

Making a biological record

In order to make a biological record four pieces of information are compulsory (*who*, *what*, *where* and *when*). If any of these pieces of information are missing the record can not be accepted.

These squares indicate the compulsory fields for the National Earthworm Recording Scheme.

There is a wealth of additional information that can be provided that may add to the usefulness of the record by expanding on the four core fields (*who*, *what*, *where* and *when*). To make recording simpler, we have produced drop down menus for some of these additional fields. The options available are provided alongside the field descriptions in the guide below.

For details on how to conduct the sampling please see the *ESB Sampling Standard Protocol* (available to download from our website).

Who

Recorder

Please provide the name of the individual who collected the specimen.

Determiner

Please provide the name of the individual who identified the specimen. This may be the same individual as the recorder.

Verifier

If your identifications have been verified by another earthworm recorder or scientists, their name should be recorded in this field. This can't be the same individual as the determiner.

What

Species

Each species should be recorded using its scientific name. A separate line should be used for each species found at a location (so three species at one location would count as three records). UK species are listed below:

Allolobophora chlorotica
Allolobophora cupilifera
Allolobophoridella eiseni
Apporectodea caliginosa
Apporectodea icterica
Apporectodea limicola
Apporectodea longa
Apporectodea rosea
Dendrobaena attemsi
Dendrobaena hortensis

Dendrobaena octaedra
Dendrobaena pygmaea
Dendrobaena veneta
Dendrodrilus rubidus
Eisenia andrei
Eisenia fetida
Eiseniella tetraedra
Helodrilus oculatus
Lumbricus castaneus

Lumbricus festivus
Lumbricus friendi
Lumbricus rubellus
Lumbricus terrestris
Microscolex phosphoreus
Murchieona muldali
Octolasion cyaneum
Octolasion lacteum
Satchellius mammalis

Number

Abundance can be recorded by specifying the number of individuals found in the 'Number' column. This is particularly useful when standardised sampling has taken place as comparisons between sites are possible.

Where

Grid Reference or Latitude/Longitude

Grid references are our preferred means of location data and can be attained through the use of ordnance survey maps or online grid reference tools (<http://gridreferencefinder.com>). Please provide a 6-figure grid reference for each record. *For a better understanding of how grid references work please check out <http://www.ordnancesurvey.co.uk/blog/2013/03/map-reading-skills-learn-how-to-use-grid-references/>*

Latitude/longitude can be provided by those that have access to GPS equipment as an alternative to a grid reference.

Site Name

The site name should be recorded wherever possible. This can be the name of the site (e.g. name of reserve, school or woodland) or the address (e.g. 32 King Street).

County

Local records are held by Local Biological Records Centres (LBRCs), so providing the county improves our data sharing processes. The county should be recorded wherever possible.

When

Date

The date of specimen collection should be recorded in the standard dd/mm/yyyy format.

Additional Fields

Habitat

Pick the habitat that best describes the location. Options in upper case describe general habitats and options in lower case describe more specific habitats. If you feel the location does not fit into any of the categories below please record it as 'other' and specify in the comments box.

010 WETLAND	040 URBAN	070 SEMI-NATURAL WOODLAND
011 fen	041 park	071 deciduous
012 carr	042 orchard	072 coniferous
013 bog	043 churchyard	073 mixed deciduous/coniferous
020 HEATHLAND/MOORLAND	044 garden	080 PLANTATION WOODLAND
021 lowland wet heath	045 compost bin	081 deciduous
022 lowland dry heath	050 FARMLAND	082 coniferous
023 valley mire	051 arable	083 mixed deciduous/coniferous
024 upland heath/moor	052 pasture	090 BUILDING
030 GRASSLAND	060 SCRUBLAND	091 glasshouse (heated)
031 acid grassland	061 dense scrub	092 glasshouse (heated)
032 neutral grassland	062 scrub with open areas	100 CAVE/TUNNEL/WALL
033 calcareous grassland		110 WASTE GROUND
034 upland grassland		120 OTHER

Substrate

301 rock	307 bark surface	313 fungi
302 stone	308 dead wood	314 nest (specify)
303 shingle	309 dead wood/under bark	315 shore line jetsam
304 soil/sand	310 moss/lichen	316 human rubbish
305 leaf litter	311 dung heaps	317 other (specify)
306 tussocks/clumps	312 carrion	

Method

Different sampling methods will often yield different species as they may target different substrates or micro-habitats.

601 hand sorted soil pits (specify size)	605 Winkler bag
602 sieved leaf litter	606 pitfall trap
603 mustard extraction	607 ESB standard soil pits protocol
604 casual/turnover	

Comments Field

The comment box should be used to record any data or information it was not possible to record in the other fields (for example additional habitat details or the size and number of soil pits per site). Where you have chosen an option that states 'specify', please enter the details in the comment box.

Some earthworms exist in different morphs (for example *Allolobophora chloritica* occurs in a pink and a green form). If you are able to state what morph the species is please add this to the comments box.

Altitude information can be attained through ordinance survey maps, GPS equipment or online tools (<http://www.daftlogic.com/sandbox-google-maps-find-altitude.htm>).

Any additional fields can be entered in here such as any notes regarding species of plant present, soil texture, soil pH, soil moisture, soil temperature, aspect and slope.

Many sites across the UK are designated due to their importance to biodiversity, geology or natural beauty. Site designations can be researched online through the Natural England website or by simply asking the authority responsible for granting permission to sample in your initial correspondence. If multiple designations apply please record these in the comments box. The site designation should be recorded wherever possible.

- Special Protection Area (SPA)
- Special Area of Conservation (SAC)
- Site of Special Scientific Interest (SSSI)
- National Nature Reserve (NNR)
- Local Nature Reserve (LNR)
- Local Wildlife Site
- National Park
- Global Geopark
- County Wildlife Site
- Local Geological Site
- Regionally Important Geological Site (RIGS)
- Ramsar Site
- Area of Outstanding Natural Beauty (AONB)
- Site of Importance for Nature Conservation (SINC)
- Biosphere Reserve
- Site of Nature Conservation Importance (SNCI)

You can never provide too much information in the comments box!

Submitting your records

Please note that all records submitted to the National Earthworm Recording scheme will be shared responsibly with external organisations, such as Local Biological Records Centres and the National Biodiversity Network. Earthworm records will be made freely available, alongside other wildlife records, to the general public.

There are two methods of submitting records to the ESB:

1) Our *Earthworm Records Submission Sheet* is an excel spread sheet that is available to download at <http://www.earthwormsoc.org.uk/further-information/downloads>

This can be completed and submitted to the National Earthworm Recording Scheme at info@earthwormsoc.org.uk with the subject heading 'Earthworm Records (Your Name, Date of submission)' e.g. Earthworm Records (John Smith, 01/01/2000)

2) User of iRecord can use the Earthworm Survey form following the instructions below:

1. Log in to iRecord at www.brc.ac.uk/irecord/

Please note that you must have an iRecord account in order to submit records through the iRecord system.

2. Click on **Record** on the menu bar.

3. Select the option **Activities**.

4. Click on the **Browse all activities** tab.

5. Enter **Earthworm** into the search bar and click **Go**.

6. Click on **Enter an earthworm record** to begin using the form.

The screenshot shows the iRecord website interface. The top navigation bar includes 'Home', 'Record', 'Explore', 'Summarise', 'Verify', 'Download', and 'Forum'. The 'Record' menu is open, showing options: 'Enter a casual record', 'Enter a list of records', 'Enter records at several places', and 'Activities'. A red arrow points to 'Activities'. Below the menu, there is a 'Recent sightings' section with a table of records. The table has columns for Species, Site name, Grid Ref, Date, and Recorder. One record is visible for 'Enchytraella' at 'Landscape'. To the right, there is a map showing the location of the record.

The screenshot shows the iRecord website interface with search results for 'Earthworm'. The 'Activities' section is active, and the 'Browse all activities' tab is selected. The search bar contains 'Earthworm' and a 'Go' button. Below the search bar, there is a table with columns for 'About the activity', 'Links', and 'Actions'. The 'Enter an earthworm records' link is highlighted with a red circle. The table also shows a description of the activity: 'Recording form for the Earthworm Society of Britain Member'. At the bottom, there are pagination controls: 'first', 'prev', '1', 'next', 'last' and 'Showing records 1 to 1 of 1'.

The form will allow you to enter multiple records for the same site and has a great map function for finding the location data.