

# European moths

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*Eublemma rosea*



*Lemonia dum/batavorum*



*Hecatera maderae*



# European Lepidoptera

± 11.000 species <sup>1</sup>

- 501 butterflies <sup>2</sup>
- 3.178 larger moths
- > 7.000 micro moths

<sup>1</sup> <https://www.projectpsyche.org/>

<sup>2</sup> van Swaay et al 2025



*Hipparchia semele*



*Caloptilia azaleella*





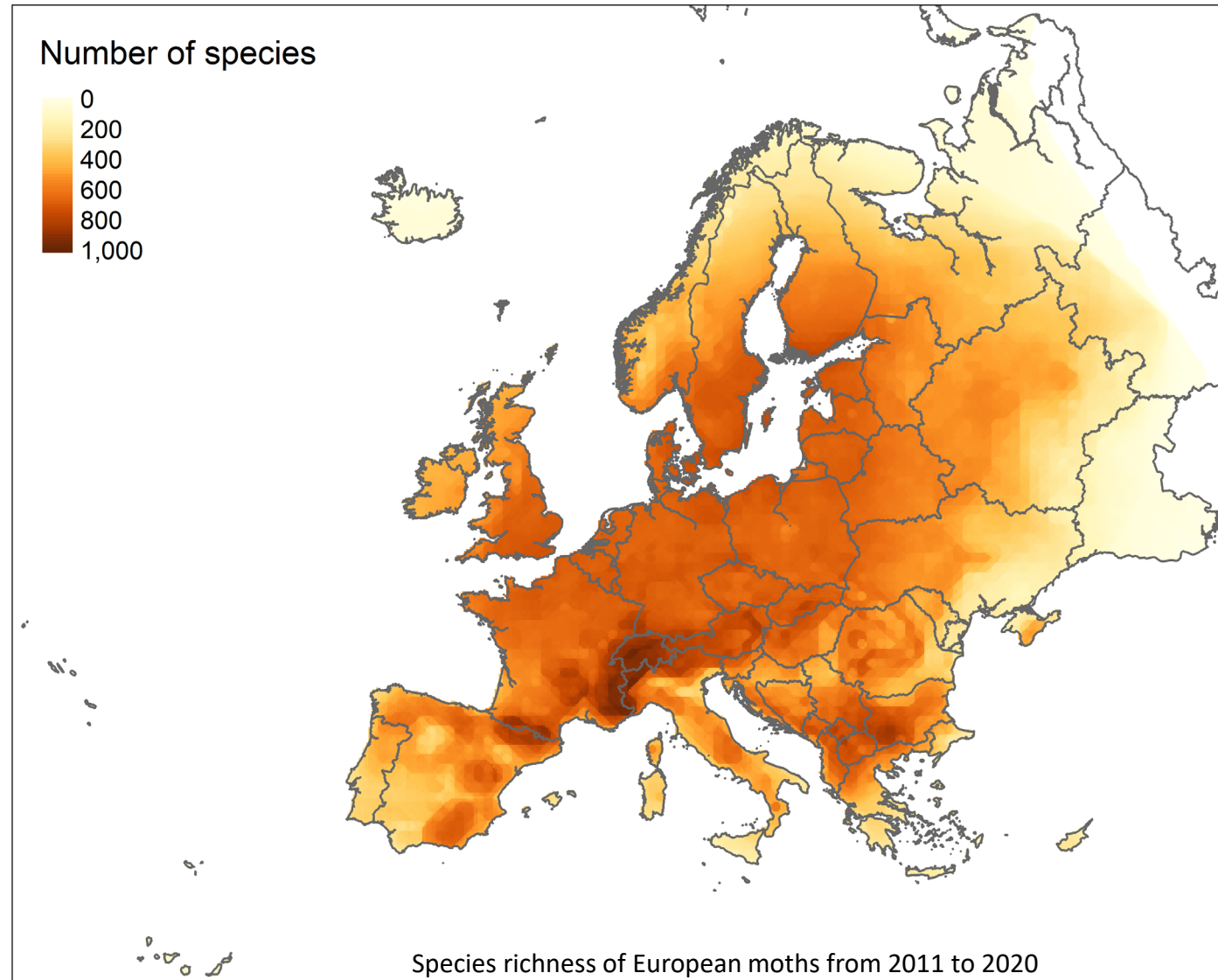
*Endromis versicolora*



# Species richness of European larger moths



- Map with number of species per  $10 \times 10 \text{ km}^2$
- Based on a species distribution model for 2,578 of 3,179 species



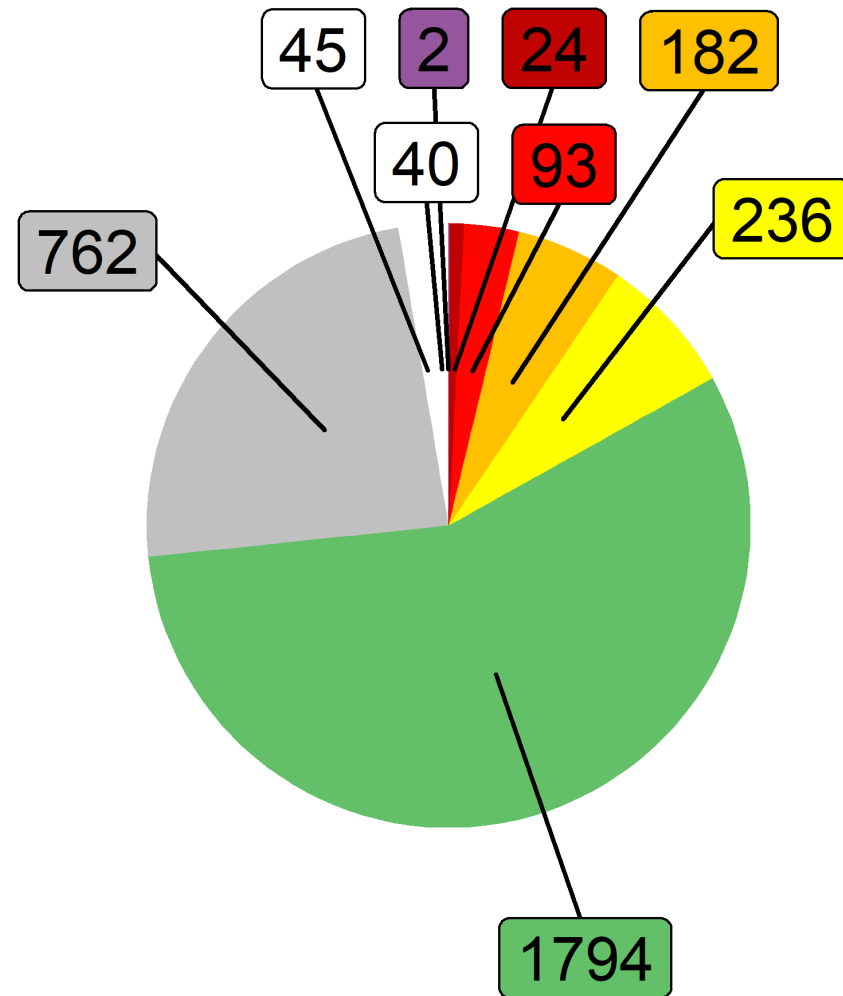


# Preliminary Red List status moths Europe

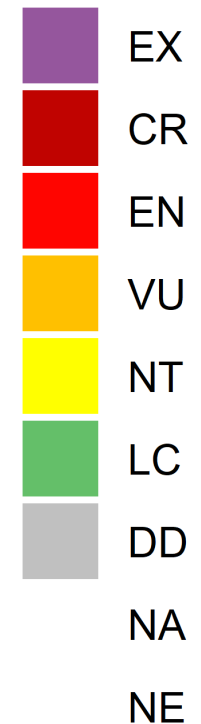


- 9.4% Threatened
- 7.4% Near Threatened
- 24% Data Deficient

Published in the next update of the Red List website which is scheduled for early July.



Red List Category



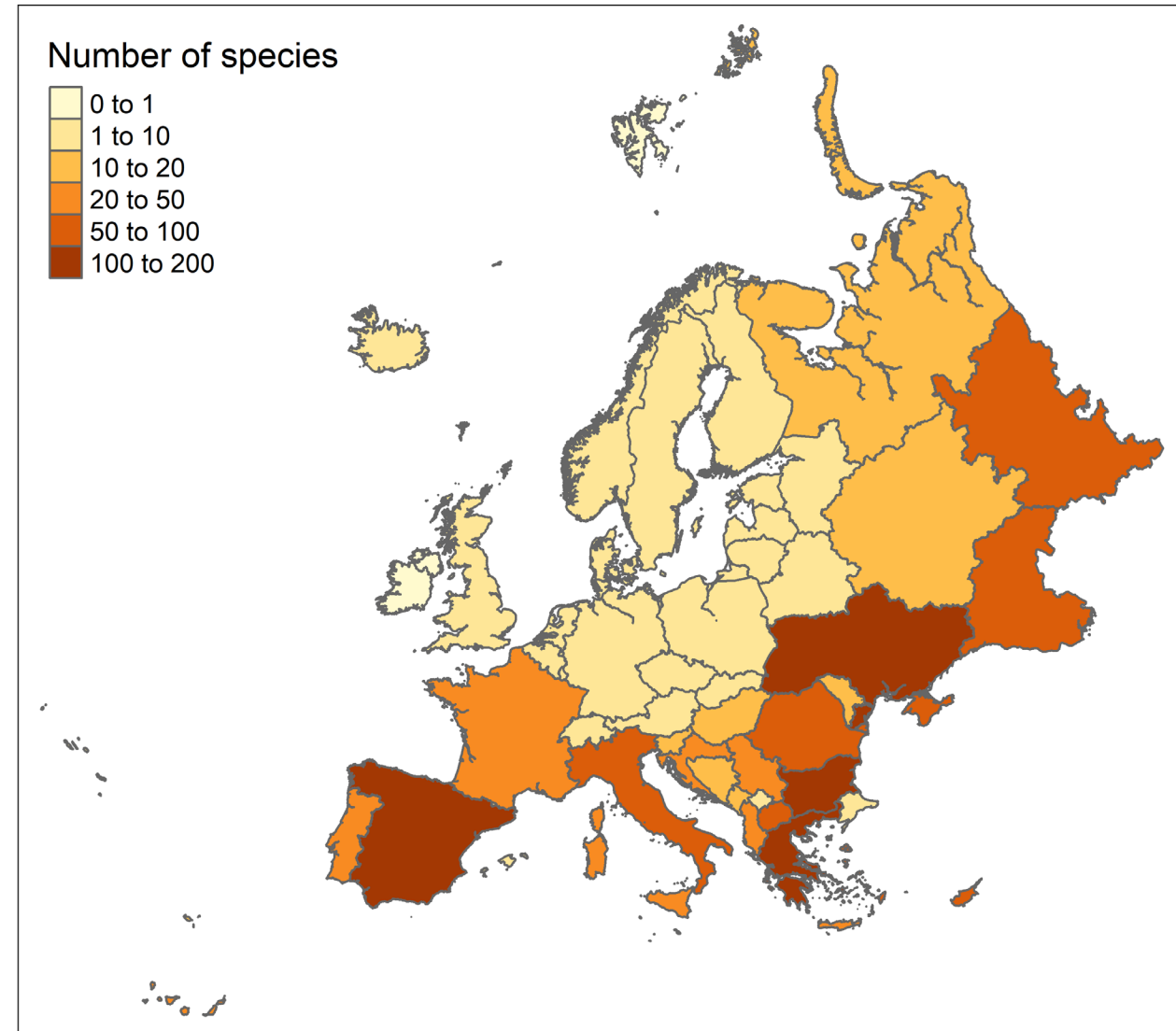


# Data Deficient

- 762 in Europe
- 211 of 500 European endemic species

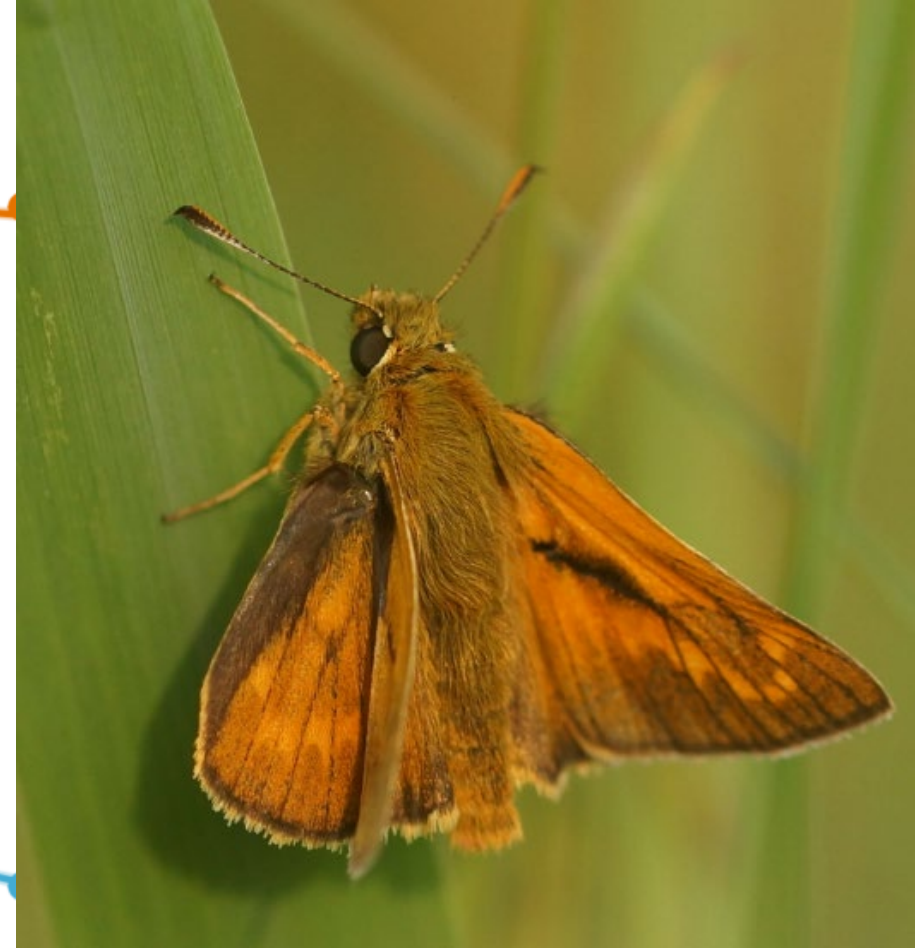
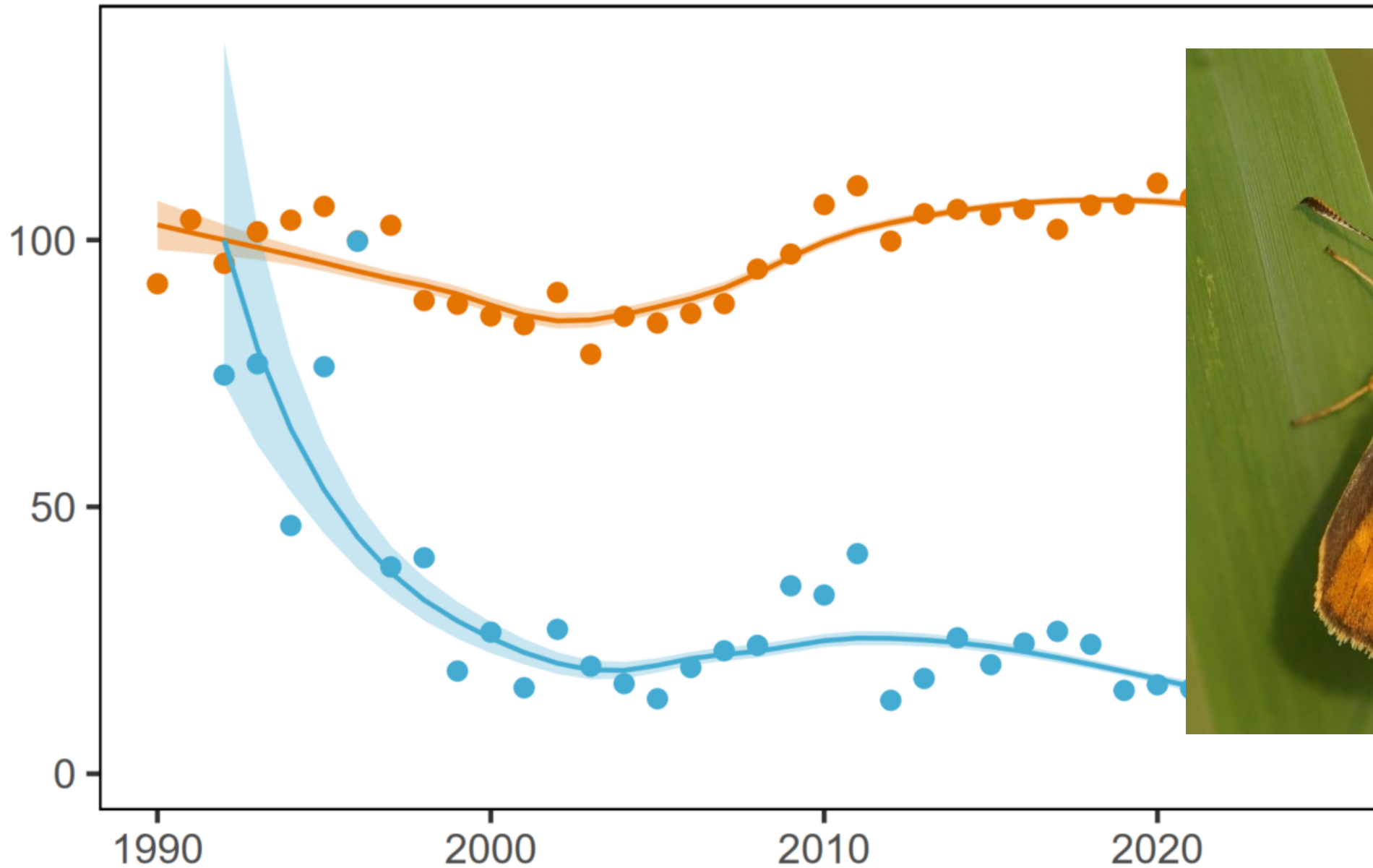


*Euchalcia chlorocharis*



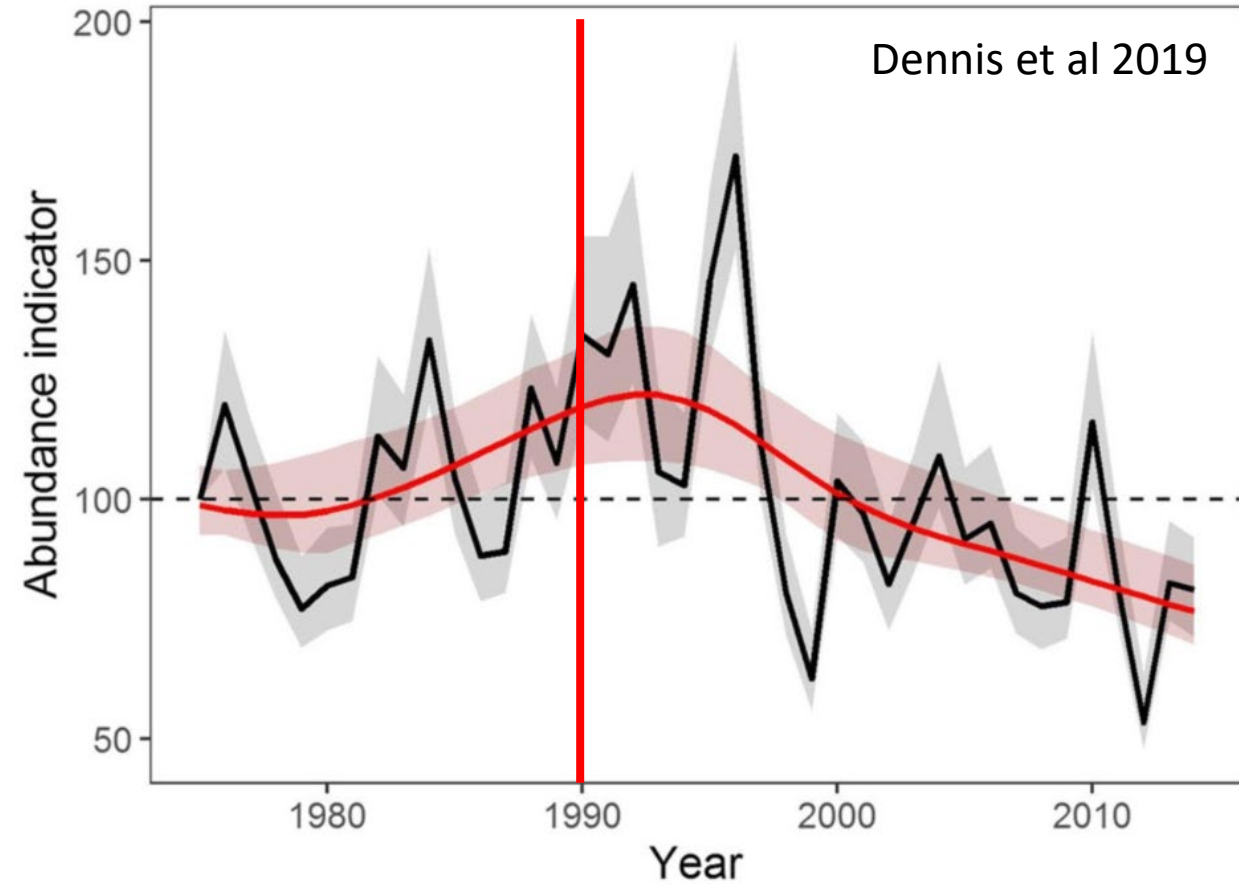
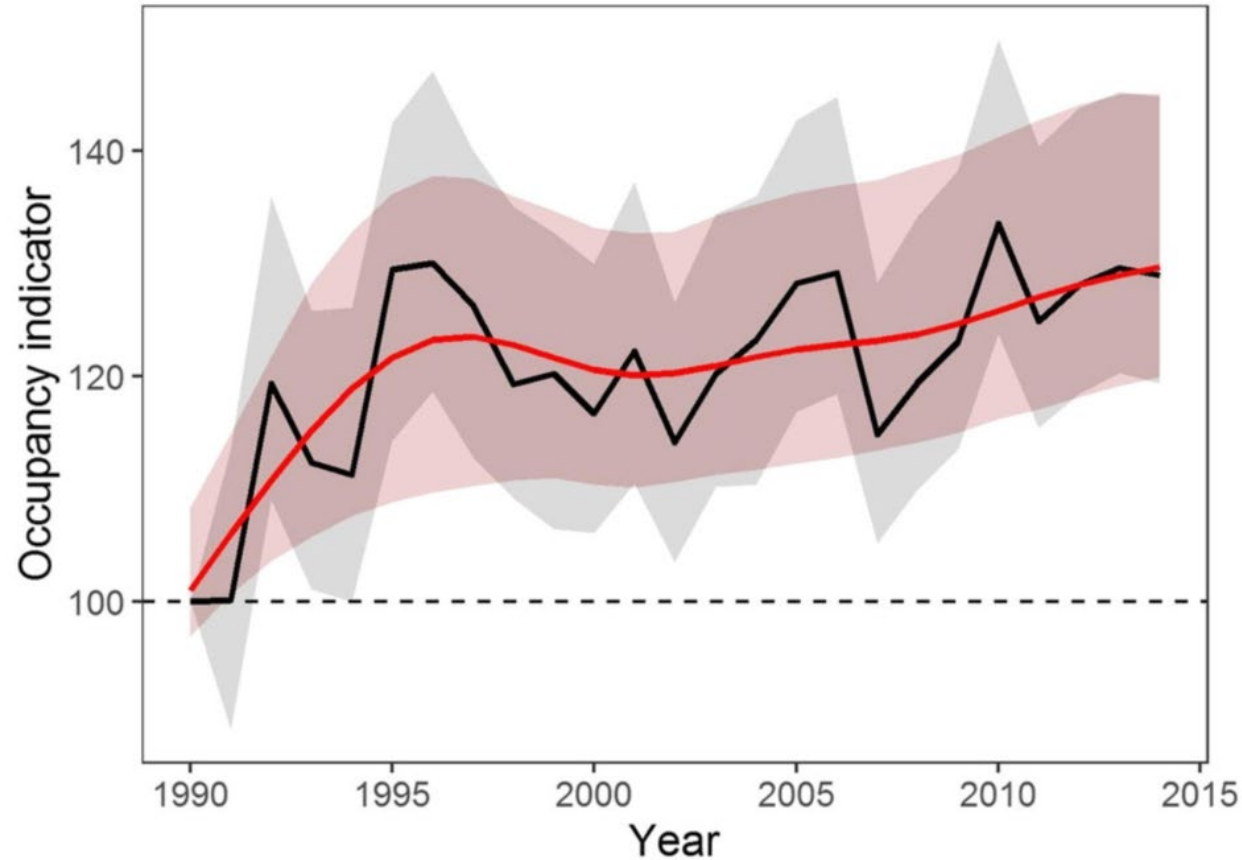


# Large skipper - *Ochlodes sylvanus*





# Occupancy vs. population trend in Scotland





We need more standardised moth monitoring!

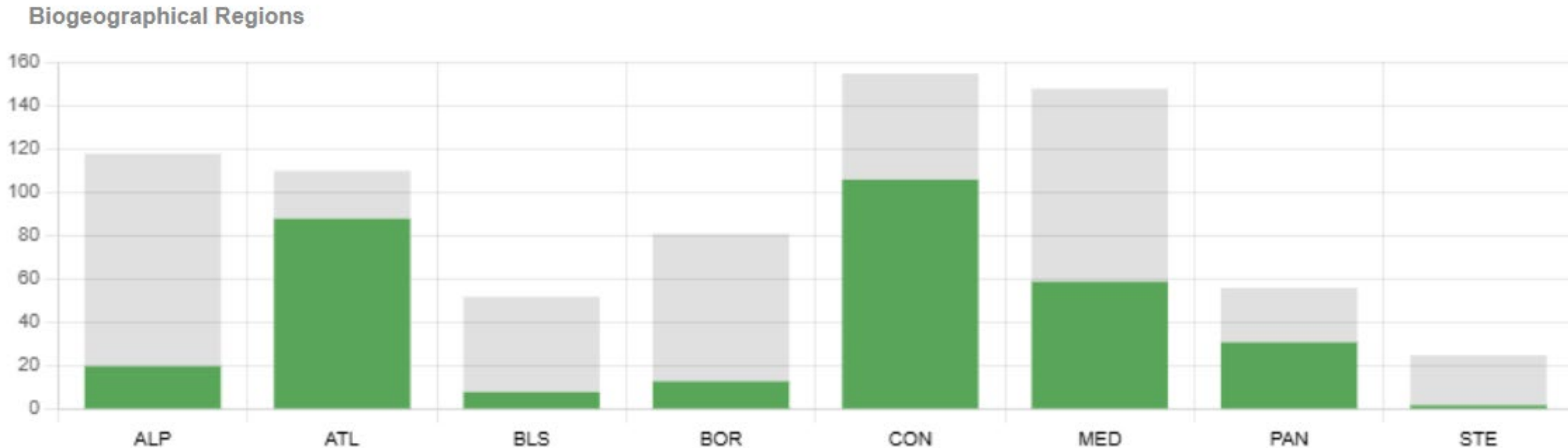






# Also for the European Union

- Nature Restoration Regulation/ Eu-PoMS
- Pollhab – Pollinators as typical species for Natura-2000 habitat types (Dirk on Friday)





# Towards European Moth Monitoring

Current monitoring schemes:

- Belgium(Flanders), United Kingdom, Finland, Netherlands, Hungary, Estonia

Use of EBMS website and app

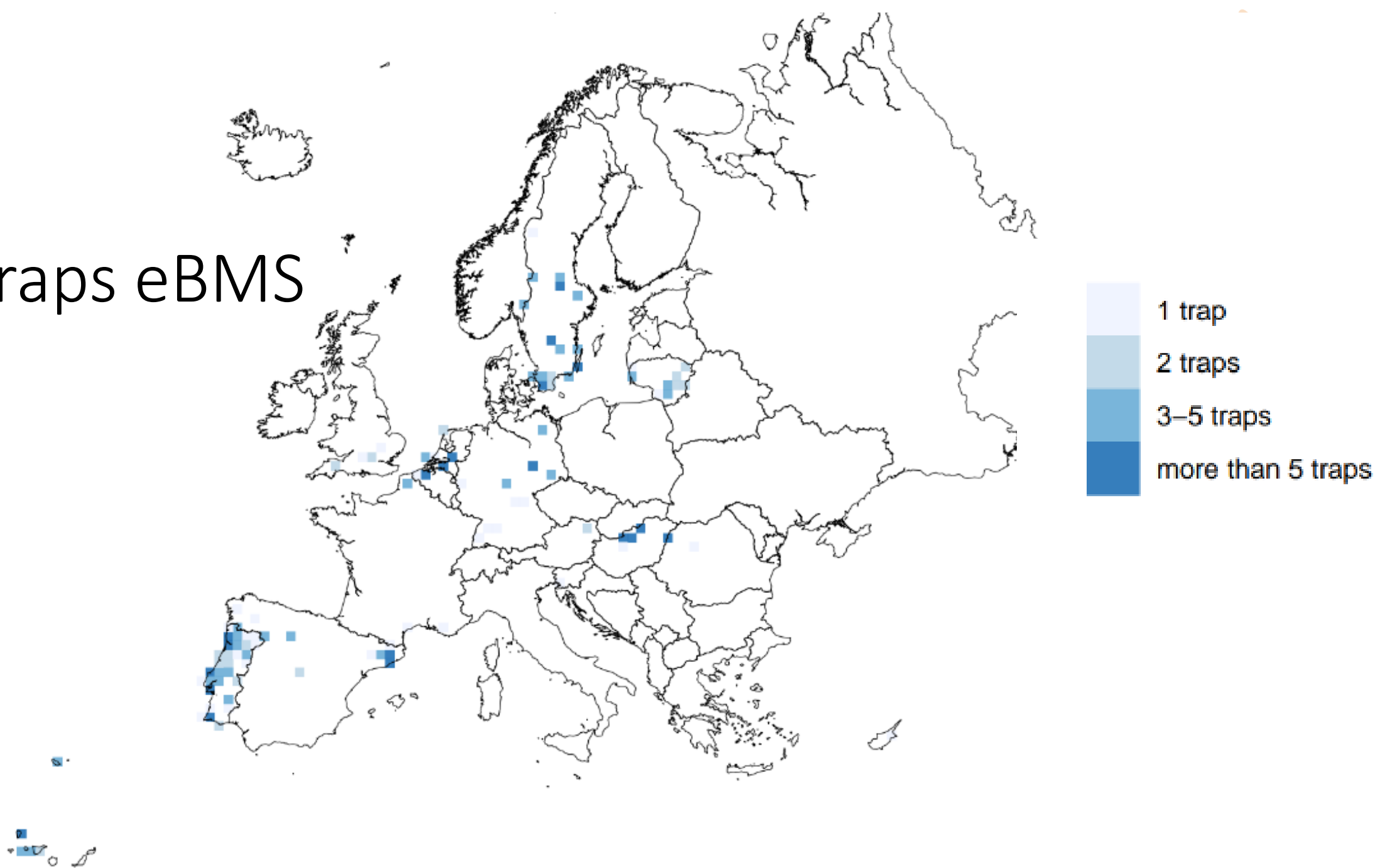
- Portugal -> presentation Helder
- Also EUpoms -> presentation Cristina



**Everyone can easily join moth monitoring!**  
Both national BMS schemes and private initiatives are open to participation.



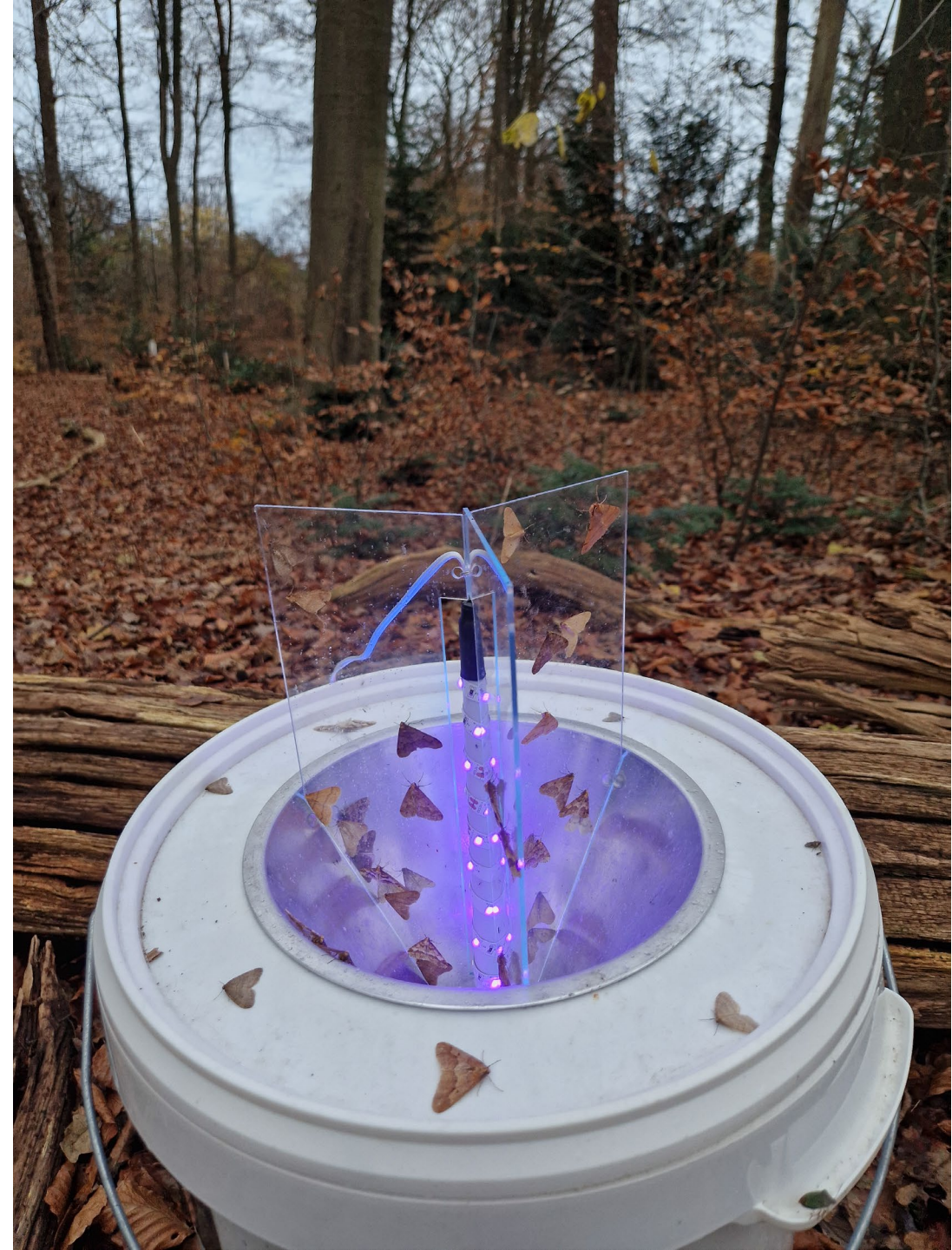
# Moth traps eBMS



# How to accomplish this?

## European Moth Network

- Moths as part of BCE
- Just start
- Make use of the fully developed system in EBMS website and the app.





# Upscale production of LED-Traps

- Scheduled mid 2026
- Local attraction











# How did we start?

- In one area before 2013
- National in 2013
- No external funding

In 2013:

- 18 sites
- 14 volunteers
- Only in gardens



# Dutch Moth Monitoring Scheme



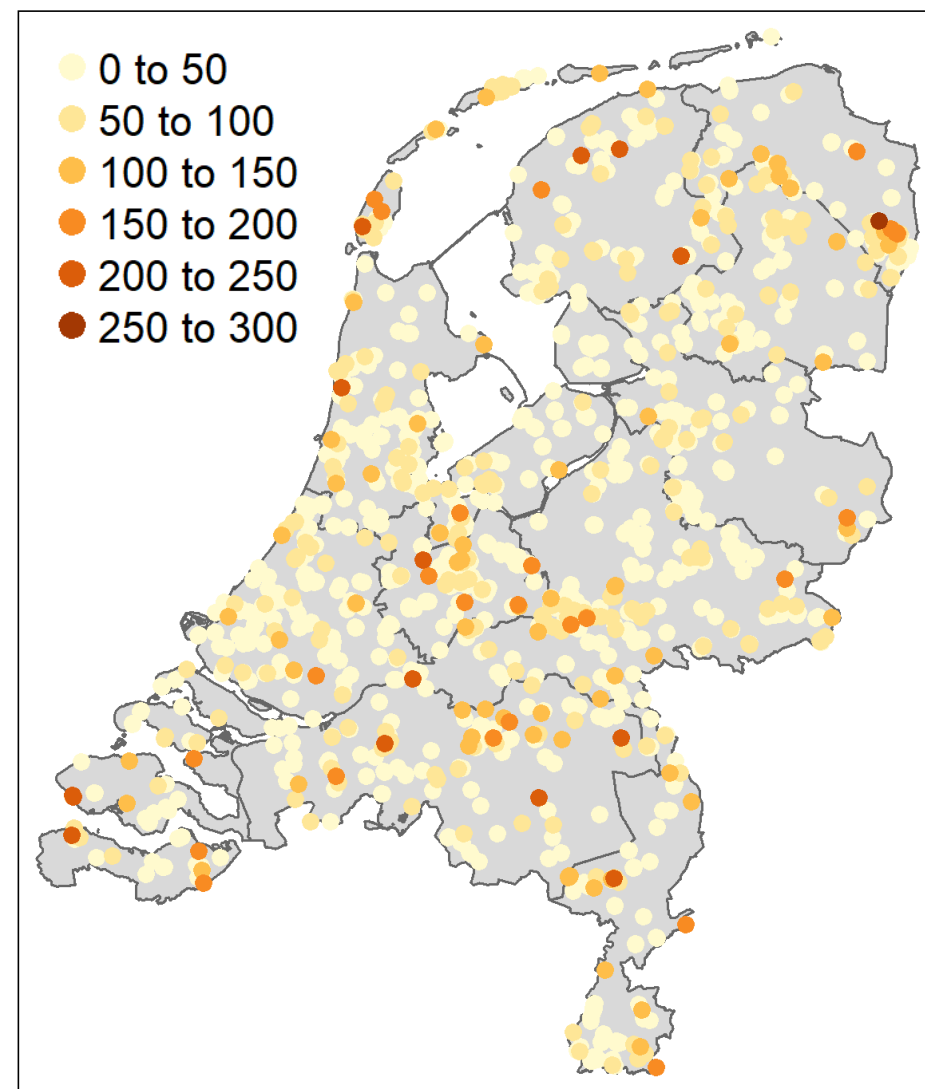
- 2013: macro moths
- 2018 first external funding (by government)
- 2021: micro moths

In 2025

- Specimen: Almost 500.000
- Locations 1665
- Species: 671 macro + 827 micro
- Volunteers: 838



Number of recorded species in 2025 per site





# Farmers' Insect Monitoring Agricultural Area

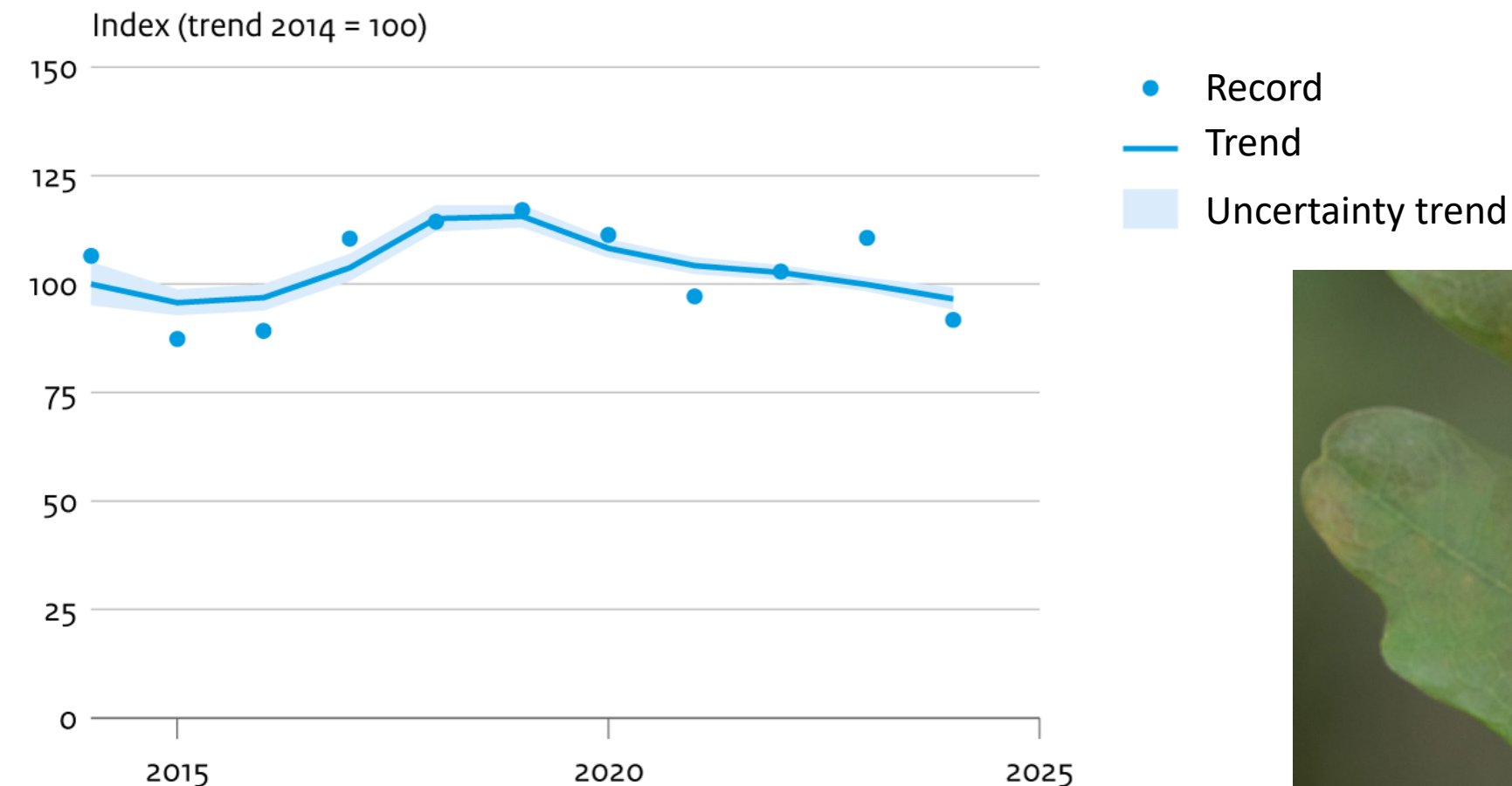


- Farmers count butterflies and moths themselves
  - 3 moth traps
  - Image recognition
  - Collaboration with two farmer organizations
  - Financed by the Dutch Ministry
  - Part of our moth network
- 
- Pilot in 2019
  - 240 farmers whole project
  - 154 farmers in 2025





# Biomass trend 719 (out of 850) species



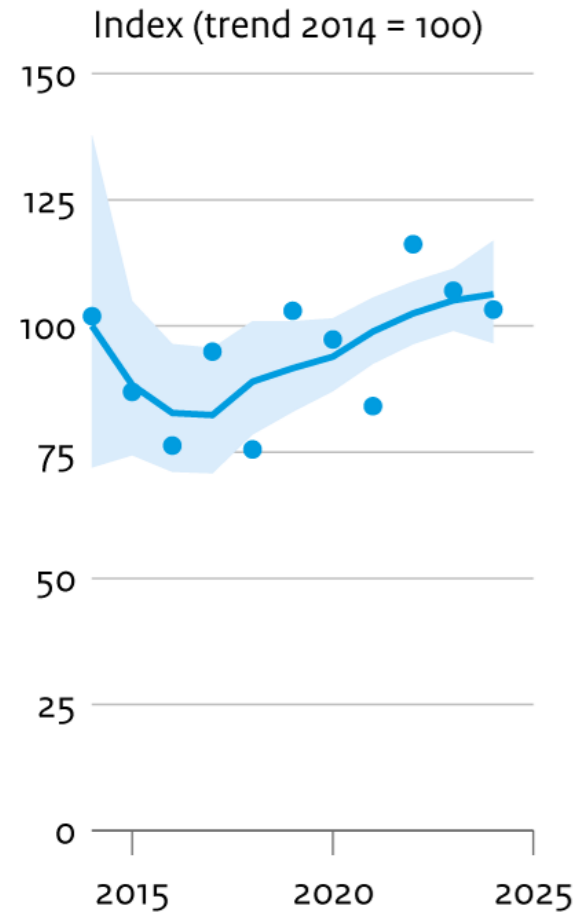
Centraal Bureau  
voor de Statistiek



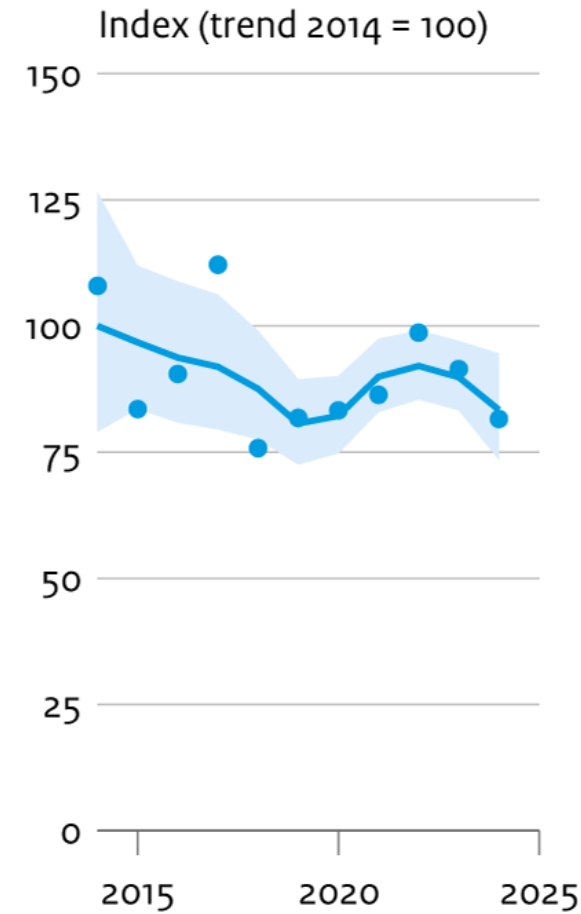
*Noctua pronuba*



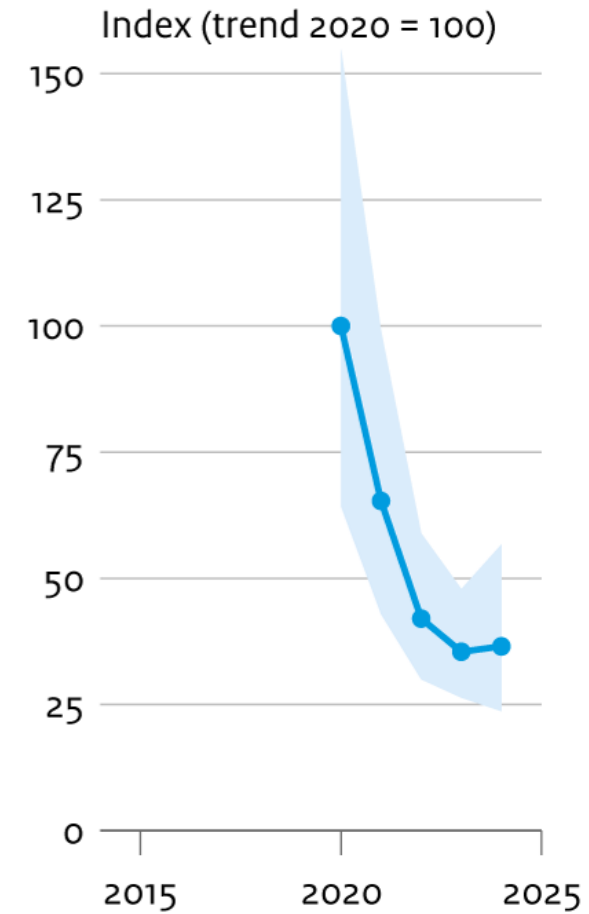
## Agricultural areas



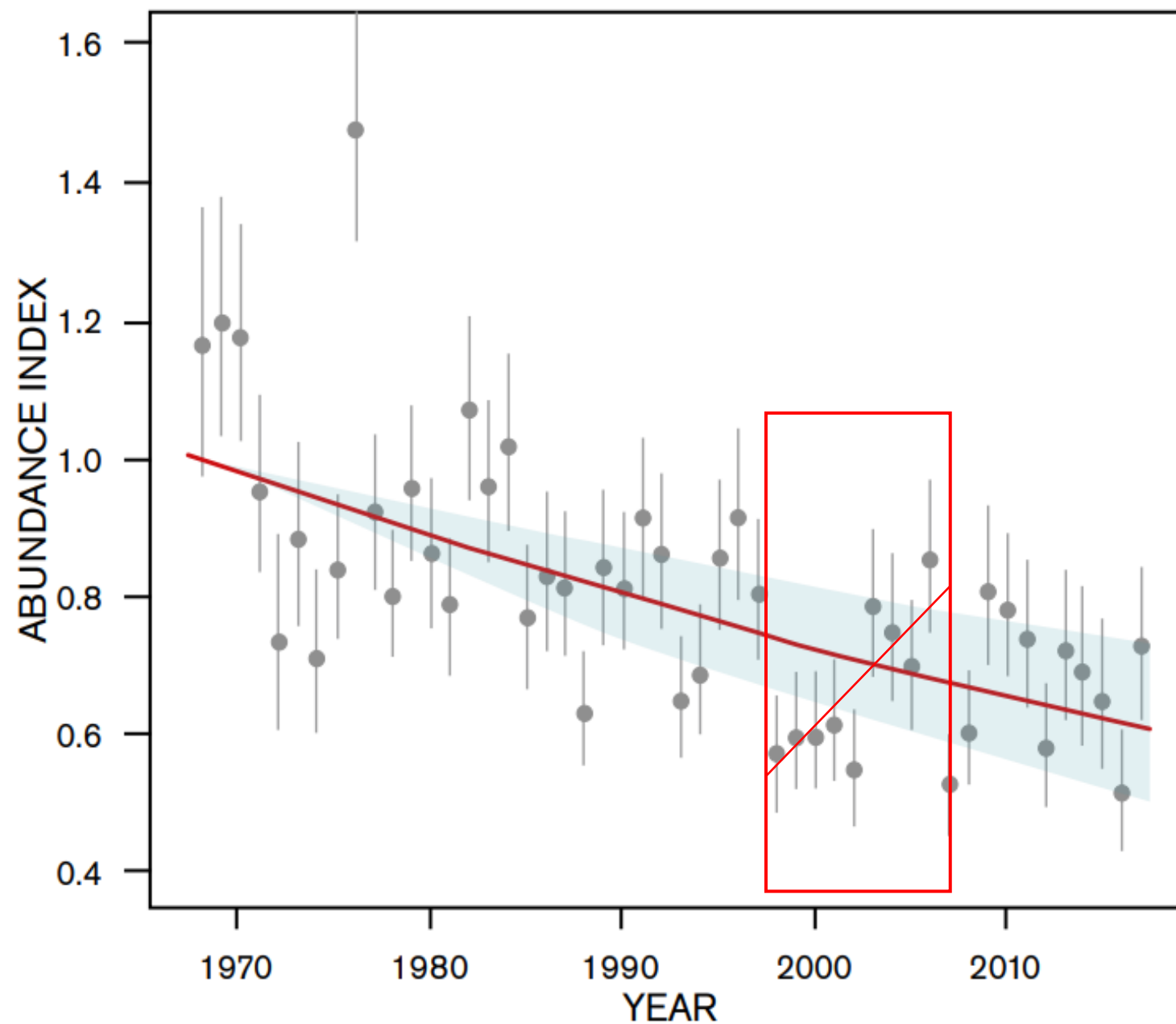
## Urban areas



## Forests



# SOUTH

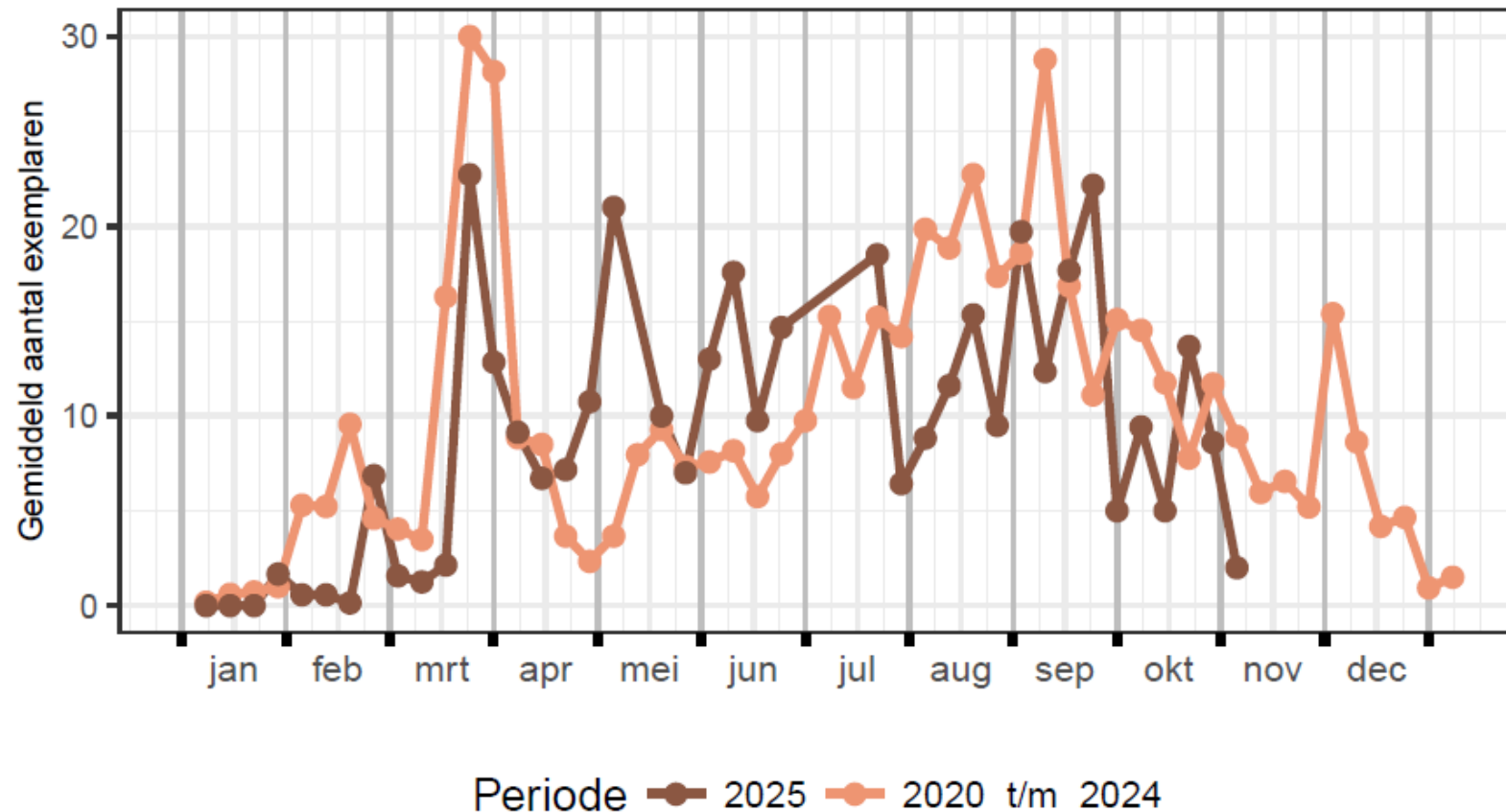




# How do we keep them enthousiastic?



- Annual Volunteer Day
- Personal survey feedback
- Monthly newsletters

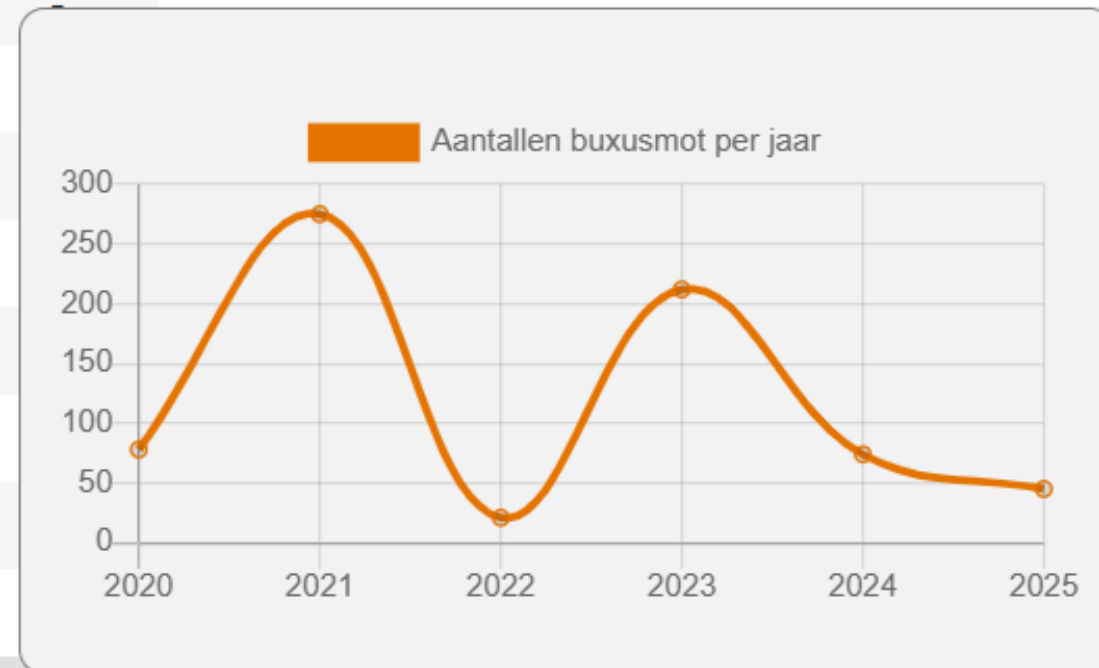


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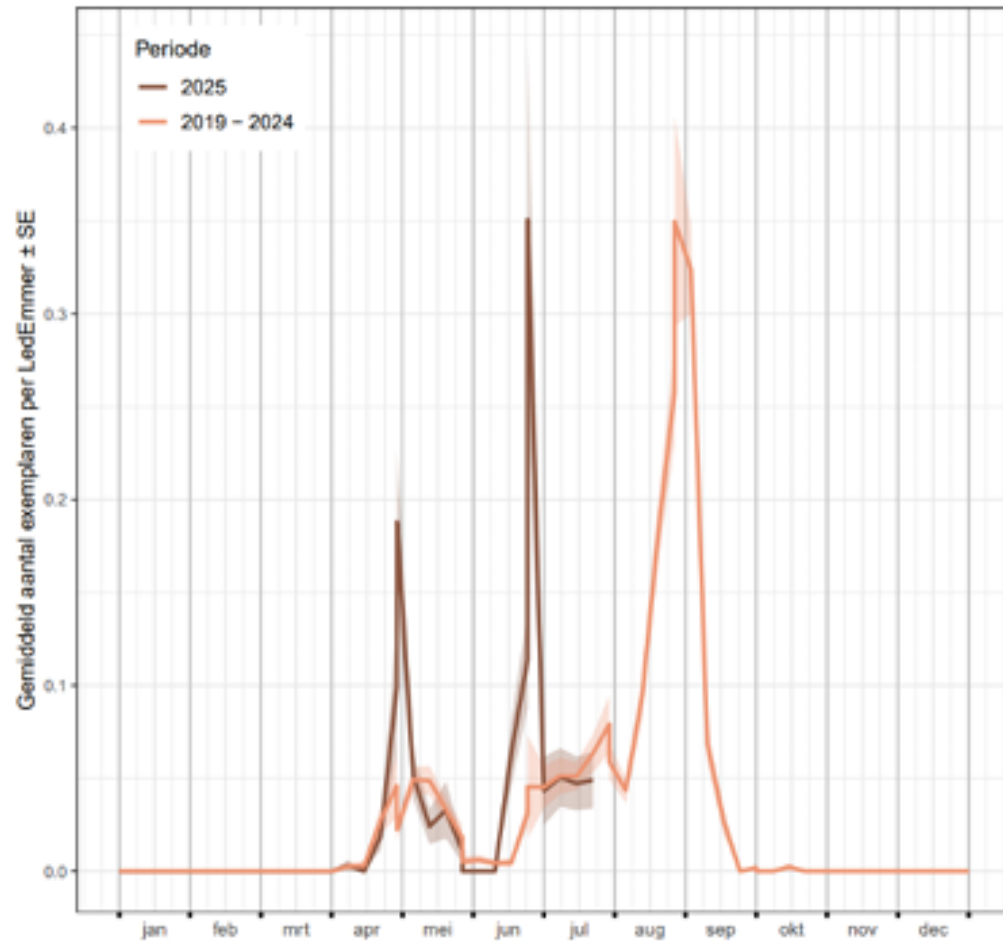
	-	1	-	-	-
bruine eenstaart	-	1	-	-	-
bruine grijsbandspanner	-	1	2	3	5
bruine herfstuil	-	-	1	1	-
bruine sikkeluil	-	24	1	28	33
bruine snuituil	1	5	-	-	2
bruine wapendrager	-	-	-	1	2
bruine zwartstipuil	-	1	-	-	-
buxusmot	78	275	21	212	74
					45





## *Watsonalla binaria*

gele eenstaart



Dat de gele eenstaart meerdere vliegpieken of generaties heeft per jaar is bekend, dit jaar is er in de data van deze soort echter een opvallende piek halverwege het jaar zichtbaar, die in het gemiddelde van de afgelopen vijf jaar een stuk minder duidelijk naar voren komt. De kans is aanwezig dat er nog een derde vliegpiek volgt in de nazomer. Welke vorm die gaat aannemen zien we hopelijk in de herfst.





# How can this help to protect moths?

- NRR: Reverse the decline of pollinator populations by 2030 at the latest
- When you know how they are doing, and prove this to your member state you can get funding for restoration measures
- Moths as indicators, for example for grassland indicators?



# Building a Moth Monitoring Network Together!



Please reach out to me during the break.



*Eublemma rosea*



*Lemonia dum/batavorum*



*Hecatera maderae*



# Questions for the discussion

- When setting up a Moth Monitoring Network, I would like to start to keep you involved. Please contact me somewhere during the break.
- Within the NRR, all species need to be identified on species level. This is impossible with volunteers. How can we make this possible? Professional and collecting those specimens
- When all data is entered in the same system we can (eventually) automatically generate personal reports. Would this be valuable?
- What do you want to be included in a moth network?
- Who do we need to include in which country? Who is enthusiastically monitoring in Europe? Names and email. Preferably society
- What do you expect from us?
  - Updates about policy?