



European Site Conservation Objectives: supplementary advice on conserving and restoring site features

**North Meadow & Clattinger Farm
Special Area of Conservation (SAC)
(Site code: UK0016372)**



Picture: Snake's-head fritillaries, John Barratt

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About this document

This document provides Natural England's supplementary advice about the European Site Conservation Objectives relating to North Meadow & Clattinger Farm SAC. This advice should therefore be read together with the SAC Conservation Objectives which are available [here](#).

You should use the Conservation Objectives, this Supplementary Advice and any case-specific advice given by Natural England, when developing, proposing or assessing an activity, plan or project that may affect this site.

This Supplementary Advice to the Conservation Objectives presents attributes which are ecological characteristics of the designated species and habitats within a site. The listed attributes are considered to be those that best describe the site's ecological integrity and which, if safeguarded, will enable achievement of the Conservation Objectives. Each attribute has a target which is either quantified or qualitative depending on the available evidence. The target identifies as far as possible the desired state to be achieved for the attribute.

The tables provided below bring together the findings of the best available scientific evidence relating to the site's qualifying features, which may be updated or supplemented in further publications from Natural England and other sources. The local evidence used in preparing this supplementary advice has been cited. The references to the national evidence used are available on request. Where evidence and references have not been indicated, Natural England has applied ecological knowledge and expert judgement. You may decide to use other additional sources of information.

In many cases, the attribute targets shown in the tables indicate whether the current objective is to 'maintain' or 'restore' the attribute. This is based on the best available information, including that gathered during monitoring of the feature's current condition. As new information on feature condition becomes available, this will be added so that the advice remains up to date.

The targets given for each attribute do not represent thresholds to assess the significance of any given impact in Habitats Regulations Assessments. You will need to assess this on a case-by-case basis using the most current information available.

Some, but not all, of these attributes can also be used for regular monitoring of the actual condition of the designated features. The attributes selected for monitoring the features, and the standards used to assess their condition, are listed in separate monitoring documents, which will be available from Natural England.

These tables do not give advice about SSSI features or other legally protected species which may also be present within the European Site.

If you have any comments or queries about this Supplementary Advice document please contact your local Natural England adviser or email HDIRConservationObjectivesNE@naturalengland.org.uk

About this site

European Site information

Name of European Site	North Meadow & Clattinger Farm Special Area of Conservation (SAC)
Location	Wiltshire
Site Maps	The designated boundary of this site can be viewed here on the MAGIC website
Designation Date	January 1996
Qualifying Features	See section below
Designation Area	104.14 hectares
Designation Changes	Not applicable
Feature Condition Status	Details of the feature condition assessments made at this site can be found using Natural England's Designated Sites System
Names of component Sites of Special Scientific Interest (SSSIs)	Clattinger Farm SSSI; North Meadow, Cricklade SSSI
Relationship with other European or International Site designations	Not applicable

Site background and geography

This SAC comprises North Meadow and Clattinger Farm, two individual sites located approximately 4.5 miles apart in north Wiltshire close to the county boundary with Gloucestershire. Both sites lie within the floodplain of the Upper Thames and fall within the [Cotswold Water Park](#).

Both parts of the SAC are located at the western end of the [Upper Thames Clay Vales National Character Area](#) (108). Clattinger Farm is 59.88 hectares in size and North Meadow is 44.25 hectares in size. North Meadow is a [National Nature Reserve](#) which is owned and managed by Natural England.

Both parts of the SAC sit within the Cotswold Water Park which is a manmade wetland created by the restoration of sand and gravel workings. The Water Park covers an area of 40 square miles with over 150 lakes of varying size. Prior to the exploitation of sand and gravel this area of the Upper Thames catchment was made up of floodplain grassland, river habitats and arable farming.

The SAC, along with a number of other associated smaller grassland SSSI, is a relic of the floodplain grazing farming system which was widespread in this area. Both sites sit on shallow glacial limestone gravel deposits which create free draining conditions that help to maintain the characteristic designated flora. The shallow gravel deposits at both sites result in a great seasonal variation in water table depth which has traditionally helped with hay meadow management leading to the sites characteristic flora.

North Meadow, which is located on the outskirts of Cricklade, between the River Thames and the River Churn is a Lammas floodplain meadow which has been managed by hay cutting and aftermath grazing for over 150 years. North meadow is known for a rich diversity of meadow plants, including the presence of around 95% of the UK's surviving population of the nationally scarce Snake's head fritillary *Fritillaria meleagris*. The snake's head fritillary is also present at Clattinger Farm in a lower abundance.

Management of both sites aims to maintain traditional hay-meadow management of hay cutting from mid-summer, followed by grazing with livestock through the autumn and into the winter as ground conditions permit. This management allows plants to flower and set seed prior to hay cutting. Both sites, but in particular North Meadow, are regularly flooded by their adjacent watercourses.

In recent years, both sites have suffered prolonged periods of flooding which has threatened the continuation of traditional meadow management, particularly at North Meadow. The underlying shallow gravel deposits and adjacent watercourses at both sites present challenges for future management in the context of expected changes in climatic conditions.

As an NNR a significant amount of management at North Meadow is focused on managing visitor pressure, especially during fritillary flowering season, in order to balance conservation of the characteristic flora whilst allowing it to be accessible to the public.

About the qualifying features of the SAC

The following section gives you additional, site-specific information about this SAC's qualifying features. These are the natural habitats and/or species for which this SAC has been designated.

Qualifying habitats:

- **H6510 Lowland hay meadows (*Alopecurus pratensis*, *Sanguisorba officinalis*)**

This habitat type comprises species-rich hay meadows on moderately fertile soils of river and tributary floodplains. Most examples are cut annually for hay, with light aftermath grazing. Seasonal flooding maintains an input of nutrients.

In the UK, this habitat corresponds to NVC type MG4 *Alopecurus pratensis* – *Sanguisorba officinalis* grassland (Rodwell, 1991). This community is characterised by species-rich swards containing frequent red fescue *Festuca rubra*, crested dog's-tail *Cynosurus cristatus*, meadow foxtail *Alopecurus pratensis*, great burnet *Sanguisorba officinalis*, meadowsweet *Filipendula ulmaria* and meadow buttercup *Ranunculus acris*. It provides the main habitat in the UK for the fritillary *Fritillaria meleagris*.

North Meadow and Clattinger Farm in the Thames Valley in southern England is one of only two SACs representing lowland hay meadows near the centre of its UK range. This site represents an exceptional survival of the traditional pattern of management and so exhibits a high degree of conservation of structure and function.

The lowland hay meadow habitat at this site also contains a very high proportion (>90%) of the surviving UK population of snake's head fritillary *Fritillaria meleagris*, a species strongly characteristic of these damp lowland meadows in Europe and now rare throughout its range.

Table 1: Supplementary Advice for Qualifying Features: H6510 Lowland hay meadows (*Alopecurus pratensis*, *Sanguisorba officinalis*)

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
Extent and distribution of the feature	Extent of the feature within the site	Restore the overall extent of the H6510 feature to 58 hectares; specifically, maintain 24 hectares of the H6510 feature at Clattinger Farm and restore 34 ha of the H6510 feature at North Meadow	<p>There should be no measurable net reduction (excluding any trivial loss) in the extent and area of this feature, and in some cases, the full extent of the feature may need to be restored.</p> <p>The baseline-value of extent given has been generated using data gathered from the listed site-based surveys. Clattinger Farm figure is based on MG4 extent from the 2001 NVC survey. North Meadow figure is based on the MG4 extent from the 1995/1996 survey by Gilbert et al. Area measurements given may be approximate depending on the methods, age and accuracy of data collection, and as a result this value may be updated in future to reflect more accurate information.</p> <p>The extent of an Annex I habitat feature covers the sum extent of all of the component vegetation communities present and may include transitions and mosaics with other closely-associated habitat features. Where a feature is susceptible to natural dynamic processes, there may be acceptable variations in its extent through natural fluctuations. Where a reduction in the extent of a feature is considered necessary to meet the Conservation Objective for another Annex I feature, Natural England will advise on this on a case-by-case basis.</p> <p>For this feature, there will be year to year fluctuations in climate resulting in variable flooding regimes. This may mean that there will need to be make some allowance for reversible shifts in vegetation types between MG4 (H6510) and wetter vegetation types such as inundation grasslands (e.g. MG13, MG7c) and MG8 and related vegetation depending on the flood cycle.</p> <p>At both sites the H6510 feature is within a habitat mosaic with other grassland communities such as MG5 and as such area definitions of individual communities are problematic. The communities at both sites may also be dynamic, varying between seasons due to flood and groundwater conditions. A series of summer floods at North Meadow have caused a decline in the area of MG4 grassland, which corresponds to H6510, since an extensive survey carried out in 1995 and 1996. The consequences of recent floods at North Meadow e.g. elevated phosphorous levels in the soil are still in evidence and will be exacerbated by potential further flooding in the future. Excessive and unseasonal flooding presents the most significant risk to the H6510 feature at North Meadow.</p>	<p>FLOODPLAIN MEADOWS PARTNERSHIP. Annual botanical surveys at North Meadow since 2010 (held by Natural England)</p> <p>FLOODPLAIN MEADOWS PARTNERSHIP, 2013. North Meadow NVC survey (held by Natural England)</p> <p>WILSON, P. 2001. Clattinger Farm NVC survey (held by Natural England)</p>
Extent and distribution of the feature	Spatial distribution of	Maintain the distribution and continuity of H6510, including where	A contraction in the range, or geographic spread, of the feature (and its component vegetation and typical species, plus transitional communities) across the site will reduce its overall area, the local diversity and variations in its structure and	FLOODPLAIN MEADOWS PARTNERSHIP.

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
	the feature within the site	applicable its component vegetation types.	<p>composition, and may undermine its resilience to adapt to future environmental changes. This may also reduce and break up the continuity of a habitat within a site and how well its typical species are able to move around the site to occupy and use habitat.</p> <p>Such fragmentation can impact on their viability and the wider ecological composition of the Annex I habitat. Smaller fragments of habitat can typically support smaller and more isolated populations which are more vulnerable to extinction. These fragments also have a greater amount of open edge habitat which will differ in the amount of light, temperature, wind, and even noise that it receives compared to its interior. These conditions may not be suitable for some of the typical and more specialist species associated with the Annex I habitat feature.</p> <p>The habitat area were H6510 occurs at both sites should be maintained by hay cutting and aftermath grazing.</p>	<p>Annual botanical surveys at North Meadow since 2010 (held by Natural England)</p> <p>FLOODPLAIN MEADOWS PARTNERSHIP, 2013. North Meadow NVC survey (held by Natural England)</p> <p>WILSON, P. 2001. Clattinger Farm NVC survey (held by Natural England)</p>
Structure and function (including its typical species)	Vegetation community composition	<p>Ensure the component vegetation communities of the feature are referable to and characterised by the following National Vegetation Classification type;</p> <p>MG4 <i>Alopecurus pratensis</i> - <i>Sanguisorba officinalis</i> (meadow foxtail – great burnet) grassland</p>	<p>This habitat feature will comprise a number of associated semi-natural vegetation types and their transitional zones, reflecting the geographical location of the site, altitude, aspect, soil conditions (especially base-status and drainage) and vegetation management.</p> <p>In the UK these have been categorised by the National Vegetation Classification (NVC). Maintaining or restoring these characteristic and distinctive vegetation types, and the range of types as appropriate, will be important to sustaining the overall habitat feature. This will also help to conserve their typical plant species (i.e. the constant and preferential species of a community), and therefore that of the SAC feature, at appropriate levels (recognising natural fluctuations).</p>	<p>This attribute will be periodically monitored as part of Natural England's site condition assessment.</p> <p>FLOODPLAIN MEADOWS PARTNERSHIP. Annual botanical surveys at North Meadow since 2010 (held by Natural England)</p> <p>FLOODPLAIN MEADOWS PARTNERSHIP, 2013. North Meadow NVC</p>

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
				<p>survey (held by Natural England)</p> <p>WILSON, P. 2001. Clattinger Farm NVC survey (held by Natural England)</p>
<p>Structure and function (including its typical species)</p>	<p>Key structural, influential and distinctive species</p>	<p>Maintain the abundance of the species listed to enable each of them to be a viable component of the H6510 Annex I habitat feature;</p> <p>MG4 structural species; Meadow Foxtail (<i>Alopecurus pratensis</i>), Great Burnet (<i>Sanguisorba officinalis</i>), Mouse-ear chickweed (<i>cerastium fontanum</i>), Crested dog's-tail (<i>Cynosurus cristatus</i>), Red fescue (<i>Festuca rubra</i>), Meadowsweet (<i>Filipendula ulmaria</i>), Yorkshire fog (<i>Holcus lanatus</i>), Meadow vetchling (<i>Lathyrus pratensis</i>), Autumn hawkbit (<i>Leontodon autumnalis</i>), Perennial ryegrass (<i>Lolium perenne</i>), Ribwort plantain (<i>Plantago lanceolata</i>), meadow buttercup (<i>Ranunculus acris</i>), Common sorrel (<i>Rumex acetosa</i>), Common dandelion (<i>Taraxacum officinale</i>),</p>	<p>Some plant or animal species (or related groups of such species) make a particularly important contribution to the necessary structure, function and/or quality of an Annex I habitat feature at a particular site. These species will include;</p> <ul style="list-style-type: none"> • Structural species which form a key part of the Annex I habitat's structure or help to define that habitat on a particular SAC (see also the attribute for 'vegetation community composition'). • Influential species which are likely to have a key role affecting the structure and function of the habitat (such as bioturbators (mixers of soil/sediment), grazers, surface borers, predators or other species with a significant functional role linked to the habitat) • Site-distinctive species which are considered to be a particularly special and distinguishing component of an Annex I habitat on a particular SAC. <p>There may be natural fluctuations in the frequency and cover of each of these species. The relative contribution made by them to the overall ecological integrity of a site may vary, and Natural England will provide bespoke advice on this as necessary.</p> <p>The list of species given here for this Annex I habitat feature at this SAC is not necessarily exhaustive. The list may evolve, and species may be added or deleted, as new information about this site becomes available.</p>	<p>This attribute will be periodically monitored as part of natural England's site condition assessment.</p>

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
		<p>Red clover (<i>Trifolium pratense</i>), White clover (<i>Trifolium repens</i>).</p> <p>Abundant population of Snakes head fritillary (<i>Fritillaria meleagris</i>)</p>		
Structure and function (including its typical species)	Vegetation: undesirable species	<p>Maintain the frequency/cover of the following undesirable species at within acceptable levels and prevent changes in surface condition, soils, nutrient levels or hydrology which may encourage their spread:</p> <p>Cow parsley (<i>Anthriscus sylvestris</i>), False Oat-grass (<i>Arrhenatherum elatius</i>), Creeping thistle (<i>Cirsium arvense</i>), Spear thistle (<i>Cirsium vulgare</i>), Cleavers (<i>Galium aparine</i>), Broadleaf plantain (<i>Plantago major</i>), Bracken (<i>Pteridium aquilinum</i>), Curly dock (<i>Rumex crispus</i>), Broad-leaved dock (<i>Rumex obtusifolius</i>), Ragwort (<i>Senecio jacobaea</i>), Common nettle (<i>Urtica dioica</i>).</p>	<p>Undesirable non-woody and woody vascular plants species may require active management to avert an unwanted succession to a different and less desirable state. Often they may be indicative of a negative trend relating to another aspect of a site's structure and function. These species will vary depending on the nature of the particular feature, and in some cases these species may be natural/acceptable components or even dominants.</p>	<p>This attribute will be periodically monitored as part of natural England's site condition assessment.</p>
	Vegetation community transitions	<p>Maintain the pattern of naturally-occurring vegetation /transitions between the H6510</p>	<p>Transitions/zonations between adjacent but different vegetation communities are usually related to naturally-occurring changes in soil, aspect or slope. Such 'ecotones' retain characteristics of each bordering community and can add value in often containing species not found in the adjacent communities. Retaining such</p>	<p>This attribute will be periodically monitored as part of natural England's</p>

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
		feature and other grassland communities on both sites	<p>transitions can provide further diversity to the habitat feature, and support additional flora and fauna.</p> <p>At both of the component sites of the SAC, the H6510 feature occurs within a mosaic of other grassland communities, such as the drier MG5 grassland and the wetter MG8 type. Individually, both these communities are of high nature conservation importance, and their presence alongside the MG4 community provides community richness to the SAC. The H6510 feature is the product of long-term management of both sites as lowland hay meadows with a late summer hay cut followed by aftermath grazing. This continued management is essential to the maintenance of the qualifying feature.</p>	site condition assessment.
Structure and function (including its typical species)	Soils, substrate and nutrient cycling	<p>Restore the properties of the underlying soil types, including structure, bulk density, total carbon, pH, and fungal:bacterial ratio, to within typical values for the H6150 habitat.</p> <p>At North Meadow, the soil P index should typically be between index 0 and 1 (< 15 mg l⁻¹)</p>	<p>Soil is the foundation of basic ecosystem function and a vital part of the natural environment. Its properties strongly influence the colonisation, growth and distribution of those plant species which together form vegetation types, and therefore provides a habitat used by a wide range of organisms. Soil biodiversity has a vital role to recycle organic matter.</p> <p>Changes to natural soil properties may therefore affect the ecological structure, function and processes associated with this Annex I feature.</p> <p>Prolonged periods of flooding at North Meadow since 2007 have significantly increased the soil P index to as much as index 3 in some years. Prolonged increase in P index may have detrimental effects to the plant community across North Meadow.</p>	Annual botanical surveys at North Meadow by Floodplain Meadows Partnership since 2010 also contain soil analysis information (held by Natural England)
	Water quality	Restore the quality of flood water received by the SAC to a standard which provides the necessary conditions to support the H6150 feature.	<p>For many SAC features which are dependent on wetland habitats supported by surface and/or ground water, maintaining the quality and the quantity of water supply will be critical, especially at certain times of year.</p> <p>Poor water quality and inadequate quantities of water can adversely affect the structure and function of this habitat type. Typically, meeting the surface water and groundwater environmental standards set out by the Water Framework Directive (WFD 2000/60/EC) will also be sufficient to support the achievement of SAC Conservation Objectives but in some cases more stringent standards may be needed.</p> <p>For this Annex I feature, the deposition of nutrients, particularly phosphate ('P'), as sediment in floodwaters have the potential to impact the site, Further site-specific investigation on the site's nutrient budget/balance is required to establish more precise water quality standards for the SAC.</p>	

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
Structure and function (including its typical species)	Hydrology: Water table	Restore a hydrological regime which provides a consistently near-surface water table which typically averages depths of 35 cm (winter), 45cm (spring), 70cm (summer) and 60cm (autumn) below ground level	<p>This habitat feature is strongly dependent on moist, but not waterlogged, soils on floodplains. Defining and maintaining the appropriate hydrological regime is a key step in moving towards achieving the conservation objectives for this site and sustaining this feature. Changes in source, depth, duration, frequency, magnitude and timing of water supply can have significant implications for the assemblage of characteristic plants and animals present.</p> <p>This target is generic and further site-specific investigations may be required to fully inform conservation measures and/or the likelihood of impacts. For this feature, sub-surface water table levels during the year should be at levels consistent with published guidance.</p>	Annual botanical surveys at North Meadow by Floodplain Meadows Partnership since 2010 also contain water table information (held by Natural England)
	Hydrology: Flooding regime	Restore a hydrological regime which provides a cumulative duration of annual surface flooding which is typically less than 10 days (between December-February) and less than 3 days (between September-November), with no inundations during March – August, subject to natural changes.	<p>This habitat feature is strongly dependent on moist, but not waterlogged, soils on floodplains. Defining and maintaining the appropriate hydrological regime is a key step in moving towards achieving the conservation objectives for this site and sustaining this feature.</p> <p>Changes in source, depth, duration, frequency, magnitude and timing of water supply can have significant implications for the assemblage of characteristic plants present. For this feature, the timing, frequency, extent and duration of surface flooding should be commensurate with maintenance of the feature at this site. Too much inundation can result in a shift from H6510 to other vegetation types (such as inundation grassland, swamps); too little flooding may compromise the necessary conservation/agricultural management due to reduced nutrient inputs which will reduce hay yields, making hay management less viable and sustainable.</p> <p>Further study is required within the catchments upstream of both sites to ascertain if recent changes in flooding regimes, particularly at North Meadow, are symptomatic of climate change or land management change, including agricultural ditch maintenance regimes.</p>	Annual botanical surveys at North Meadow since 2010 also contain water table and flooding information (held by Natural England)
	Functional connectivity with wider landscape	<p>Restore the overall extent, quality and function of any supporting features within the local landscape which provide a critical functional connection with the H6150 feature site</p> <p>For North Meadow this includes; Elmlea Meadow</p>	<p>This recognises the potential need at this site to maintain or restore the connectivity of the site to its wider landscape in order to meet the conservation objectives. These connections may take the form of landscape features, such as habitat patches, hedges, watercourses and verges, outside of the designated site boundary which are either important for the migration, dispersal and genetic exchange of those typical species closely associated with qualifying Annex I habitat features of the site.</p> <p>These features may also be important to the operation of the supporting ecological processes on which the designated site and its features may rely. In most cases increasing actual and functional landscape-scale connectivity would be beneficial.</p>	Annual botanical surveys carried out on adjacent land which has undergone restoration towards MG4 under Higher Level Stewardship (held by Natural England)

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
		<p>SSSI (<0.5 miles to west of North Meadow). Land immediately east of North Meadow which is managed in Higher Level Stewardship.</p> <p>For Clattinger Farm; restore surrounding appropriate land through Countryside Stewardship.</p>	<p>Where there is a lack of detailed knowledge of the connectivity requirements of the qualifying feature, Natural England will advise as to whether these are applicable on a case by case basis.</p> <p>The agricultural drainage ditch network associated with both sites has fallen out of regular maintenance. Regular ditch maintenance has been re-instated on North Meadow through the management of the NNR and also across some of Clattinger Farm by the owner. However, the drainage of both sites, particularly North Meadow, rely on properly functioning agricultural drainage ditches beyond the control of the site owners on third party land. It will be necessary to re-instate regular maintenance on ditches downstream of both sites to restore functional connectivity to the wider landscape and help maintain the H6510 feature. This is being addressed at North Meadow via a Water Environment Grant.</p> <p>Natural England may consider a future extension of the SAC to include Elmlea Meadow SSSI and any other meadows in close proximity to both sites which support the H6150 feature and which are present in the same functioning hydrological unit.</p>	
Structure and function (including its typical species)	Adaptation and resilience	<p>Restore the H6510 feature's ability, and that of its supporting processes, to adapt or evolve to wider environmental change, either within or external to the site</p>	<p>This recognises the increasing likelihood of natural habitat features to absorb or adapt to wider environmental changes.</p> <p>Resilience may be described as the ability of an ecological system to cope with, and adapt to environmental stress and change whilst retaining the same basic structure and ways of functioning. Such environmental changes may include changes in sea levels, precipitation and temperature for example, which are likely to affect the extent, distribution, composition and functioning of a feature within a site.</p> <p>The vulnerability and response of features to such changes will vary. Using best available information, any necessary or likely adaptation or adjustment by the feature and its management in response to actual or expected climatic change should be allowed for, as far as practicable, in order to ensure the feature's long-term viability. The overall vulnerability of this particular SAC to climate change has been assessed by Natural England as being high, taking into account the sensitivity, fragmentation, topography and management of its habitats. This means that action to address specific issues is likely, such as reducing habitat fragmentation, creating more habitat to buffer the site or expand the habitat into more varied landscapes and addressing particular management and condition issues. Individual species may be more or less vulnerable than their habitat itself. In many cases, change will be inevitable so further site assessment and appropriate monitoring is recommended.</p>	<p>NATURAL ENGLAND, 2015. Climate Change Theme Plan and supporting NBCCV Assessments for SACs and SPAs both available at http://publications.naturalengland.org.uk/publication/4954594591375360</p> <p>Annual botanical surveys at North Meadow since 2010 also contain water table and flooding information (held by Natural England)</p> <p>Swill Brook river level information</p>

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			<p>This SAC is on two locations, 4.5 miles apart. This current fragmentation means that neither site is able to support the other through buffering and connectivity. Both sites have potential, associated restoration opportunities which could help to buffer the feature. Climate change may bring differing challenges at both sites.</p> <p>Since the early 2000's North Meadow has been subject to prolonged and often unseasonal periods of flooding which has brought shifts towards wetter, less species-rich plant communities. Clattinger Farm has experienced less prolonged and large scale flooding and may in the future suffer from lack of water as the adjacent Swill Brook regularly dries up in the summer months.</p> <p>Opportunities to purchase land adjacent to North Meadow for restoration will be explored as and when possible.</p>	held by the Environment Agency.
Supporting processes (on which the feature relies)	Air quality	Maintain the concentrations and deposition of air pollutants at within the site-relevant Critical Load or Level values given for this H6510 feature of the site on the Air Pollution Information System (www.apis.ac.uk).	<p>This habitat type is considered sensitive to changes in air quality. Exceedance of these critical values for air pollutants may modify the chemical status of its substrate, accelerating or damaging plant growth, altering its vegetation structure and composition and causing the loss of sensitive typical species associated with it.</p> <p>Critical Loads and Levels are recognised thresholds below which such harmful effects on sensitive UK habitats will not occur to a significant level, according to current levels of scientific understanding. There are critical levels for ammonia (NH₃), oxides of nitrogen (NO_x) and sulphur dioxide (SO₂), and critical loads for nutrient nitrogen deposition and acid deposition. There are currently no critical loads or levels for other pollutants such as Halogens, Heavy Metals, POPs, VOCs or Dusts. These should be considered as appropriate on a case-by-case basis. Ground level ozone is regionally important as a toxic air pollutant but flux-based critical levels for the protection of semi-natural habitats are still under development.</p> <p>It is recognised that achieving this target may be subject to the development, availability and effectiveness of abatement technology and measures to tackle diffuse air pollution, within realistic timescales.</p> <p>Ammonia deposition at both sites currently falls within the critical loading for the habitat present. However, the impact of this is not yet fully determined. Overall nitrogen deposition, which includes ammonia, at both sites currently falls just below the critical loading for the habitat present, however, the potential impacts at both sites are not fully understood due to other factors, particularly deposition of sediment by flooding at North Meadow. North Meadow is adjacent to the A419 trunk road and on the outskirts of the market town of Cricklade whilst Clattinger Farm is in a more rural location, further from potential sources of pollution.</p>	More information about site-relevant Critical Loads and Levels for this SAC is available by using the 'search by site' tool on the Air Pollution Information System (www.apis.ac.uk).

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
Supporting processes (on which the feature relies)	Conservation measures	Maintain the management measures (either within or outside the site boundary) which are necessary to maintain the structure, functions and supporting processes associated with the H6510 feature	<p>Active and ongoing conservation management is needed to protect, maintain or restore this feature at this site.</p> <p>Further details about the necessary conservation measures for this site can be provided by contacting Natural England. This information will typically be found within, where applicable, supporting documents such as Natura 2000 Site Improvement Plan, Site Management Strategies or Plans, the Views about Management Statement for the underpinning SSSI and/or management agreements.</p> <p>Conservation measures for this feature will typically include grazing, cutting, scrub management, weed control, recreation/visitor management. Also covered is maintenance of surface drainage features such as grips, gutters and foot drains. Retention of suitable land use infrastructure/patterns to enable site management e.g. pastoral livestock farming</p>	<p>NATURAL ENGLAND, 2014. Site Improvement Plan: North Meadow & Clattinger Farm SAC (SIP152)</p> <p>ENGLISH NATURE, 2005. Views about the management of North Meadow SSSI and Clattinger Farm SSSI.</p>

Version Control

Advice last updated: N/A

Variations from national feature-framework of integrity-guidance: N/A

