



# Citizen science: science for everyone?

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Open science lunch, 2023-09-28



# Who am I?

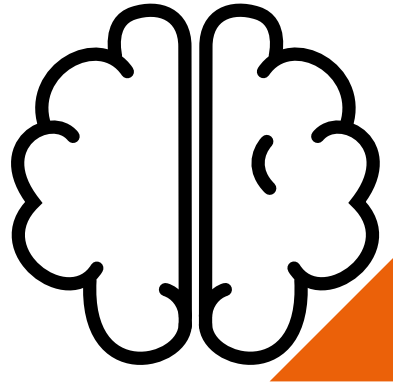
Wouter Koch

Biologist @ Artsdatabanken

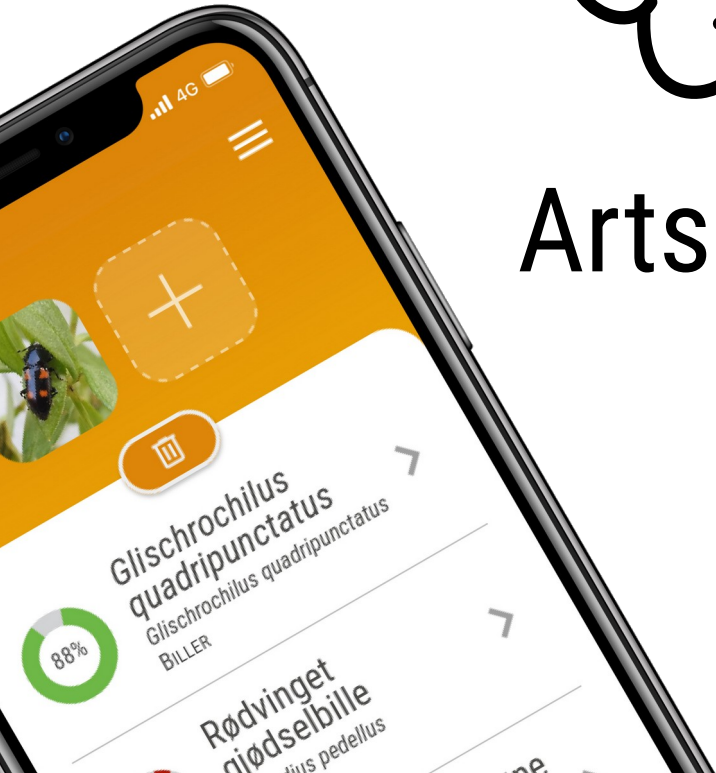
PhD (2022) in citizen  
science + AI

Now mainly Artsorakel





Artsorakel



# Citizen science

*Volunteer participation in  
the scientific process*



# Citizen science

Crowd sourcing

Knowledge based data collection

Freelance research



# Citizen science

Example: Artsobservasjoner

Report what, where, when

Any species

Documentation not required

Data openly available



# Citizen science

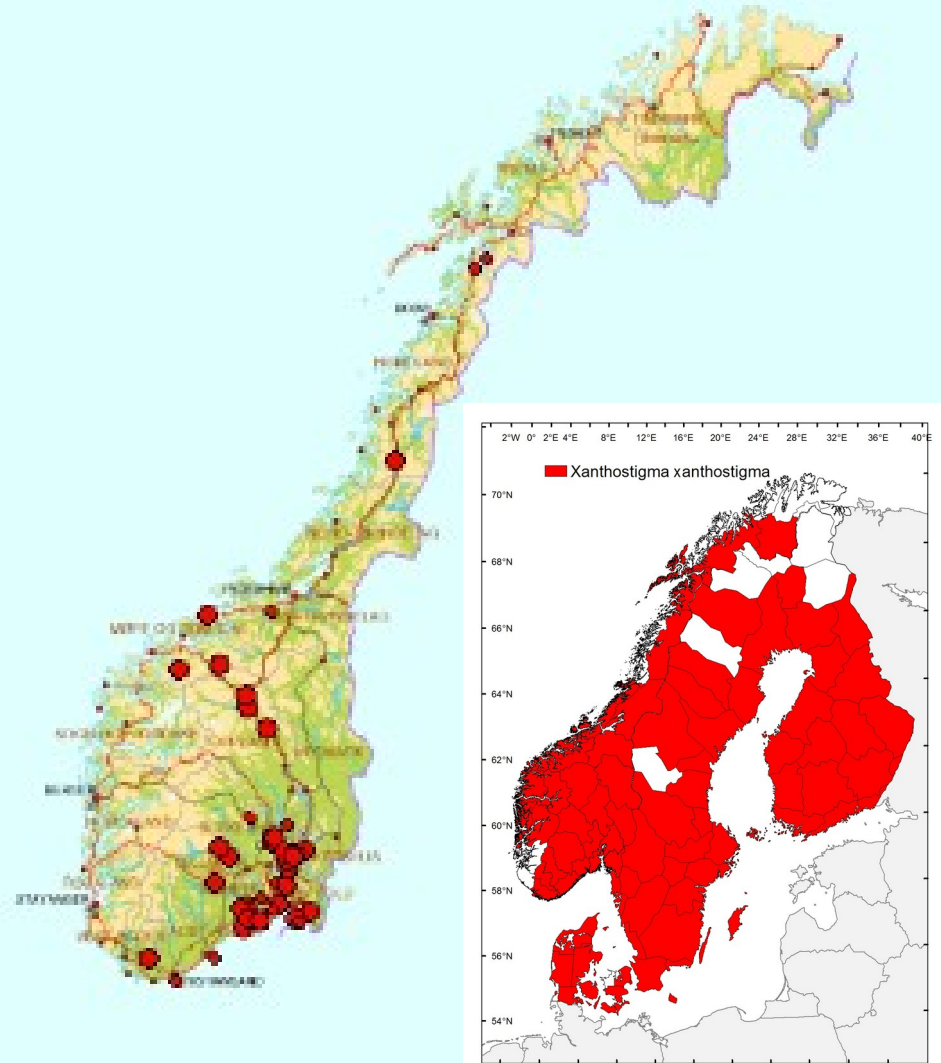
Artsobservasjoner:  
31M observations

Globally:  
>1.5B observations



# The data

*"Your maps suck"*





# The data

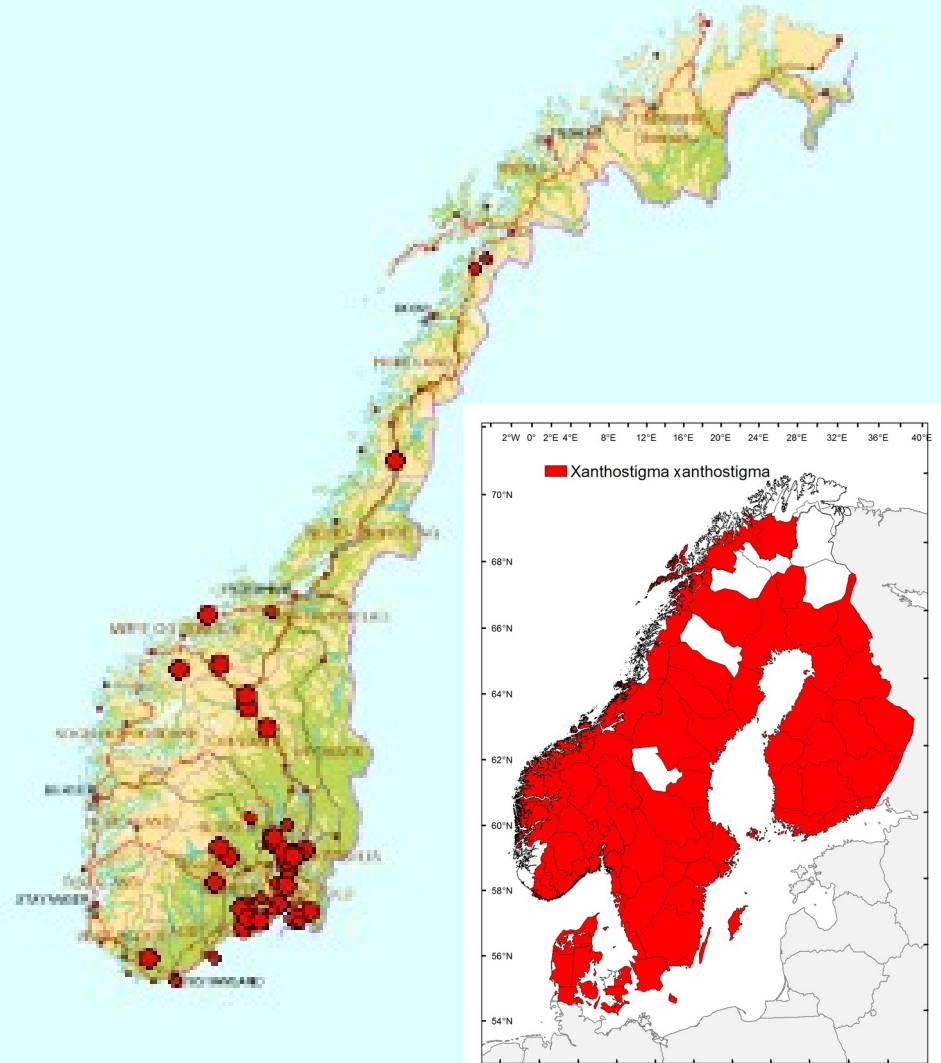
**Expectation:**

A map of where a species lives

**Reality:**

A map of where someone saw,  
recognized and then reported a  
species

Many biases!



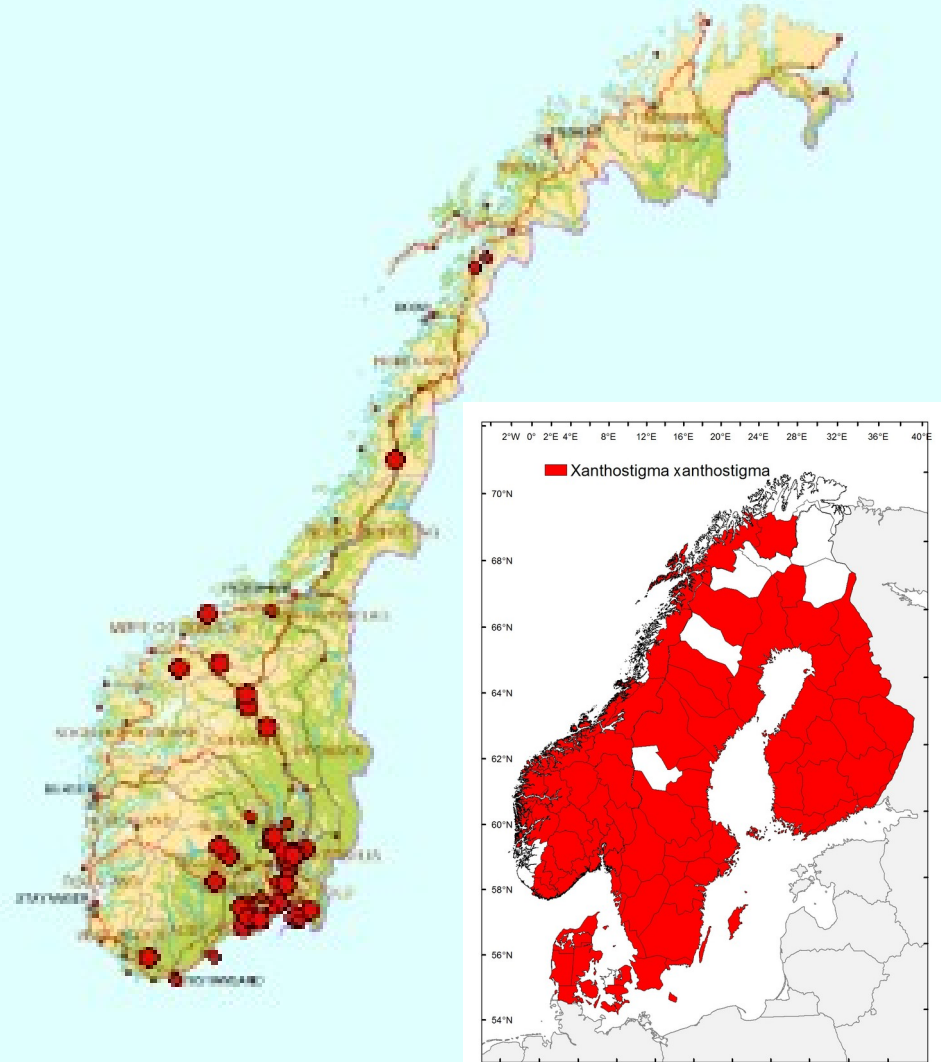
# The data

Someone was there

They saw a species

They recognized it

They reported it



**Someone was there**



# Someone was there

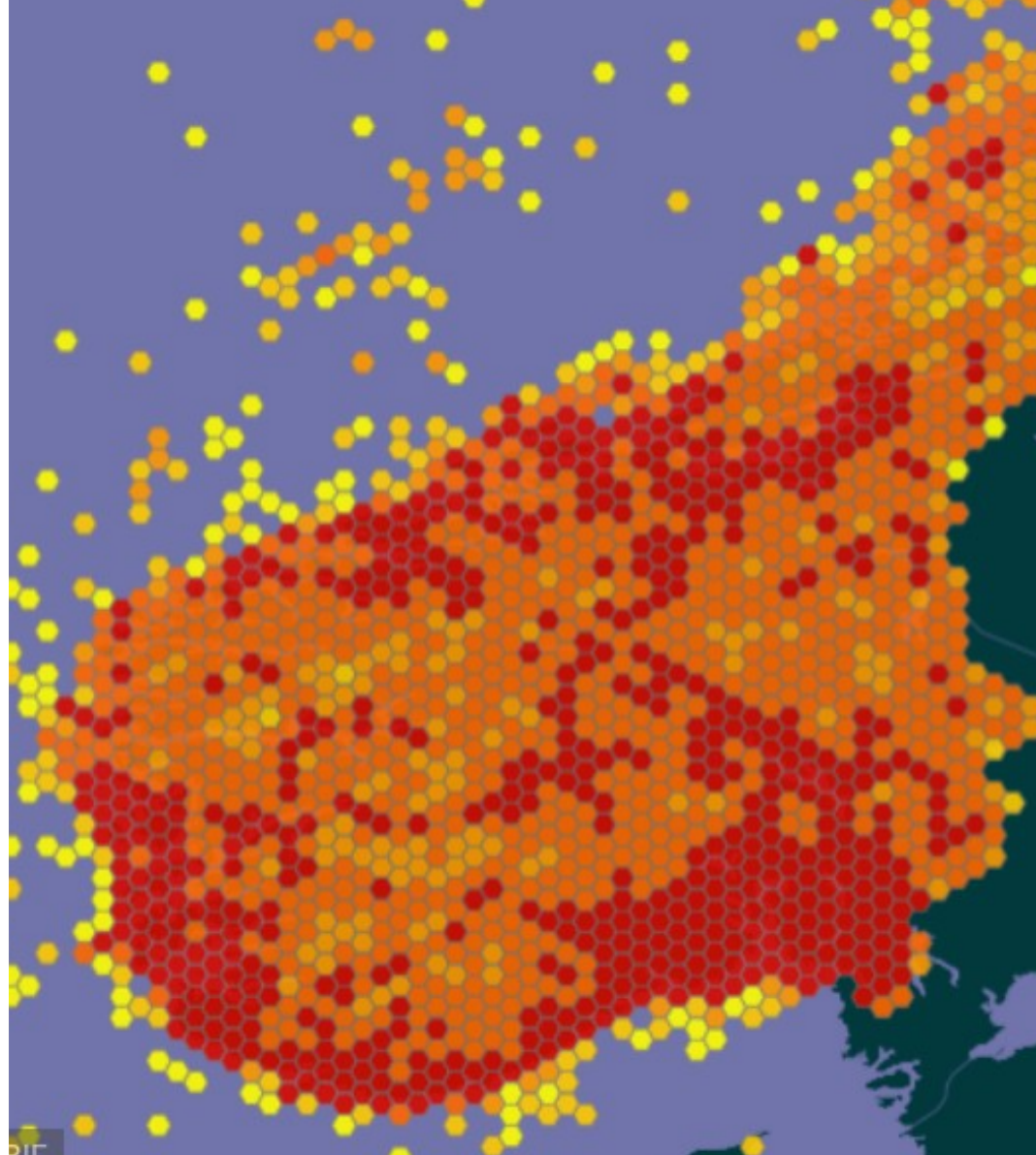
Cities

Roads

Trails

The south

Hot spots



# Someone was there\*

(\* Outdoors, in Norway)

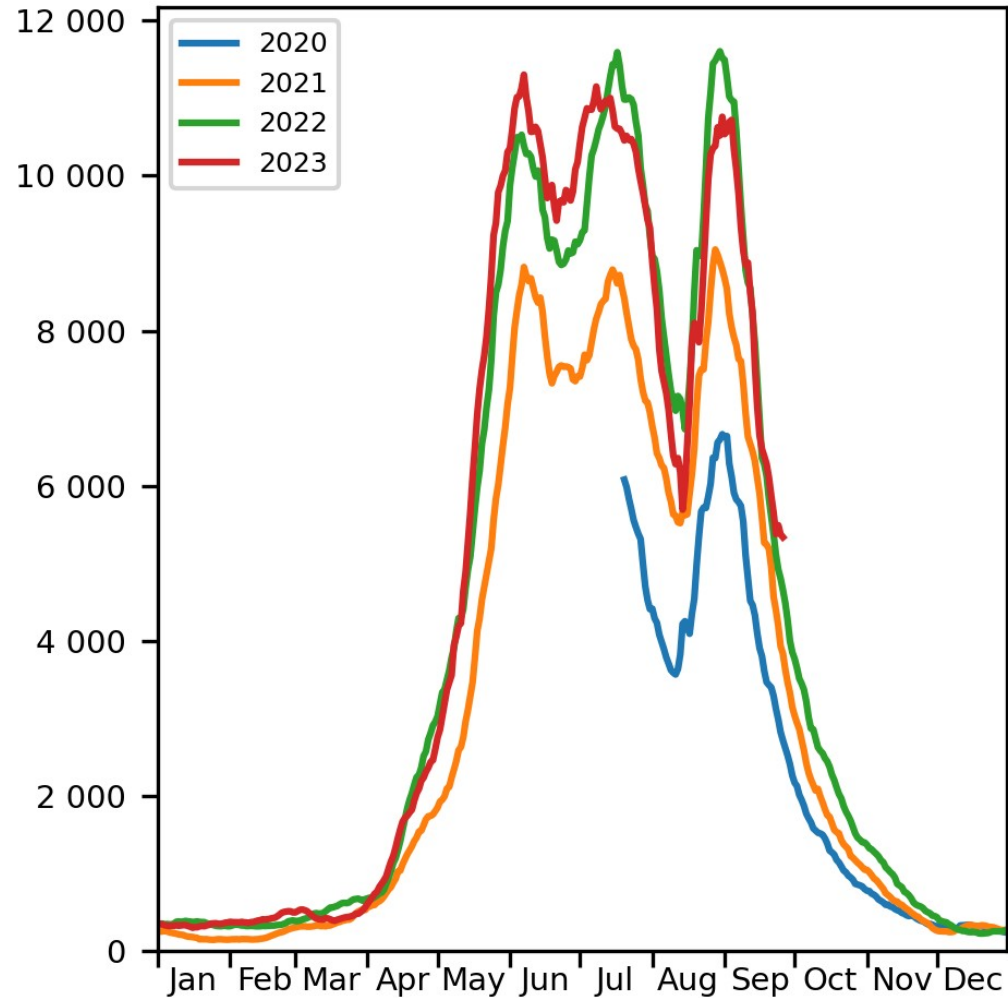
Nice weather

Summer

Weekends

Holidays

Pandemic



# They saw it

Size

Color

Behavior

Habitat

Season



Pieris rapae rapae



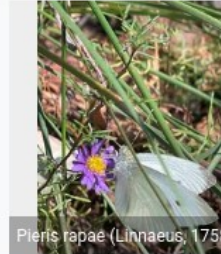
Pieris rapae (Linnaeus, 1758)



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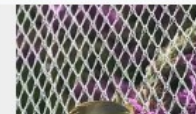
Pieris rapae (Linnaeus, 1758)



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Pieris rapae (Linnaeus, 1758)



# They saw it

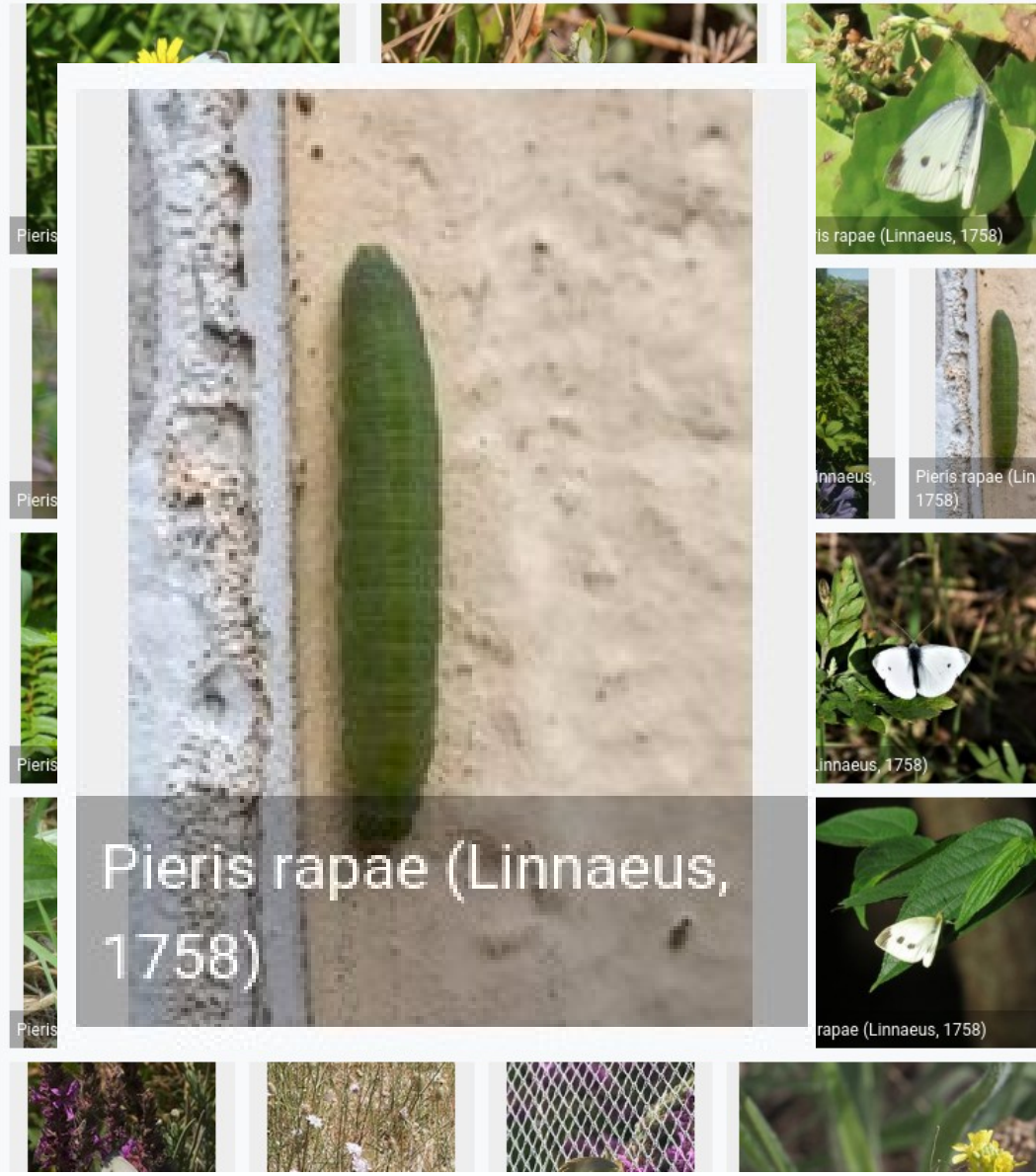
Size

Color

Behavior

Habitat

Season



# They recognized it

Popularity

Recognizable

Life stage

Behavior

Preferences





# They reported it

Interesting species

Interesting time

Interesting place



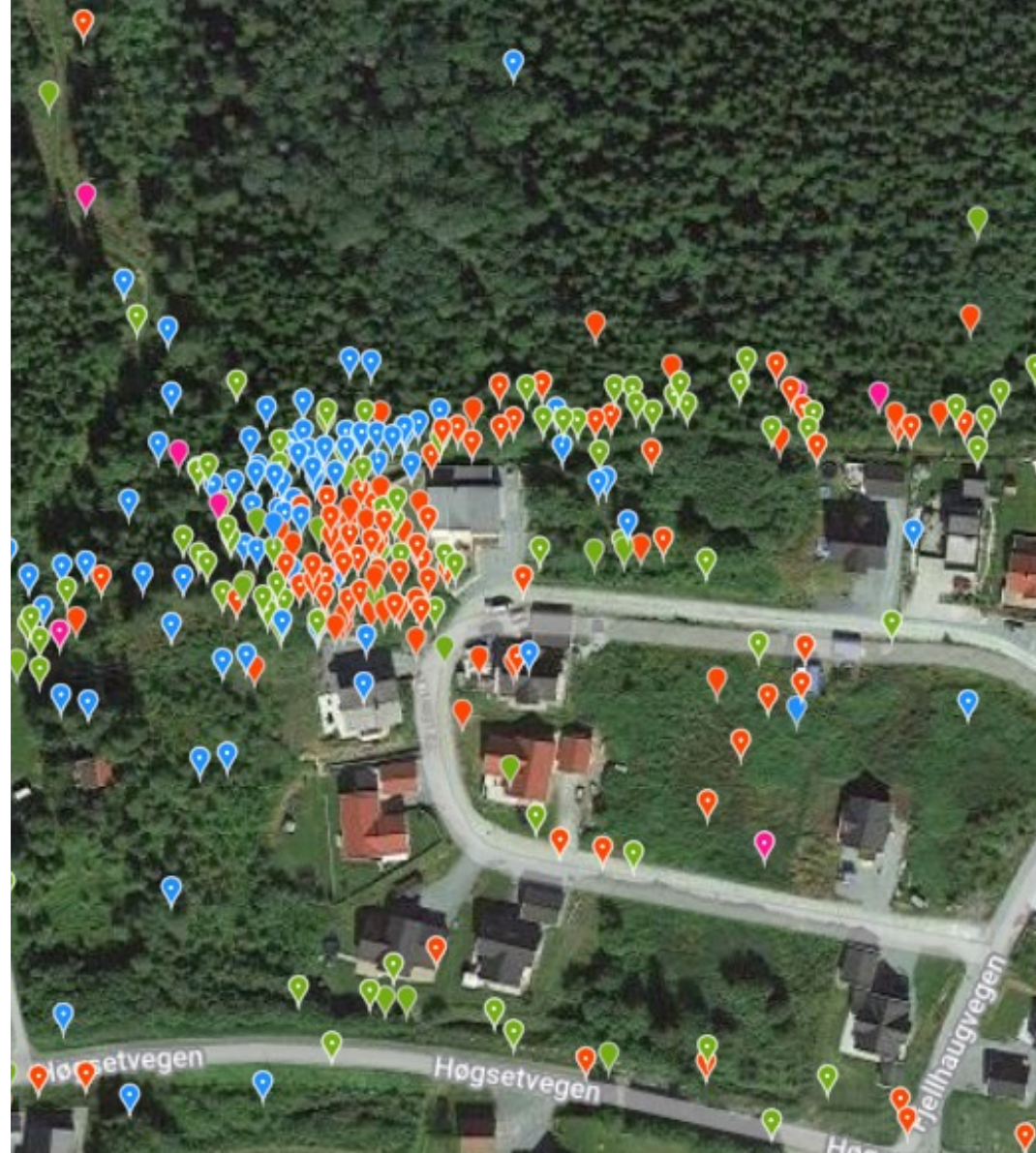
# They reported it

Interesting species

Interesting time

Interesting place

Or just a nerd



# Other issues

Opportunistic

Presence only

Pictures



# Other issues

Opportunistic

Presence only

Pictures

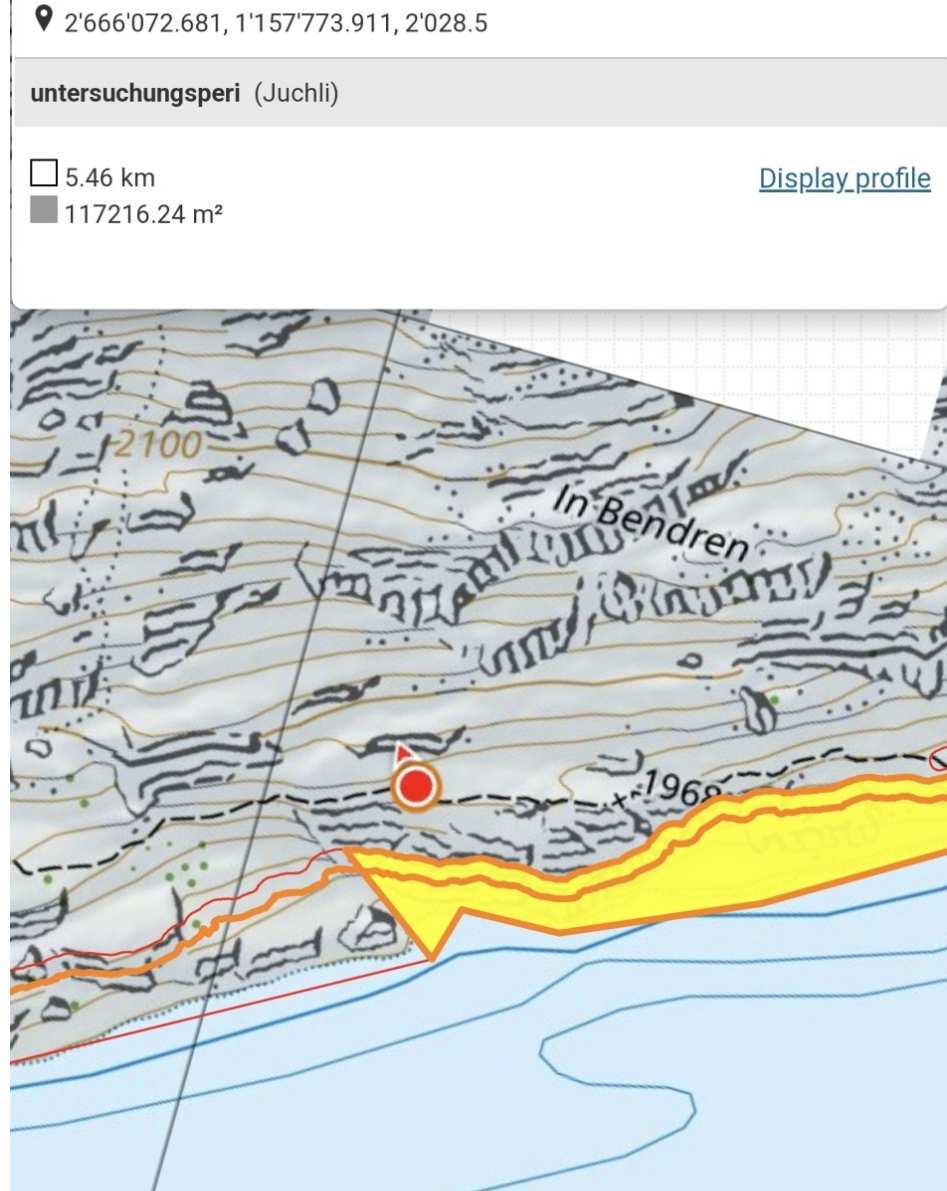


# Other issues

Opportunistic

Presence only

Pictures



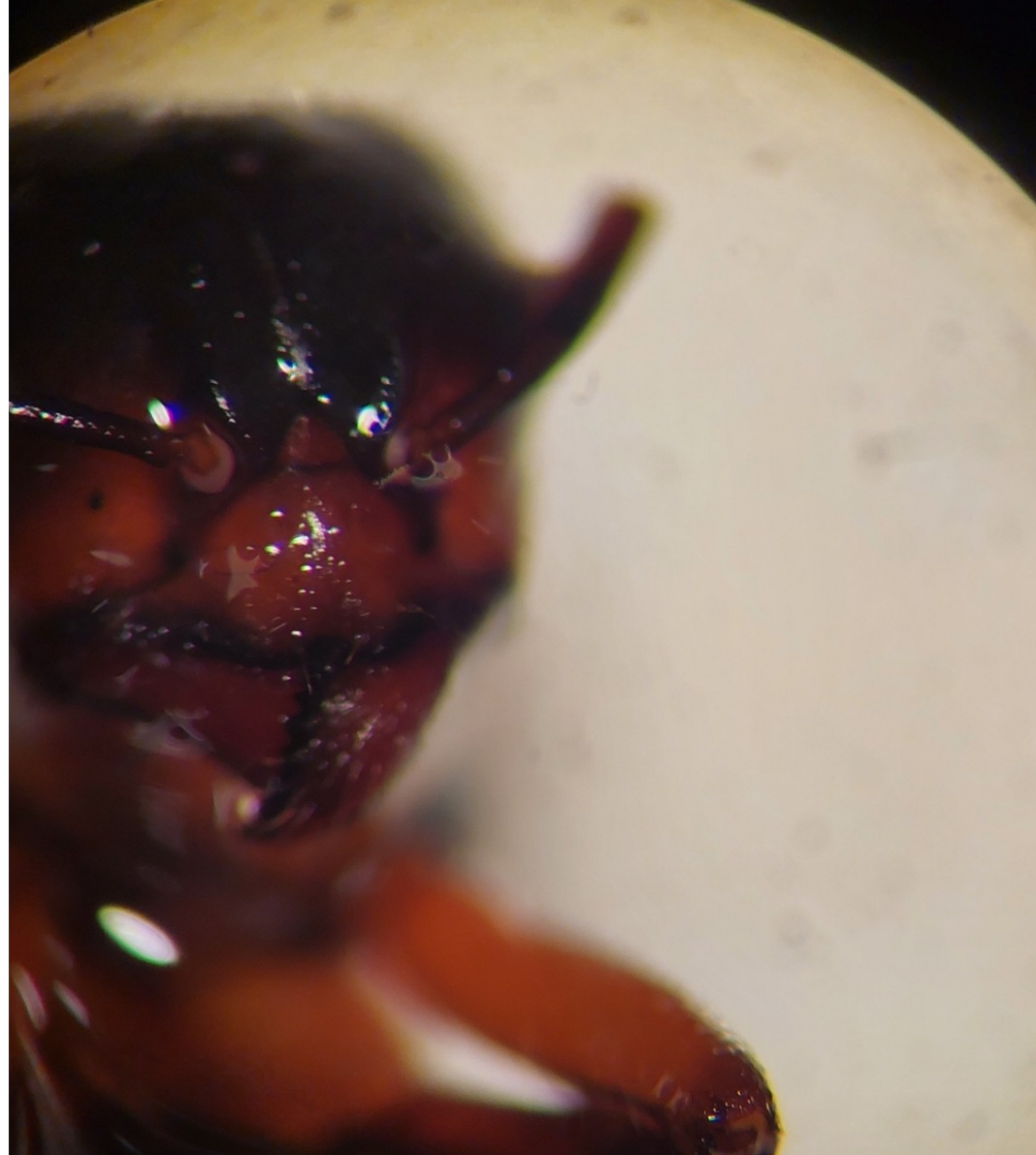
# Other issues

Opportunistic

Presence only

Pictures

*Documentation vs identification*



# So why bother?

Unrivaled quantity

Unrivaled spread

Fit for purpose

Public engagement ❤️



# There are ways

Statistical models

Supplemental data

Novel projects

Developing user tools





# Conclusion

It requires work

It's messy

It's not always suitable

It's fun

It's important

It's a goldmine





Thank you

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