

Agenda Item No. 4(b)

MEETING OF THE CROMFORD CANAL PARTNERSHIP

14 April 2016

Report of the Strategic Director – Economy, Transport and Communities
Derbyshire County Council

BREEDING BIRDS SURVEY

(1) **Purpose of Report** To present to the Partnership the final report for the Breeding Birds Survey undertaken from 2013 to 2015.

(2) **Information and Analysis** The partnership instructed that a suite of ecological surveys be undertaken to assess any impact of the operation of the trip boat Birdswood on sensitive habitats and species. This included a Breeding Birds Survey with field work undertaken in the spring and summer of 2013 before Birdswood was operational, and repeated in 2014 and 2015.

The objective of the survey was to evaluate whether over this time there was a difference in:

- The overall abundance of birds present in the canal corridor between Cromford Wharf and Derwent Aqueduct.
- The diversity of species present.
- The diversity and abundance of birds using the canal channel or margins for breeding.

The survey found that although the abundance and diversity of birds recorded was not remarkable, over the three year survey period the numbers in all three assessment categories remained broadly steady.

Analysis of the data suggests that there has been no measurable impact on birds which can be specifically attributed to the operation of the trip boat.

The report acknowledges the sensitivity of the site to a number of disturbance factors and recommends measures to continue to operate the trip boat under strict conditions and undertake sensitive habitat management.

(3) **Financial Considerations** There are no financial considerations associated with this report.

In preparing this report the relevance of the following factors has been considered: legal, prevention of crime and disorder, equality and diversity,

human resources, environmental, health, property and transport considerations.

(4) **Background Papers** Held on file within the Economy, Transport and Communities Department of Derbyshire County Council. Officer contact details – Susan White, telephone 01629 539001.

(5) **OFFICER'S RECOMMENDATION** To note the report and approve the recommendations. Approval of this report indicates the discharge of all survey duties imposed by the Partnership to examine the potential impact of the operation of the trip boat. The findings of the reports submitted to the Partnership will be considered in negotiation for any renewal when the current licence expires in late 2016.

Mike Ashworth
Strategic Director – Economy, Transport and Communities
Derbyshire County Council

**Breeding Birds Survey
Cromford Canal Wharf to Derwent Aqueduct
2013 - 2015**

**Susan White
Waterways Development Project Officer
14th April 2016**

Introduction

The Cromford Canal Partnership directed that a survey be undertaken in order to monitor the impact on breeding birds of the operation of a trip boat on the Cromford Canal between the terminal wharf and the Derwent aqueduct. This report details work undertaken in the spring and summer breeding seasons in 2013 (before Birdswood was operating), 2014 and 2015.

Survey Method

The survey methodology employed was broadly based on that of territory mapping (Bibby et al 1992) as used for the British Trust for Ornithology (BTO) Common Bird Census (CBC). Standard BTO species codes and symbols for bird activities were used to identify birds and denote activity, sex and age where appropriate. The criteria used in the assessment of breeding birds has been adapted from the standard criteria proposed by the European Ornithological Atlas Committee (EOAC 1979) and are grouped into three categories: possible breeder e.g. birds observed in suitable habitat or singing male recorded, probable breeder e.g. pair in suitable habitat, territory defended, agitated behaviour or nest building and confirmed breeder e.g. recently fledged young observed, adult birds carrying food for young. Birds that were considered to be not using the site for breeding were categorised as non-breeders e.g. flying over the site, migrant, habitat not suitable.

The full route was walked a minimum of 12 times between April and August each year, which is in excess to the 10 visits recommended in the CBC guidelines. The surveyors all received instruction in recording to the provided maps and tables and the field assessment methodology. All surveys were undertaken in the early morning and in suitable weather conditions.

The survey was supervised by Susan White, previously a Senior Ecological Consultant specialising in ornithology with extensive experience in site surveys and impact assessment for windfarm, port and housing developments.

Assessment criteria

The conservation value of bird populations has been assessed using three criteria: nature conservation value, conservation status and species vulnerability. The IEEM guidance on ecological impact assessment assesses nature conservation value within a geographical context. To attain each level of value, an ornithological resource or one of the features (species population or assemblage of species) should meet the criteria set out in Table 1 below. In some cases, professional judgement may be required to increase or decrease the allocation of specific value, based upon local knowledge.

Table 1: Definition of Terms Relating to Nature Conservation Value

Nature Conservation Value	Examples of Selection Criteria
International	A species which is part of the cited interest of an SPA and which regularly occurs in internationally or nationally important numbers. A species present in internationally important numbers (>1% of international population).
National	A species which is part of the cited interest of a SSSI and which regularly occurs in nationally or regionally important numbers. A nationally important assemblage of breeding or over-wintering species. A species present in nationally important numbers (>1% UK population). Rare breeding species (<300 breeding pairs in the UK).
Regional	Species listed as priority species in the UK BAP, which are not covered above, and which regularly occurs in regionally important numbers. Species present in regionally important numbers (>1% of regional population). Sustainable populations of species that are rare or scarce within a region. Species on the BoCC Red List and which regularly occurs in regionally important numbers.
County	Species listed as priority species in the UK BAP, which are not covered above, and which regularly occurs in county important numbers. Species present in county important numbers (>1% of county population). Sustainable populations of species that are rare or scarce within a county, or listed in a county BAP. A site designated for its county important assemblage of birds (e.g. a SINC Site). Species on the BoCC Red List and which regularly occur in county important numbers.
District	Species listed as priority in the UK BAP, which are not covered above, and are in the locality or in the relevant Natural Area profile. Species present in numbers just short of county importance. Sustainable populations of species which are rare or scarce within the locality. A site whose designation falls just short for inclusion for its county important assemblage of birds (e.g. a SINC Site). Other species on the BoCC Red List and which are considered to regularly occur in district important numbers.
Local	Other species of conservation interest (e.g. all other species on the BoCC Red and Amber List and UK BAP which are not covered above) regularly occurring in locally sustainable populations.
Site	All other BoCC Green-listed common and widespread species.

This approach ensures that the value of the breeding bird community as a whole is assessed against the SINC criteria for the identification of avian sites in Derbyshire. Local Wildlife Sites are recognised by central government as an important tool in promoting sustainable development and protecting biodiversity.

Table 2: Derbyshire Local Wildlife Site Selection Criteria, scoring table for birds in wetland habitats including reedbed and open water.

Species	Score	Species	Score
Mute swan	2	Snipe	5
Shelduck	4	Kingfisher	2
Gadwall	3	Curlew	4
Little grebe	2	Redshank	4
Water rail	4	Cuckoo	2
Garganey	5	Ringed plover	3
Shoveler	4	Yellow wagtail	2
Great crested grebe	2	Little ringed plover	3
Grey heron	3	Grasshopper warbler	4
Tufted duck	3	Sedge warbler	1
Lapwing	4	Reed bunting	1
Black-necked grebe	5	Reed warbler	1
Grey wagtail	1	Common tern	3
Dipper	2		
Selection threshold value 15			

Finally, key species were identified as those significantly dependant on the open water or margins of the canal for breeding behaviour and resources. Other species using the wider woodland or grassland habitats adjacent to the canal were deemed to be a minimal potential risk of disturbance as a result of powered boat movements on the canal.

Note that no bird species are listed in the Cromford Canal SSSI citation.

Mitigation

Mitigation represents any process, activity or action designed to avoid, reduce or compensate significant adverse environmental effects likely to be caused by a project. A number of safeguards were in place from the start of the trip boat operation aimed to avoid and reduce impact to an acceptable level; further steps may be taken if it is shown that the operation of the trip boat is causing a negative impact on biodiversity. Alternatively, should the impact of the boat be shown to be neutral or positive (for example by reducing the spread of unwanted in-channel vegetation) then initial mitigation measures could be reduced. Suggested mitigation measures are described in Table 3, others not listed may also be appropriate.

Table 3: Mitigation hierarchy and measures

Mitigation Hierarchy	Receptor	Options (examples)
Avoid or reduce	Breeding birds	Do not operate trip boat. Limit number of boat movements to acceptable impact*. Limit boat operation to avoid peak breeding season. Limit horse and leader to path only, ensure tow rope is clear of vegetation*.
Compensate	All/any	Provide funds/in-kind for habitat improvement on off-side. Provide funds/in-kind for habitat improvement in non-navigation stretch. Provide funds/in-kind to create off-line habitat.

* indicates that measure will be in place from outset

While all birds observed during the field surveys were recorded the surveyors were instructed to concentrate effort on the open water and margins of the canal as those species using this habitat were deemed to be at the greatest potential risk of disturbance by boat operations. Additional receptors were identified using the standard SINC scoring criteria set out in Table 2.

It should be noted that the 2013 survey immediately followed the dredging works over the winter of 2012/13. It is known that canal communities recover quickly after dredging however it will be difficult to ascertain if the recovery would be more abundant or diverse either with or without the operation of the trip boat.

A further difficulty in interpreting the data has been to ascertain if a negative impact is directly caused by, an in-combination effect or not caused by the trip boat operation when balanced against the significant other pressures along the canal.

Legislation

The Wildlife and Countryside Act 1981 (as amended) is the principal legislation affording protection to UK wild birds. Under this legislation all birds, their nests and eggs are protected by law and it is an offence, with certain exceptions to recklessly or intentionally:

- Kill, injure or take any wild bird;
- Take, damage or destroy the nest of any wild bird while in use or being built;
- Take or destroy the egg of any wild bird.

Species listed on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended) are specially protected at all times.

In addition to statutory protection, some bird species are classified according to their conservation status, such as their inclusion on the Red and Amber lists of Birds of Conservation Concern (BoCC) in the UK:

- Red list (high conservation concern) species are those that are Globally Threatened according to IUCN criteria; those whose population has declined rapidly (50% or more) in recent years; and those that have declined historically and not shown a substantial recent recovery.
- Amber list (medium conservation concern) species are those with an unfavourable conservation status in Europe; whose population or range has declined moderately (between 25% and 49%) in recent years; those whose population has declined historically but made a substantial recent recovery; rare breeders; and those with internationally important or localised populations.
- Green list (low conservation concern) species fulfil none of the above criteria.

Certain species have also been identified as Priority Species on the UK Biodiversity Action Plan (UKBAP) and/or the Lowland Derbyshire Local BAP (LBAP). The Biodiversity Action Plan was a government initiative, which aimed to achieve the recovery of the UK's most threatened species and habitats.

The site is a Site of Special Scientific Interest (SSSI), it is an offence to recklessly or intentionally damage an SSSI or disturb animals and birds on it. Owners and managers must give notice to Natural England before carrying out an 'operation likely to damage the special interest feature(s) of the SSSIs'.

Section 28G of the Wildlife and Countryside Act states that Local Authorities must take reasonable steps to conserve and enhance the special features of SSSIs both when carrying out statutory duties and when giving others permission for works.

The Wildlife and Countryside Act 1981 was amended by the Countryside and Rights of Way Act 2000 to strengthen the protection and management of SSSIs.

The main changes were:

- A power for the statutory agency to refuse consent for activities on SSSIs.
- A power for statutory agency to create management schemes for SSSIs in consultation with land managers, and to enforce these schemes in specific circumstances.
- Duties on public bodies to further the conservation and enhancement of SSSIs.

- Measures to address damaging activities by third parties on SSSIs.
- Increased penalties for offences relating to SSSIs.

Results

43 species were recorded during the walked transects of which 30 were seen to exhibit territorial behaviour likely to indicate breeding on site or were confirmed to be breeding. Appendix 2 lists all species encountered and the maximum count for each over the survey period.

Key species recorded, that is those listed on the SINC selection criteria or otherwise dependant on open water or margins for breeding are shown in Table 4 below.

Table 4: Key species recorded

Species	Present			Territorial			Breeding (pairs)		
	2013	2014	2015	2013	2014	2015	2013	2014	2015
Coot <i>Fulica atra</i>	14	18	20+	5	8	8	4	4	4
Dipper <i>Cinclus cinclus</i>		2	3		4		2		
Little grebe <i>Tachybaptus ruficollis</i>	5	10					3	3	3
Mallard <i>Anas platyrhynchos</i>	80+	80+	50+				3	5	5
Moorhen <i>Gallinula chloropus</i>	4	2	10	1	6		4	4	3
Mute swan <i>Cygnus olor</i>	2			2			2		
Tufted duck <i>Aythya fuligula</i>		6	2					1	1

Discussion and Impact Assessment

Evaluation of the overall diversity and abundance:

The site scored 6 in the SINC selection criteria for birds in open water and reedbed habitats, well below the selection value threshold of 15. The site is considered to be of local interest for birds following the IEEM guidance on ecological impact assessment. As such the site is not considered to be significant in either bird species abundance or diversity in the county.

The abundance and diversity of the species recorded are typical of the habitats encountered and unremarkable for open water and marginal habitats, the site is considered to have local importance under the IEEM criteria.

The site does not meet the Derbyshire Wildlife Site Selection Guidelines as meeting any given criteria for its breeding bird assemblage.

Table 4 summaries the conservation and geographical status of all species encountered during the survey.

One species of the BoCC list was observed (song thrush) and no species listed on Schedule 1 of the Wildlife and Countryside Act (as amended) was recorded.

Table 4: Species status

Species	BoCC/BAP status	Status within Derbyshire*
Blackbird	Green	Abundant resident, passage migrant and winter visitor
Blackcap	Green	Fairly common summer and uncommon winter visitor
Blue tit	Green	Abundant resident
Bullfinch	Amber	Resident
Canada goose	Not listed	Common resident
Carrion crow	Green	Common resident
Chaffinch	Green	Common resident, passage migrant and winter visitor
Chiff chaff	Green	Fairly common summer and scarce winter visitor
Coot	Green	Common resident and winter visitor
Cormorant	Green	Migrant/resident breeder
Dipper	Amber	Abundant resident
Duncock	Amber UKBAP	Abundant resident
Garden Warbler	Green	Migrant breeder/passage visitor
Goldcrest	Green	Resident/passage/winter visitor
Goldfinch	Green	Common resident and partial migrant
Great tit	Green	Common resident
Great spotted woodpecker	Green	Common resident
Green woodpecker	Amber LBAP	Fairly common resident
Greenfinch	Green	Abundant resident
Great tit	Green	Abundant resident
Grey wagtail	Red	Resident/passage visitor
House martin	Amber	Migrant breeder/passage visitor
Jackdaw	Green	Common resident
Jay	Green	Common resident
Little grebe	Amber	Fairly common resident
Long-tailed tit	Green	Common resident
Magpie	Green	Common resident
Mallard	Amber	Common and abundant resident and winter visitor
Mistle thrush	Red UKBAP	Migrant/resident breeder
Moorhen	Green	Common resident
Mute swan	Green	A fairly common resident
Nuthatch	Green	Common resident
Pied wagtail	Green	Common resident and passage migrant
Robin	Green	Abundant resident
Rook	Green	Common resident
Song thrush	Red UKBAP	Common resident and partial migrant
Swallow	Amber	Common summer visitor and passage migrant
Swift	Amber	Common summer visitor and passage migrant
Treecreeper	Green	Common resident
Tufted duck	Green	Resident/passage/winter visitor
Whitethroat	Green	Migrant breeder/passage visitor
Willow warbler	Amber LBAP	Common summer visitor
Wood pigeon	Green	Abundant resident and passage migrant
Wren	Green	Abundant resident

* Derbyshire Bird Report 2010

The survey results do not suggest that the operation of the trip boat has had an impact either negatively or positively on the overall assemblage or abundance of birds on the site during the breeding season.

Evaluation of the key species:

Analysis of impact on key species, that is, those species which are dependent on open water and/or its margins for successful breeding and at the greatest risk of disturbance by the passage of the trip boat is assessed as positive, neutral or negative below.

Coot

Up to eight active pairs of coot were recorded at regular intervals in the mid-channel of the canal of which four were seen to breed successfully each year. Coot are highly territorial and the long sightlines on the canal are considered to be a significant barrier to any increase of this species as a breeding bird on the site. A pair constructed and maintained a nest at Lea Winding Hole in 2013 but did not breed, pairs successfully bred in the off-side margins east and west of the winding hole in 2014 and 2015, suggesting some displacement has occurred.

The impact of boat movements on breeding coot is considered to be **neutral**.

Dipper

Dipper nest sites are traditional and often used by successive generations of birds. Nests are built in crevices or cracks, often in bridges, walls and culverts most commonly on fast flowing rivers. The species was present in low numbers in all years of the survey with breeding confirmed in 2013 and probable in 2014.

The impact of boat movements on breeding dipper is considered to be **neutral**.

Little grebe

Little grebe construct nests on the water edge, they have the habit of covering the nest and eggs with weeds if away from the immediate nesting site which can make locating nests difficult at times. Three successful breeding sites were recorded, territorial behaviour being recorded and then the presence of young brood on the water. One nest was in the propeller cavity of the *Duchess* transport boat resulting in it not being available for work during most of the summer season. The surveys suggest that there has been an overall decline in the number of little grebe present on the stretch of canal between Cromford Wharf and Derwent Aqueduct, however the number of breeding pairs has remained constant. Additionally the locations of nests have moved over the years. It is possible that some displacement of this species has occurred between 2013 and 2015 which may be as a result of boat movements in combination with other disturbance factors. The core measure is considered to be stability of recorded breeding pairs.

The impact of boat movements on breeding little grebe is considered to be **neutral**.

Mallard

Mallard prefer nests sites in marginal vegetation or undisturbed banks which offer some protection from predators and sited away from other mallard territories. As such the nest sites can often be difficult to detect and breeding is normally confirmed by the presence of young broods on the water. Three, three, then five mallard families were observed during the survey which is considered to be typical. The high numbers of birds recorded as present are

as a result of congregations around Cromford Wharf making use of the good foraging and roosting opportunities there.

The impact of boat movements on breeding mallard is considered to be **neutral**.

Moorhen

Moorhen are common on well-vegetated water bodies and their nests are normally located on the margins. The number of moorhen present on the canal peaked at 10 in 2015. Four breeding territories were recorded for this species in 2013 and 2014, three in 2015 and young brood observed on the water in all years. It is possible that one pair has been displaced from the canal which may be as a result of boat movements but could also be as a result of other disturbance factors. It should be noted that there were reports of anti-social behaviour in the vicinity of the Wharfshed was reported in early season 2015 including people in the channel and some damage to the Duchess and canal margins. As moorhens are highly territorial and this occurred in the early phase of nest establishment it is considered to be highly likely that this was a contributing factor to the displacement.

The impact of boat movements on breeding moorhen is considered to be **neutral** but further measures should be undertaken to support this species.

Mute swan

Mute swans require a relatively large area of margin or bank to construct their nests which are easily seen and the birds are highly territorial during the breeding season. Two adult birds were observed during the survey but no evidence of breeding was recorded on this stretch of the canal. In each of the three survey seasons a pair of mute swan established nests in the canal channel east of the Derwent Aqueduct.

Tufted duck

Tufted duck breed throughout the Midlands on reservoirs, gravels pits and lakes. While not uncommon on canals the species generally prefers greater expanses of still and open water habitats for breeding territories. Tufted duck were not present in 2013, in 2014 and 2015 1 pair were confirmed to be breeding on the site, representing a very minor improvement over the course of the survey.

The impact of boat movements on breeding tufted duck is considered to be neutral.

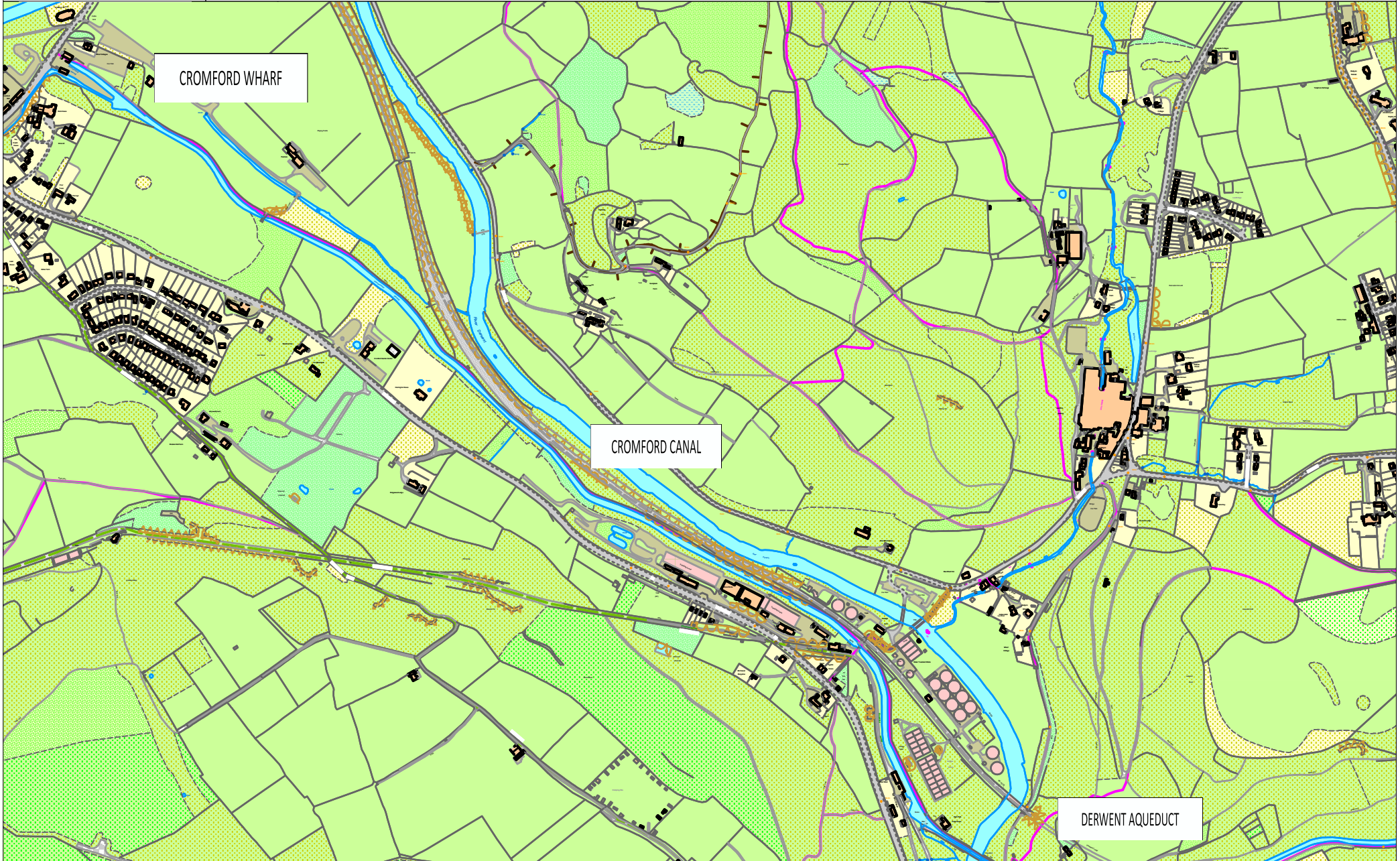
Recommendations

The trip boat continues to operate under the strict conditions currently enforced as a term of the licence. This includes limiting the number of trips per day and per week, vigilance by the boat masters in manoeuvring along the channel, careful consideration of passenger dis/embarkation points, careful use of the towpath by the towing horse (including the prompt removal of manure) and active promotion of the importance of the site for wildlife to passengers by boat crews.

Measures to support and encourage channel nesting birds, such as moorhen, should be implemented. This could include providing nesting platforms in suitable places and the management of marginal vegetation to reduce site-lines between territories.

Active management to keep the channel open such as reed-pulling and periodic dredging are required to maintain/improve the SSSI condition. Volunteer work parties have been supporting the wardens to undertake this work which should continue to be supported.

Breeding Birds Survey Area



Appendix 2: All birds recorded 2013-15

Species	Present			Territorial			Breeding (pairs)		
	2013	2014	2015	2013	2014	2015	2013	2014	2015
Blackbird <i>Turdus merula</i>	2	1	2	1	3	3		1	
Blackcap <i>Sylvia atricapilla</i>	1				8	6			
Blue tit <i>Cyanistes caeruleus</i>		6	9				5		
Bullfinch <i>Pyrrhula pyrrhula</i>		4			1				
Canada goose <i>Branta canadensis</i>	1	10	2						
Carrion crow <i>Corvus corone</i>			4						
Chaffinch <i>Fringilla coelebs</i>		2	6	12	8	2			
Chiff chaff <i>Phylloscopus collybita</i>	3		1	2	3	8			
Coot <i>Fulica atra</i>	14	18	20+		8		5	4	4
Cormorant <i>Phalacrocorax carbo</i>		1	1						
Dipper <i>Cinclus cinclus</i>		2	1		4		2		
Dunnock <i>Prunella modularis</i>	3	2				1			
Garden warbler <i>Sylvia borin</i>						1			
Goldcrest <i>Regulus regulus</i>		4	5		2	1			
Goldfinch <i>Carduelis carduelis</i>	3	10			2	2			
Greenfinch <i>Carduelis chloris</i>					2				
Grt sptd woodpecker <i>Dendrocopos major</i>		2							
Great tit <i>Parus major</i>	1	20+	6	1	3	1			
Green woodpecker <i>Picus viridis</i>	1								
Grey wagtail <i>Motacilla cinerea</i>		2	8						
House martin <i>Delichon urbica</i>		10+	20+						
Jackdaw <i>Corvus monedula</i>	6	50	12					10	1
Jay <i>Garrulus glandarius</i>			2		1				
Little grebe <i>Tachybaptus ruficollis</i>	5	10					3	3	3
Long tailed tit <i>Aegithalos caudatus</i>					1				
Magpie <i>Pica pica</i>			1						
Mallard <i>Anas platyrhynchos</i>	80+	80+	50+				3	5	5
Mistle thrush <i>Turdus viscivorus</i>		80+			1	4			
Moorhen <i>Gallinula chloropus</i>	4	2	10	1	6		4	4	3
Mute swan <i>Cygnus olor</i>	2			2			2		
Nuthatch <i>Sitta europaea</i>		2	2			4			
Pied wagtail <i>Motacilla alba</i>	2	8					1		
Robin <i>Erithacus rubecula</i>	3		2		1				
Rook <i>Corvus frugilegus</i>	1		1						
Song thrush <i>Turdus philomelos</i>				2	4				
Swallow <i>Hirundo rustica</i>	1	10+	1			5			
Swift <i>Apus apus</i>	1	10+							
Treecreeper <i>Certhia familiaris</i>		1							
Tufted duck <i>Aythya fuligula</i>		6	2					1	1
Whitethroat <i>Sylvia communis</i>			1						
Willow warbler <i>Phylloscopus trochilus</i>	1								
Wood pigeon <i>Columba palumbus</i>	2	12	18				5		
Wren <i>Troglodytes troglodytes</i>	1		2	4	9	12			