Forestry Commission	Hertfordshire and Middlesex Wildlife Trust, Hertfordshire County Council, Natural England, Woodland Trust
<i>Action</i>	<i>Action description</i>	<i>Cost estimate</i>	<i>Timescale</i>	<i>Mechanism</i>	<i>Funding option</i>	<i>Delivery lead body</i>	<i>Delivery partner(s)</i>
<b>4C</b>	Use monitoring results to identify areas adversely affected by deer and advise owners/managers on deer management and funding opportunities under Countryside Stewardship.	£1,000	2015-20	Advice: Education & awareness raising	Not yet determined	Forestry Commission	Hertfordshire and Middlesex Wildlife Trust, Hertfordshire County Council, Natural England, Woodland Trust

## 5 Vehicles: illicit

Illegal use of restricted byways and bridleways by off-road vehicles causes localised but sometimes severe rutting and soil compaction, damaging the woodland ground flora, shrubs and trees. Fly-tipping damages the ground flora directly and can introduce toxins and alien species.

<i>Action</i>	<i>Action description</i>	<i>Cost estimate</i>	<i>Timescale</i>	<i>Mechanism</i>	<i>Funding option</i>	<i>Delivery lead body</i>	<i>Delivery partner(s)</i>
<b>5A</b>	Identify areas still being damaged and the access points/routes used.	No cost	2015-17	Investigation / Research / Monitoring	No net cost	Not yet determined	Forestry Commission, Hertfordshire and Middlesex Wildlife Trust, Hertfordshire Constabulary, Hertfordshire County Council, Natural England, Woodland Trust
<i>Action</i>	<i>Action description</i>	<i>Cost estimate</i>	<i>Timescale</i>	<i>Mechanism</i>	<i>Funding option</i>	<i>Delivery lead body</i>	<i>Delivery partner(s)</i>
<b>5B</b>	Where necessary, construct or repair barriers to prevent illicit access by vehicles, install more signage and CCTV cameras, and pursue prosecutions.	Not yet determined	2015-17	Enforcement: Other	Not yet determined	Not yet determined	Broxbourne Borough Council, East Hertfordshire District Council, Hertfordshire Constabulary, Hertfordshire County Council

## 6 Forestry and woodland management

The larger woodland units with public access are under appropriate management but some of the smaller, privately-owned units are not. Though it is quite acceptable for a significant proportion of the site to be left as 'minimum intervention' high forest, in some circumstances a lack of active management can lead to adverse effects. These include a reduction in structural and species diversity (particularly in previously coppiced areas), the loss of temporary and permanent open space, the over-shading and deterioration of veteran pollards, and the spread of invasive species.

<i>Action</i>	<i>Action description</i>	<i>Cost estimate</i>	<i>Timescale</i>	<i>Mechanism</i>	<i>Funding option</i>	<i>Delivery lead body</i>	<i>Delivery partner(s)</i>
<b>6A</b>	For units adversely affected by lack of recent management or inappropriate management, encourage production of Woodland Management Plans compatible with the SAC's conservation objectives and entry into new Countryside Stewardship Scheme agreements. Use results of surveys addressing other issues to refine priorities.	Not yet determined	2015-18	Rural Development Programme for England (RDPE): Common Agricultural Policy 2014-20 (New Environmental Land Management Scheme)	Rural Development Programme (RDPE)	Forestry Commission	Hertfordshire and Middlesex Wildlife Trust, Hertfordshire County Council, Natural England, Woodland Trust

## 7 Public Access/Disturbance

The site is a large, attractive area of ancient woodland with extensive public access and close to large urban centres, so it is heavily used by the public for recreational purposes. Sensitive management of access points and routes by the site's main owners has been largely successful in mitigating the potential adverse effects of this high level of use. However, visitor numbers continue to increase, the types of use can change unpredictably and less obvious adverse effects on important flora and fauna could be missed during routine, 'general purpose' monitoring.

<i>Action</i>	<i>Action description</i>	<i>Cost estimate</i>	<i>Timescale</i>	<i>Mechanism</i>	<i>Funding option</i>	<i>Delivery lead body</i>	<i>Delivery partner(s)</i>
<b>7A</b>	Establish a 'light-weight' monitoring system for species or other site features likely to be sensitive to effects of public access (eg. vulnerable ground flora or veteran pollards close to main access points/routes).	£3,000	2015-17	Investigation / Research / Monitoring	Not yet determined	Not yet determined	Forestry Commission, Hertfordshire and Middlesex Wildlife Trust, Hertfordshire County Council, Natural England, Woodland Trust

<i>Action</i>	<i>Action description</i>	<i>Cost estimate</i>	<i>Timescale</i>	<i>Mechanism</i>	<i>Funding option</i>	<i>Delivery lead body</i>	<i>Delivery partner(s)</i>
<b>7B</b>	Regularly review monitoring results and where feasible, modify access arrangements, signage etc to remedy adverse effects.	Not yet determined	2016-20	Advice: Access Strategy	Not yet determined	Not yet determined	Forestry Commission, Hertfordshire and Middlesex Wildlife Trust, Hertfordshire County Council, Natural England, Woodland Trust

## Site details

The tables in this section contain site-relevant contextual information and links

### Qualifying features

#UK Special responsibility

<b>Wormley-Hoddesdonpark Woods SAC</b>	H9160 Sub-Atlantic and medio-European oak or oak-hornbeam forests of the <i>Carpinion betuli</i>
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### Site location and links

#### Wormley-Hoddesdonpark Woods SAC

Area (ha)	<b>335.53</b>	Grid reference	<b>TL320059</b>	<a href="#">Map link</a>
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Local Authorities	Hertfordshire
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Site Conservation Objectives	<a href="#">European Site Conservation Objectives for Wormley-Hoddesdonpark Woods SAC</a>
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European Marine Site conservation advice	<a href="#">n/a</a>
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Regulation 33/35 Package	<a href="#">n/a</a>
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Marine Management Organisation site plan	<a href="#">n/a</a>
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## Water Framework Directive (WFD)

*The Water Framework Directive (WFD) provides the main framework for managing the water environment throughout Europe. Under the WFD a management plan must be developed for each river basin district. The River Basin Management Plans (RBMP) include a summary of the measures needed for water dependent Natura 2000 sites to meet their conservation objectives. For the second round of RBMPs, SIPs are being used to capture the priorities and new measures required for water dependent habitats on Natura 2000 sites. SIP actions for non-water dependent sites/habitats do not form part of the RBMPs and associated consultation.*

### **Wormley-Hoddesdonpark Woods SAC**

<i>River basin</i>	<a href="#">Thames RBMP</a>
<i>WFD Management catchment</i>	London
<i>WFD Waterbody ID (Cycle 2 draft)</i>	n/a

## Overlapping or adjacent protected sites

Site(s) of Special Scientific Interest (SSSI)	
Wormley-Hoddesdonpark Woods SAC	Wormley-Hoddesdonpark Wood North SSSI
	Wormley-Hoddesdonpark Wood South SSSI
National Nature Reserve (NNR)	
Wormley-Hoddesdonpark Woods SAC	Broxbourne Woods NNR
Ramsar	
Wormley-Hoddesdonpark Woods SAC	n/a
Special Areas of Conservation (SAC) and Special Protection Areas (SPA)	
Wormley-Hoddesdonpark Woods SAC	n/a

<i>Version</i>	<i>Date</i>	<i>Comment</i>
1.0	28/04/2015	

[www.naturalengland.org.uk/ipens2000](http://www.naturalengland.org.uk/ipens2000)

