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

Cannock Extension Canal Special Area of Conservation (SAC)
Site Code: UK0012672

Photograph: 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 Cannock Extension Canal 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. You may also find it helpful to refer to Natural England's SSSI Impact Risk Zones dataset available here.

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	Cannock Extension Canal Special Area of Conservation (SAC)
Location	Staffordshire (SK0198205556)
Site Maps	The designated boundary of this site can be viewed here on the MAGIC website
Designation Date	01 April 2005
Qualifying Features	Floating water-plantain *Luronium natans*
Designation Area	5.47ha
Designation Changes	None
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)	Cannock Extension Canal SSSI
Relationship with other European or International Site designations	None
Other information	Natura 2000 Standard Data Form for Cannock Extension Canal SAC

Site background and geography

The Cannock Extension Canal in central England is an example of anthropogenic, lowland habitat supporting floating water-plantain *Luronium natans* at the eastern limit of the plant's natural distribution on England.

The Cannock Extension Canal was dug in 1863 for transportation of coal, which was the main industry in the area at the time, and is a terminal side branch of the Wyrley and Essington Canal extending northwards for 2.5 km towards Norton Canes. It is part of the extensive inland waterway system running throughout Birmingham and the Black Country.

The canal is fed by Chasewater Reservoir SSSI that lies approximately 8km to the north-east. The high water quality of the canal is due to the wider catchment of its feeder reservoir comprising semi-natural habitat such as heathland at Cuckoo Bank. There is little intensive agriculture in the catchment so water quality is good.

The high water quality, uneven canal bottom and the low volume of boat traffic have allowed a diverse aquatic flora to develop without any extensive reed-swamp incursion. The good water quality, low in plant nutrients, prevents dominant species such as reedmace, filamentous algae and invasive alien species such as *Elodea* species from dominating.

The large population of the nationally scarce floating water-plantain *Luronium natans*, found throughout the length of the canal, often carpeting it in places, is the best known colony in both Staffordshire and the West Midlands, and is considered to be one of the best areas in the United Kingdom for the species. In addition, a total of 34 aquatic plants have been recorded from the canal, making it the richest known waterway of its type in Staffordshire and the West Midlands and placing it high within the national canal network series.

In addition, good populations exist of flowering-rush *Butomus umbellatus*, arrowhead *Sagittaria sagittifolia*, shining pondweed *Potamogeton lucens*, perfoliate pondweed *P. perfoliatus* and spiked water-milfoil *Myriophyllum spicatum*, all of which are rare or uncommon in Staffordshire. Other uncommon species present include curled pondweed *P. crispus* and narrow-leaved water-plantain *Alisma lanceolatum*.

The canal is part of the navigable canal network and is home to a number of moorees mainly at the northern end. The canal is fished but not stocked. The canal is easily accessible from the communities at Pelsall and Norton Canes.

The Cannock Extension Canal has a variety of land uses adjacent to it. At the southern end of the SAC at the junction with the main Wyrley and Essington Canal the Extension Canal cuts through Pelsall Common Local Nature Reserve for about a fifth of its length, where a mosaic of heathland, woodland, wetland and grassland protects and complements the high nature value of the canal. Moving northwards, the adjacent land use changes to arable agriculture on both sides for about half of its length to the north. Moving further north, other land uses are a restored (and sealed) refuse tip, boatyard and moorings on the offside and woodland, fishing pool and arable agriculture on the tow-path side up to the A5 trunk road at the very north of the site.

The canal's tow-path forms the eastern boundary and has a wooded boundary for most of its length. The offside is also wooded in places and the trees overhang the canal; work has been carried out to crown lift several to reduce the shade and leaf litter, which would accumulate and smother the vegetation growing on the bed of the canal, such as the floating water-plantain *Luronium natans*.

There are drains into the canal from adjacent land, including one from Wyrley Common, which contains colliery shale waste in the water, and has led to a build-up of very fine sediment in the central section of the canal, which is slow to settle out once disturbed by boat traffic.

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:

- **S1831 Floating water-plantain *Luronium natans***

Floating water-plantain *Luronium natans* occurs in a range of freshwater situations, including nutrient-poor lakes in the uplands and slowly-flowing lowland rivers, pools, ditches and canals that are moderately nutrient-rich.

Floating water-plantain *Luronium natans* occurs as two forms: in shallow water with floating oval leaves, and in deep water with submerged rosettes of narrow leaves. The plant thrives best in open situations with a moderate degree of disturbance, where the growth of emergent vegetation is held in check. Populations fluctuate greatly in size, often increasing when water levels drop to expose the bottom of the water body.

Floating water-plantain *Luronium natans* can grow in two different forms; perennial vegetative populations and many perennial flowering populations of floating water-plantain *Luronium natans* occur as persistent, largely stable populations in deep water. Perennial flowering populations in naturally

meso-eutrophic habitats are likely to be dynamic and very vulnerable. Annual flowering populations of floating water-plantain *Luronium natans* occur as dynamic meta-populations, where individual populations will colonise, expand and set seed in suitable habitat and then decline and disappear due to community succession.

Table 1: Supplementary Advice for Qualifying Features: S1831. *Luronium natans*; Floating water-plantain

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
Supporting habitat: structure /function	**Habitat structure**	Ensure the supporting open water habitat is sufficiently free of other competing vegetation to allow space for floating water-plantain to thrive.	Floating water-plantain *Luronium natans* is intolerant of competition from other plants and occurs in a range of freshwater habitats – oligotrophic and mesotrophic lakes, slow-flowing rivers and associated floodplain pools and small pools in heathland. There are also large populations in a number of disused or recently restored canals.	CANAL AND RIVER TRUST. 2016. Cannock Extension Canal SAC site monitoring 2007 to 2016. NATURAL ENGLAND. 2014. Rapid Integrated Site Assessment for Cannock Extension Canal Units 1 and 2. Natural England. NATURAL ENGLAND. 2012. Cannock Extension Canal SSSI Definitions of Favourable Condition. Available from Natural England. This attribute will be regularly monitored through the Canal and River Trust's annual site survey and periodically monitored as part of Natural England's SSSI condition assessments.
	Vegetation structure	Ensure supporting open water habitat is free of shade or competitive vegetation, with taller species associated with floating water-plantain *Luronium natans* patches no more than occasional.	Excessive overhanging vegetation both results in shading of aquatic vegetation and large inputs of organic matter in the form of leaf litter.	CANAL AND RIVER TRUST. 2016. Cannock Extension Canal SAC site monitoring 2007 to 2016. NATURAL ENGLAND. 2014. Rapid Integrated Site Assessment for Cannock Extension Canal Units 1 and 2. Natural England. NATURAL ENGLAND. 2012. Cannock Extension Canal SSSI Definitions of Favourable Condition. Available from Natural England. This attribute will be regularly monitored through the Canal and River Trust's annual site survey and periodically

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
				monitored as part of Natural England's SSSI condition assessments.
	Vegetation composition: invasive non-native species	Ensure the following invasive non-native species are absent from the site or being contained at a level which does not cause loss of area of the floating water-plantain feature; New Zealand pigmyweed *Crassula helmsii,* Floating pennywort *Hydrocotyle ranunculoides,* Parrot feather watermilfoil *Myriophyllum aquaticum,* Water fern *Azolla filiculoides*.	These alien plant species are highly competitive and will impact negatively on floating water-plantain *Luronium natans*, which is not competitive. Other introduced species may have effects on ecosystem functioning through the food web or via direct effects on the plant community, e.g. artificially large waterfowl populations or non-native crayfish species.	CANAL AND RIVER TRUST. 2016. Cannock Extension Canal SAC site monitoring 2007 to 2016. NATURAL ENGLAND. 2014. Rapid Integrated Site Assessment for Cannock Extension Canal Units 1 and 2. Natural England. NATURAL ENGLAND. 2014. Site Improvement Plan: Cannock Extension Canal (SIP036). NATURAL ENGLAND. 2012. Cannock Extension Canal SSSI Definitions of Favourable Condition. Available from Natural England. This attribute will be regularly monitored through the Canal and River Trust's annual site survey and periodically monitored as part of Natural England's SSSI condition assessments.
Supporting habitat: structure/ function	**Water clarity**	Restore a high degree of water clarity throughout the whole site. Most of the canal bed should be clearly visible in summer.	Water clarity is an indicator of light availability for submerged plants. Elevated turbidity levels will have adverse impacts on submerged plant communities. This may be the result of, for example, suspended solids resulting from disturbance by boats, high phytoplankton densities, the presence of bottom-feeding fish and inputs of silt-laden drainage water after rain can also cause loss of clarity. Although floating water-plantain *Luronium natans* may occur in naturally dystrophic waters with humic staining, this may be exacerbated by acidification, reducing water clarity further.	CANAL AND RIVER TRUST. 2016. Cannock Extension Canal SAC site monitoring 2007 to 2016. NATURAL ENGLAND. 2014. Site Improvement Plan: Cannock Extension Canal (SIP036). NATURAL ENGLAND. 2012. Cannock Extension Canal SSSI Definitions of Favourable Condition. Available from Natural England.

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			Reason for restore: 700m of the southern end of unit 1 is very turbid (between the old colliery basins and Wyrley Grove Bridge) due to a build-up over the years of very fine sediments contained in run-off from colliery shale waste on Wyrley Common. Once these very fine, unconsolidated sediments are disturbed it takes longer for the water to clear than if the sediments were coarser. The situation has been improving over the last few years due to mitigation works on Wyrley Common but water clarity and thus aquatic plant cover is still much poorer in this section than in the other parts of the SSSI. On-site conservation measures to address this issue include additional dredging and shade reduction works (from shading trees) along critical sections of the canal.	This attribute will be regularly monitored through the Canal and River Trust's annual site survey and periodically monitored as part of Natural England's SSSI condition assessments.
Supporting habitat: structure/function	**Water levels**	Maintain open water levels which are sufficient to maintain the abundance of the floating water-plantain *Luronium natans* population	In shallow pools and similar sites plants often flower and fruit on draw-down zones as summer water levels recede. In canals floating water-plantain *Luronium natans* is very rarely exposed in this way so is unable to reproduce sexually therefore canal populations are sterile clones that can only reproduce vegetatively. The Cannock Extension Canal has very little flow of water due to being a cul-de-sac off a long level section of the Wyrley & Essington Canal. There are no locks on either canal. There is only limited inflow from the southern end to offset leakage and evaporation.	CANAL AND RIVER TRUST. 2016. Cannock Extension Canal SAC water level monitoring data. NATURAL ENGLAND. 2012. Cannock Extension Canal SSSI Definitions of Favourable Condition. Available from Natural England. This attribute will be regularly monitored through the Canal and River Trust's annual site survey and periodically monitored as part of Natural England's SSSI condition assessments using data from the Canal and River Trust's automatic level reader at Pelsall Junction.
Supporting habitat: structure/function	**Water quality**	Restore water quality throughout the whole site at the following standards to provide the necessary conditions to	For many SAC features which are dependent on wetland habitats supported by surface and/or ground water, maintaining the quality and quantity of water supply will be critical, especially at certain times of year during key stages of their life cycle.	NATURAL ENGLAND. 2016. Cannock Extension Canal SAC water quality monitoring data. NATURAL ENGLAND. 2014. Site

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
		support the floating water-plantain *Luronium natans* feature; Biochemical Oxygen Demand = level 'B' Dissolved Oxygen = > 70% Total Phosphorous concentrations (annual mean) for mesotrophic canal = <20µg/l	Poor water quality and inadequate quantities of water can adversely affect habitat(s) on which the SAC features depend. 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 SAC Conservation Objectives but in some cases more stringent standards may be needed to support the SAC feature. Floating water-plantain *Luronium natans* populations are present across a wide range of habitats with a corresponding range of water chemistry. This suggests that its tolerances to most water chemistry parameters are not especially demanding although links between presence/persistence and water quality are not yet understood. As such the water quality targets set out for freshwater habitats should be sufficient to protect populations from adverse impacts. **Reason for restore** Recent water quality monitoring shows that the water quality objective is currently not being met: March 2015 6 spot samples= all <10ug/l TP, DO not measured, BOD grade B. Aug 2016 3 spot samples = 50-100ug/l TP, average = 70ug/l, no other nutrient measured. 2009: Annual monitoring, from Wyrley Grove Bridge = average TP = 40ug/l (n=36), Annual monitoring is required from a number of sampling locations along the canal to understand the water quality at this site.	Improvement Plan: Cannock Extension Canal (SIP036). NATURAL ENGLAND. 2012. Cannock Extension Canal SSSI Definitions of Favourable Condition. Available from Natural England. This attribute will be regularly monitored through the Canal and River Trust's annual site survey and periodically monitored as part of Natural England's SSSI condition assessments.
Supporting habitat:	**Substrate sediment**	Restore a habitat substrate that is	Fine, unconsolidated sediments are an unsuitable rooting medium and plants may be subject to uprooting. Conversely,	NATURAL ENGLAND. 2012. Cannock Extension Canal SSSI Definitions of

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
structure /function		characterised by cohesive sediments which are not too coarse or too fine.	where sediment is too coarse and mineral there may be scouring and poor root anchorage. **Reason for restore:** 700m of the southern end of unit 1 is very turbid (between the old colliery basins and Wyrley Grove Bridge) due to a build-up over the years of very fine sediments contained in run-off from colliery shale waste on Wyrley Common. Once these very fine, unconsolidated sediments are disturbed it takes longer for the water to clear than if the sediments were coarser. The situation has been improving over the last few years due to mitigation works on Wyrley Common but the very fine sediments in this area make this section much poorer than in other parts of the SSSI. On-site conservation measures to address this issue include additional dredging and shade reduction works (from shading trees) along critical sections of the canal.	Favourable Condition. Available from Natural England. This attribute will be regularly monitored through the Canal and River Trust's annual site survey and periodically monitored as part of Natural England's SSSI condition assessments.
Supporting processes (on which the feature and/or its supporting habitat relies)	**Disturbance of habitat by human activity**	Ensure the duration, intensity and/or the frequency of disturbance events remain at levels that are necessary to support the feature.	Floating water-plantain *Luronium natans* is sensitive to competition for light and nutrients from other plant species. The loss or reduction in the disturbance regime that would normally arrest succession is particularly significant. In canals the disturbance regime is related to dredging (removal of sediments) and boat traffic. Species-richness of the canal as a whole depends not only on water quality but also on the intensity of boat traffic and channel management. In the absence of management unused and derelict canals become overgrown with emergent vegetation and lose the open water element of their flora. Heavily used canals lose much of their submerged and floating-leaved vegetation because the water column becomes turbid and plants are chewed up by propellers and uprooted by the passage of boats. Dredging is an important management tool to increase the distance between boats and the bottom of the canal bed/silt.	CANAL AND RIVER TRUST. 2016. Cannock Extension Canal SAC boat counter monitoring data. This attribute will be regularly monitored through the Canal and River Trust's annual site survey and periodically monitored as part of Natural England's SSSI condition assessments using data from the Canal and River Trust's boat counter on the canal.

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			Boat movement and dredging are key management tools for this site, both by stopping succession of more dominant plants and by occasional disturbance events to the canal banks that can create colonisation opportunities for the features of interest. Annual boat traffic movements are currently to be confirmed for the Cannock Extension Canal. The Canal and River Trust dredge the Cannock Extension Canal as part of their national dredging programme with additional dredging works, as identified by recent survey, being undertaken as one of the conservation measures for the site.	
Supporting processes (on which the feature and/or its supporting habitat relies)	**Regeneration potential (vegetative)**	Maintain sufficient areas of shallow and still water for the development of ascending stolons bearing chains of plantlets, and for the production of floating leaves.	Canal populations are sterile clones that only reproduce vegetatively. Perennial populations of floating water-plantain *Luronium natans* should exhibit a range of different plant sizes	CANAL AND RIVER TRUST. 2016. Cannock Extension Canal SAC site monitoring 2007 to 2016. NATURAL ENGLAND. 2014. Rapid Integrated Site Assessment for Cannock Extension Canal Units 1 and 2. Natural England. NATURAL ENGLAND. 2012. Cannock Extension Canal SSSI Definitions of Favourable Condition. Available from Natural England. This attribute will be regularly monitored through the Canal and River Trust's annual site survey and periodically monitored as part of Natural England's SSSI condition assessments.
Population (of the feature)	**Population abundance**	Restore the abundance of the floating water-plantain *Luronium natans*, with individual plants always occurring frequently throughout	This will ensure there is a viable population of the feature which is being maintained at or increased to a level that contributes as appropriate to its Favourable Conservation Status across its natural range in the UK. Due to the dynamic nature of population change, the target-	CANAL AND RIVER TRUST. 2016. Cannock Extension Canal SSSI site monitoring 2007 to 2016. NATURAL ENGLAND. 2014. Rapid Integrated Site Assessment for Cannock

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
		the SAC, and avoid deterioration from its current level as indicated by the latest mean peak count or equivalent.	value given for the population size or presence of this feature is considered to be the 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. Unless otherwise stated, the population size or presence will be that measured using standard methods, such as peak mean counts or breeding surveys. 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. In 1993 when the canal was notified as a SSSI floating water-plantain *Luronium natans* was abundant throughout much of the canal apart from the northern section from the old colliery basins to the A5 where it was less extensive. Assessment in 2017 found that floating water-plantain *Luronium natans* is	Extension Canal Units 1 and 2. Natural England. NATURAL ENGLAND. 2012. Cannock Extension Canal SSSI Definitions of Favourable Condition. Available from Natural England. UNIVERSITY OF HERFORDSHIRE. 1999. Survey of key sites within West Midland Meres and Mosses Natural Area for *Luronium natans*. Report to English Nature. ENGLISH NATURE. 1993. SSSI Notification documents. NATURE CONSERVANCY COUNCIL. 1989. Site survey. This attribute will be regularly monitored through the Canal and River Trust's annual site survey and periodically monitored as part of Natural England's SSSI condition assessments.

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			present throughout much of the site, from Pelsall Junction to the A5, abundant over circa 50% of the canal where it forms extensive carpets over the bed. Over a further circa 15% of the canal it is present but less dominant, and through the central section of the canal it is slowly recolonizing.	
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 feature and/or its supporting habitats.	Active and ongoing conservation management is needed to 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.	ENGLISH NATURE, 2005. Views about the management of Cannock Extension Canal SSSI. NATURAL ENGLAND. 2014. Site Improvement Plan: Cannock Extension Canal (SIP036).
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 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 high,	NATURAL ENGLAND (2015). Climate Change Theme Plan and supporting NBCCV Assessments for SACs and SPAs at http://publications.naturalengland.org.uk/publication/4954594591375360)

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			taking into account the sensitivity, fragmentation, topography and management of its habitats/supporting habitats. This means that this site is considered to be among the most vulnerable sites overall and are likely to require the most adaptation action, most urgently, 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.	
Supporting processes (on which the feature relies)	**Air quality**	Restore as necessary the concentrations and deposition of air pollutants to at or below the site-relevant Critical Load or Level values given for these features of the site on the Air Pollution Information System (www.apis.ac.uk).	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. 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. The critical load for nitrogen is currently being exceeded at this site.	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). NATURAL ENGLAND. 2014. Site Improvement Plan: Cannock Extension Canal (SIP036).

Attributes	Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
Version Control Advice last updated: N/A			
Variations from national feature-framework of integrity-guidance: • Attribute relating to 'recruitment of plants' has been deleted as the population in the Cannock Extension Canal SAC reproduces vegetatively. • The text in the Supporting and Explanatory Notes for the following sections have been amended and added to: Water clarity, Water level, Water quality, Disturbance and Adaption and Resilience.			