

Site Improvement Plan

Tarn 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)

UK0030339 Tarn Moss SAC

Site description

Tarn Moss is a basin mire which is situated roughly halfway between Keswick and Penrith in Cumbria. The site is designated as a SAC on the basis of its transition mire, ladder mire and quaking bog communities.

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	Pressure/Threat	H7140 Very wet mires often identified by an unstable `quaking` surface	Investigate and reduce negative inputs from agricultural sources in the surrounding catchment. Investigate A66 drainage in relation to site and provide containment structures in culverts from A66 to reduce negative inputs	Environment Agency, Highways Agency, Natural England, Landowner/occupier
2 Forestry and woodland management	Pressure	H7140 Very wet mires often identified by an unstable `quaking` surface	Consult with landowner and Forestry Authority regarding woodland operations	Natural England, Landowner(s)
3 Invasive species	Threat	H7140 Very wet mires often identified by an unstable `quaking` surface	Mechanical control to remove regenerating sitka on an annual basis	Natural England, Landowner(s)
4 Air Pollution: risk of atmospheric nitrogen deposition	Threat	H7140 Very wet mires often identified by an unstable `quaking` surface	Investigate and monitor air pollution impacts on vegetation diversity/change. Control, reduce and ameliorate atmospheric nitrogen impacts	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 Water Pollution

Catchment management is critical to reduce negative impacts into the SAC such as fertiliser run-off. Localised negative indicators (patches of rush species *Juncus*, and bull-rushes *Typha*) are evident. These are present where water entering the site via tile drains from adjacent agricultural fields is not freely flowing and a delta of silt and undesirable vegetation has developed. An underground tile drain from adjacent pasture has only been discovered recently. The relation of the drainage from the A66 and potential pollutants into the SAC has never been fully ascertained but is a potential, interlinked threat. There are a number of culverts alongside the A66 providing channels for water into the SAC which potentially could be contaminated following vehicle and accident spillage. Water quality sampling is required.

Action	Action description	Cost estimate	Timescale	Mechanism	Funding option	Delivery lead body	Delivery partner(s)
1A	Work is required to identify and address any existing or potential negative inputs into the SAC from the surrounding water catchment area via agricultural practices.	£7,500	2015-20	National Nature Reserve (NNR) management plan	Natural England (NNR running costs)	Natural England	Landowner/occupier
1B	One source of enrichment has been identified recently. This is an underground tile drain from adjacent pasture land. Work is needed with a drainage contractor to try to redirect this source as far away from the main interest features of the SAC as possible.	£3,000	2014-15	National Nature Reserve (NNR) management plan	Natural England (NNR running costs)	Natural England	Landowner/occupier

<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>
1C	Investigation to determine the locations of outfalls of drainage and the water quality from the A66 feeding directly into the SAC	Not yet determined	2015-20	Investigation / Research / Monitoring	Natural England (NNR running costs)	Natural England	Environment Agency, Highways 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>
1D	Containment protocol/facilities required for culverts leading into SAC from A66 to control vehicle accident spillage.	£10,000	2014-16	Partnership agreement	Not yet determined	Highways Agency	n/a

2 Forestry and woodland management

Clearfelling of plantation woodland on the east side of the site is necessary to restore the hydrological integrity of the SAC. The plantation woodland (Troutbeck Plantation) has a Woodland Plan for the next ten years, and a programme of planned felling and replanting commenced in 2012. There are potential impacts to the SAC due to negative inputs such as water borne sediment and heavy metal deposits. Consultation on felling applications are ongoing between Natural England, the Forestry Authority, the woodland owner and his agents.

<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>
2A	Clearfelling of plantation woodland on the east side of the site is necessary to restore the hydrological integrity of the SAC.	Not yet determined	2014-24	Regulation: Felling Licence	Not yet determined	Natural England	Landowner(s)
<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>
2B	Provision of silt traps into water courses during felling operations to prevent negative impacts to the SAC via inputs of water borne sediment and heavy metal deposits.	Not yet determined	2014-24	Regulation: Felling Licence	Not yet determined	Natural England	Landowner(s)

3 Invasive species

Sitka Spruce trees have, over a period of time, become established on the surface of the Moss, via adjacent plantation woodland. If left to grow to maturity they would have a negative effect on the hydrology of the Moss. These have been removed recently, but remain an ongoing concern requiring vigilance and resources from National Nature Reserve staff.

<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>
3A	Ongoing removal of regenerating sitka	£1,000	2015-20	National Nature Reserve (NNR) management plan	Natural England (NNR running costs)	Natural England	Landowner(s)

4 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. The main source of aerial nitrogen deposition is the main A66 trunk road which is approx 50m from the northern boundary of the SAC. Another additional potential source is the poultry unit 50m east of the SAC boundary.

<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>
4A	Further investigate potential atmospheric nitrogen impacts on the site from A66 road traffic and poultry unit based on application of guidance from Chief Scientist Group Nitrogen Task and Finish Group.	Not yet determined	2014-17	Investigation / Research / Monitoring	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

Tarn Moss SAC H7140 Transition mires and quaking bogs

Site location and links

Tarn Moss SAC

Area (ha) **17.03** Grid reference **NY400274** [Map link](#)

Local Authorities Cumbria

Site Conservation Objectives [European Site Conservation Objectives for Tarn 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 (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.

Tarn Moss SAC

<i>River basin</i>	Solway Tweed	Solway Tweed RBMP
<i>WFD Management catchment</i>	Eden and Esk	
<i>WFD Waterbody ID (Cycle 2 draft)</i>	n/a	

Overlapping or adjacent protected sites

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

National Nature Reserve (NNR)	
Tarn Moss SAC	Tarn Moss NNR

Ramsar	
Tarn Moss SAC	n/a

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

<i>Version</i>	<i>Date</i>	<i>Comment</i>
1.0	07/10/2014	

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