



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

Denby Grange Colliery Ponds Special Area of Conservation (SAC) Site Code: UK0030036



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About this document

This document provides Natural England's supplementary advice about the European Site Conservation Objectives relating to Denby Grange Collier Ponds 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'

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

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About this Site

European Site Information

Name of European Site	Denby Grange Colliery Ponds Special Area of Conservation
Location	West Yorkshire
Site Map	The designated boundary of this site can be viewed here
Designation Date	1 April 2005
Qualifying Features	See section below
Designation Area	18.34ha
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)	Denby Grange Colliery Ponds SSSI
Relationship with other European or International Site designations	N/A

Site Background and geography

Covering a total area of 18.52 hectares, this site lies in the valley of Stony Cliffe Beck, a tributary of the River Calder, close to the village of Netherton, south-west of Wakefield, West Yorkshire. To the immediate west is the site of the former Denby Grange colliery, now supporting a timber yard and associated buildings.

The SAC supports three water bodies within ancient, replanted, predominantly birch and oak woodland. The original main breeding pond was created by coal-mining activity and a second pond was created within the SAC in 2000. This newer pond is also known to support breeding great crested newts. A third smaller pond towards the sites northern boundary is not known to support breeding great crested newts.

On designation this site supported the sixth-highest recorded count of great crested newts *Triturus cristatus* for recent years in Great Britain and the largest known breeding colony of great crested newts in West Yorkshire. Large numbers of four other amphibian species also occurred, with substantial populations of smooth newt *Triturus vulgaris* and palmate newt *T. helveticus*. Counts of frogspawn indicate a good population of common frog *Rana temporaria* and counts of common toad *Bufo bufo* run to several hundreds.

Qualifying features of the SAC

Qualifying habitats:

N/A

Qualifying Species:

Denby Grange Colliery Ponds SAC is important because it contains a species listed in Annex II of the Habitats Directive requiring special conservation measures. This species is described as its 'qualifying feature', and is listed in the European Site Conservation Objectives. It is important at a European level and for this reason the European Commission has entered the Denby Grange Colliery Ponds SAC on the List of Sites of Community Importance. An asterisk (*) will indicate that the feature is considered to be a Priority feature (see explanatory notes of the Conservation Objectives document for further explanation).

For the purposes of preparing for or undertaking an assessment required by the Conservation of Habitats and Species Regulations 2010 (as amended), all of the qualifying features listed below must all be treated equally.

The following Annex II species of European importance were the primary reason for the initial selection of this SAC;

- 1166 Great crested newt *Triturus cristatus*

The great crested newt is the largest native British newt, reaching up to around 17cms in length. It has a granular skin texture (caused by glands which contain toxins making it unpalatable to predators), and in the terrestrial phase is dark grey, brown or black over most of the body, with a bright yellow/orange and black belly pattern. Adult males have jagged crests running along the body and tail. 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.

Breeding sites are mainly medium-sized ponds, though ditches and other water body types may also be used less frequently. Ponds with ample aquatic vegetation (which is used for egg-laying) seem to be preferred. Great crested newts can be found in rural, urban and post-industrial settings, with populations less able to thrive where there are high degrees of fragmentation. The connectivity of the landscape is important, since great crested newts often occur in meta- populations that encompass a cluster of several or many ponds. This helps ensure the survival of populations even if sub-populations are affected by, for example, the temporary drying-out of breeding ponds.

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 2010 (as amended), making it a 'European Protected Species'. A Licence may therefore be required for any activities likely to harm or disturb great crested newts.

At designation, the water-body at Denby Grange Colliery Ponds SAC, created by coal-mining activity, consistently yielded high counts of great crested newts. The pond is surrounded by wooded slopes, with adjacent anthropogenic habitat associated with the previous mining activities. A large new pond was created in 2000 to help support the conservation of the population, which was previously reliant on a single breeding site.



Great Crested Newt (female)

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

Attributes		Targets	Supporting and/or Explanatory Notes	Sources of site-based evidence (where available)
Supporting habitat: structure/ function	Overall Habitat Suitability Index score	For this SAC, restore and then maintain an overall Great Crested Newt Habitat Suitability Index score to no less than 0.8.	The Habitat Suitability Index (HSI) provides an overall measure of evaluating habitat quality and quantity for Great Crested Newts. The Index score lies between 0 and 1, with 1 representing optimal GCN 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. This will be calculated for the great crested newt breeding ponds: Old Pond and Fire Pond. In February 2013 a HSI Assessment of the great crested newt breeding ponds at Denby Grange Colliery Ponds SAC was carried out. In January 2014 a fish survey confirmed no fish to be present in the Fire Pond. The combination of these data gives the following HSI score for the ponds: Old Pond: HSI score = 0.63 Fire Pond: HSI score = 0.87 Current average across SAC breeding ponds is HSI score =0.75 The average HSI score for the two breeding ponds within the SAC can be increased by reducing shading and improving drainage and water quality at the Old Pond as well as increasing macrophyte cover at both the Old and Fire Ponds.	HSI Score: Chris Cathrine (2013) field survey. Fish data on Fire Pond: MEM Fisheries Consultants & Services Ltd (2014) Fish Survey at Denby Grange Colliery Fire Pond. (both available from Natural England on request)
Supporting habitat: structure/ function	Presence of ponds	Maintain the 3 ponds present within the SAC, which include 2 great crested newt breeding ponds (Old Pond and Fire Pond).	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. Ponds within SAC: 1) Old Pond at grid reference SE270153 2) Fire Pond at grid reference SE270152 3) Northern Pond at grid reference SE268156 *These three ponds were extant when Denby Grange Colliery Ponds was	This attribute will be periodically monitored as part of Natural England's site condition assessments .

Attributes		Targets	Supporting and/or Explanatory Notes	Sources of site-based evidence (where available)
			designated as a SAC in 2001.	
Supporting habitat: structure/ function	Permanence of ponds	Maintain the permanence of water within Fire Pond, indicated by a minimum summer depth of 10cms Restore the permanence of water within Old Pond indicated by a minimum summer depth of 10cms	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 through 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. Northern Pond (non-breeding pond) not known to dry out as it is connected to a stream. Hydrology of Old Pond needs restoring as it currently dries out every year prior to newt larvae developing to terrestrial phase.	This attribute will be periodically monitored as part of Natural England's site condition assessments .
Supporting habitat: structure/ function	Cover of macrophytes	Restore and then maintain a good cover of macrophytes to the breeding ponds of Fire and Old Pond within the site.	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 <i>Myosotis scorpioides</i>, flote/sweet grass <i>Glyceria fluitans</i> and great hairy willowherb <i>Epilobium hirsutum</i>. They are, however, an integral part of the natural successional change of a water body 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. "Good" cover of marginal vegetation, emergent, submerged and/or floating vegetation to be present in at least 50% of newt breeding ponds. "Good" defined as: 25% - 100% of margin covered by marginal and emergent species, and 25% - 75% of pond bottom/ midwater/surface covered by submerged or floating species.	This attribute will be periodically monitored as part of Natural England's site condition assessments .
Supporting habitat: structure/ function	Invasive, non-native and/or introduced species	Invasive non-native species should be rare or absent components of open water habitat supporting the great crested newt.	Submerged vegetation is an important component of the pond ecosystem, making it habitable to a wide range of animals, but too many plants can occasionally be undesirable for newts, if the water column becomes completely shaded and choked. Introduced or 'alien' submerged plants can grow very vigorously and dominate more beneficial native species. New Zealand stonecrop <i>Crassula helmsii</i> and Canadian pondweed <i>Elodea canadensis</i> are two examples to be avoided. In most instances, any introductions should be avoided and if present the complete removal of such species is usually recommended.	

Attributes		Targets	Supporting and/or Explanatory Notes	Sources of site-based evidence (where available)
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 newts has structural diversity which can be provided by features such as hedges, ditches, stone walls, old farm buildings, loose stone/rocks, rabbit burrows and small mammal holes. Good habitat provides a range of invertebrates, such as earthworms, insects, spiders and slugs, on which Great crested newts are known to feed. Fragmentation refers to significant barriers to Great crested 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 during dispersal vary widely according to habitat quality and availability. At most sites, the majority of adults probably stay within around 250m of the breeding pond but may well travel further if there are areas of high quality foraging and refuge habitat extending beyond this range.	
Supporting habitat: structure/ function	Shading of ponds	Pond perimeters should generally be free of shade affecting less than 60% of the shoreline, with less than 25% of southern margin in Old Pond shaded and less than 50% of southern margin in Fire Pond shaded.	Shading from trees and/or buildings (not including emergent pond vegetation) can negatively affect the abundance of marginal vegetation in ponds, water temperature and the rate of hatching and development of great crested newt eggs and larvae.	This attribute will be periodically monitored as part of Natural England's site condition assessments .
Supporting habitat: structure/ function	Presence of fish and wildfowl	Fish and wildfowl are absent from 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 GCNs and their larvae. Similarly fish can be significant predators of GCN larvae. The presence of waterfowl and fish can reduce habitat suitability. These should be wholly absent from sites which support fewer than 5 ponds.	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 and restore 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 GCNs 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	Water quality data from Chris Cathrine (2013) field survey, data held in electronic site file.

Attributes		Targets	Supporting and/or Explanatory Notes	Sources of site-based evidence (where available)
		Maintain water quality in Fire Pond, and restore water quality in both Old Pond and Northern Pond.	adults. Water quality is currently considered good in the Fire Pond with the presence of a diverse assemblage of macro-invertebrates – water quality should therefore be maintained in this pond. Observations of the Old Pond over recent years have indicated the pond suffers from poor water quality with few macro-invertebrates present. There is also an unconsented discharge to the Old Pond which is being investigated but which is thought to be contributing the poor water quality. Water quality at the Northern Pond appears to be poor due to the present of an ochreous discharge and few aquatic macro-invertebrates. This latter pond also receives a consented, treated sewage discharge. The aim should be to improve water quality in both the Old and Northern Ponds.	
Population (of the feature)	Population size	The size of the great crested newt population is being maintained at or above a peak mean of at least 625 adults in April/May	Estimating the average size of the GCN 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 and between-year variation in great crested newt population counts is frequent, and so monitoring the achievement of this target (through routine condition-assessment) will allow for both natural fluctuations and any margins of error in data collection. The target is based on the peak mean count of great crested newts over 4 consecutive years between 1992 – 1995 prior to SSSI designation in 1997. The peak count of 625 individuals was recorded in the Old Pond in 1993. Note there were no further GCN surveys undertaken at the site prior to SAC designation in 2001.	This attribute will be periodically monitored as part of Natural England's site condition assessments. Baseline taken from peak of GCN surveys undertaken 1992 – 1995, data as referenced in Gibson, S. D. (Ed) Results of a survey and assessment of 15 great crested newt (<i>Triturus cristatus</i>) sites thought to hold large population using standardised survey techniques. JNCC, ISSN 0963-8091
Population (of the feature)	Population viability	Maintain the presence of great crested newt eggs in breeding ponds at a level	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 survey for eggs is mid-	This attribute will be periodically monitored as part of Natural

Attributes		Targets	Supporting and/or Explanatory Notes	Sources of site-based evidence (where available)
		which is likely to maintain the abundance of the population to its target level.	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.	England's site condition assessments .
Population (of the feature)	Supporting metapopulation	Maintain the connectivity of the SAC great crested newt population to other closely-associated populations (either within or outside of the site boundary), including those present at Stockmoor Common Maintain the woodland, hedgerow and grassland habitats present between the SAC and the nearby Stockmoor Common Nature Reserve.	Great crested newts often exist in metapopulations. A metapopulation is a group of associated populations made up of newts which breed in, and live around, a cluster of ponds. 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 metapopulation 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. Denby Grange Colliery Ponds SAC is c.170m from Stockmoor Common Nature Reserve, where there are 3 ponds (two within rough grassland and one within woodland habitat). Great crested newts have been recorded within all of these water bodies. The main GCN breeding pond at Stockmoor Common is c.460m from the main breeding pond in the SAC. It is likely that newts will move between the ponds in the SAC and the reserve, and constitute a wider metapopulation. The undesignated land between the SAC and Stockmoor Common supports commuting habitat for great crested newts including permanent pastures, hedgerows and a woodland copse. These habitats should be maintained to allow movement of the metapopulation between the sites. The woodland within the SAC also forms part of this commuting habitat and should likewise be maintained.	Source of Stockmoor Common Nature Reserve GCN data: Yorkshire Wildlife Trust (2007), West Yorkshire Ecology (2012), Natural England (2013), North East and West Yorkshire Amphibian and Reptiles Group (2013). All available from Natural England on request.
Supporting habitat: extent and distribution	Extent of supporting terrestrial habitat	The overall extent of habitat which supports the Great Crested Newt feature is either being maintained at or recovering to 18.01 ha of woodland	In order to contribute towards the objective of achieving an overall favourable conservation status of the great crested newt feature at a UK level, it is important to maintain or if appropriate restore the extent of supporting habitats and their range within this SAC. The information available on the extent and distribution of supporting habitat used by the feature may be approximate depending on the nature, age and accuracy of data collection, and may be subject to periodic review in light of improvements in data.	Area calculated Sept 2002, confirmed by use of landline maps and aerial photographs. Area of woodland updated 2012 to remove areas of road and hard standing that have been present since before designation
Supporting	Distribution of	Maintain the distribution and	This target has been included because a contraction in the range, or	

Attributes		Targets	Supporting and/or Explanatory Notes	Sources of site-based evidence (where available)
habitat: extent and distribution	supporting terrestrial habitat	continuity of the feature and its supporting habitat, including where applicable its component vegetation types and associated transitional vegetation types, across the site is maintained.	geographic spread, of the supporting habitat (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 the resilience of the Great Crested Newt feature 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.	using ArcView GIS.
Supporting processes (on which the feature and/or its supporting habitat relies)	Conservation measures	Management or other measures (within and/or outside the site boundary as appropriate) necessary to maintain or restore the Great Crested Newt feature and/or its supporting habitat are underway and are not being undermined or compromised.	This target has been included because 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 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's Views about the Management of the SSSI which underpin this SAC are available from http://www.sssi.naturalengland.org.uk/Special/sssi/search.cfm
Supporting processes (on which the feature and/or its supporting habitat relies)	Adaptation and resilience of the feature and the supporting processes on which it relies	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, is not prejudiced	This attribute and target has been included to recognise the increasing likelihood of supporting habitat features needing 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 sea levels, 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.	
Supporting habitat: structure/ function	Soils, substrate and nutrient cycling	The properties of the underlying soil types, including structure, bulk density, total carbon, pH, soil	This target is included because soil and substrates supports basic ecosystem function and is 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	

Attributes		Targets	Supporting and/or Explanatory Notes	Sources of site-based evidence (where available)
		nutrient status and fungal:bacterial PLFA ratio, are maintained within typical values for the supporting habitat	provides a habitat used by a wide range of organisms. Soil biodiversity has a vital role to recycle organic matter. Changes to natural soil properties may therefore affect the ecological structure, function and processes associated with the supporting habitat of the Great Crested Newt feature.	
Supporting processes (on which the feature and/or its supporting habitat relies)	Air quality	Maintain or restore as necessary the concentrations and deposition of air pollutants to 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).	This target has been included because the supporting 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 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 are 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. 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. 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 (www.apis.ac.uk).

Version Control

Advice last updated: n/a

Variations from national feature-framework of integrity-guidance:

Presence of ponds: The generic target states that the 'number of ponds' or 'surface area of the ponds' can be used as a target for this criterion. This latter target has not been selected for this site as the pond levels vary considerably throughout the year and across years. The area of the Old Pond is very unlikely to achieve its original size on designation as the hydrology of the site has changed significantly since designation e.g. it is thought that this pond received significant input of water from the working colliery which has now closed, the groundwater input is also suspected to have changed since the Fire Pond was created and as the Old Pond is thought to be situated on a perched groundwater tables in unstable substrate created as a result of mining activity. Current investigations are underway to clarify the hydrology of the site. Water availability is also better tackled for these ponds in the target of 'permanence of ponds'. Therefore the 'number of ponds' is deemed a more suitable target in this criterion.