

Site Improvement Plan

Arun Valley

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)

UK0030366 Arun Valley SCI

UK9020281 Arun Valley SPA

Site description

Arun Valley Special Protection Area (SPA) and Site of Community Importance (SCI) comprise an area of wet meadows on the floodplain of the River Arun between Pulborough and Amberley.

The neutral wet grassland which is subject to winter, and occasional summer, flooding, and is dissected by a network of ditches which support a rich aquatic flora and invertebrate fauna.

The area is of outstanding ornithological importance notably for wintering wildfowl. The site is a SCI for Little whirlpool ram's-horn snail *Anisus vorticulus* for which this is considered to be one of the best areas in the United Kingdom.

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 water levels	Threat	A037(NB) Bewick's Swan, S4056 Little ramshorn whirlpool snail, Waterbird assemblage	Maintain water levels and ditch management by continued implementation of the Water Level Management Plan	Environment Agency, Local Authorities, Natural England
2 Inappropriate water levels	Threat	A037(NB) Bewick's Swan, S4056 Little ramshorn whirlpool snail, Waterbird assemblage	Investigate likely impacts on the designated features from implementation of the Lower Tidal River Arun Strategy (LTRAS), and find solution to maintain favourable conservation status	Environment Agency, Natural England, Landowner(s)
3 Water Pollution	Threat	A037(NB) Bewick's Swan, S4056 Little ramshorn whirlpool snail	Investigate and monitor the impacts of point and diffuse water pollution that enter the site, and introduce measures to reduce pollutants	Environment Agency, Southern Water Services Ltd, Natural England (CSF)
4 Inappropriate ditch management	Threat	A037(NB) Bewick's Swan, S4056 Little ramshorn whirlpool snail	Ecological monitoring of <i>Anisus vorticulus</i>	Natural England

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 water levels

Environment Agency is ceasing to administer Internal Drainage Board (IDB) ditches, and water control structures, with the likelihood that management will revert to landowners/Local Authorities. This has implications for management/clearance of the ditches and maintenance of water controlling structures. There could be impacts on water levels, the marginal and in-channel flora and associated species. *Anisus vorticulus* is not known to tolerate occasional ditch drought (M.Willings, Pers Comm 2014) Bewick's Swan and the majority of water bird assemblage species for which the site is classified require large bodies of in field water and water levels maintained within the ditch systems.

Action	Action description	Cost estimate	Timescale	Mechanism	Funding option	Delivery lead body	Delivery partner(s)
1A	Seek agreement with relevant parties to find an appropriate funding mechanism to undertake the maintenance and deliver the management necessary to maintain the sites in accordance with the Water Level Management Plan (WLMP), when the Environment Agency (EA) administered Internal Drainage Board (IDB) is dissolved - including ditch management and maintenance of water structures where appropriate.	Not yet determined	2015	Water Level Management Plan	Defra, Local Authority	Environment Agency	Local Authorities, Natural England
1B	Maintain appropriate water levels and ditch management at Amberley Wildbrooks, in light of the proposed dissolution of the IDB, to ensure levels and habitat is optimal for Bewick's swan, water bird assemblage, <i>Anisus vorticulus</i> and aquatic plant assemblage.	£14,000	2015-2020	Water Level Management Plan	Not yet determined	Not yet determined	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>
1C	Review Amberley Wild Brooks WLMP to ensure that long term management of water levels and ditches is maintained to ensure favourable conservation status is maintained.	£50,000	2015	Water Level Management Plan	Environment Agency	Natural England	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>
1D	Ensure water levels and associated structures are appropriately managed and maintained for SPA, SCI and supporting Ramsar species. This is linked to the action regarding the proposed dissolution of the EA-administered IDB. There is no WLMP for either Waltham or Pulborough Brooks. The most appropriate mechanism identified is delivery via the existing Management Plans for each site.	£6,350	2015-20	Non-Natural England funded site management plan	Environment Agency, RSPB, Wildlife Trust	Natural England	n/a

2 Inappropriate water levels

Environment Agency are reviewing management of river bank defences adjacent to the Special Protection Area/Site of Community Importance in the medium term (beyond 10 years) as part of the Lower Tidal River Arun Strategy (LTRAS) project. If the banks are not maintained, there will be a permanent increase in water levels, with added risk of changes in salinity, water levels, and increasing water pollution (rivers Stor and Arun failing for phosphorus levels). *Anisus vorticulus* is not known to have a tolerance for elevated salinity levels. The majority of Ramsar plant species (also key supporting habitat for *A.vorticulus* and Bewick's swan) are intolerant of poor water quality. Impacts of increased salinity largely unknown.

Action	Action description	Cost estimate	Timescale	Mechanism	Funding option	Delivery lead body	Delivery partner(s)
2A	Ensure appropriate hydrological conditions beyond the current flood risk strategy (which is to maintain the flood banks for the next 10 years), to protect the SCI, SPA and Ramsar features over the long term. This requires investigation to understand the effects on the habitat and species, if a 'managed adaptation' was adopted as a strategy and the embankments were not maintained. The Lower Tidal River Arun Strategy (LTRAS) has this as one of the shortlisted options and aims to investigate the most appropriate way to manage the flood risks at the Arun Valley sites beyond the current strategy. This will include assessing the impacts of increased water levels and the associated risk of increases in salinity and water pollution.	£200,000	2022	Flood Risk Maintenance Programme: Flood Risk Management - Operational Work	Environment Agency	Environment Agency	Natural England

Action	Action description	Cost estimate	Timescale	Mechanism	Funding option	Delivery lead body	Delivery partner(s)
2B	Revive the Landowner Liason Group on Amberley to ensure that all relevant parties (landowners, EA, Natural England) work together to ensure appropriate management of water levels are in place and are maintained across the site. Liaise to discuss all other relevant issues relevant to managing and maintaining the site to achieve and/or maintain in favourable condition status.	£2,500	2014-2020	Major Landowner Group land ownership activities : Other	Not yet determined	Environment Agency	Natural England, Landowner(s)

3 Water Pollution

There's a risk that undetected deterioration in the quality of water entering the ditch systems is impacting upon SPA/SCI/Ramsar species. *Anisus vorticulus* requires good water quality. An important food source for Bewick's swan is *Potamogeton spp.* (pond weeds), which also requires good water quality, as do the majority of aquatic plant species for which the Ramsar is designated, and which is the essential supporting habitat for *A.vorticulus*. The rivers Arun and Stor are failing on phosphate levels. Directly linked to this is point source pollution from a sewage treatment works upstream of the site. There may also be a risk of increased levels of nutrients entering the site through flooding, especially if the river banks are not maintained (see issue of changes in water levels). The classified bird species are also vulnerable to increased levels of nutrient enrichment as there is an increased likelihood of certain disease. Increase in growth of vegetation from sustained nutrient enrichment can make the habitat unsuitable for many bird species (Literature Review, Mott McDonald, 2006). Diffuse pollution from agricultural run off is likely to be contributing to the phosphate levels (this issue is managed via Catchment Sensitive Farming).

Action	Action description	Cost estimate	Timescale	Mechanism	Funding option	Delivery lead body	Delivery partner(s)
3A	Investigation into impacts of Sewerage Waste Treatment works (STW) upstream of the Arun Valley sites, which have not been addressed through Review of Consents (ROC). This action is in place to assess the levels of point source pollution entering the SPA/SCI via the rivers Arun and Stor, and to assess their impacts on the SPA/SCI features.	Not yet determined	2020	Water Industry Asset Management Plan (AMP): Implement Investigation	Southern Water Services	Southern Water Services Ltd	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>
3B	Implementation of Southern Water Asset Management Programme (AMP) scheme. This action is in place to deliver the measures necessary to ensure point source pollution impacts are mitigated for where appropriate (based on the results from the AMP investigations).	Not yet determined	2027	Water Industry Asset Management Plan (AMP): Implement Plan Scheme	Southern Water Services	Southern Water Services Ltd	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>
3C	Reduce nitrogen and phosphates from agricultural diffuse pollution through catchment-wide delivery of the options under the New Environmental Land Management Scheme.	Not yet determined	2016-2020	Rural Development Programme for England (RDPE): Common Agricultural Policy 2014-20 (New Environmental Land Management Scheme)	Rural Development Programme (RDPE)	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>
3D	Establish a monitoring mechanism for testing of ditches to establish and assess the levels of phosphate and salinity, particularly in the light of the future review of the Lower Tidal River Arun Strategy (LTRAS).	£3,000	2014-18	Investigation / Research / Monitoring	Natural England	Natural England	Environment Agency

4 Inappropriate ditch management

This is linked to issue 1 and possible cessation or changes in the method and frequency of ditch management/clearance. *Anisus vorticulus* is sensitive to changes in, and cessation of ditch management, as are the marginal and in-channel flora. The management requirements of *A. vorticulus* are little understood, so further research is required. Further surveys are also required- there has not been a full survey of *A. vorticulus* at Amberley since 1997. A full survey has been undertaken at Pulborough 2013/14, but repeat surveys will be necessary.

Action	Action description	Cost estimate	Timescale	Mechanism	Funding option	Delivery lead body	Delivery partner(s)
4A	Ecological monitoring of <i>Anisus vorticulus</i> : maintain an accurate and up-dated knowledge of the ditch occupation by <i>A. vorticulus</i> in Arun Valley. Repeat surveys of the whole SCI will be required periodically. Post ditch clearance monitoring of populated ditches important to assess effectiveness of ditch clearance protocol and other changes that are/may occur in the future - changes in water levels/water quality/management of ditches.	£16,000	2016	Investigation / Research / Monitoring	Natural England, RSPB	Natural England	n/a
Action	Action description	Cost estimate	Timescale	Mechanism	Funding option	Delivery lead body	Delivery partner(s)
4B	<i>Anisus vorticulus</i> : collate and analyse data collected from surveys and ditch management records, and undertake a literature review of this species to aid future management of the habitat and water levels/water quality for this species, and to aid landowners managing their land for this species.	£8,000	2020	Investigation / Research / Monitoring	Not yet determined	Natural England	

Site details

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

Qualifying features

#UK Special responsibility

Arun Valley SCI	S4056 <i>Anisus vorticulus</i> : Little ramshorn whirlpool snail
Arun Valley SPA	A037(NB) <i>Cygnus columbianus bewickii</i> : Bewick swan Waterbird assemblage

Site location and links

Arun Valley SCI

Area (ha) 487.49	Grid reference TQ035143	Map link
Local Authorities	East Sussex	
Site Conservation Objectives	European Site Conservation Objectives for Arun Valley SCI	
European Marine Site conservation advice	n/a	
Regulation 33/35 Package	n/a	
Marine Management Organisation site plan	n/a	

Arun Valley SPA

Area (ha) 528.62	Grid reference TQ035143	Map link
Local Authorities	West Sussex	
Site Conservation Objectives	European Site Conservation Objectives for Arun Valley SPA	
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.

Arun Valley SCI

<i>River basin</i>	South East RBMP
<i>WFD Management catchment</i>	Arun & Western Streams
<i>WFD Waterbody ID (Cycle 2 draft)</i>	GB107041012100, GB107041013040

Arun Valley SPA

<i>River basin</i>	South East RBMP
<i>WFD Management catchment</i>	Arun & Western Streams
<i>WFD Waterbody ID (Cycle 2 draft)</i>	GB107041012100, GB107041012810, GB107041013040

Overlapping or adjacent protected sites

Site(s) of Special Scientific Interest (SSSI)	
Arun Valley SCI	Pulborough Brooks SSSI Amberley Wild Brooks SSSI
Arun Valley SPA	Pulborough Brooks SSSI Amberley Wild Brooks SSSI Waltham Brooks SSSI
National Nature Reserve (NNR)	
Arun Valley SCI	n/a
Arun Valley SPA	n/a
Ramsar	
Arun Valley SCI	Arun Valley
Arun Valley SPA	Arun Valley
Special Areas of Conservation (SAC) and Special Protection Areas (SPA)	
Arun Valley SCI	Arun Valley SPA
Arun Valley SPA	Arun Valley SAC

<i>Version</i>	<i>Date</i>	<i>Comment</i>
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