European Butterfly Monitoring Schemes: capacity building and cost effectiveness

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eBMS

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Butterfly Conservation

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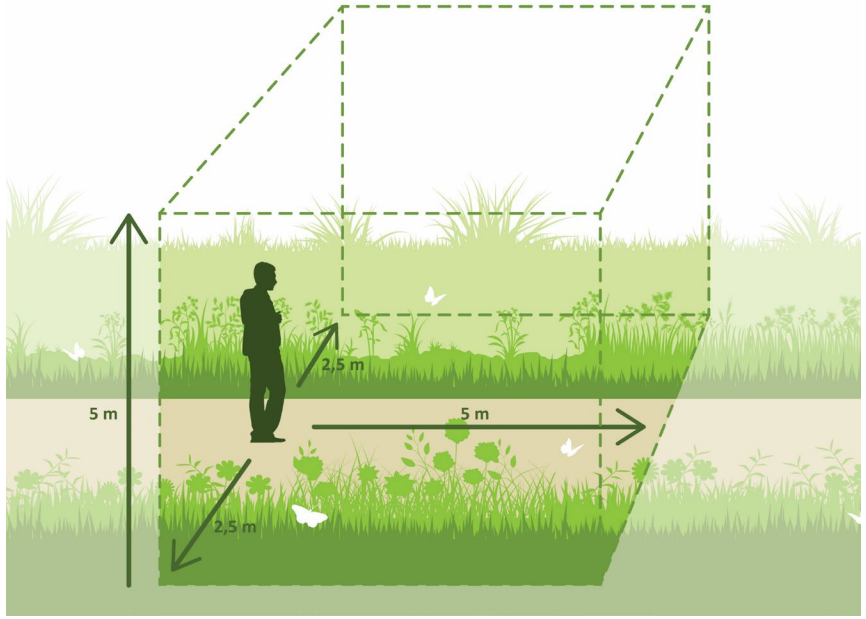
European Commission environment

Monitoring method: BMS

- First Butterfly Monitoring Scheme (BMS) since 1976 in the United Kingdom and now all EU MSs with BMS.
- BMS as a monitoring system: based on expert citizen scientists + coordination.

Trained volunters: experts with time



Butterfly CONSERVATION EUROPE

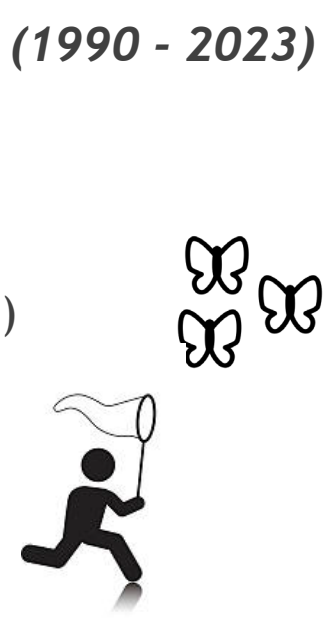
Butterflies as indicators

- **Short life** with several stages and some species habitat-specific
- **Respond rapidly** to changes in habitat condition and climate
- Well documented (biology, ecology, distr. 50 years monitoring methods)
- **Easy to observe** and train on identification
- Great popularity in society = involve **citizen science**

eBMS central database

European database in numbers (1990 - 2023)

- ~10,000 volunteers
- 18 million counts
- **34 BMS** in 30 countries (Europe)
- 1,3 million visits
- 15,149 transects
- 49,418 km monitored
- **353** registered butterfly species

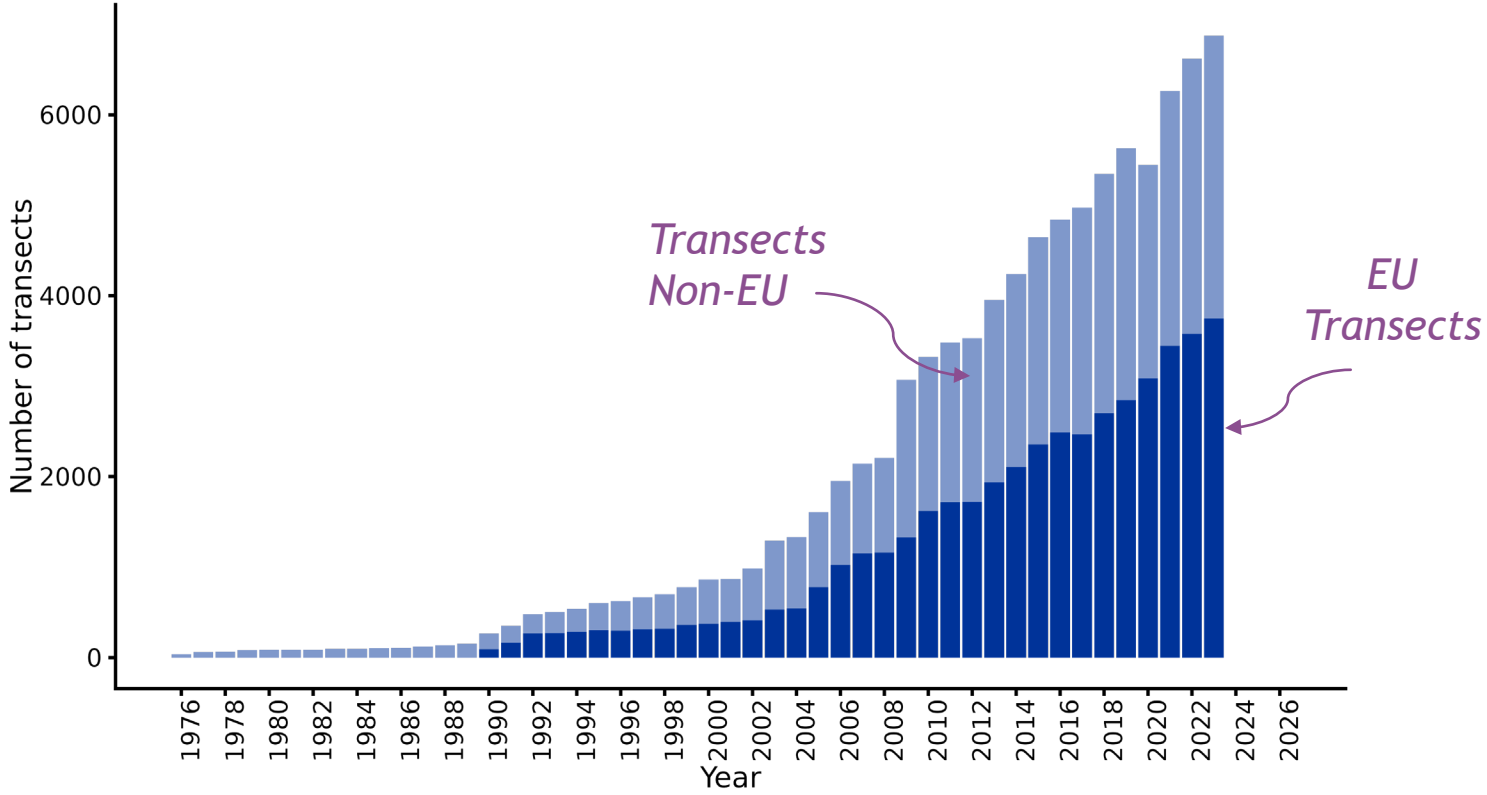


Biggest systematic database of insects in the world

V6 eBMS database updated 2023

eBMS database + network

- Same methodology: comparison between countries/schemes
- BMS growing fast across Europe



Butterfly Conservation Europe

IRISH BUTTERFLY MONITORING SCHEME

CBMS Catalan Butterfly Monitoring Scheme

UKBMS

STERF Suivi Temporel des Rhopalocères de France

Dutch Butterfly Conservation

tagfalter-monitoring.de

Svensk dagfjärilsövervakning 2010 www.lu.se/dagfjarilar

BMS ESPAÑA

ABC

SoM

Madeira Butterfly & Moth Monitoring scheme

Društvo za proučevanje in ohranjanje metuljev Slovenije Celje

tagis Centro de Conservação das Borboletas de Portugal

APOLLO-GR BMS

ai

viel-falter.at

eBMS

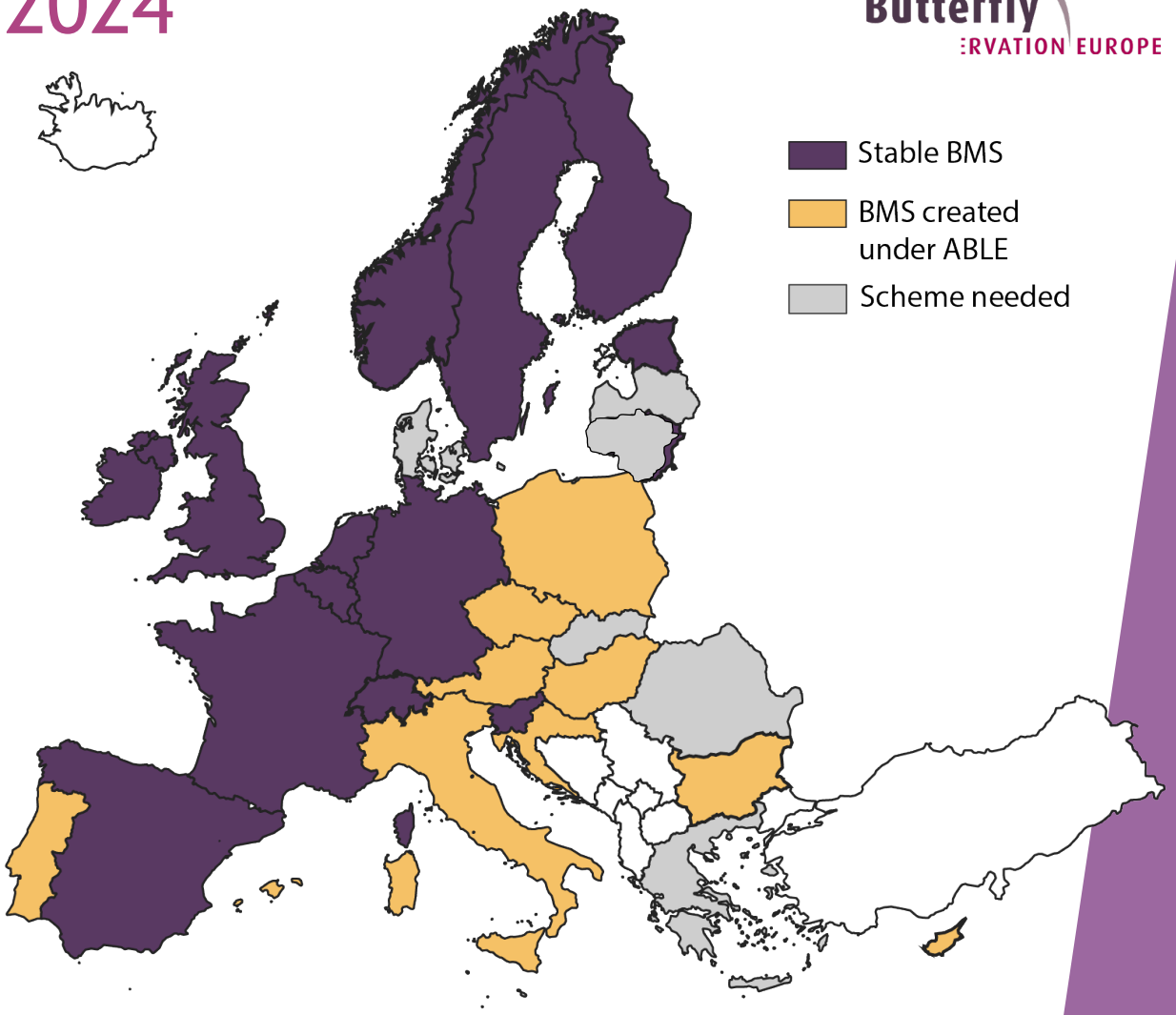
eBMS growth in the EU 2018-2024

ABLE BMSs created – Fledging schemes:

1. Italy
2. Portugal
3. Hungary
4. Cyprus
5. Austria
6. Czech Republic
7. Croatia
8. Malta
9. Bulgaria
10. Poland

Focus countries on SPRING:

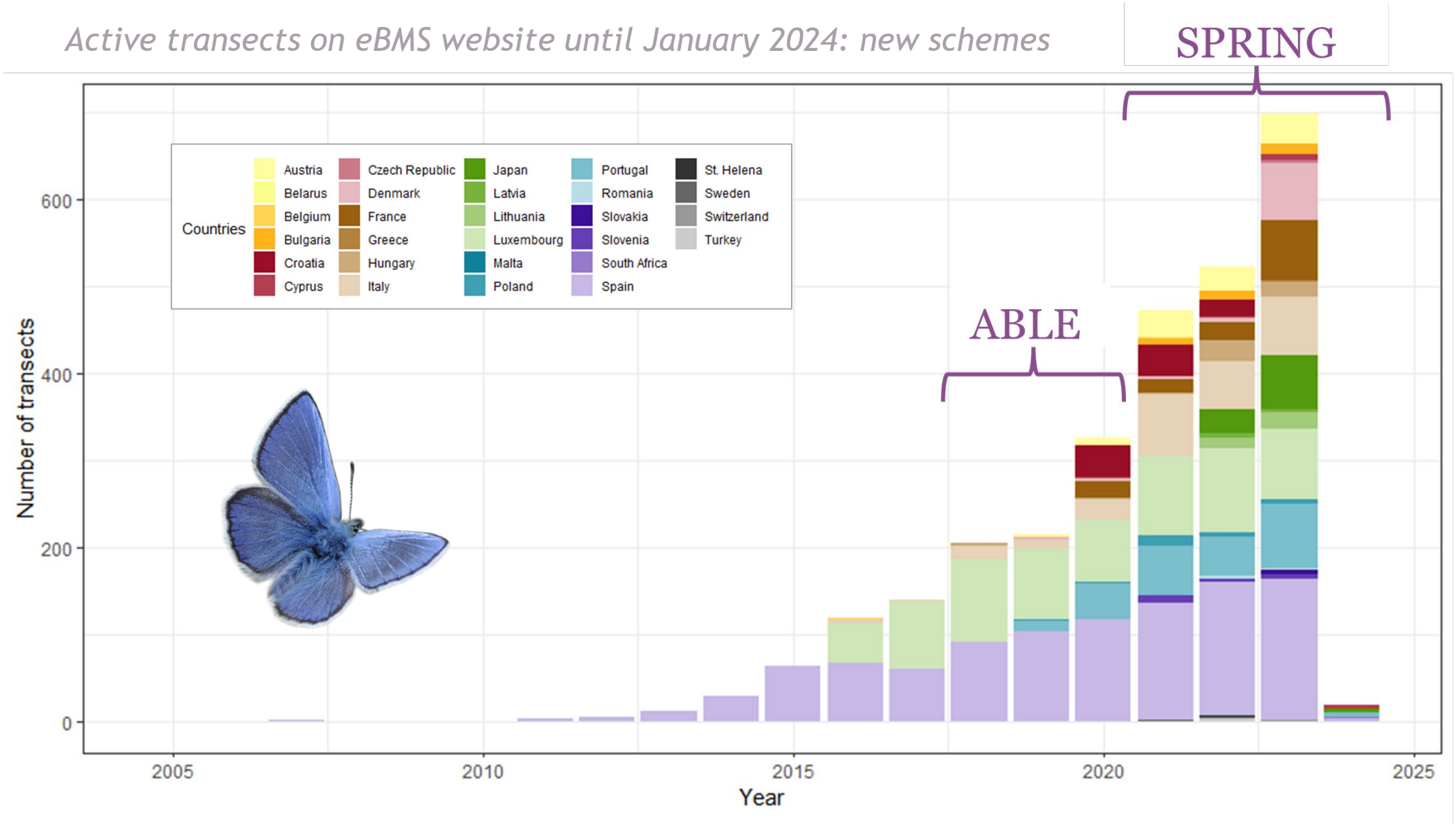
1. Denmark
2. Lithuania
3. Latvia
4. Slovakia
5. Romania
6. Greece



EU funded projects

eBMS growth in the EU 20218-2024

Active transects on eBMS website until January 2024: new schemes

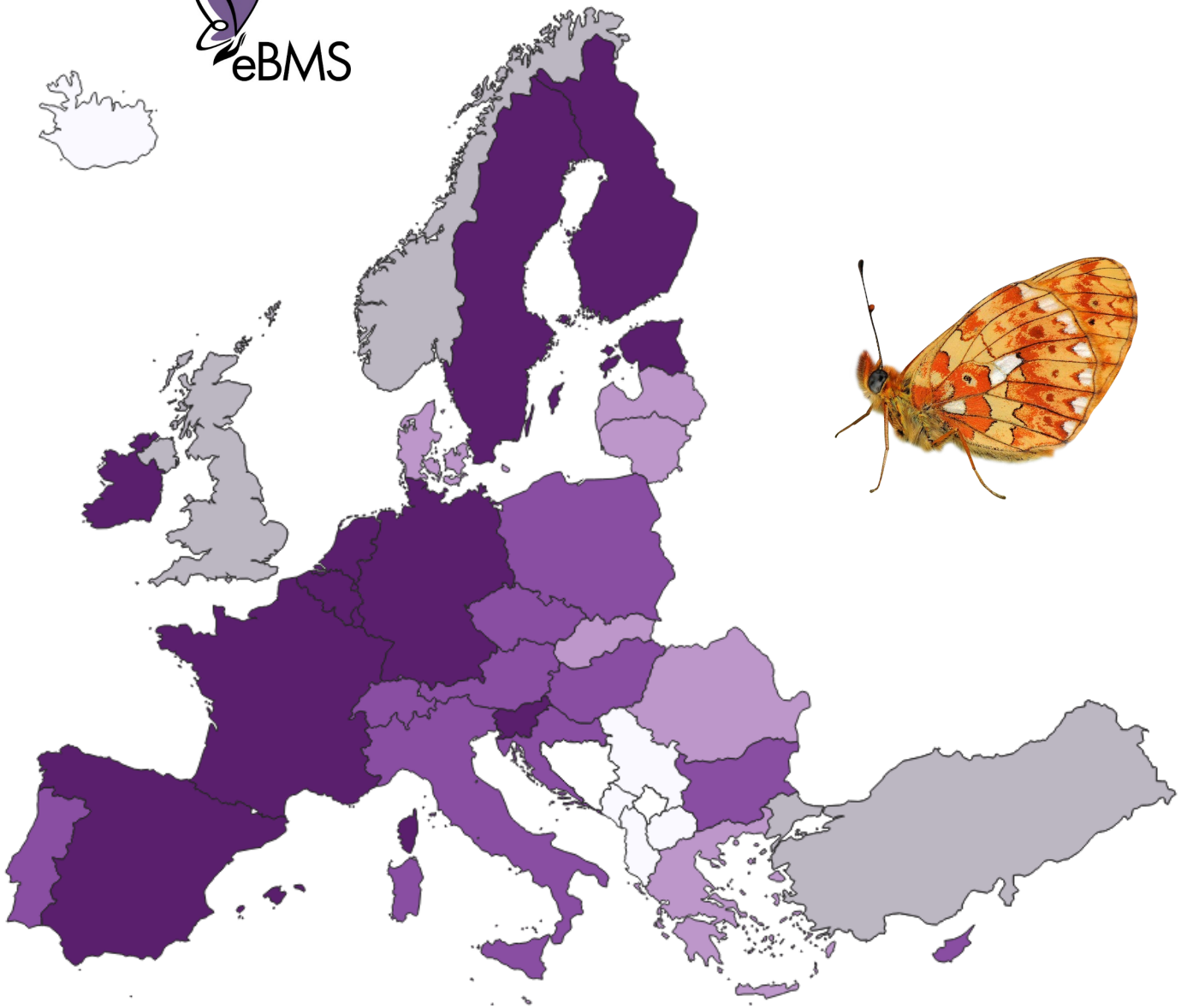


eBMS status 2024

Robust network of Butterfly Monitoring, 27 EU MSs running BMS

Stable BMS

- Scheme with long-term monitoring data (decades of data)
- In general, supported by institutions/governments (national/regional)
- Produce trends, reports, papers



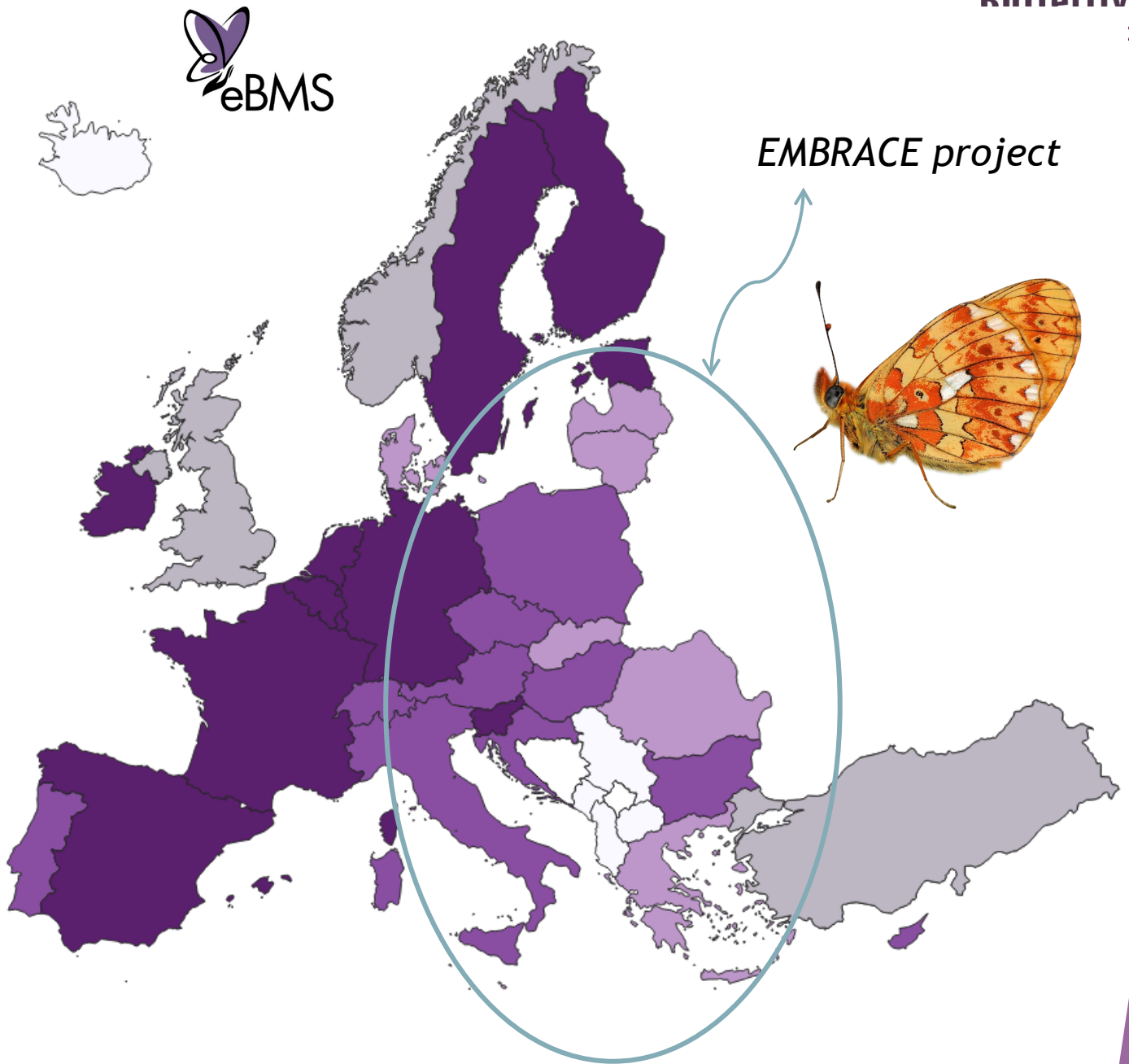
eBMS status 2024

Robust network of Butterfly Monitoring, 27EU running BMS

In Progress BMS

Starting BMS

- Some years of monitoring
- Volunteer coordinators
- No national institutional/government funding to date
- Schemes are vulnerable, need to increase capacity



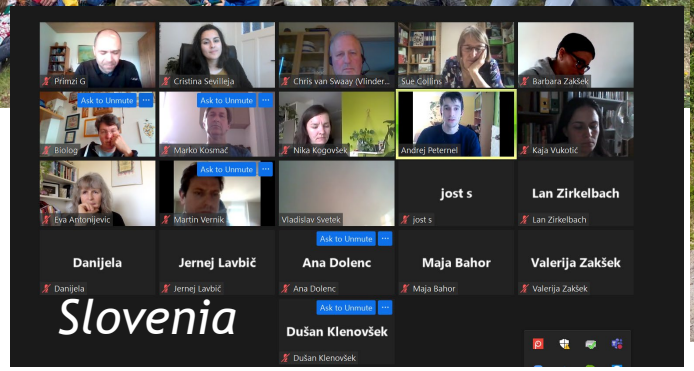
eBMS network

eBMS network

- Robust and connected network: European coordination
- BCE partners: experts from each European countries
- Close **relationships and trust**
- Enhancing the butterfly community
- Growth of national specialist butterfly
- NGO and societies

eBMS network

Support to new schemes



eBMS network

Support from older schemes

30 years of Catalan BMS

40 years of Dutch BC

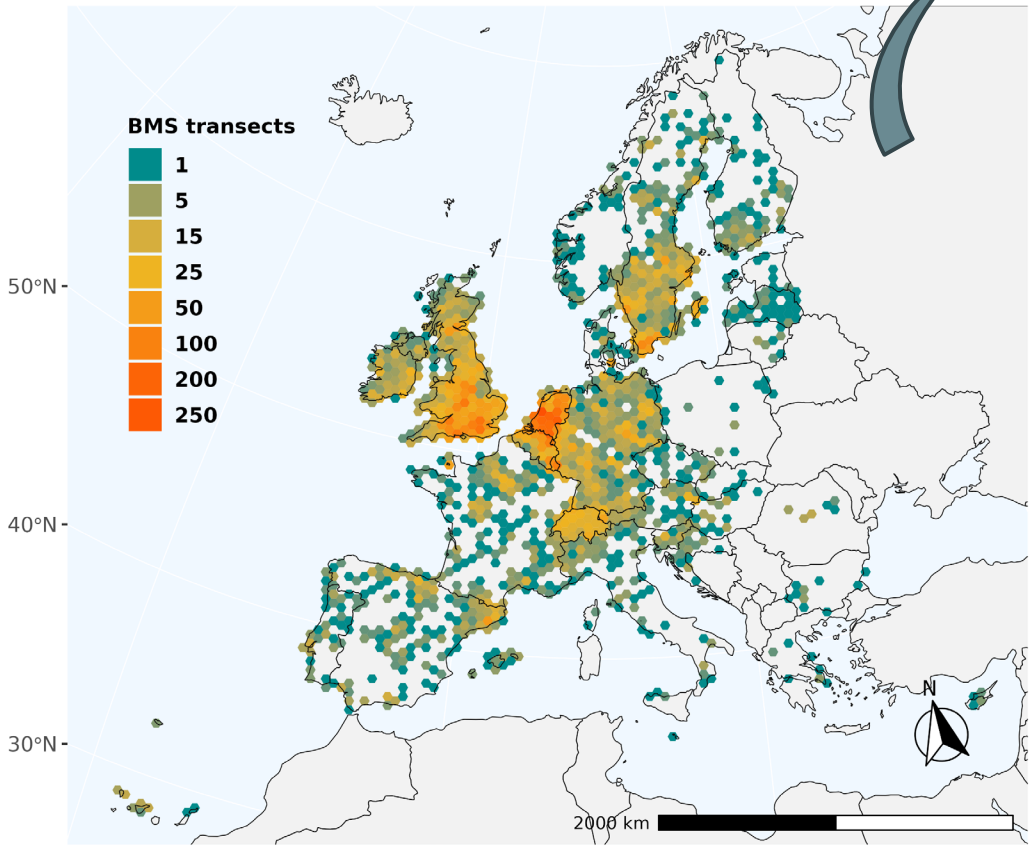
50 years of UKBMS

20 years of German BMS

Spain BMS

Work of National Coordinators

- **30 countries with 34 BMSs** collecting data to eBMS annually
- **Standardisation** at EU level
- National Coordination per scheme



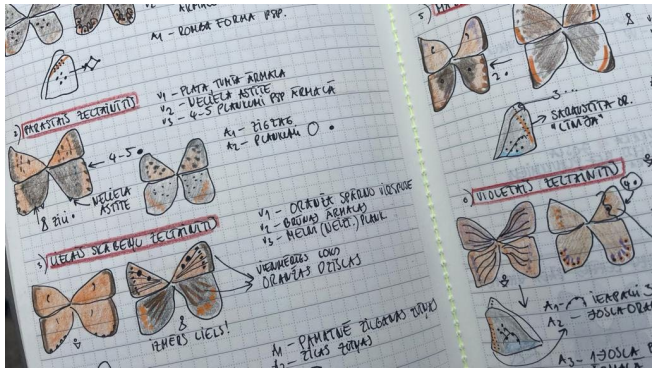
eBMS

Work of National Coordinators

- *Recruitment, training and support of volunteers*
- *Collection of data:* design of transects, train on identification and tools and supervision of volunteers
- *Data:* verification of data, submission to eBMS database, annual reports, calculation of trends/indicators
- *Dissemination:* feedback to MS, volunteers, institutions, stakeholders and social media
- *Community*: organization of events, communication with volunteers, keep the community

Volunteer work
(most countries)


Silvia Florbela, PT



BMS: citizen science community

Trained volunteers on butterfly identification:

- Selection transect sites by volunteers, supervised by coordinator = ⇧ frequent visits per year
- Familiarise with the environment and species (expertise)
- Coordinators provide materials, seminars, supervision and encourangement (retain volunteers)
- Belong to a community = volunteers attached to nature & understanding need of protection/changes

- Support coordinators
- Tools for gathering data
- Verification
- Statistical quality control
- Calculation EU Indicators

Cost effectiveness

eBMS Butterfly monitoring is extremely cost effective:

- Great amount of **expert (unpaid) volunters walked** monitoring transects (several times per year)

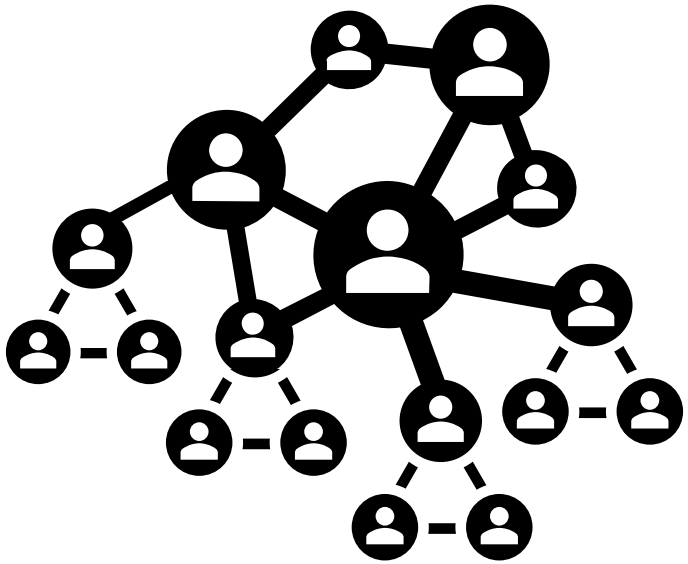
- *Well invested*: Sustainable schemes based on **part-time paid coordinator support from national funding-** as part of the pyramidal monitoring structure

- Long established scheme = Effective structure and skilled staff

- **Added value** from volunteers providing data over the long-term (well invested money in scheme coordination)

- **Volunteer motivated to continue monitoring**: not based on money

- 3,176 transects with more than 10 years
- 15,149 transects in total eBMS



From data to policy

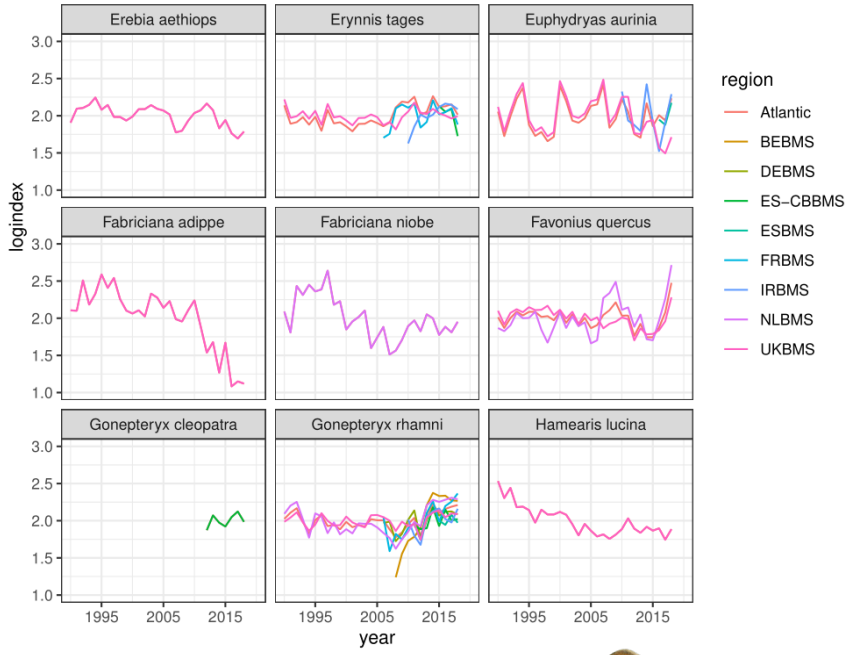
eBMS

eBMS benefits

BMSs provide robust data on butterfly trends at species and site level.

eBMS Records:

- At Species level on all transects
- Individual Species abundance
- Species diversity
- Monitoring throughout whole butterfly season
- Covers adult butterflies from emergence
- Captures the profile of abundance of each species including the peaks



Produce:
- Long term time series databases on a standardised basis
- Vital input data for scientific research and validation of models of environmental change

eBMS benefits

Contribution to European and International commitments on biodiversity

Useful data for MSs policy makers to use for:

- High quality **HD Art 17** Favourable Conservation Status (fcs) assessments of listed butterfly species
- Red Data Book (**RDB**) assessments for rare species: *IUCN Butterfly Red List 2025*
- Evaluation of effectiveness of agricultural incentives
- Sites and species management and evaluation of restoration measures
- Reports to EU and CBD on Biodiversity and SD Strategy implementation

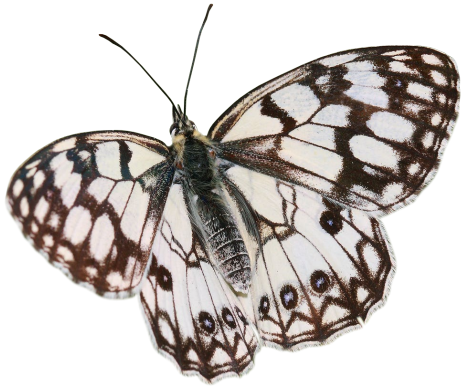
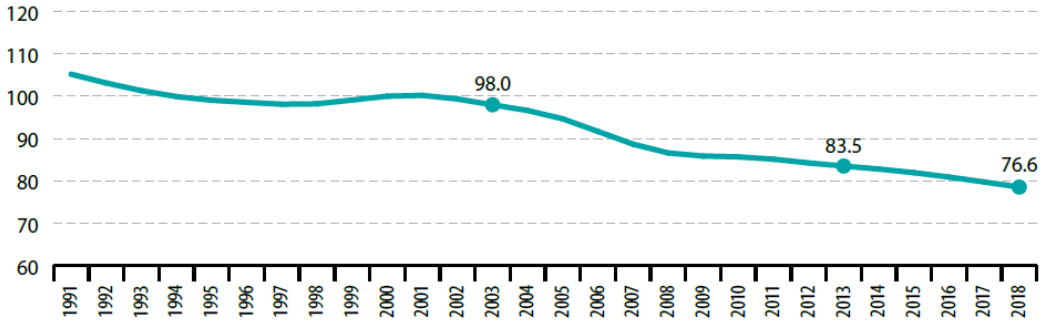


Figure 15.10: Grassland butterfly index, EU, 1991–2018
(index 2000 = 100)



LONG TERM 2003–2018

SHORT TERM 2013–2018

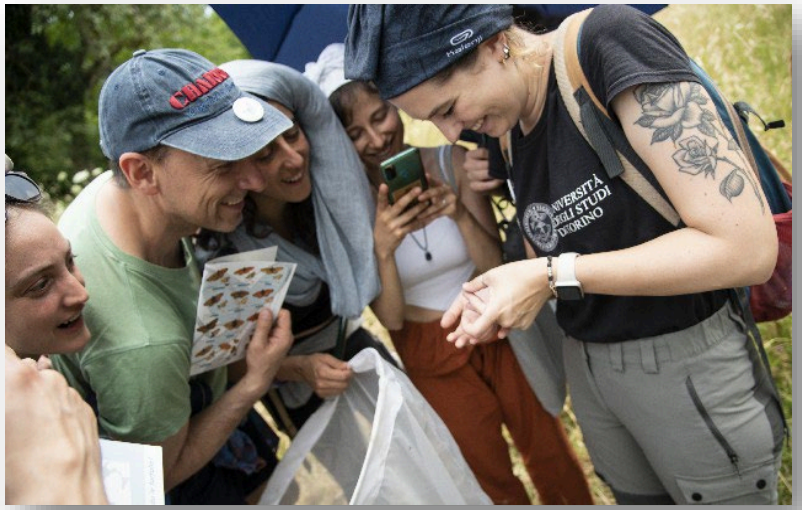
15 LIFE ON LAND

Compound annual growth rate (CAGR): – 1.5 % per year in the period 2003–2018; – 1.2 % per year in the period 2013–2018.

Source: EEA, Butterfly Conservation Europe, European Butterfly Monitoring Scheme partnership, Assessing Butterflies in Europe (ABLE) project (Eurostat online data code: sdg_15_61)

eBMS benefits

Population and society



- **Article 10 EU Nature Restoration Regulation** (NRR) requires Member States to "***promote citizen science*** *in the collection of monitoring data where suitable and* ***provide adequate resources*** *for the performance of those tasks"*

- Butterflies are **easy to identify** to species level (500 species, allowing training)

- Butterfly monitoring is a popular form of citizen science:
  - Disseminate results
  - Raises profile of insect declines
  - Engages citizens in positive action for nature
  - Connection with surroundings (improve managements)

- BMS volunteers are pool of expert parataxonomists to help implement the EU Pollinator Monitoring Scheme (**EUPoMS, Art.10 NRR**)

Room for improvement

Remaining challenges

- **Securing MS support** for stable jobs for national and where needed regional coordinators
- **Retaining volunteers** to repeatedly walk the same transects year after year
- **Increasing** the number of **transects** across the whole of MSs and habitats
- Growing the **use of butterfly count results** by MSs and the EU to support recovery of wild pollinators

eBMS is long-term data = robust and high quality data

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