

Biological Recording

Field Studies Guidance Note

What is Biological Recording?

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What is Biological Recording?

Biological recording: When someone records information on where a living organism, habitat or community is found, when it was seen and by whom.

Biological records describe the presence, abundance (number of organisms), associations (e.g with habitats or other living organisms) and changes, both in time and space, of wildlife.

What is a Biological Record?

A biological record in its most basic form is a record made by a person of an organism occurring at a place at a specific time. So, for any biological record to be accepted, it must have four basic components:



Who: the name of the recorder (person who found/saw the organism) and the determiner (person that identified the organism). These can be the same individual or different individuals.

What: the name of the organism seen (i.e. the species/genus/family). The use of scientific names is preferred in most cases as common names can vary by region or sometimes refer to several different species.

Where: the location where the organism was seen. The location should ideally be a georeference such as a grid reference.

When: the date the organism was observed (or collected if referring to a record where a specimen is taken).

Data Resolution

Data resolution refers to the level of detail that is contained within a biological record. The higher the resolution of a biological record, the more precise and useful it is. You can increase the resolution of a biological record by providing more information.

	Low Resolution Data		High Resolution Data
Who?	Recorder (Group) Recorder: Friends of Darwin Close	Recorder (Individual) Recorder: Jane Doe	Recorder & Determiner Recorder: Jane Doe Determiner: Jane Doe
What?	Family Level Identification Coccinellidae (Ladybirds)	Genus Level Identification <i>Coccinella</i> sp.	Species Level Identification <i>Coccinella septempunctata</i> (7-spot Ladybird)
Where?	1km x 1km Grid Reference NY0114	100m x 100m Grid Reference NY016141	10m x 10m Grid Reference NY01641419
When?	Year Only 2016	Month and Year September 2016	Full Date 15/09/2016

Who: the full name of the recorder and the determiner is preferable, so any queries about the record can be directed to the correct person.

What: the more specific the taxonomic classification, the better. Whoever determines the identification (ID) should only classify organisms to a level they're confident with.

Where: use the most accurate geographic resolution appropriate for the record. Your grid reference should not be smaller in area than your survey area (e.g. if you were surveying a 100m square field for birds, you should use a 6-figure grid reference).

When: providing the actual date is much more useful than just the year.

Data Quality

In addition to improving the resolution, the data quality can be improved by adding other information. For example:

- **Providing habitat, life stage, sex and/or abundance details** can help those studying the data to investigate ecology, species distributions, and can help inform conservation.
- **Detailing the survey methods and effort** can help data scientists establish how representative your record is of local populations and allow different records to be compared.
- **Providing site names** so that a grid reference can be cross-referenced.
- **Detailing the names of any individuals that have confirmed the species determination for you** you may ask other recorders or experts to help with the process of verifying the record.



Why: Detailing habitat, microhabitat, and environmental conditions will help to work out why the species is located at that specific site at that specific time.

How: Detailing the survey methods and effort can help us establish how representative a record is of local populations.

When recording, it's always worth checking with the National Recording Scheme/Societies for the group that the organisms belongs to for guidance on which additional information is useful.

A list of National Recording Schemes & Societies is available from the Biological Records Centre website: www.brc.ac.uk/recording-schemes

Submitting a Biological Record

Biological records are only useful if they are available to potential users of the data, so they should be submitted to a relevant organisation. Where to submit biological records can be confusing because there are a wide variety of organisations involved in the generation, collation, and use of biological records.

The important thing to remember is that there is no right or wrong regarding where records are submitted, it's up to you where you submit them. When considering where to submit a record, recorders should think about how they would like their record to be used and select the appropriate organisation(s).

- **National Recording Schemes & Societies (NRSSs)** collate biological records of specific groups of organisms.
- **Local Environmental Record Centres (LERCs)** collate biological records for specific geographic areas.
- **Other organisations** collate biological records for specific projects or initiatives.

Recorders should contact the organisations they wish to submit their records to, in order to establish their submission preferences.

Digital advances have resulted in a number of free-to-use online biological recording platforms. These have the benefit of providing biological recorders with their own means of collating their own records, and the records may be automatically accessible to NRSSs and LERCs.



iRecord is a digital recording platform (you can use their website or their mobile app) where you can submit records for any organisms you see. The system uses a network of recorders to verify records and makes records available to NRSSs and LERCs. Plus, it's free and easy to use (there are also many tutorials on how to use it on YouTube).

More information: www.brc.ac.uk/irecord



iNaturalist is an online system that collects wildlife observations, with a feature that suggests identification of organisms from a photo using artificial intelligence (AI). Although this app has proven popular and can be useful for larger distinct species, it needs to be used with caution. For some species, identification will require the use of microscopes and keys to distinguish important features that are not visible in photographs – this is especially true for many invertebrates and plants.

More information: www.inaturalist.org

Validation and Verification

Once a record has been submitted, the information it contains should be validated and verified. These two processes help ensure that records are correct and accurate.

Validation is the process of checking that data is in the correct format and it is important in maintaining accuracy.

To validate the data, data managers will check the format is correct for dates, references, species names and other fields. Online recording platforms often only allow data to be submitted in the correct format. If you are imputing data to the platforms using common names, check that they are associated with the correct species – common names can vary locally or refer to multiple species. The most current scientific name for a species should be accessible through the Dictionary of UK Species.

Verification is the process of establishing confirmation that the data is correct and accurate.

Georeference verification: Getting a grid reference wrong by a single digit can displace the record significantly. For example, a bat roost recorded in Cumbria at NX976180 incorrectly submitted as NX876180 would place it in the Irish Sea. Providing a site name allows data managers to cross-reference the name with the georeferenced provided.

Species identification verification: To ensure all species determinations are correct, verifiers may ask questions or for physical evidence. Questions may relate to things such as the recorder's experience of ID guides used. Evidence can range from photos, sending them a specimen or evidence such as droppings. Verification is an important part of ensuring data quality, so don't be offended if you are asked to provide more information.



What is the Point of Biological Recording?



Monitoring – Biological records can be used to assess the status of a species, or habitat, at a point in time. By comparing data across time, trends can be established to identify if the species/habitats are changing in some way.

Research – Data can be used to compare more than just distribution or abundance, meaning that biological records can be used in all sorts of different research projects.



Conservation – Biological records provide alerts of any species that need to be considered within the building planning process and they are important for wildlife site designations. Additionally, they enable a species to be assessed for its conservation status, allowing conservationists to target their efforts on the habitat and species that need them the most.

Raising awareness – Many biological recording initiatives double up as public engagement activities. The RSPB Garden Birdwatch engages with huge numbers of volunteers to generate records and helps raise awareness of garden bird populations.



Policy – Government policy is influenced by biodiversity data and the reports (e.g. State of Nature Report) that are produced from data collected by biological recorders.

The feel-good factor – Recorders enjoy observing wildlife they see and get satisfaction knowing that their records help research and conservation. They meet people with similar interests, and some even record competitively.

Skills development – Biological recording is a great way to develop survey and identification skills, which are useful for researchers, conservationists and ecologists.



Further Information

Useful Resources

iRecord Website. Biological recording platform. www.irecord.org.uk

National Biodiversity Network Website. A collaborative partnership created to exchange biodiversity information. www.nbn.org.uk

Biological Records Centre. Supports biological recording for a wide range of plant and animal groups. They also hold information about National Recording Schemes and Societies (NRSS) across the UK. www.brc.ac.uk/recording-schemes

Association of Local Environmental Records Centres. Find a full list of Local Environmental Record Centres (LERC). www.alerc.org.uk/lerc-finder.html

References

Bell, C., Brown, K. D., and Watts, O. (2022) *Field Studies Guidance Note: Grid references for biological recording*. Shrewsbury: Field Studies Council

Brown, K.D. (2022) *Biological Recording*. Available at: <https://biologicalrecording.co.uk/> (Accessed: 28 July 2022)



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