

# Site Improvement Plan

## Phoenix United Mine and Crow's Nest

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)**

**UK0030238 Phoenix United Mine & Crow's Nest SAC**

## Site description

This site on the south-eastern edge of Bodmin Moor supports internationally-important Calaminarian grassland metallophyte communities. The legacy of a long history of copper and tin extraction survives as mine spoil which has been colonised by a number of metallophytic bryophytes. In particular, the site supports the only known site in the world for the endangered Cornish path-moss *Ditrichum cornubicum*. Other notable metallophytes include the Red Data Book liverworts *Cephaloziella massalongi* and the endemic *C. nicholsonii*, both associated with copper-rich substrates, and the mosses *Pohlia andalusica* and *Scopelophila cataractae*.

## 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 Inappropriate scrub control	Pressure	H6130 Grasslands on soils rich in heavy metals	Periodic ground disturbance to re-expose mineral-rich bare soil and scrub management	Natural England, Duchy of Cornwall, Fore Downs Commons
2 Change in land management	Threat	H6130 Grasslands on soils rich in heavy metals	Secure agri-environment agreement, to ensure an appropriate grazing regime	Natural England, Duchy of Cornwall
3 Air Pollution: impact of atmospheric nitrogen deposition	Pressure	H6130 Grasslands on soils rich in heavy metals	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 Inappropriate scrub control

The presence of surface vegetation and accumulated organic matter on previously bare mineral rich ground is having an adverse impact on the area of habitat available for the rare bryophytes. The re-exposure of bare soil would recreate suitable habitat for the bryophytes, and ensure long-term survival of the rare species. Scrub is gradually spreading within both sites, causing the loss of metalliferous ground (on which the rare bryophytes are dependent). Large-scale clearance of scrub (especially gorse and bracken at Phoenix United Mine) is required, followed by grazing by appropriate stock in order to re-establish grassland. Invasive shrubs/trees that cast dense shade (such as holly, cherry laurel, Cotoneaster and Rhododendron) are a threat to bryophytes at Crow's Nest, and again require control.

Action	Action description	Cost estimate	Timescale	Mechanism	Funding option	Delivery lead body	Delivery partner(s)
1A	Disturbance of abandoned mine waste workings are required (within a cycle of approx every 5 years or more) to provide fresh metal-rich substrate.	£5,000 every 5 years	2015 onwards	Species Recovery Programme	Species Recovery Programme	Natural England	Duchy of Cornwall
1B	Control of invasive vegetation (particularly gorse, willows, cotoneaster, rhododendron and rank grassland) that is invading the bryophyte sites following amelioration of the toxic soils. They need to be cut back to control encroachment. Preparation of a scrub management plan is required prior to works commencing. Applies only to Phoenix United Mines SSSI. To be repeated at 10 year intervals.	£11,200	2015 onwards	Rural Development Programme for England (RDPE): Environmental Stewardship Higher Level Scheme (HLS)	Rural Development Programme (RDPE)	Natural England	Duchy of Cornwall

<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>	Control of invasive vegetation (particularly gorse, willows, cotoneaster, rhododendron and rank grassland) that is invading the bryophyte sites following amelioration of the toxic soils. They need to be cut back to control encroachment. Preparation of a scrub management plan is required prior to works commencing. Applies to all of Crows Nest SSSI. To be repeated at 10 year intervals.	£10,000	2015 onwards	Species Recovery Programme	Species Recovery Programme	Natural England	Fore Downs Commons

## 2 Change in land management

Grazing animals are a key factor related to the conservation status of the metalliferous bryophyte assemblage, causing the disturbance and exposure of soil suitable for bryophyte growth and helping to halt vegetation succession. A dramatic increase or decline in grazing pressure within the SAC would likely have major negative consequences for the bryophytes of interest. Current grazing levels appear to be suitable and should be maintained. However there is no stewardship or management

<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>	Grazing management to ensure that grazing is of an appropriate type and level. Removal of enclosure fencing around three sites at Phoenix United Mine to encourage grazing and disturbance of substrate. Applies only to Phoenix United Mine SSSI.	£5,000	2015 onwards	Rural Development Programme for England (RDPE): Environmental Stewardship Higher Level Scheme (HLS)	Rural Development Programme (RDPE)	Natural England	Duchy of Cornwall

## 3 Air Pollution: impact of atmospheric nitrogen deposition

Nitrogen deposition exceeds site relevant critical loads. Nitrogen deposition may increase growth of vegetation, particularly tall grasses, which outcompete or shade bryophytes. A wide range of studies on bryophyte species have demonstrated that in general, increased N supply adversely affects growth, although specific studies of impacts on the species located at Phoenix United Mines and Crow's Nest SAC have not been located.

<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	2015-20	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

**Phoenix United Mine & Crow's Nest SAC**      H6130 Calaminarian grasslands of the *Violetalia calaminariae*

### Site location and links

#### Phoenix United Mine & Crow's Nest SAC

Area (ha) **48.72**      Grid reference **SX265723**      [Map link](#)

Local Authorities      Cornwall

Site Conservation Objectives      [European Site Conservation Objectives for Phoenix United Mine & Crow's Nest 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.*

### **Phoenix United Mine & Crow's Nest SAC**

*River basin*

[South West RBMP](#)

*WFD Management catchment*

North Cornwall, Seaton, Looe and Fowey

*WFD Waterbody ID (Cycle 2 draft)*

GB108048002320

## Overlapping or adjacent protected sites

Site(s) of Special Scientific Interest (SSSI)	
Phoenix United Mine & Crow's Nest SAC	Crow's Nest SSSI Phoenix United Mine SSSI
National Nature Reserve (NNR)	
Phoenix United Mine & Crow's Nest SAC	n/a
Ramsar	
Phoenix United Mine & Crow's Nest SAC	n/a
Special Areas of Conservation (SAC) and Special Protection Areas (SPA)	
Phoenix United Mine & Crow's Nest SAC	n/a

<i>Version</i>	<i>Date</i>	<i>Comment</i>
1.0	08/04/2015	

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

