



TRANSFORMING CITIZEN SCIENCE FOR BIODIVERSITY

Applications of citizen science data for biodiversity conservation

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Digital citizen science biodiversity data



Digital citizen science **biodiversity data**

Observation of an organism, with limited information: taxonomic identification, location, time



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Collected voluntarily by members of the public

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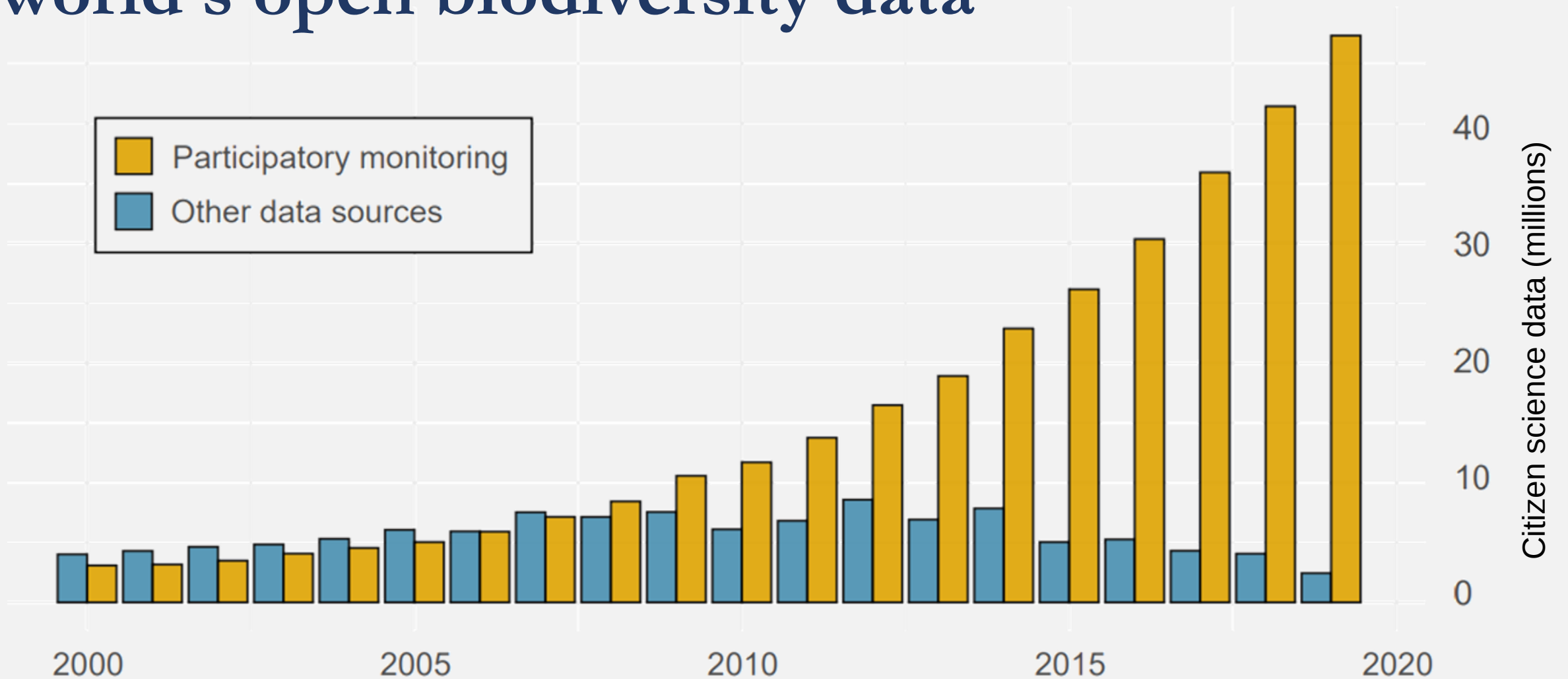


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Collected voluntarily by members of the public

App-based data collection means data are opportunistic – no structured sampling process

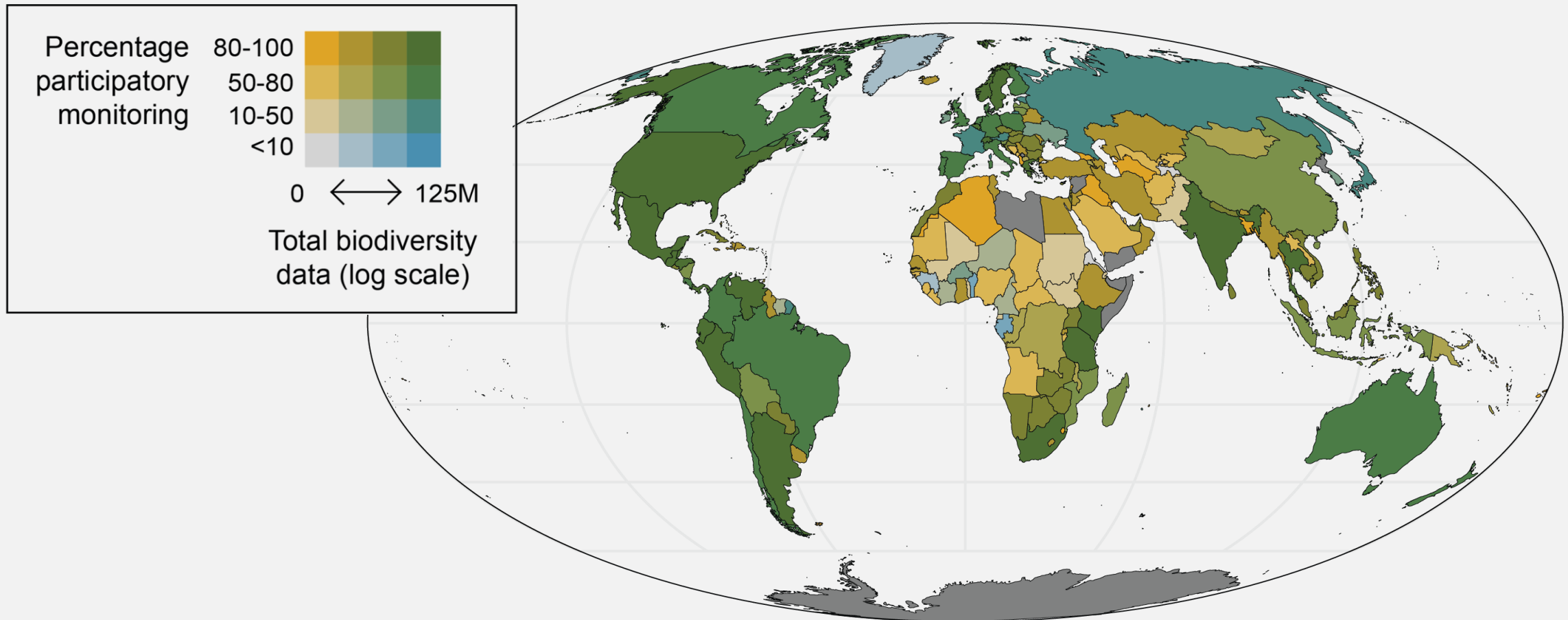
Citizen science produces over 60% of the world's open biodiversity data



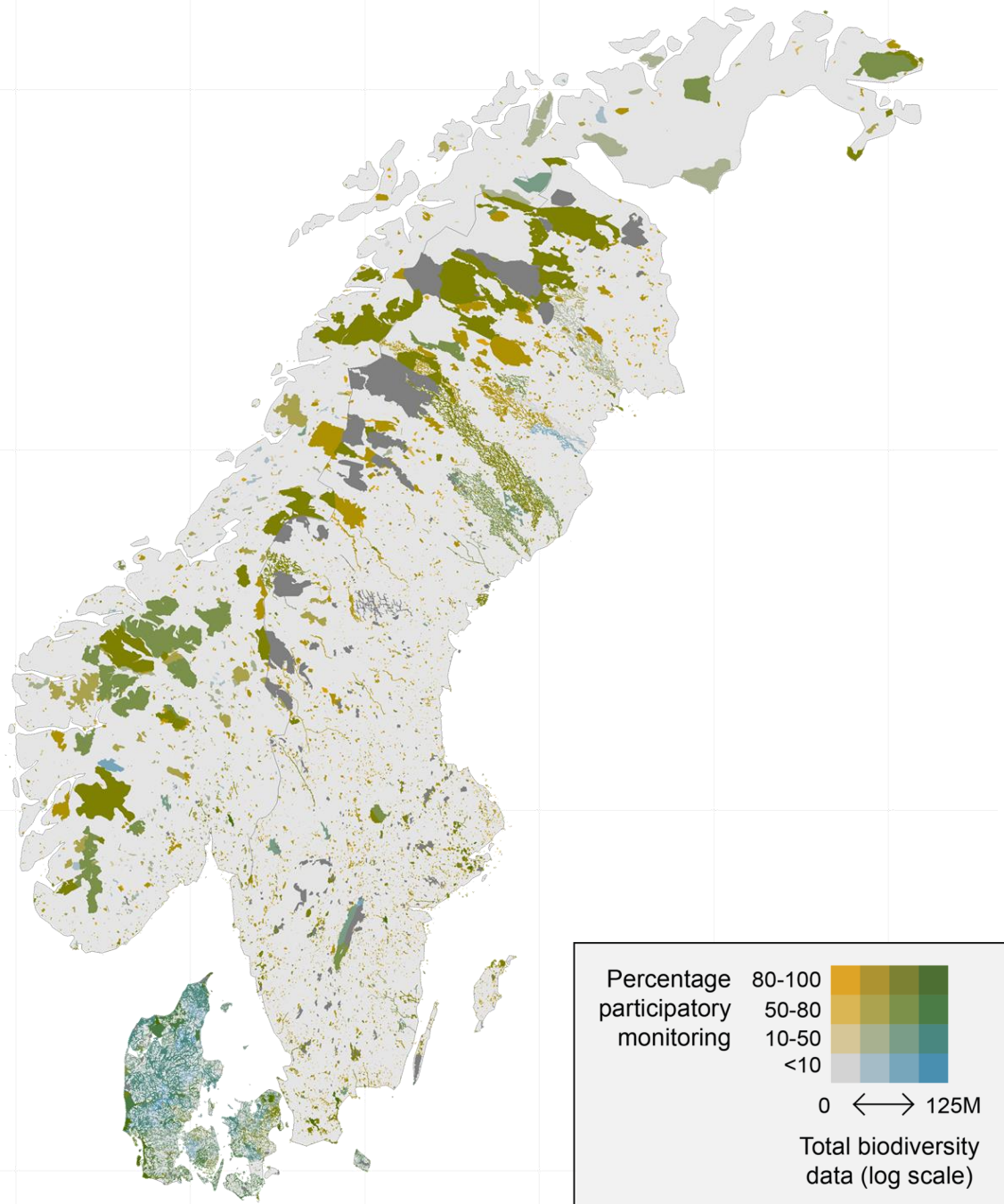
Data (for global protected areas) added annually to the Global Biodiversity Information Facility data repository

Objective of my PhD: Understand the **current impact** and improve the **future utility** of opportunistic citizen science data for biodiversity monitoring and conservation.

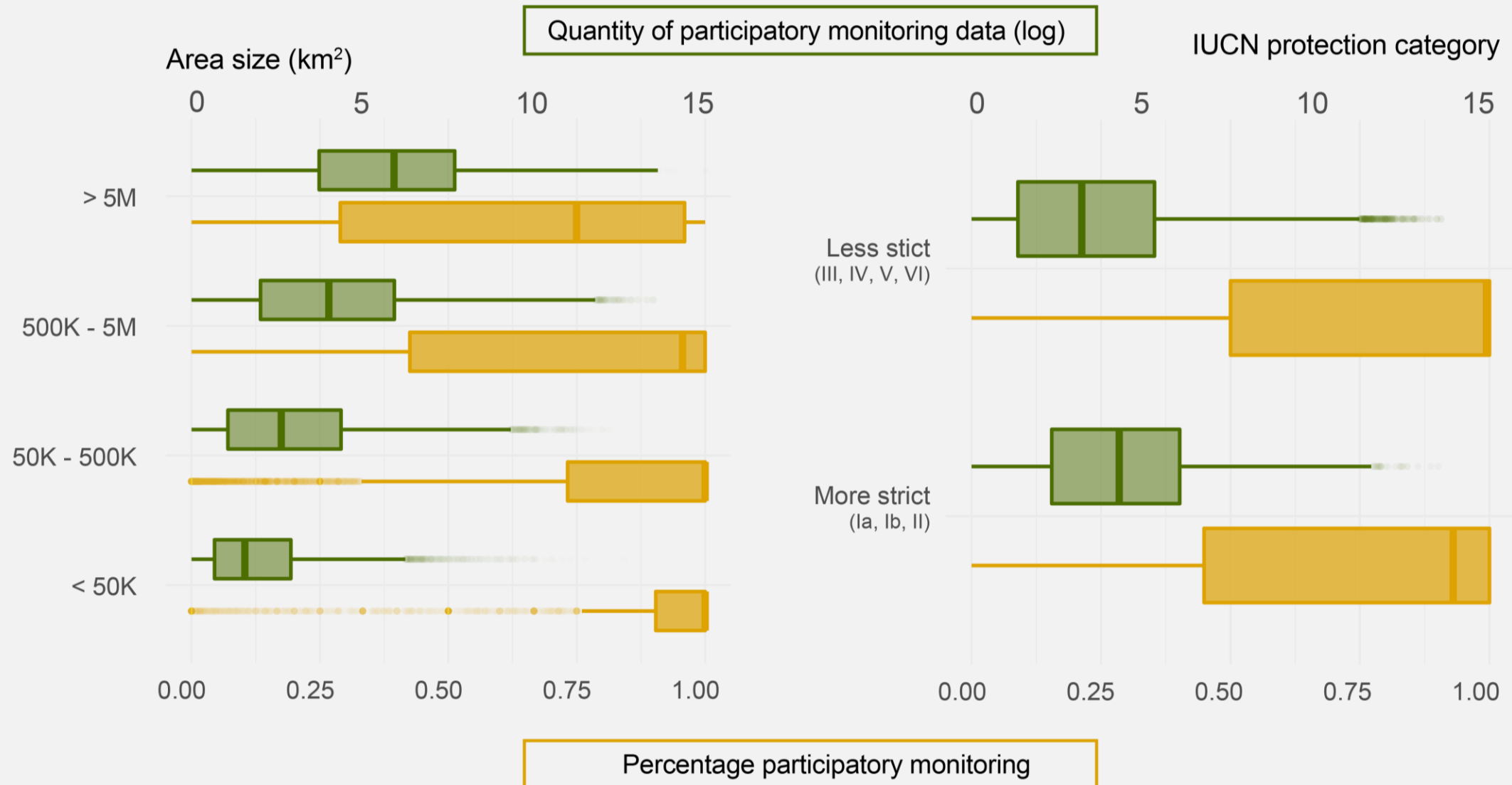
We introduced a classification scheme to identify global protected areas where citizen science data are a high proportion of the total available data.



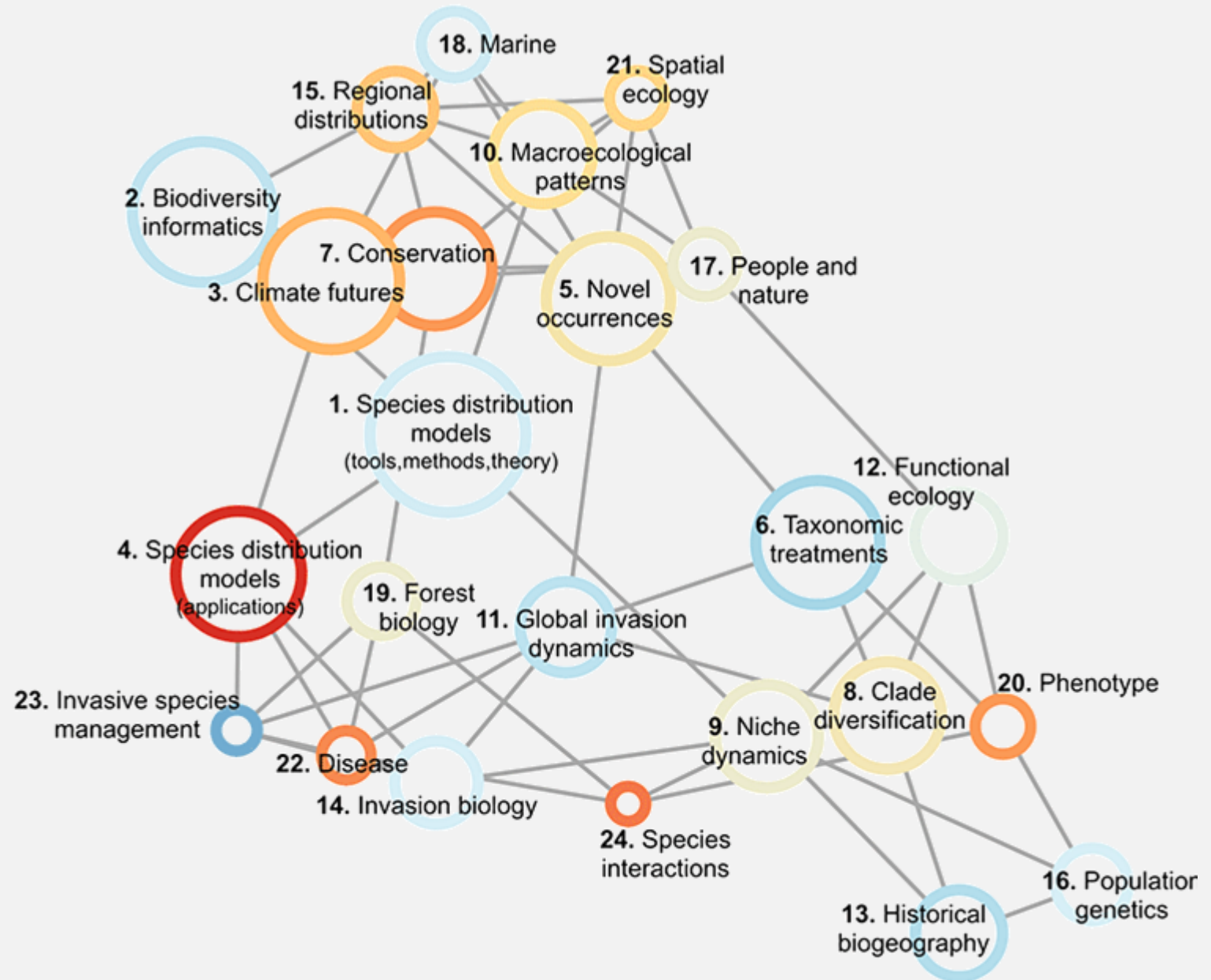
Even within regions of
high citizen science
utilization, there is a lot
of variation among
protected areas



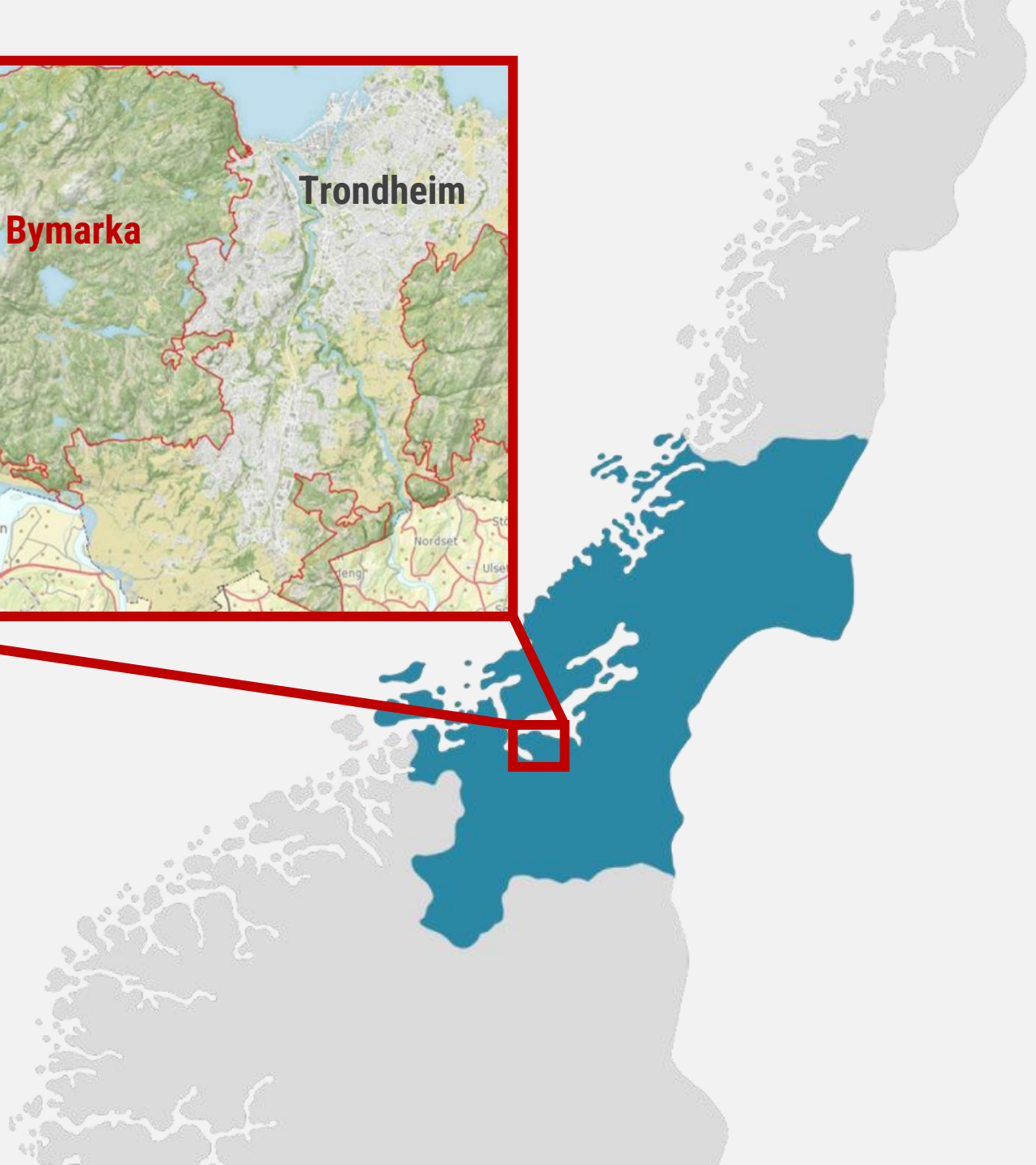
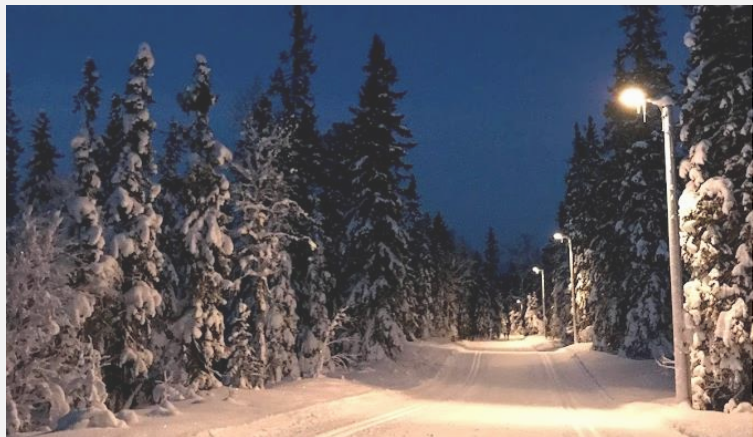
Globally, small areas and those with less strict protection schemes rely the most on citizen science.



And yet...

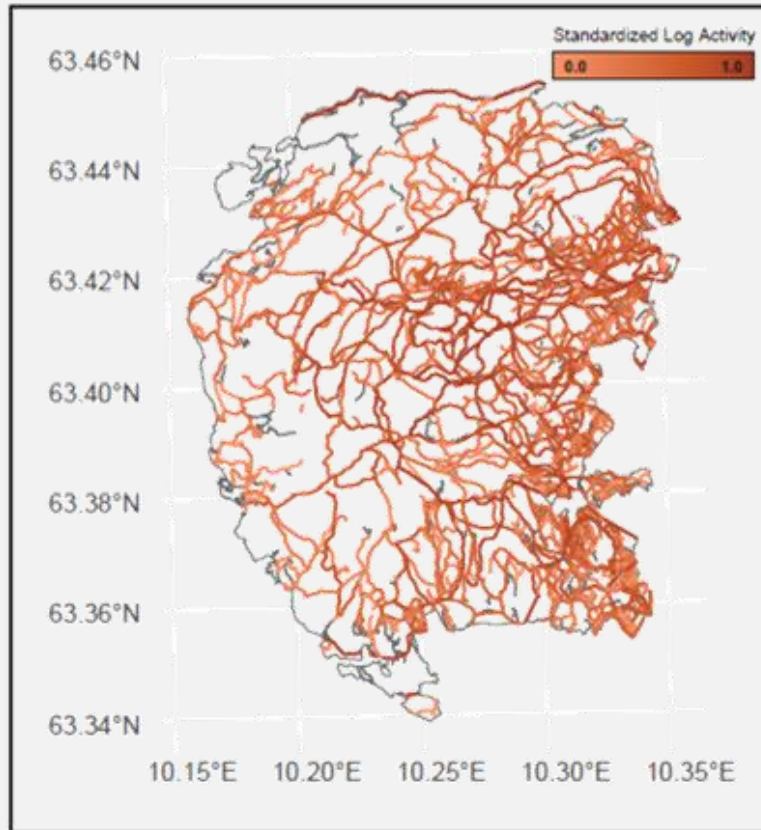


Themes of research using GBIF data. Heberling et al. 2020 <https://doi.org/10.1073/pnas.2018093118>

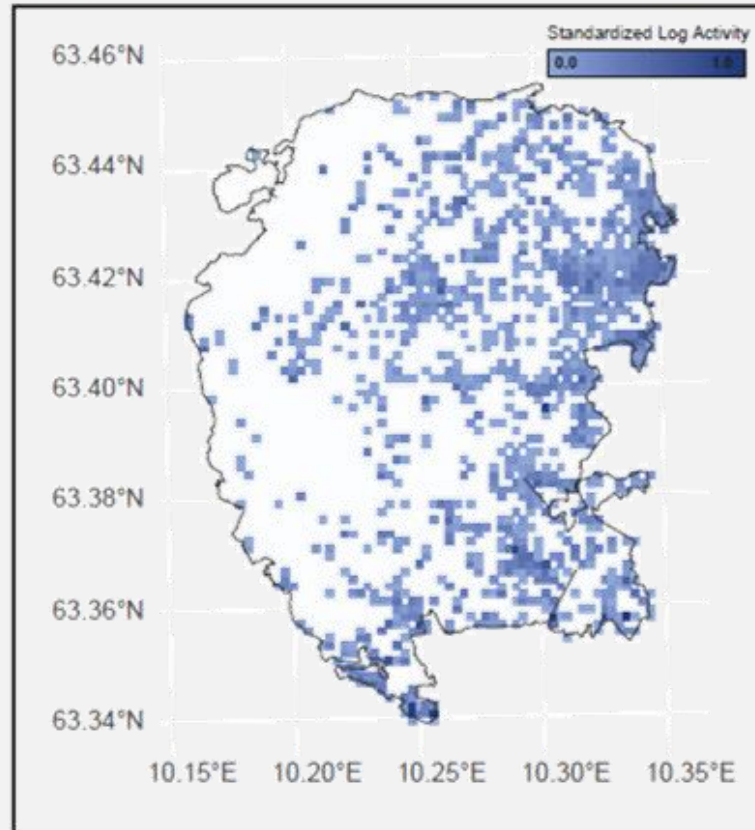


The distribution of citizen science did not correlate with recreational activity or professional data shared on GBIF.

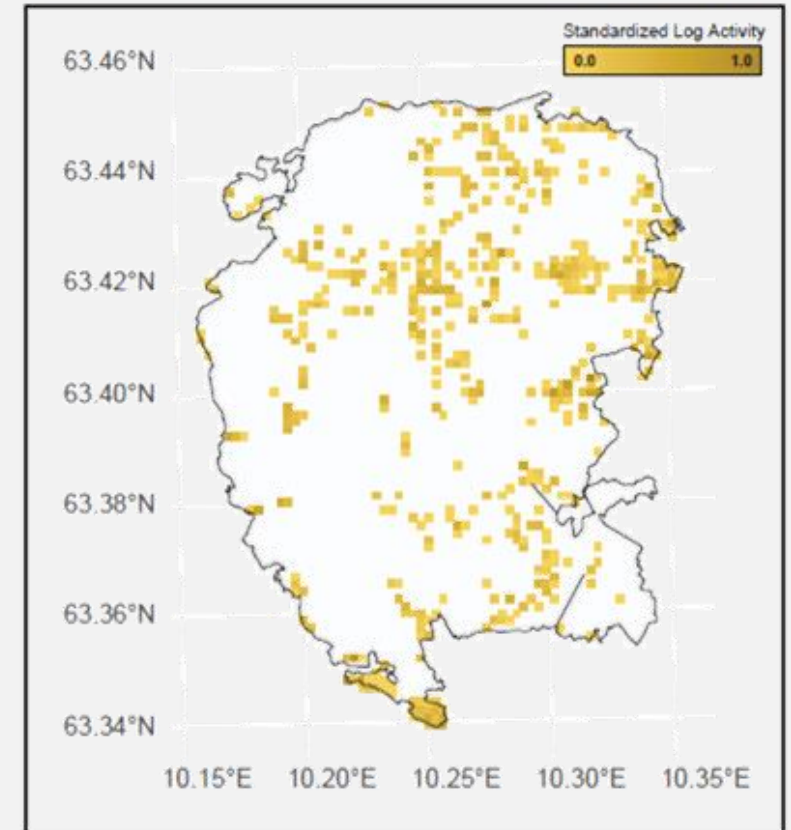
Strava activity



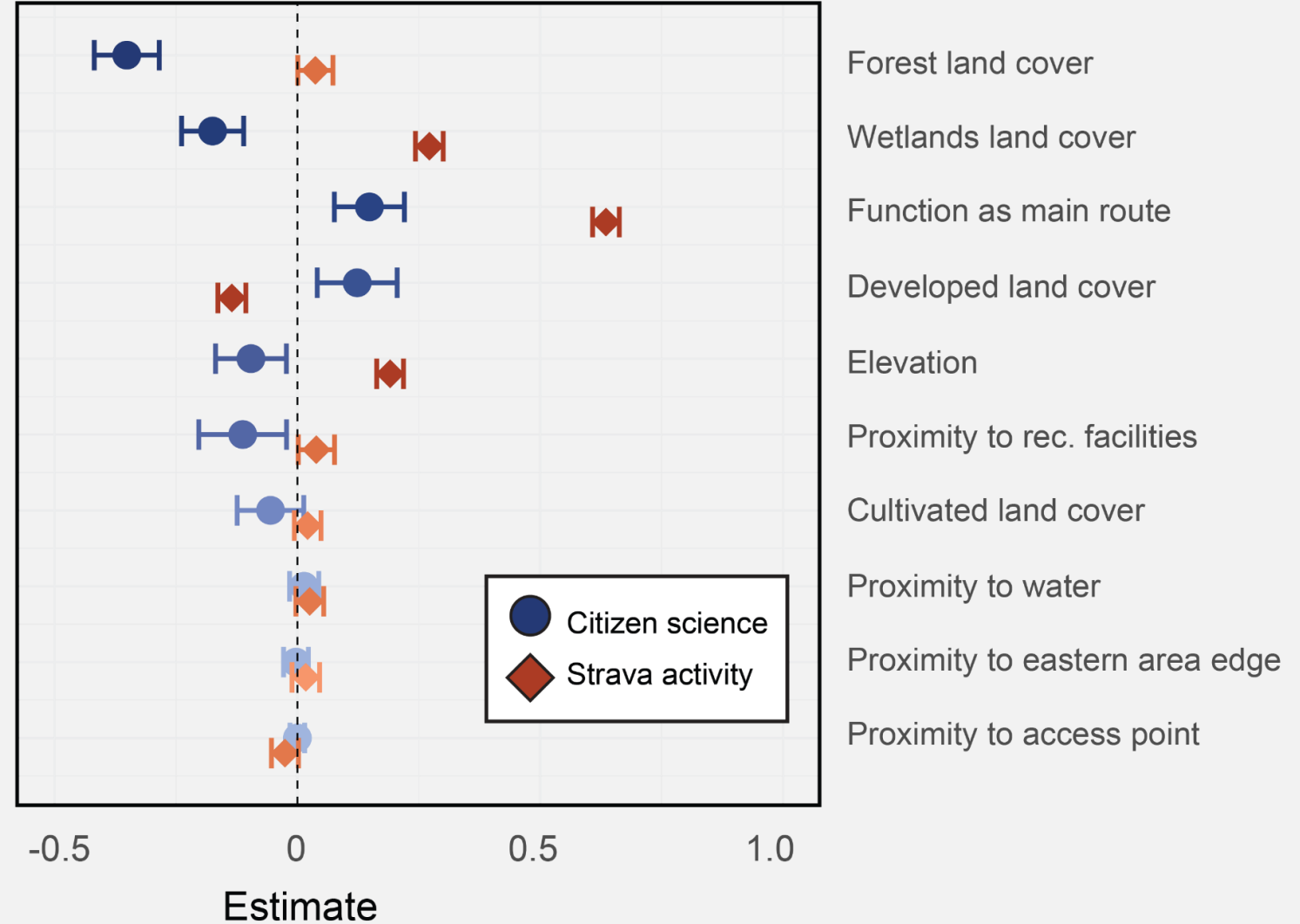
Citizen science data



Professional data



Citizen science was widely distributed, and more associated with ease of access than with natural features.





There is strong precedent for connections between citizen science and local protected areas management.

Conservation Science and Practice Open Access
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Community science supports research on protected area resilience

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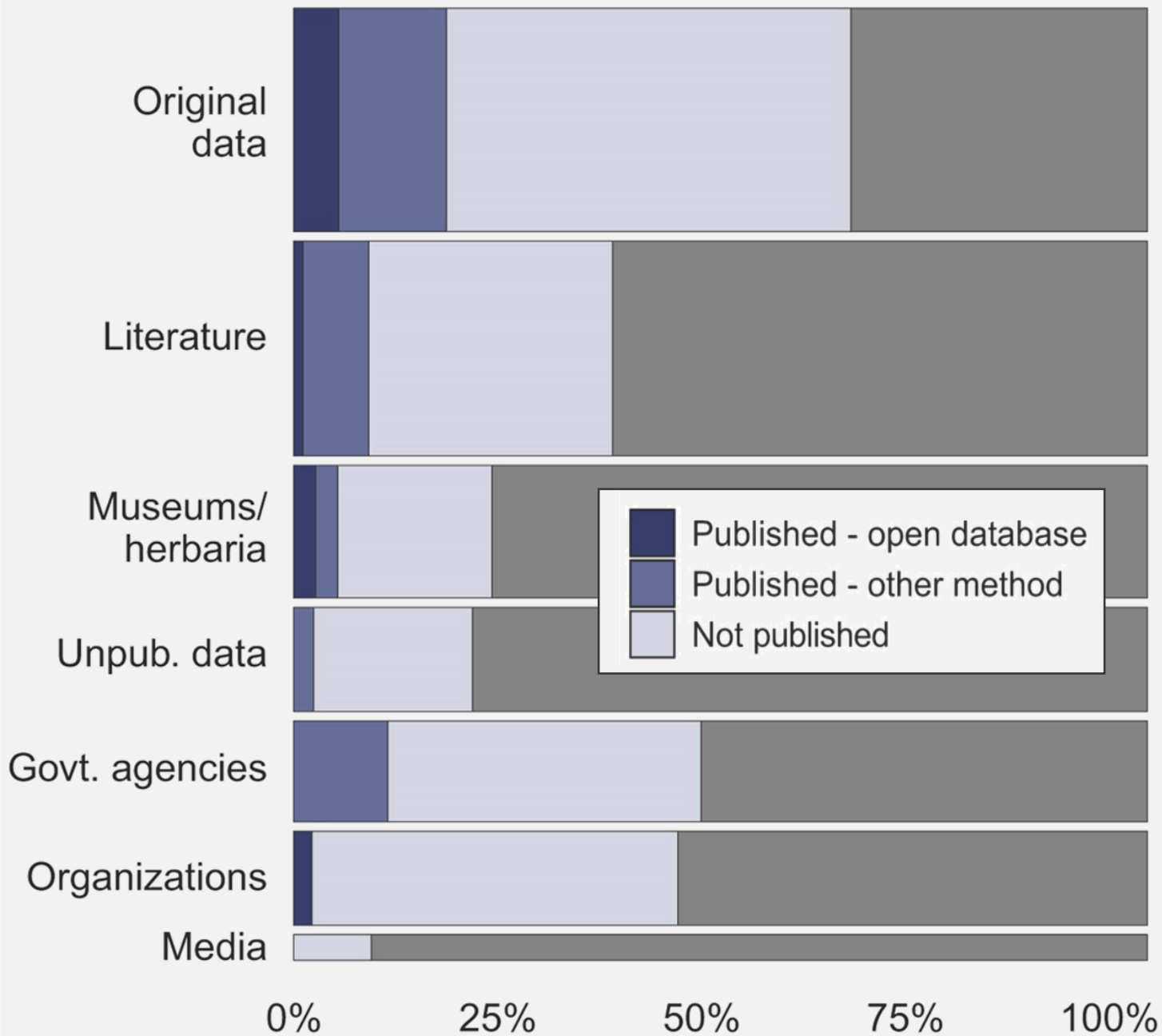
Harnessing the volume of citizen science data to address a data-hungry question.

To what extent does competition between Norway's two ptarmigan species determine the limits of their distribution?



Photo: Anders Bryn





75% of recent unstructured biodiversity data in the literature are not shared openly: **there is great potential for more data sharing!**

Thank you!

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Supervisor committee: Francesca Verones

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