DESK BASED BIRD ASSESSMENT

LOWER BUCKLAND
DOCKLOW, HEREFORDSHIRE

A Report to Seren Energy

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This study was conducted and compiled by:
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1. INTRODUCTION

1.1 PROJECT INTRODUCTION

On 3rd September 2010, Seren Energy commissioned Middlemarch Environmental Ltd to undertake a desk based bird assessment of a proposed single wind turbine installation and associated access track located at Lower Buckland in Docklow, Herefordshire. The requirement for, and scope of, this study was defined in consultation with Hayley Pankhurst (Environmental Planner, Herefordshire and Worcestershire) at Natural England in April 2010.

To fulfil the above brief to assess the potential for the proposed works to impact bird species the Herefordshire County Bird Recorder was contacted in order to obtain records of bird species within a 5 km radius of the proposed development site. In addition, desk study data was obtained from Herefordshire Biological Records Centre backed up with field data (relating to both birds and habitats) obtained during an Extended Phase 1 Habitat Survey of the area in April 2010. All information obtained was reviewed and an assessment of likely impacts to bird species is provided.

1.2 SITE DESCRIPTION

The surveyed area is located approximately 5 km east of Leominster at Docklow. The surveyed site is located immediately to the south of the A44 Leominster-Worcester Road and comprised the route of a proposed access track to a single turbine location to the south of Docklow Manor. A radius of approx 50m either side of the proposed access track and around the single turbine location was surveyed. The approximate centre point of the survey area is SO 564 566.

The majority of the study site comprised improved grassland grazed by sheep together with arable crops within a well defined field pattern within a noticeably undulating landscape liberally dotted with small broad-leaved woodlands. The proposed access track would utilise an existing farm track that runs due south from the A44 opposite Brick Cottage and extends through, and past, the farm buildings at Orchard Cottage and Lower Buckland before deviating in an easterly direction to a central point within a large arable field immediately to the south of Oak Wood at an approximate grid reference of SO 566 564.

The surrounding landscape similarly consists of mixed arable/pastoral farmland with widely scattered farm complexes and homesteads. Small wooded blocks punctuate the area and a network of minor roads bisects the area.

2. METHODOLOGY

A desk study was undertaken to determine the presence of any bird species that have been recorded within a 5 km radius of the site.

The desk study exercise involved contacting appropriate statutory and non-statutory organisations which hold ornithological data relating to the survey area. Middlemarch Environmental Ltd then assimilated and reviewed the desk study data provided by these organisations. The consultees for the Desk Study were:

- Steve Coney, Herefordshire County Bird Recorder; and,
- Herefordshire Biological Records Centre.

In addition, supplementary information was obtained from the extended phase 1 habitat survey undertaken at Lower Buckland in April 2010.

All data was evaluated and an assessment of the likely impacts of the proposed development on birds was made.

The data collected from all sources is provided in Section 3 and discussed in Section 4.

3. RESULTS

3.1 DESK STUDY

Records of bird species provided by Herefordshire Biological Records Centre within a 5 km radius of survey area at Lower Buckland, Docklow are provided in Table 3.1 and discussed further in Section 4.

Species	No. of Records	Most Recent Record	Proximity of Nearest Record	UK BAP?	Local BAP?	NERC S.41?	Legislation / Conservation Status
Barn owl *Tyto alba*	16	2004	350m	N	Y	N	WCA 1
Common snipe *Gallinago gallinago*	2	1993	900m	N	N	N	
Great spotted woodpecker *Dendrocopus major*	1	2005	3km	N	N	N	-
Green woodpecker *Picus viridis*	1	1978	3km	N	N	N	-
Grey Wagtail *Motacilla cinerea*	3	2002	600m	N	N	N	-
House martin *Delichon urbica*	3	2007	4km	N	N	N	-
House sparrow *Passer domesticus*	6	2007	800m	Y	N	N	-
Kestrel *Falco tinnunculus*	3	2004	4km	N	N	N	-
Mallard *Anas platyrhynchos*	15	2005	400m	N	N	N	-
Moorhen *Gallinula chloropus*	5	2005	2.2km	N	N	N	-
Raven *Corvus corax*	1	2007	4km	N	N	N	-
Sky lark *Alauda arvensis*	1	2004	3km	Y	N	Y	-
Starling *Sturnus vulgaris*	1	2007	4km	Y	N	Y	-
Spotted flycatcher *Muscicapa striata*	1	1978	3.5km	Y	N	Y	
Swallow *Hirundo rustica*	5	2007	2km	N	N	N	-
Tree sparrow *Passer montanus*	1	2002	4km	Y	N	Y	-
Willow tit *Poecile montana*	1	1978	3.5km	Y	N	Y	
Wren *Troglodytes troglodytes*	2	2005	1km	N	N	N	
Yellowhammer *Emberiza citrinella*	5	2005	2.5km	Y	N	Y	-

Key:
WCA 1: Wildlife and Countryside Act – Bird species with increased protection whilst nesting.

Table 3.1: Bird species recorded within a 5 km radius of the proposed Lower Buckland turbine location

Steve Coney, County Bird Recorder for Herefordshire, was contacted and a request for information regarding notable breeding and wintering concentrations of the following target groups within a 5km radius of this site:

- Diurnal raptors;
- Owl species;
- Wildfowl;
- Wading species;
- Gull species; and,
- Corvid species.

Coney (2010), stated the following:

'Having looked at the recent database information I hold, there are no recent records of species relevant to your enquiry, within the search area. As far as I can tell there is no reason to believe that there is any obvious proof of concentrated migration routes through the zone.'

In addition to the ornithological desk study information, the extended phase 1 habitat survey undertaken in April 2010 obtained data for statutory and non-statutory protected sites within a 2 km radius of the survey area. Information received from Herefordshire Biological records Centre highlighted the presence of two non-statutory sites. These two sites were:

- The Roughs and The Oaks Local Wildlife Site (LWS); and,
- Woodland near Grendon Bishop Local Wildlife Site (LWS).

Both of these non-statutory sites are in excess of 700 m from the survey area and neither is known to be of significance for their breeding or wintering bird populations.

3.2 Field Survey Results

The survey area comprised a 50 m wide corridor on either side of an existing farm access track which follows a north/south route from the A44 as far as Orchard Cottage before heading due east past Lower Buckland Farm and continuing eastwards to the proposed turbine location on the edge of a large arable field. The survey area is provided on Middlemarch Environmental Drawing C108307-01 provided in Appendix 1. It should be noted however that any birds noted within the general vicinity of the study area were also recorded during the walkover survey.

All of the birds recorded during the field survey undertaken as part of the Extended Phase 1 Habitat Survey are presented in Table 3.1.

Common Name	Scientific Name	Status
Blackbird	*Turdus merula*	
Blackcap	*Sylvia atricapilla*	
Blue Tit	*Cyanistes caeruleus*	
Bullfinch	*Pyrrhula pyrrhula*	National BAP Species. Amber Listed Species.
Carrion Crow	*Corvus corone*	
Chaffinch	*Fringilla coelebs*	
Common Buzzard	*Buteo buteo*	
Common Whitethroat	*Sylvia communis*	Amber Listed Species.
Dunnock	*Prunella modularis*	National BAP Species. Amber Listed Species.
Goldcrest	*Regulus regulus*	
Goldfinch	*Carduelis carduelis*	
Great Tit	*Parus major*	
House Sparrow	*Passer domesticus*	National BAP Species
Jackdaw	*Corvus monedula*	
Linnet	*Carduelis cannabina*	National BAP Species Red Listed Species
Long-tailed Tit	*Aegithalos caudatus*	
Magpie	*Pica pica*	
Mallard	*Anas platyrhynchos*	Amber Listed Species
Pheasant	*Phasianus colchicus*	
Pied Wagtail	*Motacilla alba yarrelli*	
Raven	*Corvus corax*	
Robin	*Erithacus rubecula*	
Rook	*Corvus frugilegus*	
Sky Lark	*Alauda arvensis*	National BAP Species Red Listed Species.
Song Thrush	*Turdus philomelos*	National BAP Species. Red Listed Species.
Stock Dove	*Columba oenas*	Amber Listed Species.
Swallow	*Hirundo rustica*	
Swift	*Apus apus*	
Wood Pigeon	*Columba palumbus*	
Wren	*Troglodytes troglodytes*	
Yellowhammer	*Emberiza citrinella*	National BAP Species. Red listed Species.

Table 3.1: Bird Species recorded during the site visit to the Lower Buckland site, Herefordshire in April 2010

Key
UK BAP Species listed as UK Biodiversity Action Plan Priority Species
Local BAP Herefordshire Biodiversity Action Plan
RSPB Red Species included on RSPB Red List of Conservation Concern (see below)
RSPB Amber Species included on RSPB Amber List of Conservation Concern (see below)

Notes for RSPB Red-listing Criteria
BDp: Rapid (>50%) decline in UK breeding population over the last 25years
HD: Historic population decline in UK during 1800-1995
Additional Amber-listing Criteria
SPEC 2 or 3: Species with unfavourable conservation status in Europe (SPEC = Species of European Conservation Concern)

Notes for RSPB Amber List Criteria
BDMp: Moderate (25-49%) decline in UK breeding range over last 25 years
BDMr: Moderate (25-49%) contraction in UK breeding range over last 25 years
SPEC 2 or 3: Species with unfavourable conservation status in Europe (SPEC = Species of European Conservation Concern)
Hdrec: Historic population decline during 1800-1995, but recovering: population size has more than doubled over last 25 years
BI: >20% of European breeding population in UK
WI: >20% of NW European (wildfowl), East Atlantic Flyway (waders) or European (others) non-breeding populations in UK

4. DISCUSSION & CONCLUSIONS

Following field observations of birds gained from the site visit undertaken on 28th April 2010 and supplemented with desk study data obtained from the Herefordshire Biological Records Centre and the Herefordshire County Bird Recorder and with reference to Scottish Natural Heritage Guidance on windfarms and any potential species of national and local conservation significance, a series of potential target species were compiled for the Lower Buckland site. Target species are those which are considered to be at greatest risk from wind turbines, for example less manoeuvrable species which fly at the approximate height of turbine rotor blades. The following potential target species for the Lower Buckland site were identified:

- All diurnal raptor species with barn owl, common buzzard, kestrel and sparrowhawk;
- Large, flock-forming species of corvid;
- Raven *Corvus corax*; and,
- Owl species – in respect to this site to comprise barn owl, little owl and tawny owl.

Reference to desk study data together with field observations and analysis of habitats and land use indicated that other groups generally considered to be target species with respect to windfarm developments e.g. gulls, wildfowl and wading bird species, are not perceived to be at risk from the proposed site development. All three of these bird groups are unlikely to occur in any significant numbers or concentrations within 5 km of the Lower Buckland site.

There are no significant areas of open water within a 5 km radius of the surveyed site. Indeed Herefordshire generally possesses no waterbodies of significance for wildfowl or wading birds, either in terms of breeding birds or concentrations of passage or wintering species. To the north of the study site (approximately 1500 m from the closest waterbody to the proposed turbine location) are a series of small pools with the largest being approximately three hectares in extent. These pools are managed and stocked as a commercial coarse fishery. They are surrounded by trees and shrubs and this, together with their relatively small size and frequent human disturbance, is considered to render them of negligible value for significant concentrations of wildfowl and waders.

Similarly, the nearest river valley flyway to the surveyed area is the valley of the River Lugg which lies in excess of 4 km to the west. Desk study information indicated that there are no known migration routes within this area (Coney, 2010).

In terms of assessing potential impacts of the proposed two turbines, factors which need to be considered are:

- Direct loss and/or deterioration of habitats.
- Indirect habitat loss as a result of displacement by disturbance.
- Increased energy expenditure due to a barrier effect of larger arrays of rows of turbines.
- Mortality due to collisions with turbines and associated infrastructure.

In terms of loss and deterioration of habitats, it is considered that the proposed location of a single small turbine within a large arable field (approximately nine hectares in extent) towards the eastern boundary of the survey area will have a negligible impact. The footprint of the proposed turbine station is small, and its planned location is within an existing arable cropped field. This habitat is abundant both on site and in the surrounding locality and in terms of breeding potential offers limited nesting potential for bird species. Of the species noted during the site visit and those provided in the desk study, the species most likely to utilise arable crops for breeding and feeding is sky lark. The interface between the crop edge and the surrounding boundary hedgerows is also likely to support breeding common whitethroat, linnet, pheasant and yellowhammer. It is considered that the loss of a very small habitat footprint to accommodate the proposed single turbine will not have any significant detrimental long term impact upon any of these species. There is however, some potential for minor disturbance to breeding birds if the access route and turbine erection is undertaken during the bird breeding season.

In terms of infrastructure associated with the proposed turbine, an existing farm access track is present along the majority of the preferred access route with only a short section of new track required at its eastern extent leading across the arable crop to the proposed base station location. This may require some upgrading to facilitate turbine installation. The construction and use of such a short section (estimated to be approximately 150 m in length) of track is considered likely to have a negligible impact upon breeding birds, although there may be some minor disturbance during upgrading activities if undertaken during the bird breeding season. However, it is considered that being an existing farm access track birds present along this narrow corridor are prone to be habituated to human activity. Again, if works are undertaken outside of the bird breeding season then the impacts will be significantly lessened.

Due to the small scale nature of the scheme, its proposed location and utilisation of existing farm access track it is considered that there will very little adverse impacts. In terms of indirect habitat loss as a result of displacement by disturbance. During the construction phase there is likely to be a small amount of disturbance but again this is considered to be negligible given the proposed turbine location within areas of arable crops. It should also be noted that the site is occupied by an active mixed farm and there are regular movements of vehicles and people across site to which local birds become habituated. Any construction activities associated with the proposed turbine installation are considered to be small scale and it is considered that local breeding birds will soon become habituated to these activities.

In regard to increased energy expenditure due to a barrier effect of larger arrays of rows of turbines, this is also considered to have no impact as the scheme only proposes one small turbine. This turbine is to be located in excess of 50 from the nearest surrounding important habitat features e.g. parcel of woodland to

the north (Oak Wood), boundary hedgerows and linear scrub with small watercourse to the east. Birds will not be forced to deviate any significant distance in order to bypass the single proposed turbine.

In terms of collision risk associated with the Lower Buckland survey area, those species considered to be target species were judged to be present in low numbers i.e. common buzzard, kestrel and raven. The proposals comprise a single turbine situated within a large arable field and in excess of 50 m from features such as field boundaries or woodlands. The single turbine will not create a significant 'barrier effect' and is therefore considered to comprise a low collision risk to target breeding species, although some limited residual risk does remain.

Further analysis of the desk study data supplied by Herefordshire Biological Records Centre indicated that the species that is potentially of most significance in respect to site proposals is barn owl. A total of 16 records of this species were obtained for the five km search radius with the closest being 350 m north-west of the surveyed area (1.8 km from the proposed radius location). This is a species that frequently breeds within farm outbuildings and sections of hollow trees. The closest buildings to the proposed turbine location are in excess of 500 m away. Several trees with suitable nesting hollows are within 100 m of the proposed turbine location. However, as barn owls are generally a low flying species and are considered to spend the majority of their time below the height of the proposed turbine blades, it is considered that this species will not be detrimentally impacted by site proposals. Furthermore, as they prefer areas of rough grassland in which to hunt for prey, a foraging resource that is very limited in extent within the surveyed area (and does not occur to any significant extent within the immediate vicinity of the proposed turbine location), it is considered to further reduce the possibility of direct impacts from the proposed turbine. Similarly, two other owl species to be expected within the study area, little owl and tawny owl, also tend to be low flying species and are not considered to be at a significant risk from a single turbine.

Common buzzard was frequently recorded within and adjacent to the survey area during the late April site visit. This is a species known to be widespread within the county of Herefordshire and breeding can occur within small woodlands and copses. It is considered that the proposed siting of a single turbine within a relatively open area in excess of 50 m from notable habitat features is unlikely to significantly adversely impact this increasingly common raptor species. It is considered that local birds will become habituated to the turbine and will be able to avoid collision with it. Similarly, corvid species such as carrion crow, rook, jackdaw and raven although defined as target species are considered to be at low risk from collision with a single, well sited turbine due to their reasonable agility and manoeuvrability.

In conclusion, the siting, design and management of the single turbine at Lower Buckland Farm is unlikely to have any significant adverse impacts on any important bird populations or habitats. The supplied desk study information highlighted relatively few species considered to be target species and therefore at risk. The majority of species records were small passerines which generally suffer no significant impacts from small scale wind farm developments. Analysis of the bird sensitivity map for England in relation to proposed windfarm schemes indicates that this area of the south-western Midlands is not currently considered to be sensitive in respect of windfarms and birds (Bright *et al* 2009). Furthermore, as part of

the extended phase 1 habitat survey undertaken at the Lower Buckland site, a search was made for any statutory or non-statutory conservation sites within a 2 km radius of the study site. Two non-statutory sites were identified during this exercise, namely The Roughs and The Oaks (Local Wildlife Site) and Woodland near Grendon Bishop (Local Wildlife Site). Both sites are in excess of 700 m from the study area and are not known to support any significant species of birds or concentrations of any particular species (or groups of species).

5. RECOMMENDATIONS

It is considered that there may be some risk to bird species if enabling and turbine construction works are undertaken at the Lower Buckland site during the bird breeding season. It is therefore recommended that such works are undertaken outside of this ecological window. The breeding bird season is considered to span March to September inclusive.

If it is not possible to undertake works outside of this window, it is recommended that any vegetation likely to be impacted by works is subject to a check for the presence of nesting birds by an experienced ecologist immediately prior to works commencing.

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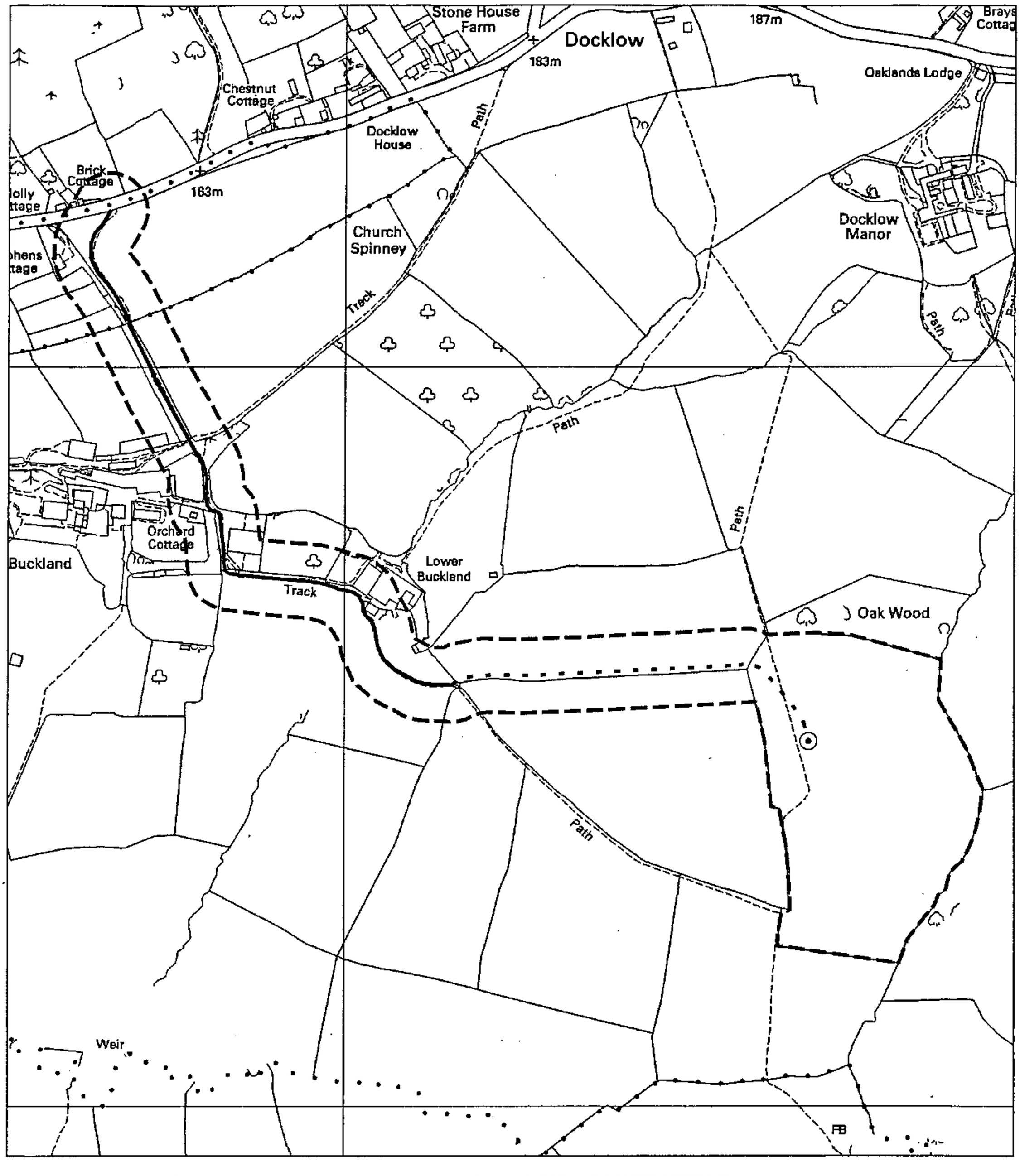
Wildlife & Countryside Act (1981) as amended

APPENDIX 1

Site Location Plan



Legend

- Proposed turbine location
- Existing access track
- Proposed access track
- Survey area

Seven Energy	Lower Buckland Farm, Docklow
Survey Area, Proposed Turbine Location	C108307-01
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MIDDLEMARCH ENVIRONMENTAL

QUALITY ASSURANCE

TITLE: DESK BASED BIRD ASSESSMENT

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