



IX Field School on Soil Zoology and Ecology for Young Scientists

August 18–24, 2025, Karaganda, KZ

iNaturalist. Do scientists need citizen science? (for species distribution modelling)



Natalya Ivanova

The contribution of citizen science to GBIF data

Why iNaturalist?

Case study. Improving the quality of identification of earthworms in iNaturalist

Biases



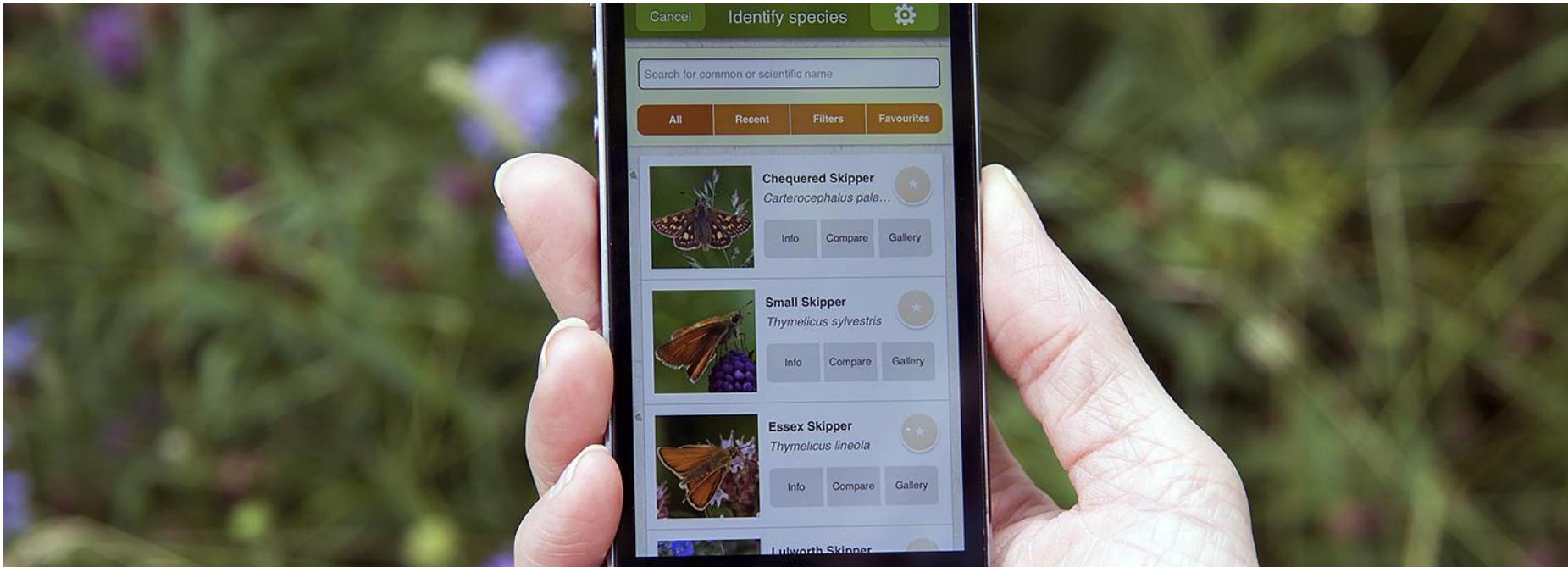
REDMI NOTE 12S
DRYOMYS CC-BY

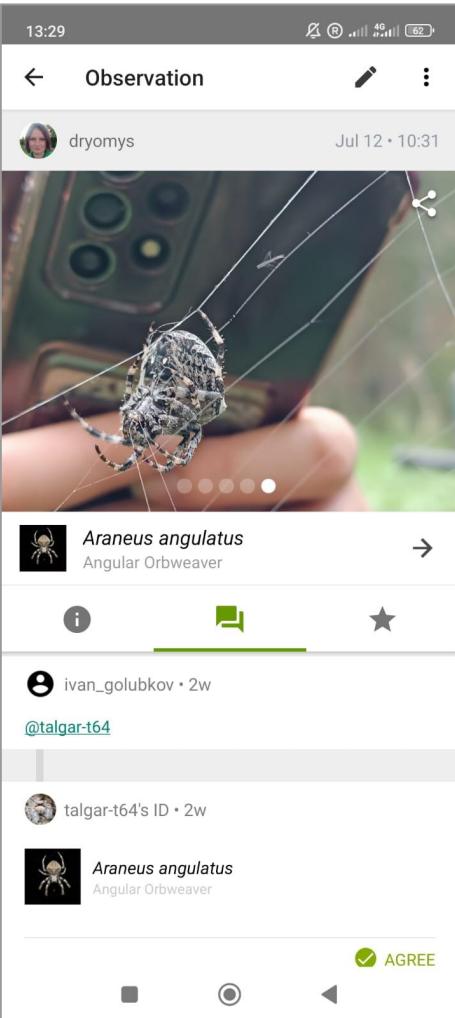


iNaturalist

eBird

Pl@ntNet





Benefits of citizen science apps for species distribution modelling:

- Most observations are recent.
- High georeferencing accuracy.

Main disadvantage:

- Low-quality species identification

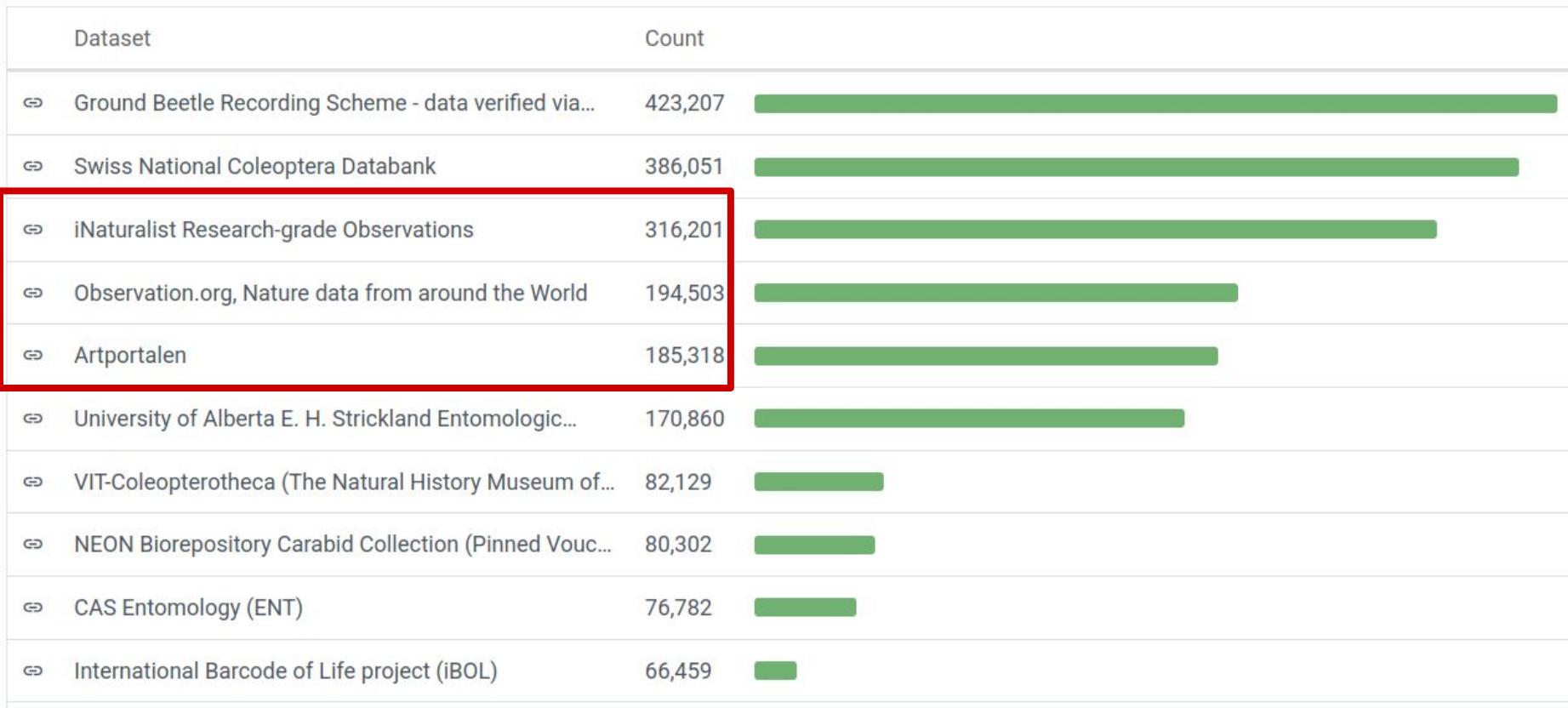
10 largest GBIF datasets



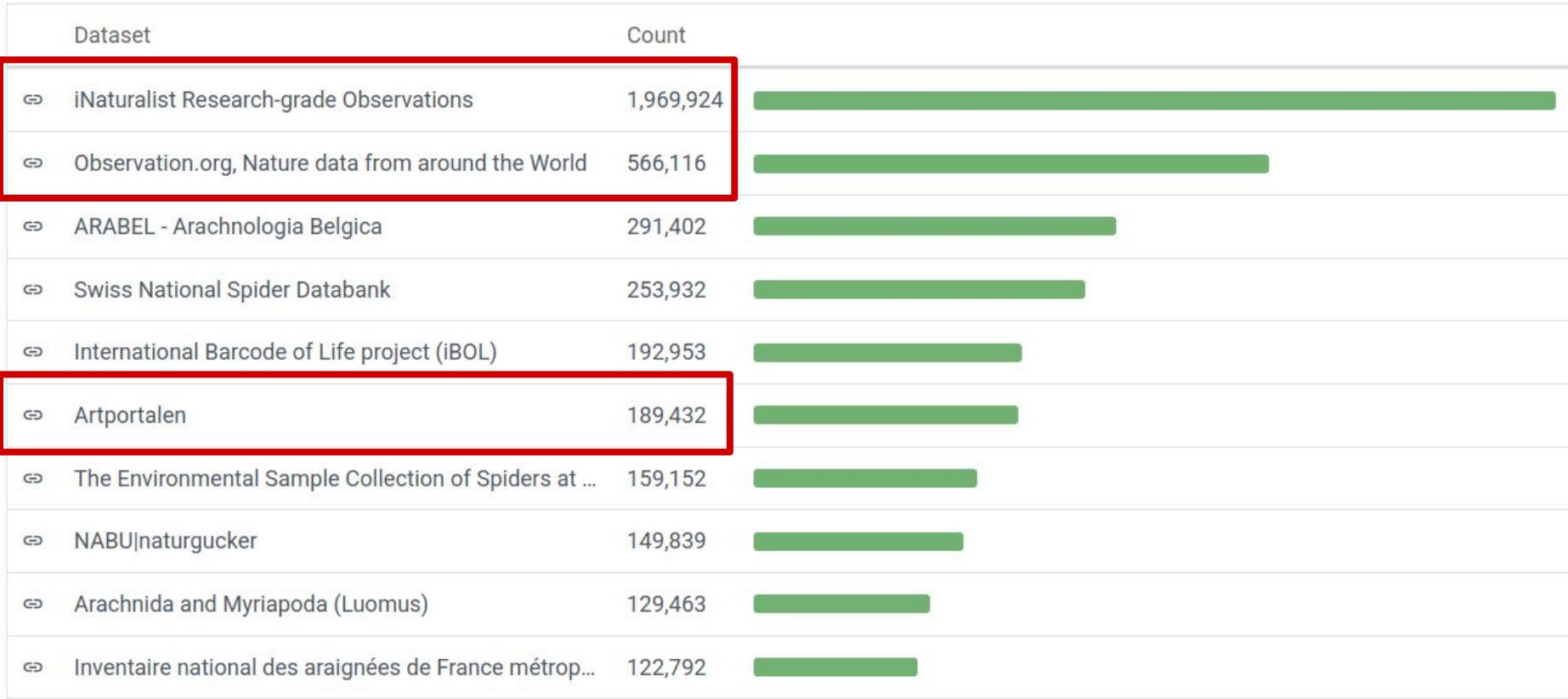
Family Lumbricidae: 166,379 occurrences



Family Carabidae: 4,419,760 occurrences

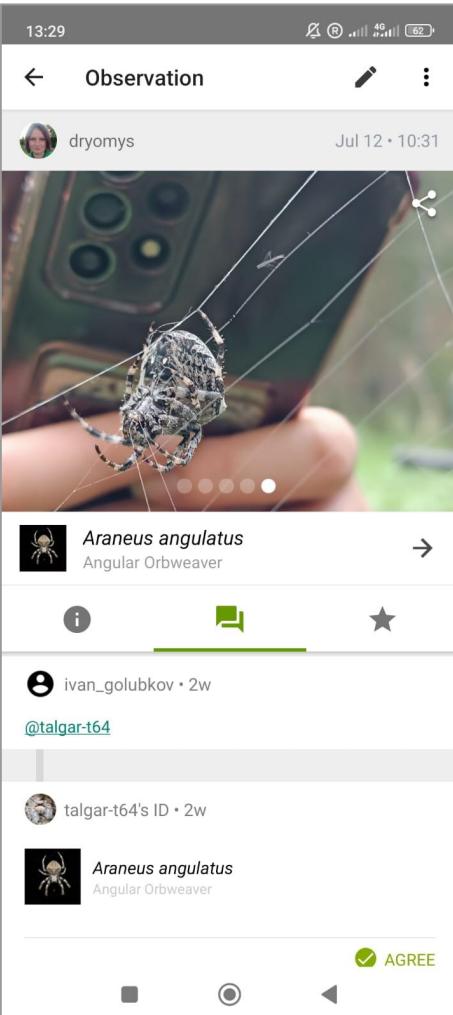


Order Araneae: 7,250,317 occurrences



Different citizen science systems publish data through GBIF in different levels of detail

Items	Citizen science platform			
	iNaturalist	Pl@ntNet	eBird	RU-BIRDS
Human-readable username	+	-	-	+
ORCID	+	-	-	-
Automatic species identification	+	+	-	-
Access to primary media files through GBIF	+	+	-	-
Observation date	+	+	+	+
Latitude and longitude	+	+	+	+



Benefits of iNaturalist

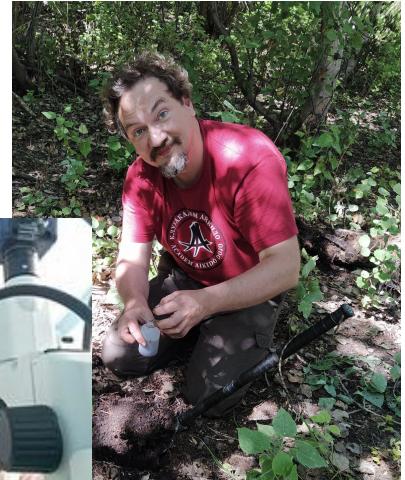
Only Research-Grade observations are published through GBIF

You can check:

- Expert qualification (see his profile)
- Accuracy of observation date (based on photo)
- Accuracy of location

You can identify observations yourself.

Improving the quality of identification of earthworms in iNaturalist



Before. What was identified as *Lumbricus terrestris*



Outcomes

Top Identifiers of *Aporrectodea caliginosa*

-  sergeyermolov
52
-  dominid
25
-  dinanesterkova
10
-  mosleyandlinusthemillipedes
10
-  vytautas_tamutis
7
-  max_carabus
39
-  tatyaganord
17
-  elena_golovanova
10
-  apgarm
7
-  sylvaingerard
7

Top Identifiers of *Lumbricus terrestris*

-  max_carabus
314
-  florence163
164
-  artois
92
-  dominid
49
-  mosleyandlinusthemillipedes
42
-  thirty_legs
185
-  sergeyermolov
129
-  danavan
86
-  julietrav24
48
-  eddieregnbue
35

Outcomes

Earthworms of the North Eurasia - need ID

 Project Journal

Overview

3,162
OBSERVATIONS

22
SPECIES

199
IDENTIFIERS

1,675
OBSERVERS

 Stats

<https://www.inaturalist.org/projects/earthworms-of-the-north-eurasia>

Earthworms of the North Eurasia - verified

 Project Journal

Overview

180
OBSERVATIONS

15
SPECIES

27
IDENTIFIERS

14
OBSERVERS

 Stats

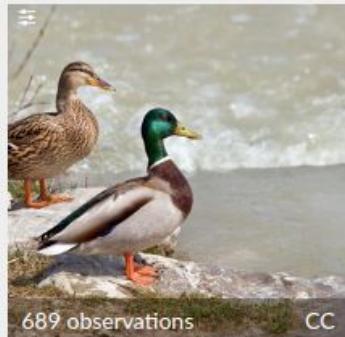
<https://www.inaturalist.org/projects/earthworms-of-the-north-eurasia-verified>

Biases

Top observed species in Kazakhstan



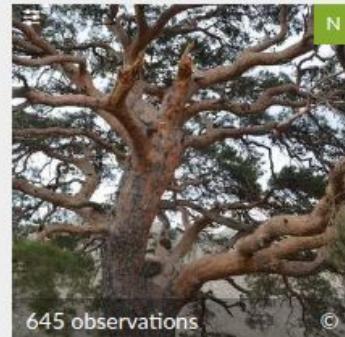
1.066 observations
Acer negundo
(Box Elder)



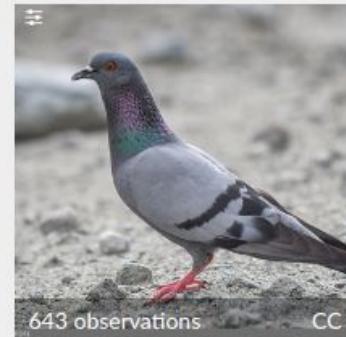
689 observations
Anas platyrhynchos
(Mallard)



686 observations
Pica pica
(Eurasian Magpie)



645 observations
Pinus sylvestris
(Scots Pine)

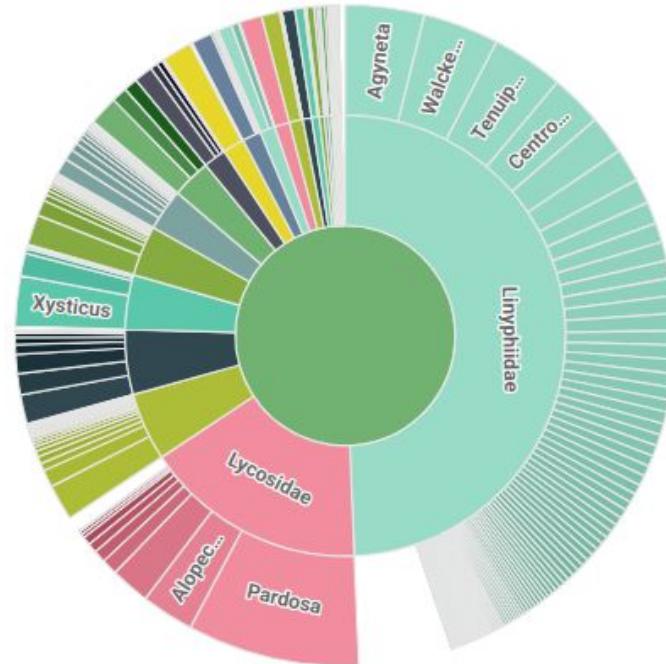


643 observations
Columba livia
(Rock Pigeon)

Taxonomic biases in iNaturalist data: spiders in Finland



Araneae: iNaturalist

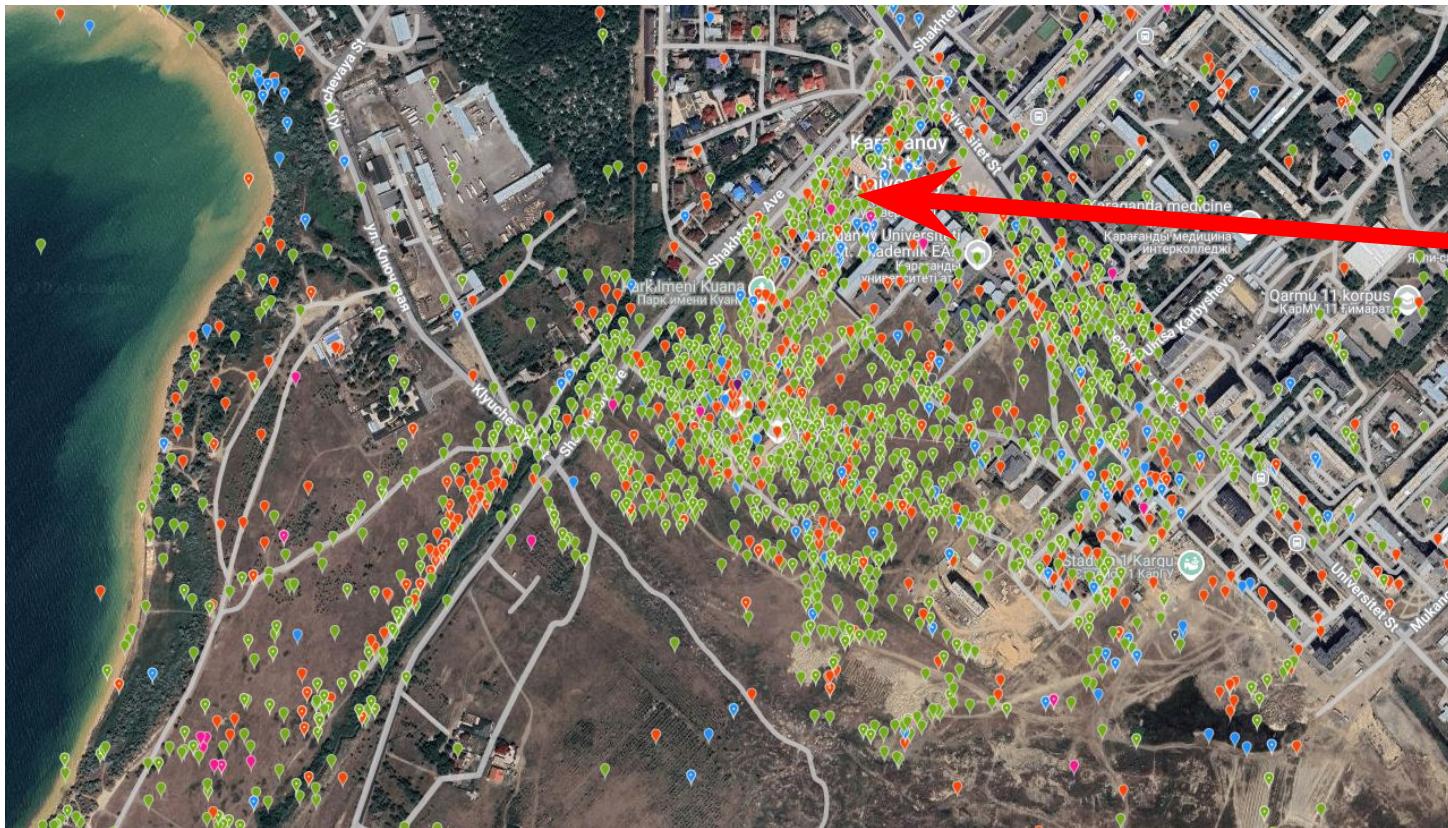


Araneae: LUOMUS

Taxonomic biases in iNaturalist data: earthworms

Species	Number of occurrences	
	Mining from literature	iNaturalist
<i>Aporrectodea caliginosa</i>	82	43
<i>Dendrobaena octaedra</i>	116	7
<i>Lumbricus rubellus</i>	100	34
<i>Lumbricus terrestris</i>	49	140
<i>Octolasion lacteum</i>	74	8

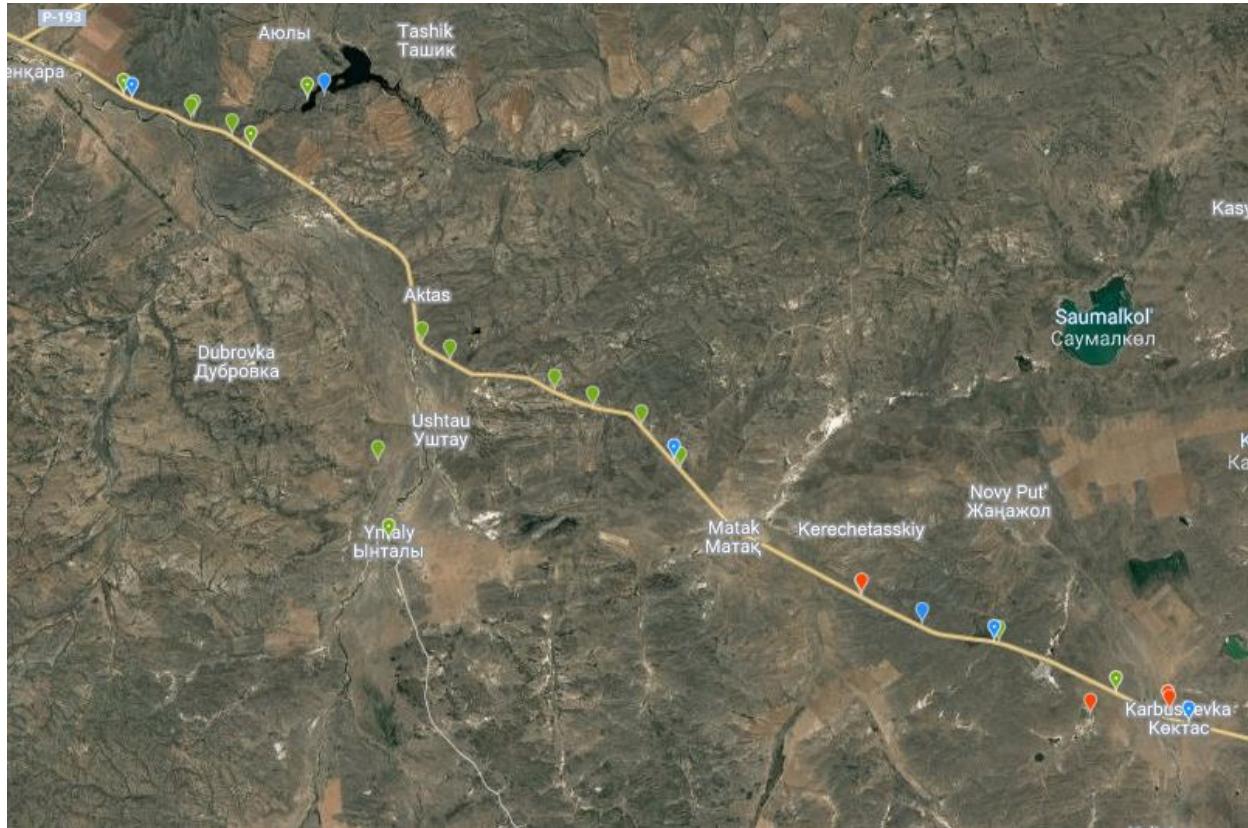
Spatial biases: is our campus a biodiversity hotspot?



You are here

Spatial biases: observations are collected along roads

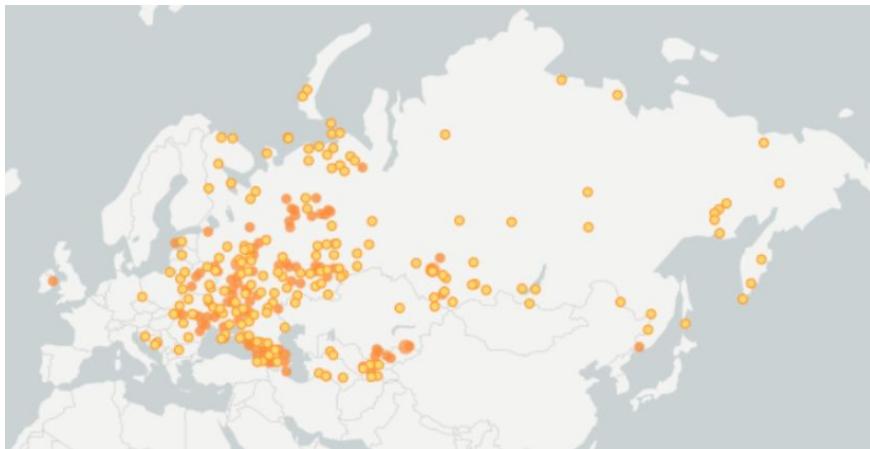
Karaganda



Karkaraly

There are also biases in scientific data. But they are different.

Earthworm occurrences from
Russian-language literature



<https://doi.org/10.3897/BDJ.12.e130897>

- Different spatial coverage in Europe and Asia (and at different times)
- Ecologically valuable habitats are better studied
- Some areas have been studied many times by different researchers

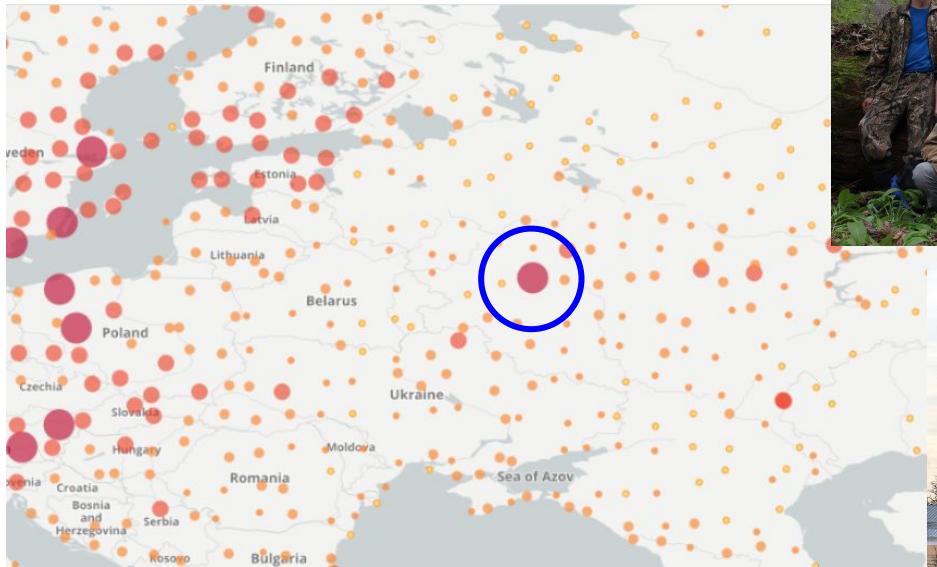
The Tellerman
Forest is an
example of
a frequently
studied area



- Malevich, 1957
Malevich, Perel', 1958
Krivosheina, 1961
Perel', 1967
Malevich, 1970
Perel', 1979
Striganova et al., 1989
Penev et al., 1994
Vsevolodova-Perel', 1997
Vsevolodova-Perel', et al., 1997

There are also biases in scientific data. But they are different.

Carabidae in the world (GBIF)



Sergey
Alekseev



Outcomes: do you need iNaturalist data for your SDM project?

- Is it possible to identify your target species from a photo (audio)?
- Can you verify the identification?
- Is the data from iNaturalist relevant to the biology of the target species?
- Do you have occurrence data from other sources?



IX FIELD SCHOOL ON SOIL ZOOLOGY AND ECOLOGY

18–24 August 2025



Discover Central Kazakhstan!

Aug 18, 2025 - Aug 24, 2025



Thank you for your attention!

About

Members 2

Bioblitz for participants of the IX Field School on Soil Zoology and Ecology 2025 (Karaganda Buketov University, Karaganda, Kazakhstan)

[Read More >](#)

Your Membership

Edit Project

Project Journal

