

Site Improvement Plan

Penhale Dunes

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)

UK0012559 Penhale Dunes SAC

Site description

Penhale Dunes SAC, located on the north Cornwall coast, is an extensive and exposed calcareous dune system, forming the largest dune system in Cornwall. The majority of the dunes are fixed grey dunes colonised by marram and red fescue grasses, characteristic plant species include Portland spurge, wild carrot, kidney vetch and restharrow. Shifting white dunes with marram characterise the shoreline.

The dune system is important in a Cornish context as it is the only dune system in Cornwall which supports dune slacks (seasonally wet hollows). Penhale dunes supports two types of dune slack community, humid dune slacks and dunes with creeping willow. Humid dune slacks are found more frequently in northern and western parts of the UK. The site is also an important site for Shore dock, which occurs at Penhale Dunes in dune slacks rather than its typical habitat which is at the base of cliffs, with freshwater seepages, on rocky or sandy beaches.

The rare Variegated horsetail also occurs in dune slacks at Penhale. The site supports Petalwort, a rare liverwort, occurring here in short compacted dune turf alongside paths. Petalwort is rare and declining throughout its range in the Mediterranean and western Europe, and the UK may now be its stronghold. At Penhale Early gentian occurs in short rabbit grazed dune turf. Early gentian is not known to occur outside of the UK and occurs mainly in southern England. Shore dock, Early gentian and Petalwort are all Annex II species.

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 coastal management	Pressure/Threat	H2120 Shifting dunes with marram, H2130 Dune grassland, H2170 Dunes with creeping willow, H2190 Humid dune slacks, S1395 Petalwort, S1441 Shore dock, S1654 Early gentian	Increase amounts of bare sand, dune slack and short turf habitats	Cornwall Wildlife Trust, Natural England
2 Invasive species	Pressure	H2130 Dune grassland, H2170 Dunes with creeping willow, H2190 Humid dune slacks, S1441 Shore dock, S1654 Early gentian	Complete and implement a scrub and invasive species management plan	Cornwall Wildlife Trust, Natural England
3 Change in land management	Pressure	H2130 Dune grassland, S1654 Early gentian	Review agricultural management and existing consents	Natural England
4 Public Access/Disturbance	Pressure	H2120 Shifting dunes with marram, H2130 Dune grassland, H2170 Dunes with creeping willow, H2190 Humid dune slacks, S1395 Petalwort, S1441 Shore dock, S1654 Early gentian	Increase public awareness and information regarding the impacts of dog fouling and trampling	Cornwall Wildlife Trust, Natural England

5	Hydrological changes	Threat	H2170 Dunes with creeping willow, H2190 Humid dune slacks, S1441 Shore dock, S1654 Early gentian	Improve the understanding of the hydrology and links with the site's sensitive features and assess if current activities (e.g. abstraction) are having an effect	Cornwall Wildlife Trust, Environment Agency, Natural England, Cornwall Council (Hydrologist)
6	Air Pollution: risk of atmospheric nitrogen deposition	Threat	H2130 Dune grassland, S1654 Early gentian	Further investigate potential 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 coastal management

The amounts of bare sand, species-rich short turf and early successional dune slacks are below the levels required for favourable condition.

Action	Action description	Cost estimate	Timescale	Mechanism	Funding option	Delivery lead body	Delivery partner(s)
1A	Collect/ collate baseline data and monitor the extent of bare sand, dune slack, short turf and scrub vegetation to inform habitat management, with the aim of increasing the amount of bare sand, species-rich short turf and early successional dune slack habitats.	£10,000+	2015-20	Investigation / Research / Monitoring	EU LIFE, Higher Level Stewardship (HLS), Higher Level Stewardship (HLS) capital works	Natural England	Cornwall Wildlife Trust
Action	Action description	Cost estimate	Timescale	Mechanism	Funding option	Delivery lead body	Delivery partner(s)
1B	Increase the amount of bare sand by actively creating areas of bare sand, scrapping existing dune slacks to re-create earlier successional vegetation and/or create new slacks and controlling scrub (possibly combined with grazing) to increase short-turf habitats. Installation of fencing and water supply will be required to facilitate grazing.	£80,000 - £100,000	2015-20	Habitat creation / restoration strategy: Other	EU LIFE, Higher Level Stewardship (HLS), Higher Level Stewardship (HLS) capital works	Natural England	Cornwall Wildlife Trust

2 Invasive species

Scrub invasion is affecting dune communities and also reducing the mobility of the dune system. Scrub encroachment (predominantly willow) is leading to dune slacks drying out and loss of characteristic dune slack vegetation. Scrub invasion (especially blackthorn) is leading to loss of short dune-turf communities. Sea buckthorn is invading in parts of the site.

Action	Action description	Cost estimate	Timescale	Mechanism	Funding option	Delivery lead body	Delivery partner(s)
2A	Control scrub and non-native species such as sea buckthorn	£12,000 - £20,000	2015-20	Advice	EU LIFE, Higher Level Stewardship (HLS), Higher Level Stewardship (HLS) capital works	Not yet determined	Cornwall Wildlife Trust, Natural England

3 Change in land management

There are potential enrichment impacts resulting from agricultural use within the site, in particular fertiliser inputs on Early gentain and dune habitat.

Action	Action description	Cost estimate	Timescale	Mechanism	Funding option	Delivery lead body	Delivery partner(s)
3A	Promote the uptake of NELMS agreements.	£10,000+	2015-18	Rural Development Programme for England (RDPE): Common Agricultural Policy 2014-20 (New Environmental Land Management Scheme)	New Environmental Land Management Scheme (NELMS)	Natural England	n/a
3B	Review existing SSSI consents relating to agricultural management, and modify and revoke where appropriate.	£80,000-£100,000	2015-18	Regulation: Compulsory Withdraw/Modify Notice/Consent	No funding required	Natural England	n/a

4 Public Access/Disturbance

Nutrient enrichment to dune habitats and rare plants caused by dog fouling is a concern. Moreover due to the increasing use of the southern (non-MOD) part of the site by the public and horseriders, (motorbike use of the site has been a problem in the past), there is potential for adverse impacts on sensitive species as a result of excessive trampling by horses, walkers, and cyclists.

<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	Control/reduce the impact of dog fouling (nutrient enrichment).	£10,000	2015-20	Advice: Education & awareness raising	Higher Level Stewardship (HLS)	Not yet determined	Cornwall Wildlife Trust, 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>
4B	Control/reduce impacts of trampling (horses, walkers, bikes) on rare species and sensitive habitats, in particular (Petalwort and Early gentian).	£2,000	2015-20	Advice: Education & awareness raising	Higher Level Stewardship (HLS)	Not yet determined	Cornwall Wildlife Trust, Natural England

5 Hydrological changes

Hydrological changes to, for example water table levels (lowering of levels potentially more damaging to sensitive features) are a threat to the site's SAC features. Petalwort and Shore dock are sensitive to the drying out of dune slacks. An investigation is required to better understand the site's hydrology and then to assess if it is impacted by any current activities such as water abstraction in the wider area.

<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>
5A	Investigate the hydrology of the dune system and identify any changes or variations from a naturalised situation.	£10,000-£20,000	2015-20	Investigation / Research / Monitoring	Environment Agency, Natural England, SSSI funding	Natural England	Cornwall Wildlife Trust, Cornwall Council (Hydrologist)

<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>
5B	Undertake a survey to investigate changes in distribution of sensitive species eg Petalwort and Shore Dock.	£8,000-£10,000	2015-20	Investigation / Research / Monitoring	Natural England, SSSI funding	Natural England	Cornwall Wildlife 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>
5C	Review existing water abstractions and investigate any potential impacts (such as the lowering of the water table).	No funding required	2015-17	Restoring Sustainable Abstraction Programme: Abstraction Licence - Revoke/Amend	Environment Agency	Not yet determined	Environment Agency, Natural England

6 Air Pollution: risk of atmospheric nitrogen deposition

Nitrogen deposition exceeds the site-relevant critical loads for ecosystem protection and hence there is a risk of harmful effects wherein the quality and character of dune vegetation begins to be altered and adversely impacted, but the sensitive features are currently considered to be in favourable condition on the site. This requires further investigation.

<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>
6A	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

Penhale Dunes SAC

S1395 *Petalophyllum ralfsii*: Petalwort

S1441 *Rumex rupestris*: Shore dock

S1654 *Gentianella anglica*: Early gentian

H2120 Shifting dunes along the shoreline with *Ammophila arenaria* ("white dunes")

H2130# Fixed dunes with herbaceous vegetation ("grey dunes")

H2170 Dunes with *Salix repens ssp argentea* (*Salicion arenariae*)

H2190 Humid dune slacks

Site location and links

Penhale Dunes SAC

Area (ha) **621.34** Grid reference **SW769572** [Map link](#)

Local Authorities Cornwall

Site Conservation Objectives [European Site Conservation Objectives for Penhale Dunes 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.

Penhale Dunes SAC

River basin

[South West RBMP](#)

WFD Management catchment

West Cornwall and the Fal

WFD Waterbody ID (Cycle 2 draft)

GB108049000710

Overlapping or adjacent protected sites

Site(s) of Special Scientific Interest (SSSI)	
Penhale Dunes SAC	Kelsey Head SSSI Penhale Dunes SSSI
National Nature Reserve (NNR)	
Penhale Dunes SAC	n/a
Ramsar	
Penhale Dunes SAC	n/a
Special Areas of Conservation (SAC) and Special Protection Areas (SPA)	
Penhale Dunes SAC	n/a

<i>Version</i>	<i>Date</i>	<i>Comment</i>
1.0	29/01/2015	

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