partnership for Biodiversity in Planning

Biodiversity Data Search Guidance for Ecological Consultants

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Contents

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ALERC
Association of Local Environmental Records Centres

ALGE
ASSOCIATION OF
Local Government Ecologists

Bat Conservation Trust

buglife

partnership for Biodiversity in Planning

THE Mammal SOCIETY

GiGL

people's trust for endangered species

RTPI
Royal Town Planning Institute

Glossary

ALERC	Association of Local Environmental Records Centres
ALGE	Association of Local Government Ecologists
ASSI	Area of Special Scientific Interest
BCT	Bat Conservation Trust
BDS	Biodiversity Data Search
CSZ	Core Sustenance Zones
CWS	County Wildlife Site
EPS	European Protected Species
HRA	Habitats Regulations Assessment
IIA	Important Invertebrate Areas
INNS	Invasive Non-Native Species
IPA	Important Plant Areas
IRZ	Impact Risk Zones
LERC	Local Environmental Records Centre
LNR	Local Nature Reserve
LPA	Local Planning Authority
NBN	National Biodiversity Network
NNR	National Nature Reserve
NGO	Non-Governmental Organisation
OS	Ordnance Survey
PEA	Preliminary Ecological Appraisal
SAC	Special Area of Conservation
SINC	Site of Interest for Nature Conservation
SNCB	Statutory Nature Conservation Body
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest
SWA	Scottish Wildcat Action
WPA	Wildcat Priority Areas

1 Introduction

This document provides guidance on conducting, interpreting and reporting on **biodiversity data searches (BDS)** in relation to proposed developments on land (developments in the marine environment are excluded). The guidance aims to improve the way that biodiversity data is collected and interpreted by ecological consultants to inform planning decisions. The guidance should be used alongside professional judgement applied on a case by case basis.

The principal audience is professional ecologists carrying out ecological surveys and writing reports to be submitted with planning applications. However, the guidance will also be useful to others, including: developers commissioning this work; planners, ecologists and policy makers working for local authorities; licensing authorities; non-governmental organisations (NGOs) who are responsible for reviewing and assessing the implications of professional ecological surveys; and to other professionals who need to take account of these.

Additional guidance on this topic can be found in:

- BS42020: 2013 Biodiversity – Code of practice for planning and development (BSI, 2013)
- Guidelines for Accessing and Using Data (CIEEM, 2016)
- Guidelines on Preliminary Ecological Appraisal (CIEEM, 2018)
- Accessing Biodiversity Data through your LERC (ALERC, 2019)

Information on BDS is also available in various species-specific guidance on surveys, impact assessment and mitigation.

The guidance contained within this document has been written with input from members of the Partnership for Biodiversity in Planning Project. This is a 4-year partnership project involving 19 organisations from the conservation, planning and development sectors working together to improve the consideration of biodiversity in planning (see website link in references).

2 Motivation for conducting a BDS

There are various legal and policy obligations for **Local Planning Authorities (LPAs)** to consider biodiversity (RTPI, 2019). Conducting a BDS is an important part of 'considering biodiversity' and 'having regard for the Habitats Directive' in the planning process for the reasons listed below. BDS can help:

- Highlight constraints at an early stage that should be factored into the scope, location, design, schedule and budget for the scheme from the outset of the design and planning process, helping to avoid costly delays.
- Provide information on locations of statutory and non-statutory designated sites to enable assessment of impacts on these sites and early consultation with relevant bodies.
- Flag up protected and priority species (see Appendix 1) that may be present, including those that may be at risk from the particular type of development.
- Highlight species that are only detectable by a specific type of survey or expert.
- Identify where risk of harm to biodiversity is high.
- Flag up the presence of **Invasive Non-Native Species (INNS)**.
- Provide information at the landscape scale, which may be important for larger developments such as highway schemes that can create barriers to organism mobility.
- Provide a longer-term view, in comparison to a survey, which is a snapshot in time. This may be particularly important for those species that cannot be detected throughout the year (because they are only active at certain times) or those that are not present in every year.
- Identify, justify and trigger the most effective surveys to be carried out at the site.
- Contribute, alongside associated survey data, to identifying and justifying the most effective avoidance, mitigation, compensation or enhancement to be applied at the site.
- Fulfil one of the requirements of a **European Protected Species (EPS)** licence application where relevant (e.g. bats, great crested newt, dormouse).

Biodiversity data is required to make informed ecology assessments, and therefore the data needs to be of an appropriate quality, depending on the questions being asked. Detailed information is needed to allow an assessment of net impacts at a site level but, for example, larger-scale Local Plan decisions can be made with less detailed information.

3 Triggers for BDS

For the vast majority of scenarios, a BDS should be carried out as part of a **Preliminary Ecological Appraisal (PEA)** desk study. The information can then be used to inform the PEA fieldwork and any subsequent survey work and reporting that will be submitted with a planning application. If a BDS is not carried out then the rationale for this should be clear in any reports produced. More information on variations and exceptions can be found in CIEEM's Guidelines for Accessing and Using Biodiversity Data (CIEEM, 2016).

New Forest Burnet

4 Request for BDS

When requesting a BDS on biodiversity data there are a number of considerations. This includes: the need for specialist knowledge relating to biodiversity; consideration of the most suitable sources of data; the scope of the data to include; consideration of 'sensitive' data; and what to do with the information once it is retuned.

4.1. Specialist data services

Biodiversity data services provided by LERCs are specialist services and should be treated as such. They are designed to inform ecological experts of the presence of species, habitats and sites within a specific area. All of these ecology elements can hold legal status. To make sure the right services are acquired and the data provided are interpreted correctly, a certain minimum expertise is required. This is particularly important when data are needed for one off or small scale developments as the developer themselves may have little or no knowledge of biodiversity law and policies and the implications that data may hold for these. The developer should employ an ecological consultant and in these cases, it is very important that the consultant themselves acquire data services and ensures that they order the correct data search that will support their work. This will avoid inappropriate data being provided. It is also possible that some data providers have restrictions on the supply of certain datasets (e.g. records of sensitive species) to members of the public and can only release data to those with appropriate competencies, who are usually ecological consultants.

4.2. Sources of BDS data

There are various sources of data and information available locally and nationally that should be consulted to inform a robust BDS. None of them can claim to be a 'one-stop-shop' for biodiversity data, but the main sources that must be consulted to ensure that a report is well informed (including, at least, statutory and non-statutory designated sites and records of protected, priority and invasive non-native species) are outlined in the following sections.

4.2.1. Local Environmental Records Centres (LERCs)

As the data custodian of local recording groups, local groups of national schemes and societies, as well as public and private sector clients and partners, the **Local Environmental Records Centres (LERCs)** (where present) will provide access to site, species and habitat data for their county. However, LERCs do not always hold all the ecology data that exists for the county and it is important to establish exactly what data is being provided and what might be missing.

It may be necessary to contact more than one LERC if a site straddles or lies adjacent to another county or area boundaries.

All LERCs are not-for-profit businesses, which means any profits are reinvested in service development and support for local recording networks. Some are hosted by Local Authorities, some by local Wildlife Trusts and others operate independently. The fees for carrying out a BDS vary according to running costs, which are dependent on how the business is set up, the geographical area etc. More information is available online (ALERC, 2017). Services provided also vary according to local demand. Consultants should ensure they are familiar with the fee structure and services of the relevant LERC before quoting a job for a client.

Since July 2012, the **Association of Local Environmental Records Centres (ALERC)** has offered accreditation to LERCs that meet certain good practice criteria in relation to their procedures and service provision. A client can expect a higher level of service from an accredited LERC. For example, one requirement is for at least 90% of enquiries to be answered within 10 working days, in comparison, the statutory obligation through Environmental Information Regulations (2004) is 20 days. It is worth noting that this is a minimum standard and most enquiries will receive a response much quicker.

ALERC and the former Institute of Ecology and Environmental Management (now CIEEM) carried out a survey of consultant ecologists to better understand attitudes towards LERCs (IEEM, 2012). 473 people responded and some clear messages that came across were the need to improve the consistency of LERC data provision and the need for an easier system allowing consultants to submit data. LERC accreditation is helping to improve data provision. With regard to data submission, see Section 8.

4.2.2. MAGIC (England only)

The MAGIC website *'provides authoritative geographic information about the natural environment from across government'*. The data provided via the website are also likely to be available from LERCs that are absorbing open data into their services on behalf of their stakeholders. However, some LERCs may hold habitat mapping data that is more locally accurate than the habitat data held on MAGIC. A fairly recent addition to the MAGIC website is information on European Protected Species licences.

4.2.3. NBN Atlas

Although much data on the Atlas is of a lower resolution, it can be useful to give context beyond what LERCs might provide.

Only data published under one of the open data licences (OGL, CC0, CC-BY), can be used in commercial activity, and only data published at capture resolution will be detailed enough to be useful, although blurred open data may help with context for

a site. The responsibility for ensuring that the quality, resolution and permissions are appropriate for use in a BDS lies with the end user of the Atlas, the data must be correctly cited, and proven misuse will result in a fixed penalty issued by the NBN Trust on behalf of data providers (NBN Atlas, website a.). Data that is appropriate for informing planning decisions is also likely to be available via LERCs that absorb open data into their services. Definitions of commercial v non-commercial use are available online (NBN Atlas, website b.). The Atlas describes commercial use as *'any use which is primarily intended or directed towards commercial advantage or monetary compensation (this includes cost recovery) e.g. any part of the process directed at gaining planning consent, land of infrastructure development including background research and reporting data'.* Guidance on how to cite the Atlas is also available (ALERC, 2019; NBN Atlas, website c.).

4.2.4. National Schemes and Societies

Where decisions or activities are likely to impact on particular taxonomic groups, or results from MAGIC, the NBN Atlas or LERC searches have highlighted taxonomic groups relevant to the project, it is important to contact the relevant national scheme or society for access to additional data and advice. A list of NSS is maintained by the Biological Records Centre and is available online (BRC website). Most national schemes and societies are run by a small number of volunteers and ample time should be allowed for them to respond to queries.

4.3. Extent of BDS search

The geographical extent of a BDS search will relate to the zone of influence of an individual project and should therefore be project-specific. It is the responsibility of the applicant to ensure that the information they request and obtain will meet their needs for a particular planning application. More information on this can be found in CIEEM's guidelines on Preliminary Ecological Appraisal (CIEEM, 2018). Sections 6 and 7 cover some important geographic considerations for interpreting and reporting the resulting data.

4.4. Sensitive data

Records of certain species can be considered sensitive for a number of reasons but perhaps the most important one is persecution. A common example of this is records of badgers in areas where continued harm to the animals is a concern. Another example is records of raptors, such as hen harriers or peregrine falcons, where egg collection or killing by unscrupulous land managers are concerns. In a ruling by the Information Commissioner, the right of Natural Resources Wales to withhold access to records of breeding peregrine falcons for fear they may be harmed was upheld. National sensitive species lists, for Scotland, England, Wales and Northern Ireland respectively, are used to govern the NBN Atlas on records of which species are publicly

available and which aren't. Locally, lists of sensitive species can vary depending on a number of factors, including the local status of particular species and the position taken by local species recording groups.

It is important to be aware that use and access to records of sensitive species is restricted more tightly than other records. In some instances this may mean that records can only be treated as confidential, in others it may mean that special permission to supply them needs to be sought, which may also require the submission of further details on what the records are to be used for. The restrictions around records of sensitive species will always be documented and can be clarified by contacting the data provider when necessary. Anyone unsure about which species may be deemed as sensitive or what the implications of sensitivity are is advised to ask the data provider.

4.5. Information returned from the BDS search

Different LERCs will provide different information from their BDS searches; this is often shaped by client feedback over a number of years. Some will only provide interpreted information, which summarises the data holdings for the defined area.

LERCs will validate records as they come in, including checking the record is complete and its location and date are correct. This can be done via automated processes that are informed by the LERC's expertise and local knowledge. Verification involves experts checking species identifications to ensure that they are reliable. The sheer volume of records that are generated for some taxonomic groups, and the levels of expertise required to identify certain groups to species level makes the task of verifying the records (checking that the identification is correct or at least likely to be correct) difficult to manage for local and national species experts, particularly as many of them are doing the work on a voluntary basis. With this in mind, many LERCs and other **National Biodiversity Network (NBN)** members have decided to make clearly labelled unverified data available to stakeholders to act as an alert where the knowledge that species *may* exist is important to the decisions and activities the data is being used to inform.

Wildflower meadow

5 Interpretation of designated sites data from BDS

This section focuses on how to view and use BDS data from statutory designated sites and non-statutory designated sites that are protected at a national, regional or local level, in terms of legislative requirements as well as organisations and data sources to consult.

5.1. Statutory designated sites

If a BDS returns records of a **Special Protection Area (SPA), Special Area of Conservation (SAC)** or Ramsar site then consideration should be given to the necessity for a **Habitats Regulations Assessment (HRA).** The LPA will confirm whether or not this will be necessary having assessed whether the proposal is likely to have a significant effect on the European site and the integrity of the features for which it is designated. Consultation with the LPA and the relevant **Statutory Nature Conservation Body (SNCB)** is essential to establish if this is likely to be the case. More information is available in CIEEM's guidelines on Ecological Impact Assessment (CIEEM, 2018b).

If a BDS returns records of a **Site of Special Scientific Interest (SSSI)** or A**rea of Special Scientific Interest (ASSI)** then consideration should be given to any likely impacts on the site or the features for which it was designated and the necessity to consult the relevant SNCB. This is likely to be necessary if the proposal falls within a SSSI or ASSI but may also be necessary if the proposal is at some distance from the site, depending on the predicted geographical extent of impacts arising from the proposal (the 'Zone of Influence').

Natural England have developed **Impact Risk Zones (IRZs** - and associated guidance (Natural England, 2019)) which are mapped zones around individual SSSIs reflecting the particular sensitivities of sites to impacts from different types of proposals. These zones indicate when it will be necessary to consult Natural England in relation to a proposal. The IRZs cover the interest features and sensitivities of European sites as well as compensation sites that have been secured for use where impacts on European sites cannot be avoided or mitigated for.

If records of a **National Nature Reserve (NNR)** or **Local Nature Reserve (LNR)** are returned from a BDS, similar consideration should be given to any likely impacts on that site (given the 'Zone of Influence') and the necessity to consult the relevant managing body (Natural England, National Trust, Forestry Commission, RSPB, Wildlife Trust, local authority or other body as appropriate).

5.2. Non-Statutory Designated Sites

If records of a **Local Nature Reserve (LNR)**, Local Wildlife Site (England), Local Nature Conservation Site (Scotland), Site of Importance for Nature Conservation (Wales), Site of Local Nature Conservation Importance (Northern Ireland), **County Wildlife Site (CWS)**, Site of Interest for Nature Conservation (SINC), RSPB reserve, Wildlife Trust reserve or similar are returned from a BDS, consideration should be given to any likely impacts on that site (given the 'Zone of Influence') and the necessity to consult the LWS partnership or relevant managing body/owner.

Plantlife's **Important Plant Areas (IPAs)** (see Plantlife's website) and Buglife's **Important Invertebrate Areas (IIAs)** (see Buglife's website) should be considered to be non-statutory designated sites and may trigger botanical or invertebrate surveys respectively if a development is proposed within an IPA or IIA, or within an appropriate buffer distance and certain habitats are present on site. IPA boundaries share a large overlap with the Statutory Designation Network (specifically SSSI boundaries).

Bluebell wood

6 Interpretation of species data from BDS

The interpretation of species data from a BDS – i.e. what do you do with the data? – is crucial to maximising the benefits of such an exercise. Information for both general and specific interpretation regarding certain species and species groups is included below.

6.1. Protected and Priority Species – General Considerations

When assessing the likelihood of whether a species will be affected by the development, it is important to assess the likelihood of the species being present using a combination of:

a) presence of positive records;
b) range of the species;
c) presence of habitat suitable for the species on or very close (and connected) to the development and presence of other species that live in the same conditions; and
d) appropriate survey work.

This is especially important for under-recorded species, where it is common for BDS not to pick up records close to the development, but their presence can be predicted on the basis of local presence and habitat quality. In time, predictive modelling will help to present a probability that species are present, based on a set of variables. Work is underway to develop such approaches.

Not every area can always be fully surveyed, and the majority of surveys do not record what wasn't there. Absence of evidence is therefore not the same as evidence of absence. Even where absence records are held by the LERC or another data holder these should be scrutinized in terms of survey effort, timing and purpose to either give greater confidence or discard the absence record. The likelihood of false absences should always be considered.

Positive records can help to identify if there are any legally protected species or species of conservation concern (see Appendix 1) present *at the site* that are likely to be directly or indirectly impacted by the proposals. Where species are known on sites it is up to consultants to consider what additional information is needed to understand impacts and to ensure legal compliance. Further data or surveys may be needed or species may need to be accounted for in the design of the project pre-, during or post-construction.

The most recent records (e.g. from the last five years) are of most use but older records can give a historical context about changes in distribution over time; long-

term, temporal data on a species implies persistence. A lack of more recent data may reflect a lack of survey data rather than a lack of the species. Older data, however, should not be used to estimate current population status and should be considered within the context of any physical changes at the site and in the surrounding area.

ABSENCE OF EVIDENCE IS NOT THE SAME AS EVIDENCE OF ABSENCE

It is important to consider what action is appropriate when a species has been recorded at a site previously but is not found during the site surveys. This depends on whether there is still suitable habitat on site and in the surrounding area that is likely to be impacted, the species concerned and the age and nature of the original record.

It is important to consider if there are any legally protected species or species of conservation concern (see Appendix 1) present *in the surrounding area* that are likely to be directly or indirectly impacted by the proposals. Offsite records are a pointer to the possibility of a species being on site. Where species are known in the area surrounding the site it is up to consultants to consider what additional information is needed to understand potential impacts and to ensure legal compliance. Further data or surveys may be needed or species may need to be accounted for in the design of the project pre-, during and post-construction.

For freshwater species occurring in waterways (e.g. otter, white-clawed crayfish), it is more appropriate to consider their distribution and the likely impacts downstream (and potentially upstream) of the site and in the catchment area rather than to a given radius from the site boundary.

Records of any species at increasing distances from the site are of decreasing significance, depending on the mobility and dispersal range of a species and the connectivity of the local habitat or any barriers to movement. However, more distant records that occur around the site could indicate presence on site. Records at a greater distance and lower resolution records can also be useful to confirm a site is within the range of a species, particularly for under-recorded species. See above for use of older records.

The distance to which species records are relevant may also depend on how frequently and thoroughly the species are surveyed for. Where species distribution is well documented through regular national surveys, an absence of records more reliably suggests an absence of the species (e.g. Lepidoptera). For less well known species (e.g. other invertebrates), however, records at a greater distance from the site may be given more weight due to the general scarcity of records.

It is important to consider whether there are species recorded for which, due to the significance of the potential impacts of the proposal, distribution and population data should be sought from sources other than the LERC.

You should consider if there are species recorded that are only detected by specific survey techniques and that may not be picked up during a PEA or subsequent standard survey methodologies (e.g. Bechstein's bat).

It is important to consider if there are any species recorded that are particularly vulnerable to the type of development proposed (e.g. raptor or bat species and wind farm developments).

Existing survey data returned from a BDS may be sufficient to inform a project about a particular species (without carrying out further surveys) providing the data:

- is current/up-to-date;
- covers the relevant geographical area;
- has been collected using best practice survey methods;
- is available for 'commercial use'; and
- is acceptable to the Local Planning Authority and/or licensing body.

Natural England has produced advice on acceptable age of survey data for the Great Crested Newt (UK Government, 2017), where records are provided that are 'in date' they could potentially be used in favour of new surveys.

6.2. Mammals

6.2.1 Badgers

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A BDS should seek to establish any existing badger records within the study area (sightings, setts and/or road casualties [RTAs]). A standard search radius around a development site is 2km, although for large or linear developments a greater search radius may be required. These records may incur a fee. In Scotland, Scottish Badgers have comprehensive data for sett records and RTA casualties. The Local Record Centres and Mammal Society (for other parts of the UK) may also be consulted.

Badgers, unlike many other mammals, do not normally disperse their young when they reach maturity. For that reason and many others it takes a long time for them to expand their territories. The pressure from other surrounding groups may mean that the area they occupy never expands. Setts can exist and be continuously occupied for many years and historical records should never be discounted, as there is every chance that the badgers are still at that site (Scottish Badgers, 2018).

6.2.2. Bats

The Bat Conservation Trust (BCT) has defined **Core Sustenance Zones (CSZs)** (BCT, 2016) for different bat species using available literature from radio tracking studies (see Table 1). A CSZ refers to the area surrounding a communal bat roost within which habitat availability and quality will have a significant influence on the resilience and conservation status of the colony using the roost.

In practice, if a record of a communal bat roost is returned from a BDS, the CSZ should be used to assess whether bats from that roost are likely to be using any suitable habitat on the development site for commuting or foraging (if the CSZ and site boundary intersect). Ideally, there should be no net loss of this habitat or the favourable conservation status of the roost could be impacted. Other potential impacts should also be assessed using this method, such as collision impacts from roads and wind turbines and lighting.

Table 1. CSZs for different UK bat species.

Species	CSZ radius (km)
Lesser horseshoe[a]	2
Greater horseshoea	3
Daubenton's bat	2
Whiskered/Brandt's bat	1
Natterer's bat	4
Bechstein's bat[a]	1
Noctule	4
Leisler's bat	3
Common pipistrelle	2
Soprano pipistrelle	3
Nathusius' pipistrelle	3
Serotine	4
Barbastelle[a]	6
Brown long-eared	3
Grey long-eared[a]	3

a There may be justification with Annex II and other rare species to increase the CSZ to reflect use of the landscape by all bats in a population. We would suggest increasing the CSZ of Bechstein's bat to at least 3km, reflecting its specific habitat requirements.

In some areas there is greater knowledge and understanding of a bat population's use of the landscape, which should also be used to inform development proposals. For example, for greater horseshoe bats in the South Hams SAC, a Supplementary Planning Document is available (South Hams SAC, 2018).

6.2.3. Dormouse

The low breeding rate of Dormouse and their habitat requirements give rise to a natural low population density compared to other small rodents. They can disperse from core breeding populations into connected (or nearly connected) habitat, and this occurs whether habitats are optimal or even very sub-optimal. For example, Dormouse will disperse from a woodland into the adjoining hedgerow network, even if those hedgerows are regularly flailed and unable to support Dormouse independently of the adjoining land. It needs to be understood that survey data from offsite may therefore be more informative than data from on site. If records of dormice at a site are not held by the LERC but contextual information from online or

physically published atlases shows that they are present in the same or adjacent hectads (10km^2), surveys are required to investigate presence and determine the need for a licence.
It should also be noted that the presence of dormice is more likely in sub-optimal habitat within their core areas of Southern England, the English/Welsh border and South Wales and surveys should be conducted accordingly. In counties at the edge of their current range they are more likely to occur only in optimal habitat.


Hazel dormouse in Briddlesford Woods - Isle of Wight

© Clare Pengelly

6.2.4. Otter

For the otter, precise local information on presence or absence is less useful than an overview of the current status on the catchment or hydrometric area (see the Centre of Ecology and Hydrology website), due to the fact that the otter's home range can cover tens of kilometres.

The otter population is currently recovering from severe declines and is eventually likely to occupy all catchments. Within a catchment, all watercourses and most isolated water bodies could be visited by this species. It is important to consider whether records are pre- or post-decline (recovery started in the early 2000's, after reintroductions were initiated in the mid-1980s) to understand whether the data is still relevant and also to consider the need for surveys of wider catchments in areas where otters continue to re-colonise (e.g. Kent and part of the north-west) to establish if status has changed since the last national survey.

Current records of otter in a catchment should trigger a requirement for surveys for resting and breeding sites if there is a watercourse on or adjacent to the site that will be impacted by the proposals. If there are no records then a catchment-wide survey may be needed to determine whether otters are present and therefore assess the need for surveys for resting and breeding sites. These can be in apparently unsuitable places, such as drainage pipes in urban areas.

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6.2.5. Scottish Wildcat

Due to the rarity of Scottish Wildcat and the large range of this species, an extended search area of up to 10km is considered appropriate, particularly where development will result in loss of habitat considered of potential value to the wildcat. Where development occurs within, or is in immediate proximity to one of the **Wildcat Priority Areas (WPAs)** identified by Scottish Wildcat Action (SWA) (see website) then the relevant project officer within SWA should be contacted to confirm if the data provided by the LERC includes all recent records. Beyond the WPAs a search with the LERC is likely to be sufficient.

6.3. Herpetofauna

It is recommended that records of herpetofauna within at least 2km of the site boundary are reviewed and, bearing in mind the likely absence of records within this distance and the potential dispersal distances (for adders and grass snakes in particular), this could reasonably be increased. When interpreting records of herpetofauna, the connectivity between the record and the site should be assessed, as a break in habitat created by a major road or watercourse is likely to be a barrier to dispersal for these species.

6.3.1. Great Crested Newt

© Suffolk Wildlife Trust

Adult Great crested newts are generally considered to travel up to 250m from a breeding pond and perhaps up to 500m as juveniles or whilst dispersing. We do know, however, that some newts can move over 1km and it is these movements that, although not the norm, can be critical for the species to locate new ponds and for resilience of the population in an area in the long-term. English Nature's Great Crested Newt Method Statement template (English Nature, 2015) suggests a distance of 500m, used proportionately. The Great Crested Newt Mitigation Guidelines (English Nature, 2001) recommend that a survey for this species is carried out if there are historical records on site or *in the general area* or a pond within around 500m. The guidelines should be referred to for more detail. So a BDS for great crested newt includes not only species records but a search for ponds. This species has a wide geographic distribution, and occurs in a variety of different habitat types and may therefore be expected to be found more widely. Land use change over the past century will have both created and fragmented the habitat of this species and populations. Data, both locally to the development site and that from further afield, may be needed to understand the likely occurrence of this species and also the significance of any potential conservation impacts.

6.3.2. Other herpetofauna

The natterjack toad, smooth snake and sand lizard are range restricted and tend, within that range, to be closely associated with particular habitats. For these three species this includes lowland heaths (and associated bog, grassland and woodland edge habitats). The sand lizard and natterjack toad also occur in sand dunes while the natterjack toad additionally inhabits coastal grazing marsh and salt marshes.

Pool frogs became extinct in the UK in the 1990s and only a small number of reintroduced populations, of the type known as the 'northern clade' in eastern England, are considered of conservation importance (there are also introduced populations elsewhere in Britain). The rarity of this species and the likely dispersal distance means it is reasonable to consider records within 2km of the site when considering the need to survey for the species.

A record of a reptile species 2km away in continuous good habitat would suggest a reasonable likelihood of that species occurring on the development site. The range to take account of both the likely movement distances for the population (individual adders move several km in a year, grass snakes probably more. Slow worms and common lizards generally only move several hundred metres) and also the likelihood of there being records available (i.e. the detectability or likelihood of records being submitted). The range of data sources selected serves as an 'alert' for consultants. Ranges may be considered to be over cautious, but even in the absence of any records, the presence of good habitat, should wave a flag that reptiles should be considered. A 2km boundary is therefore a useful trigger for a BDS.

6.4. Birds

If a BDS returns records of priority bird species on a site or within 2 km of the site, further advice should be sought on whether a bird survey should be triggered. Lists of priority bird species are outlined in: Schedule 1 Wildlife and Countryside Act 1981 (as amended) for England, Scotland and Wales; Wildlife (Northern Ireland) Order 1985 (as amended); NERC Act (England); Wildlife and Natural Environment Act (Northern Ireland) 2011; Nature Conservation (Scotland) Act 2004 (as amended); Environment Act (Wales) 2016 (Wales); and Red or Amber species are listed as ‘Birds of Conservation Concern’.

The table following provides a list of considerations that may suggest a bird-related BDS is not needed, if all of the bird records received fall into one of these categories.

Many bird records returned from a BDS will probably be low resolution, i.e. recorded against 1km^2, a tetrad (2km^2) or a hectad (10km^2). Assuming the development site is itself not that large, and not located in an area of good quality semi-natural and/or

Table 2. Considerations when bird species may not require a BDS

Questions	Tips
Does the bird species have a large but low-density, widely dispersed breeding distribution where it may reasonably be expected to occur across most similar habitats, such as in arable farmland, plantation woodlands, hedgerows, and gardens? (e.g. skylarks are Red-listed by reason of large long-term population declines, but they still occur at low densities across most agricultural landscapes).	*The "BirdTrack" website (see references) offers a useful way of checking how widely different species occur at national, county and local area level and the BTO website provides good current population estimates of most species.*
Is the reason why the bird species is identified as a priority relevant to the situation under consideration? For example, redwings and fieldfares are Amber listed by reason of their very small UK breeding populations, but are abundant and widespread winter visitors. Birds listed on Schedule 1 as rare breeding birds that only occur locally as passage migrants (e.g. ospreys in most areas of lowland England) would not in themselves trigger the need for a further bird survey.	*Check the latest Birds of Conservation Concern report (BTO, 2015) to find out why particular species have been Red or Amber listed. Check local county bird atlases or annual bird reports to confirm the local status of particular species.*
Are any of the bird species recorded actually rare vagrants unlikely to reoccur very often, if at all? A bird discovered far outside its normal range often attracts great birdwatcher and media interest, but may be of little value in UK conservation terms.	*Check local county bird atlases, bird club websites, or annual bird reports to confirm the local status of particular species.*
Have circumstances changed since the bird species was recorded, such that it is unlikely to reoccur? (e.g. little ringed plovers that formerly nested in an active quarry now restored to a fishing lake).	*Consider the history of the site and its surroundings, and take account of significant changes that may have influenced the bird communities over time.*

secondary habitat, there is a good chance that any notable priority birds recorded around the development site may not actually relate to birds recorded on the development site.

It is important to test this assumption. Consider the habitat found on the development site, the habitat preferences of the bird species recorded, and the general availability of suitable habitat for those bird species across the square. If necessary, seek further expert advice.

A BDS may well return records that are many years old. Records older than five years may not be useful indicators of current value, but before discounting them, it is worth considering the following. Most bird datasets do not include absence records, i.e. where a visit was made but that bird species was definitely not recorded. So the absence of more recent records of a priority species may only mean that no-one has done a more recent survey.

Some bird species tend to be under-recorded, unless specialised survey techniques are used. Nocturnal birds (e.g. owls, nightjars, woodcocks) and breeding species that are often detectable only for a brief "window" in the early spring (e.g. goshawk, lesser spotted woodpecker, hawfinch, willow tit) are examples of where records older than five years may need be treated as significant, triggering the need for a new survey, especially if there still appears to be suitable habitat for such species on or near to a site.

In all cases, the key question regarding whether a bird survey should be carried out, is whether there good quality semi-natural and/or secondary habitat present that might be directly or indirectly affected by the proposals?

6.5. Invertebrates (not including aquatic invertebrates or Lepidoptera)

If a BDS returns records of legally protected (i.e. Habitats Directive or Wildlife and Countryside Act 1981, as amended) or priority invertebrate species on site or on adjacent land, an invertebrate survey should be triggered if suitable habitat for the species is present on site and is likely to be impacted by the proposals. Surveys should be conducted in a manner that is appropriate for the species and habitat in question.

A BDS may be of limited value for invertebrates however, due to the general lack of survey data for many invertebrate groups, particularly on sites where there have been past restrictions on public access. Therefore a habitat-based approach is often more useful in determining the need for an invertebrate survey. The presence of habitats with the potential to support high quality invertebrate assemblages will trigger an expectation that a survey is required. Buglife has produced guidance about when an invertebrate survey would be expected (Buglife, 2019).

Where a development is within an IIA and suitable habitats are present on site it is reasonable to expect that an appropriate survey is required for planning purposes.

6.6. Aquatic Invertebrates

For freshwater species occurring in waterways, it is more appropriate to consider their distribution and the likely impacts downstream and potentially upstream of the site rather than within a given radius from the site boundary. If there is a watercourse on or adjacent to the site that will be impacted by the proposals, and there are records of a legally-protected aquatic species (for example, the freshwater pearl mussel or white-clawed crayfish) within the catchment, then appropriate surveys should be considered.

6.7. Lepidoptera

If a BDS produces records of a legally protected (excluding research and sale only species) or priority Lepidopteran species on a development site or within 1km of the site, and suitable habitat is present and likely to be impacted by the proposals, a survey appropriate to the species or group in question and habitats present should be triggered.

Many of the Lepidopteran species are highly localised and/or restricted in range and therefore surveys should be triggered for these species if records are found for the site or within the given ranges (only likely to cover a relatively small area of the UK). When EPS or Wildlife and Countryside Act species are found then it is important to consult with Butterfly Conservation. There is no generic mitigation that can be applied and should always be assessed on a site by site basis. If Section 41 species are found then some factsheets are available on Butterfly Conservation's website (see references). Further information and specialist guidance is likely to be necessary for mitigation purposes, *i.e.* from Natural England or Butterfly Conservation.

6.8. Plants and Fungi

If records of legally protected, priority and/or Red-Listed plant species at the site are returned from a BDS and are likely to be impacted then it is relevant to trigger botanical surveys to establish if the plant species are still present and what further action is appropriate in relation to the proposals. If these records are returned off site on adjacent land they could be used to build a case for habitat creation or restoration on site to allow the species to colonise or re-colonise the area.

Low resolution records are not useful for plants because they are not mobile species. Ideally, fine resolution (a minimum six-figure grid reference) should be used, although 1km^2 records should be considered if finer resolution records are not available.

Where a development is within an IPA and suitable habitats are present on site, it is reasonable to expect that an appropriate survey is required for planning purposes.

6.9. Invasive Non-Native Species

Consultants should include a request for Invasive Non-Native Species (INNS) data as part of the BDS to help them consider whether there might be special measures required for survey or future capture or disposal operation, as part of an avoidance and mitigation strategy. There may be a need to change biosecurity protocols to avoid further spread of the species on or off the site and any mitigation practices required by the surveyor but also, and of particular importance, by the development team and vehicles.

Additional notes on the legislation relating to INNS and further sources of information are given in Appendix 2.

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7 Reporting a BDS

It is important in reporting on a BDS that the data is interpreted within a Preliminary Ecological Appraisal (PEA) report to guide the reader regarding the importance of the record when deciding what to do next. Long lists of designated sites and species records placed in an appendix with no description of how they were obtained and no interpretation of their importance in the main section of the report are meaningless and should be avoided, even where not precluded by the terms and conditions under which the data have been provided.

In a PEA report, the Methods section should include a BDS subheading detailing which LERCs were approached, which types of records were requested (statutory and non-statutory designated sites, protected and priority species, INNS or alternative list as appropriate), what radius from the site boundary was used and why. If no LERC BDS was carried out, the report should include the rationale behind this decision. Other sources of data, how or why they were selected and how the data was extracted should also be detailed, and all sources of data should be fully referenced.

A BDS subheading under the Results section should refer to internationally, nationally and locally designated sites and protected and notable species, in order of their conservation status (highest first). Reference may be made to lists of important species in an appendix. Lists of species should be tabulated and include the species name, date of the record, distance between the record and the site boundary and relevant legal protection. Sorting the lists according to e.g. species group, distance from the site and level of legal protection may also be useful. The type of record and number of individuals should also be included where available. Maps are useful to indicate the location and proximity of important sites and species (grid references in a table mean nothing to the reader) but these should be easy to read (not cluttered by too many records) and a clear key and scale provided.

It is important to check each Data Providers' terms and conditions in order to be clear what is permitted in terms of reporting any data. For example, some LERCs will state that their BDS reports are for internal use only, also maps may be subject to **Ordnance Survey (OS)** copyright. In this situation, a summary sheet of the report's content may be available for publication instead and if a user has their own OS MasterMap licence then the maps can be reproduced for publication.

The Evaluation section of a PEA report should bring together the BDS data with the PEA survey data and the development proposals in order to assess the need for further work in the form of an Ecological Impact Assessment (EcIA). It may be possible at this stage to evaluate the likelihood of impacts on designated sites and what subsequent action is

necessary. Alongside this, all the data (including that obtained from the BDS) should be used to make an assessment of the likelihood of protected and priority species being present at or adjacent to the site and impacted by the proposals. The importance of a species should be evaluated in terms of their likely presence on site or proximity and connectivity to the site; legal protection; national and local conservation status, listing in biodiversity action plans and relevant planning policies; and previous EPS licences. Further guidelines on conducting a PEA (CIEEM, 2018) can be obtained from CIEEM's website.

Buttercups in a meadow

8 Submitting Ecological Data from Development Projects

Records collected during the planning and development process (both pre and post-development) should be submitted to the LERC so that those records can be used to inform future development and conservation activities. Ideally this should be included in the terms and conditions of a contract between the ecological consultant and a client and the consultant should account for the time taken to submit ecological records when quoting for work.

Where a project includes a planning application the data will be in the public domain through the LPA website, therefore confidentiality should not be cited as a reason not to submit records. Where a project includes a protected species licence it is likely to be one of the licence conditions for data to be submitted at least annually to the LERC. Sharing data where possible is a professional obligation of CIEEM membership as stated in CIEEM's Professional Code of Conduct (CIEEM, 2019).

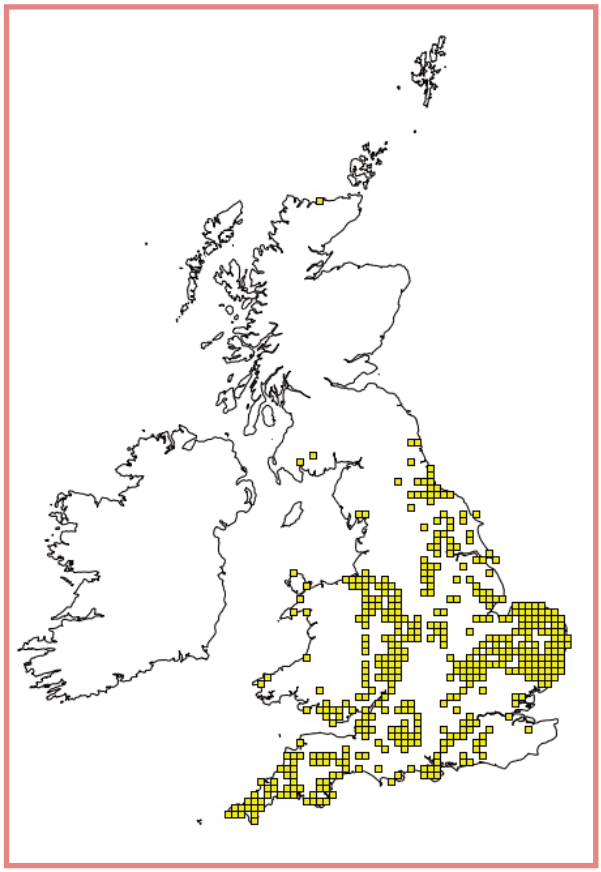
Most LERCs will accept data so long as it has the same basic elements to it. For example, the Sussex Biodiversity Records Centre (see references) recommend the following elements are provided:

- **Species name:** give the scientific name, or the standard common name
- **Abundance:** the number of individuals seen. Ideally the measurement of abundance should also include the sex and age (or life stage) of the species being recorded e.g. 2 Adult Female (Orange-tips) or 1 Troop (Spangle Waxcap)
- **Location name**
- **UK national grid reference** (ideally 6 figure or greater) e.g. TQ294246.
- **Date:** ideally this would be an exact date, however the month and year or a date range, is sufficient.
- **Recorder's name:** provide a full name and contact details; this helps to distinguish between different recorders and enables the LERC to check details if necessary.
- **Any other details:** such as gender, an egg, if it was flying or feeding, how many there were etc.

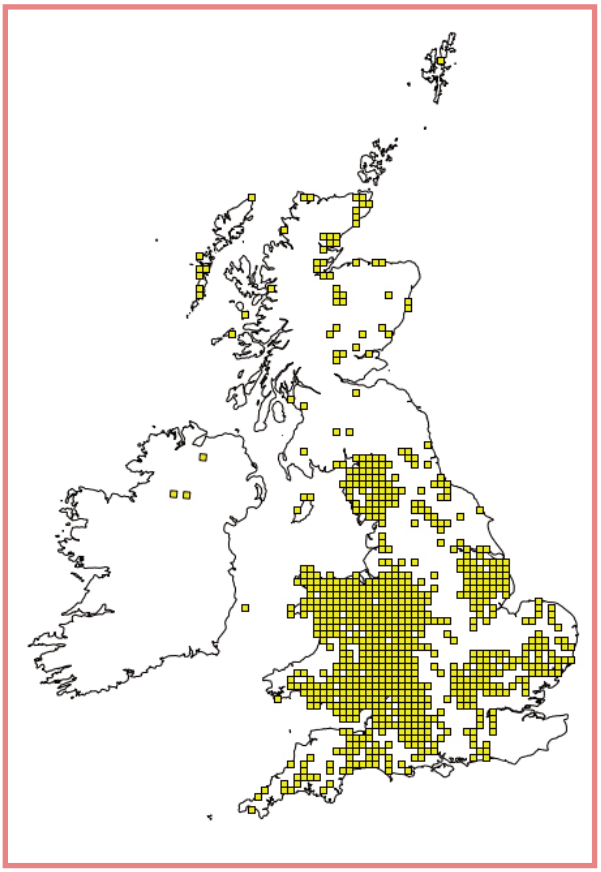
If you are uncertain about the best way to share records, please contact your LERC. Many LERCs are keen to receive habitat and green infrastructure data, as well as records of protected and priority species.

An alternative to submitting records to the LERC is to use the Consultants Portal (see references). The portal was set up by the NBN and CIEEM, who recognised that many consultant's records are not shared. The portal is an online tool for consultants and other biodiversity professionals to submit and manage their species data online. Data are shared with the NBN Atlas and is made available to LERCs and national recording schemes.

Another online tool where records of bats can be submitted is Ecobat (see references). This initiative was developed by the University of Exeter (with funding from the Natural Environment Research Council), who recognised that there was no standard way of quantifying bat activity recorded at sites subject to development proposals. The tool compares bat activity recorded at a site to bat activity recorded at similar sites locally (from a large dataset) to give an objective quantification of activity levels. The data from Ecobat is shared with the NBN Atlas.



Harvest mouse distribution map



Pole cat distribution map

Appendicies

Appendix 1. Conservation Designations for UK Taxa

The Joint Nature Conservation Committee (JNCC) has collated the contents of many of the various national and international lists designating conservation status into a single downloadable spreadsheet (JNCC, 2018), with guidance, that can be searched or filtered to identify:

- the different conservation designations that a given taxon has;
- the list of taxa that appear on any given list of conservation status or that are protected under any given item of legislation.

This spreadsheet can be used to obtain an up-to-date list of European Protected Species, nationally-protected species and/or national priority species. It can also be filtered by taxon category, for example 'birds', 'vascular plants', etc.

In addition to the above there are county-level lists, which the LERCs report against.

Appendix 2. Invasive Non-Native Species

EU member states are recommended to have a published national list of non-native species, which feeds into regional cooperation agreements. In 2021 there will be a full-scale review of the species lists and an assessment of the application of the new regulations.

In England, the law on non-native species is covered by the Invasive Alien Species (Enforcement and Permitting) Order 2019 (an amendment to the Wildlife and Countryside Act 1981). This prohibits the release, or allowing to escape into the wild, any specimen which is a species of animal which (a) is not ordinarily resident in, nor a regular visitor to, Great Britain in a wild state, or (b) is referred to in Part 1 of Schedule 2 of the 2019 order. This amendment is in line with requirements in Scotland, Northern Ireland and Wales.

For England and Wales, the Schedule 9 list of animal and plant species has been amended (Order 2010). The amendments include adding 24 taxa to part 1 and removing other taxa from part 1. This variation also adds plants to part 2 and removes Japanese Knotweed and Green Seafingers from part 2.

In Northern Ireland, the law on non-native species is covered by Article 15 of the Wildlife (Northern Ireland) Order 1985 (as amended), with a list of species appearing in Schedule 9 of the order.

For plants, correct disposal is essential; information about this is available from Plantlife online (see references).

In addition to the above requirements and guidance there may be regional or county level lists, which LERCs report against.

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