

# Site Improvement Plan

## Birklands & Bilhaugh

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)**

**UK0012740    Birklands & Bilhaugh SAC**

## Site description

Birklands & Bilhaugh SAC supports extensive areas of the old acidophilous oak woodland SAC feature which was managed for hundreds of years as an extensively grazed wood pasture. However, this habitat is slowly reverting to high forest woodland and heath following the cessation of traditional livestock grazing. This woodland is particularly notable for its remnant ancient and decaying oak trees which support rich assemblages of invertebrates and fungi.

Parts of the woodland are now being restored to wood pasture to sustain the invertebrate and fungi assemblages, and the exceptional population of ancient standing oaks which are dotted throughout the SAC. However, much of the site supports much younger stands of mature and immature oak trees consisting of both *Quercus robur* and *Q. petraea*, with birch *Betula pendula* also scattered throughout the stands. The field layer consists mainly of bramble and bracken but where the canopy is more open swards of acid grassland and ericaceous heath can be found.

## 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 Public Access/Disturbance	Pressure	H9190 Dry oak-dominated woodland	Demolition of Visitor Centre complex and restoration of the site, and investigation of impacts of increased use as a public park	Forest Enterprise, Natural England, Nottinghamshire County Council
2 Planning Permission: general	Threat	H9190 Dry oak-dominated woodland	Local Authority to commit funding and maintain political pressure to ensure demolition	Nottinghamshire County Council
3 Change in land management	Pressure/Threat	H9190 Dry oak-dominated woodland	Investigation and practical on-site works using a range of funding options to ensure habitat continuity	Forest Enterprise, Natural England, Nottinghamshire County Council, Thoresby Estate, Sherwood Forest Trust
4 Physical modification	Threat	H9190 Dry oak-dominated woodland	Investigation and remediation of possible impacts of coal mining on the vegetation	Natural England, Thoresby Estate, UK Coal
5 Air Pollution: impact of atmospheric nitrogen deposition	Pressure	H9190 Dry oak-dominated woodland	Develop and implement a Site Nitrogen Action Plan	Not yet determined

6	Disease	Threat	H9190 Dry oak-dominated woodland	Prevent spread of disease by co-ordinated biosecurity, and by the establishment of measures to increase robustness through genetic investigation of local resilience	Natural England, Nottinghamshire County Council, University of Nottingham
7	Invasive species	Pressure/ Threat	H9190 Dry oak-dominated woodland	Monitor and control invasive species through a coordinated approach	Natural England, Nottinghamshire County Council

## 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 Public Access/Disturbance

The current visitor's centre complex (restaurant, office, shops, associated infrastructure and car parks) are located within the SAC and its presence is preventing the necessary restoration of the full extent of the oak woodland. This needs to be physically removed and the area restored. The centre managers are the County Council who face uncertainty over political support, funding and securing planning permission to enable this by 2015/16. In addition, a new visitor attraction could result in far greater numbers of visitors to the site and impacts such as compaction around trees (within root zones) and impacts on field layer.

The use of the SAC as a public park is also relatively recent and, in common with other wood pasture sites like Burnham Beeches and Epping Forest, this management regime can cause localised soil compaction, nutrient enrichment, direct loss of trees (vandalism, health and safety), introduction of non-native species (including new diseases) as well as an altered ecological succession. Such impacts can affect the health of soils, tree roots and the associations with mycorrhizal fungi which in turn can have impacts on the health of the veteran and ancient trees as well as emerging cohorts.

<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>	Achieve demolition of the current visitor centre and restoration of this site to wood pasture.	£1,301,500	2015-21	Habitat creation / restoration strategy: Habitat restoration	Local Authority	Nottinghamshire County Council	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>1B</b>	Develop a coordinated approach to delivering holistic management of habitats and visitors across the whole SAC area by wardening.	£300,000	2015-25	Advice: Wardening	Not yet determined	Natural England	Forest Enterprise, Nottinghamshire County Council

<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>	Investigate the long term impacts of public use, to inform future management.	£20,000	2016 onwards	Investigation / Research / Monitoring	Grant in aid	Natural England	Nottinghamshire County Council

## 2 Planning Permission: general

Without a new financed visitor centre, the demolition and restoration of the current visitor centre site is likely to be further delayed.

<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>	Secure planning permission for a new Visitor Centre.	£400,000	2015	Regulation: Grant Appropriate Planning Permission	Local Authority	Nottinghamshire County Council	n/a

## 3 Change in land management

Due to a previous lack of management, the site has a very large age gap between the ancient trees and the next generation cohort. This will result in localised extinction of invertebrate species and an alteration to vegetation structure without intervention. In addition to this, part of the SAC is part of the Public Forest Estate managed by the Forestry Commission, who are ineligible for environmental stewardship. Much of the conservation work now required is not economically viable on its own. Additional funding for conservation management is therefore critical to restore the site to wood pasture.

<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>	Identify, analyse and map all existing cohorts of native oak trees across the SAC.	£400,000	2015-25	Habitat creation / restoration strategy: Habitat restoration	Grant in aid	Natural England	Forest Enterprise, Nottinghamshire County Council, Sherwood Forest 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>3B</b>	Identify next generation trees, including mapping, veteranisation and setting halos around them at an early stage to create correct conditions for open grown future trees.	£15,000	2015 onwards	Habitat creation / restoration strategy: Habitat restoration	Grant in aid	Forest Enterprise	Nottinghamshire County Council, Thoresby Estate
<b>3C</b>	Identify, manage and protect natural regeneration of native oaks for the current 0 to 50-year cohort. This could include transplanting from shaded areas, individual protection and maintenance, as well as GPS tagging.	£6,000	2018 onwards	Habitat creation / restoration strategy: Habitat restoration	Rural Development Programme (RDPE), Landfill tax (SITA/ Biffa)	Natural England	Forest Enterprise, Nottinghamshire County Council, Thoresby Estate
<b>3D</b>	Secure and ring-fence resources to ensure management is undertaken to restore and maintain the SAC feature in favourable condition. Veteranisation of, and halo-thinning around, existing native oaks as well as the use of a range of other species will be required to bridge any identified age gaps.	£80,000 - £1,400,000	2015 onwards	Major Landowner Group land ownership activities : Undertake Specific Management Works	Core funds	Forest Enterprise	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>3E</b>	Assess the effectiveness of the HLS management when the current schemes expire, by comparing grazed and ungrazed wood pasture compartments to determine whether habitat quality and suitability has been improved and if further refinements to the wood pasture management are required.	£50,000	2018	Investigation / Research / Monitoring	Not yet determined	Natural England	Forest Enterprise, Nottinghamshire County Council, Thoresby Estate
<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>3F</b>	Assess current management regimes to ensure the wood pasture habitats are largely sustained in favourable condition by grazing with appropriate vertebrate herbivores. Where this is not possible it will be necessary to implement alternative management capable of sustaining wood pasture habitats to achieve and sustain favourable condition.	£5,000	2015 onwards	Investigation / Research / Monitoring	Not yet determined	Natural England	Forest Enterprise, Nottinghamshire County Council, Thoresby Estate
<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>3G</b>	Evaluate opportunities and mechanisms to secure and generate revenues from site based activities within the SAC. This should not be limited to existing economic resources like timber but should include new and innovative ways to generate income.	No cost	2015 onwards	Major Landowner Group land ownership activities : Undertake Specific Management Works	Timber income	Forest Enterprise	Nottinghamshire County Council, Thoresby Estate

<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>3H</b>	Identify other funding options for ongoing habitat management to address any remaining funding shortfall.	Not yet determined	2015	Mechanism not identified / develop mechanism	Not yet determined	Natural England	Forest Enterprise

#### 4 Physical modification

Deep seam coal extraction has recently taken place immediately beneath the SAC. Surface fissuring has since occurred within this unit although the full extent of the impacts have yet to materialise. Thorough investigation and mapping of fissures throughout the area is required, as well as an assessment of impact on ancient trees (aerial/infra red imaging) and long term monitoring for evidence of decline of site condition along fissure lines.

<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>	Investigate and assess surface impacts of coal mining under the SAC.	£3,750	2015	Investigation / Research / Monitoring	Natural England	Natural England	Thoresby Estate

<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>	Investigate and remediate the possible effects of coal mining.	£100,000	2016 onwards	Habitat creation / restoration strategy: Habitat restoration	UK Coal	UK Coal	Natural England

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

Nitrogen deposition exceeds site relevant critical loads. Locally observed effects include increase in bracken cover and vigorous grasses at expense of slower growing species of impoverished soils (although it is not possible to attribute this solely to nitrogen deposition).

<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>	Control, reduce and ameliorate atmospheric nitrogen impacts.	Not yet determined	2015-20	Site Nitrogen Action Plan	Not yet determined	Not yet determined	Not yet determined



## 6 Disease

Pathogens are being spread across the country, often by movement of timber and there is a high risk of spread to the woodland on this site. More stringent biosecurity controls are required of contractors working on the site, to ensure disease is not brought to site which could kill the dominant species (oak) resulting in devastation of the SAC feature. There is also a risk of visitors spreading disease.

Action	Action description	Cost estimate	Timescale	Mechanism	Funding option	Delivery lead body	Delivery partner(s)
6A	Identify and select indigenous genotypes of site-native trees, informed by genetic testing of oak trees across the whole SAC, to increase the long-term resilience of the habitat feature. Compliment with sympathetic site management to ensure individual trees are not subjected to excessive environment stress as this can increase their susceptibility to disease.	£150,000	2015-16	Investigation / Research / Monitoring	Grant in aid	Nottinghamshire County Council	Forest Enterprise, Natural England, Thoresby Estate, University of Nottingham

## 7 Invasive species

Japanese knotweed has been treated and appears to now be under control, however himalayan balsam is spreading rapidly across the site despite intervention. Rhododendron management is also required, as it is the sporulating host for *Phytophthora* species which threaten the woodland.

Action	Action description	Cost estimate	Timescale	Mechanism	Funding option	Delivery lead body	Delivery partner(s)
7A	Targeted removal of Himalayan balsam within the disused tip (within Robert's Plantation to the north of the visitors centre) and the sycamore plantation (between the visitors centre and the cricket pitch). Control rhododendron in the Forestry Commission area as well as bracken and bramble across the area.	£60,000	2015-20	Invasive Control Plan: Invasive Species Control Programme	Not yet determined	Nottinghamshire County Council	Forest Enterprise, Natural England, Thoresby Estate

## Site details

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

### Qualifying features

#UK Special responsibility

**Birklands & Bilhaugh SAC** H9190 Old acidophilous oak woods with *Quercus robur* on sandy plains

### Site location and links

#### **Birklands & Bilhaugh SAC**

Area (ha) **271.84**      Grid reference **SK618679**      [Map link](#)

Local Authorities      Nottinghamshire

Site Conservation Objectives      [European Site Conservation Objectives for Birklands and Bilhaugh 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.*

### **Birklands & Bilhaugh 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>	n/a

## Overlapping or adjacent protected sites

Site(s) of Special Scientific Interest (SSSI)	
Birklands & Bilhaugh SAC	Birklands & Bilhaugh SSSI

  

National Nature Reserve (NNR)	
Birklands & Bilhaugh SAC	Sherwood Forest NNR

  

Ramsar	
Birklands & Bilhaugh SAC	n/a

  

Special Areas of Conservation (SAC) and Special Protection Areas (SPA)	
Birklands & Bilhaugh SAC	n/a

<i>Version</i>	<i>Date</i>	<i>Comment</i>
1.0	06/01/2015	

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

