

# THE USE OF CITIZEN SCIENCE IN THE MONITORING OF ANIMAL SPECIES



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# Citizen science in the Natural sciences

CITIZEN SCIENCE = the practice of public participation and collaboration in scientific research to increase scientific knowledge.

(National Geographic)

- scientists need data for conducting research
- Botany, Zoology, Chemistry, Physics, Astronomy,...
- potential obstacles in getting a larger number of data
- citizen science as a helpful and practical method of obtaining extensive datasets



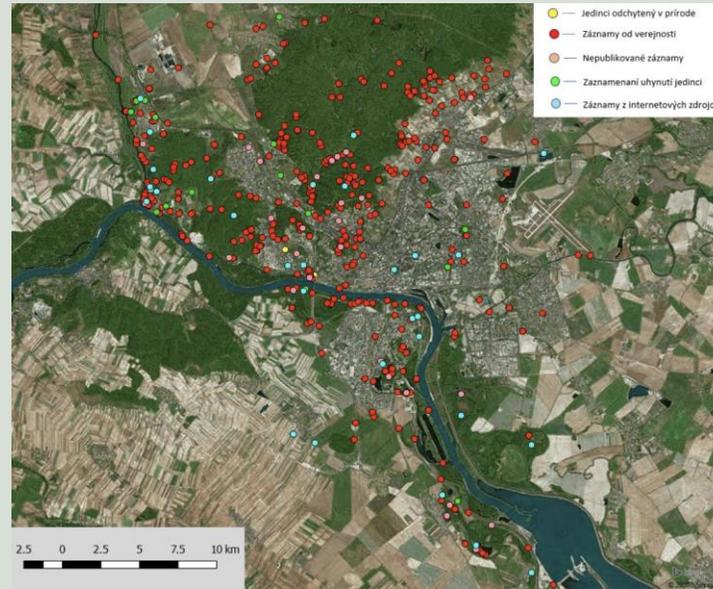
# Citizen science in zoology

- dates back to the 19<sup>th</sup> century
- Christmas Bird Count
  - Frank Chapman (1864 - 1945)
  - substitution to bird hunting
  - longest-running citizen science survey
- Monarch Butterfly Migration Tracking
  - began in the 1930s
  - understanding migratory paths
  - conservation efforts
- iNaturalist, eBird.org, Zooniverse, **iNaturalist** and many more



# Citizen science in Slovakia

- steady development over the years
- notable projects:
  - Slovak Ornithological Society (SOS) Projects (*European Breeding Bird Atlas, Common Bird Monitoring*)
  - iNaturalist Slovakia (*City Nature Challenge Bratislava*)
  - Distribution of the new plant pest *Aphis nerii* in Slovakia (Purkart et al., 2020)
  - Monitoring of the Aesculapian snake (*Zamenis longissimus*) in Bratislava



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<https://doi.org/10.17221/46/2019-PPS>

**Citizen science reveals the current distribution of the new plant pest *Aphis nerii* in Slovakia**

ADRIÁN PURKART<sup>1</sup>, LUKASZ DEPA<sup>2</sup>, MILADA HOLECOVÁ<sup>1</sup>, JOZEF KOLLÁR<sup>3</sup>,  
MARTIN SIVÁK<sup>4</sup>, ZLATICA ORSZÁGHOVÁ<sup>1</sup>, KATARÍNA GOFFOVÁ<sup>1\*</sup>

# Monitoring non-native species



- mud-dauber wasps of the genus *Sceliphron* Klug, 1801
- *S. caementarium* (N-N), *S. curvatum* (N-N), *S. destillatorium* (N)
- females construct mud nests and provision them with paralysed spiders
- why these species?
- what was being observed?
- goal: gathering information about the occurrence and properties of the nests of the non-native species across Slovakia with the use of citizen science



# Method of obtaining data

- citizen science:
  - social media posts (Facebook, Instagram)
  - addressing people directly
  - iNaturalist
  - publications in journals, magazines and on various portals
- determination of the species (identification



Kutavka rodu *Sceliphron* (foto L. Glajšeková).

Úlohu zistiť aktuálne rozšírenie kutavky ázijskej a kutavky americkej dostala študentka a zároveň spolumaťorka tohto textu Lucia Glajšeková z Prírodovedeckej fakulty UK v Bratislave v rámci svojej bakalárskej práce. A hoci sa Slovensko môže javiť na mape ako malá krajina, z pohľadu hmyzu a malého počtu aktívnych entomológov ide o rozsiahle a dosiaľ značne neprebádané územie. Kutavky rodu *Sceliphron* však prinášajú výhodu, ktorá k monitorovaniu ich prítomnosti výrazne ponauča. Samice kutaviek si začiatkom leta začínajú budovať nápadné hlínené stavby v tvare dŕbákov, ktoré skladajú vonďa seba. Do nich následne vnášajú paralyzované pavúky, na ktoré nakladú



# Results

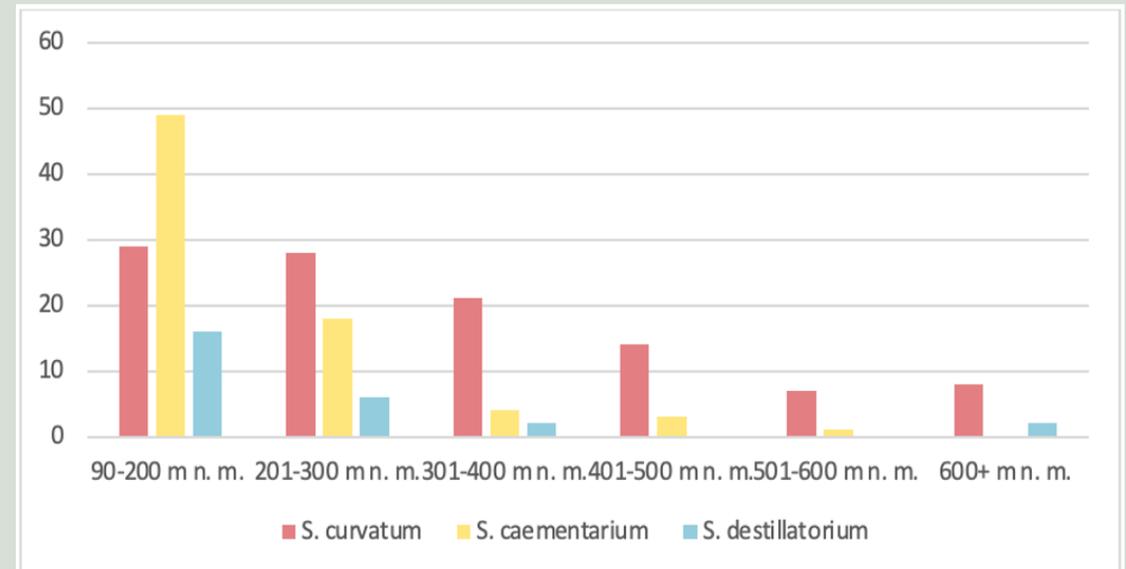
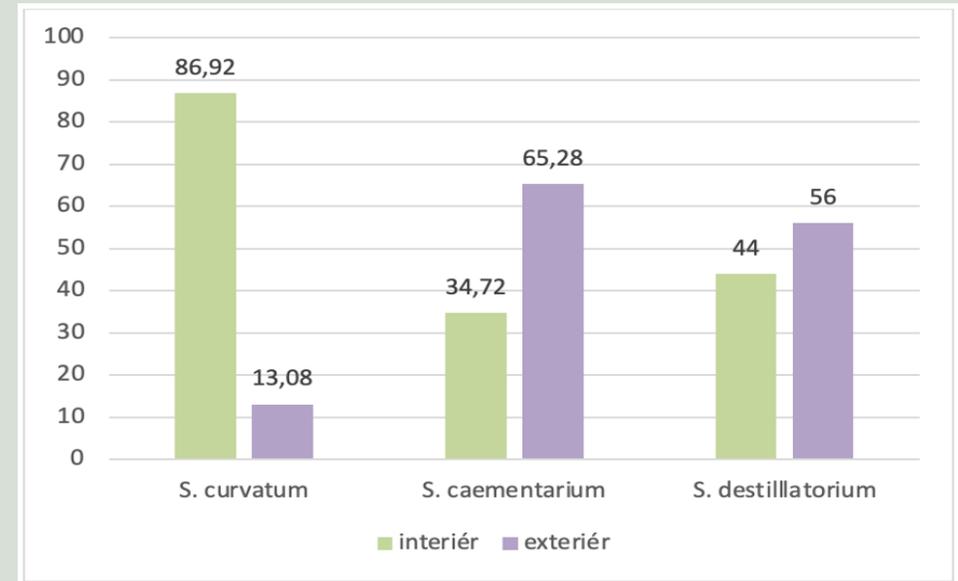
- more than 400 entries based on data and photographs from the public

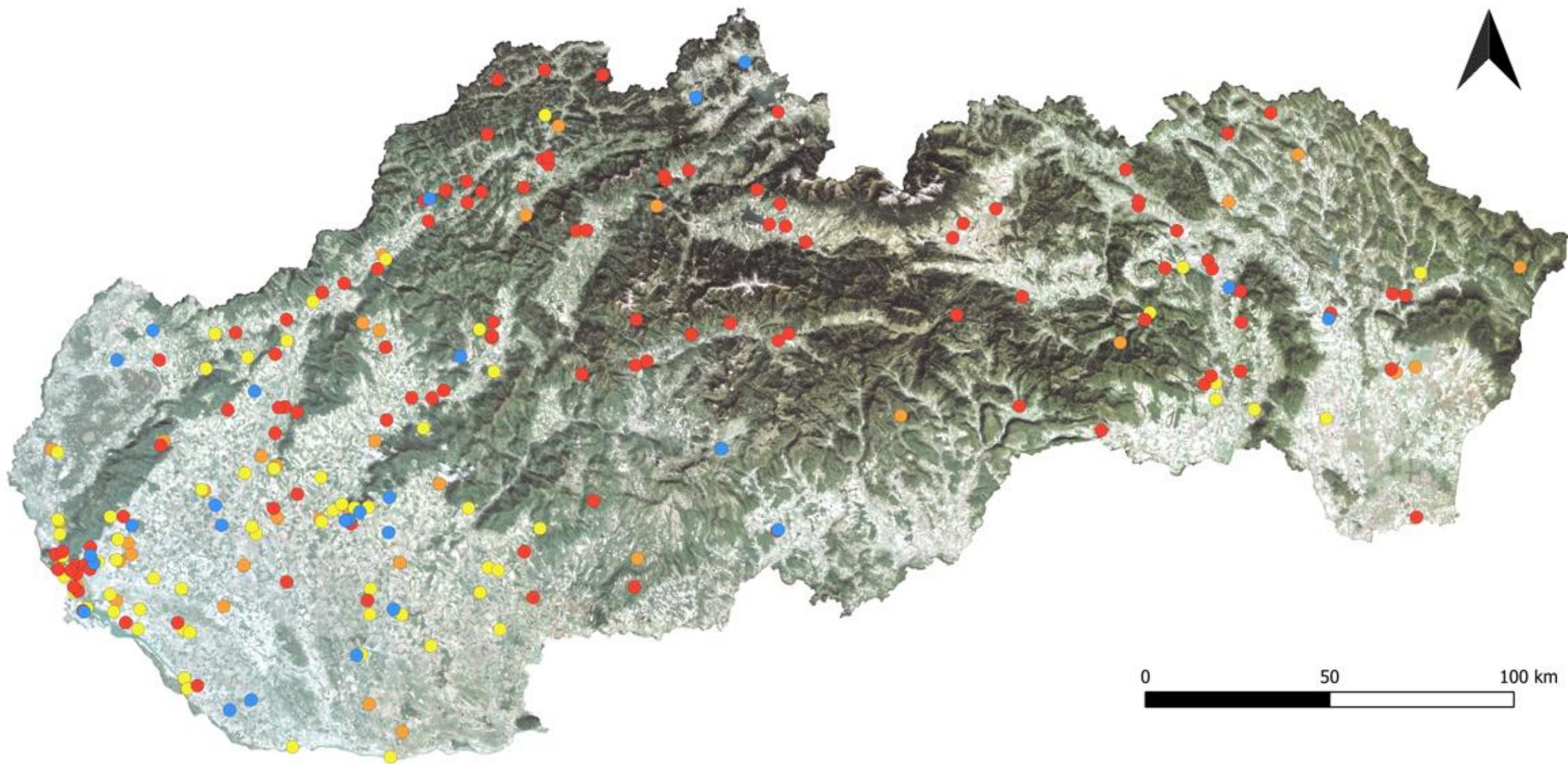
- **location of the nest:**

- interior → *S. curvatum*
- exterior → *S. caementarium* and partly *S. destillatorium*

- **altitude:**

- higher altitudes → *S. curvatum*
- lower altitudes → *S. caementarium*





0 50 100 km

# My experience using citizen science



# The norward spread of praying Mantises

Goal: Documenting the norward spread of mantises due to climate change.

Method: Social media, newspaper articles, citizen science platforms

Discovery: New species (*Ameles spallanzania*) found in Slovakia, typical to southern Europe



## WANTED: PRAYING MANTIS

### Help biologists with their research!

The green praying mantis occurs in warmer areas of Slovakia. As a result of climate change, it is spreading to new territories. Shall we find out where?

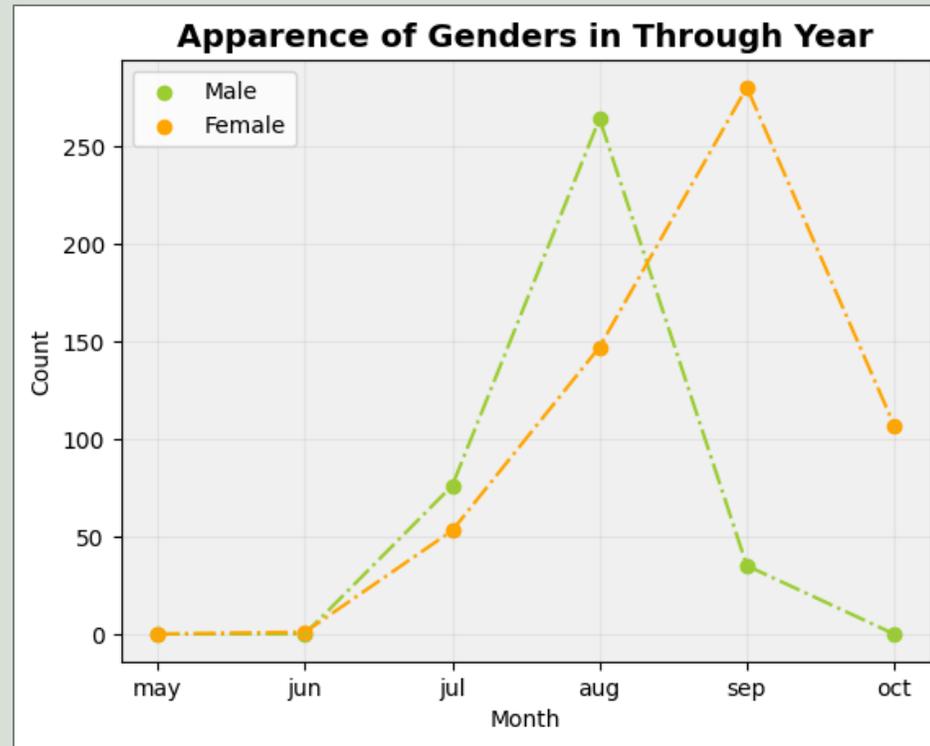
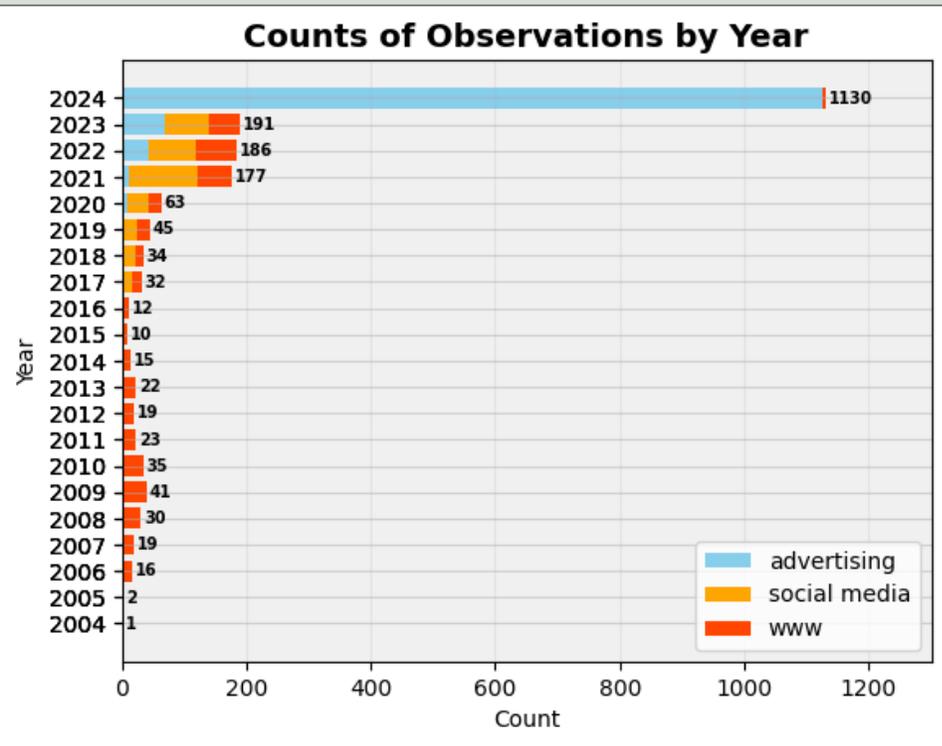
### We need the following information:

- Photograph (for determining age and gender)
- Location (GPS, village)
- Date (day, month, year)

Send findings to : [modlivky1@gmail.com](mailto:modlivky1@gmail.com)

Public submitted **over 2000** data points.



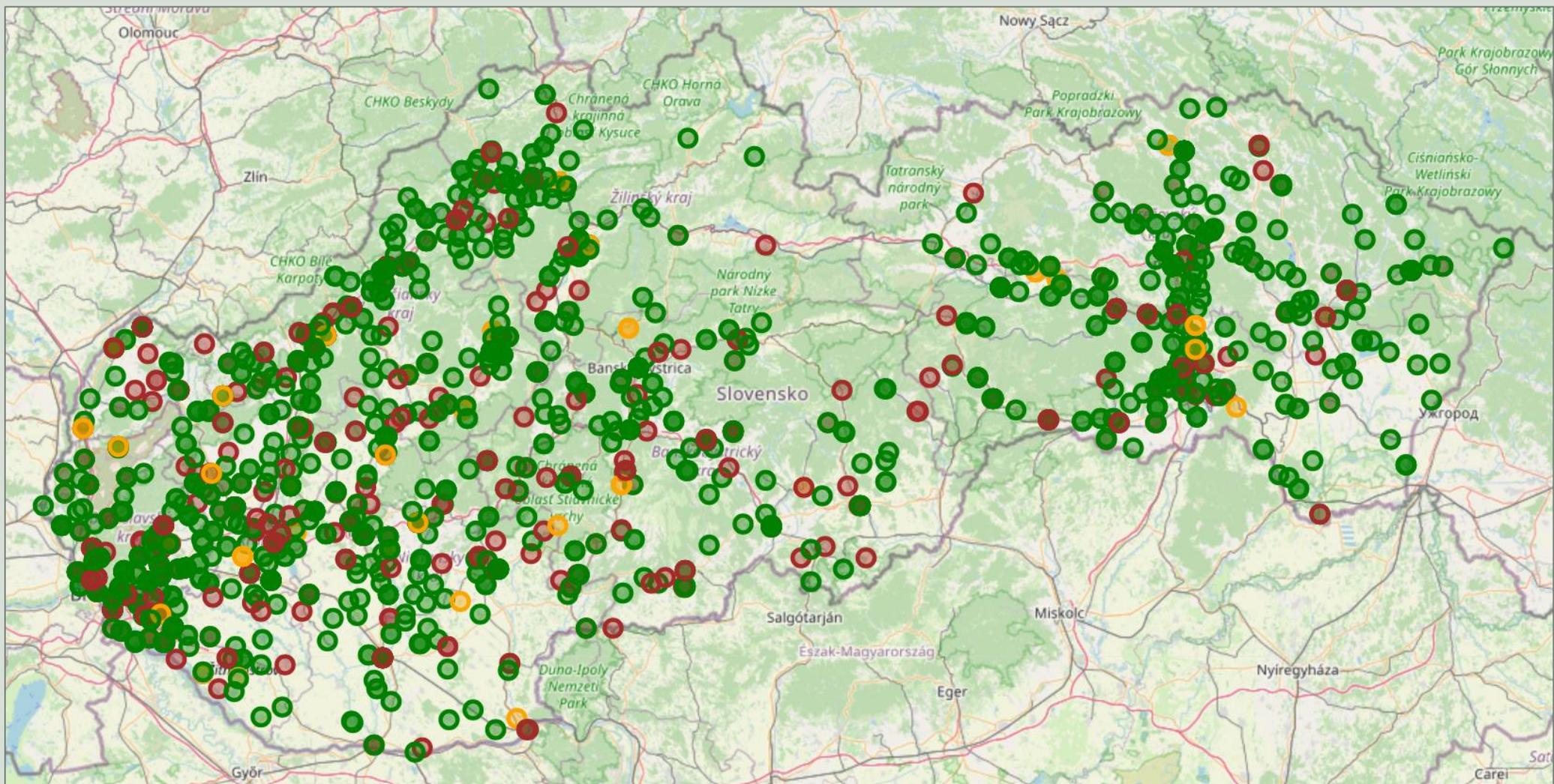


Graphs created by NUBS s.r.o.

# Findings

Citizen science covers a wide range of findings related to a given topic.





Map created by NUBS s.r.o.

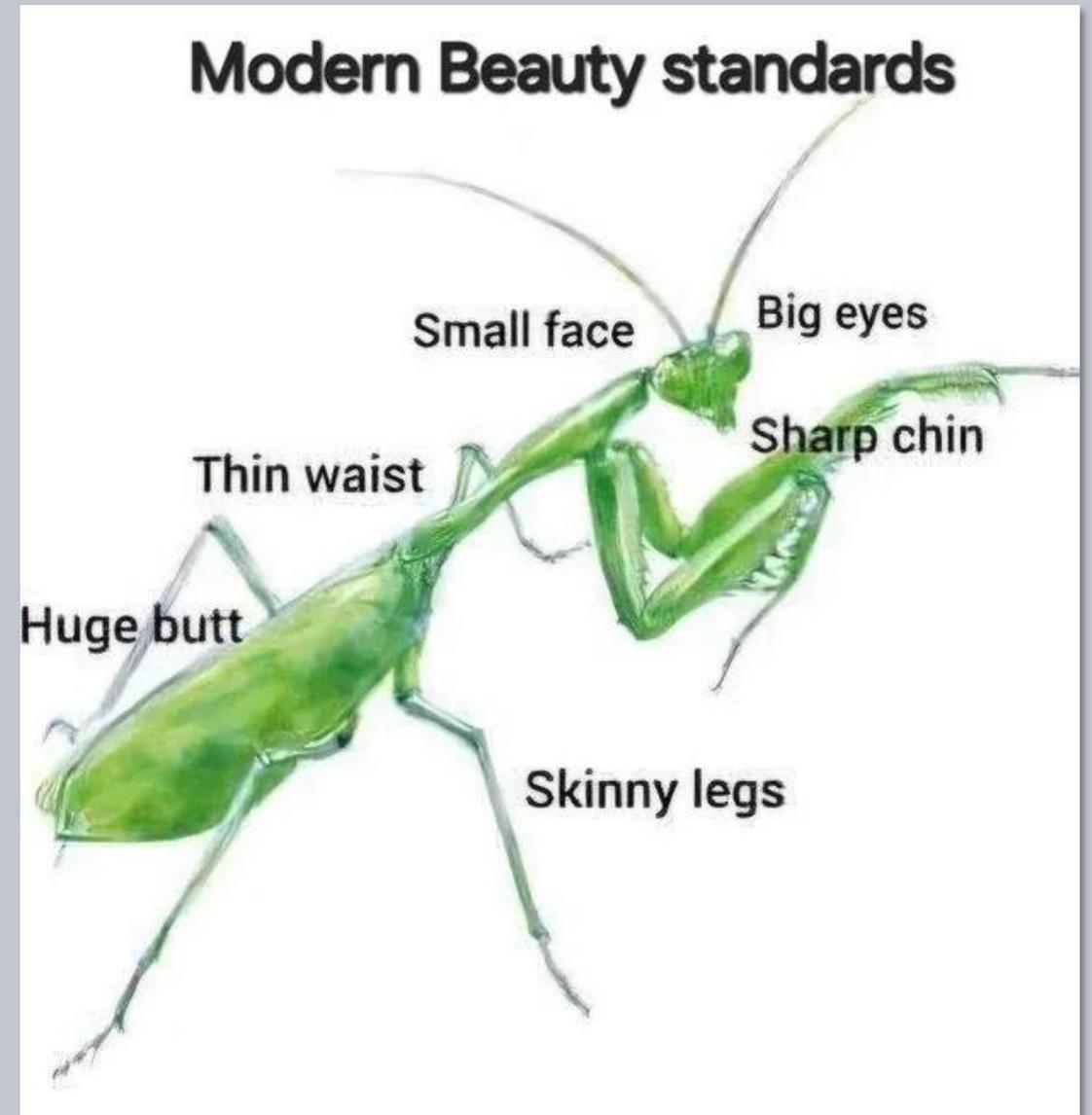
# Geographic distribution

Mapping Norward spread in Slovakia

[Online interactive map](#)



# What to expect from citizen science project?



**CITIZEN SCIENCE**



**SUPERHEROES**

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Thank you  
for your  
attention

