Improvement Programme for England's Natura 2000 Sites (IPENS)

Planning for the Future

Site Improvement Plan

Brown Moss

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, or contact Natural England's Responsible Officer for the site via our enquiry service 0300 060 3900, or enquiries@naturalengland.org.uk

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

UK0030100 Brown Moss SAC

Site description

Brown Moss forms part of the series of meres and mosses in the Midlands. The site consists of a series of pools in a setting of heathland and woodland. The pools support Floating water plantain *Luronium natans* for which the SAC is designated, and vary considerably in their water chemistry and also in their water levels which fluctuate considerably and apparently independently. Floating water plantain appears to behave as a metapopulation on this site, colonising the various pools according to their suitability.

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 Hydrological changes	Threat	S1831 Floating water-plantain	Investigate movement of water in the catchment	Environment Agency, Natural England, Shropshire Council
2 Water Pollution	Threat	S1831 Floating water-plantain	Monitor water quality coming onto the site	Environment Agency, Natural England, Shropshire Council
3 Invasive species	Pressure/ Threat	S1831 Floating water-plantain	Monitor and control Crassula helmsii	Environment Agency, Natural England, Shropshire Council
4 Water Pollution	Pressure/ Threat	S1831 Floating water-plantain	Reduce nitrogen and phosphorus from surrounding farmland onto the site	Environment Agency, Natural England
5 Siltation	Pressure/ Threat	S1831 Floating water-plantain	Reduce the amount of silt in pools	Environment Agency, Natural England, Shropshire Council
6 Air Pollution: impact of atmospheric nitrogen deposition	Pressure	S1831 Floating water-plantain	Develop and implement a Site Nitrogen Action Plan	Not yet determined

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 Hydrological changes

The site dried out almost completely in summer 2013. The influence of groundwater and direction of flow is thought to be key to the management of the notified feature. Surface drains and ditches also exist, some draining surrounding farmland, others linking the pools. Some of these have become silted up or diverted and need further investigation to determine the quantity and quality of water coming into the site.

Action	*Action description*	*Cost estimate*	*Timescale*	*Mechanism*	*Funding option*	*Delivery lead body*	*Delivery partner(s)*
1A	Investigate the movement of water within the designated site and the wider catchment by monitoring flows and reviewing exisiting hydrology data to determine the role of surface water in achieving favourable condition status.	£10,000	2015 onwards	Investigation / Research / Monitoring	Not yet determined	Natural England	Environment Agency, Shropshire Council

2 Water Pollution

High phosphorus and nitrogen concentrations in groundwater and surface water feeding the pools is being caused by agricultural run-off, gathering geese, septic tanks and release from sediment. The eutrophication this causes impacts on the suitability of the pools for Floating water plantain.

Action	*Action description*	*Cost estimate*	*Timescale*	*Mechanism*	*Funding option*	*Delivery lead body*	*Delivery partner(s)*
2A	Engage farmers in Catchment Sensitive Farming activity in the catchment to disseminate good practice in the use of fertiliser and manure.	No additional cost	2014 onwards	England Catchment Sensitive Farming (CSF)	No additional cost	Natural England	Environment Agency, Shropshire Council

Action	*Action description*	*Cost estimate*	*Timescale*	*Mechanism*	*Funding option*	*Delivery lead body*	*Delivery partner(s)*
2B	Monitor Canada geese numbers to assess their contribution to phosphorus input as a cause of eutrophication.	No additional cost	2015 onwards	Diffuse Water Pollution Plan	No additional cost	Natural England	Shropshire Council

3 Invasive species

Non native *Azolla sp,* and especially *Crassula helmsii* are recurring problems despite a level of control in the past. Their rapid expansion can alter the vegetation dynamic around pool margins; and its persistence can lead to an increase in the proportion of emergent or marginal species and a reduction in aquatic species typical of open water, including Floating water plantain. A programme of physical or chemical control may therefore be required.

Action	*Action description*	*Cost estimate*	*Timescale*	*Mechanism*	*Funding option*	*Delivery lead body*	*Delivery partner(s)*
3A	Monitor the occurrence and effects of *Crassula helmsii* and if necessary instigate appropriate control measures.	Not yet determined	2014 onwards	Invasive Control Plan: Invasive Species Control Programme	Not yet determined	Natural England	Environment Agency, Shropshire Council

4 Water Pollution

The area is a mainly dairy farming, high input system potentially contributing to nitrogen and phosphorus levels in pools, through run-off into ditches feeding into the site. The eutrophication this causes, impacts on the suitability of the pools for Floating water plantain. Catchment Sensitive Farming may be a more effective tool than stewardship in moderating fertiliser & slurry usage in the catchment.

Action	*Action description*	*Cost estimate*	*Timescale*	*Mechanism*	*Funding option*	*Delivery lead body*	*Delivery partner(s)*
4A	Target future environmental stewardship (NELMS) in the catchment to change the influence from arable farming to extensive grassland.	Staff time	2015 onwards	Rural Development Programme for England (RDPE): Common Agricultural Policy 2014-20 (New Environmental Land Management Scheme)	New Environmental Land Management Scheme (NELMS)	Natural England	Environment Agency

5 Siltation

Of the total external and internal sources of phosphorus, sediment was the major contributor. Phosphorus release from sediment contributed up to 84% of the total supply. Birds are a major contributor leading to high phosphorus levels in pools, thereby affecting macrophyte communities. Control of geese has been mooted but the area is open access land and is well used by the local public.

Action	*Action description*	*Cost estimate*	*Timescale*	*Mechanism*	*Funding option*	*Delivery lead body*	*Delivery partner(s)*
5A	Investigate the possibility of desilting Pool 6 as a means of restoring the open water habitat and reducing the nutrient loading and release into the water in summer.	£300,000	2015 onwards	Lake Restoration Project	Not yet determined	Natural England	Environment Agency, Shropshire Council

6 Air Pollution: impact of atmospheric nitrogen deposition

Nitrogen deposition exceeds site relevant critical loads.

Action	*Action description*	*Cost estimate*	*Timescale*	*Mechanism*	*Funding option*	*Delivery lead body*	*Delivery partner(s)*
6A	Control, reduce and ameliorate atmospheric nitrogen impacts.	Not yet determined	2014-2020	Site Nitrogen Action Plan	Not yet determined	Not yet determined	Not yet determined

Site details

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

Qualifying features

#UK Special responsibility

Brown Moss SAC	S1831 *Luronium natans*: Floating water-plantain

Site location and links

Brown Moss SAC

Area (ha) **32.03** *Grid reference* **SJ561394** Map link

Local Authorities	Shropshire
Site Conservation Objectives	European Site Conservation Objectives for Brown Moss 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.

Brown Moss SAC

River basin	Severn RBMP
WFD Management catchment	Shropshire Middle Severn
WFD Waterbody ID (Cycle 2 draft)	n/a

Overlapping or adjacent protected sites

Site(s) of Special Scientific Interest (SSSI)	
Brown Moss SAC	Brown Moss SSSI

National Nature Reserve (NNR)	
Brown Moss SAC	n/a

Ramsar	
Brown Moss SAC	Midland Meres & Mosses Phase 1

Special Areas of Conservation (SAC) and Special Protection Areas (SPA)	
Brown Moss SAC	n/a

Version	*Date*	*Comment*
1.0	21/11/2014	