Site Clear Solutions Limited

Eco House, 12-13 Conduit Road, Norton Canes, Staffordshire, WS11 9TJ

Information to Inform a

Habitats Regulations Assessment (iHRA)

L. Heath

AC Environmental Consulting Ltd

January 2025

CONTENTS

APPENDICES

1.0 INTRODUCTION

1.1 The following shadow Habitats Regulations Assessment has been provided by AC Environmental Consulting Ltd (ACE) on behalf of Site Clear Solutions Ltd in relation to Eco House, 12-13 Conduit Road, Norton Canes, Staffordshire, WS11 9TJ (Grid reference: SK 02079 07898), henceforth known as the 'Site'.

1.2 The aim of this report is to provide The Environment Agency (EA) with the background information to carry out a Habitat Regulations Assessment in their duty as a Competent Authority. This HRA is in relation to an application for a bespoke Environmental Permit variation for a hazardous and non-hazardous waste transfer and treatment facility.

1.3 Information required to inform an Appropriate Assessment (AA) of the proposals is also included within this document for consideration by the Competent Authority.

Site Location and Context

1.4 The Site is located to the east of the village of Norton Canes, within an established purpose built industrial estate. The Site is located within the Conduit Road industrial estate on the east side of the main access cul-de-sac. The estate comprises a mix of industrial / warehouse buildings of various sizes. Access to the estate is provided by Betty's lane to the south, which connects to Walsall Road (B4154).

The Site consists of a main single storey industrial unit with ancillary offices, together with an yard to the rear, for the storage and treatment of waste. There is also car parking to the site frontage on Conduit Road.

The site is entirely surfaced with impermeable concrete and there are no habitats available on site.

1.5 To the immediate north and west and south, the Site is bordered by industrial buildings. To the east of the site lies fields and an area of deciduous woodland.

1.6 Further afield, the Gains Brook flows east to west approximately 243m to the south of the site.

Site Proposals

1.8 Site Clear Solutions Ltd is seeking to vary their existing bespoke environmental permit to include the operation of an Advetec XO22 aerobic digestion unit for the treatment of bagged non-hazardous 'offensive' clinical waste, generated from the onsite clinical waste transfer station. The application involves the requirement for an aerobic digestion system to be operated on site at Site Clear Solutions, 12-13 Conduit Road, Norton Canes, Cannock, WS11 9TJ. Treatment of healthcare wastes will therefore be carried out on site.

Within the same permit variation application Site Clear Solutions is seeking to add additional EWC codes to the permitted waste types. The additional EWC codes will be subject to sorting, separation, and repackaging for third party processing. There will be no other treatment.

The site layout is shown in drawing 230327SCS101v9b.

1.9 The site has no habitats suitable for use by wildlife.

Sites on the National Site Network Considered

1.10 Two internationally designated sites were identified within 2km of the Site boundary:

- Cannock Extension Canal (cSAC or SAC) and (SSSI), 0.97km south of the Site
- Chasewater and The Southern Staffordshire Coalfield Heaths (SSSI), 0.87km east of the Site

Additionally, there is an area of protected Deciduous woodland within less than 50m to the east of the site.

1.11 The EA has requested a Habitat Regulation Assessment due to the Site being within 2km of the Cannock Extension Canal and Chasewater and The Southern Staffordshire Coalfield Heaths.

The HRA process

1.12 The HRA process has developed into a four-stage process summarised as follows:

- Stage One: Screening – also known as the Test of Likely Significant Effect (TOLSE). If the Competent Authority cannot screen out a *likely significant effect,* an Appropriate Assessment is required.
- Stage Two: Appropriate Assessment – the Competent Authority will only agree to plans or projects that will not affect the *integrity* of a European site also known as the 'Integrity Test';
- Stage Three: Alternative Solutions – assesses any alternative solutions of a potentially damaging plan or project that failed the Integrity Test, and if it is determined there are no alternative solutions, the project cannot be agreed to, and it will either need to be changed or refused; and
- Stage Four: The final stage may allow a plan or project to proceed if after failing stage three if it is for Imperative Reasons of Overriding Public Interest, and only if suitable compensatory measures are secured.

1.14 This report identifies and considers ecological pathways between the Site and each site within the zone of influence. Each pathway was screened with a TOLSE for alone effects, and then in-combination with other plans or projects.

Outcome Summary

1.15 Table 1 below provides a summary of the outcome of this shadow HRA.

Table 1: iHRA outcome summary

Designation	Stage 1 screening	Stage 2 Appropriate Assessment
Cannock Extension Canal (cSAC or SAC) and (SSSI)	Risk of effects considered but screened out: Air Pollution Dust Deposition	No adverse effect on the integrity of the SAC / SSSI. No mitigation required.
Chasewater and The Southern Staffordshire Coalfield Heaths (SSSI)	Risk of effects considered but screened out: Air Pollution Dust Deposition	No adverse effect on the integrity of the SSSI. No mitigation required.
Priority Habitat Inventory - Deciduous Woodland	Risk of effects considered but screened out: Air Pollution Dust Deposition	No adverse effect on the integrity of the Protected Habitat No mitigation required.

2.0 DESIGNATED SITES

2.1 The proposed development Site is located approximately 970m from Cannock Extension Canal SAC and SSSI, and 877m from Chasewater and The Southern Staffordshire Coalfield Heaths SSSI, which can be seen in drawing ref: 230327SCS109.

Nature Conservation Designations

2.2 A summary of the justification for the international designations is provided in Table 2, below. Detailed information on Conservation Objectives and Supplementary Advice on Conservation Objectives is provided in Appendix 2.

Table 2: Nature Conservation Designations of the Designated Sites within 2km of the Site.

Designation	Justification/Interest Feature
Cannock Extension Canal SAC	The Cannock Extension Canal SAC overlaps the Cannock Extension Canal SSSI. The site consists of an inland water body (75%), humid grassland, mesophile grassland (10%), broad-leaved deciduous woodland (4.9%) and other land (including towns, villages, roads, waste places, mines, industrial site) (10.1%). There are no Annex 1 habitats that are present at the site, however 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 in England. A very large population of the species occurs in the Canal, which has a diverse aquatic flora and rich dragonfly fauna, indicative of good water quality. The low volume of boat traffic on this terminal branch of the Wyrley and Essington Canal has allowed open-water plants, including floating water-plantain, to flourish, while depressing the growth of emergents.
Cannock Extension Canal SSSI	The Cannock Extension Canal SSSI overlaps the Cannock Extension Canal SAC. Designated as an SSSI in March 1993, 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 reedswamp incursion. A total of thirty four 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. Of major importance is a large population of the nationally scarce floating water-plantain Luronium natans, the best known colony in both Staffordshire and the West Midlands. This SSSI is comprised of two Management Units, the closest of which, Unit 1, is listed as 'Unfavourable – Recovering' and Unit 2 listed as 'Favourable'. The reason for the 'Unfavourable – Recovering' condition is not explicitly identified, however,

	commentary provided following the most recent NE Site check (12 November 2020) noted the prevalence of Floating Pennywort Hydrocotyle ranunculoides and Azolla Azolla. Remedial measures are likely to include introduction of weevils and dredging. NE have predicted the management unit to attain 'Favourable' status in 2029. Favourable condition for the SSSI is defined as being adequately conserved and meeting its 'conservation objectives'.
Chasewater and The Southern Staffordshire Coalfield Heaths (SSSI)	Chasewater and the Southern Staffordshire Coalfield Heaths was designated as an SSSI in December 2010. Chasewater and the Southern Staffordshire Coalfield Heaths SSSI is nationally important for its wet and dry lowland heath, fens (including habitats often referred to as mires and swamps) and oligotrophic (nutrient-poor) standing open water habitats, and for its populations of two nationally scarce vascular plant species: floating water-plantain Luronium natans (listed in Schedule 8 to the Wildlife and Countryside Act 1981, as amended) and round-leaved wintergreen Pyrola rotundifolia (a regional rarity). The mosaic of habitats present on the site supports a diverse range of birds. Over 140 species are regularly recorded in any year. A large roost of gulls Larus spp. assembles during the winter and the number of lesser black-backed gulls Larus fuscus can exceed 4,000 individuals. A range of other wintering waterfowl are also present with tufted duck Aythya fuligula often approaching nationally important numbers on Chasewater.
Priority Habitat Inventory - Deciduous Woodland	Priority Habitats are those which have been deemed to be of principal importance for the purpose of conserving biodiversity, being listed in the UK Biodiversity Action Plan, and with maintenance and restoration of these habitats being promoted through agri-environment schemes.

Threats and pressures

2.3 A summary of threats and pressures on the designated sites are outlined in Table 3, below. Additional information on threats and pressures is provided in Appendix 3.

Table 3: Threats and pressures relating to the Designated Sites within 2km of the Site

Designation	Threats and Pressures
Cannock Extension Canal SAC	• Water pollution – water quality targets to support Floating water-plantain were not met in 2015/16 water quality monitoring. Historic sediment loads into the canal have also occurred. • Water Levels – there is very little inflow of water, which may

	lead to the water-plantain *Luronium natans* population facing limitations in abundance, with restricted inflow to counteract leakage and evaporation • Overgrazing from Canada geese – this could affect the vegetation community including Floating water-plantain as well as contributing additional nutrients via excreta. • Invasive species: risk of outcompeting the Floating water-plantain • Air pollution: risk of atmospheric nitrogen deposition • Climate change – this SAC has been assessed by Natural England as being highly vulnerable to climate change
Cannock Extension Canal SSSI	• Agricultural sources of water pollution • Recreational Disturbance • Invasion of non-native freshwater plants • Siltation (water quality)
Chasewater and The Southern Staffordshire Coalfield Heaths SSSI	• Disturbance and recreational impacts from sporting activities • Land Use Change • Scrub Encroachment • Water Pollution from urban and / or road sources; water company discharges; and other / unknown sources • Recreational Disturbance • Water abstraction • Invasion of non-native freshwater plants • Undergrazing
Priority Habitat Inventory - Deciduous Woodland	• Deforestation • Pollution • Pests • Invasive species • Species disturbance

Each potential impact pathway is described below. The description includes an explanation as to why each

of the potential impact pathways has been scoped in or out of the detailed assessment.

3.0 STAGE 1: LIKELY SIGNIFICANT EFFECTS

3.1 Ecological pathways have been considered based on those typically associated with development sites of this nature, and from the information on conservation objectives provided in Table 2 (Key Attributes and Target Conditions of the designated sites) and Appendix 2, as well as the identified threats and pressures listed in Table 3.

Ecological Pathways Scoped out

Cannock Extension Canal SAC

3.2 Several impact pathways have been screened out of this assessment, as follows:

- Water pollution – the Site is not hydrologically linked to the site – whilst the geology of the Site could provide a groundwater pathway, the Site is fully concreted with an interceptor, and pollution prevention measures are in place.
- Water Levels – the Site will not be abstracting water, so there will be no increase in pressure from the development.
- Air pollution: the Site risk of atmospheric nitrogen deposition is low. The Site, except from the vehicles operated on the site, will not lead to increased risk of nitrogen deposition at the SAC.
- Several other threats and pressures are also not considered given the distances between the Site and the designated site, and their lack of impact pathways include overgrazing and invasive species.

Cannock Extension Canal SSSI

3.3 Several impact pathways have been screened out of this assessment, as follows:

- Agricultural sources of water pollution – as above, the Site is not hydrologically linked to the site, nor would it be an agricultural source of pollution.
- Siltation (water quality) – as above, the Site is not hydrologically linked to the site, and being 0.97km from the designated site, the Site will not contribute to siltation.
- Recreational Disturbance – the site is within an existing industrial park, 0.97km from the designated site. No increased recreational pressure is expected due to the nature of the development.
- Invasive species is another threat and pressure that is not considered given the distances between the Site and the designated site, and the proposed activity does not involve any pathways for the introduction or spread of non-native species.

Chasewater and The Southern Staffordshire Coalfield Heaths SSSI

3.4 Several impact pathways have been screened out of this assessment, as follows:

- Disturbance and recreational impacts from sporting activities: the site is within an existing industrial park, 0.87km from the designated site. No increased recreational pressure is expected due to the nature of the development.
- Land Use Change: The designated site is 0.87km from the Site and the proposed

activity does not involve any physical changes to the land within the designated site.

- Scrub Encroachment: The proposed activity does not involve any changes that would promote scrub encroachment – the designated site is 0.87km from the Site and
- Water Pollution from urban and / or road sources; water company discharges; and other / unknown sources: the Site is not hydrologically linked to the site and the site does not generate any discharges. The new proposed activity will also not generate any discharges.
- Recreational Disturbance: similar to sporting activities above, the site is within an existing industrial park, 0.87km from the designated site. No increased recreational pressure is expected due to the nature of the development.
- Water abstraction; the Site will not be abstracting water, so there will be no increase in pressure from the development.
- Invasion of non-native freshwater plants: given the distances between the Site and the designated site, and that the proposed activity does not involve any pathways for the introduction or spread of non-native freshwater plants, this threat is not considered relevant.
- Undergrazing: The proposed activity does not involve any changes to land management or livestock therefore this threat is not relevant.

Priority Habitat Inventory - Deciduous Woodland

3.5 Several impact pathways have been screened out of this assessment, as follows:

- Deforestation; the Site and the proposed activity does not involve and physical changes to the land or habitats within the designated site. There will be no removal or any form of woodland clearance.
- Pests – the majority of waste stored on Site does not make for a suitable habitat for pests. Bagged offensive wastes are stored in the building. Retention times of biodegradable wastes will be strictly adhered to in order to prevent the waste decaying, which is when pests would be attracted. The proposed activity will not increase the likelihood of pests and there will be no additional quantities received to the Site.
- Invasive species – the proposed activity does not involve any pathways for the introduction or spread of non-native species.
- Species disturbance - the proposed activity involves no change to the site i.e. the addition of outside lights that will disrupt bats, and there is no vegetation on site that needs removing, or any changes to the building that might disturb breeding birds.

Ecological Pathways Considered

3.6 There is one ecological pathway from the Site that has been considered, which relates to the Priority Habitat – Deciduous Woodland. No ecological pathways to other protected sites exist due to the distance of the site form these areas. Pathways considered are:

- Air pollution (dust deposition)

3.7 This pathway is considered in more detail below.

Air Pollution

3.8 Air pollution is a potential pathway impacting on the Priority Habitat – Deciduous Woodland.

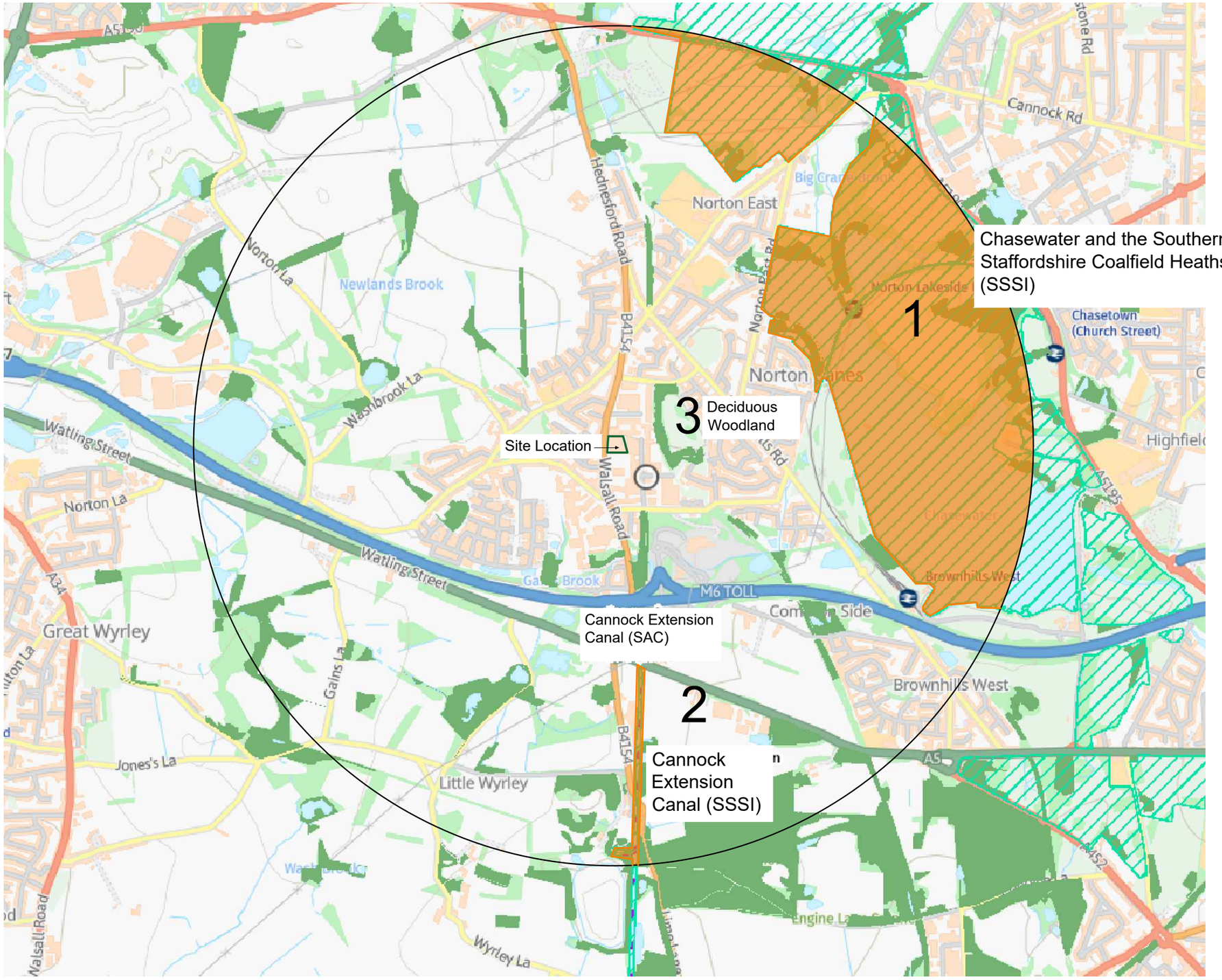
3.9 The only notable air pollution pathway from a site of this type would be dust deposition from escape of dusts from the site. The Guidance on the Assessment of Mineral Dust Impacts for Planning 2016, it is acknowledged that the greatest impacts from dust emissions will be within 100m of the source, referring to both large and small dust particulates.

3.10 The Site will be regulated by the EA under a bespoke environmental permit and will operate in accordance with a Dust and Emissions Management Plan (DEMP). Dust suppression is to be used on all plant, vehicles and concrete surfaces via hose and sweeping on a weekly basis or immediately after an incident. Site management will undertake site inspections at the start and end of each day, including the base of the perimeter, and any dust identified will be swept immediately. A small amount of dust will be produced through the granulation process which is undertaken in an enclosed area within the building which is equipped with roller shutter doors. This area operates in strict accordance with the daily cleaning procedure of vacuuming and sweeping in line with the insurance recommendations. The vacuuming will ensure the dust produced is captured and stored securely. The shredding of the bagged offensive non-hazardous waste, on the external yard, prior to it being fed into the digester can also produce dust, however, the shredders low speed cutting shafts minimise dust and noise from this operation. The site has a 4m high concrete panel wall which lines the eastern boundary, and northeast and southeast corners which additional acts as a barrier to protect the designation from dust.

3.11 The Site is less than 50m from the Protected Habitat, however, the DEMP aims to control any potential sources of dust to prevent dust emission impacts, on the surrounding receptors, including several that are sensitive. All possible source-pathway-receptor routes have been identified, and suitable abatement measures have been assigned to each one to minimise the potential dust and emissions caused from onsite operations. The DEMP will be reviewed annually to ensure it is up to date or following a dust and / or emissions incident by the ineffectiveness of the plan. **As such, it is considered that there will be No Likely Significant Effect of air pollution (dust deposition) on the integrity of the Priority Habitat or any of their supporting habitats and therefore any qualifying species.**

Appendix 1 – 230327SCS109 Designated Sites Plan

AC ENVIRONMENTAL
Environment House
Werrington Road
Stoke-on-Trent
ST2 9AF



N

2 km Buffer Zone

REV	DATE	DETAIL

CLIENT
SITE CLEAR SOLUTIONS

SITE
12-13 Conduit Rd,
Norton Canes,
Cannock
WS11 9TJ,

PROJECT
PERMIT APPLICATION

TITLE
NATIONALLY DESIGNATED SITES

SCALE @A3	DATE	DRAWN BY	CHECKED BY
1:10000	Mar 2025	T Kearns	D Alcock

DRAWING NO	REVISION
230327SCS109	

Appendix 2 – Conservation Objectives and Supplementary Advice on Conservation Objectives

COUNTY: STAFFORDSHIRE, WEST MIDLANDS

SITE NAME: CANNOCK EXTENSION CANAL

DISTRICT: Cannock Chase Walsall

SITE REF: 15W2L

Status: Site of Special Scientific Interest (SSSI) notified (Under Section 28 of the Wildlife and Countryside Act) 1981 as amended.

Local Planning Authority: STAFFORDSHIRE COUNTY COUNCIL, Cannock Chase District Council, Walsall Metropolitan Borough Council

National Grid Reference: SK 019044, SK 020069 Area: 5.47 (ha.) 13.5 (ac.)

Ordnance Survey Sheet 1:50,000: 139 1:10,000: SK 00 NW, SK 00 SW

Date Notified (Under 1949 Act): – Date of Last Revision: –

Date Notified (Under 1981 Act): 25 March 1993 Date of Last Revision: –

Other Information:
New site.

Description and Reasons for Notification:
The Cannock Extension 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 high water quality, uneven canal bottom and the low volume of boat traffic have allowed a diverse aquatic flora to develop without any extensive reedswamp incursion.

A total of thirty four 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.

Of major importance is a large population of the nationally scarce floating water-plantain *Luronium natans*, the best known colony in both Staffordshire and the West Midlands. This plant, recognised as endangered in Europe, is found throughout the length of the Cannock Extension. Good populations also 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 eastern canal bank is brick-edged with several species including hemlock water-dropwort *Oenanthe crocata*, skullcap *Scutellaria galericulata*, fairy flax *Linum catharticum* and water dock *Rumex hydrolapathum*, growing out of the brickwork. The towpath itself supports such species as common spotted-orchid *Dactylorhiza fuchsii* and greater bird's-foot-trefoil *Lotus uliginosus*. The western bank is much more natural with reed sweet-grass *Glyceria maxima* and branched bur-reed *Sparganium erectum* forming extensive marginal stands. Yellow iris *Iris pseudacorus* and yellow loosestrife *Lysimachia vulgaris* add to the diversity of this community.

At least nine species of dragonfly have been recorded in association with the canal, including the red-eyed damselfly *Erythromma najas* and emperor dragonfly *Anax imperator*, the latter species being at the northern edge of its range in Britain.

Site name:	Chasewater and the Southern Staffordshire Coalfield Heaths	**Unitary authority/county:**	Staffordshire, Walsall

District: Cannock Chase, Lichfield

Status: Site of Special Scientific Interest (SSSI) notified under section 28C of the Wildlife and Countryside Act 1981, as inserted by Schedule 9 to the Countryside and Rights of Way Act 2000

Local Planning Authority: Staffordshire County Council, Walsall Metropolitan Borough Council, Lichfield District Council, Cannock Chase District Council

National Grid reference:	SK035079	**Area:**	530.23 ha
Ordnance Survey Sheet:	**1:50,000:** 128, 139	**1:10,000:**	SK 00 NW, SK00NE, SK 01 SW

Notification date: 16 December 2010

Reasons for notification:

Chasewater and the Southern Staffordshire Coalfield Heaths SSSI is nationally important for its wet and dry lowland heath, fens (including habitats often referred to as mires and swamps) and oligotrophic (nutrient-poor) standing open water habitats, and for its populations of two nationally scarce vascular plant species: floating water-plantain *Luronium natans* (listed in Schedule 8 to the Wildlife and Countryside Act 1981, as amended) and round-leaved wintergreen *Pyrola rotundifolia* (a regional rarity).

General description:

Chasewater and the Southern Staffordshire Coalfield Heaths SSSI is located in southern Staffordshire between Norton Canes and Burntwood, and extends into Walsall. The SSSI stretches for seven kilometres, from Hednesford Hills in the north to Brownhills Common in the south and lies on unstratified, pebbly or gravelly boulder clay overlying Carboniferous Middle Coal Measures. Whilst the underlying geology has had some influence on the habitats found within the SSSI, the impact of human activity in the form of coal mining, the construction of Chasewater as a canal feeder reservoir and, more recently, the building of the M6 Toll motorway have had a far greater impact in shaping what is present today.

The construction of Chasewater and the operation of the Cannock Chase Collieries would have undoubtedly been highly destructive to the natural environment, but they also safeguarded areas of semi-natural habitat from other damaging influences such as intensive agriculture, forestry and development. Once the reservoir was completed and the collieries ceased to operate, plants and animals were able to recolonise the site. Recent developments have subsequently recognised the high wildlife value of the area and, through various habitat translocation and creation techniques, have minimised their impact by contributing to the restoration and enhancement of the local environment.

At various points the continuity of semi-natural habitats is interrupted by housing, roads and improved farmland. Nevertheless, the site's importance is enhanced by its strategic location in providing an ecological link between the nationally important heaths of Sutton Park, located nine kilometres to the south, and those of Cannock Chase, lying one kilometre to the north.

<u>Wet and dry lowland heath</u>

The lowland heathland has largely developed on land heavily influenced by past and more recent coal mining activities and, as a consequence, varies considerably in both age and origin. Whilst some of the heathland has been associated with the site for a considerable time, some is relatively recent in origin with the youngest having been established in the last twenty years as part of a derelict land reclamation scheme, a restoration scheme on an exhausted open-cast mine and a translocation associated with the construction of the M6 Toll motorway.

The dry heathland is dominated by heather *Calluna vulgaris* and wavy hair-grass *Deschampsia flexuosa*, with occasional or frequent bilberry *Vaccinium myrtillus,* cowberry *V. vitis – idaea,* crowberry *Empetrum nigrum,* Western gorse *Ulex gallii,* purple moor-grass *Molina caerulea* and bell heather *Erica cinerea*. Wetter areas, particularly to the north-west of Biddulph's Pool and on the north shore of Chasewater, support wet heathland communities. These are dominated by purple moor-grass, cross-leaved heath *Erica tetralix* and heather, with cranberry *Vaccinium oxycoccos*, cottongrasses *Eriophorum* spp. and various bog-mosses including *Sphagnum fallax*, *S. palustre, S. papillosum* and *S. capillifolium* occurring at lower frequencies.

Fens (including habitats often referred to as mires and swamps)

A number of fens have developed on the margins of the various water bodies, below Chasewater's main dam and within the lowland heathland. They include habitats often referred to as mires and swamps and vary in both size, from a few square metres to one hectare, and their water chemistry, from base-poor to base-rich. The water supply for some of these fens appears to be influenced by the chemistry of the spoil derived from abandoned coal workings. These fens contain a number of nationally and regionally scarce vascular plants and bryophytes.

The fens are numerous and scattered across the site. In the valley below the main (eastern) dam of Chasewater a complex of different fen types has developed. A small mire on the upper slopes dominated by lawns of *Sphagnum fallax* with cross-leaved heath, cranberry, common cottongrass and occasional round-leaved sundew *Drosera rotundifolia* merges into a community with water horsetail *Equisetum fluviatile*, marsh pennywort *Hydrocotyle vulgaris* and hemp agrimony *Eupatorium cannabinum* indicative of a more nutrient-rich water supply. As the valley broadens out into a basin and the soils are wetter, great willowherb *Epilobium hirsutum* and common reedmace *Typha latifolia* become dominant, water horsetail, marsh pennywort and hemp agrimony are still abundant, and species such as wild angelica *Angelica sylvestris*, marsh marigold *Caltha palustris,* marsh cinquefoil *Comarum palustre*, bottle sedge *Carex rostrata* and early marsh orchid *Dactylorhiza incarnata* are occasional.

A large, highly alkaline, spring-fed fen, fed largely from spring mounds built from concretions of deposited minerals, has developed on the north shore of Chasewater. This supports a remarkable flora containing sea club-rush *Bolboschoenus maritimus,* marsh arrow-grass *Triglochin palustris,* early marsh orchid and the nationally scarce round-leaved wintergreen *Pyrola rotundifolia*, within a matrix of common cottongrass, common sedge *Carex nigra* and common reedmace. Charophytes (stoneworts) and calcicolous bryophytes such as *Campylium stellatum, Drepranocladus polygamun, Riccardia* sp. and *Didymodon tophaceus* are associated with the spring mounds.

Open-water transition fens are located on the south side of the Wyrley and Essington Canal and on the north side of Biddulph's Pool. The former supports tubular water-dropwort *Oenanthe fistulosa*, star sedge *Carex echinata* and white sedge *Carex curta*. The latter site contains abundant bottle sedge, bog pondweed *Potamogeton polygonifolius* and *Sphagnum inundatum*.

A swamp on No Man's Bank is dominated by common sedge, marsh cinquefoil and common cottongrass, with bog pondweed, water horsetail and jointed rush *Juncus articulatus*. A small acidic basin mire dominated by common cottongrass *Eriophorum angustifolium* occurs

on Norton Bog. This is perhaps the only remnant of a more extensive area of bog that was destroyed by the tipping of mining waste.

Oligotrophic (nutrient-poor) standing open water

The oligotrophic open water habitat represented by the four main water bodies, Biddulph's Pool, Chasewater (including Jeffrey's Swag), the Slurry Pool and the Anglesey Branch of the Wyrley and Essington Canal, is rare elsewhere in Staffordshire and the wider West Midlands Region. Those that do exist are generally degraded. The characteristic flora is dependent on water that is low in nutrients and this has been maintained because the soils of the catchment are of low fertility, derived from the underlying pebbly or gravelly boulder clay, albeit heavily influenced by coal mining. Also, much of the catchment lies within the SSSI and is occupied by semi-natural vegetation managed under a low intensity agricultural regime. The four main water bodies still retain a flora, albeit slightly species-poor, typical of water bodies with a low nutrient status. Taken together, these water bodies have a good selection of characteristic species, including several that are nationally or regionally scarce.

The characteristic flora of Biddulph's Pool is dependent on acidic water, low in nutrients. Beds of broad-leaved pondweed *Potamogeton natans* occupy the deeper water and there is a natural transition from the open water through a marginal fen community into mature carr woodland.

Chasewater is a large lake with gently shelving margins on a semi-natural substrate of sand, gravels and pebbles. The transition from the surrounding heathland into the emergent and draw-down vegetation communities passes through thin and sporadic stands of water horsetail *Equisetum fluviatile,* common spike-rush *Eleocharis palustris*, common cottongrass*,* bog pimpernel *Anagallis tenella* and floating club-rush *Eleogiton fluitans*, before giving way to an almost continuous stand of shoreweed *Littorella uniflora* and small-fruited yellow-sedge *Carex oederi*. These are joined in places by occasional needle spike-rush *Eleocharis acicularis* and the nationally scarce floating water-plantain *Luronium natans*. Generally, tall marginal emergents are scarce, but siltier parts of the drawdown zone are dominated, seasonally, by marsh yellow-cress *Rorippa palustris* and marsh cudweed *Filaginella uliginosa*, along with scarce species such as orange foxtail *Alopecurus aequalis* and golden dock *Rumex maritimus.*

Unlike Biddulph's Pool, the Slurry Pool is quite unusual in that it is oligotrophic, but with moderate alkalinity and levels of calcium carbonate. This has allowed lawns of the charophyte (stonewort) *Chara virgata* to develop across the bottom of the pool. Aquatic plants include shining pondweed *Potamogeton lucens*, lesser pondweed *Potamogeton pusillus*, broad-leaved pondweed, spiked water-milfoil *Myriophyllum spicatum* and mare's-tail *Hippuris vulgaris*. Significant stands of lesser reedmace *Typha angustifolia* and common reed *Phragmites australis* can be found around the margins of the pool.

The Anglesey Branch canal is perhaps the most botanically diverse water body within the site. Aquatic plants are abundant with large beds of fan-leaved water-crowfoot *Ranunculus circinatus* and shining pondweed throughout. Other species include the nationally scarce flat-stalked pondweed *Potamogeton friesii*, curled pondweed *Potamogeton crispus,* spiked water-milfoil and amphibious bistort *Persicaria amphibian*. Shoreweed and the nationally scarce floating water-plantain both occur along the margins.

Vascular plants

Populations of floating water-plantain occur in both Jeffrey's Swag and the Anglesey Branch of the Wyrley and Essington Canal. Round-leaved wintergreen *Pyrola rotundifolia* can be found in the heathlands and on the edge of the fen vegetation on the north shore of Chasewater.

The mosaic of habitats present on the site supports a diverse range of birds. Over 140 species are regularly recorded in any year. A large roost of gulls *Larus* spp. assembles during the winter and the number of lesser black-backed gulls *Larus fuscus* can exceed 4,000 individuals. A range of other wintering waterfowl are also present with tufted duck *Aythya fuligula* often approaching nationally important numbers on Chasewater.

European Site Conservation Objectives for Cannock Extension Canal Special Area of Conservation
Site Code: UK0012672

With regard to the SAC and the natural habitats and/or species for which the site has been designated (the 'Qualifying Features' listed below), and subject to natural change;

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring;

- **The extent and distribution of the habitats of qualifying species**
- **The structure and function of the habitats of qualifying species**
- **The supporting processes on the habitats of qualifying species rely**
- **The populations of qualifying species, and,**
- **The distribution of qualifying species within the site.**

This document should be read in conjunction with the accompanying *Supplementary Advice* document, which provides more detailed advice and information to enable the application and achievement of the Objectives set out above.

Qualifying Features:

S1831. *Luronium natans*; Floating water-plantain

Explanatory Notes: European Site Conservation Objectives

These Conservation Objectives are those referred to in the Conservation of Habitats and Species Regulations 2017 as amended from time to time (the "Habitats Regulations"). They must be considered when a competent authority is required to make a 'Habitats Regulations Assessment', including an Appropriate Assessment, under the relevant parts of this legislation.

These Conservation Objectives and the accompanying Supplementary Advice (where available) will also provide a framework to inform the measures needed to conserve or restore the European Site and the prevention of deterioration or significant disturbance of its qualifying features.

These Conservation Objectives are set for each habitat or species of a Special Area of Conservation (SAC). Where the objectives are met, the site will be considered to exhibit a high degree of integrity and to be contributing to achieving Favourable Conservation Status for that species or habitat type at a UK level. The term 'favourable conservation status' is defined in regulation 3 of the Habitats Regulations.

Publication date: 27 November 2018 (version 3). This document updates and replaces an earlier version dated 30 June 2014 to reflect the consolidation of the Habitats Regulations in 2017.

Appendix 3 – Threats and Pressures on the Designated Sites

Operations likely to damage the special interest

Site name: Cannock Extension Canal

OLD1006558

Ref. No.	Type of Operation
1	Cultivation, including ploughing, rotovating, harrowing, and re-seeding.
2	The introduction of grazing and changes in the grazing regime (including type of stock, intensity or seasonal pattern of grazing and cessation of grazing).
3	The introduction of stock feeding and changes in stock feeding practice.
4	Mowing or other methods of cutting vegetation and changes in the mowing or cutting regime (including hay making to silage and cessation).
5	Application of manure, fertilisers and lime.
6	Application of pesticides, including herbicides (weedkillers).
7	Dumping, spreading or discharge of any materials.
8	Burning.
9	The release into the site of any wild, feral or domestic animal*, plant or seed.
10	The killing or removal of any wild animal*, including/other than pest control.
11	The destruction, displacement, removal or cutting of any plant or plant remains, including tree, shrub, herb, aquatic plants, hedge, dead or decaying wood, moss, lichen, fungus, leaf-mould and turf.
12	The introduction of tree or woodland management+ and changes in tree or woodland management+.
13a	Drainage (including the use of mole, tile, tunnel or other artificial drains).
13b	Modification to the structure of the canal including its banks and beds, as by re-alignment, re-grading and dredging.
13c	Management of aquatic and bank vegetation for drainage purposes.
14	The changing of water levels and tables and water utilisation (including irrigation, storage and abstraction from existing water bodies and through boreholes).
15	Infilling of the canal.
16a	Freshwater fishery production and management and changes in freshwater fishery production and management, including sporting fishing and angling.
20	Extraction of minerals, including peat, sand and gravel, topsoil, subsoil and spoil.
21	Construction, removal or destruction of roads, tracks, walls, fences, hardstands, banks, ditches or other earthworks, or the laying, maintenance or removal of pipelines and cables, above or below ground.
22	Storage of materials.
23	Erection of permanent or temporary structures, or the undertaking of engineering works, including drilling.
26	Use of vehicles or craft likely to damage or disturb features of interest.
27	Recreational or other activities likely to damage the aquatic and marginal vegetation.
28	Introduction of game or waterfowl management and changes in game and waterfowl management and hunting practice.

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* 'animal' includes any mammal, reptile, amphibian, bird, fish or invertebrate.

\+ including afforestation, planting, clear and selective felling, thinning, coppicing, modification of the stand or underwood, changes in species composition, cessation of management.

Operations requiring Natural England's consent

Wildlife and Countryside Act 1981 Section 28 (4)(b) substituted by Schedule 9 to the Countryside and Rights of Way Act 2000

The operations listed below may damage the features of interest of Chasewater and the Southern Staffordshire Coalfield Heaths SSSI. Before any of these operations are undertaken you must consult Natural England, and may require our consent.

It is usually possible to carry out some of these operations in certain ways, or at specific times of year, or on certain parts of the SSSI, without damaging the features of interest. If you wish to carry out any of these activities please contact your Natural England Area Team who will give you advice and where appropriate issue a consent. Please help us by using the 'notice form' (provided at notification and available on request) to ask us for consent to carry out these operations.

In certain circumstances it will not be possible to consent these operations, because they would damage the features of interest. Where possible the Area Team will suggest alternative ways in which you may proceed, which would enable a consent to be issued. To proceed without Natural England's consent may constitute an offence. If consent is refused, or conditions attached to it, which are not acceptable to you, you will be provided with details of how you may appeal to the Secretary of State.

Standard reference number	**Type of operation**
1.	Cultivation, including ploughing, rotovating, harrowing and re-seeding.
2.	Grazing and alterations to the grazing regime, including type of stock, intensity or seasonal pattern of grazing.
3.	Stock feeding and alterations to stock feeding practice.
4.	Mowing or cutting vegetation and alterations to the mowing or cutting regime such as from haymaking to silage.
5.	Application of manure, slurry, silage liquor, fertilisers and lime.
6.	Application of pesticides, including herbicides (weedkillers) whether terrestrial or aquatic, and veterinary products.
7.	Dumping, spreading or discharging or any materials.
8.	Burning and alterations to the pattern or frequency of burning.
9.	Release into the site of any wild, feral, captive-bred or domestic animal, plant, seed or micro-organism (including genetically modified organisms).
10.	Killing, injuring, taking or removal of any wild animal, or their eggs and nests, including pest control and disturbing them in their places of shelter.
11.	Destruction, displacement, removal or cutting of any plant or plant remains, including tree, shrub, herb, hedge, dead or decaying wood, moss, lichen, fungus, leaf-mould, turf or peat.
12.	Tree and/or woodland management and alterations to tree and/or woodland management including, planting, felling, pruning and tree surgery, thinning, coppicing, changes in species composition and removal of fallen timber.
13a.	Draining including the use of mole, tile, tunnel or other artificial drains.

Standard reference number	Type of operation
13b.	Modification to the structure of water courses including streams, springs, ditches, dykes, drains and their banks and beds, as by re-alignment, re-grading, damming or dredging.
13c.	Management of aquatic and bank vegetation for drainage purposes.
14.	Alterations to water levels and tables and water utilisation including irrigation, storage and abstraction from existing water bodies and through boreholes.
15.	Infilling or digging of ditches, dykes, drains, ponds, pools, marshes or pits.
16a.	Freshwater fishery production and/or management, including sporting fishing and angling, and alterations to freshwater fishery production and/or management.
20.	Extraction of minerals including peat, shingle, hard rock, sand and gravel, topsoil, subsoil and spoil.
21.	Destruction, construction, removal, rerouting, or regrading of roads, tracks, walls, fences, hardstands, banks, ditches or other earthworks, including soil and soft rock exposures or the laying, maintenance or removal of pipelines and cables, above or below ground.
22.	Storage of materials.
23.	Erection of permanent or temporary structures or the undertaking of engineering works, including drilling.
26.	Use of vehicles or craft.
27.	Recreational or other activities likely to damage or disturb the features of special interest, including sailing and water skiing.
28.	Game and waterfowl management and hunting practices and alterations to game and waterfowl management and hunting practice.

Notes

i. This is a list of operations appearing to Natural England to be likely to damage the special features of the SSSI, as required under section 28 (4) (b) of the Wildlife and Countryside Act 1981, as substituted by Schedule 9 to the Countryside and Rights of Way Act 2000.
ii. Where an operation has been granted a consent, licence or permission from another authority separate consent will not be required from Natural England. However, other authorities are required to consult Natural England before such consents, licences or permissions are issued.
iii. Any reference to ‘animal’ in this list shall be taken to include any mammal, reptile, amphibian, bird, fish, or invertebrate.

Date notified: 16 December 2010
National Grid reference: SK035079

Improvement Programme for England's Natura 2000 Sites (IPENS)

Planning for the Future

Site Improvement Plan

Cannock Extension Canal

Site Improvement Plans (SIPs) have been developed for each Natura 2000 site in England as part of the Improvement Programme for England's Natura 2000 sites (IPENS). Natura 2000 sites is the combined term for sites designated as Special Areas of Conservation (SAC) and Special Protected Areas (SPA). This work has been financially supported by LIFE, a financial instrument of the European Community.

The plan provides a high level overview of the issues (both current and predicted) affecting the condition of the Natura 2000 features on the site(s) and outlines the priority measures required to improve the condition of the features. It does not cover issues where remedial actions are already in place or ongoing management activities which are required for maintenance.

The SIP consists of three parts: a Summary table, which sets out the priority Issues and Measures; a detailed Actions table, which sets out who needs to do what, when and how much it is estimated to cost; and a set of tables containing contextual information and links.

Once this current programme ends, it is anticipated that Natural England and others, working with landowners and managers, will all play a role in delivering the priority measures to improve the condition of the features on these sites.

The SIPs are based on Natural England's current evidence and knowledge. The SIPs are not legal documents, they are live documents that will be updated to reflect changes in our evidence/knowledge and as actions get underway. The information in the SIPs will be used to update England's contribution to the UK's Prioritised Action Framework (PAF).

The SIPs are not formal consultation documents, but if you have any comments about the SIP or would like more information please email us at IPENSLIFEProject@naturalengland.org.uk, or contact Natural England's Responsible Officer for the site via our enquiry service 0300 060 3900, or enquiries@naturalengland.org.uk

This Site Improvement Plan covers the following Natura 2000 site(s)

UK0012672 Cannock Extension Canal SAC

Site description

Cannock Extension Canal SAC supports the largest known population of Floating Water-plantain *Luronium natans* in Staffordshire. Floating water-plantain is a rare, small white-flowered water plant only found in Europe. In the UK it is considered a nationally scarce plant. It is found in Wales, and central England, growing in lakes, reservoirs, ponds, slow-flowing rivers and canals.

Floating water-plantain occurs as two forms: in shallow water with floating oval leaves; in deep water with submerged rosettes of narrow leaves. The assemblage of 34 aquatic plant species places this site in the top 20% of British canals. The site also has a good dragonfly assemblage.

Plan Summary

This table shows the prioritised issues for the site(s), the features they affect, the proposed measures to address the issues and the delivery bodies whose involvement is required to deliver the measures. The list of delivery bodies will include those who have agreed to the actions as well as those where discussions over their role in delivering the actions is on-going.

Priority & Issue	Pressure or Threat	Feature(s) affected	Measure	Delivery Bodies
1 Water Pollution	Pressure	S1831 Floating water-plantain	Assess and reduce sediment inputs and diffuse pollution	Canal and River Trust, Environment Agency, Natural England, Landowner(s)
2 Overgrazing	Pressure	S1831 Floating water-plantain	Assess the effects of Canada geese	Canal and River Trust, Natural England
3 Invasive species	Pressure/ Threat	S1831 Floating water-plantain	Monitor and control invasive non-native species.	Canal and River Trust, Natural England
4 Air Pollution: risk of atmospheric nitrogen deposition	Pressure	S1831 Floating water-plantain	Develop a Site Nitrogen Action Plan	Not yet determined

Issues and Actions

This table outlines the prioritised issues that are currently impacting or threatening the condition of the features, and the outstanding actions required to address them. It also shows, where possible, the estimated cost of the action and the delivery bodies whose involvement will be required to implement the action. Lead delivery bodies will be responsible for coordinating the implementation of the action, but not necessarily funding it. Delivery partners will need to support the lead delivery body in implementing the action. In the process of developing the SIPs Natural England has approached the delivery bodies to seek agreement on the actions and their roles in delivering them, although in some cases these discussions have not yet been concluded. Other interested parties, including landowners and managers, will be involved as the detailed actions are agreed and delivered. Funding options are indicated as potential (but not necessarily agreed or secured) sources to fund the actions.

1 Water Pollution

Historic sediment loads into the canal have occurred, the origin of which has now been resolved. However this may need to be revisited to protect the site in the future as heavy rainfall events cause stained inflows into the site indicating that there is still a sediment load, albeit low, in the inflow water. In addition all other inflows into the canal need to be assessed to ensure that only clean water is entering the canal.

Action	*Action description*	*Cost estimate*	*Timescale*	*Mechanism*	*Funding option*	*Delivery lead body*	*Delivery partner(s)*
1A	Investigate known inflow to make sure that previous works to control sediments are still having the desired effect. If these are not working properly, they need to be rectified to address the problem.	Not yet determined	2014-2015	Partnership agreement	Not yet determined	Natural England	Canal and River Trust, Environment Agency, Landowner(s)

Action	*Action description*	*Cost estimate*	*Timescale*	*Mechanism*	*Funding option*	*Delivery lead body*	*Delivery partner(s)*
1B	There is a need to understand the flow of water from all land surrounding the site, including any road drainage.Undertake a catchment walkover to assess all inflows, including any discharges from boats, moorings and roads. Devise solutions if any problems are found.	Not yet determined	2014-18	Partnership agreement	Not yet determined	Natural England	Environment Agency, Local Authorities, Landowner(s)

2 Overgrazing

Large groups of Canada geese are grazing on the waterplants in the canal. There is a risk that this could affect the vegetation community including Floating water-plantain as well as contributing additional nutrients via excreta.

Action	*Action description*	*Cost estimate*	*Timescale*	*Mechanism*	*Funding option*	*Delivery lead body*	*Delivery partner(s)*
2A	The effects of grazing on aquatic macrophytes by large groups of Canada geese needs to be assessed and resolved.	Not yet determined	2014-18	Investigation / Research / Monitoring	Conservation Enhancement Scheme (CES)	Canal and River Trust	Natural England

Action	*Action description*	*Cost estimate*	*Timescale*	*Mechanism*	*Funding option*	*Delivery lead body*	*Delivery partner(s)*
2B	Raise awareness of the importance of the site with the local community if the feeding of geese (e.g. with bread) is an issue.	Not yet determined	2014-20	Advice: Education & awareness raising	Not yet determined	Canal and River Trust	Natural England

3 Invasive species

Water fern *Azolla filiculoides* and Water pennywort *Hydrocotyle ranunculoides* have been present on the canal in the recent past and have been successfully controlled by the Canal and Rivers Trust. Any invasive species that get into the canal need to be eradicated to prevent damage to the interest features and associated biodiversity of the site.

Action	*Action description*	*Cost estimate*	*Timescale*	*Mechanism*	*Funding option*	*Delivery lead body*	*Delivery partner(s)*
3A	Continue to monitor regularly and control as necessary all invasive non-native species.	Not yet determined	2014-20	Invasive Control Plan: Other	Not yet determined	Canal and River Trust	Natural England

4 Air Pollution: risk of atmospheric nitrogen deposition

Nitrogen deposition exceeds site relevant critical load. The site could be affected by major roads, industrial estates and farming in the vicinity.

Action	*Action description*	*Cost estimate*	*Timescale*	*Mechanism*	*Funding option*	*Delivery lead body*	*Delivery partner(s)*
4A	Control, reduce and ameliorate atmospheric nitrogen impacts.	Not yet determined	2014-20	Site Nitrogen Action Plan	Not yet determined	Not yet determined	Not yet determined

Site details

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

Qualifying features

#UK Special responsibility

Cannock Extension Canal SAC	S1831 *Luronium natans*: Floating water-plantain

Site location and links

Cannock Extension Canal SAC

Area (ha) **5.47**	*Grid reference*	**SK020058**	Map link
Local Authorities			Staffordshire; Walsall
Site Conservation Objectives			European Site Conservation Objectives for Cannock Extension Canal SAC
European Marine Site conservation advice			n/a
Regulation 33/35 Package			n/a
Marine Management Organisation site plan			n/a

Water Framework Directive (WFD)

The Water Framework Directive (WFD) provides the main framework for managing the water environment throughout Europe. Under the WFD a management plan must be developed for each river basin district. The River Basin Management Plans (RMBP) include a summary of the measures needed for water dependent Natura 2000 sites to meet their conservation objectives. For the second round of RBMPs, SIPs are being used to capture the priorities and new measures required for water dependent habitats on Natura 2000 sites. SIP actions for non-water dependent sites/habitats do not form part of the RBMPs and associated consultation.

Cannock Extension Canal SAC

River basin	Humber	Humber RBMP
WFD Management catchment	Staffordshire Trent Valley	
WFD Waterbody ID (Cycle 2 draft)	n/a	

Overlapping or adjacent protected sites

Site(s) of Special Scientific Interest (SSSI)	
Cannock Extension Canal SAC	Cannock Extension Canal SSSI

National Nature Reserve (NNR)	
Cannock Extension Canal SAC	n/a

Ramsar	
Cannock Extension Canal SAC	n/a

Special Areas of Conservation (SAC) and Special Protection Areas (SPA)	
Cannock Extension Canal SAC	n/a

Version	*Date*	*Comment*
0.3	07/10/2014	