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Earthworm Society of Britain  
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## Introduction

The Earthworm Society of Britain (ESB) was founded in 2009 to promote earthworms and conduct research. Distribution data for earthworms across the UK and Ireland remains relatively poor compared to other taxa, despite acceptance from the scientific community and general public that earthworms are important organisms providing vital ecosystem services such as soil aeration/drainage, nutrient recycling and decomposition of dead plant material (and even our own garden waste in compost heaps).

In 2009 the ESB launched the National Earthworm Recording Scheme. Between 2009 and 2013 the ESB focussed on training new earthworm recorders and promoting the society to the general public. In 2014 the main focus of the society was to generate and collate earthworm records. This report summarises the records submitted to the National Earthworm Recording Scheme during 2014.

## National Earthworm Recording Scheme

In spring 2014 the ESB released a range of recording documents in order to standardise earthworm sampling methods and support earthworm recorders. These documents include:

- Earthworm Recording Form: a form that can be used in the field to record data for the required and optional fields of an earthworm record.
- Earthworm Recording Sheet: This Excel spreadsheet is the format by which records should be submitted to the National Earthworm Recording Scheme.
- Earthworm Recording Instructions: This guide accompanies the Earthworm Recording Form and Earthworm Recording Sheet, giving full explanations for all the required and optional fields.
- Soil Pit Sampling Guide: This document provides a step by step guide to sampling for earthworms in the soil using the standard protocol for the National Earthworm Recording Scheme.

Furthermore, the website was updated to include all of the above guidance and make it freely available to the general public.

In order to encourage previously trained earthworm recorders to undertake sampling and submit records, the ESB hosted three two-day field meetings during 2014 (in Bracknell Forest, London and Kent). Each field meeting consisted of one day of earthworm sampling across a number of sites and habitats. During the sampling day new and experienced earthworm recorders were introduced to the recording documents and standard sampling protocol. The second day of each event consisted of a lab-based identification workshop where recorders identified specimens collected from the previous day (or any specimens they had personally collected previously) with support from experienced ESB tutors. Verification of previously identified specimens was also available through the ESB tutors.

The ESB also became the verifier for all earthworm records on iRecord and has designed and launched an iRecord earthworm recording form. The backlog of earthworm records on iRecord has been cleared and the ESB aims to verify all new records within two weeks of submission.

## How many records were received?

In total 2437 records were submitted to the scheme during 2014. Please note that this includes records made by recorders in 2014 and records made in previous years by recorders that were only submitted to the scheme in 2014.

Earthworm records originate from a number of sources (see figure 1). They can be generated directly by the ESB (through its recorders and field meetings) or can be collated from external sources (such as museum collections, biological records centres, research projects).

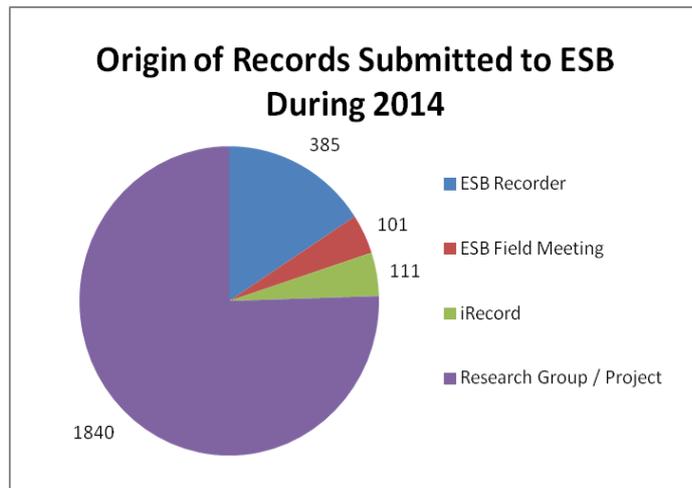


Figure 1 (left): Chart showing the origin of records submitted to the ESB during 2014.

The ESB generated 486 records directly (285 through ESB recorders and 101 through field meetings). This is a great improvement on 2013 when no records were generated directly by the ESB.

Over 75% of earthworm records received during 2014 were from research projects (and mostly from Statutory Nature Conservation Organisations). 111 records were collated from iRecord, which includes sorting through the backlog of earthworm records from when iRecord was launched.

The ESB 'Earthworm Recorder of the Year' award for 2014 goes to **Victoria Burton** who submitted 181 earthworm records. The table below illustrates the top 10 ESB recorders of 2014.

**Table 1: Top 10 ESB recorders**

| Position | First Name   | Surname          | Number Of Records |
|----------|--------------|------------------|-------------------|
| 1        | Victoria     | Burton           | 181               |
| 2        | Keiron Derek | Brown            | 126               |
| 3        | Kerry        | Calloway         | 34                |
| 4        | Vicky        | Gilson           | 33                |
| 5        | Salma        | Mostafa          | 32                |
| 6        | Rachel       | Clark            | 23                |
| 7        | Keith        | Lugg             | 20                |
| 8        | Dan          | Carpenter        | 15                |
| 9        | Felicity     | Crotty           | 9                 |
| 10       | Paul         | Tinsley-Marshall | 8                 |

## What species were recorded?

Records of 25 different species of earthworm were submitted to the National Earthworm Recording Scheme during 2014 (see figure 2).

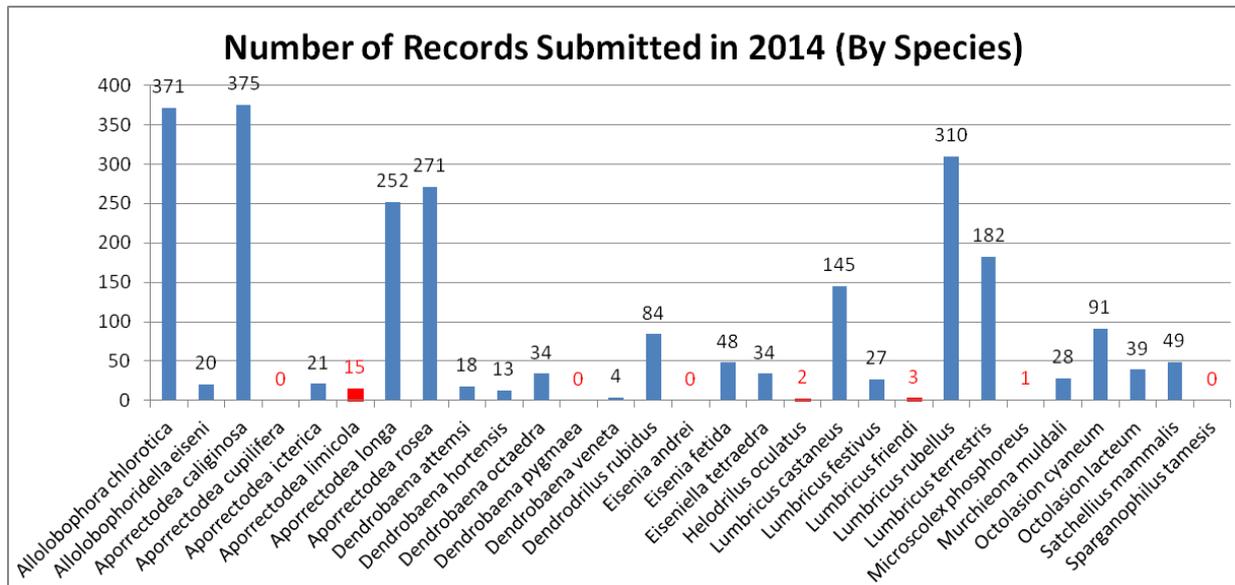


Figure 2 (above): Bar graph demonstrating the number of records received for each species of earthworm. Figures in red indicate species of earthworm that are considered extremely rare.

As expected, these records include a large number of records of the species thought to be most common (such as *Allolobophora chlorotica*, *Aporrectodea chlorotica* and *Lumbricus rubellus*).

Records of 4 species considered extremely rare (NECR145: Earthworms in England: distribution, abundance and habitats) were submitted to the scheme during 2014. Most of these were records submitted to the ESB through Natural England. These records were gathered in order to inform the report referenced previously. However, the following species were recorded by ESB recorders:

- Aporrectodea limicola*: Found by Keiron Brown in his parents' garden in Cumbria
- Helodrilus oculatus*: Discovered in the bank of a stream in Richmond Park during the ESB London Field Meeting 2014.
- Microscolex phosphoreus*: Recorded by Keith Lugg from a garden in Devon.

## British Isles Earthworm Distribution

Figure 3 demonstrates the locations of all the earthworm records submitted to the National Earthworm Recording Scheme during 2014 (indicated by the clear red squares) in relation to records collated for the Carpenter et al (2012) paper (indicated by black squares).

Figure 3 also illustrates that the earthworm records collated during 2014 significantly increase our record of earthworm distribution across England, Scotland and Wales. However, no earthworm records were submitted from Northern Ireland or Ireland during 2014.

It can also be seen from this distribution map that there are still large areas of the British Isles where no records of earthworms have been submitted to the National Earthworm Recording Scheme.

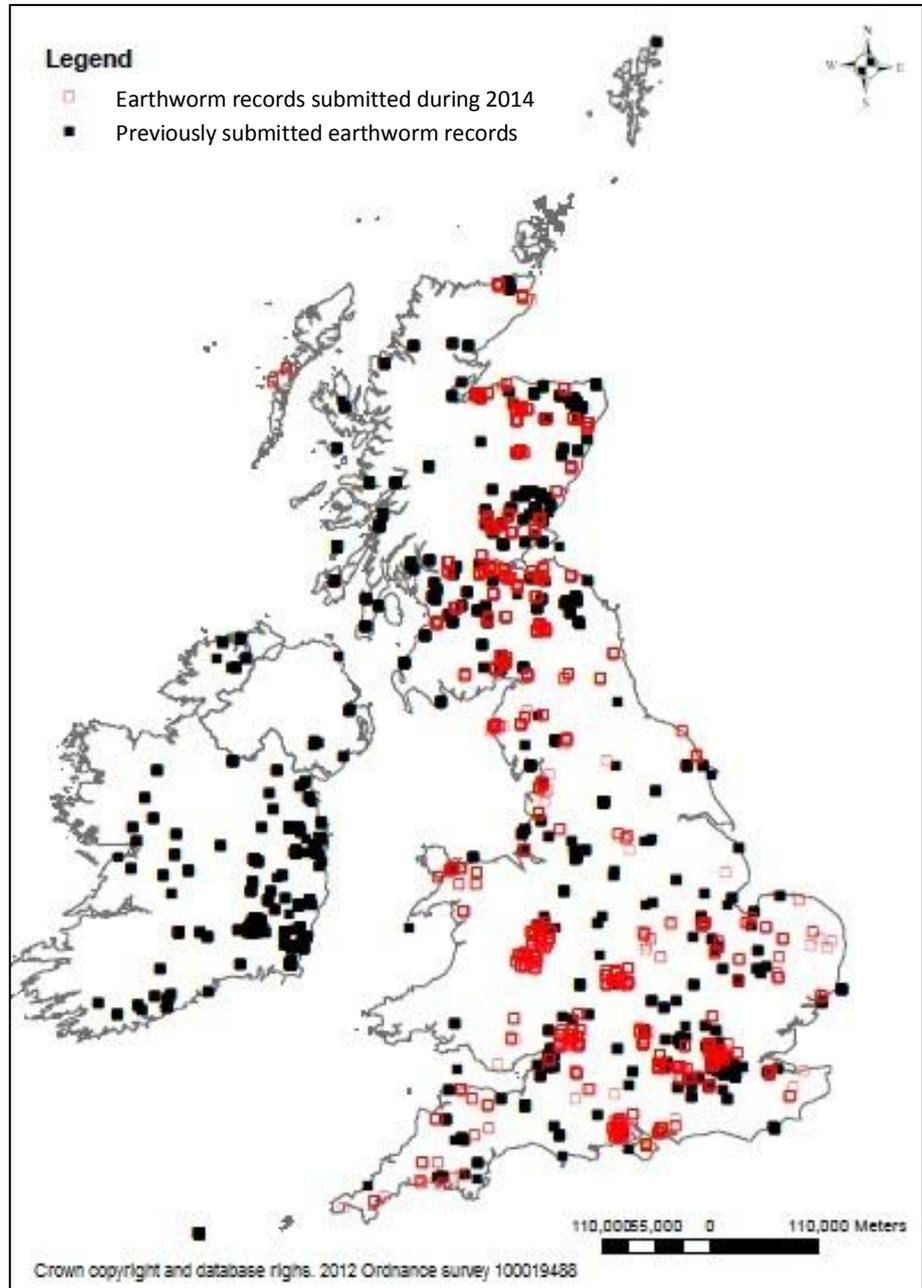


Figure 3 (above): Map of the British Isles showing the distribution of earthworm records for all UK species.

Furthermore, many of the areas where records of earthworm species are present require more sampling in order to create reliable distribution maps for specific species.

## Distribution of *Dendrobaena hortensis* in the British Isles

*Dendrobaena hortensis* is an epigeic earthworm that is considered rare in the UK (Sherlock 2012).

Although only 13 new records were submitted to the National Earthworm Recording Scheme in 2014, it was recorded in 10 different counties.

Six of these counties (Conwy County, Cumbria, Devon, Lancashire, Norfolk and Somerset) appear to have no previous records of *D. hortensis*.

The distribution of records for *D. hortensis* is clearly incomplete as individual records are isolated from each other.

Further recording effort is required in order to establish the true rarity of this species and the true distribution for this species.

The lack of *Dendrobaena hortensis* records and subsequent incomplete distribution map is typical of earthworm species in

the British Isles. This is particularly evident in species considered rare, such as *D. hortensis* as individual records are often large distances apart from other records of the same species.

Although 2014 was a very successful year for the ESB in terms of earthworm recording we would like to continue improving on the number of records submitted to the National Earthworm Recording Scheme per annum. Therefore we will be running a number of identification workshops during 2015.

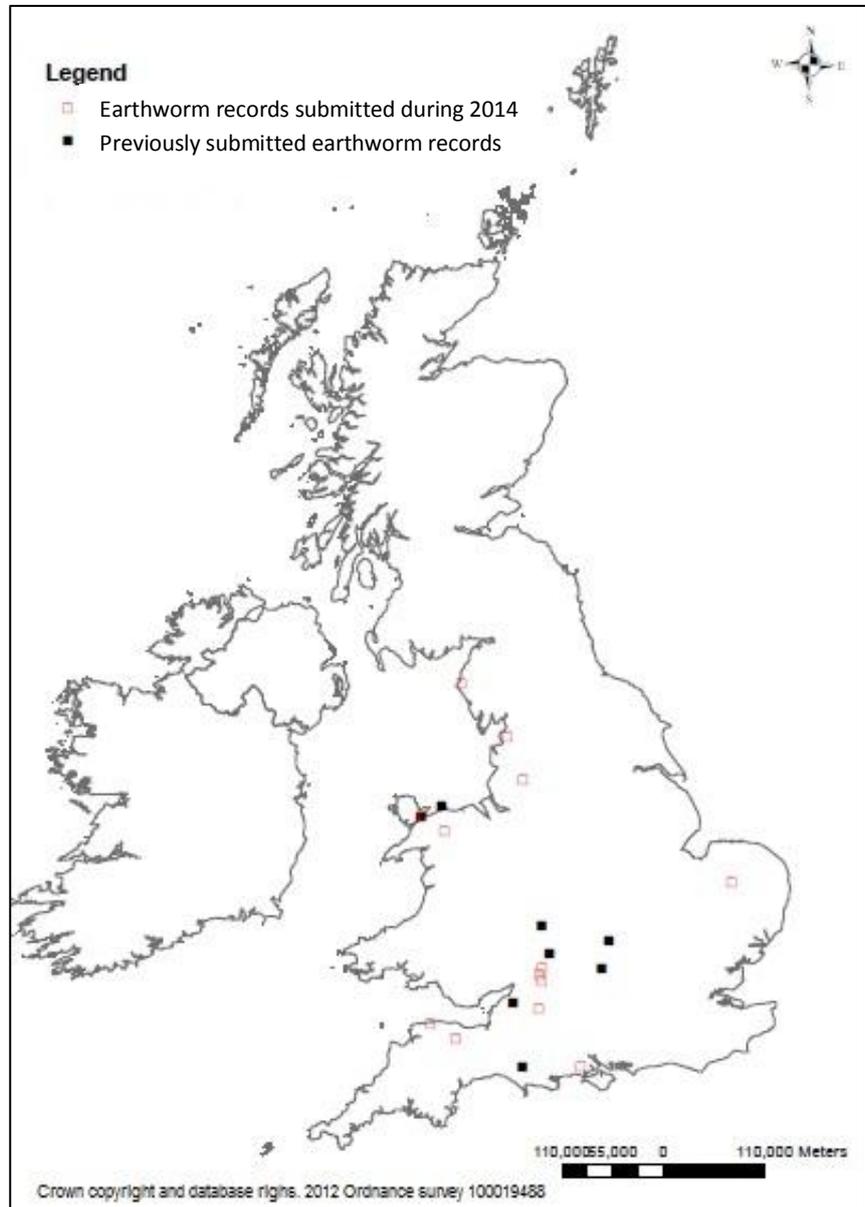


Figure 4 (above): Map of the British Isles showing the distribution of earthworm records for *Dendrobaena hortensis*.

Upcoming ESB events in 2015 (please contact [keironderekbrown@gmail.com](mailto:keironderekbrown@gmail.com) to book spaces)

|                     |  |                         |
|---------------------|--|-------------------------|
| 21/03/15 - 22/03/15 | <b>ESB Preston Montford Field Meeting</b>      | Shropshire FULLY BOOKED |
| 24/04/15            | <b>Richmond Park: Earthworm Talk &amp; Dig</b> | London                  |
| 23/06/15            | <b>UK Earthworm Identification Workshop</b>    | Cumbria                 |
| Summer 2015         | <b>ESB Yorkshire Field Meeting</b>             | Yorkshire               |
| 17/10/15 – 18/10/15 | <b>ESB Thames Valley Field Meeting</b>         | Berkshire               |

## References

Carpenter D, Sherlock E, Jones DT, Chiminoides J, Writer T, Neilson R, Boag B, Keith AM, Eggleton P (2012) Mapping of earthworm distributions for the British Isles and Eire highlights the under-recording of an ecologically important group. Biodiversity Conservation 21:475-485

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Sims RW, Gerrard BM (1999) Earthworms. Synopses of the British Fauna (New Series). 39. London: Linnean Society of London

Sherlock E (2012) Key to the earthworms of the UK and Ireland. Field Studies Council

