



Environmental Survey Great Catchwater



Scunthorpe & Gainsborough
Water Management Board

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Contract

This report describes work commissioned on 10 October 2018 by Scunthorpe & Gainsborough WMB. Alison Briggs BSc (Hons) Env.Sc., MSc Env.Mngt: Climate Change PIEMA of JBA Consulting carried out this work.

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Purpose

This document has been prepared following walk over surveys of Great Catchwater Drain in which the Board is undertaking maintenance under a PSCA with the Environment Agency. JBA Consulting accepts no responsibility or liability for any use that is made of this document other than by the Client for the purposes for which it was originally commissioned and prepared.

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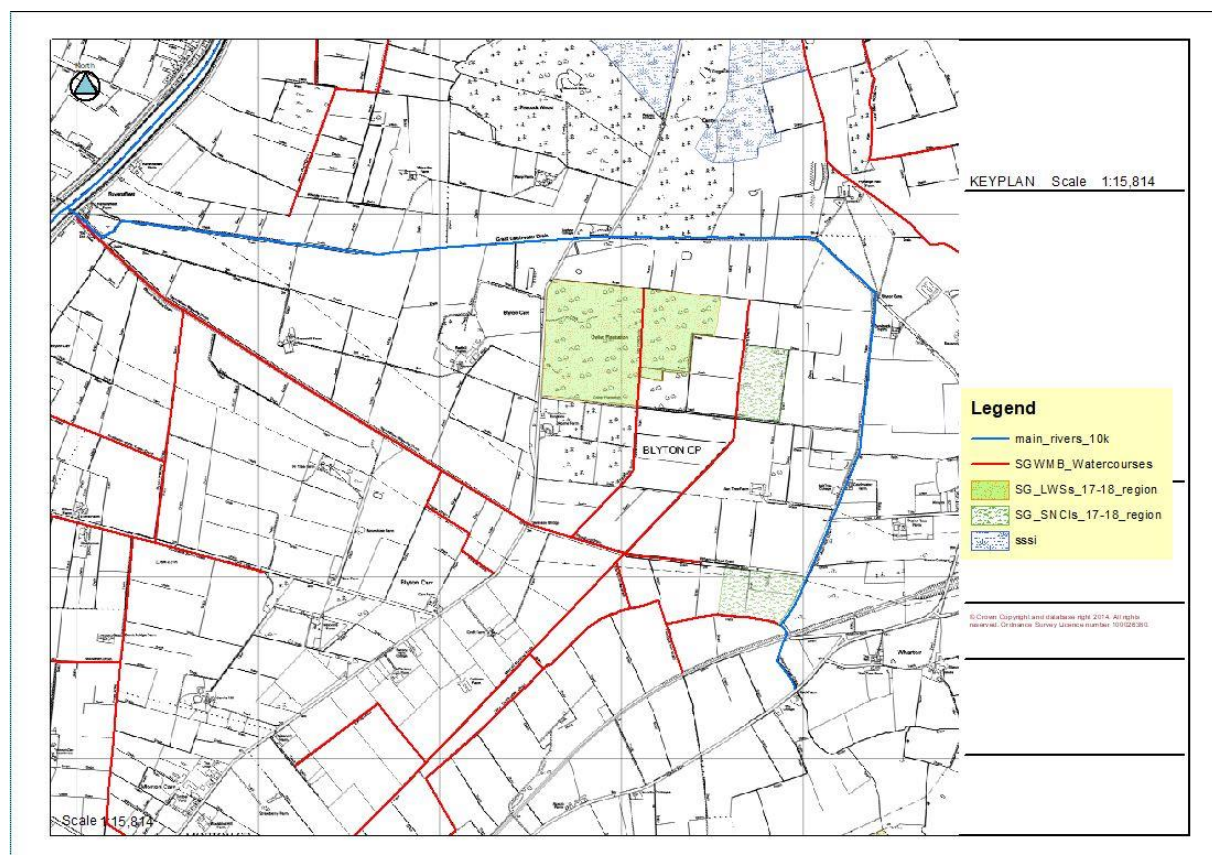


Great Catchwater Environmental Survey

1 Background

The main river system Great Catchwater Drain takes highland water from ground north east of Gainsborough shown on Figure 1 below. Main River systems are under the control of the Environment Agency however the Agency considers Great Catchwater to be a low consequence system in terms of flooding. The Agency has therefore not undertaken maintenance on this system for several years. Scunthorpe & Gainsborough Water Management Board (the Board) considers that lack of maintenance to be impacting on land drainage within that part of its District proximal to Great Catchwater.

Figure 1: Great Catchwater System



1.1 Legislative Duty to conserve Biodiversity

The Land Drainage Act 1991 (as amended) imposes a duty on an Internal Drainage Board to further the conservation of flora and fauna with the purposes of any enactment relating to the functions of the Board.

1.2 Public Sector Co Operation Agreement

The Board has in place with the Environment Agency agreement to work under a Public Sector Co-Operation Agreement (PSCA). The Environment Agency is agreeable to the Board undertaking work on main river Great Catchwater Drain on its behalf. As Delivery Party to the PSCA, the Board will be exercising powers on behalf of the Environment Agency as Authorising Party. Works on Great Catchwater fall under section 165 of the Water Resources Act 1991 together with duties contained in the Environment Act 1995.



2 Survey

2.1 Desktop survey

A desktop survey was undertaken obtaining ecological information from the Greater Lincolnshire Nature Partnership on an area incorporating the length of Great Catchwater Drain within a 2km corridor.

Species associated with Great Catchwater Drain with the potential to be affected by its maintenance, and identified as present in the species report are:

- Water Vole (*Arvicola amphibus*) identified within the area within several Board maintained drains from 2002
- Otter (*Lutra lutra*) identified in the watercourse 1995

European Eel (*Anguilla anguilla*) records are held by the Nature Partnership however records do not indicate any identified in Great Catchwater Drain. Following discussions with Environment Agency Fisheries, it has been identified there is potential for Eel to be within the Great Catchwater Drain catchment.

2.2 Site survey

A walkover survey had been undertaken on part of this watercourse on 12 April 2018 from the outfall into Ravensfleet Warping Drain up to Laughton Road. The weather was dull, misty and cold, following a very cold Spring where daily temperatures were little above freezing and there had been substantial snow falls. Water Vole can remain active all year, they do not hibernate but spend longer underground during the winter months, consuming stored food and field signs virtually disappear. The optimum survey period for Water Vole is between March to June when the animal is active during its prime breeding season. Surveys remain possible until the end of October when activity may start to reduce with cooler weather.

Surveys were undertaken week commencing 15th October 2018 on the full extent of Great Catchwater Drain. Site photographs Figures 2 - 9 compare growth on bank and in channel between April 2018 and October 2018 site visits.

The watercourse is dominated by Common Reed (*Phragmites australis*) among rank grasses associated with nitrogen rich ground adjacent to farmland. Occasional small stands of Meadowsweet (*Filipendula ulmaria*) were noted.



Figure 2.1: Great Catchwater April 2018 150m upstream Ravensfleet outfall



Figure 2.2: Great Catchwater October 2018 150m upstream Ravensfleet outfall





Figure 3.1: Great Catchwater 400m upstream of Warping Drain outfall April 2018



Figure 3.2: Great Catchwater 400m upstream of Warping Drain outfall October 2018





Figure 3.1: Great Catchwater emergent Phragmites



Figure 3.2: Great Catchwater emergent Phragmites October 2018





Figure 4.1: Great Catchwater 500m downstream Cuckoo Cottage April 2018



Figure 4.2: Great Catchwater 500m downstream Cuckoo Cottage October 2018





3 Impact on protected species

3.1 Water vole

Water vole is a protected species under S5 Wildlife & Countryside Act 1981 and is a priority conservation species. Activities that harm water vole would be destruction or disturbance of habitat and/or destruction or disturbance of places used for shelter or protection.

Historical Records held by Greater Lincolnshire Nature Partnership does not identify the presence of water vole in Great Catchwater Drain. Records from 2002 suggest species presence in the nearby Ravensfleet Warming Drain however the record type is not specified.

The habitat appears suitable for water vole, with soft bankside vegetation and slow-flowing water over 1m deep ¹. However, water is only of preferred depth within 500m from the Ravensfleet outfall, after which the depth reduces considerably to circa 100mm. Water vole use water to avoid predation and populations are found in ditches holding little more than muddy water ². Much of the watercourse banks comprise sands which are not considered suitable for this species ³.

An original survey of this watercourse from Ravensfleet to Laughton Road was undertaken in April 2018. No evidence of the presence of water vole was identified. A second survey was undertaken week commencing 15th October 2018. No field signs of faeces, latrines, feeding stations, burrows, footprints, runs or pathways were identified.

Evidence of the presence of water vole was not located however no evidence is not confirmation of absence and to mitigate any potential damage, the Environment Agency require retention of suitable habitat. Bankside mowing requires a sward height of at least 150mm, preferably 200mm to ensure they have cover to move about in. Any weed cutting will be central to the channel only leaving bankside emergent plants for feeding. De-silting must be undertaken very carefully, the toe of the bank will not be touched, and the bucket will not be dragged up the side of the bank. This will avoid disturbance by sealing off burrow entrances if any water vole is present. The excavator must be set back 2m from bank top to avoid compacting any water vole burrows. Dredging material must be placed on bank top to avoid impeding water vole entrances. Work will be undertaken from one bank only, working upstream.

3.2 Otter

The European otter is the UK's only native otter species; it is a European Protected Species under the Conservation (Natural Habitats, &c.) Regulations 1994 (as amended), and fully protected under S5 the Wildlife and Countryside Act 1981. It is an offence to deliberately or recklessly capture, kill, disturb or injure otters.

Historical Records from 1995 held by Greater Lincolnshire Nature Partnership identifies the presence of otter in Great Catchwater Drain although record type is not specified.

Specific field signs ⁴ would include spraints, tracks, feeding remains, otter slides into the water, holts or above ground couches where otters may rest during the day.

The survey identified two recent otter prints in mud on the southern bank of the watercourse approximately 500m downstream of Laughton Road under overhanging trees and roots. The bank was surveyed closely to identify whether any other field signs occurred, none were found. Otters are territorial with large home ranges. Depending on the quality of the habitat and availability of food, the range of a male along rivers may be 35km. Otters will follow and use known routes across territory. Areas of open water in weak sunlight were observed from a distance with binoculars, no fish species were identified, suggesting Great Catchwater is not used as a feeding watercourse, but the prints were left as otter passed through.

3.3 European Eel

The presence of eel is not recorded occurring in Great Catchwater Drain although there is potential for the passage of eel into this system from tidal River Trent at the penstock discharge into Ravensfleet Reservoir.

Emergent species cutting of mid channel methodology outlines measures taken to reduce impact on eel through use of a Bradshaw bucket and de-weeding of the centre channel only.



4 Methodology for undertaking maintenance

4.1 Flail mowing bank side

The watercourse will be accessed from either agricultural farmland or hard stoned track running parallel, dependent upon section of drain .

For health and safety reasons, prior to undertaking any watercourse maintenance, the watercourse bank top must be mown in order the de-weeding excavator driver can identify the location of bank top to place the wheels or tracks of machinery. The banks of the watercourse are mown to identify the location of bank toe.

In accordance with environmental best practice, and to retain a place of refuge, safety and food source, bank sides of the watercourse will be mown with flail no shorter than 10cm and a fringe of terrestrial vegetation will be retained at the bottom of the bank offering protection for any species leaving the water.

To achieve complete environmental best practice maintenance of a watercourse would be undertaken from opposite banks whether annually, bi-annually or tri-annually. That method of maintenance will not be possible on this watercourse. Between the outfall into Ravensfleet Warping Drain and where the watercourse passes under Laughton Road, the northern bank of the watercourse is open farmland, whereas the southern bank alternates between trees, shrubs, and higher land. Removal of trees and shrubs from the southern bank would create an adverse impact on local biodiversity. For the section between Laughton Road and Carr Lane, the watercourse will be accessed from the bridle path on one side only. Access from the other bank is prohibited by trees forming part of Carmer Wood within Forestry Commission ownership.

4.2 De-weeding watercourse

De-weeding work is the removal of emergent growth from the watercourse channel using a Bradshaw bucket with knives which cut through roots. This work will be undertaken outside the fish spawning season, which depending on species, typically spans the months of April – July. Great Catchwater drain has a lack of favourable spawning substrate and the fish species present will spawn chiefly on aquatic plants and marginal vegetation. De-weeding works will be undertaken sensitively, the centre of the channel only will be cleared of vegetation, a fringe being retained within the watercourse at the base of both banks. Arisings will be placed on the opposite bank top/sides.

De-weeding can cause temporary de-oxygenation of the water as silts fall from the removed weed roots. Following environmental best practice guidelines and starting from the outfall working upstream with a Bradshaw bucket to cut mid-channel growth, will not create any adverse impact on fish species.

4.3 Deposition of arisings

The Board has several Environmental Waste Exemptions to implement maintenance across its District ⁵. The Ravensfleet pump station catchment into which Great Catchwater Drain discharges is exempted in the following categories:

- D1
- D7
- S2
- T6
- U1
- U10
- U11
- U13

For all watercourses within the District, the Board uses the specific exemptions:



- U10: spreading waste to benefit agricultural land,
- A1: depositing waste from dredged inland waters,
- D7: burning waste in the open and
- S2: storing waste in a secure place.

Current exemptions expire in 2021.



5 References

1. Strachan, R., Moorhouse, T., Gelling, M. (2011) *Water Vole Conservation Handbook* 3rd Edition, ISBN 0-9546376-5-8
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3. Strachan, R., Moorhouse, T., Gelling, M. (2011) *Water Vole Conservation Handbook* 3rd Edition, ISBN 0-9546376-5-8
4. Otter field signs available online at: <http://www.ukwildottertrust.org/the-otters/>. Viewed 21 October 2018
5. Environmental Permitting Exemptions available online at: <https://environment.data.gov.uk/public-register/view/search-waste-exemptions>

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