CIEEM

Guidelines for accessing, using & sharing biodiversity data in the UK

October 2023

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CONTENTS

Acknowledgements

This document has been prepared by organisations committed to promoting high standards of collection, management and use of data to inform evidence-based decision-making.

Special thanks are due to Lisa Kerslake CEcol FCIEEM (Swift Ecology), Mike Dean CEcol CEnv FCIEEM (MD Ecology), Andrew Cherrill CEnv MCIEEM, Jo Judge (formerly NBN Trust) and Tom Hunt (formerly ALERC) for their work in revising this guidance.

Errors and Omissions

This document is correct to the best of our knowledge and the authors take no responsibility for errors or omissions. Data users should be aware that information may change over time and to contact their Local Environmental Records Centre if they are unsure of how to proceed.

This document should be referenced as: CIEEM (2020) *Guidelines for Accessing, Using and Sharing Biodiversity Data in the UK*. Chartered Institute of Ecology and Environmental Management (CIEEM) 43 Southgate Street, Winchester, Hampshire, SO23 9EH, UK

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1. Introduction

1.1. Biodiversity (biological diversity) data are defined, for the purposes of this document, as species records (including absence records), habitat data, and designated site information. Biodiversity data includes information which is freely available online as well as information held by local environmental records centres (LERCs) or other organisations/individuals, which will provide them in response to a data search request. They can originate from many different sources and be held in a wide variety of formats.

1.2. It is extremely important to take biodiversity into account when making decisions that have an impact on the environment, whether as part of a development or restoration proposal or not. Indeed, there is often a requirement to do so depending on applicable legislation and national policies. Those making, or advising on, such decisions should use biodiversity data from the appropriate source(s). This is necessary to ensure that decisions are based on the best available evidence and are as cost-effective and transparent as possible.

1.3. For ecology surveys intended to inform an assessment of the effects of land use change, e.g. a development or restoration proposal, a comprehensive desk study should be undertaken at the outset; this will normally include a search for biodiversity data, to identify protected, priority or sensitive sites, habitats or species potentially affected by the proposal under consideration, as well as a review of available contextual information. Desk studies are an important component of a Preliminary Ecological Appraisal (PEA[1]), the first stage of assessing the likely ecological effects of a development proposal, and any subsequent detailed assessment of those effects (termed an Ecological Impact Assessment (EcIA[1])).

1.4. These guidelines have been developed by UK biodiversity data specialists and are aimed at those who are using biodiversity data to support the development planning process (e.g. local planning authorities (LPAs) and ecological consultants). The guidelines provide guidance on when and where it is advisable to source and use biodiversity data, particularly in relation to developments.

1.5. These guidelines are intended to ensure compliance with existing industry standards and guidance, such as BS42020:2013 - Code of Practice for Planning and Biodiversity (BSI, 2013); Guidelines for Preliminary Ecological Appraisal (CIEEM, 2017), Guidelines for Ecological Report Writing 2nd edition (CIEEM, 2017), Guidelines for Ecological Impact Assessment v1.1 (CIEEM, 2018).

1. https://cieem.net/resource/guide-to-ecological-surveys-and-their-purpose/

2. What are biodiversity data?

2.1. Biodiversity data can come in many different forms, but essentially comprise four different types:

i) **Reported records** of a particular species, or taxonomic group of species or species assemblages at a specific spatial reference (normally a 4, 6 or 10 figure Ordnance Survey Grid Reference), including a date when the record was taken. Records will also be kept with the name of the person who originated them (although this information may be kept private for data protection reasons) and may also contain other attributes such as lifecycle stage, sex, and associated habitat of the species. The conservation status may also be included, as may be the distance of the record from the site of interest.

i) **Habitat maps** for a given geographical location, which will also include the date, recorder name and other associated information. They are usually for a larger area than species records and are likely to be defined as a series of polygons on a map (but may be point data). There are different classification systems of habitats commonly used by ecologists, e.g. Phase 1 Habitat Survey; National Vegetation Classification (NVC); UK Habitat Classification (UKHab) and the European Nature Information System (EUNIS).

i) **Details of designated nature conservation sites**, including their boundaries, level of designation (SAC, SPA, SSSI, non-statutory site, etc.), reasons why the site has been designated (e.g. for a rare species or habitat, or a rare assemblage of species) as well as the site's extent (often shown as a map). Additional information may include when a site was last surveyed and how, or the assessed quality or significance of the recorded habitats or assemblages.

i) **Site reports,** which could include Phase 2/NVC/UKHab descriptions and species lists undertaken by the relevant LERC, or survey reports produced by ecological consultants for the site or another site within the search area. However, these are only available in specific cases. The use of data from reports produced by others should always be appropriately acknowledged and specific permissions for use should be sought, where necessary.

2.2. It should be emphasised that biodiversity datasets are, by their nature, incomplete. Some groups of species are better recorded than others, whether nationally or locally. The number of species present in the UK is very large, many are not easy to detect, identify and record, and access to private land to collect such information is frequently difficult or impossible. It is always important to remember that absence of evidence is not the same as evidence of absence. In other words, a lack of records for a particular species does not mean that it is not present and this assumption should not be made. It is also important to note that "absence" records – i.e. where a survey has been carried out and no evidence of a given species was found – can also provide useful information and may be held by the LERC.

2.3. Biodiversity data can come in different forms, which will be suitable for different uses. For example, some LERCs will be able to provide bat species records within a reduced area or at a higher resolution for people planning work on particular buildings or large trees. LERCs can also offer larger, more extensive datasets which map all the relevant species and habitat records as well as the boundaries of local wildlife sites (see Section 4). These services might be useful for someone considering the impact of a larger development.

3. Why are these data needed?

3.1. An understanding of the location and status of species and habitats is essential for the effective conservation and management of biodiversity. Some species and habitats are specifically protected by UK and international law and are a material consideration that need to be considered when assessing whether a proposed development accords with planning policy, or when assessing the impact of a proposed development or other potentially damaging activity. In addition, there may be species and habitats which, although not nationally important, are notable at a local level and may be listed as part of a Biodiversity Action Plan or other local strategy or policy.

3.2. This means that the presence of legally protected or priority[2] species, habitats or sites must be taken into account by developers, landowners and householders, local planning authorities (LPAs), ecological consultants and anyone else who is involved in construction or other works that could have an impact on biodiversity. Using biodiversity data from the outset can highlight the presence of protected or priority species and habitats and helps ecologists to plan and target surveys accordingly. Used properly, biodiversity data should improve the quality of ecological surveys and assessments and provide evidence to planners and other decision-makers that biodiversity has been taken into account and help to demonstrate that the mitigation hierarchy has been applied. As noted, the absence of data is not the same as absence of species : data need to be treated with caution.

3.3. Biodiversity data are extremely important as, aside from use in planning and decision making, they are key to delivering state of environment reporting, informing agri-environment schemes, education, modelling trends in species and habitat distribution (including for invasive non-native species), research and policy making.

2. See Box 1 in CIEEM's Guidelines for Preliminary Ecological Appraisal.

4. How are biodiversity data collected and stored?

4.1. Local Environmental Records Centres (sometimes called biological, biodiversity or simply local records centres) collect, collate, manage and disseminate information relating to the biodiversity of a region. All are run on a not-for-profit basis. Much of the species information comes from amateur naturalists, who collect species and habitat records as a social or leisure activity or as part of local schemes. Data sharing agreements between the LERC and each data provider enable LERCs to provide their records to others, particularly to inform local plan and decision making. In return LERCs support the data providers with training, help in targeting survey effort, facilities, equipment, publications, data storage, management and analysis. All records are **validated** (*carrying out standardised, often automated checks on the "completeness", accuracy of transmission and validity of a record*) and, where possible, **verified** (providing confidence as to the accuracy of identification of what has been observed) by the relevant LERC in conjunction with local and national experts – giving a level of quality assurance in relation to individual datasets/records and before they are shared with other users.

4.2. National bodies with an interest in particular taxonomic groups also collect biodiversity data. These National Schemes and Societies (NSS) typically mobilise a network of volunteers to track the changes in distribution of species groups such as bats, birds or butterflies and will often use standardised sampling methods to do so. Records collected by their volunteers will have also gone through a validation and verification process, in many cases using the same expertise as the LERCs. In some cases the data are provided to the LERC via the local scheme organiser. In other cases the data are held separately by the NSS which collected them.

4.3. Similarly, there are numerous local special interest groups, such as a county bat group, a local mammal group, or a local natural history society, which also collect biodiversity data of relevance to their specific interest. These groups will often provide the data they collect to the relevant LERC, but not in all cases. The groups are typically set up based on local interests, and there is therefore no standard list of such groups relevant to all geographic locations.

4.4. The Multi-Agency Geographic Information for the Countryside (MAGIC) is an invaluable online source of government-sourced environmental information for Great Britain presented as an interactive map and covering rural, urban, coastal and marine environments - see https://magic.defra.gov.uk/home.htm. This includes details of statutory designated sites (mapped boundaries and links to the reasons for designation and information on condition, for example), habitats and species, landscape classifications and historic environment data.

4.5. Specific tools for Scotland are NatureScot's SiteLink for designated sites and the Scotland's Environment Map webpages for habitat maps (e.g. the ancient woodland inventory).

4.6. The National Biodiversity Network (NBN) Atlas is an online tool that enables users to interrogate species records. It provides powerful mapping tools and a large range of datasets submitted by many different organisations including LERCs and NSSs. The NBN Atlas covers the whole of the UK, and there are individual country views, containing the same data and information as the main Atlas through the NBN Atlas Northern Ireland, NBN Atlas Scotland, NBN Atlas Wales and NBN Atlas Isle of Man.

4.7. iRecord (based on the Indicia online recording toolkit and supported by the national Biological Records Centre) is used by some National Schemes for record mobilisation and by a number of individuals to record, store and share their observations. There are also a number of LERC online recording systems available. The Indicia/iRecord network provides another route via which records are verified and the data are made available to LERCs and the National Biodiversity Network Atlas.

4.8. Some LPAs are increasingly requesting that developers, or their appointed ecological consultants, share biodiversity data with the relevant LERC on completion or consent of a planning application so that the information collected can be incorporated into local and national databases, and assist in future monitoring of developments. This is in accordance with CIEEM's expectations of a member's professional obligations. In most cases it is also a requirement for surveys undertaken under a protected species licence from the relevant Statutory Nature Conservation Body. These data could be used to assess the long-term ecological impacts of the development and also to monitor the outcomes of any landscaping or ecological mitigation measures that were proposed and implemented as part of the development. This could therefore also ensure compliance with any planning or legal agreements.

5. How can this information be accessed?

5.1. LERCs generally offer the most comprehensive and current source of protected site, habitat and species data for their defined geographic area[3]. Local contact details can be found via www.alerc.org.uk. NSS hold species-specific data collected by volunteers. Contact information for all NSS can be found via www.brc.ac.uk/recording-schemes. In Northern Ireland, there is a single source for data, CEDaR, the Centre for Environmental Data and Recording.

5.2. The relevant LERC will be able to advise on whether there are specific local interest groups collecting biodiversity data, and whether their records are included within the LERC dataset or not.

5.3. The relevant LERC, NSS and/or local interest groups should be contacted in the first instance. Some have specific forms available on their website which need to be completed to request a data search. There is normally a charge (licence fee) levied by LERCs and NSSs when biodiversity data are provided for commercial purposes. This charge will vary depending on the policies and the overheads of the individual LERC, and reflects the time taken to validate, manage and extract the data; it is not a charge for the information itself.

5.4. Web-based sources such as MAGIC and the NBN Atlas can be accessed directly. It is important to note that there are restrictions on commercial data use of some of the data on the NBN Atlas. Data on the NBN Atlas are provided under one of four licences, three are 'Open' (OGL, CC0 & CC-BY[4]) which allow the data to be used for any purpose and the fourth (CC-BY-NC[3]) is 'Shared' and does not allow commercial use of that data without prior permission from the data provider. Guidance on the definition of non-commercial use is available on the NBN Atlas help pages[5]. Misuse of data on a shared licence may result in a fixed charge notice being issued[6]. NBN data should not be used in place of LERC data as a cost-saving approach. NBN data may differ from LERC data.

5.5. In Scotland, information on NatureScot data that can be freely used is provided on NatureScot's portal. For Northern Ireland, some data may be available on the Republic of Ireland's National Biodiversity Data Centre website as well as from CEDaR (the Centre for Environmental Data and Recording in Northern Ireland).

5.6. Technological advances, funding sustainability and evolving information needs are likely to bring changes to how data are accessed.

5.7. Details of the information to be requested as part of a data search by a consultant to inform a development or restoration proposal, are set out in Section 7.

3. To find out more about the different ways of accessing data, please refer to the 2013 Guidance for Local Authorities on Accessing Biodiversity Information http://www.nbn.org.uk/nbn_wide/media/Documents/Data/Guidance-for-Local-Authorities-on-Biodiversity-Data.pdf
4. More information on data licensing on the NBN Atlas is available here https://docs.nbnatlas.org/data-licenses/
5. https://docs.nbnatlas.org/guidance-on-the-definition-of-non-commercial-use/
6. https://docs.nbnatlas.org/data-licenses/breach-licence-conditions/

6. When should biodiversity data be accessed?

6.1. Biodiversity data should be used by whoever needs to take into account the effect and impact of their plans, actions or decisions on biodiversity. This can include:

- A Strategic Environmental Assessment (SEA) of a plan, programme or development strategy;
- An assessment to inform a planning application, as part of a PEA and/or Ecological Impact Assessment (which, in some cases, will form part of an Environmental Impact Assessment[7]);
- A Habitat Regulations Assessment (HRA) of a plan or project in relation to a European Site;
- An assessment to inform a development intended to proceed under permitted development rights or other consented development, such as exempted development in Ireland;
- A protected species survey prior to undertaking works to an existing property, particularly where the presence of bats has been confirmed, or is highly likely); or
- An assessment of the effects of changes in land use.

6.2. In choosing whether or not to use biodiversity data, decision makers and developers (or those acting on their behalf) should be aware that the correct use of such data has the following benefits:

- Highlighting potential constraints at an early stage in the planning process, which might reduce the risk of delays caused by discoveries later on;
- Facilitating good survey design by contextualising a site;
- Providing an indication of the species and habitats likely to be found at a particular site;
- Providing evidence for the need to survey for protected or priority species in a timely manner, thus helping to plan seasonally-constrained surveys;
- Providing an early indication of the presence of invasive non-native species.

7. http://www.legislation.gov.uk/uksi/2018/695/contents/made

7. Background data searches for development

7.1. Desk studies are an important part of a Preliminary Ecological Appraisal (PEA) and any subsequent Ecological Impact Assessment (EcIA), and (in most cases) a Preliminary Bat Roost Assessment. Guidance on the information to be collected as part of a desk study for a PEA or EcIA, and the appropriate sources, are set out in CIEEM's Guidelines for Preliminary Ecological Appraisal[8].

7.2. When requesting ecological surveys or reports to inform a planning application, the LPA should make it clear that it expects a desk study, including a data search with the LERC or equivalent, to be undertaken, as a proportion of the information that will be relevant in most cases can only be obtained from the LERC or equivalent. The summarised results of the desk study should be included in the ecological report(s). The results need to be interpreted, to inform the baseline conditions and assessment of ecological effects, and edited where necessary to prevent sensitive or confidential records being made public. The ecological consultant should make the developer aware of any such requirements and will normally pass on the costs of the data search to their client. However, it is important that the ecological consultant obtains the data on their client's behalf, to ensure that the correct information is requested, and that the data are interpreted by an ecologist with appropriate expertise[9].

7.3. Search areas for desk studies should relate to the Zone of Influence of a project (the area over which it might affect a given ecological feature), which will vary dependent on the nature and scale of the proposals. They may vary depending on what information is being sought. Further information is provided in related guidance such as *Guidelines for Preliminary Ecological Appraisal (CIEEM, 2017), Guidelines for Ecological Impact Assessment in the UK and Ireland: terrestrial, Freshwater, Coastal and Marine v1.1* (CIEEM, 2018), and *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (Collins, 2016).

7.4. In some cases the background data search will require more than one organisation to be contacted to request information, such as:

i) Where the site, or the study area for the data search, is located across the boundaries of regions covered by LERCs, in which case the consultant will need to contact more than one LERC. This is likely to be the case for sites located on or close to county boundaries, for example.

ii) Where the LERC is not the sole likely source of relevant information (see Paragraphs 4.2 and 4.3). It is the duty of the consultant to ascertain whether there are relevant bodies besides the LERC which need to be contacted to obtain a full dataset.

7.5. When interpreting the results of a data search, a consultant will need to give specific consideration to the age and likely validity of any records. Greater reliance can be placed on records that have been verified than on those that haven't. Erroneous records can sometimes be provided as part of a data search – if a consultant considers this likely to be the case they should contact the organisation which provided the record to investigate further (rather than simply ignoring it).

7.6. There is no definable cut off date for determining that desk study records of a certain age are no longer valid. Each record will need to be considered on its own merits. Where there is strong evidence to suggest that a species is no longer present despite the data search identifying a record, this should be explained clearly in any report. In the absence of such evidence the record should be considered to be relevant. In addition, historical data can be useful in identifying trends.

7.7. Where planning applications are delayed, a new data search may be required (see CIEEM's Advice Note on the Lifespan of Ecological Reports[10]). The LERC's terms of use may also define a limit on the length of time the data can be used.

8. https://cieem.net/resource/guidance-on-preliminary-ecological-appraisal-gpea
9. Some data providers also have restrictions on the supply of certain datasets to members of the public and can only release data to those with appropriate competencies, usually ecological consultants.
10. https://cieem.net/resource/advice-note-on-the-lifespan-of-ecological-reports-and-surveys/

7.8. It is generally expected that a desk study, including a data search, will be a key part of the ecological surveys or reports produced to inform a planning application. Freely available web-based sources of data and contextual information should always be used (but with due regard to the restrictions on use of NBN Atlas data set out in Paragraph 5.4). In some cases, it may be acceptable to not undertake a data search with the LERC or other relevant NSS or local interest groups. For example:

i) Pre-commencement consultation and agreement with the LERC and/or local authority ecologist has determined that a data search is not required.

ii) Situations where the data search would be extremely unlikely to provide information needed to inform the assessment, due to the scale and location of the proposed development (specific examples are provided in Appendix 2 of the Guidelines for Preliminary Ecological Appraisal Second Edition (CIEEM, 2017)). The appropriateness of excluding a data search will need to be judged on a case-by-case basis as, in most situations, it will be essential to carry out such a search even if the development is very small or is likely to have a low impact. It can be very difficult to demonstrate that a data search would not have provided relevant information without obtaining and reviewing those data.

iii) In some cases for Preliminary Roost Assessments of buildings in low impact / small-scale scenarios, such as an extension to a residential property, loft conversions (full or partial), installation of Velux/dormer windows, single modern agricultural or similar building conversion or demolition; however, it should not be assumed that data searches are never required for such scenarios and this must be judged on a case by case basis and justified accordingly.

iv) Single-species surveys, where a survey undertaken at the correct time of year and following an appropriate methodology confirms likely absence. However, it should be noted that a data search is still likely to be required for mobile species, which could move into the site from adjacent areas; for cryptic species that may not be evident (or their field signs may not be evident) at certain times of year; for species whose presence or abundance is known to vary extensively year to year; or in situations where a field survey confirms presence of a species, and contextual information is required to allow an assessment of effects and to design appropriate mitigation).

7.9. In all cases it should be made explicit in the ecological report that a data search has not been undertaken, justification for the absence of a data search should be included, the likelihood of key information being missed as a result should be assessed, and the implications of this clearly set out. Whilst web-based sources such as the NBN Atlas provide a useful dataset, these should be used to complement, rather than as a substitute for, records held by the LERC or equivalent.

7.10. It should also be noted that in circumstances where a protected species 'mitigation' licence will be required, a desk study is likely to be needed to the appropriate distance, irrespective of the scale of the development (this will be a radius of at least 2 km in the case of bats, for example).

7.11. The cost of data provision or time constraints[11] will not be considered as valid reasons for non-compliance.

11. Some LERCs offer a fast track search facility at additional cost, or a reduced search area for bats in relation to a single dwelling.

8. Provision of biodiversity data to LERCs

8.1. Following the completion of surveys, all relevant biodiversity data obtained should be submitted to the relevant LERCs and other groups as appropriate, unless the client has expressly refused permission for this[12]. A statement to this effect should be included in the consultants' Terms and Conditions. Data can be submitted direct to the LERC. Note that where a protected species licence is required, submission of such data by the stated deadline is a requirement of the licence.

12. However, it should be noted that reports accompanying a planning application will usually eventually be posted on the LPA planning website, thus effectively in the public domain.

9. Metadata Standards

9.1. Metadata are additional sets of information supplied to facilitate the understanding and use of data by describing the origin, content, purpose, format, location and limitations of a given data set.

9.2. Ecological data are collected for a variety of reasons and may be passed to third-parties, or deposited in an open-access archive. The data may or may not be incorporated into a formal report, but common to all situations is the need for a comprehensive set of metadata to enable potential users to assess whether the data are 'fit for purpose'. The end-users may not have been involved in the planning, execution or reporting stages of the original survey. Surveyors, authors of reports, and managers of data archives therefore have a responsibility to ensure that metadata are freely and fully available. It cannot be assumed that end-users of a dataset will know which data collection methods have been used or understand potential weaknesses in the data.

It is recommended that metadata management is incorporated into members' in-house quality assurance procedures in reporting, sharing and archiving of ecological data. A key element of this is to establish a metadata standard.

9.3 A metadata standard has two elements defining:

- guidance on the set of information to accompany a dataset and necessary for full and appropriate use of the data; and
- principles of good practice to be followed in the management of data and the accompanying metadata.

9.4 Metadata management principles contributing to efficient data management include ensuring that metadata are:

- recorded fully by the originator of the data;
- stored with the 'raw' data;
- in a portable format that can be transmitted with the data;
- documented whenever derived summary statistics, or the original data, are incorporated into written reports;
- recognised as being an integral part of the data set; and
- shared freely wherever possible.

9.5 Metadata allow an assessment of the reliability of data per se and conclusions based upon these data. It follows that:

- the field surveyor has responsibilities in the documentation of metadata and passing it on accordingly;
- metadata should be documented fully in survey reports produced for clients, but should also be stored with the raw data for subsequent use and dissemination;
- where data are shared with outside bodies and individuals the metadata should be transmitted with the dataset;
- organisations receiving data from third parties, or contracting surveyors, should check that all data are accompanied by relevant metadata;
- it may be helpful to specify metadata reporting standards in contracts with surveyors and data suppliers; and
- particular care should be taken to ensure that key elements of the metadata are not omitted when editing reports written by others, or incorporating elements of third-party reports into other documents.

Raising the profile of professional ecological and environmental management and promoting the highest standards of practice for the benefit of nature and society.

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