

Breeding Bird Survey
Horn Crag Quarry, Silsden

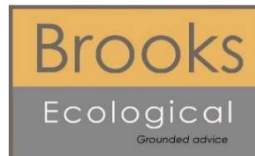
A.D. Calvert Architectural Stone Supplies

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Introduction

1. Following the recommendations set out in the Preliminary Ecological Appraisal report (ER-5064-01), a breeding bird survey was undertaken at the land at Horn Crag Quarry.
2. The Site (c. 6.0 hectares) is situated to the north of Silsden. The Site comprises a former quarry and surrounding land which has long ceased active quarrying and has allowed heathland and associated secondary mature habitats to develop.
3. The surrounding habitats are generally pastoral, with fields grazed by sheep, cattle and horses. Silsden reservoir lies to the west of the Site. Small areas of woodland are scattered across the landscape, alongside farmhouses and holiday parks.

Figure 1 The Site



Method

4. Three breeding bird survey visits were undertaken at the site between late March and early June 2021 (Table 1).

Table 1. Breeding Bird Survey 2021, Visit & Weather Data

Visit	Date	Survey Times	Wind Force (Beaufort Scale)	Cloud Cover (Okta)	Visibility	Temp (°C)	Precipitation	Remarks
1	20/04/2021	06.52-08.28	1	2	> 3km	7	None	Light cloud, dry and calm
2	12/05/2021	06.30-07.33	1	4	> 3km	4	None	Bright, sunny, dry and calm
3	09/06/2021	04.50-05.45	0	7	> 3km	12	None	Bright, sunny, dry and calm

5. The three breeding bird survey visits incorporated amended visit Common Birds Census (CBC) territory mapping methodology to record breeding bird activity on site. Registrations of all bird species observed within the site red line boundary, overflying the site, and heard singing and/or calling were entered onto field survey maps using standard British Trust for Ornithology (BTO) species and activity codes. Registrations of birds within 100m of the site red line boundary were also recorded to ensure that any breeding territories overlapping the site boundary were included. The site was walked extensively and covered to within 100m of every point within the red line site boundary, the survey route was reversed on each visit to alleviate recording bias.
6. Surveys were completed using 10x42 binoculars. The field surveys and data analysis in 2021 were undertaken by David Lovett, an experienced consultant ornithologist with 9 years professional experience undertaking ornithological research, bird surveys and monitoring and providing advice on mitigation and habitat enhancement for birds throughout the United Kingdom.

Results

7. A total of 28 bird species were recorded within the site red line boundary and in adjacent habitats (Table 2.). Of these, 19 species showed evidence of breeding behaviour, such as males displaying or singing within breeding territories, birds giving territorial calls, adults observed with food for young or adults observed with recently fledged young or in family groups.

Table 2. Number and Conservation Status of Bird Species Recorded April-June 2021

TOTAL NUMBER of BIRDS SPECIES RECORDED	20
BoCC4 Red Listed Species of Conservation Concern	3
BoCC4 Amber Listed Species of Conservation Concern	4
BoCC4 Green Listed Species (not currently considered of conservation concern)	12
Species Not Assessed by BoCC4	1
Protected Species Listed on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended)	0
Species considered by the Rare Breeding Birds Panel (RBBP) (UK) – R = Regular Breeding Birds, O = Occasional Breeding Birds, C = Colonising Species, P = Potential Breeding Birds	0
UK Biodiversity Action Plan (UKBAP) Priority Species in England	5
International Union for Conservation of Nature (IUCN) European Red List (2015) VU = Vulnerable (Globally Threatened), NT = Near Threatened, (all other species = Least Concern)	0
IUCN Global Red List VU = Vulnerable (Globally Threatened), NT = Near Threatened, (all other species = Least Concern)	0
Species Listed in Annex 1 of the European Union (EU) Wild Birds Directive 2009 (A1)	0

Important breeding bird species recorded on site are those included as red listed (severe population decline (> 50%) over 25 years/longer term) and amber listed species of conservation concern (moderate population

decline (> 25% but < 50%) over 25 years/longer term), in Birds of Conservation Concern 4 (BoCC4) (Eaton *et al.* 2015). Further information on bird conservation status and bird legislation relative to the species recorded is given in Appendix One.

Table 3. Red Listed Bird Species of Conservation Concern Recorded April-June 2021.

BBS – Horn Crag Quarry, April - June 2021	BTO Species Code	Schedule 1 Species	Rare Breeding Birds	UK BAP Species	European Red List	Global Red List	Annex 1 Species	Scientific Name	Estimate of Breeding Pairs or Territories
Bird Species (systematic order follows British Ornithologists Union (BOU) August 2019)									
Curlew	CU			U K				<i>Numenius arquata</i>	0
Starling	SG			U K				<i>Sturnus vulgaris</i>	0
Song Thrush	ST			U K				<i>Turdus philomelos</i>	1 territory

8. Key red listed bird species recorded at Horn Crag Quarry during surveys in spring and early summer 2021 (Table 3) included song thrush *Turdus philomelos*, which was recorded singing from mixed scrub and trees during visit 1, with a second foraging bird seen during visit 2. This species is likely to have nested within the scrub in the western part of the Site.
9. Curlew were seen flying over the Site during all survey visits. However, this species was not seen on the ground within the Site, only in neighbouring fields, at least 100m away from the Site boundary. This species is not thought to nest within the Site boundary.
10. A single starling was seen on the northern boundary of the Site during visit 2. Suitable foraging habitat is present within the Site and the wide area, although the lack of mature trees with cavities means this species is not expected to nest within the Site.

Table 4. Amber Listed Bird Species of Conservation Concern Recorded April-June 2021

BBS – Horn Crag Quarry, April - June 2021	Bird Species (systematic order follows British Ornithologists Union (BOU) August 2019)	BTO Species Code	Schedule 1 Species	Rare Breeding Birds	UK BAP Species	European Red List	Global Red List	Annex 1 Species	Scientific Name	Estimate of Breeding Pairs or Territories
Willow warbler	WW								<i>Phylloscopus trochilus</i>	2 territories
Dunnock	D.				UK				<i>Prunella modularis</i>	2 territories
Meadow Pipit	MP								<i>Anthus pratensis</i>	3 territories
Bullfinch	BF				UK				<i>Pyrrhula pyrrhula</i>	1 territory

- Key amber listed bird species recorded at the Site during surveys in spring and early summer 2021 (Table 4.) included willow warbler *Phylloscopus trochilus* with two territories associated with mixed scrub in the western half of the Site.
- Similarly, two territories of dunnock *Prunella modularis* and one of bullfinch *Pyrrhula pyrrhula* were also located in the same area of scrub.
- Meadow pipit was recorded around the northern and eastern edges of the Site, where more open heathland habitat is found. One nest was recorded in the north-west section of the Site, with other territories identified by birds displaying across the repeated survey visits.

- Green listed bird species, not currently considered of conservation concern (Table 5.), were found to have territories generally associated with the mixed scrub in the western section of the Site.
- Species with territories located in this area include woodpigeon *Columba palumbus* (1 territory) chiffchaff *Phylloscopus collybita* (1 territory), blackbird *Turdus merula* (2 territories), wren *Troglodytes troglodytes* (3 territories), robin *Erithacus rubecula* (3 territories) and chaffinch *Fringilla coelebs* (2 territories).
- Jackdaw *Coloeus monodula* were recorded during the second and third survey visits within the quarry rock face, with a nest thought to be present within a crevice.
- Other species found during the survey visits but not exhibiting territorial or nesting behaviour include magpie and pied wagtail, as well as the migratory wheatear.

Table 5. Green Listed Bird Species Recorded March-June 2021

BBS – Horn Crag Quarry, April - June 2021		BTO Species Code	Schedule 1 Species	Rare Breeding Birds	UK BAP Species	European Red List	Global Red List	Annex 1 Species	Scientific Name	Estimate of Breeding Pairs or Territories
Bird Species (systematic order follows British Ornithologists Union (BOU) August 2019)										
Woodpigeon	WP								<i>Columba palumbus</i>	1 territory
Magpie	MG								<i>Pica pica</i>	0
Jackdaw	JD								<i>Coloeus monedula</i>	1 pair
Blue Tit	BT								<i>Cyanistes caeruleus</i>	0
Long-tailed Tit	LT								<i>Aegit halos caudatus</i>	0
Chiffchaff	CC								<i>Phylloscopus collybita</i>	1 territory
Wren	WR								<i>Troglodytes troglodytes</i>	3 territories
Blackbird	B.								<i>Turdus merula</i>	2 territories
Robin	R.								<i>Erit hacus rubecula</i>	3 territories
Wheatear	W.								<i>Oenant he oenant he</i>	0
Pied Wagtail	PW								<i>Mot acilla alba</i>	0
Chaffinch	CH								<i>Fringilla coelebs</i>	2 territories

Table 6. Non-Native Bird Species Not-Assessed by BoCC4 Recorded March-June 2021

BBS – Horn Crag Quarry, April - June 2021		BTO Species Code	Schedule 1 Species	Rare Breeding Birds	UK BAP Species	European Red List	Global Red List	Annex 1 Species	Scientific Name	Estimate of Breeding Pairs or Territories
Bird Species (systematic order follows British Ornithologists Union (BOU) August 2019)										
Red-legged Partridge	RL								<i>Alectoris rufa</i>	1 pair

- A single non-native bird species not assessed by BoCC4 was recorded at the Site (Table 6.).
- Red-legged partridge *Alectoris rufa* was recorded during the second visit, with two birds seen in heathland above the quarry face. No evidence of breeding was noted, though suitable habitat is present within the Site.

Conclusion

20. The three breeding bird survey visits undertaken at Horn Crag Quarry between April and June 2021, provided robust data for breeding birds, with 13 species (65%) showing signs of breeding on-site from a total of 20 species recorded within or close to the Site red line boundary.
21. The breeding bird assemblage recorded on site included one red listed species of conservation concern (5%) and four amber listed species of conservation concern (20%), seven common green listed bird species (35%) and one species not assessed by BoCC4 (5%). Of the species encountered, seven (35%) did not exhibit behaviour to suggest breeding was taking place on or adjacent to the Site.
22. Analysis of breeding bird distribution on site found that, in general, most species were restricted to areas along the western edge of the Site, where trees and mixed scrub have established naturally. This includes all the red and all but one of the amber-listed species which were found to exhibit breeding behaviour. The only breeding species on-site not associated with areas of scrub was meadow pipit, which was nesting amongst heather in the north and east of the Site.
23. The most important breeding bird species recorded on site from surveys in spring and early summer 2021 are red listed species of conservation concern. Of the three red listed species encountered, only a single song thrush territory has been identified.
24. All four amber listed species encountered were seen to exhibit breeding behaviour, three (willow warbler, bullfinch and dunnock) in association with mixed scrub and one (meadow pipit) with areas of heathland.
25. Together, the breeding red and amber listed species show the importance of the mixed, naturally regenerated scrub on the Site, with 80% of red or amber listed breeding species relying on this habitat.
26. The total number of territories for each red or amber listed species peaked at three (meadow pipit), and for those species associated with the scrub was either one or two. This is likely due to the small size of the area. Nevertheless, the habitat supporting these declining species is still valuable.
27. Long term declines of key red listed breeding bird species noted from the Site have been recorded in the U.K. during 1970-2015, including declines of 50% for song thrush. Declines of amber listed species recorded on-site include 29% for dunnock, 44% for willow warbler, 34% for meadow pipit and 39% for bullfinch (Hayhow et al. 2017). Declines have been attributed to loss of breeding and foraging habitat, which has driven reduced breeding success and increased mortality, mainly through major changes in farming practices and agricultural intensification.
28. Overall, the ornithological value of the Site for breeding birds should be considered at a local level within the context of the surrounding habitat, which predominantly includes areas of farmland, as well as small areas of woodland.
29. Development proposals for the site include reinstating quarrying, with stone being removed to an offsite processing facility. With regards to the breeding bird assemblage recorded on site, development would result in the loss of breeding and foraging habitat for red and amber listed bird species of conservation concern. Species nesting in scrub and heathland habitats will be displaced into similar habitats in the surrounding area, though it is also possible that some species will tolerate the increased disturbance of the development and continue to make use of the Site post-development.
30. Given these factors, mitigation measures should be implemented to offset direct effects of the loss of breeding and foraging habitat for birds through development of the site. These measures are important to ensure that suitable habitat remains available for red and amber listed breeding bird species and also other breeding bird species recorded on site, and that local bird biodiversity is enhanced and improved.

Mitigation & Recommendations

31. Retain existing trees and areas of mixed scrub within the site red line boundary, where possible. Trees could be used to create screening for the Site boundary and areas of scrub retained. Planting should include a range of native species including alder, hawthorn, goat willow, field maple, oak and hazel.
32. Creating wide buffer zones through new planting of tree and scrub species, particularly along the site boundaries, will increase potential nesting and foraging habitat for birds and also improve connectivity through the Site.
33. Incorporate and retain 'wild areas' of un-managed vegetation, including areas of heather and associated heathland plants. This will provide breeding habitat for the amber-listed meadow pipit, as well as foraging habitat for other species seen to use the Site such as wheatear and pied wagtail.
34. Any site clearance works, including unavoidable removal of trees, scrub and vegetation, earth-moving and groundworks should be completed between September and February, to avoid disturbance to birds during the breeding bird season from 1st March to 31st August inclusive. Should any of these works be undertaken after February, a site breeding bird check should be made by a qualified ornithologist to ensure that no active nests of breeding birds are present before works commence. Dense areas of scrub present on the Site are likely to require supervised clearance.
35. Once quarrying operations have been completed, there is potential for the Site to be restored to encourage greater numbers of red and amber listed species to use the Site for breeding. This could include extending the existing and creating new areas of scrub, adding trees to encourage more cavity nesting species, extending the heather cover for moorland species and encouraging raptors to make use of the exposed rock faces.

Appendix 1 Policy & Legislation

United Kingdom Conservation Status of Birds

The fourth major review of the status of birds occurring in the United Kingdom, Channel Islands and the Isle of Man – Birds of Conservation Concern 4 (BoCC4) (Eaton et al. 2015), presents lists of conservation concern based on assessments using objective listing criteria and most recent data. The listing criteria assess global conservation status, historical population decline, recent population decline (numbers and geographical range), European conservation status, rarity, localised distribution, and international importance of populations.

Lists are denoted Red, Amber and Green in a simple 'traffic light' system to provide a single, easily understood measure for each species to convey concern and hence to help set priorities for conservation action. Species are assigned to each list depending upon the scale of population decline and concern which includes breeding and non-breeding populations.

- Red list criteria – Severe population decline (> 50%) over 25 years or longer term.
- Amber list criteria – Moderate population decline (> 25% but < 50%) over 25 years or longer term.
- Green list criteria – Species not currently considered of conservation concern.

The review concerns native bird species only and not those introduced to the United Kingdom by humans, whether intentionally or accidentally. Populations of non-native bird species are not considered of conservation value, indeed introduced species can be harmful to the natural environment (Eaton et al. 2015). These species are therefore not assessed for conservation attention and termed 'not assessed'.

Summary of Relevant Legislation with Regard to Birds

The primary legislation affecting wild birds in England and Wales is the Wildlife & Countryside Act (1981) as amended. The basic principle of this act is that all wild birds, their nests, and eggs are protected by law and some rare species are afforded additional protection from disturbance during the breeding season (Schedule 1.). The term wild bird is defined as any bird of a species which is resident in, or a visitor to, the European territory of any Member State, in a wild state. Game birds are not included in this definition

(except in certain sections of the Act) but are covered by the Game Acts which give protection in the close season.

The Wildlife & Countryside Act (1981) states that 'it is an offence, with certain exceptions, to:

- intentionally kill, injure or take any wild bird.
- intentionally take, damage or destroy the nest of any wild bird while it is in use or being built.
- intentionally take or destroy the egg of any wild bird.
- have in one's possession or control any wild bird (dead or alive), part of a wild bird or egg of a wild bird which has been taken in contravention of the Act, the Protection of Birds Act 1958 or the law of any EU Member State (which implements the EU Birds Directive 1979).
- intentionally or recklessly disturb any wild bird listed on Schedule 1 while it is nest building or is in, on or near a nest with eggs or young; or disturb the dependant young of such a bird.
- have in one's possession or control any birds of a species listed on Schedule 4 of the Act, unless registered and ringed in accordance with the Secretary of State's regulations.

Rare Breeding Birds in the United Kingdom

The U.K. Rare Breeding Bird Panel (RBBP) (www.rbbp.org.uk) collates data on over 160 species of rare breeding birds and scarcer non-native breeding species, and ensures data are archived properly and are used for conservation. This informs understanding of the status, distribution and population trends of the rarest breeding birds, too rare to monitor in any other way, and also species introduced to the U.K. Archived records form the definitive historical record of rare breeding birds in the U.K. Breeding species are categorised as – regular breeder, occasional breeder, colonising and potential breeder.

United Kingdom Biodiversity Action Plan Bird (UK BAP) Species

United Kingdom Biodiversity Action Plan (U.K. BAP) Bird Species (jncc.defra.gov.uk/uk_bap_priority_bird_species) are those identified by the Joint Nature Conservation Committee (JNCC) as being the most threatened and requiring conservation action under the U.K. Biodiversity Action Plan and included on a list of priority bird species, initially created between 1995 and 1999, and subsequently updated in response to the Species and Habitats Review Report published in 2007. Original species on

the U.K. BAP list (1995-1999) have a Species Action Plan (SAP) which provides details of relevant conservation information and action. Following devolution, the U.K. BAP has recently (July 2012) been succeeded by the U.K. Post-2010 Biodiversity Framework which is focused at a country-level (England, Wales, Scotland & Northern Ireland) rather than at a U.K. level, with the list of priority bird species remaining an important reference source for conservation of individual bird species and also for conservation of bird biodiversity within a specified area or site. U.K. BAP species are identified in order to guide decision-makers, such as local planning authorities and regional authorities, in their duty to have regard to the conservation of bird biodiversity.

IUCN Red List Status (European Red List & Global Red List)

Birdlife International (the official International Union for Conservation of Nature (IUCN) Red List authority for birds) determines the global conservation status of birds (www.iucn.org/theme/species/birds). The IUCN red list is used by government agencies, wildlife departments, conservation-related non-governmental organisations (NGOs), natural resource planners, educational organisations, students, and the business community. It is crucial to identify bird species requiring targeted recovery efforts, but also for focusing on conservation to identify key sites and habitats that need conserving.

EU Biodiversity Legislation

Additional protection for birds is also provided to species listed within the European Union (EU) Wild Birds Directive 2009/147/EC. Further information may be found at;

ec.europa.eu/environment/nature/legislation/birdsdirective/jncc.defra.gov.uk

This imposes strict legal obligations on EU member states to maintain populations of naturally occurring wild birds at levels corresponding to ecological requirements and to preserve a sufficient diversity and areas of habitats for their conservation. Bird species mentioned in Annex I (194 species and sub-species (races)) are particularly threatened and form the subject of special conservation measures concerning their habitat in order to ensure their survival and reproduction in their area of distribution.

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