European Site Conservation Objectives: Supplementary Advice on Conserving and Restoring Site Features

Rixton Clay Pits Special Area of Conservation (SAC)
Site code: UK0030265

Rixton Clay Pits/ P. Thomas© Natural England

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About this document

This document provides Natural England's supplementary advice about the European Site Conservation Objectives relating to Rixton Clay Pits SAC. This advice should therefore be read together with the SAC Conservation Objectives 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. Any proposals or operations which may affect the site or its qualifying features should be designed so they do not adversely affect any of the attributes listed in the objectives and supplementary advice.

This supplementary advice to the Conservation Objectives describes in more detail the range of ecological attributes on which the qualifying features will depend and which are most likely to contribute to a site's overall integrity. It sets out minimum targets for each qualifying feature to achieve in order to meet the site's objectives.

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	Rixton Clay Pits Special Area of Conservation (SAC)
Location	Cheshire
Site maps	The designated boundary of this site can be viewed here on the MAGIC website
Designation Date	April 2005
Qualifying Features	See section below
Designation Area	13.99 ha
Designation Changes	n/a
Feature Condition Status	Condition assessment information relating to this site can be found using Natural England's Designated Sites search tool.
Names of component Sites of Special Scientific Interest (SSSIs)	Rixton Clay Pits SSSI
Relationship with other European or International Site designations	n/a
Further information	Natura 2000 Standard Data Form for Rixton Clay Pits SAC

Site background and geography

Situated east of Warrington, this site comprises parts of extensive disused brickworks complex that excavated glacial boulder clay; however workings ceased in the 1960s. The excavations have left a series of hollows, which have since filled with water, developing ponds of variety of sizes and depths.

The parts of the clay pits that are above the water level are still very wet and support rich wetland communities of fen, swamp, wet woodland and grassland. In places these are botanically rich with an abundances of sedges and a number of plants which are rare or uncommon, such as northern marsh orchid, yellow-wort, blue fleabane and creeping willow. The site supports 4 species of native amphibian (common frog, common toad, smooth newt and great crested newt). The site is an important recreation resource locally and is has a network of paths and boardwalks that provide low key access for walkers. The site is a Local Nature Reserve and is managed by Warrington Council ranger service by conservation grazing with sheep.

Great crested newts *Triturus cristatus* are known to occur in at least 20 ponds and breed in least 7. This is a very complex site with a network of interlinked pools and ditches as well as many flooded hollows. The larger water bodies do support fish and this may limit their use by newts. The areas of the excavated pit above the water level have been colonised by fen, grassland and wet woodland, providing excellent terrestrial habitat for Great crested newts. Throughout this wetland there are numerous small

pool and ponds at versus stages of succession. Site management concentrates on maintaining this number of available ponds for Great Crested Newt breeding by management and through new pond creation. The Great Crested Newt population has been monitored since 1994 by the site rangers.

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 Species:

- S1166 Great crested newt *Triturus cristatus*

  The great crested newt is the largest native British newt, reaching up to around 17cms in length. Newts require aquatic habitats for breeding. Eggs are laid singly on pond vegetation in spring, and larvae develop over summer to emerge in August – October, normally taking 2–4 years to reach maturity. Juveniles spend most time on land, and all terrestrial phases may range a considerable distance from breeding sites.

  At the time of its notification as SSSI, the water-bodies at this SAC, created by clay-mining activity, consistently yielded high counts of great crested newts. The great crested newt population has been increasing since, with peak counts in excess of 500 newts (torch counts in 1994 were 95, in 2005 were 437 and in 2015 were 518). This increase is a consequence of over 20 years of conservation management by the rangers including pond management and creation as well as management and enhancement of the terrestrial habitat. The breeding ponds are surrounded by fen, swamp and wet woodland that have developed as a result of succession following the cessation of the previous mining activities. Great crested newts are known to occur in at least 20 ponds across the SSSI/SAC. New ponds have also been created more recently for wildlife and amenity purposes.

  The great crested newt is also fully protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and Schedule 2 of the Conservation of Habitats and Species Regulations 2017, making it a 'European Protected Species'. A Licence may therefore be required for any activities likely to harm or disturb great crested newts.

Great Crested Newt (female)

Table 1: Supplementary Advice for Qualifying Features: S1166 Great crested newt *Triturus cristatus*

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
Supporting habitat: structure /function	Overall Habitat Suitability Index score	For this SAC, maintain an overall Great Crested Newt (GCN) Habitat Suitability Index score of no less than 0.8.	The Habitat Suitability Index (HSI) provides a measure of evaluating habitat quality and quantity for Great Crested Newts. The Index score lies between 0 and 1, with 1 representing optimal habitat. In general, the higher the index score the more likely the site is to support great crested newts. The HSI methodology is documented in ARG-UK Advice Note 5 (May 2010). The HSI should not be used as a substitute for more detailed surveys and consideration of other attributes where necessary.	UK AMPHIBIAN AND REPTILE GROUPS (ARG-UK) Advice Note 5 on the Habitat Suitability Index (May 2010). Aerial photographs 2005, 2008, 2014 (held by Natural England) NATURAL ENGLAND, 2013. Rixton Clay Pits SSSI Habitat map (held by Natural England) This attribute will be periodically monitored as part of Natural England's site condition assessments.
	Presence of ponds	Maintain the number of ponds present within the site (7 breeding ponds within site)	Ponds to include breeding ponds as well as non-breeding ponds, since the latter may be used for foraging or sustaining prey populations. The surface area of a pond is taken from when water reaches its highest level (excluding flooding events), which will usually be in the spring. Note that this site is not ground water dependent; there some is surface water inflows from the surrounding fen and swamp habitat. Over all water levels tend to be relatively stable.	Aerial photographs 2005, 2008, 2014 (held by Natural England) NATURAL ENGLAND, 2013. Rixton Clay Pits SSSI Habitat map (held by Natural England) This attribute will be periodically monitored as part of Natural England's site condition assessments.
	Permanence of ponds	Maintain the permanence of water within ponds present within the site	Ponds to include breeding ponds as well as non-breeding ponds, since the latter may be used for foraging or sustaining prey populations. Ponds should have a high degree of permanence (they never or rarely dry out other than though natural drought) and this may be adversely affected by changes in the supply or flow of water (from either surface water and/or groundwater sources) to the ponds.	

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
	Cover of macrophytes	Maintain a high cover of macrohytes, typically between 50-80%, within ponds	Marginal and emergent vegetation are important components of a great crested newt pond as they provide excellent egg-laying sites. Good plants for this purpose include water forget-me-not *Myosotis scorpioides*, floating sweet grass *Glyceria fluitans,* brooklime *Veronica beccabunga, water starwort Callitriche sp* and great hairy willowherb *Epilobium hirsutum*. They are, however, an integral part of the natural successional change of a waterbody and whilst it is preferable to have a good range and area of marginal plants, they should not extend across the entire water surface. In most circumstances it will be desirable to retain a fringe of marginal and emergent vegetation around at least half of a pond's edge. Where the marginal vegetation is particularly invasive, and provides no specific benefit to crested newts, it may be decided that its complete removal is necessary.	
Supporting habitat: structure/ function	Supporting terrestrial habitat	Maintain the quality of terrestrial habitat likely to be utilised by Great Crested Newts, with no fragmentation of habitat by significant barriers to newt dispersal.	Great crested newts need both aquatic and terrestrial habitat. Good quality terrestrial habitat, particularly within 500m of the breeding ponds, provides important sheltering, dispersing and foraging conditions and can include all semi-natural habitat along with meadows, rough tussocky grassland, scrub, woodland, as well as 'brownfield' land or low-intensity farmland. Good quality terrestrial habitat for great crested newt has structural diversity which can be provided by features such as hedges, ditches, fen, wet woodland, rabbit burrows and small mammal holes. Good habitat provides a range of invertebrates, such as earthworms, insects, spiders and slugs, on which newts are known to feed. Fragmentation refers to significant barriers to newt movement such as walls and buildings, but not footpaths or tracks. Newts disperse over land to forage for food, and move between ponds. The distances moved vary widely according to habitat quality and availability but typically the majority of adults probably stay within around 250metres of the breeding pond but may well travel further if there are areas of high quality foraging and refuge habitat extending beyond this range.	
	Shading of ponds	Ensure breeding pond perimeters are generally free of shade	Shading from trees and/or buildings (not including emergent pond vegetation) can negatively affect the abundance of marginal vegetation in	

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
		(typically no more than 60% cover of the shoreline)	ponds, water temperature and the rate of hatching and development of great crested newt eggs and larvae. The breeding ponds tend to be within the area of open fen and swamp, there is targeted scrub management and conservation grazing to keep the scrub to below 10%.	
Supporting habitat: structure/ function	Presence of fish and wildfowl	Ensure fish and wildfowl are absent or rare in all ponds.	At high densities waterfowl (i.e. most water birds such as ducks, geese and swans but excluding moorhen) can remove all aquatic vegetation, adversely affect water quality and create turbid pond water conditions. Some may also actively hunt adult Great Crested Newts and their larvae. Similarly fish can be significant predators of newt larvae. The presence of waterfowl and fish can reduce habitat suitability. There is no fishery within the site, but the large flooded clay pit dose support fish, this can become an issue in one of the breeding ponds after flooding. However site rangers regularly check this area after flooding and will remove fish from the pond if needed.	This attribute will be periodically monitored as part of Natural England's site condition assessments.
Supporting processes (on which the feature or its supporting habitat relies)	Water quality	Maintain the quality of pond waters within the site as indicated by the presence of an abundant and diverse invertebrate community.	As the clarity and chemical status of water bodies supporting Great Crested Newts can be subjective, the presence of an abundant and diverse community of freshwater invertebrates can be indicative of suitable water quality standards. Invertebrate groups present should include groups such as mayfly larvae and water shrimps. This will ensure ponds support a healthy (mainly invertebrate) fauna to provide food for developing GCN larvae and adults. There are no external inflows to the site, the wetland and ponds are dependent on rainfall.	This attribute will be periodically monitored as part of Natural England's site condition assessments.
Population (of the feature)	Population abundance	Maintain the abundance of the Great Crested Newt population at a level which is consistently above 500 individuals, whilst avoiding deterioration from its current level as indicated by the latest mean peak count or equivalent.	This will ensure there is a viable population of Great Crested Newts present at this site which contributes as appropriate to its Favourable Conservation Status across its natural range in the UK. The great crested newt population has been increasing at the site since notification as SSSI with the peak counts in excess of 500 newts (torch counts in 1994 were 95, in 2005 were 437, in 2015 were 518). Due to the dynamic nature of population change, the target-value given for the population size or presence of this feature is considered to be the	WARRINGTON BOROUGH COUNCIL. Counts of Great Crested Newt Population at Rixton Clay Pits SSSI 1994 to 2013 (Summary data provided by site rangers M Lees and M Walsh from torch counts)

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			minimum standard for conservation/restoration measures to achieve. This minimum-value may be revised where there is evidence to show that a population's size or presence has significantly changed as a result of natural factors or management measures and has been stable at or above a new level over a considerable period. The values given here may also be updated in future to reflect any strategic objectives which may be set at a national level for this feature. Given the likely fluctuations in numbers over time, any impact-assessments should focus on the current size of the site's population, as derived from the latest known or estimated level established using the best available data. This advice accords with the obligation to avoid deterioration of the site or significant disturbance of the species for which the site is designated, and seeks to avoid plans or projects that may affect the site giving rise to the risk of deterioration. Similarly, where there is evidence to show that a feature has historically been more abundant than the stated minimum target and its current level, the ongoing capacity of the site to accommodate the feature at such higher levels in future should also be taken into account in any assessment. This value is also provided recognising there will be inherent variability as a result of natural fluctuations and margins of error during data collection. Whilst we will endeavour to keep these values as up to date as possible, local Natural England staff can advise that the figures stated are the best available. Unless otherwise stated, the population size or presence will be that measured using standard methods, such as peak mean counts or breeding surveys. Estimating the average size of the Great Crested Newt population will normally be based on the peak count of adults undertaken in the known peak season for the area, and in-year weather conditions; likely to be mid-April to mid-May in central areas. The peak count is derived by summing the counts across the site on 'best' night for each season. Considerable natural between-year variation in population counts is frequent.	This attribute will be periodically monitored as part of Natural England's site condition assessments.
Population (of the feature)	Population viability	Maintain the presence of great crested newt eggs in breeding ponds at a level which is likely to	A "breeding pond" is defined as a pond in which egg-laying and successful metamorphosis (e.g. the pond doesn't dry up too soon) is likely to occur at least once every three years. The optimum time to	WARRINGTON BOROUGH COUNCIL. Counts of Great

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
		maintain the abundance of the population at or above its target level.	survey for eggs is mid-March to mid-May. Presence of eggs can be recorded by day or night visits and surveys should be combined with visits for the adult component.	Crested Newt Population at Rixton Clay Pits SSSI 1994 to 2013 (Summary data provided by site rangers M Lees and M Walsh from torch counts) Warrington Borough Council also hold data for the Rixton Clay Pit LNR This attribute will be periodically monitored as part of Natural England's site condition assessments. NATURAL ENGLAND, 2013. Rixton Clay Pits SSSI Habitat map (held by Natural England)
Population (of the feature)	Supporting metapopulation	Maintain the connectivity of the SAC's great crested newt population with any associated meta-populations (either within or outside of the site boundary)	Great crested newts often exist in meta-populations which are groups of associated populations made up of newts which breed in, and live around, a cluster of ponds. Great Crested Nets are known to occur within an adjacent active quarry site and there may be opportunity for individuals to move between the populations. There will be some interchange of newts between these populations, even though most adults consistently return to the same pond to breed, and so it will be important to avoid the isolation of these populations from each other. A meta-population associated with a SAC may occur outside of the designated site boundary. The connectivity of the wider local landscape to the SAC may therefore be important as this may help to ensure the survival of the overall population even if sub-populations are temporarily affected by, for example, pond desiccation or fish introductions.	
Supporting processes (on which the feature and/or its supporting habitat relies)	Conservation measures	Maintain the management measures (either within and/or outside the site boundary as appropriate) which are necessary to maintain the structure, functions and supporting processes associated with the great crested newt feature and/or its supporting habitats.	Active and ongoing conservation management is needed to protect, maintain or restore this feature at this site. 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 the Natura 2000 Site Improvement Plan, site management strategies or plans, the Views about Management Statement for the underpinning SSSI and/or management agreements.	NATURAL ENGLAND, 2014. Site Improvement Plan: Rixton Clay Pits SAC (SIP200). Available from http://publications.naturalengland.org.uk/publication/5221653453733888 ENGLISH NATURE, 2004. Views about Management of Rixton Clay Pits SSSI. Available at http://www.sssi.naturale

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
				ngland.org.uk/Special/ssi/vam/VAM%201003514.pdf
Supporting habitat: extent and distribution	Distribution of supporting habitat	Maintain the distribution and continuity of the great crested newt's supporting habitat, including where applicable its component vegetation types and associated transitional vegetation types, across the site	A contraction in the range, or geographic spread, of the feature (and its component vegetation) across the site will reduce its overall area, the local diversity and variations in its structure and composition, and may undermine its resilience to adapt to future environmental changes. Contraction may also reduce and break up the continuity of a habitat within a site and how well the species feature is able to occupy and use habitat within the site. Such fragmentation may 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 this feature and this may affect its viability.	NATURAL ENGLAND, 2013. Rixton Clay Pits SSSI Habitat map (held by Natural England)
Supporting processes (on which the feature and/or its supporting habitat relies)	Adaptation and resilience	Maintain the feature's ability, and that of its supporting habitat, to adapt or evolve to wider environmental change, either within or external to the site	This recognises the increasing likelihood of supporting habitat features having to absorb or adapt to wider environmental changes. 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 precipitation and temperature for example, which are likely to affect the extent, distribution, composition and functioning of a feature within a site. 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 *moderate*, taking into account the sensitivity, fragmentation, topography and management of its habitats/supporting habitats. This means that that some adaptation action for specific issues may be required, 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	NATURAL ENGLAND, 2015. Climate Change Theme Plan and supporting National Biodiversity Climate Change Vulnerability assessments (NBCCVAs) assessments for SACs and SPAs in England [available at http://publications.naturalengland.org.uk/publication/4954594591375360].

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			less vulnerable than their habitat itself. In many cases, change will be inevitable so appropriate monitoring would be required.	
Supporting processes (on which the feature and/or its supporting habitat relies)	Air quality	Maintain or restore, where necessary, concentrations and deposition of air pollutants at or below the site-relevant Critical Load or Level values given for this feature of the site on the Air Pollution Information System (www.apis.ac.uk).	The supporting freshwater and terrestrial habitat of this feature is considered sensitive to changes in air quality. Exceedance of critical values for air pollutants may modify the chemical status of its substrate, accelerating or damaging plant growth, altering its vegetation structure and composition (including food-plants) and reducing supporting habitat quality and population viability of this feature. 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 may be critical levels for ammonia (NH3), oxides of nitrogen (NOx) 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. 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.	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.
Version Control Advice last updated; not applicable				
Variations from national feature-framework of integrity-guidance: Not applicable				