

Oxford Flood Alleviation Scheme: Wintering Birds

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1.0 Background

CH2M has been commissioned by the Environment Agency to undertake a full suite of protected fauna surveys within the proposed Oxford Flood Alleviation Scheme (OFAS). The Oxford Flood Alleviation Scheme Ecological Appraisal (CH2M, 2015¹) identified the need for further surveys, including breeding birds. Discussion of its conclusions between the Environment Agency and other stakeholders subsequently identified a need to check whether any significant numbers of sensitive bird species use the Scheme area for overwintering.

A series of detailed wintering bird surveys were undertaken by Hazelwood Conservation ecological consultants between December 2016 and March 2017, to identify the species which utilise the area during the winter in order to identify any potential impacts from the construction and operation of the OFAS.

The data collected have been analysed to provide a list of species found within the footprint of the scheme. The objectives of the wintering bird survey were to:

- identify all birds within the proposed OFAS, with specific emphasis on species of conservation concern, over winter. This list of species will provide an indication of how the habitat is utilised during the winter months; and
- use this information to inform the avian mitigation options.

The aim of this report was to list all species recorded within the proposed OFAS Scheme area, particularly those listed as either red or amber from the UK's "Birds of Conservation Concern 4" published by the RSPB and partner organisations (BoCC 4²).

2.0 Methodology

Walkover

The area of the proposed scheme was divided into 15 separate transects, each given an alphanumeric code (T1 – T15). These transects were then each surveyed once a month from December until March, representing the overwintering season.

An adapted Common Bird Census (CBC)³ was conducted to collect information on species presence along with the direction in which the bird was travelling. Two experienced ecologists from Hazelwood

¹ CH2M (2015) *Oxford Flood Alleviation Scheme: Ecological Appraisal*. Environment Agency

² https://www.bto.org/sites/default/files/shared_documents/publications/birds-conservation-concern/birds-of-conservation-concern-4-leaflet.pdf

³ <https://www.bto.org/about-birds/birdtrends/2011/methods/common-birds-census>

Conservation conducted all surveys over a three-day period each month, alternating transect order to avoid bias.

All species were recorded during the surveys. The recorded frequency was then calculated for each species, being the percentage of transect walks that the bird had been recorded on throughout the entire series of surveys that winter. This figure provides an indication of how common the species are within the scheme footprint, regardless of BoCC 4 status. This information will provide an indication to which species are more likely to be impacted by the scheme.

Limitations

Birds are highly mobile, but unlike times of migration, species which occur during the winter tend to be more 'settled' and tend to stay 'local' to a specific area. Therefore, birds recorded during the wintering bird surveys are more likely to be species which are present throughout the season and using the proposed schemes footprint regularly, and therefore potentially impacted by construction and operation.

Access was not always possible into areas of extremely dense vegetation in order to carry out a thorough survey, however a general area is adequate for this type of survey.

All work carried out in preparing this report is based upon the data received from Hazelwood Conservation, CH2M's current professional knowledge and understanding of current relevant UK standards, best practice and legislation. Changes in this legislation and guidance may occur in the future and lead to the conclusions needing to be reviewed.

These limitations were taken into consideration within the results and recommendations made in this technical note.

3.0 Legislation

All birds within the UK are protected under the Wildlife and Countryside Act 1981 (as amended), which extends to their nests and eggs during the breeding season. Undertaking an activity which could result in capture, injury or death of a bird may constitute an offence.

Some species, including kingfisher *Alcedo atthis* are further protected under Schedule 1 of the same Act. Undertaking an activity which could result in capture, injury or death of Schedule 1 bird species may constitute an offence.

4.0 Results

Table 4-1 is the accumulation of all species, along with their BoCC status, recorded during the winter bird surveys of OFAS.

Table 4-1 Total list of species recorded during the wintering bird survey, in order of recorded frequency. Recorded frequency displayed as the percentage of species occurrence throughout all sixty transects conducted between December 2016 – March 2017.

Common name	Scientific name	BoCC listing	Recorded frequency
Blue tit	<i>Cyanistes caeruleus</i>	Green	98%
Robin	<i>Erithacus rubecula</i>	Green	95%
Blackbird	<i>Turdus merula</i>	Green	92%
Woodpigeon	<i>Columba palumbus</i>	Green	92%
Wren	<i>Troglodytes troglodytes</i>	Green	88%
Goldfinch	<i>Carduelis carduelis</i>	Green	82%
Great tit	<i>Parus major</i>	Green	80%
Dunnock	<i>Prunella modularis</i>	Amber	77%
Magpie	<i>Pica pica</i>	Green	77%
Carrion crow	<i>Corvus corone</i>	Green	75%
Chaffinch	<i>Fringilla coelebs</i>	Green	68%
Bullfinch	<i>Pyrrhula pyrrhula</i>	Amber	58%
Redwing	<i>Turdus iliacus</i>	Red	55%
Mallard	<i>Anas platyrhynchos</i>	Amber	53%
Green woodpecker	<i>Picus viridis</i>	Green	38%
Long-tailed tit	<i>Aegithalos caudatus</i>	Green	38%
Song thrush	<i>Turdus philomelos</i>	Red	37%
Jackdaw	<i>Corvus monedula</i>	Green	35%
Red kite	<i>Milvus milvus</i>	Green	32%
House sparrow	<i>Passer domesticus</i>	Red	32%
Black-headed gull	<i>Chroicocephalus ridibundus</i>	Amber	30%
Moorhen	<i>Gallinula chloropus</i>	Green	30%
Starling	<i>Sturnus vulgaris</i>	Red	30%
Buzzard	<i>Buteo buteo</i>	Green	25%
Greenfinch	<i>Chloris chloris</i>	Green	25%
Canada goose	<i>Branta canadensis</i>	-	20%
Reed bunting	<i>Emberiza schoeniclus</i>	Amber	20%
Goldcrest	<i>Regulus regulus</i>	Green	20%
Fieldfare	<i>Turdus pilaris</i>	Red	20%
Mistle thrush	<i>Turdus viscivorus</i>	Red	20%
Collard dove	<i>Streptopelia decaocto</i>	Green	18%
Great spotted woodpecker	<i>Dendrocopos major</i>	Green	18%

<u>Common name</u>	<u>Scientific name</u>	<u>BoCC listing</u>	<u>Recorded frequency</u>
Grey heron	<i>Ardea cinerea</i>	Green	18%
Kestrel	<i>Falco tinnunculus</i>	Amber	17%
Ring-necked pheasant	<i>Phylloscopus collybita</i>	-	15%
Chiffchaff	<i>Phalacrocorax carbo</i>	Green	15%
Cormorant	<i>Garrulus glandarius</i>	Green	15%
Jay	<i>Phasianus colchicus</i>	Green	15%
Pied wagtail	<i>Motacilla alba</i>	Green	15%
Skylark	<i>Alauda arvensis</i>	Red	10%
Feral pigeon	<i>Columba livia domestica</i>	-	7%
Greylag goose	<i>Anser anser</i>	Amber	7%
Lesser black-backed gull	<i>Larus fuscus</i>	Amber	7%
Coal tit	<i>Parus ater</i>	Green	7%
Raven	<i>Corvus corax</i>	Green	7%
Rook	<i>Corvus frugilegus</i>	Green	7%
Treecreeper	<i>Certhia familiaris</i>	Green	7%
Meadow pipit	<i>Anthus pratensis</i>	Amber	5%
Sparrowhawk	<i>Accipiter nisus</i>	Green	5%
Mute swan	<i>Cygnus olor</i>	Amber	3%
Nuthatch	<i>Sitta europaea</i>	Green	3%
Siskin	<i>Linaria cannabina</i>	Green	3%
Herring gull	<i>Sitta europaea</i>	Red	3%
Linnet	<i>Spinus spinus</i>	Red	3%
Kingfisher*	<i>Alcedo atthis</i>	Amber	2%
Stock dove	<i>Columba oenas</i>	Amber	2%
Yellowhammer	<i>Emberiza citrinella</i>	Red	2%

* indicates a Schedule 1 (Part 1) species.

5.0 Discussion

A total of fifty-seven BoCC listed species of bird were recorded throughout the sixty transects which were conducted for the winter bird survey. Twelve of the species could be described as waterbirds, or water associated birds, and will in the long-term benefit from the improved waterways and increased floodplains created within the OFAS. The remaining species are thought to benefit from the proposed scheme through increased foraging and feeding opportunities on the fruit, seeds and invertebrates associated with an open landscape, e.g. the new flood-plain consisting of open grass fields with a vegetative border (trees/shrubs etc.). As such, the impact of the proposed scheme is only likely to affect wintering birds in the short-term, creating an enhanced area after completion. However, in the short-term, construction will reduce available foraging habitat and increase disturbance for the majority of the species listed in Table 4-1.

The only red listed species to be regularly recorded, over half of the surveys, was the redwing. This migratory small thrush species is often recorded feeding within fields or hedgerows/trees. This highly mobile species

is unlikely to be harmed during construction, as they are able to move to neighbouring, undisturbed, suitable habitat. In the long-term operation of the scheme, this species is likely to benefit from the floodplain and enhanced planting.

6.0 Mitigation

A number of proposals for mitigation have been suggested below to inform the OFAS Avian Mitigation Strategy. These proposals aim to reduce and/or avoid potential adverse impacts on breeding birds that could result following commencement of site preparation and construction works, to ensure that the works comply with current legislation. Based on the findings presented here, the following options are recommended:

• Principles for Mitigation Design

○ Vegetation clearance

Vegetation clearance would preferably occur outside the bird nesting season (middle of February to end of August), though vegetation removal during this period is possible under supervision of an ecologist if all nests are located and protected. If possible, all work during nesting season should be undertaken in daylight hours only with any security lighting pointing away from vegetation to prevent disturbance.

○ Other disturbance

Kingfishers are only likely to be disturbed if they have burrows near the works, and this is unlikely to occur outside of the breeding season. Any potential for disturbance of kingfishers is therefore addressed in the technical note on the breeding bird surveys. All work should be undertaken in daylight hours only with any security lighting pointing away from any section of river bank containing a kingfisher burrow, to prevent disturbance.

○ Additional surveys

A pre-construction survey will be required throughout the entire scheme in advance of mobilisation of works if there is to be vegetation clearance during nesting season, to identify any active nests which may be present and therefore affected.

○ Habitat loss

Loss of foraging habitat will lead to a reduction in available resources for all birds, specifically scrub and open habitat used by the majority of the species listed in table 4-1, increasing competition among many species. It is recommended that appropriate tree/scrub species are planted where possible to include native fruit, berry and nut producing species such as hawthorn, blackthorn, hazel and bramble to provide alternative food resources for birds.

7.0 Conclusion

This technical note has listed all species utilising habitat marked for development of the OFAS during the winter. The majority of the named species use the habitat for foraging/hunting for food, behaviour which is likely to be impacted during the construction of the scheme but enhanced during operation.

None of the habitats recorded within the survey area will be removed completely during construction, or are restricted to the Scheme boundary, therefore it is envisaged that the species recorded here are likely to travel outside of the site boundary if disturbed. As construction is likely to be restricted to vegetation clearance during the winter, any potential disturbance is lessened. Therefore, it is considered that, as regards wintering birds, the OFAS can be implemented without significant adverse ecological impacts, will not be detrimental to the conservation status of the named bird species present, and will be in accordance with relevant legislation and planning policy.