



What do recorders
think about open data?



Butterfly
Conservation

Saving butterflies, moths and our environment

Facilitating ~~Barriers to~~ open ecological data

- Loss of benefits – publications, funding, reputation etc. DOIs
- Data misuse → flawed science Metadata standards
- Ownership – IPR & personal investment DOIs
- Technical barriers to sharing Data repositories e.g. NBN Atlas, GBIF, Dryad
- Time and financial costs of sharing Funder/journal public data archiving
- Risk of damage to sensitive species & habitats, stakeholder relationships

Hampton *et al.* (2013) *Front. Ecol. Environ.*
Millar *et al.* (2015) *Trends Ecol. Evol.*
Pearce-Higgins *et al.* (2018) *Ecol. Appl.*
Tulloch *et al.* (2018) *Nat. Ecol. Evol.*

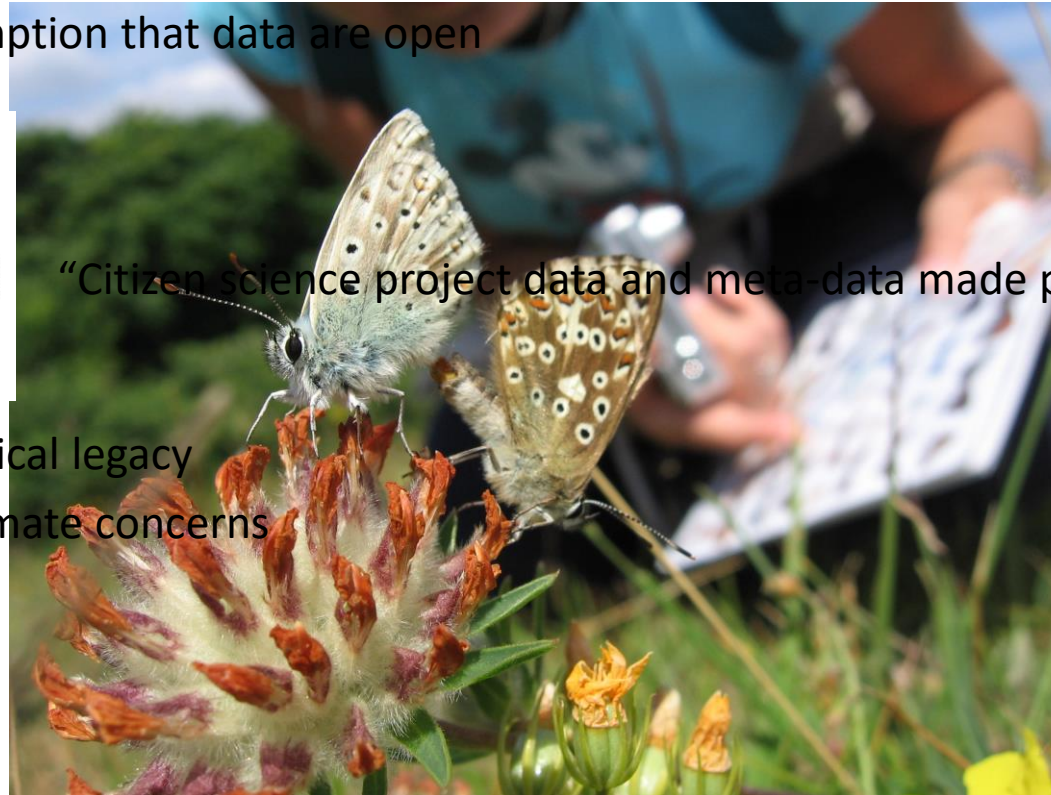


Biological recording and citizen science

- Assumption that data are open



- Historical legacy
- Legitimate concerns



“Citizen science project data and meta-data made publicly available...”

Miller-Rushing *et al.* (2012) *Front. Ecol. Environ.*
Pearce & Diggs *et al.* (2013) *Biol. J. Linn. Soc.*
Stratton *et al.* (2019) *Int. J. Appl. Ecol.*



What do recorders think?



- Who owns submitted records?
 - 49% nobody i.e. public good
 - 27% recording scheme
 - 18% recorder i.e. private property
- Conditions for third party use
 - 12% unconditional use i.e. open data
 - 26% up to the scheme organisers
 - 16% scheme attribution
 - 37% scheme attribution, non-commercial

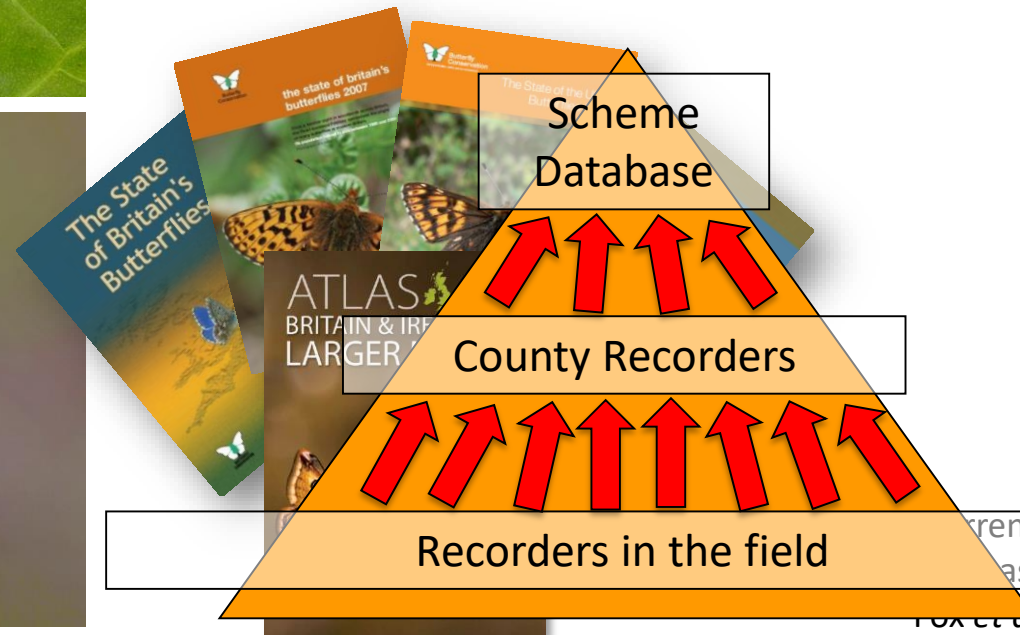
Ganzevoort *et al.* (2017) *Biodivers. Conserv.*





Butterfly Conservation

- National Moth Recording Scheme
25 million records of UK macro-moths
- Butterflies for the New Millennium
13 million records of UK butterflies



Warren et al. (2001) *Nature*
 Thomas et al. (2004) *Science*
 Fox et al. (2014) *J. Appl. Ecol.*
 Macgregor et al. (2019) *Nat. Commun.*

Questionnaires 2017

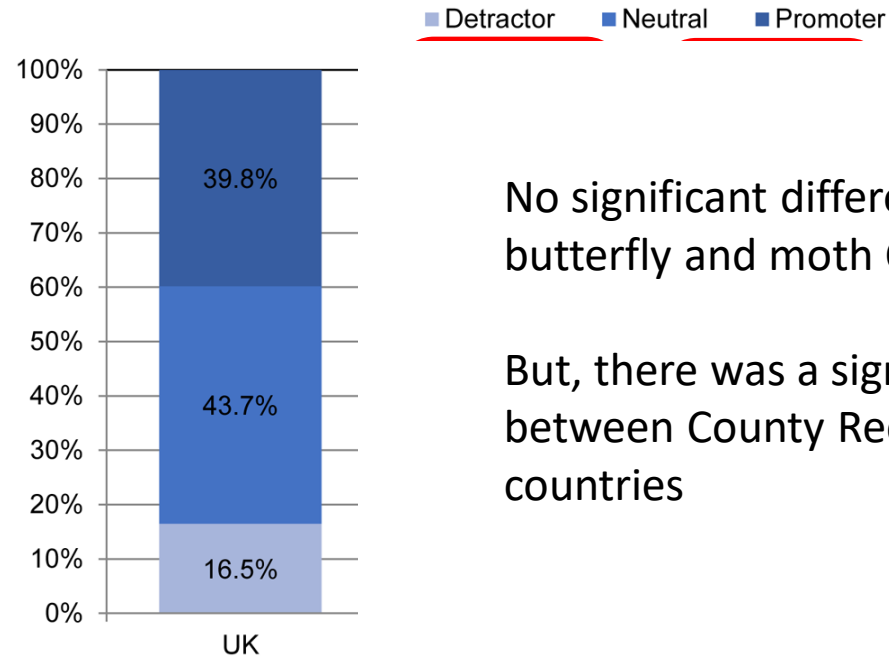
- County Recorders
 - 5 questions relating to open access with multiple choice or scaled answers
 - Emailed to all County Recorders in NMRS and BNM networks
 - Not anonymous
 - Questions not obligatory
 - 104 responses = 68% NMRS & 69% BNM County Recorders**
= 60 England, 2 Northern Ireland, 28 Scotland & 14 Wales
- Recorders
 - 2 questions relating to open access with multiple choice answers
 - Online survey distributed via County Recorders
 - Anonymous
 - Questions obligatory
 - 510 responses = 367 England, 5 Northern Ireland, 80 Scotland & 58 Wales**

County Recorders



County Recorder results: overall support for open access

- On a scale of 1-10, how much are you in favour of open access to butterfly/moth records? Scores 1-4 = detractor, 5-8 = neutral, 9-10 = promoter



No significant difference in scores between butterfly and moth County Recorders

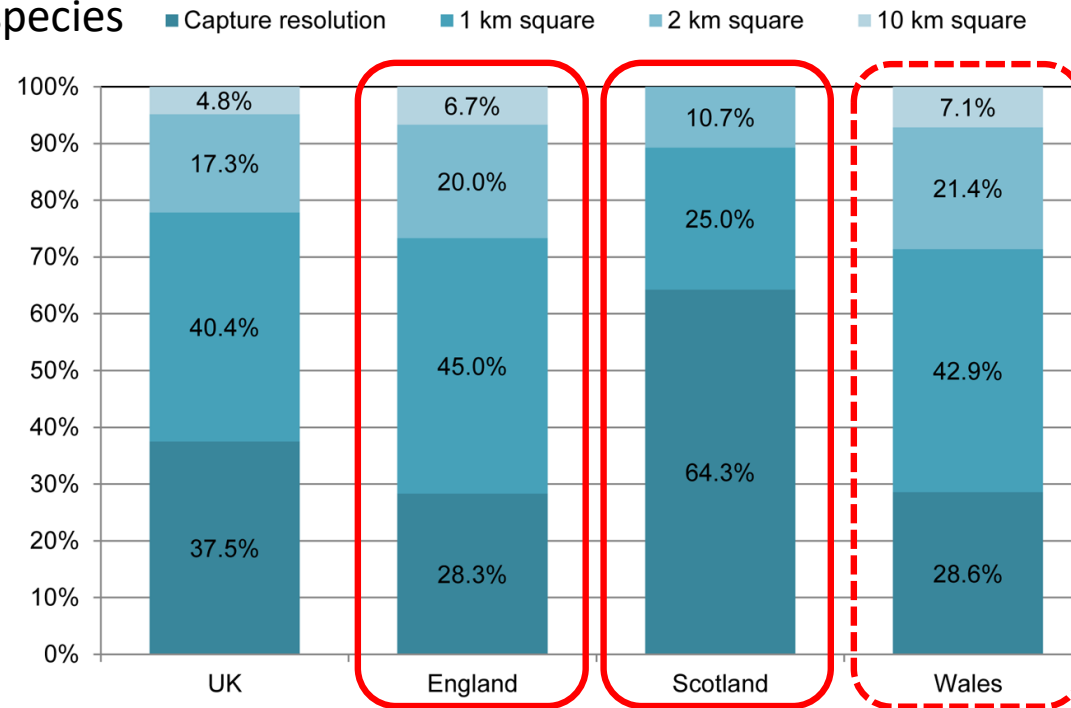
But, there was a significant difference between County Recorders from different countries



County Recorder results: spatial resolution

- What spatial scale would be best for open access butterfly/moth records?

Widespread species



County Recorder results: spatial resolution



Widespread species

37.5% in favour at capture resolution

77.9% in favour at 1km square resolution

95.2% in favour at 2km square resolution



Threatened species

6.7% in favour at capture resolution

15.4% in favour at 1km square resolution

45.2% in favour at 2km square resolution

County Recorder results: time delay

- Should there be a time lag before butterfly/moth become open access and, if so, how long should it be?

70% no delay

21% 5-year delay

1% 10-year delay

4% 20-year delay

No significant difference between butterfly and moth County Recorders

County Recorders in England more in favour of a delay than those in Scotland



County Recorder results: Creative Commons licences

- Which Creative Commons licence is appropriate for butterfly/moth records?



3.9% CC0 (no rights reserved)



16.5% CC-BY (scheme attribution)



79.6% CC-BY-NC (scheme attribution, non-commercial use)

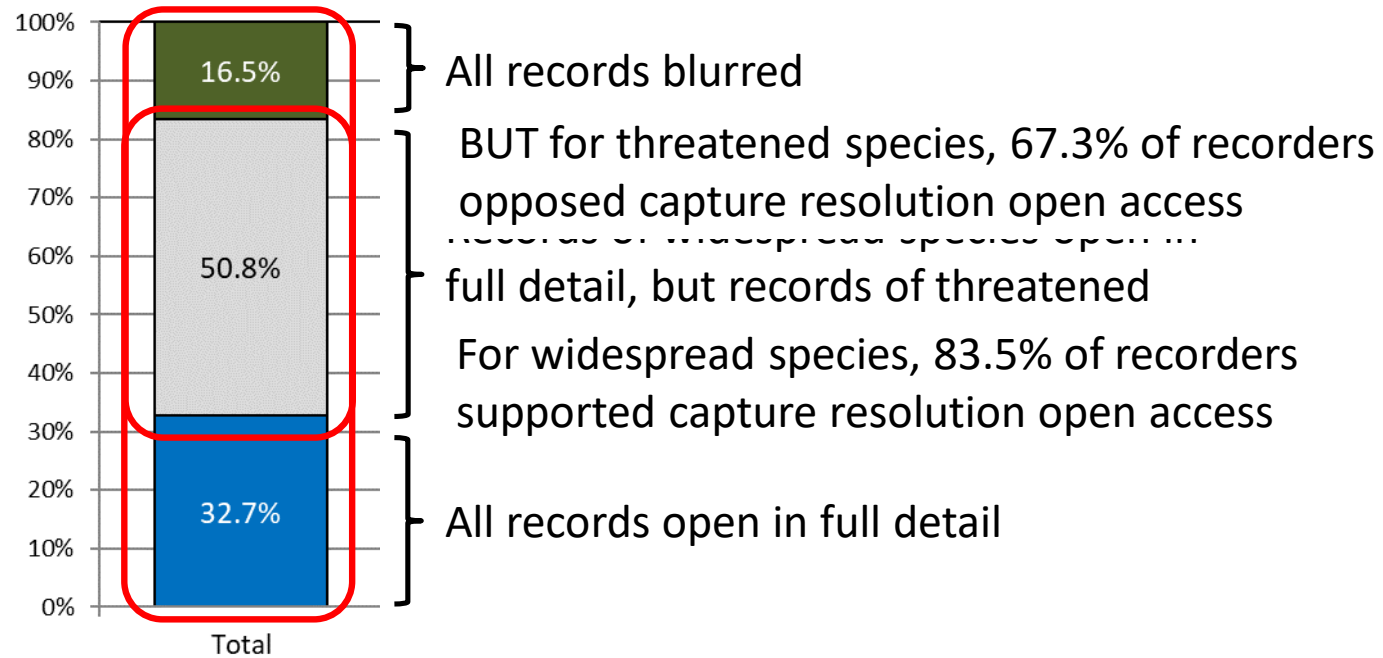


Recorders questionnaire



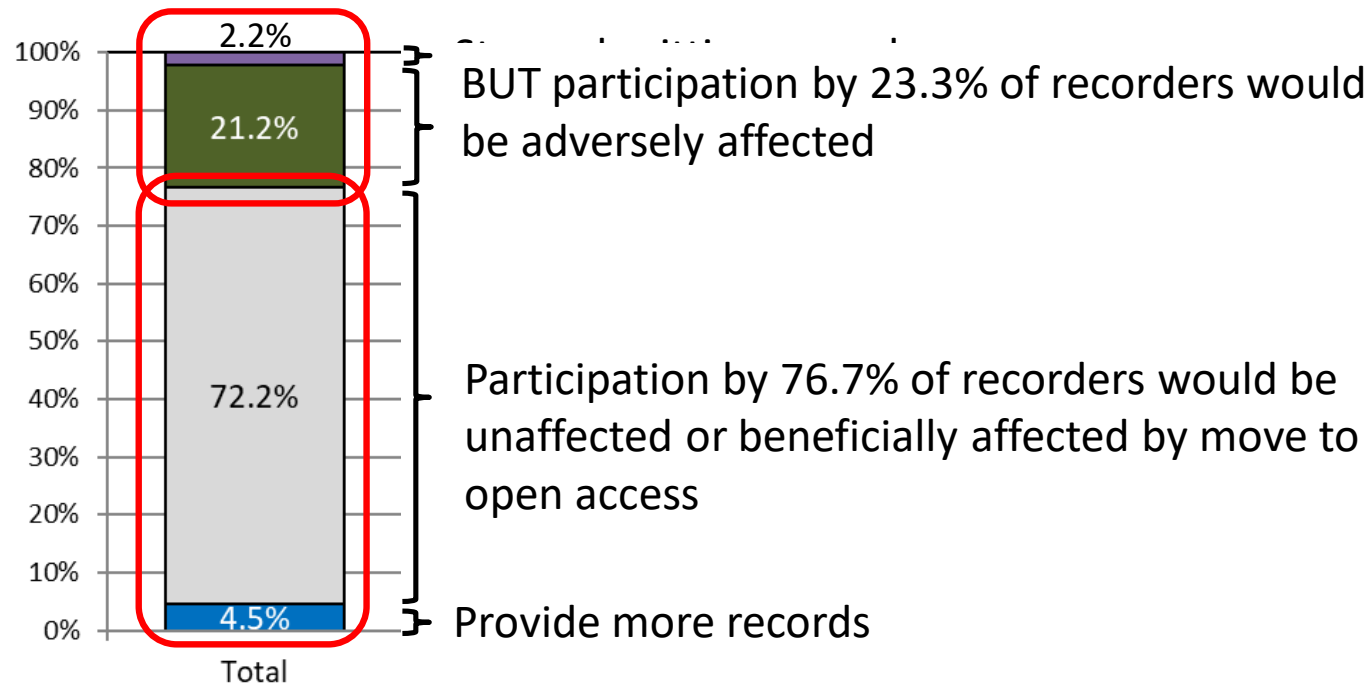
Recorder results

- What is your preference for public access to your butterfly/moth records?



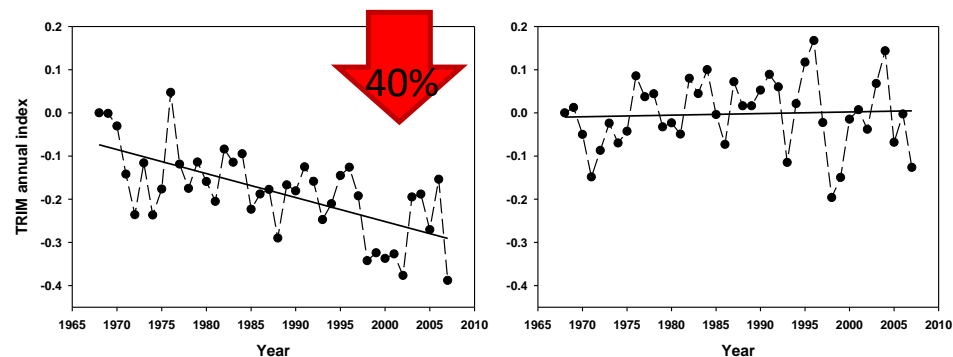
Recorder results

- If the UK butterfly/moth recording schemes moved to open access, what would be your response?



Conclusions

- There is clear support for increasing access to records among County Recorders but only at restricted spatial resolution and for non-commercial use
- Recorders are more supportive of open access than County Recorders, but many remain concerned about capture resolution data
- Both groups showed a clear distinction between open access to records of threatened and widespread species
- County Recorders in Scotland showed more support for open access than those in England



Thanks

Read more:

Fox R, Bourn NAD, Dennis EB, Heafield RT, Maclean IMD & Wilson RJ (2019) Opinions of citizen scientists on open access to UK butterfly and moth occurrence data. *Biodiversity and Conservation* **28**, 3321-3341.

Photographs:

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