

# Site Improvement Plan

## Thorne and Hatfield Moors

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)**

**UK0030166     Hatfield Moor SAC**

**UK9005171     Thorne & Hatfield Moors SPA**

**UK0012915     Thorne Moor SAC**

## Site description

Thorne and Hatfield Moors SPA and SAC consists of an extensive lowland raised mire system adjacent to the Humber estuary on the north-east coast of England and comprise the largest remaining lowland peatland in England. The diverse mosaic of habitats contributes greatly to the ornithological interest, which comprises breeding species, notably Nightjar.

## 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 Drainage	Pressure	H7120 Degraded raised bog	Restore hydrology	Black Drain IDB, Defra, Dempster IDB, Environment Agency, Humberhead Levels NIA, Lincolnshire Wildlife Trust, Lower Ouse IDB, Natural England, Reedness and Swinefleet IDB, Thorntree IDB, Doncaster East IDB, Carstairs Trust
2 Inappropriate scrub control	Pressure	H7120 Degraded raised bog	Remove and control excess tree and scrub cover	Natural England
3 Air Pollution: impact of atmospheric nitrogen deposition	Pressure/Threat	H7120 Degraded raised bog	Control and reduce impacts of atmospheric nitrogen deposition	Not yet determined
4 Public Access/Disturbance	Threat	A224(B) European nightjar	Minimise disturbance to breeding nightjar	Natural England
5 Planning Permission: general	Pressure	A224(B) European nightjar	Investigate cumulative impacts on nightjar	Developer, Doncaster Metropolitan Borough Council, Natural England

6	Peat extraction	Pressure	H7120 Degraded raised bog	Reduce impacts of peat extraction and drainage	Defra, Department for Communities and Local Government (DCLG), Doncaster Metropolitan Borough Council, East Riding of Yorkshire District Council, Natural England, North Lincolnshire District Council
7	Invasive species	Threat	H7120 Degraded raised bog	Monitor, and if appropriate, control the Crassula population	Black Drain IDB, Dempster IDB, Environment Agency, Lower Ouse IDB, Natural England, Doncaster East IDB

## 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 Drainage

Because of the highly modified and variable topography, the extensive artificial drainage system and the large extent, hydrological restoration requires considerable effort. To achieve stable water levels near to ground level and to prevent further decline of raised mire habitat it will be necessary to improve and reconfigure the drainage system on and around the site. To achieve this will be complex and require a significant investment of resources. The agreed Water Level Management Plan (WLMP) and the recent programme of implementation works mark an important step towards establishing a sustainable hydrological regime. However further steps will be needed and this will require further planning and negotiation involving landowners and watercourse managers as well as the funding to implement the necessary measures that are identified. Wherever possible in restoring wetland habitats regard should be given to the conservation of significant archaeological features.

Action	Action description	Cost estimate	Timescale	Mechanism	Funding option	Delivery lead body	Delivery partner(s)
<b>1A</b>	Implement the current Thorne Moors Water Level Management Plan (WLMP) measures, plus secure the continued investment of resources to support the next stage of implementation beyond the current round of activity. Review the requirement for a further WLMP for Hatfield Moor.	£2,000,000	2014-17	Water Level Management Plan	Environment Agency, Flood and Coastal Erosion Risk Management (FCERM) 2015-21	To be agreed	Black Drain IDB, Defra, Dempster IDB, Environment Agency, Lower Ouse IDB, Reedness and Swinefleet IDB, Thorntree IDB, Doncaster East IDB
Action	Action description	Cost estimate	Timescale	Mechanism	Funding option	Delivery lead body	Delivery partner(s)
<b>1B</b>	Review the requirement for a further WLMP for Hatfield Moor following the end of the EU Life Project funded improvements, and implement a follow-up phase of rewetting works as required.	£100,000	2018-23	National Nature Reserve (NNR) management plan	n/a	Natural England	Black Drain IDB, Defra, Dempster IDB, Environment Agency, Lower Ouse IDB, Reedness and Swinefleet IDB, Thorntree IDB, Doncaster East IDB

<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>	Establish hydrological protection zones in the buffer zone by securing land in long-term conservation management.	£400,000	2014-25	Mechanism not identified / develop mechanism	EU Life, Heritage Lottery Fund (HLF)	Natural England	Lincolnshire Wildlife Trust, Carstairs Trust
<b>1D</b>	Establish hydrological protection zones in the buffer zone	£250,000	2014-25	Existing Local Project	EU Life, External funding, Nature Improvement Area (NIA)	Natural England	Humberhead Levels NIA
<b>1E</b>	Establish hydrological protection zones in the buffer zone through the promotion of appropriate agri-environment schemes.	£300,000	2014-25	Rural Development Programme for England (RDPE): Common Agricultural Policy 2014-20 (New Environmental Land Management Scheme)	Rural Development Programme (RDPE)	Natural England	Environment Agency

<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>1F</b>	Investigate undertaking a review of the SSSI boundary as part of establishing effective hydrological protection zones in the buffer zone.	£50,000	2014-25	Designation strategy: Notification Amendment	Natural England	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>1G</b>	For each moor continue to develop an understanding of the hydrological requirements necessary to meet favourable condition, addressing uncertainties by appropriate monitoring and investigation, including a periodic review of the rate of re-colonisation by bog vegetation.	£100,000	2018	Investigation / Research / Monitoring	Natural England	Natural England	Environment Agency
<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>1H</b>	Prevent rewetting from having a negative effect on nightjar, through research.	£55,000	2014-20	Investigation / Research / Monitoring	Natural England	Natural England	n/a

## 2 Inappropriate scrub control

Where the peatland has experienced excessively dry conditions secondary scrub has developed and now covers large areas of both moors. As well as producing shade and leaf litter, water loss is higher under tree cover due to greater evapo-transpiration losses. Cover exceeding 10% is a negative factor in attempting to restore raised bog habitat. Large areas of scrub require control requiring large amounts of finance.

<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>	After the EU Life funded programme of large-scale scrub removal has finished in 2017, undertake follow-up scrub control management as required to maintain cleared areas in an open state. (Phase 1 to comprise 100ha @ £2000 per ha)	£200,000	2018-23	National Nature Reserve (NNR) management plan	Natural England, Heritage Lottery Fund (HLF)	Natural England	n/a

## 3 Air Pollution: impact of atmospheric nitrogen deposition

Air pollution impacts on vegetation diversity. As with most lowland raised bogs in England the aerial deposits of nitrogen exceed the threshold limits above which the quality and character of bog vegetation begins to be altered and adversely impacted.

<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>	Control, reduce and ameliorate atmospheric nitrogen impacts	Not yet determined	2014-20	Site Nitrogen Action Plan	Not yet determined	Not yet determined	Not yet determined

## 4 Public Access/Disturbance

Disturbance affecting nightjar breeding success - Access and disturbance reducing nightjar breeding success, for example, through increased predator pressure. The impact of predation by crows and foxes on the breeding success of the nightjar population is not fully understood.

<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>	Positive visitor management to manage access and disturbance to sensitive areas.	£100,000	2014-20	National Nature Reserve (NNR) management plan	Natural England	Natural England	n/a

## 5 Planning Permission: general

In the wider area surrounding the SPA particularly to the north and west, wind farms have been erected, or are being, planned. However the resident nightjar population's pattern of behaviour during nocturnal migration and dispersal from the two moors and their interactions with the environment in the surrounding countryside is poorly understood. Investigation is needed to better understand the cumulative impact of existing and planned wind farm and other local developments on the nightjar population

<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>	Ecological monitoring and investigation of the nightjar population and its local dispersal and migration	£50,000	2014-18	Partnership agreement	Developer, Local Authority, Natural England	Doncaster Metropolitan Borough Council	Developer, Natural England
<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>	Ecological monitoring and investigation of the nightjar population and its local dispersal and migration	£50,000	2018	Enforcement	Developer	Doncaster Metropolitan Borough Council	Developer, Natural England

## 6 Peat extraction

In a few locations extant planning permissions remain in place relating to peat extraction, drainage and service area use. Enforcement action by the local planning authority is underway and should lead to appropriate restoration in due course.

<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>	Curtailment of operations affecting the two sites permitted under extant planning permissions. Revoke planning permissions, or reach agreement to cease the exercise of adverse operations.	Not yet determined	2014-20	Enforcement: Planning Permission - Enforcement / Revocation	Defra, Dept. For Communities & Local Government (DCLG)	Doncaster Metropolitan Borough Council	Defra, Department for Communities and Local Government (DCLG), East Riding of Yorkshire District Council, Natural England, North Lincolnshire District Council



## 7 Invasive species

*Crassula helmsii*, Australian Stonecrop is a non-native invasive plant species and is present in the peripheral drain of the site. It has a tendency to spread quickly and may form dense mats particularly in the emergent edge of wetlands. It has potential to affect other plant species however anecdotal evidence suggests that it does not compete well where acidic sphagnum moss is abundant. Effective methods of elimination and control are currently absent.

Action	Action description	Cost estimate	Timescale	Mechanism	Funding option	Delivery lead body	Delivery partner(s)
7A	Monitor the effects and if appropriate control <i>Crassula</i> population. Appropriate control methods need to be identified at the national level and implemented via the NNR management plan or Internal Drainage Board/ Water Framework Directive related mechanisms.	£10,000	2014-20	Invasive Control Plan: Invasive Species Control Programme	Environment Agency, Natural England	Natural England	Black Drain IDB, Dempster IDB, Environment Agency, Lower Ouse IDB, Reedness and Swinefleet IDB, Thorntree IDB, Doncaster East IDB

## Site details

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

### Qualifying features

#UK Special responsibility

<b>Hatfield Moor SAC</b>	H7120 Degraded raised bogs still capable of natural regeneration
<b>Thorne &amp; Hatfield Moors SPA</b>	A224(B) <i>Caprimulgus europaeus</i> : European nightjar
<b>Thorne Moor SAC</b>	H7120 Degraded raised bogs still capable of natural regeneration

### Site location and links

#### Hatfield Moor SAC

Area (ha) **1363.55**      Grid reference **SE699057**      [Map link](#)

Local Authorities      Doncaster; North Lincolnshire

Site Conservation Objectives      [European Site Conservation Objectives for Hatfield Moor SAC](#)

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

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

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

#### Thorne & Hatfield Moors SPA

Area (ha) **2449.2**      Grid reference **SE728163**      [Map link](#)

Local Authorities      Doncaster; East Riding of Yorkshire; North Lincolnshire

Site Conservation Objectives      [European Site Conservation Objectives for Thorne & Hatfield Moors SPA](#)

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

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

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

## Thorne Moor SAC

Area (ha) **1909.38**      Grid reference **SE728163**

[Map link](#)

Local Authorities

Doncaster; East Riding of Yorkshire; North Lincolnshire

Site Conservation Objectives

[European Site Conservation Objectives for Thorne Moor 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 (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.

### **Hatfield Moor SAC**

<i>River basin</i>	<a href="#">Humber RBMP</a>
<i>WFD Management catchment</i>	Idle & Torne
<i>WFD Waterbody ID (Cycle 2 draft)</i>	GB104028064330

### **Thorne & Hatfield Moors SPA**

<i>River basin</i>	<a href="#">Humber RBMP</a>
<i>WFD Management catchment</i>	Idle & Torne
<i>WFD Waterbody ID (Cycle 2 draft)</i>	GB104028064330

### **Thorne Moor SAC**

<i>River basin</i>	<a href="#">Humber RBMP</a>
<i>WFD Management catchment</i>	Don and Rother, Idle & Torne
<i>WFD Waterbody ID (Cycle 2 draft)</i>	n/a

## Overlapping or adjacent protected sites

Site(s) of Special Scientific Interest (SSSI)	
Hatfield Moor SAC	Hatfield Moors SSSI
Thorne & Hatfield Moors SPA	Thorne, Crowle & Goole Moors SSSI Hatfield Moors SSSI
Thorne Moor SAC	Thorne, Crowle & Goole Moors SSSI
National Nature Reserve (NNR)	
Hatfield Moor SAC	Humberhead Peatlands NNR
Thorne & Hatfield Moors SPA	Humberhead Peatlands NNR
Thorne Moor SAC	Humberhead Peatlands NNR
Ramsar	
Hatfield Moor SAC	n/a
Thorne & Hatfield Moors SPA	n/a
Thorne Moor SAC	n/a
Special Areas of Conservation (SAC) and Special Protection Areas (SPA)	
Hatfield Moor SAC	Thorne & Hatfield Moors SPA
Thorne & Hatfield Moors SPA	Thorne Moor SAC Hatfield Moor SAC
Thorne Moor SAC	Thorne & Hatfield Moors SPA

<i>Version</i>	<i>Date</i>	<i>Comment</i>
1.0	09/12/2014	

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

