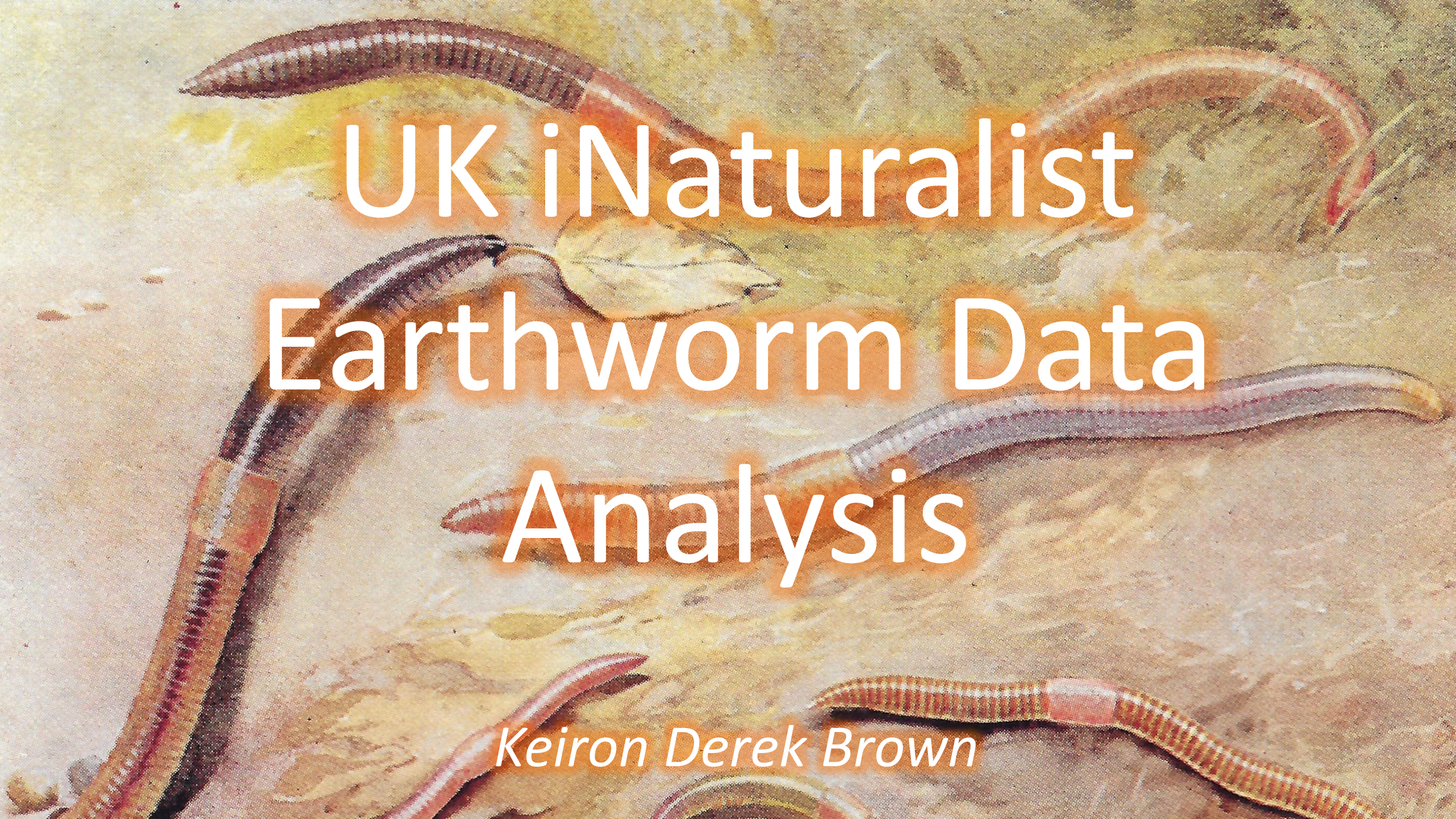


The background is a detailed, textured illustration of several earthworms in a soil environment. The worms are depicted in various colors, including shades of brown, red, and purple, with some showing distinct segmentation. They are shown in various poses, some crawling and others partially buried in the soil. The soil itself is rendered with fine, wavy lines, giving it a three-dimensional appearance. The overall style is that of a scientific or natural history illustration.

UK iNaturalist Earthworm Data Analysis

Keiron Derek Brown

iNaturalist Earthworm Data in iRecord

94 UK earthworm species records transferred from iNaturalist to iRecord. All have 'Research Grade' verification status on iNaturalist and have now been through the National Earthworm Recording Scheme verification protocol, with a verification status applied on iRecord.

11% of records had a recorder name associated with the record.

89% of records had a username (rather than recorder name) associated with the record.

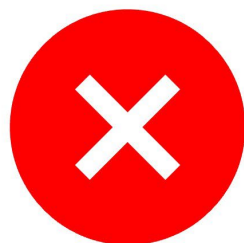
15% of records had low spatial resolution - with an output grid reference of 1 km or lower resolution.



0% of records passed the verification protocol for accepted records – largely due to determination method and ID resource used not being stated in the record.

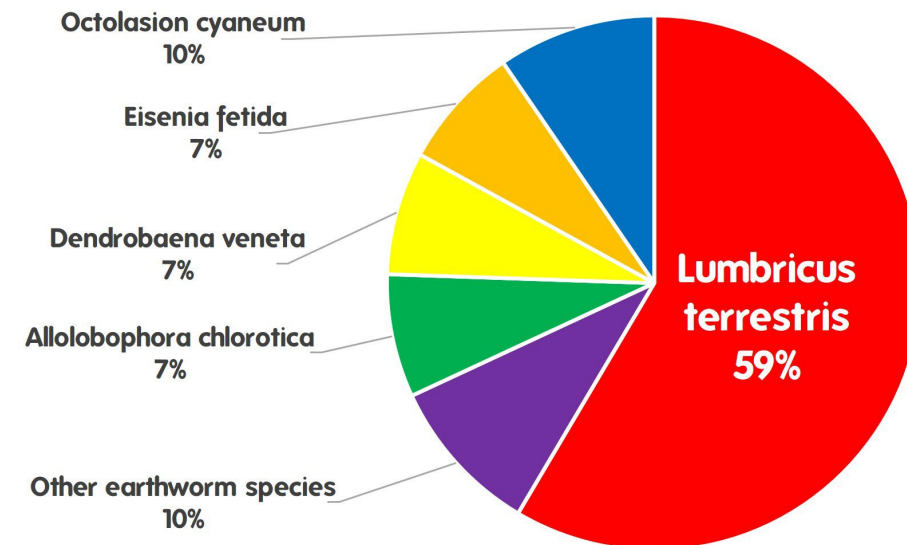


83% of records were not accepted as it was not possible to determine the species from the photograph or distinguish between similar species within the same ecological category.



17% of records were confirmed to be incorrect (1 was a centipede!), often based on size and colouration indicating a different ecological category to the species named.

Number of Records By Species



Over half (59%) of the records entering iRecord were *Lumbricus terrestris* – the species that the iNaturalist AI suggests for most earthworm records.



15 records (17%) had an open licence (CC0 or CC BY) applied – and would therefore be of use to Local Environmental Record Centres (LERCs) for data searches.



84% had a non-commercial licence applied – meaning records can't be used by LERCs.

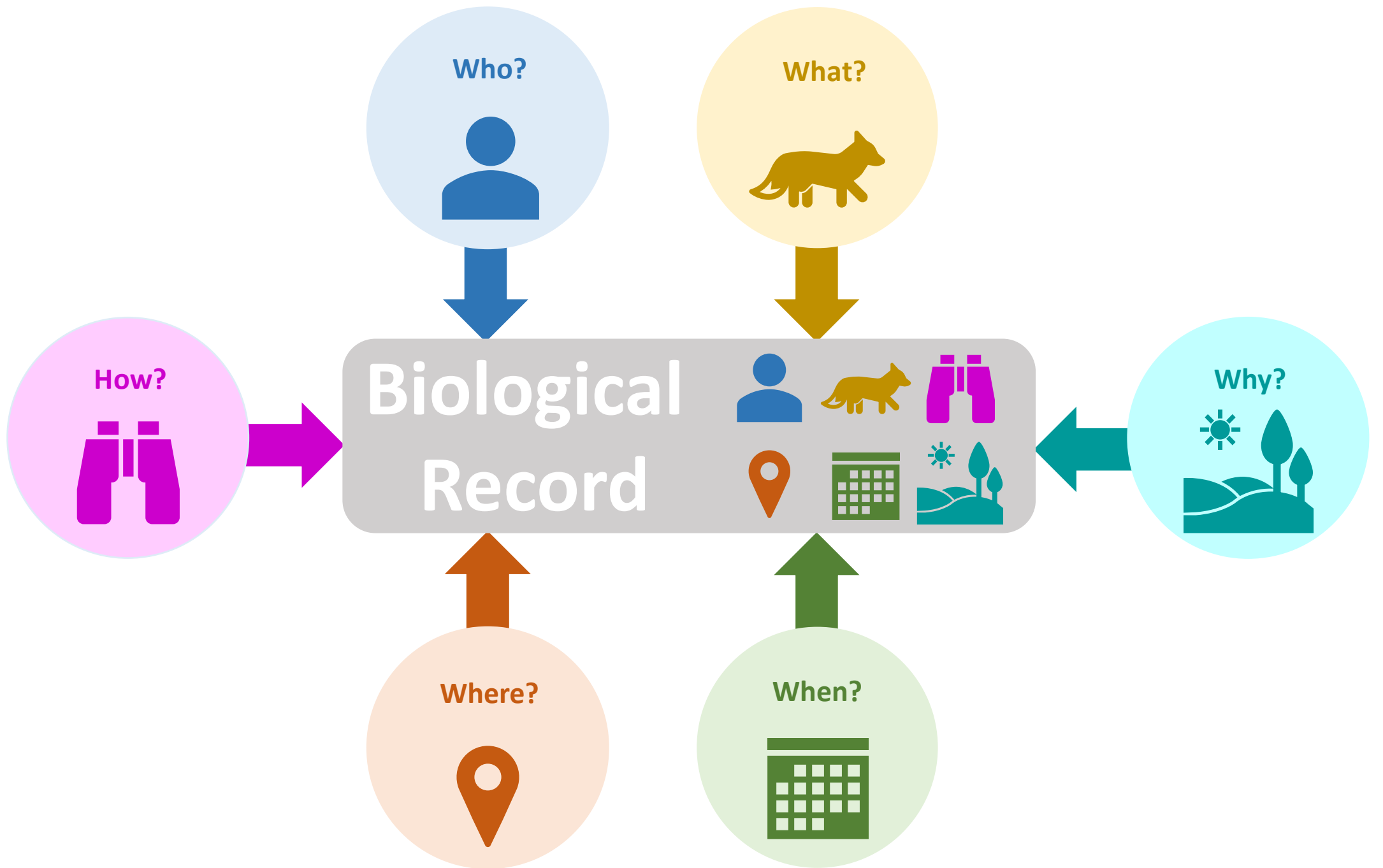
iRecord Vs INaturalist



iNaturalist



iRecord



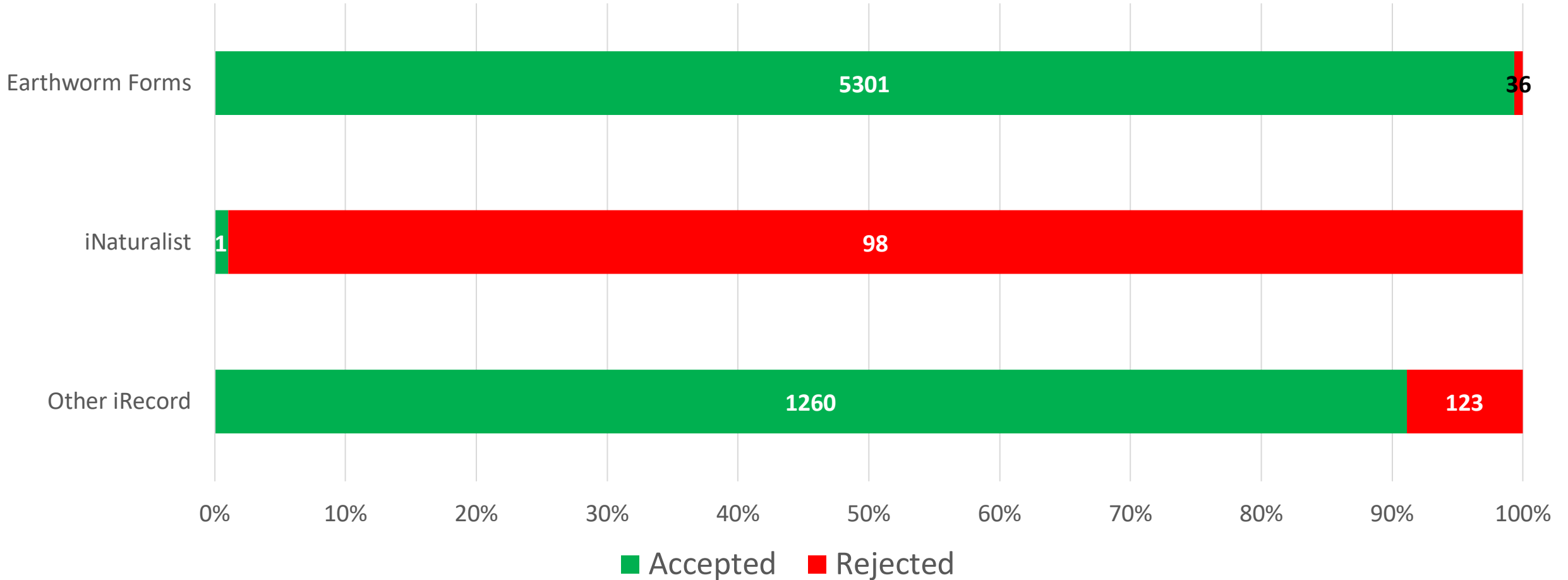
The Earthworm Data on iRecord





The Verification Issue

Accepted Vs Rejected Records



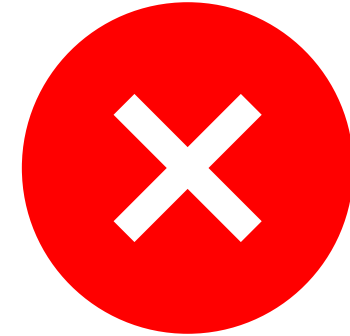
iNaturalist Record Verification Statuses



1% of records passed the verification protocol for accepted records (i.e. a single record). This was largely due to determination method and ID resource used not being stated in the record.



83% of records were not accepted as it was not possible to determine the species from the photograph or distinguish between similar species within the same ecological category.



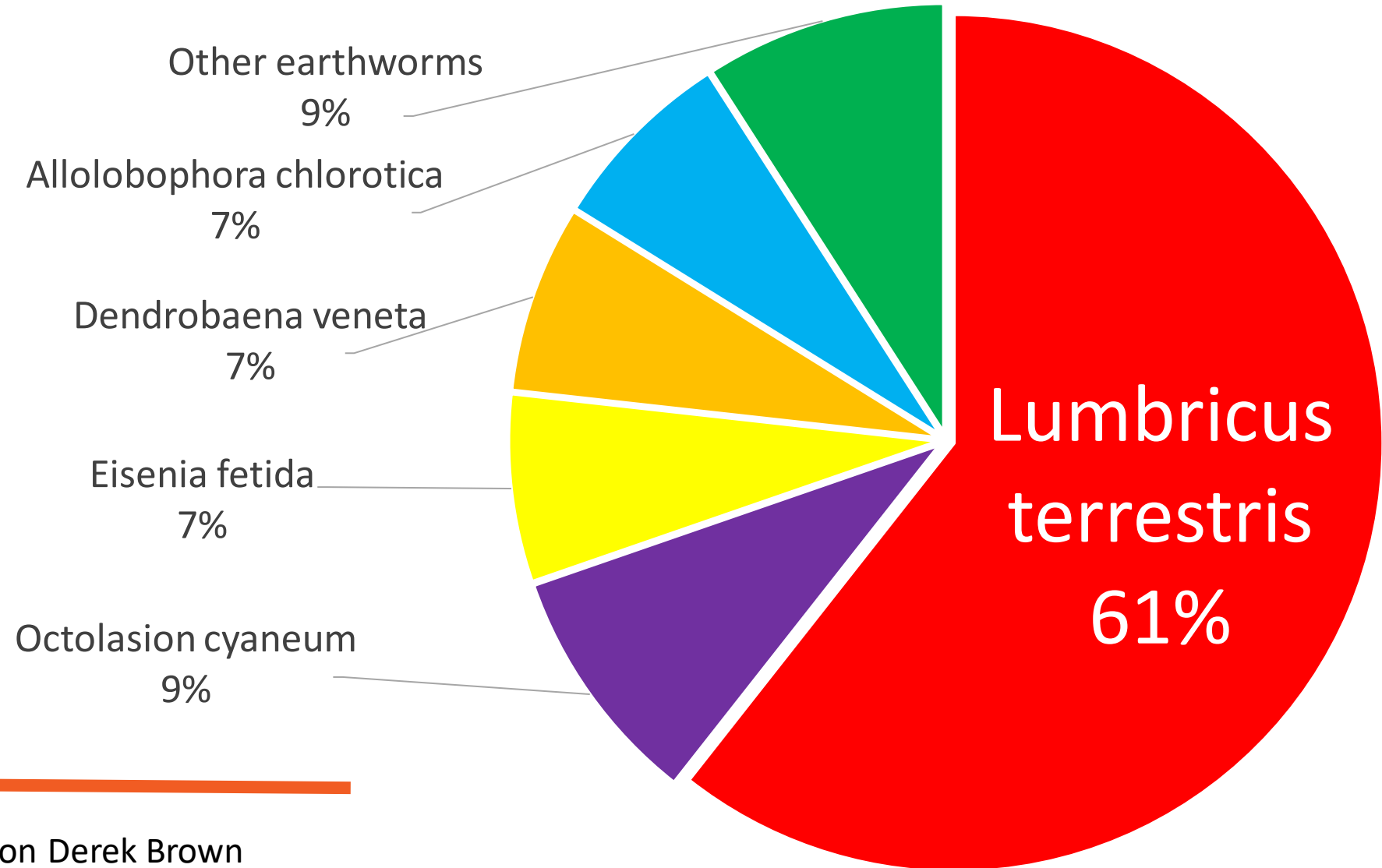
16% of records were confirmed to be incorrect, often based on size and colouration indicating a different ecological category to the species named.



The AI Issue

iNaturalist Records By Species

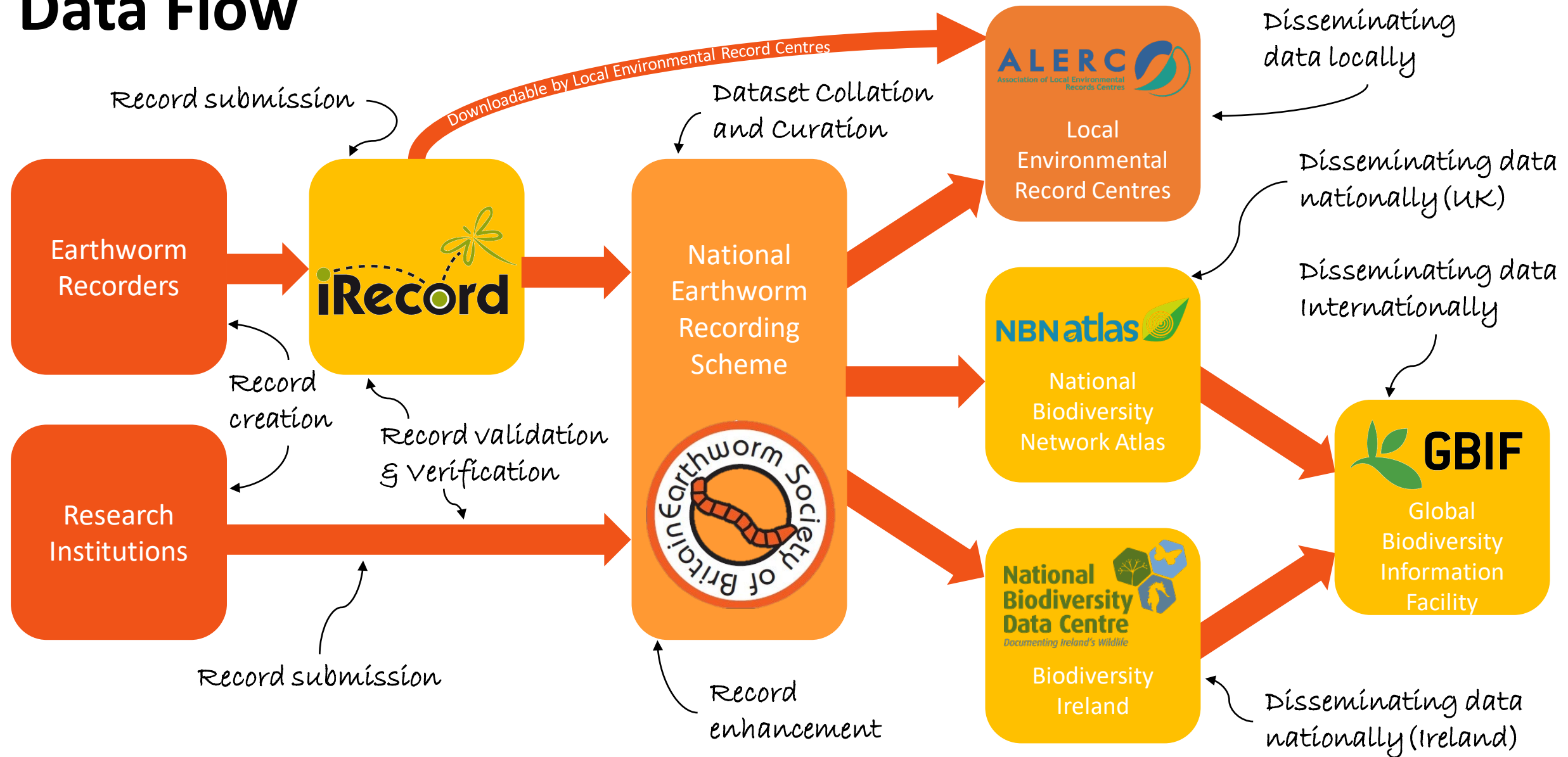
Looking only at recorder earthworm records (i.e. not research records), *Lumbricus terrestris* accounts for only 6.5% of accepted records in the National Earthworm Recording Scheme database.





The Licence Issue

Earthworm Recording Data Flow



iNaturalist Record Licences



15% (15 records)
had an open
licence (CC0 or CC
BY) applied – and
would therefore be
of use to Local
Environmental
Record Centres
(LERCs) for data
searches.

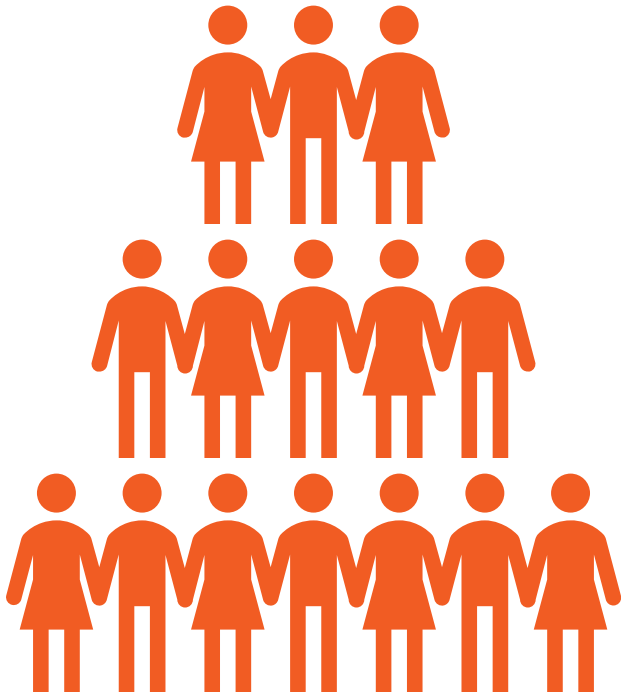


84% had a non-
commercial licence
applied – meaning
records can't be
used by LERCs.
Records with non-
commercial
licences are not
added to the NERS.



The Recorder Issue

iNaturalist Recorder Names



30% (30 records) had a clear Recorder name.

70% (69 records) had a username.

- **14% (14 records) with username that could be a real name.**
- **56%(55 records) with a username that was clearly not a real name.**



The Location Resolution Issue

iNaturalist Record Location Resolution

10m	29.3%	29 records	Good resolution
100 m	43.4%	43 records	Good resolution
1 km	17.2%	17 records	Limited Use
10 km	6.1%	6 records	Very Limited Use
100 km	4.0%	4 records	Useless (not accepted into recording scheme)





One record is better than none?

Record of *Dendrobaena veneta*

Record details

Record ID	22029812
Record external key	iNat:12045690
Recommended name	<i>Dendrobaena veneta</i> (Rosa, 1886)
Name as entered	<i>Dendrobaena veneta</i>
Taxonomy	Animalia :: Crassiditellata :: Lumbricidae
Survey	iNaturalist UK and IOM data
Recorder	thedoctor tos
Input by	admin, core
Record status	Accepted as considered correct
Verified by	Brown, Keiron Derek
Date	28/04/2018
Grid ref	51.440N, 2.527W
Uncertainty (m)	2064 → ST67
Site name	Bristol, UK
Licence	CC BY-NC
Submission date	Entered on 25th September 2021 at 05:43 and last updated on 20th August 2022 at 17:29
Life stage	Adult
Quality grade	research
iNaturalist Project IDs	19208
Location accuracy	2064

Comments

Brown, Keiron Derek 2 weeks ago

Not accepted into National earthworm recording scheme due to restrictive licence and very low resolution georeference.

Brown, Keiron Derek 1 month ago

✓ iNaturalist Recorder notes: Avon Valley Woods, Found under logs/bark in leaf litter micro-habitat (Identification made as trained ESB recorder using ESB Accredited AIDGAP key to Earthworms of Britain and Ireland). ID Characters: Epilobic Head, Male Pore: 15, Clitellum 26-32, TP: 30-31, Setae: Widely spaced.

1 month ago



Explore records of *Dendrobaena veneta*

Dendrobaena veneta details page

Photos and media





Recommendations For iNaturalist

Recommendations For iNaturalist

1. Introduce a difficulty rating for species, tagging species that can't be identified by photos (and notifying users when they submit records).
2. Species that can't be identified from photos should either not get pulled through to iRecord or require many more agreements.
3. Train the AI for difficult species to see if it can be improved (or turn it off for certain species).
4. Make it clearer to users what the implications of their licence choice actually means – encourage open licences.
5. Do not allow records to be submitted at useless 100km resolutions.

