Supporting Science and recruiting verifiers

Peacock butterfly by Mark Searle

Zoë Randle

recording@butterfly-conservation.org

Butterfly Conservation

Saving butterflies, moths and our environment

Background

Butterfly Conservation Data Review conducted from 2018 – 2020 to improve:

- Data access for BC staff
- Data management
- Dataflow

County Recorder Surveys in 2020 and 2022 to:

- Discover the challenges and opportunities in the digital environment

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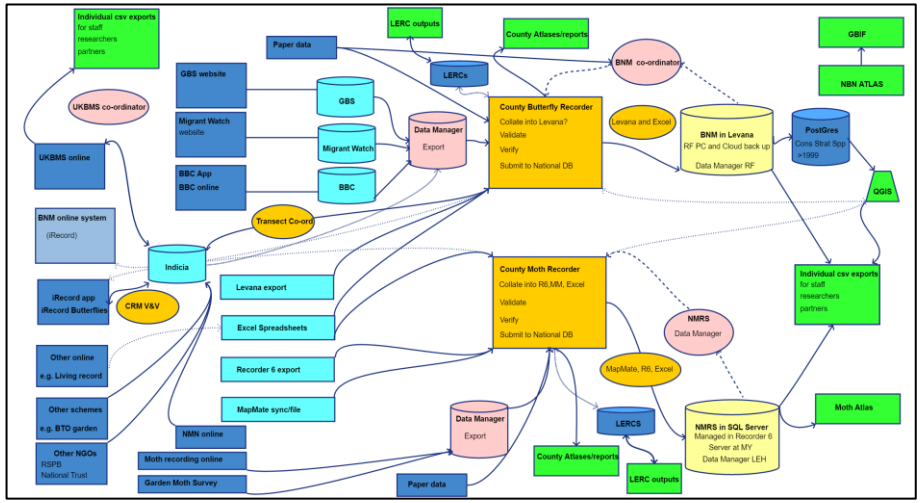
Elephant Hawk-moth (Bob Eade)

Key findings

Smoother, more streamlined dataflows were required

Need for increased training and support for the County Recorder (CR) networks

CRs were concerned about workload & succession planning



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Supporting Science

Made possible with Heritage Fund

Department for Digital, Culture, Media & Sport

Digital Skills for Heritage

The **Digital Skills for Heritage Initiative** helped the heritage sector move into a more resilient, creative future by developing use of digital technology.

This project aimed to improve data flow and better support recorders and volunteers. Improved access to natural heritage and grow digital skills by developing tools and collaboration.

Marbled White,
recorded on iRecord, photo: CC0

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UK Recording Schemes

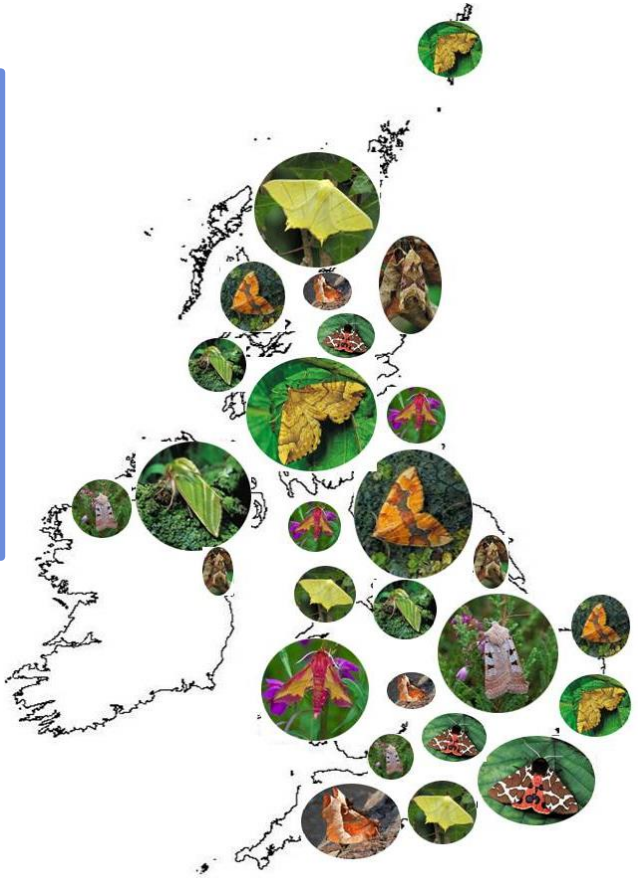
Butterflies for the New Millennium

"BNM" Established in 1995

UK, Isle of Man & Channel Islands

> 17 million verified butterfly records

1690 earliest record



MOTHS COUNT

National Moth Recording Scheme

"NMRS" Established in 2007

UK, Isle of Man & Channel Islands

> 41 million verified moth records

1741 earliest record

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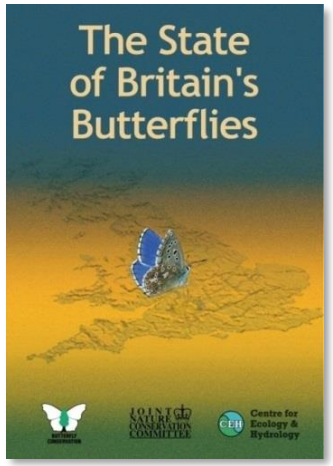
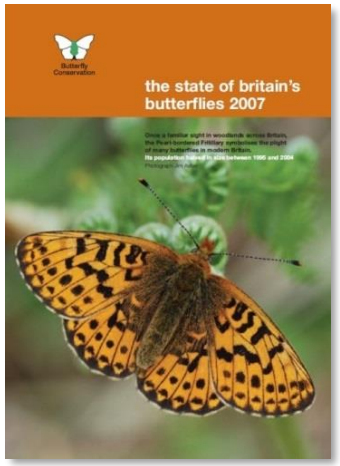
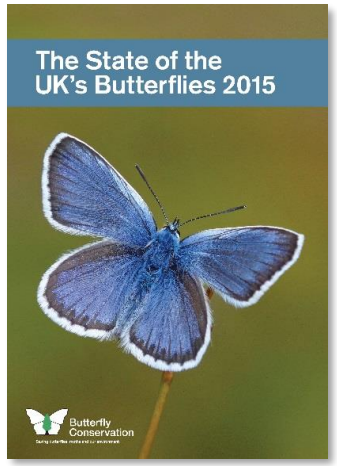
BNM and NMRS Data Use: State of reports & Atlases







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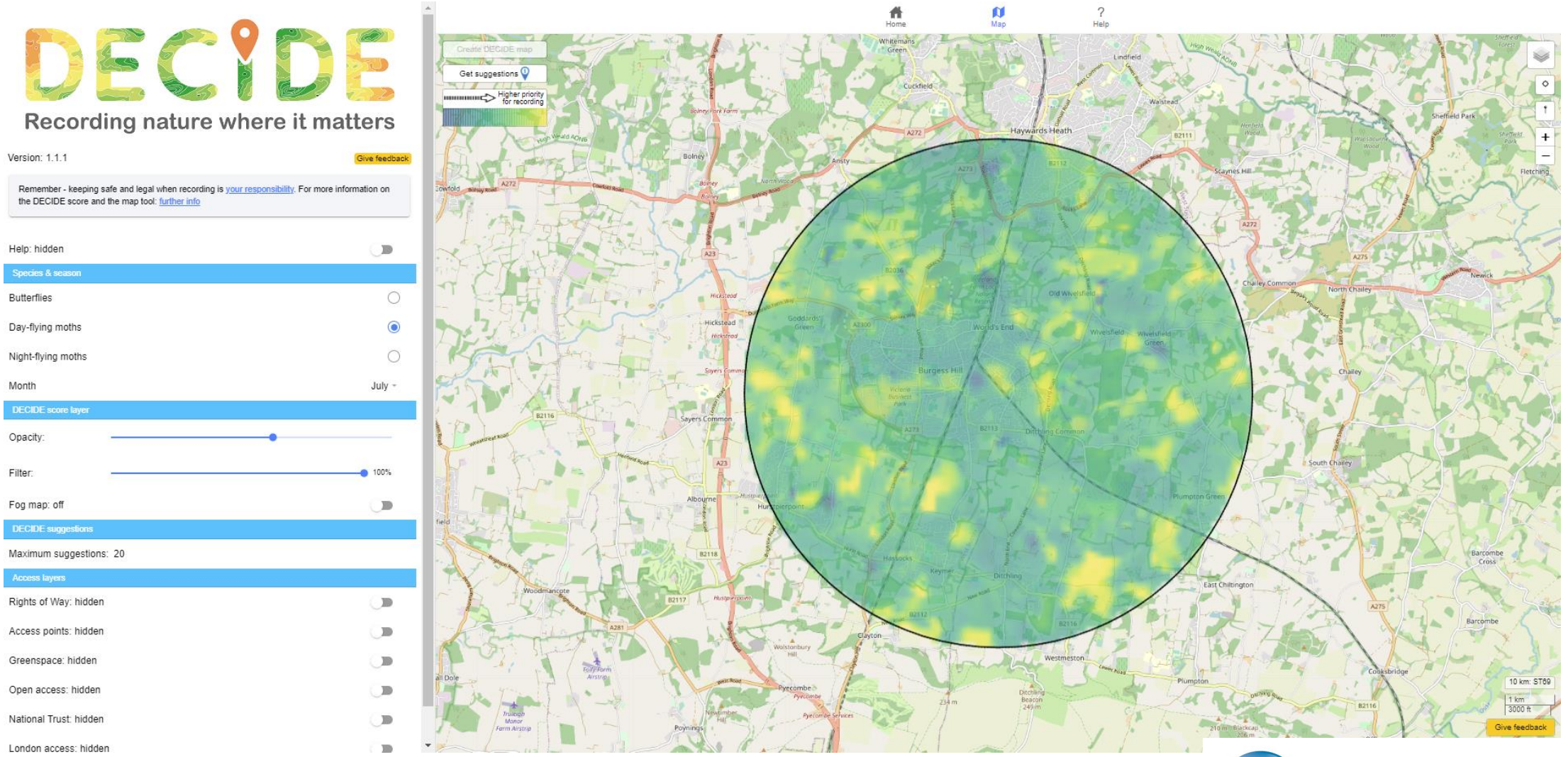
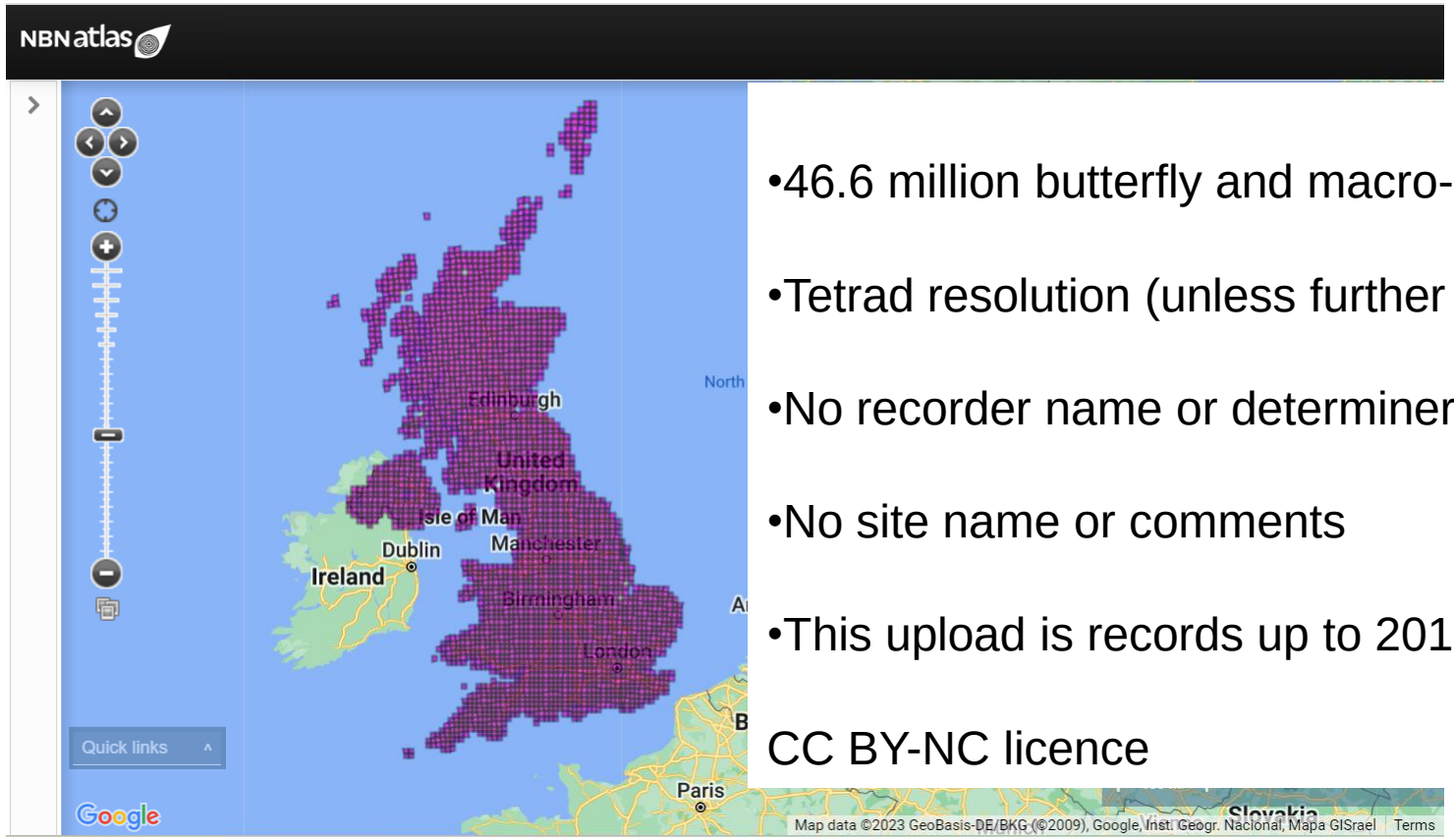
Data Use: DECIDE- Targeted recording in under-recorded areas



https://decide.ceh.ac.uk/info/decide_info

UK Centre for Ecology & Hydrology

BNM & NMRS: derived datasets on the NBN Atlas



- 46.6 million butterfly and macro-moth records
- Tetrad resolution (unless further blurred to 10km)
- No recorder name or determiner name
- No site name or comments
- This upload is records up to 2019

CC BY-NC licence

Butterfly Conservation

NBN atlas

BNM and NMRS data users

BNM and NMRS datasets inform all that we do!

RESEARCH ARTICLE

Global Change Biology WILEY

Where and why are species' range shifts hampered by unsuitable landscapes?

Jenny A. Hodgson[1] | Zoë Randle[2] | Chris R. Shortall[3] | Tom H. Oliver[4]

ECOLOGY LETTERS

LETTER | Open Access

Precipitation buffers temperature-driven local extinctions of moths at warm range margins

Lisbeth A. Hordley ✉, Richard Fox, Andrew J. Suggitt, Nigel A. D. Bourn

First published: 22 March 2023 | https://doi.org/10.1111/ele.14195

Editor: Andrew David Barnes

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County Recorder Networks

Volunteers

Local experts

Encouraging recording

Promotion of butterflies or moths

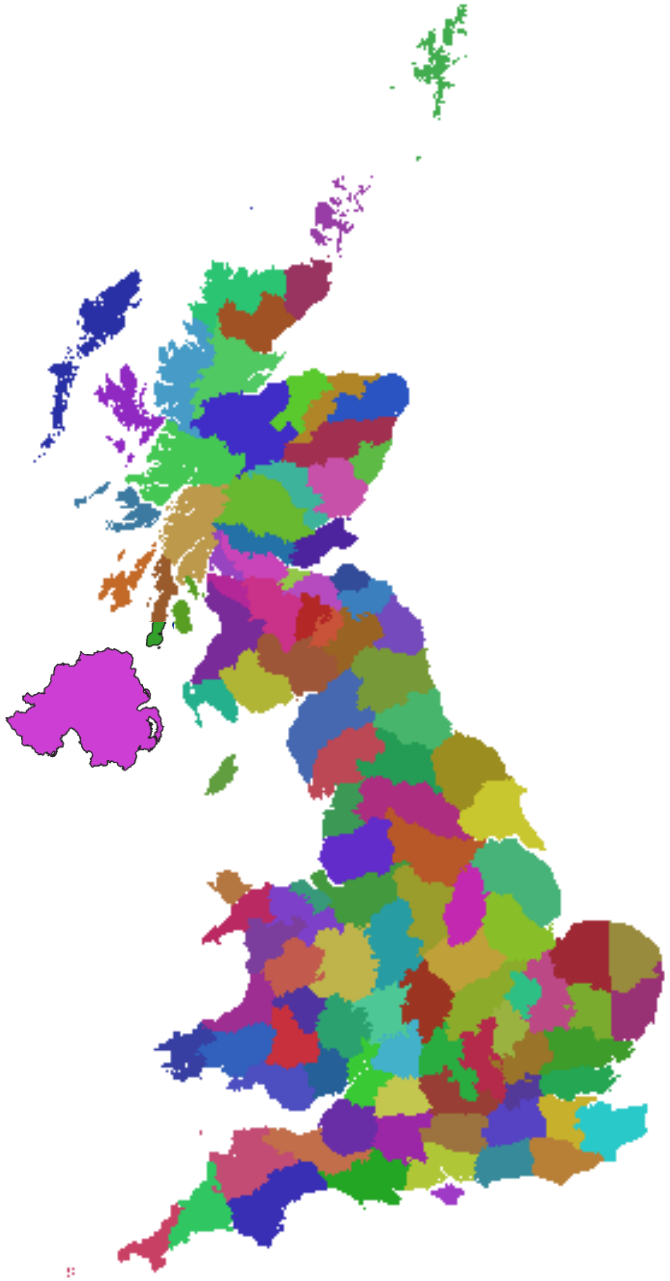
Feedback to recorders

Collation of local datasets

Verification of records

Submission of records to UK-wide Recording Schemes

…..and often loads more…!



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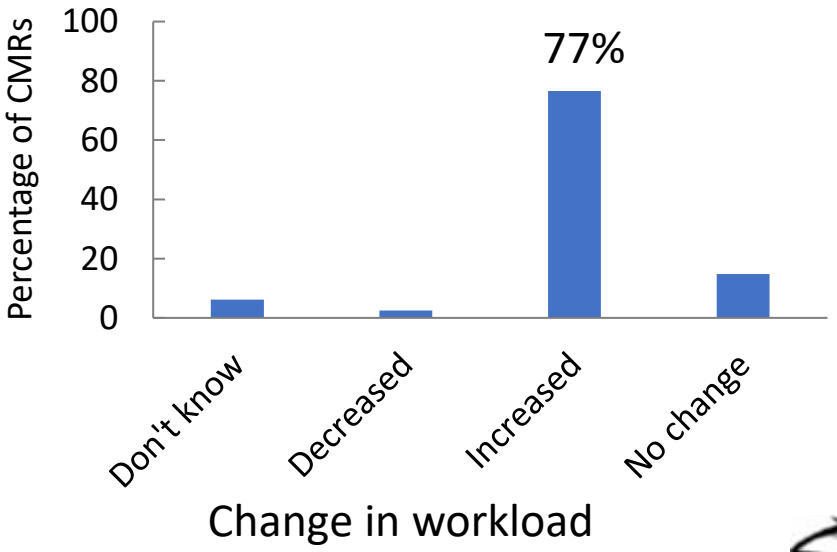
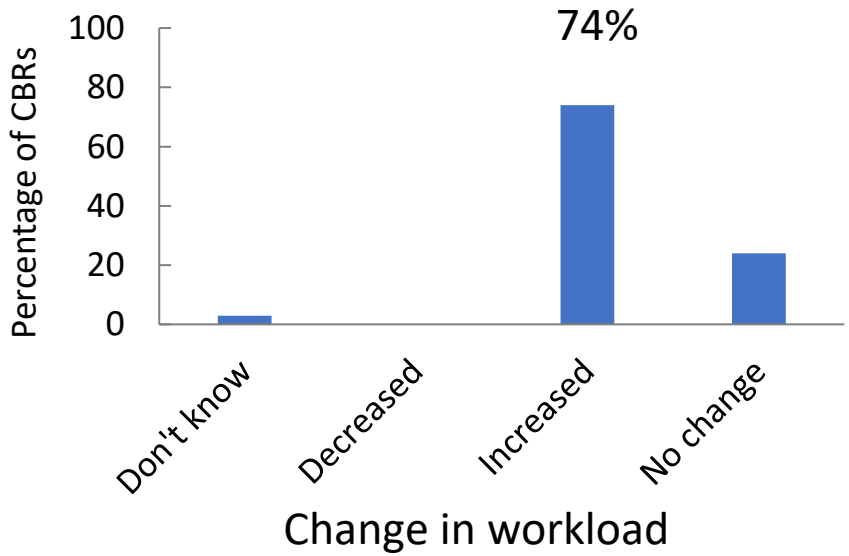
County Recorder workload and record submission





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County Recorder Tool-kit needs – challenging!

Collaborative approach - workshops

Complexity of needs – different people needed different things

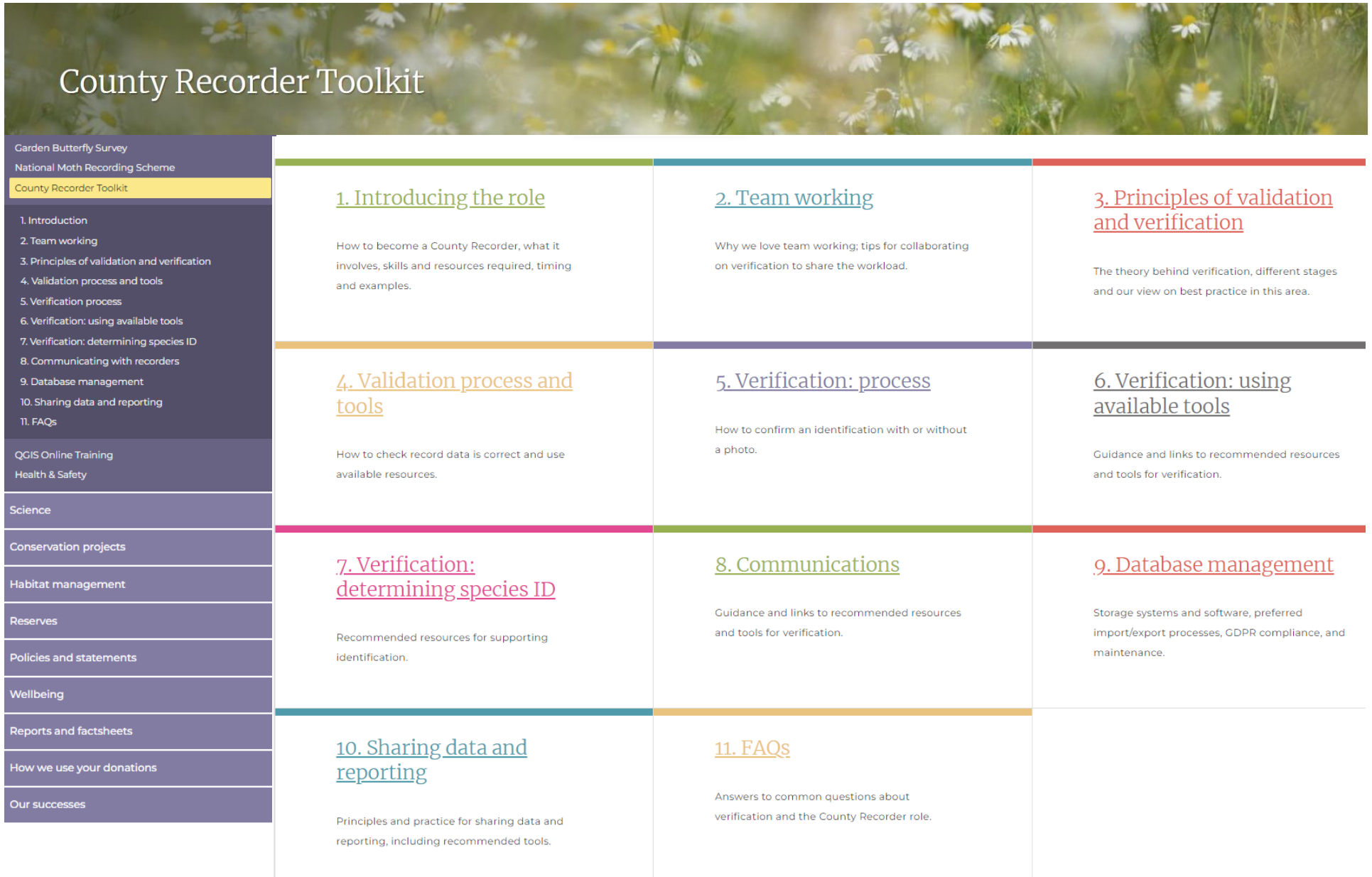
Long list of wants, needs and requirements

Ambitions too big for this project alone!

Worked with Martha Henson from Tech Works For Us - User Research

- Martha interviewed a range of County Recorders
- Key themes
- Prioritised simple and useful solutions – balance between time and resources
- Road map for future developments

County Recorder Toolkit



County Recorder Toolkit

Best practice for validating and verifying records

Excel Tools for cleaning data

ID resources:

Moth grading guidance

Field guides

Guide to difficult species

Moth dissection website

How to query and or redetermine records in iRecord

Communicating with recorders in iRecord using templated responses

Signposting to online data capture:

iRecord butterflies app

BNM Online

NMRS Online

Spreadsheet template

Setting up iRecord activities

Guidance – importing and exporting data to/from iRecord

GDPR guidance

Database options

QGIS training links

County Recorder Toolkit

6. Verification: using available tools

Guidance and links to recommended resources and tools for verification.

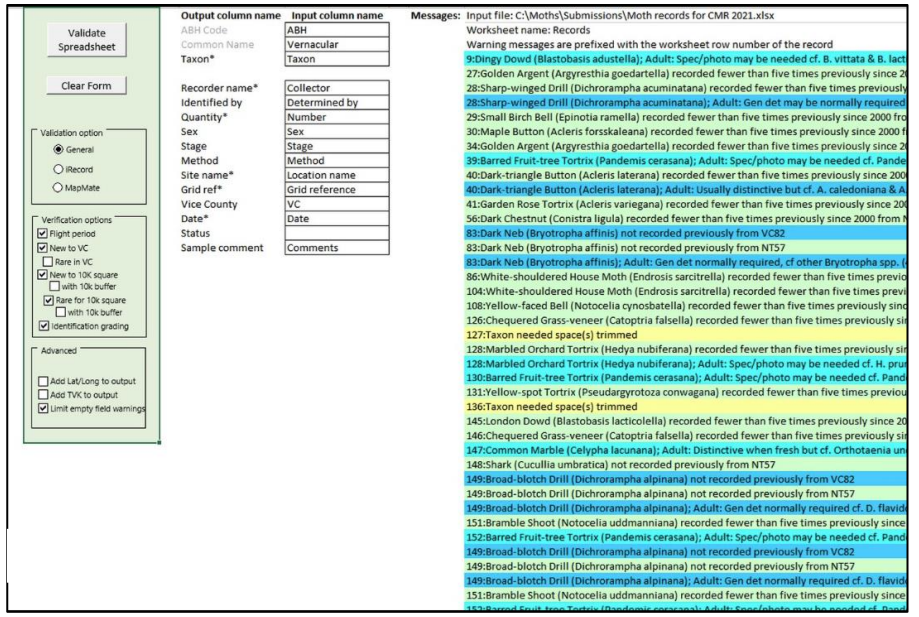
Record Validation Spreadsheets – developed by Mark Cubitt

Validate and verify records in spreadsheets

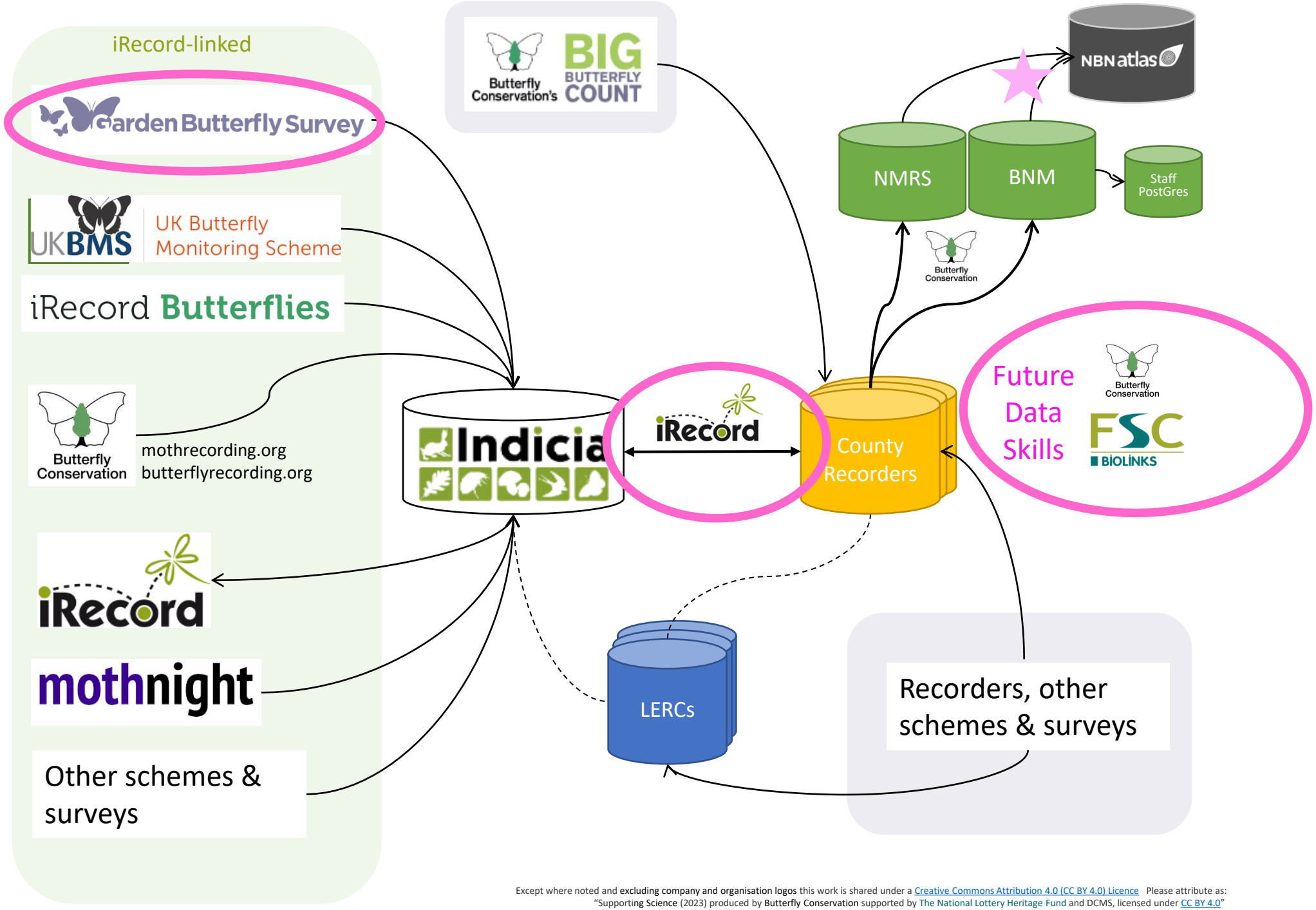
Potentially erroneous records colour coded

Data reformatting for onward import to other databases e.g. iRecord and MapMate

Useful for recorders to use **prior** to submitting their records to their County Recorders to help reduce workload



https://butterfly-conservation.org/our-work/recording-and-monitoring/county-recorder-toolkit



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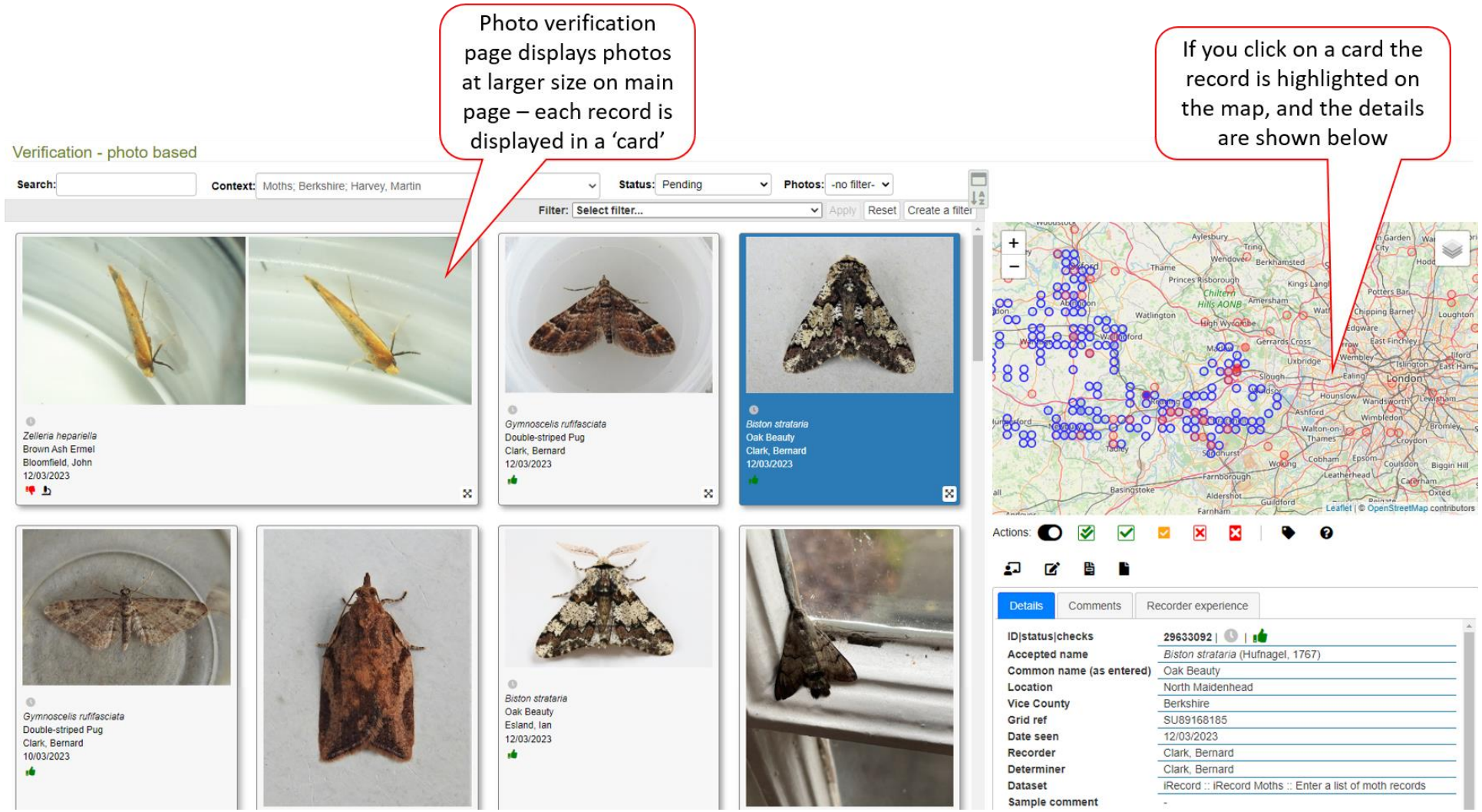
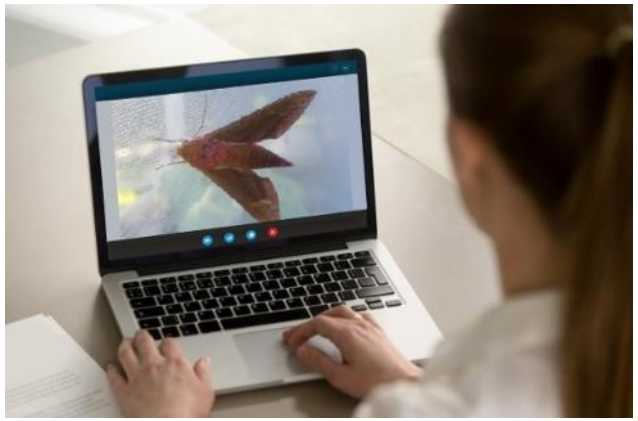
Improve systems…



Develop teams and strengthen the pool of volunteers



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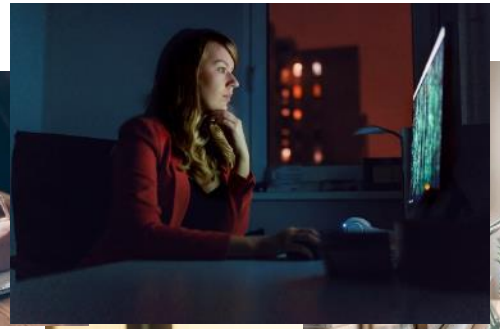

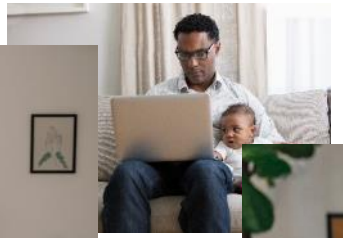

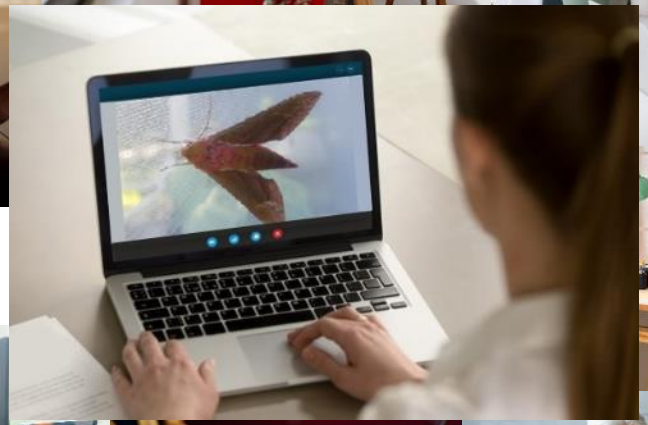

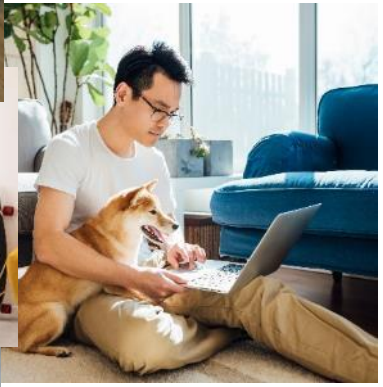
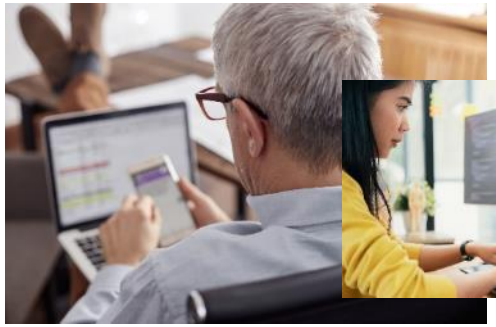

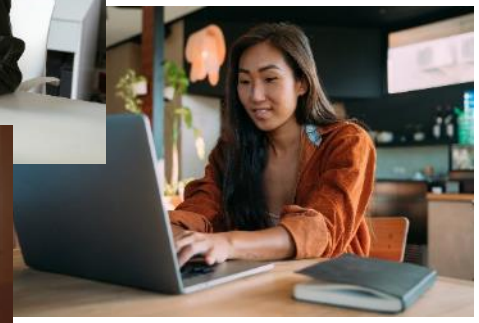

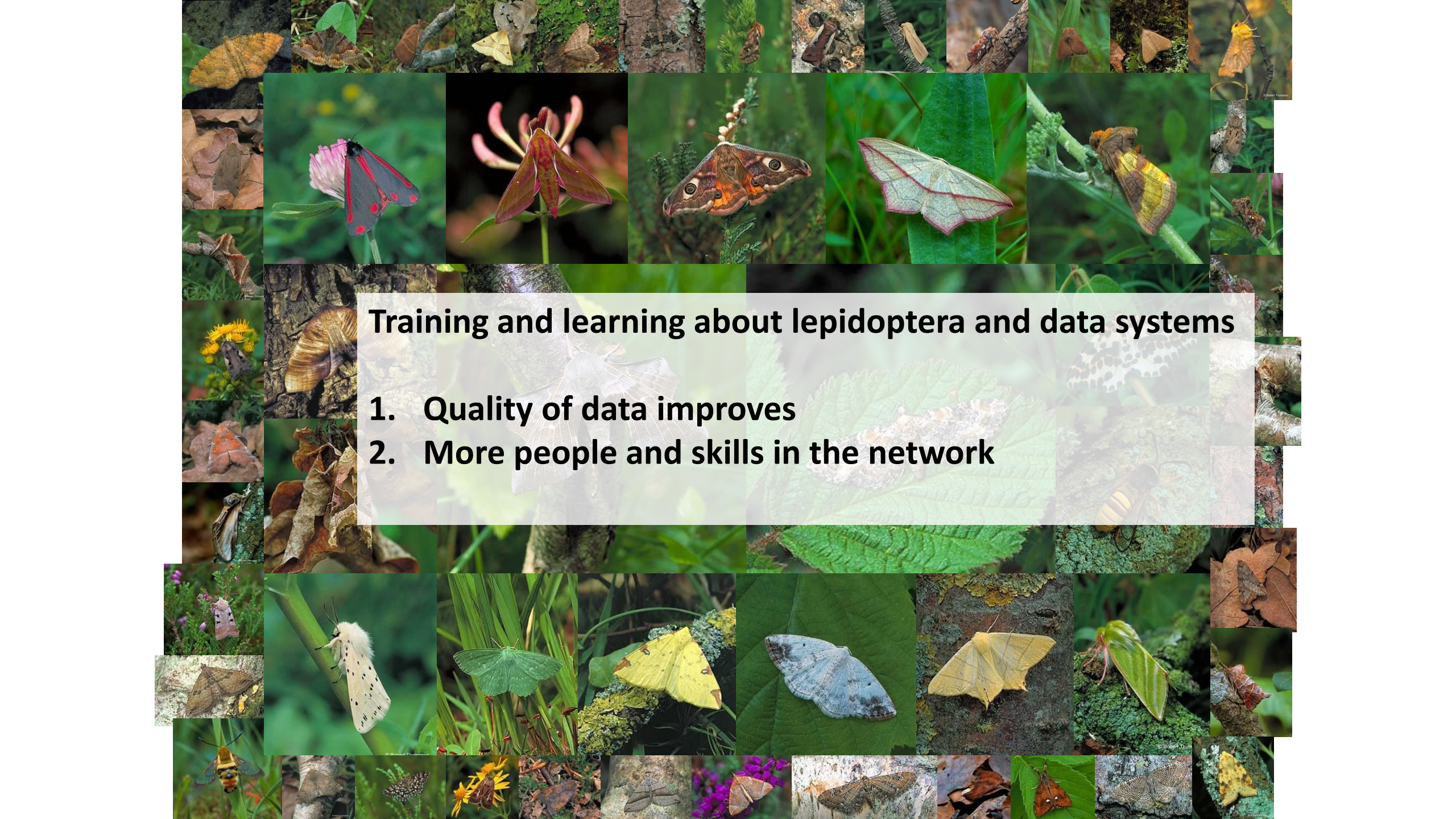

Training and learning about lepidoptera and data systems

1. Quality of data improves
2. More people and skills in the network

Learning journey

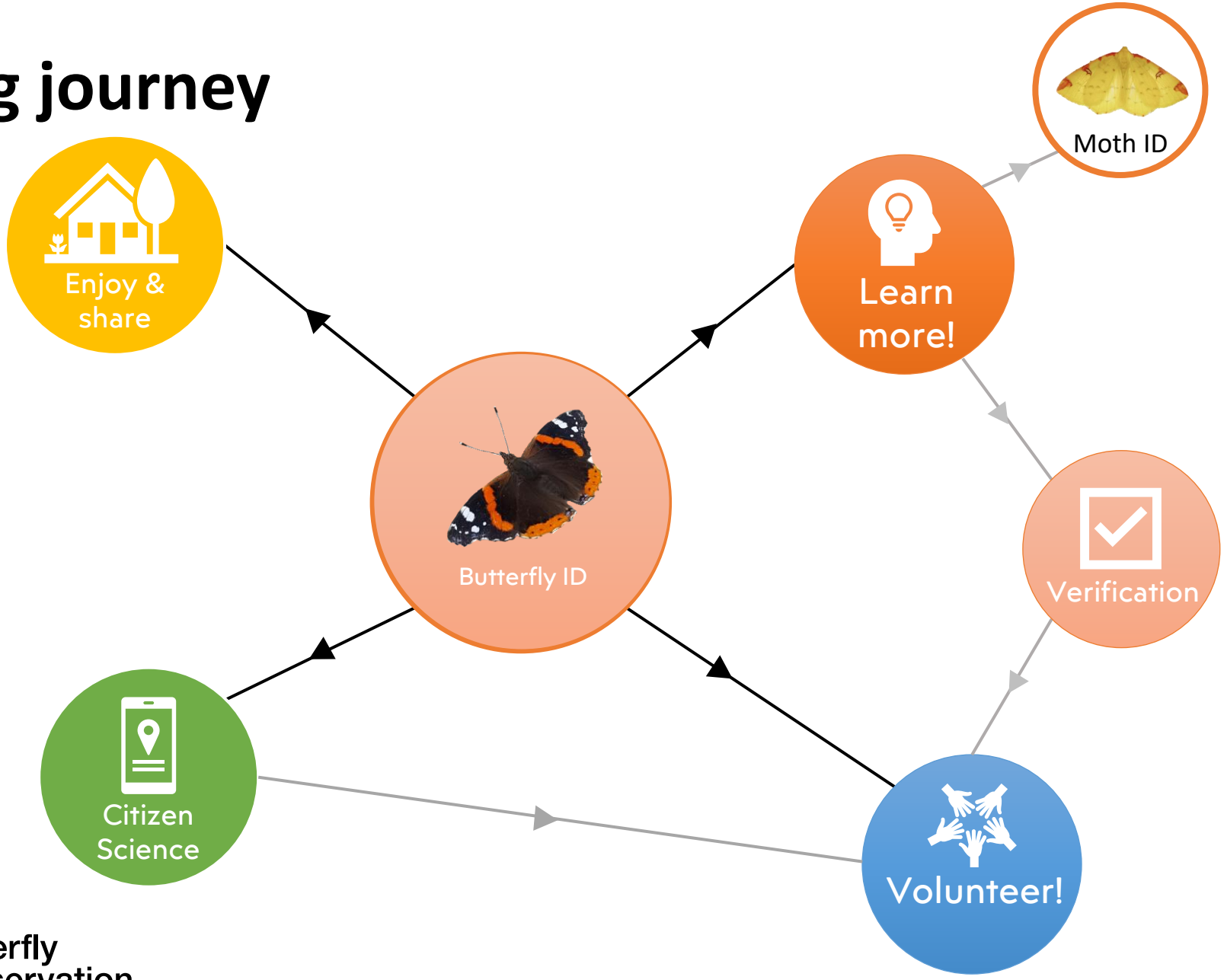

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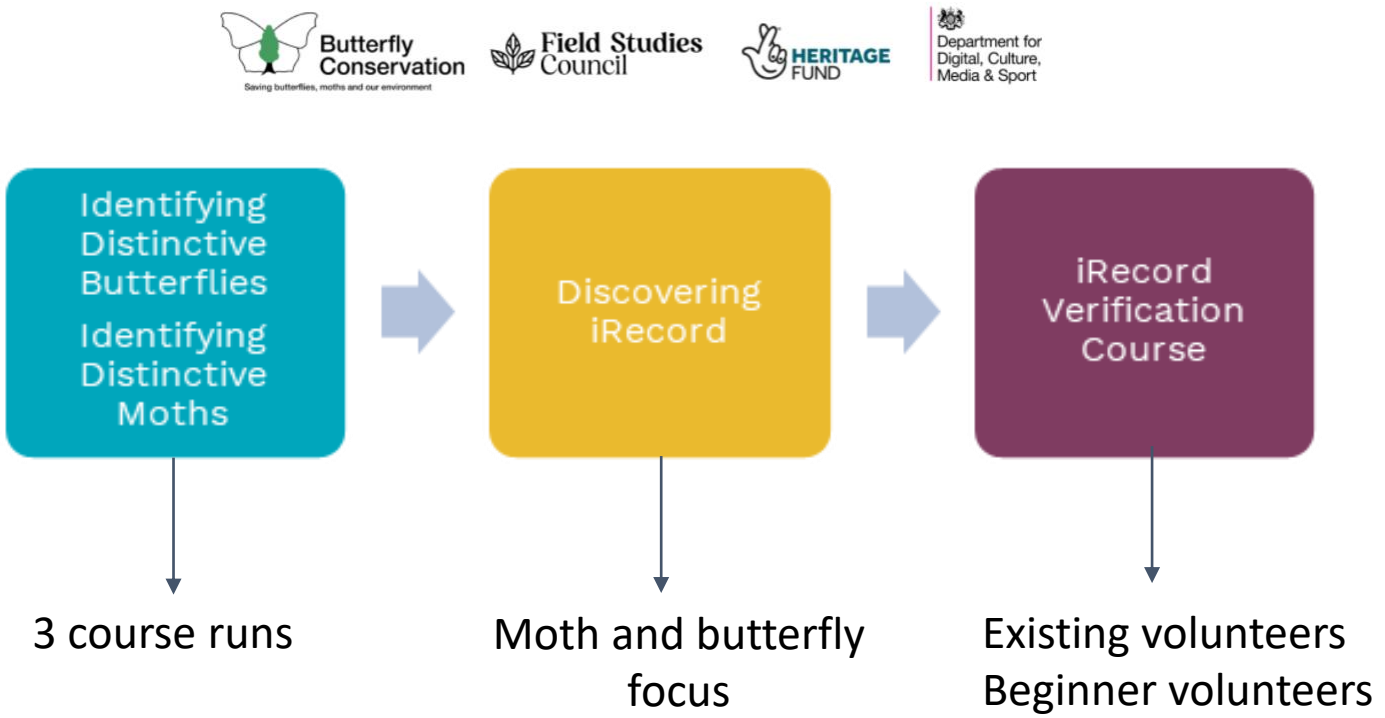
Photo credits: Gail Hampshire CC BY 2.0; Butterfly Conservation CC BY 4.0

Online training pathway



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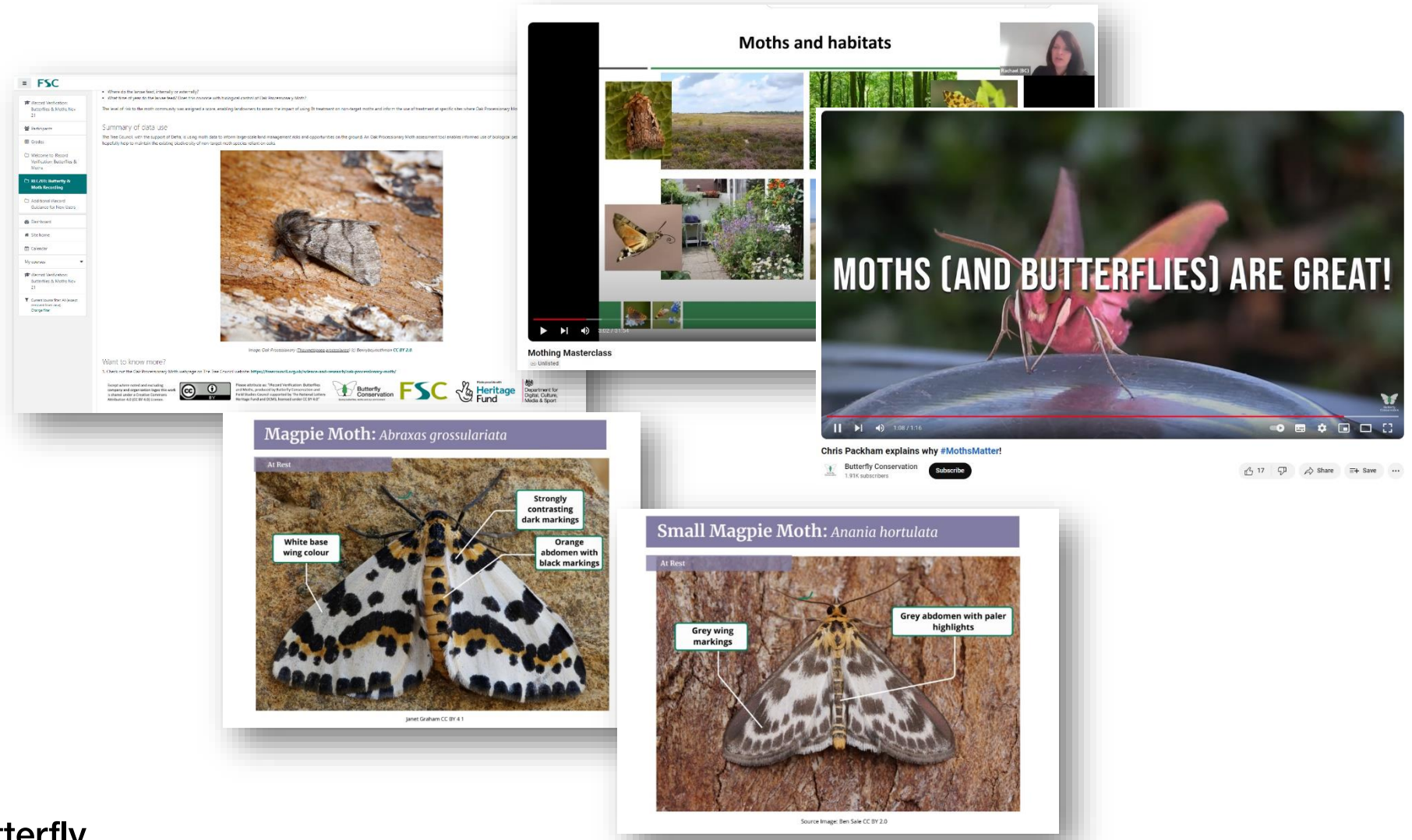
Courses: format and content



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Online identification training: Which species?

- Reasonably widespread
- Easy to ID from a photo
- Assistant Verifiers can help

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Our “Distinctive” Moths

CC-BY 4.0 Mark Fordyce Angle Shades	CC0 Brimstone Moth	CC-BY 4.0 Benjamin Weston Buff-tip	CC-BY 4.0 Mark Welfare Burnished Brass
CC0 Cinnabar	 Elephant Hawk-moth	CC0 Hebrew Character	CC0 Jersey Tiger
CC0 Magpie Moth	CC0 Poplar Hawk-moth	CC-BY 4.0 Alan Kenworthy Setaceous Hebrew Character	CC0 Small Magpie

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Our “Distinctive” Butterflies

Brimstone (male)	Common Blue	Green Hairstreak	Holly Blue	Marbled White
Orange-tip (male)	Painted Lady	Peacock	Red Admiral	Scotch Argus
	Small Copper	Small Tortoiseshell	Speckled Wood	

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Promotion of distinctive species identification courses

FSC Eventbrite subscribers

Discovering iRecord: Butterflies & Moths course participants

FSC Biodiversity newsletter

Social media of BC and FSC incl. twitter and instagram

BC Branch newsletter

Biolinks in-person events subscribers

University Moth Challenge course leaders

London Friends of Greenspaces Network newsletter

BioLinks Discovering iRecord participants

Stepney City Farm

BC staff newsletter

FSC quarterly newsletter listings

Greenspace Information for Greater London CIC

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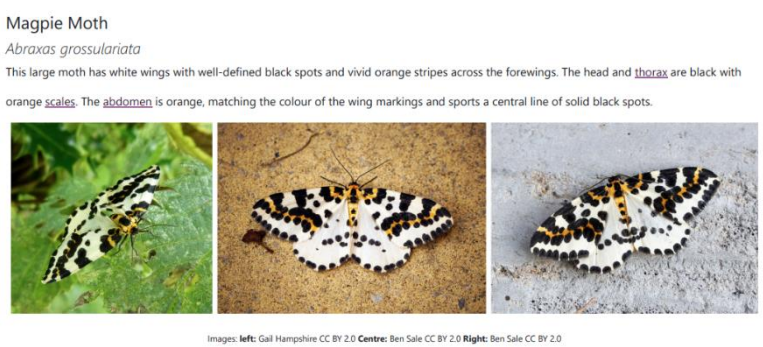
Online identification training: what worked well?



Magpie Moth

Abraxas grossulariata

This large moth has white wings with well-defined black spots and vivid orange stripes across the forewings. The head and thorax are black with orange scales. The abdomen is orange, matching the colour of the wing markings and sports a central line of solid black spots.

Images: **left:** Gail Hampshire CC BY 2.0 **Centre:** Ben Sale CC BY 2.0 **Right:** Ben Sale CC BY 2.0

Identification Features

Wing span

36 -50mm

Wing colour

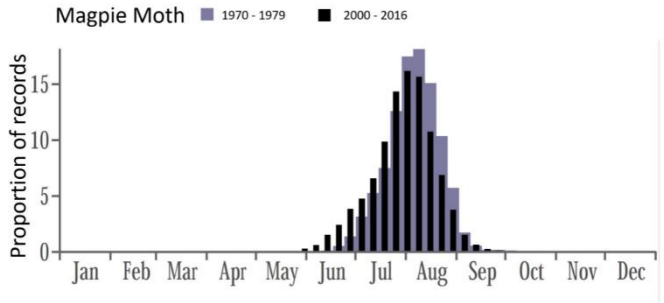
Clean, white base colour with two stripes of orange across the wing, one at the base and one just below the centre line. All wings are marked with clearly defined black spots with some merging creating the appearance of a black stripe across the forewings.
Both the fore and hindwings are bordered with black spotted markings.

Antennae

Long, black, threadlike antennae.

Flight period and life cycle

The moths fly in July and August and are frequently attracted to light.



"Ability to go at own pace."

"I liked how you focussed on a few species rather than a lot."

"The quizzes were useful learning tools."

"Comparisons with confusion species."

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Field Studies Council

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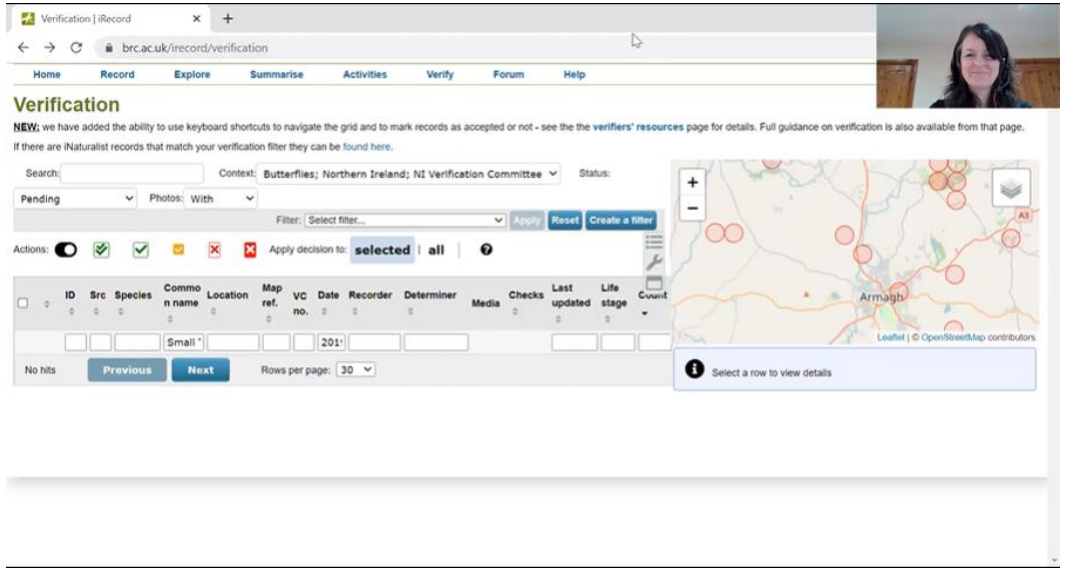
Online verification training: what worked well?



"Webinars and actual verification assignments."

"I liked being monitored on the assignment."

"I really loved getting to look at real data."

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Training and learning pathway: successes

842

102

Moth ID

Enjoy & share

86% had used new skills since the training

Learn more!

730

Butterfly ID

92 Discovering iRecord

29 iRecord Verification

Verification

Citizen Science

89% are more confident with butterfly and moth identification

Volunteer!

20 new Verification Assistants

26% have or are likely to take an active role in verification with a County Recorder

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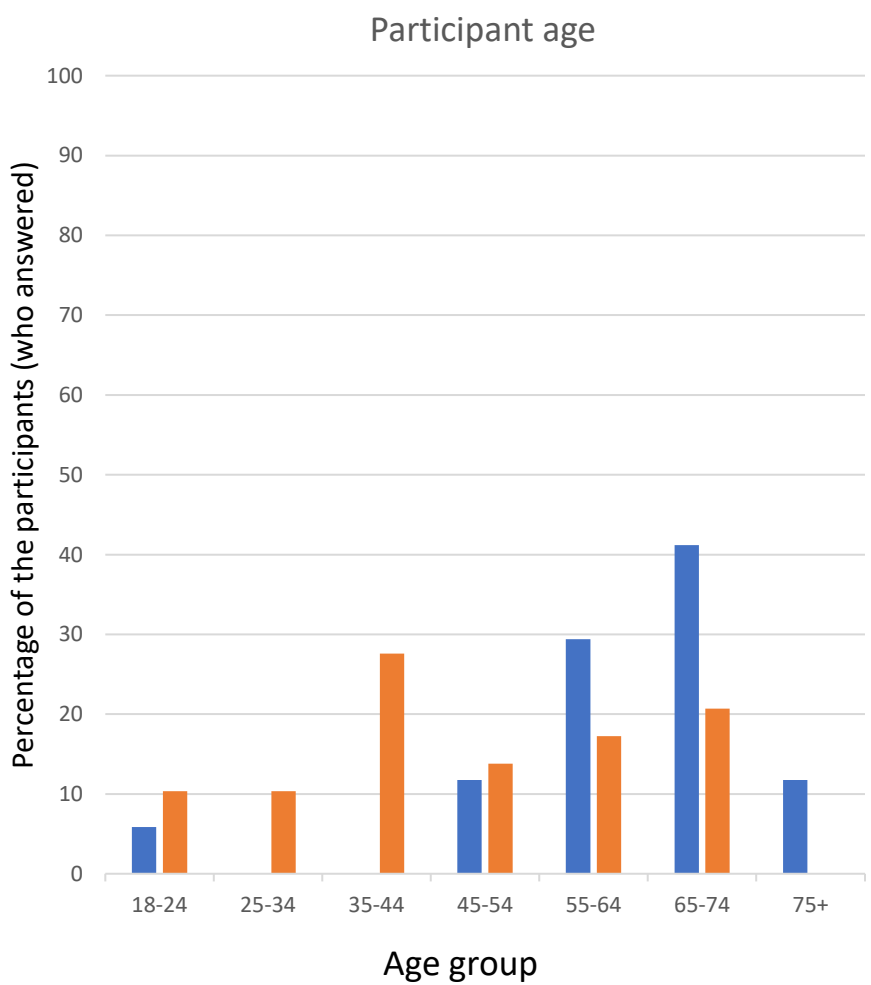
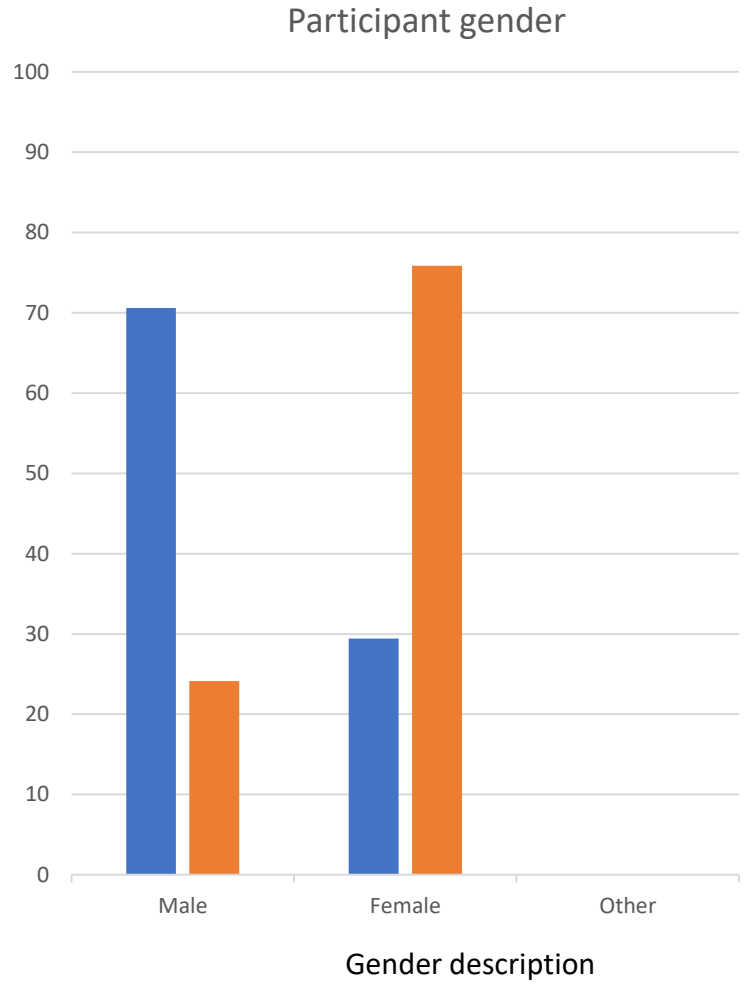
Photo credits: Gail Hampshire CC BY 2.0; Butterfly Conservation CC BY 4.0

Who took part in the verification courses?





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= existing volunteers

= beginner volunteer

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What did we learn?

- Many people love recording butterflies and moths!
- More people and skills are needed:
  - Keep the critical data flowing
  - Support County Recorder workload
  - Strengthen skills within the network
- You can learn beginner moth and butterfly identification & verification online!
- Online training pathways complement traditional entry routes

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Digital Skills for Heritage

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Thank you

- Rachael Conway, Keiron Brown, Dan Asaw
- FSC and BioLinks
- UK Centre for Ecology & Hydrology
- Current volunteers
- Our funders
- Everyone who took part!

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