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## A487 New Dyfi Bridge

Environmental Statement -  
Volume 3: Appendix 9.10

### Breeding Bird Survey Report

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# 1 Introduction

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Ove Arup and Partners Ltd was commissioned by Alun Griffiths (Contractors) Ltd to undertake ecological surveys to inform an Environmental Impact Assessment (EIA) of the proposed A487 New Dyfi Bridge scheme on land to the north of Machynlleth, Mid-Wales, located at National Grid Reference SH747017.

The proposed A487 New Dyfi Bridge scheme (The Scheme) consists of a new viaduct structure across the floodplain and a river bridge to cross the Afon Dyfi approximately 480 m upstream of the existing Pont-ar-Ddyfi. The length of the Scheme is approximately 1100 m with approximately 550 m being on structures.

This report summarises the findings of a desk study on birds near to and on site and also on the breeding bird surveys undertaken on site. The breeding bird surveys were conducted with two objectives:

1. To gain an understanding of the breeding bird assemblage present using a transect survey methodology within representative habitats in the study area, assessing the species present and relative abundance within different habitat types;
2. To highlight any key species or habitats of particular value that may influence the design of the project.

## 1.1 Description of the Scheme

The Scheme consists of a new section of single carriageway road. The typical carriageway width would be 9.3 m (excluding verges), which would consist of two 3.65 m wide lanes, with a 1 m hard strip on either side of the carriageway.

For most of its route, the Scheme will be elevated across a generally flat floodplain and at its highest point (on the river bridge) it will be some 10-11 m above ground level.

At the northern end of the scheme the alignment ties into the existing A487 in the area of the completed Ffridd Gate Improvement and the existing A487 will be renumbered as the A493, joining the new A487 alignment via a ghost island 'tee' junction.

The Scheme crosses the River Dyfi and floodplain on a structure, connecting via a short embankment to the existing A487 north of the Cambrian Line Railway Bridge over the A487 on the edge of Machynlleth. A simple priority junction is provided at the southern end of the scheme connecting the proposed works with the existing A487.

The existing A487 will be de-trunked between the two tie in points with the new scheme. The Pont-ar-Ddyfi and the section of the existing A487 to the south of the river will be restricted to Non-Motorised Users (NMUs) only.



## 1.2 Relevant Legislation

All breeding wild birds in the UK are protected under Section 1 of the Wildlife and Countryside Act 1981(as amended) which makes it an offence to intentionally kill, injure or take any wild bird or take, damage or destroy the nest (whilst being built or in use) or its eggs.

In addition, bird species listed under Schedule 1 of the Act receive extra protection during breeding. The Act states that ‘it is an offence to intentionally or recklessly disturb any wild bird listed in Schedule 1 while it is nest building, or at (or near) a nest containing eggs or young, or disturb the dependent young of such a bird’.

Some bird species are listed as features of European designated sites (European Sites), notably Special Protection Areas (SPAs) and Ramsar sites. European Sites are afforded protection in relation to development through the provisions of the Conservation of Habitats and Species Regulations 2010 (as amended). As a result, appropriate consideration needs to be made of the potential effects on the populations of birds which are features of SPAs or Ramsar Sites caused by development plans or projects. Birds can also be listed as features of nationally statutory designated sites, notably Sites of Special Scientific Interest (SSSI).

The Natural Environment and Rural Communities (NERC) Act 2006 came into force on 1st October 2006. Section 42 (S42) of the Act requires the Secretary of State for Wales to publish a list of habitats and species which are of principal importance for the conservation of biodiversity in Wales. The list has been drawn up in consultation with the Countryside Council for Wales (now National Resource for Wales), as required by the Act. The S42 list is used to guide decision makers such as public bodies, including local and regional authorities, in implementing their duty under section 40 of the Act, to have regard to the conservation of biodiversity in Wales, when carrying out their normal functions.

## 1.3 Conservation Status of Birds

The conservation status of birds in the UK and Wales is set out in Birds of Conservation Concern 4 (Eaton, et al., 2015) and The Population Status of Birds in Wales 2 **Invalid source specified.**, respectively. Birds are classified in three lists described as follows:

- Red List: species that are globally threatened, whose population or range has declined rapidly in recent years, and those whose populations have declined historically and not exhibited any signs of recovery. Species that have experienced a population decline of >50%.
- Amber List: species with an unfavourable conservation status in Europe, whose populations have declined moderately in recent years, including species that show a historical decline but whose populations have shown a substantial increase, species that are rare, with localised populations and those species of international importance with UK populations and species that have experienced a population decline or breeding range decline of 25% to 49%.



For Wales, this list includes species of less than 30 breeding pairs or 90 individuals outside breeding during the most recent five year period with data, UK red-listed birds excluding those that qualify under breeding categories but are not established breeders in Wales, rare breeding or wintering species with a least 10 % of the UK population in Wales, species with at least 50 % of a population occurring at one site but which are not rare breeders, and species which comprise 2 % of the European or East Atlantic Flyway population.

- Green list: All regularly occurring species that do not qualify under any of the red or amber criteria are green listed. The green list also includes those species listed as recovering from historical decline in the last review that have continued to recover and do not qualify under any of the other criteria.

## 2 Methodology

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The methodology for the studies and surveys is set out in the following section.

### 2.1 Desk Study

A desk study has been undertaken and reported in the Extended Phase 1 and Desk Study Report **Invalid source specified..** In brief, biodiversity information data were obtained from the Biological Information Service (BIS), and also the North Wales Environmental Information Service (Cofnod). The Multi-Agency Geographic Information for the Countryside (MAGIC) website and the Countryside Council for Wales Protected Sites and Landscapes Map were reviewed for information on internationally and nationally designated sites of nature conservation importance. In the context of birds, the desk study area extends for 5 km around the centre line of the scheme. Detailed methodology of the desk study is not reported further within this current document.

### 2.2 Survey Methods

#### 2.2.1 General Methods

The survey methods were derived from current best practice as described in Bird Census Techniques **Invalid source specified.** and Bird Monitoring Methods **Invalid source specified.**, and conform to the recommendations of the Royal Society for Protection of Birds (RSPB), British Trust for Ornithology (BTO) and the Joint Nature Conservation Committee (JNCC). Surveys consisted of walking pre-defined transect routes in all accessible habitat types, as described within the Breeding Bird Survey methodology contained within the above references.

All breeding bird surveys were carried out by a team of two surveyors, with at least one experienced in undertaking ornithological survey work and able to identify birds by calls and songs, as well as visually. The transect route was walked at a slow pace, pausing briefly at intervals to listen for song and to scan for birds flying overhead or taking flight from the surrounding area (Figure 1). All birds seen and heard were mapped in accordance with the British Trust for Ornithology (BTO) standard activity recording codes.

Survey results were captured using tablet devices in order to improve data collection efficiency and mapping precision, and include details of weather data, species present, numbers of individuals and their behaviour.

Surveys were undertaken on three occasions in April, May and June 2016, with at least two weeks between surveys. The transect route was walked in the morning, between dawn and 10am, when levels of avian activity (particularly singing) are likely to be at their highest. On one of the three surveys the routes were walked in the opposite direction to the previous survey, to balance any temporal variation in behaviour levels.

Birds were considered to be breeding where they were recorded if any of the following applied:

- Nests, eggs and/or young were found to be present;
- A pair of birds were recorded in or near habitat suitable for that species to breed within;
- Birds were seen carrying food, nest material or the faecal sacs of young;
- Birds exhibited territorial behaviour *e.g.* displaying or prolonged agitation; or
- Birds were heard singing and habitat suitable for that species to breed within was present at that location.

Where breeding signs were recorded, it is assumed that a 'breeding pair' was present and this term is used from this point forward within this report. However, professional judgement was used when determining whether a species was likely to have bred within the site based on species distributions and local abundance as well as anthropogenic effects such as nesting disturbance from public right of ways, roads and grazing animals.

### 2.2.2 Incidental Records

Records of bird species observed on site during other ecological surveys within the breeding season, taken to be March to August, were also noted to inform the assessment, particularly when species were of conservation concern.

## 2.3 Reporting Methods

The data gathered during field survey work has been displayed on plans (Figures 2, 3 and 4) combining that obtained from each survey visit in order to reveal patterns of breeding bird activity. These results are then discussed within the Results section of this report. Results are discussed in the following order:

- An initial overview of all results gathered, including total species recorded within the study area;
- Results are then discussed in relation to the conservation status of the birds present and whether they are considered to be within the Zone of Influence<sup>1</sup> with regards to potential impacts of protected site populations, namely:

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<sup>1</sup> The 'zone of influence' for a project is the area over which ecological features may be subject to significant effects as a result of the proposed project and associated activities. This is likely to extend beyond the project site, for example where there are ecological or hydrological links beyond the site boundaries. Determining the zone of influence of the project and which important ecological features could be significantly affected is a key activity of the Scoping process (taken from CIEEM, 2016 - Chartered Institute of Ecology and Environmental Management (2016) Guidelines for Ecological Impact Assessment in the UK and Ireland Terrestrial, Freshwater and Coastal (Second edition January 2016)).



- Individual breeding features of the SPA/Ramsar site with a Zone of Influence considered to be 5km from the designated site boundary;
- Breeding bird features of Sites of Special Scientific Interest (SSSI) with a Zone of Influence considered to be 5km from the designated site boundary;
- Breeding birds listed on Schedule 1 of the Wildlife and Countryside Act 1981;
- Other species which are Red or Amber listed within Birds of Conservation Concern (BOCC) **Invalid source specified.** and The Population Status of Birds in Wales 2 **Invalid source specified.**, but not included in the above groups; and
- A summary of S42 Priority Species.

## 2.4 Limitations and Assumptions

Given that surveys were undertaken on three occasions a precautionary approach has been taken when assuming likely breeding of species. When any bird was recorded showing signs of breeding as defined above, it was assumed to represent a likely breeding attempt. This may have led to over-estimation of likely breeding numbers if any such birds were on migration, but this precautionary approach is considered appropriate given the spacing of the survey effort. It should be stressed that the transect was not located within well-known key migration areas and therefore most/all birds recorded were considered likely to be breeding locally. Furthermore, most migrant species should not have been present by the second survey at least.

The breeding bird surveys were carried out at appropriate times of the year and weather conditions on all surveys were considered suitable. The dates of the surveys and weather conditions are shown in Appendix A.

It should be stressed that the findings presented in this study represent those at the time of survey and reporting, and data collected from available sources. Ecological surveys are limited by factors which affect the presence of species, such as temporal weather conditions, migration patterns and behaviour.

Nevertheless, these surveys were conducted at the optimal survey periods. Every effort has been made to ensure that the findings of the study present as accurate an interpretation as possible of the status of breeding birds within the study area.

## 3 Results

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### 3.1 Desk Study

#### 3.1.1 Designated Sites

The site is included within the Dyfi Biosphere, an area designated by UNESCO in 2009 for its diversity of natural beauty, heritage and wildlife. Within the Zone of Influence (as described above) there are the following designations:

- Aber Dyfi Special Protection Area (~ 5 km away) is a site of importance as a traditional wintering area for Greenland white-fronted goose *Anser albifrons flavirostris*, representing at least 1% of the wintering population in the UK<sup>2</sup>. This site is not designated for breeding birds and as such is not further considered within this report.
- Cors Fochno and Dyfi Ramsar site (~ 6 km away) is, in part, designated for overwintering Greenland white-fronted goose, migratory (spring and autumn passage) common greenshank *Tringa nebularia* and is a key site in Wales for breeding waders, however not as a primary reason only for noteworthy fauna. Monitoring of breeding curlew *Numenius arquata*, lapwing *Vanellus vanellus*, redshank *Tringa totanus* and snipe *Gallinago gallinago* populations are or have been undertaken alongside general breeding bird assemblages<sup>3</sup>.
- The Dyfi SSSI (~ 4 km away) has a wide range of breeding and wintering birds; the site is used by a nationally significant population of approximately 5000 overwintering wigeon *Anas penelope*, and a flock of approximately 140 Greenland white-fronted geese use the site as the only regular wintering population in Wales. Woodland and scrub areas support breeding birds such as redstart *Phoenicurus phoenicurus*, pied flycatcher *Ficedula hypoleuca*, wood warbler *Phylloscopus sibilatrix* and nuthatch *Sitta europaea*. Wetter areas hold a good variety of breeding birds such as grasshopper warbler *Locustella naevia*, sedge warbler *Acrocephalus schoenobaenus* and reed bunting *Emberiza schoeniclus*, together with small populations of reed warbler *Acrocephalus scirpaceus*. Breeding waders are also regionally important in the wet pastures where lapwing, redshank, curlew and snipe breed.

#### 3.1.2 Bird records

With regards to Schedule 1 species, kingfisher *Alcedo atthis*, osprey *Pandion haliaetus*, goshawk *Accipiter gentilis*, barn owl *Tyto alba* (breeding nearby recently), red kite *Milvus milvus*, merlin *Falco columbarius*, little ringed plover *Charadrius dubius* and hen harrier *Circus cyaneus* have all been recorded within 2

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<sup>2</sup> <http://jncc.defra.gov.uk/default.aspx?page=2082>

<sup>3</sup> <http://jncc.defra.gov.uk/pdf/RIS/UK14004.pdf>

km of the site. Black-tailed godwit *Limosa limosa* have been recorded on spring passage at ~5 km from the site.

Birds on the Red List found within 3 km of the site include: kestrel *Falco tinnunculus*, spotted flycatcher *Muscicapa striata*, starling *Sturnus vulgaris*, linnet *Linaria cannabina*, yellowhammer *Emberiza citrinella*, common bullfinch *Pyrrhula pyrrhula*, cuckoo *Cuculus canorus*, pied flycatcher and skylark *Alauda arvensis*. Birds on the Red List found from 3 to ~ 5 km from the site include: curlew, herring gull *Larus argentatus* and wood warbler; however, with the exception of one summer record each for curlew and wood warbler (both before 2000), the rest were winter and spring records.

Full details of the bird records are recorded in Arup **Invalid source specified..**

## 3.2 Field surveys

### 3.2.1 Summary of Results

Full survey results are shown on Figures 2, 3 and 4. The results table in Appendix B collates all results, showing the maximum numbers of birds recorded from the three survey visits.

A total of 51 species were recorded during the three breeding bird surveys across April to June 2016, with an additional five incidental species recorded between March and June 2016.

Cors Fochno and Dyfi Ramsar site is a key site in Wales for breeding waders. Four species of wader were recorded on site; common sandpiper *Actitis hypoleucos*, oystercatcher *Haematopus ostralegus* and little ringed plover. A single curlew was heard calling from probably off site. Little ringed plover is likely to have bred on site, and common sandpiper thought possible to have bred on site, as described below.

Six of the species cited on the Dyfi SSSI were recorded, being nuthatch, sedge warbler, reed warbler, reed bunting, curlew and red kite, as described below.

Four species were recorded that are included on Schedule 1 of the Wildlife and Countryside Act 1981, however as detailed below only little ringer plover are considered to have bred within the site in 2016. Kingfisher have the potential to breed in the steep cut banks of the river but no nest were found this year within the site, and goshawk and red kite were only recorded flying over the site and could possibly have bred within the woodlands adjacent to the site or in the local area.

A total of eight bird species were recorded that are placed on the Red List and 13 species were recorded on the Amber List of the BOCC **Invalid source specified.**; the remaining 30 species are Green Listed. Six species on the Welsh Red List and 18 species on the Welsh Amber List were recorded **Invalid source specified.**; the remaining 27 species are Green Listed. Nine of the species recorded are also included on the S42 list of the NERC Act 2006, as described below.

Results are now discussed in detail by conservation status.



## 3.2.2 Results by Conservation Status

### 3.2.2.1 SPA/Ramsar Features

Cors Fochno and Dyfi Ramsar site is a key site in Wales for breeding waders; however only greenshank is listed as noteworthy fauna and this species was not recorded on site. The site however is monitored for breeding curlew, lapwing, redshank and snipe. Of these only curlew was recorded during the breeding bird survey, however this was a single distant call recorded in June which was thought to be off site. This species is not thought to have bred onsite as no other observations were made and any suitable habitats within the site are disturbed by pedestrians and dogs, and grazing cattle.

Three other waders were recorded on site: little ringed plover, common sandpiper and oystercatcher. A pair of little ringed plover were recorded during the May and June surveys, with an incidental record of what is assumed to be the same pair from 3<sup>rd</sup> May.

Common sandpiper were recorded on the Afon Dyfi foraging during the April survey and calling on the June survey. There is suitable habitat for this species to be breeding on site along the Afon Dyfi, although no further evidence of breeding or presence was recorded.

A single flight and call of an oystercatcher was recorded during the June survey. Although there is some suitable habitat for this species along the banks and shale of the Dyfi to be breeding on site, due to their size and obvious warning calls when near a nest it is not thought that this species bred within the site.

### 3.2.2.2 SSSI Features

Passerines recorded on site and listed as part of the Dyfi SSSI include sedge warbler, reed warbler, reed bunting and nuthatch. A single sedge warbler was recorded singing during the June survey within a hedgerow, which is unlikely breeding habitat, as shown on Figure 4. An incidental record of a single reed warbler was also recorded on 17<sup>th</sup> May. Reed bunting sightings, males calling and in song were recorded within the central area of the site in May and June, as shown in Figures 3 and 4. Nuthatch was recorded during the June survey within woodland to the north of the site, which is likely breeding habitat, as shown on Figure 4.

As described above a single calling curlew was heard during the June survey and is the only wader species listed on the Dyfi SSSI that was recorded. This species is unlikely to breed on site given the grazing habitat and anthropogenic disturbances. It is however, likely that this species breeds on the surrounding hill sides and uses the lowland grazed fields within the site for foraging.

Raptors recorded on site and listed as part of the Dyfi SSSI include red kite which is not breeding on site but is likely breeding locally or adjacent to the site.

### 3.2.2.3 Schedule 1 Breeding Species

Four species were recorded that are included on Schedule 1 of the Wildlife and Countryside Act 1981. These include little ringed plover, kingfisher, red kite and goshawk.

A pair of little ringed plover were recorded on each survey in the same location of the Afon Dyfi. They were first recorded incidentally on 3<sup>rd</sup> May, 12 days after the first survey. They were then recorded on both the second and third survey. It is very likely that they are breeding on site given their continued presence in suitable breeding habitat.

An incidental record of a kingfisher was observed flying along the Afon Dyfi on 8<sup>th</sup> March. Suitable kingfisher habitat exists in the larger embankments of the river, and suitable holes were recorded during the winter surveys on the southern banks of the river within the site, however no evidence of breeding was observed during the specific breeding bird surveys. The southern side of the river is highly disturbed by pedestrians walking and cycling along the public right of way. Nevertheless, due to the river cutting steep banks in places within the site, or close to it, it is possible that this species could breed within the steep taller banks of the river.

Two red kites were recorded in the woodland north of proposed bridge over the river during the April and June surveys. A single bird was seen on the May survey. These birds are likely a pair of birds breeding in the local area but no nests were found on site.

An incidental record of a single goshawk flying out of woodland to the south west of the site and heading north east was also observed on 8<sup>th</sup> March. No other sightings of this species were recorded during the breeding bird surveys or any other surveys within the site. As such, it is not thought that this species breed within the site, however it is possible that this species bred within the woodlands adjacent to the site or in the local area.

### 3.2.2.4 Birds of Conservation Concern

A total of eight bird species were recorded that are placed on the Red List of the BOCC. These are discussed individually below:

- Mistle thrush *Turdus viscivorus*, a single bird was recorded singing within the woodland north of the river within during the April and May surveys, as such a single pair is thought to have bred in this area.
- Song thrush *Turdus philomelos* one individual was seen carrying nesting material during the April survey, as shown on Figure 2. Birds were heard to be in song across the site over all three surveys. A total of three singing males were recorded on a single survey.
- House sparrow *Passer domesticus*, two separate birds were heard calling during the May survey and a pair was recorded on the June survey, as shown in Figure 4.

- Linnet, one individual was heard singing in May and one individual was heard calling in June, from different areas of the site in suitable breeding habitat, as shown in Figures 3 and 4.
- Grey wagtail *Motacilla cinerea* were seen on all three surveys with sightings predominantly around the Afon Dyfi, as shown in Figures 2, 3 and 4. A pair was recorded just off site behind residential properties to the north of the Afon Dyfi during the April survey.
- Spotted flycatcher, one individual was seen foraging in the tree line along the Afon Dyfi during the June survey. Breeding is unknown, although there is suitable breeding habitat present on site.
- Cuckoo, one individual was heard singing from towards the centre of the site during the June survey. Evidence of breeding is unknown but possible given the presence of primary hosts on site, although their breeding density is relatively low. Primary hosts on site could include dunnoek *Prunella modularis*, pied wagtail *Motacilla alba yarelli* and reed warbler.
- Curlew, as discussed above.

The following six species are placed on the Welsh Red List and are discussed below:

- Bullfinch, a male was seen during the April survey south of the site near the rail line, and again recorded in song on the May survey within the same area, see Figures 2 and 3. A pair were also observed on the May survey in the central area of the site, see Figure 3.
- Willow warbler *Phylloscopus trochilus*, birds were heard in suitable habitat singing on all three surveys. A total of four singing males were recorded on a single survey.
- Linnet, cuckoo, spotted flycatcher and curlew are also on the Welsh Red List and are discussed above.

A total of 13 bird species were recorded that are placed on the Amber List of the BOCC. These include:

- Mallard *Anas platyrhynchos*, multiple birds were observed on all three surveys. Three pairs were observed on the May survey and one pair was observed with eight chicks on the last survey in June on the Afon Dyfi.
- Dunnock, two individuals were observed on each the April and May surveys. No birds were heard singing or observed exhibiting signs of breeding; however it is likely that this species does breed on site given suitable habitat for both breeding and foraging.
- Reed bunting, single birds were observed on all three surveys distributed across the site, as shown on Figures 2, 3 and 4. Two males were in song on the June survey towards the north of the site, as shown on Figure 4.



- Dipper *Cinclus cinclus*, an individual bird was observed incidentally on 8<sup>th</sup> March south of Dyfi bridge and another individual was observed foraging on the April survey by the Dyfi bridge, as shown on Figure 2.
- Tawny owl *Strix aluco*, an incidental record of a bird singing was heard on the night of 7<sup>th</sup> 2016 from the woodland north-east of Dyfi Bridge.
- Common swift *Apus apus*, an incidental record of three birds foraging was observed on 7<sup>th</sup> June from the western side of the site.
- Lesser black-backed gull *Larus fuscus*, a single bird was observed flying eastward across the centre of the site on the June survey, as shown on Figure 4. There is very limited breeding habitat for any gull species on site and due to the size of birds and obvious response to disturbance when nesting, this species (including all gull species) is not thought to have bred within the site.
- House martin *Delichon urbicum*, three birds were observed flying over the site along the Afon Dyfi towards the north of the site on the June survey, as shown on Figure 4.
- Bullfinch, willow warbler, common sandpiper, oystercatcher and kingfisher are also on the BOCC Amber list and are discussed above.

The following 18 species are placed on the Welsh Amber List and are discussed below:

- Barn swallow *Hirundo rustica*, five birds were observed flying across the southern part of the site in April and one bird was observed flying near the Afon Dyfi in the northern part of the site on the May survey, as shown on Figures 2 and 3. There is limited habitat on site for breeding to occur and no evidence of breeding was observed.
- Coal tit *Periparus ater*, one bird was heard calling on the April survey and in the same location (woodland to the north of the site) a bird was heard singing on the May survey. Given the suitable habitat it is likely that a pair bred in or near to the woodland north of the site.
- Garden warbler *Sylvia borin*, a single bird was heard singing on the May survey in forest towards the north of the site. Given the suitable habitat it is likely that a pair bred in or near to the forest.
- Goldcrest *Regulus regulus*, single birds were heard in song on all three surveys. Birds were found mainly in the northern part of the site, focussed upon the woodland area, as shown on Figures 2, 3 and 4. Breeding status is unknown, but suitable habitat is on site for nesting and foraging.
- Green woodpecker *Picus viridis*, a single bird was recorded along the southern side of the site on the April survey, as shown on Figure 2. Breeding status is unknown, but suitable habitat is on site for nesting and foraging.
- Long-tailed tit *Aegithalos caudatus*, a single bird were observed on the April survey and three birds were heard calling in woodland adjacent to

the Afon Dyfi towards the north of the site on the June survey, as shown on Figures 2 and 4.

- Sand martin *Riparia riparia*, birds were observed on all three surveys, with observations predominantly along the Afon Dyfi. Breeding was confirmed on site by the presence on occupied nests in the riverbanks of the Afon Dyfi towards the west of the site on the May and June surveys, as shown on Figures 3 and 4fgi.
- Common sandpiper, house sparrow, mallard, oystercatcher, reed bunting, red kite, little ringed plover, song thrush, dipper, kingfisher and swift are also on the Welsh Amber List and are discussed above.

### 3.2.2.5 Section 42 Priority Species

There are nine species recorded on site that are listed on S42. Species included on the S42 list are also BOCC and have been described in detail in previous sections.

With the exception of curlew (as discussed previously) the remaining eight species are all likely to be breeding on site, based upon their behaviour, ecology and local habitat. These seven species are: bullfinch, house sparrow, cuckoo, dunnock, reed bunting, song thrush and spotted flycatcher.

## 4 Conclusions

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A total of 51 species were recorded during the breeding bird surveys between April and June 2016. An additional five species were recorded incidentally. Of these 56 species, 46 were considered to be likely breeding on site based upon their behaviour, ecology and local habitat (Appendix B).

None of the species recorded are features of the Aber Dyfi SPA due to the features only being wintering birds. There are no wader species designated on the Cors Fochno and Dyfi Ramsar site which were recorded on site, although species which are monitored within the Ramsar site were recorded.

Six species were recorded that are specifically named on the Dyfi SSSI citation. These species are the passerines: sedge warbler, reed bunting, nuthatch and reed warbler; raptors: red kite; and waders: curlew. Only the passerines are considered to breed on site.

Eight bird species were recorded that are on the Red list of BOCC and thirteen Amber listed BOCC species were recorded on site. Six Welsh Red listed species were recorded and 18 Welsh Amber listed species were recorded on site. Nine species were recorded that are S42 priority species, of which eight species likely breed on site.

A pair of little ringed plover, a Schedule 1 species, likely bred on site in 2016. A single kingfisher was observed but without with breeding behaviour; however the presence of suitable nesting habitat means this species may have bred on site but not been detected. Two other Schedule 1 species, goshawk and red kite, were observed but are considered to have not bred on site in 2016.

Overall the assemblage of breeding birds recorded is typical of the habitats surveyed within the study area. The habitats supported a range of familiar bird species associated with hedgerows, farmland, scrub and riverine habitat. The site does not support notably high densities of farmland indicator species, such as skylark or linnet. The river habitat does however support a number of species of conservation concern such as dipper, grey wagtail, little ringed plover, kingfisher and common sandpiper. The northern forest, whilst not supporting notably high densities of woodland species, was observed to contain notable birds such as goldcrest, song thrush, spotted flycatcher and tawny owl.

### 4.1 Recommendations

Individual breeding bird species and the breeding bird assemblages associated with different habitats within the study area should be evaluated as part of the project level Ecological Impact Assessment within the Environmental Statement. It should be noted that this breeding bird survey did not include specific searches for species that are typically crepuscular or nocturnal, notably owls. Barn owl, a Schedule 1 species on the Wildlife and Countryside Act 1981, has been recorded breeding previously within 2 km of the site, although there is little suitable



breeding habitat on site for this species and no suitable nesting locations have been identified.

It is recommended that during the design process habitat retention, protection and if necessary replacement and enhancement measures are implemented along the route.

Due to their legal protection, mitigation for breeding birds should be designed into the project, including any necessary measures to avoid disturbance of Schedule 1 species, *i.e.* little ringed plover, red kite, goshawk and kingfisher. Consideration should also be given to barn owl should any trees be subsequently identified as potentially suitable (such as following storm damage).

## References

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[1]

## Figures

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Figure 1. Transect route for breeding bird survey.

Figure 2. Breeding bird survey results from April.

Figure 3. Breeding bird survey results from May.

Figure 4. Breeding bird survey results from June.



## Appendix A

### Weather Conditions

# A1 Weather Conditions

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Survey Visit Number	Date	Weather Conditions				
		Temp (°C)	Wind speed (Beaufort Scale)	Wind direction	Cloud cover (%)	Conditions
1	15/04/2016	7	1	W	100	Dry
2	04/05/2016	14	2	W	20	Sunny
3	07/06/2016	18	1	N	100	Dry

## Appendix B

### BBS Survey Results

## B1 Breeding Bird Survey Max Count Results

Species Name		Species Code	Status*	TOTAL		Likely Breeding on Site
Vernacular Name	Scientific Name			Total Overall	Max Count of Species seen at Any One Time	
Barn Swallow	<i>Hirundo rustica</i>	SL	Green, Amber <sup>W</sup>	6	5	Y
Magpie	<i>Pica pica</i>	MG	Green	5	1	Y
Blackcap	<i>Sylvia atricapilla</i>	BC	Green	8	1	Y
Blue Tit	<i>Cyanistes caeruleus</i>	BT	Green	24	2	Y
Carrion Crow	<i>Corvus corone</i>	C.	Green	11	4	Y
Chaffinch	<i>Fringilla coelebs</i>	CH	Green	25	3	Y
Coal Tit	<i>Pariparus ater</i>	CT	Green, Amber <sup>W</sup>	2	1	Y
Common Blackbird	<i>Turdus merula</i>	B.	Green	25	2	Y
Common Bullfinch	<i>Pyrrhula pyrrhula</i>	BF	Amber, S42, Red <sup>W</sup>	5	2	Y
Buzzard	<i>Buteo buteo</i>	BZ	Green	3	1	Y
Chiffchaff	<i>Phylloscopus collybita</i>	CC	Green	9	1	Y
Linnet	<i>Linaria cannabina</i>	LI	Red, S42, Red <sup>W</sup>	2	1	Y
Raven	<i>Corvus corax</i>	RN	Green	1	1	N
Common Sandpiper	<i>Actitis hypoleucos</i>	CS	Amber, Ramsar, Amber <sup>W</sup>	2	1	Y
Wood Pigeon	<i>Columba palumbus</i>	WP	Green	7	2	Y
Cuckoo	<i>Cuculus canorus</i>	CK	Red, S42, Red <sup>W</sup>	1	1	Y



Curlew	<i>Certhia familiaris</i>	CU	Red, S42, Red <sup>w</sup>	1	1	N
Jackdaw	<i>Corvus monedula</i>	JD	Green	9	8	Y
Eurasian Treecreeper	<i>Certhia familiaris</i>	TC	Green	4	2	Y
European Goldfinch	<i>Carduelis carduelis</i>	GO	Green	42	12	Y
Robin	<i>Erithacus rubecula</i>	R.	Green	17	1	Y
Garden Warbler	<i>Sylvia borin</i>	GW	Green, Amber <sup>w</sup>	1	1	Y
Goldcrest	<i>Regulus regulus</i>	GC	Green, Amber <sup>w</sup>	6	1	Y
Goosander	<i>Mergus merganser</i>	GD	Green	5	2	Y
Great Spotted Woodpecker	<i>Dendrocopos major</i>	GS	Green	2	1	Y
Great Tit	<i>Parus major</i>	GT	Green	7	2	Y
Green Woodpecker	<i>Picus viridis</i>	G.	Green, Amber <sup>w</sup>	1	1	Y
Grey Heron	<i>Ardea cinerea</i>	H.	Green	4	2	N
Grey Wagtail	<i>Motacilla cinerea</i>	GL	Red	7	2	Y
Duncock	<i>Prunella modularis</i>	D.	Amber, S42	4	1	Y
House Martin	<i>Delichon urbicum</i>	HM	Amber,	3	3	Y
House Sparrow	<i>Passer domesticus</i>	HS	Red, S42, Amber <sup>w</sup>	4	2	Y
Lesser Black-backed Gull	<i>Larus fuscus</i>	LB	Amber	1	1	Y
Little Egret	<i>Egretta garzetta</i>	ET	Green	2	1	Y
Long-tailed Tit	<i>Aegithalos caudatus</i>	LT	Green, Amber <sup>w</sup>	4	3	Y
Mallard	<i>Anas platyrhynchos</i>	MA	Amber, Amber <sup>w</sup>	25	8	Y
Mistle Thrush	<i>Turdus viscivorus</i>	M.	Red	1	1	Y
Nuthatch	<i>Sitta europaea</i>	NH	Green	1	1	Y

Oystercatcher	<i>Haematopus ostralegus</i>	OC	Amber, Amber <sup>w</sup>	1	1	N
Pied Wagtail ( <i>yarrellii</i> )	<i>Motacilla alba yarrellii</i>	PW	Green	5	1	Y
Red Kite	<i>Milvus milvus</i>	KT	Green, Schedule 1, Amber <sup>w</sup>	6	2	N
Reed Bunting	<i>Emberiza schoeniclus</i>	RB	Amber, S42, Amber <sup>w</sup>	5	1	Y
Little Ringed Plover	<i>Charadrius dubius</i>	LP	Green, Schedule 1, Ramsar, Amber <sup>w</sup>	4	2	Y
Rock/Feral Pigeon	<i>Columba livia</i>	DV	Green	1	1	N
Sand Martin	<i>Riparia riparia</i>	SM	Green, Amber <sup>w</sup>	46	15	Y
Sedge Warbler	<i>Acrocephalus schoenobaenus</i>	SW	Green	1	1	Y
Song Thrush	<i>Turdus philomelos</i>	ST	Red, S42, Amber <sup>w</sup>	9	1	Y
Spotted Flycatcher	<i>Muscicapa striata</i>	SF	Red, S42, Red <sup>w</sup>	1	1	Y
Dipper	<i>Cinclus cinclus</i>	DI	Amber, Amber <sup>w</sup>	1	1	Y
Willow Warbler	<i>Phylloscopus trochilus</i>	WW	Amber, Red <sup>w</sup>	13	1	Y
Wren	<i>Troglodytes troglodytes</i>	WR	Green	22	1	Y
Incidental records						
Goshawk	<i>Accipiter gentilis</i>	GI	Green, Schedule 1	1	1	N
Kingfisher	<i>Alcedo arthis</i>	KF	Amber, Schedule 1, Amber <sup>w</sup>	1	1	N
Reed Warbler	<i>Acrocephalus scirpaceus</i>	RW	Green	1	1	N
Tawny Owl	<i>Strix aluco</i>	TO	Amber	1	1	Y
Common Swift	<i>Apus apus</i>	SI	Amber, Amber <sup>w</sup>	3	3	N

\* Status: Red, Amber, Green = Status of each species on the BOCC 4; Red<sup>w</sup>, Amber<sup>w</sup>, Green = Status of each species on the *The population status of birds in Wales 2*; Ramsar = Species listed as qualifying feature or potential qualifying features of the Cors Fochno and Dyfi Ramsar site; SPA = species

mentioned on the Aber Dyfi SPA; SSSI = species mentioned on local SSSI citations; Schedule 1 = species listed on Schedule 1 of the Wildlife and Countryside Act; S42 = Priority Species on Section 42 of the Natural Environment and Rural Communities Act.