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Towards a UK Biodiversity Observation Network: Insights from Stakeholder Engagement

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14/05/2026

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1. Background

The UK has a long history of monitoring biodiversity, mainly through citizen science (Pocock et al., 2015). This has generated large quantities of biodiversity monitoring data covering many taxa, long time periods and a large proportion of the UK. This makes the UK one of the best monitored countries on Earth. However, this rich biodiversity monitoring landscape is highly fragmented, with many schemes working in isolation raising the potential for redundancy and duplication. As an example, Turner et al. (2023) found 45 national monitoring schemes covering 13 species of native amphibians and reptiles. There is also a disconnect between data providers and data users, including policy, which means that monitoring efforts are not currently aligned with policy and other data users' needs.

Many countries that don't have such an established biodiversity monitoring network have begun designing monitoring systems with integration as a core principle (Kühl et al., 2020). There is a great need to bring monitoring efforts together to provide a robust evidence base for assessing biodiversity trends under national and international commitments. Although data standards like Darwin Core and platforms such as the National Biodiversity Network Atlas and GBIF have improved data sharing and access, this only goes part of the way to producing robust indicators of biodiversity change.

An integrated biodiversity monitoring system would address some key challenges in the current UK biodiversity monitoring data: 1) gaps, biases and inconsistent standards; 2) understand biodiversity change across scales; 3) monitoring guided by policy needs; 4) engagement across all key actors in the UK biodiversity monitoring network.

The Global Biodiversity Observing System (GBiOS) is a blueprint for integrated monitoring and reporting of biodiversity data across the world (Gonzalez et al., 2023). This was proposed by the Group on Earth Observations Biodiversity Observation Network (GEO BON) to connect existing capacities and organizations to monitor biodiversity change and to guide the action needed to achieve the targets and goals of the Kunming-Montreal global biodiversity framework. National biodiversity observation networks (BONs) are the key units that make up a GBiOS. A BON is a network of sites and groups that produce biodiversity observations from those sites, and it coordinates observations and monitoring to support policy. A few national BONs exist: China, Colombia, France and Japan.

By establishing a UK BON, the UK would become part of the GBiOS, benefiting from and contributing to the international biodiversity monitoring community. The BON provides a model that can be implemented and adapted to the specific UK needs. In order to understand what a UK BON would look like, we need to first understand the needs of and challenges experienced by the biodiversity data providers and users that will be nodes in the BON. The aim of this engagement project is to investigate these needs and challenges and assess views towards a future UK BON.

2. Methods

2.1 Stakeholder engagement

As discussed above, the aim of this engagement is to understand the needs and challenges of biodiversity monitoring data users and providers. The objective is to identify where the current monitoring network is failing and how a UK BON can help.

2.1.1 Stakeholder groups

The target audience is users and providers of biodiversity monitoring data. The users include academics and researchers in Non-Governmental Organisations (NGOs), but also local authorities and groups of organisations such as those involved in Local Nature Recovery Strategies (LNRSs). The providers include NGOs, Local Environmental Records Centres (LERCs), the NBN. Some of them are just providers of data (e.g. the NBN), others generate new data through monitoring programmes and others do both. All these stakeholders are nodes in the current UK biodiversity monitoring network and will potentially have a role in a future UK BON.

2.1.2 Interviews

We conducted semi-structured interviews with the stakeholders. Each interview lasted approximately one hour, and it was attended by two members of the project team where possible. One facilitator led the interview, while the other took notes. The interview script (appendix A) was organised in three main sections. The first part of the interview asked the interviewee to describe their organisation and their role within it and whether the organisation primarily collects, provides or uses biodiversity monitoring data. According to the interviewee's answers to these initial questions, the interviewer then asked questions from part 2 (questions about data use) or part 3 (questions about data generation). Most of the interviewees were both data providers and users so many of the interviews included questions from both sections.

2.1.3 "Towards a UK Biodiversity Observation Network" workshop at the British Ecological Society Annual Meeting

We held a lunchtime workshop at the British Ecological Society's (BES) Annual Meeting in Edinburgh in December. The overall aim of the workshop was to engage with the BES community around the topic of establishing a UK BON. We had 3 specific goals: 1) to understand the needs and challenges of the academic community as users of biodiversity monitoring data and how UK BON can help; 2) to identify challenges and opportunities for achieving the UK BON vision; and 3) to identify enthusiastic individuals who want to work with us.

Around 80 people attended the workshop, which lasted one hour. After a short presentation to introduce the concept of a BON and the international context, participants were asked to do some practical activities in small groups. We had 9 groups of around 7-10 people each. During the first session they were asked to map their current biodiversity monitoring network by writing on sticky notes their role, organisation type and whether they are a data user, provider or both. We then asked them to write down on another sticky note the main types of biodiversity data they use or provide and the main sources or repositories where the data can be found. These sticky notes represent the nodes in the network. Once they had all the sticky notes, they were asked to draw arrows between the nodes to represent data flows. While they drew their network the groups were also discussing any gaps and bottlenecks they could see in the network and any opportunities for achieving more integration.

In the second session participants were asked to draw a future ideal network, attempting to solve the gaps and bottlenecks and to achieve the integration opportunities identified in the previous session. We also asked them to discuss what role a UK BON could play in achieving this ideal network, what barriers it could help overcome and how it could become an enabling force.

During the sessions, 5 facilitators were available to answer questions and facilitate the discussion. In the end we asked one person from each group to report back on two main points from their discussion. We then distributed two questionnaires for providing feedback on the event and to collect contact details of people who wanted to get involved.

2.2 Thematic analysis

Following interviews with 18 UKCEH external stakeholders we analysed 18 hours of qualitative data. A combination of steps was undertaken to format the data for analysis:

1. Reading and re-reading interview material to gain a deep understanding of the data: this included reading interview notes and cross-checking content with transcripts from the Teams recording
2. Sorting the responses by the stakeholder type: we generated spreadsheets recording responses to the 9 questions and the stakeholder type (data user, data provider, both)
3. Analysing the data to draw out themes, frequency of similar answers, plus standalone answers such a niche experiences: the responses were grouped by key messages and experiences.
4. Synthesising: Co-pilot was used to help synthesise and condense the quantity of information. We instructed Copilot to use only the anonymised interview content provided e.g. not to draw on wider sources to assist the interpretation. Copilot was used following the UKCEH Governance and Guidelines.
5. Review: the themes identified by Copilot were then reviewed and supported with direct quotes from the interviews.

3. Results

We interviewed 18 stakeholders, who were data users (4), data providers (7) or both (7). Five stakeholders were from organisations we categorised as “local authority/LERC”, six were from NGOs, four were from universities, two from partnerships of organisations and one from a consultancy company. See Table 1 for a breakdown of organisation type by stakeholder type.

Table 1. Types of organisations (and number) within each stakeholder type category.

Stakeholder type	Organisation type
Data provider	Local authority/LERC (3), consultancy (1), NGO (2), partnership (1)
Data user	Local authority/LERC (2), partnership (1), university (1)
Data provider/user	NGO (4), university (3)

The following section explores some of the key themes that emerged from the interviews.

3.1 Key themes from stakeholder interviews

3.1.1 A wealth of biodiversity data

Organisations across the biodiversity sector collect and use a wide range of ecological data: species occurrence data, including from citizen science records, habitat surveys, environmental condition data, invasive species monitoring and novel data types such as drone imagery and acoustics data. Biodiversity data is collected to understand the state of biodiversity and ecosystems so that conservation, restoration, and land-management decisions can be effectively planned, targeted, and evaluated.

Stakeholders interviewed use biodiversity monitoring data to understand species distributions, investigate long-term trends in species and habitats, identify drivers of biodiversity change, and support planning and strategy development, including Local Nature Recovery Strategies and local planning decisions. Data users described a range of different analyses applied to the data: from simple species range or habitat maps to deriving trend indicators and linking trends to environmental variables.

A wide community benefits from these datasets: ecologists, NGOs, local authorities, government bodies, researchers, consultants, infrastructure developers, community groups, and the public. However, some potential users, particularly researchers, educators, local councils, and grassroots groups, struggle to access or interpret some datasets due to technical, structural, or awareness barriers.

3.1.2 Uncertainty in data flows and barriers to data sharing

Many biodiversity monitoring datasets feed into national and global platforms such as the NBN Atlas, GBIF, Government Agencies’ open data portals, and national recording schemes, offering transparency, standardisation, and improved visibility. There is considerable uncertainty around data flows, with the potential for data duplication. For example, species records generated by local volunteers could end up in the NBN Atlas through different routes, for example through their LERC sharing the datapoint directly with the NBN or through the national recording scheme. One data provider said:

"The data flows from one centre to another is tricky and unsatisfactory. Hard to know who to send it to, local vs national. How can you be sure where you send it to gets shared with others and disseminated correctly? This has always been a problem."

Sharing is limited by technical constraints, inconsistent licensing, concerns around sensitive observations (such as endangered species), GDPR risks, and the time and capacity required to clean, verify, and format datasets. Additional barriers arise from fragmented systems, different protocols, commercial confidentiality, and the lack of centralised tools or secure storage. All these issues cause significant lags in the sharing of biodiversity data, which limits our ability for real-time monitoring.

3.1.3 Barriers to accessing and using data

Multiple barriers were identified by the stakeholders around accessing and using biodiversity data. Table 2 lists the main barriers identified and potential solutions.

Table 2. Key barriers to data access and use and potential solutions.

Theme	Main Barriers	Main Solutions
Capacity	Not enough staff time to improve data management and dissemination	More staffing, funding, and training
Accessibility & Complexity	Data is technical, hard to interpret, or hard to navigate	Simple interfaces, dashboards, guidance, and educational materials
Data Standards	Mixed formats, legacy systems, records are not digitized	Standardisation, AI-assisted data cleaning, and metadata tools
Licensing & Governance	Licensing limits, confidentiality, GDPR concerns	Clearer access controls and better upload/sharing processes
Awareness	Many users don't know the data exists or how to use it	Outreach, collaboration, social media, and involvement in national networks
Infrastructure	Fragmented systems and hard-to-use tools	Improved APIs, stronger national integration, updated platforms
Methodological inconsistencies	Data are collected using different protocols	Standardisation of methods, protocols, and guidance, unified analytical approaches and best-practice conventions
Data coverage	Gaps in spatial, temporal and taxonomic coverage	Improved data quality, resolution, and time series, more complete datasets, expanded monitoring, and consistent spatial/temporal coverage

Data users face significant barriers to fully utilising biodiversity information. Major limitations arise from uneven data quality, inconsistent standards, and data structures that prevent smooth integration across systems. Many datasets lack the fine-scale resolution needed for local planning or sub-national analysis, and the lack of historical data restricts long-term trend interpretation. Issues such as undigitized data, incompatible formats, and restrictions around sensitive data, further limit the value and accessibility of existing information.

The limited capacity within organisations that collect and provide data to users is a major barrier to implementing solution to improve data accessibility and one that was mentioned multiple times during the interviews. This is especially a problem for regional organisations such as LERCs, where often only one member of staff is responsible for data management and sharing, among other duties.

To address these challenges, organisations consistently highlighted the need for clearer national standards, modernised digital infrastructure, and better analytical capacity. Improved mechanisms for data sharing and integration, alongside long-term funding, skilled staff, and coherent governance, are seen as essential to unlocking the full potential of biodiversity monitoring at local, regional, and national levels.

3.1.4 A gap between national and local monitoring

Academics tend to use national scale data to produce national or regional scale assessments, while local applications, such as LNRS planning or habitat condition assessments require fine-scale local data. National scale datasets are often inadequate for answering questions at the regional or local scale and local scale data do not usually contribute to national scale indicators and assessments. This means that it is difficult to compare biodiversity trends across scales and that national scale assessments cannot be used to inform action on the ground at a regional and local level. Two of the respondents said:

"On a scale smaller than national, the data on the NBN are less useful because they are not spatially resolved enough to be useful for someone who's doing a project on a local scale or the Local Nature Recovery Strategies, for example."

"Another role for the UK BON… would be to bring together the national and the regional, because things are going on in isolation mostly."

3.1.5 Collaborations

Despite this gap, organisations involved in regional and local biodiversity monitoring regularly collaborate with national scale organisations. Collaborations usually involved active data-sharing agreements between county recorders, LERCs and national schemes, NGOs, and statutory agencies, supported by platforms like iRecord and iNaturalist. Collaboration often occurs through joint projects, survey coordination, citizen-science initiatives, and shared training.

Organisations that provide biodiversity data, such as LERCs, NBN and NGOs also often interact with researchers and research organisations, mainly through providing data for student projects, but occasionally through project-based research collaborations, sharing local and specialist expertise and occasionally through contributions to academic outputs such as reports and peer reviewed papers. However, some respondents reported a *"disconnect between on the ground organisations and researchers"*, and a *"Lack of consistent collaboration with national schemes and universities*", highlighting some challenges in establishing collaboration, especially between local/regional organisations and organisations working on a national scale.

3.1.6 Benefits and contribution to UK BON

Across both biodiversity data providers and users, there was broad agreement that a UK Biodiversity Observation Network (UK BON) would offer major benefits (Table 3). Data users mentioned that UK BON would give them easier, more consistent access to biodiversity information by bringing datasets together in an integrated, and discoverable way. It would provide common standards, best-practice guidance, and coordinated national monitoring, enabling users to benchmark local findings against national trends and produce more robust assessments. UK BON would strengthen the overall evidence base, reduce duplication of effort, and support more robust environmental decision-making.

Data providers agreed a UK BON would provide a coordinated, standardised, integrated, and collaborative national system that enhances data quality, accessibility, and scientific value, while reducing the operational burden on individual organisations through streamlined data flows and integrated infrastructure.

A UK BON is expected to strengthen collaboration, enhance community networks, support innovation in indicators and tools, and increase the scientific and policy impact of biodiversity evidence. Respondents said:

"Any more we can do to have a joined-up approach to data mobility in the UK, would be great."

"There is a strong appetite for a unified, standardised national system."

"A BON could support regional and local conservation needs, not just national indicators."

"If we could harmonise it all… even have scalable indicators… disaggregate from national to local or aggregate from local to national… that would be amazing."

Table 3. List of benefits of UK BON and examples from data providers and users.

Benefits	Examples
Stronger Scientific Evidence and Enquiry	Solves the widespread problem of "not knowing where to look for data" by creating a unified national system.
Standardisation and Consistency	National consistency in taxonomy, data standards, formats, and quality controls.
Better Data Integration and Accessibility	Reduces fragmentation by integrating data from multiple sectors: statutory bodies, NGOs, LERCs, academia, and citizen science groups.
Enhanced Decision-Making and Policy Influence	Offers complete and context-rich datasets to inform planning decisions, conservation priorities, and local policy.
Improved Collaboration and Community Building	Creates access to a broad "community of practice" for shared learning and resources.
Operational Efficiency and Reduced Burden	Creates more efficient data flows across organisations and sectors.
Supporting Better Indicators, Tools, and Innovation	Enhances development of robust biodiversity indicators, analytics, and decision-support tools.

Organisations across the UK could make substantial contributions to UK BON by supplying high-quality biodiversity data, specialist expertise, and established monitoring capacity. Many hold national-scale or long-term datasets that could significantly enhance national assessments of biodiversity change.

Volunteer networks represent a major strength, with several organisations able to mobilise trained recorders, support citizen-science initiatives, and bridge national programmes with local communities.

Beyond data, organisations can play strategic roles in shaping standards, governance, and interoperability frameworks, drawing on existing infrastructures such as the NBN Atlas and regional LERC models. Many are well placed to test new tools, contribute to capacity-building, and provide land access for on the ground monitoring.

Some respondents while supportive of the BON also shared thoughts on possible barriers to overcome. One respondent said:

"Membership will be diverse with different motivations (recorders vs managers vs academics), so governance and scope need careful design."

Some organisations could contribute only if processes are simplified, specifically they mentioned: *"data upload must be extremely easy and fast"*, *"streamlined workflows to reduce administrative burden"* and *"clear licensing pathways and data-sharing agreements".*

Most respondents mentioned resource issues, administrative burdens, and lack of funding as main barriers to their current work. There was a view that these could also be barriers to contributing to UK BON and there was some uncertainty about whether the network has the capacity or resource to meet the diverse needs of the stakeholder community:

"There are not enough resources to run such schemes currently."

"…you would have to have sort of membership fees, I guess… because how would it run?"

3.2 Reflections from the BES workshop

The workshop was very well attended, which shows that there is a lot of interest around the establishment of a UK BON within the BES community. Most participants (58 out of 77) were researchers and students from either academic institutions, research institutes or NGOs. Government agencies and public bodies were also represented, although in smaller numbers (11 attendees). There was certainly some enthusiasm around the idea of a UK BON but there was also some scepticism and some worries that a UK BON will try to replace existing organisations and partnerships. This was particularly evident from the questions after the introductory presentations, which highlighted that several similar initiatives already exist. It is clear to us that UK BON should not try to duplicate or replace existing nodes in the network, but it should add value to and fill gaps in the current network. Going forward it will be important to communicate this intention clearly and have conversations with key organisations so that we can co-design UK BON with them.

The discussions and drawing of the networks started quickly and lively, however some groups got stuck at the stage of drawing arrows between nodes. This could be for different reasons: 1) the task was not described appropriately, 2) the group's network was too disjointed leading to too many nodes and arrows, 3) the networks are complex and there is a lot of redundancy, making it difficult to identify their structure. In the end 6 out of 9 groups drew arrows between the different node types.

The main data types that were mentioned were species occurrence and abundance data, followed by habitat and trait data. Every group listed the NBN and GBIF as data sources and repositories, while EIDC, LERCs, BRC and specific recording schemes (e.g. UKBMS, BBS, BWARS) were mentioned by most groups. Each group mentioned some novel data types, the most popular being eDNA and bioacoustics. They also listed some repositories for these specialised data types, including ENA (European Nucleotide Archive) and BOLD (the Barcode of Life data portal for DNA barcode data).

All the groups recognised the central role the NBN has in the current biodiversity monitoring network and its role as an integration node, bringing together lots of different data. They also recognised some of the limitation of the NBN, such as the time and effort it takes to format and upload data and the resulting lags between monitoring and the data being available. Multiple groups also highlighted that not all data are on the NBN, with academic data often flowing into EIDC or other repositories, such as Dryad or FigShare. This results in the need for links between different repositories. One group discussed using identifiers to mark different data sources when they flow into NBN so that provenance is identifiable. They also proposed the creation of a database of databases, a hub of information around different data repositories.

Two main points were highlighted during the final feedback session around the role of a UK BON. The participants saw UK BON as potentially having a role in creating links between existing data repositories, both through enhancement in NBN functionalities (lowering the effort required to upload data and creating incentives to share) and through an external platform (a catalogue of data repositories) or developing common data standards. Another major theme from the discussions was the potential role of UK BON in building capacity around the use of novel data types and their integration with historical data. New technologies are likely to be enablers of integration as they are well suited to filling in the gaps in the current biodiversity monitoring network. UK BON could bring together expertise and produce best practices and guidance on how to set up new monitoring so that it is integrated with existing efforts, on data sharing standards and on methods for statistical integration.

4. Discussion

4.1 Barriers and solutions

Across the interviews and the BES workshop, participants painted a consistent picture of the UK's current biodiversity monitoring landscape as both exceptionally rich and frustratingly fragmented. Stakeholders described a "wealth of biodiversity data" spanning species records (often from volunteer-led schemes), habitat condition data, and emerging streams such as eDNA, bioacoustics and drone imagery. Yet they also highlighted uncertain and possibly duplicated data flows, variable standards, and uneven spatial, temporal, and taxonomic coverage. These issues create lags between data collection and assessment and reporting and limit the potential for integration that is needed for robust indicators and decision-support. Discussions during the workshop echoed these points. Groups uniformly identified the NBN as the current main integration node in the network but recognised that a significant proportion of biodiversity monitoring data reside outside the NBN (e.g., EIDC and specialised data repositories); they also proposed some practical fixes, such as simplified workflows for uploading data, clearer licensing, data-source identifiers, and a "database of databases". Participants also stressed the persistent gap between national-scale indicators and locally actionable evidence, especially for LNRSs and planning decisions.

Both communities converged on what would most help them do better science and make better decisions: (1) standards and guidance that are widely adopted; (2) modernised, interoperable infrastructure that reduces friction and duplication in data submission, curation, and access; (3) capacity and analytical support, particularly for integrating novel data types with long-running time series; and (4) clear governance that recognises diverse motivations and needs across data providers, users and stakeholders and builds trust around data management, sharing and use. In short, there is a strong appetite for coordination that adds value without replacing or duplicating existing roles.

4.2 What is the role of a UK BON within the national biodiversity monitoring landscape?

A UK BON should function as the connective tissue of the UK monitoring system, a network that coordinates standards, data flows, methods and governance across existing nodes. There are five areas in which UK BON could add value to the current monitoring network:

1. Gaps, biases and common standards in biodiversity data: much like the GBiOS (Gonzalez et al., 2023), UK BON would address these issues by mobilising and integrating existing datasets and developing consistent approaches for monitoring going forward. The use of the Essential Biodiversity Variable framework (Jetz et al., 2019; Pereira et al., 2013; Proença et al., 2017) will help identify what aspects of biodiversity we need to measure, and assess what data is available, where the gaps are and how to prioritise resources. UK BON also has a role to play to guide the strategic implementation of new monitoring technologies to fill gaps in the available data.
2. Providing evidence across scales: by promoting compatible sampling designs and reproducible workflows, UK BON could make progress towards producing multiscale assessments of biodiversity status and change that integrate data collected from local to national scale. This will make sure that national level trends can be linked to regional and local context and local evidence be used for prioritising policy and action.
3. Interoperability and data flow integration: UK BON could support the mapping and streamlining of current data pathways, to reduce duplication and improve provenance tracking of data.

4. Knowledge exchange and community of practice: by bringing together biodiversity data users, providers and stakeholders, UK BON will create a community of practice that will reflect the broad range of needs and perspectives present across these stakeholder types, resulting in a more inclusive and effective monitoring network. Some of the things that UK BON could do in this space are convening training and co-development of guidance and tools (dashboards, API clients, reproducible workflows) that lower barriers for both data providers and users.
5. Connecting data to policy: UK BON would provide a stable interface between data providers and policy users, ensuring monitoring is responsive to evolving UK and international reporting needs.

4.3 Next steps towards a UK BON

Since the engagement events described in this report, we have convened the first meeting of the UK BON Design & Implementation Team. This group brings together individuals who expressed interest during the BES workshop and have committed to contributing to the next stages of development. The Design & Implementation Team has begun outlining a governance structure for UK BON that draws inspiration from established BONs internationally, while remaining tailored to the specific priorities, strengths, and needs of the UK biodiversity monitoring landscape. Emerging ideas for governance include the establishment of a steering group, several thematic working groups and task forces, and an advisory board to ensure broad expertise and stakeholder representation.

Once the governance structure is agreed, we will begin drafting a comprehensive work plan. This will articulate the governance model, set out UK BON's objectives, and specify the actions and milestones required to achieve them. In parallel, we will prepare an application for GEO BON endorsement, which will formally recognise UK BON as part of the wider global biodiversity observation community and strengthen its connections, visibility, and influence within the GBiOS framework.

4.4 Conclusions

The creation of UK BON represents an important opportunity to strengthen coordination, integration, and strategic direction across the UK's biodiversity monitoring system. These initial engagement activities have provided clarity on the community's needs and generated enthusiasm for the project. With the Design & Implementation Team now established and foundational work underway, UK BON is well positioned to become a unifying mechanism that enhances the value, accessibility, and impact of biodiversity evidence in the UK, while contributing meaningfully to global efforts.

4.5 Ethics and EEDI statement

This project did not undergo a formal institutional ethics review; however, ethical considerations were central to the design and delivery of all engagement activities. Prior to participating in interviews all contributors were provided with an information sheet outlining the purpose of the project, what participation entailed, how their data would be used, and their right to withdraw at any time. Participants provided formal consent by accepting the invite to the Teams interview.

Participation in all engagement activities was voluntary, and individuals were free to decline to answer any question. Data were recorded and stored securely, and identifying information was removed during analysis to protect participant confidentiality. Quotes presented in this report have been anonymised to avoid attribution to any specific individual or organisation. No sensitive personal data were collected, and the project team took care to ensure that participation posed no foreseeable risk to individuals.

This project sought to engage a broad and diverse range of stakeholders involved in biodiversity monitoring across the UK, including participants from local authorities, Local Environmental Records Centres, NGOs, academic institutions, partnerships, and consultancies. In designing the engagement activities, we aimed to be

inclusive and accessible, and to reflect a range of perspectives, professional backgrounds, and organisational roles within the biodiversity monitoring landscape.

We did not formally collect data on protected characteristics as part of the interview process. For the BES workshop, an optional equality and diversity monitoring form was made available; however, only a small number of participants completed it, limiting the conclusions that can be drawn. We therefore recognise that our ability to assess representation across characteristics such as gender, ethnicity, disability, and socioeconomic background is constrained.

We recognise that achieving greater equity, equality, diversity, and inclusion will be essential for the long-term success and legitimacy of a UK Biodiversity Observation Network. Future phases of UK BON development will seek to engage more systematically with under-represented groups, consider barriers to participation, and explore more robust approaches to monitoring and supporting diversity and inclusion within governance, engagement, and decision-making processes.

4.6 Acknowledgements

We would like to thank all interview participants and workshop attendees who generously gave their time, shared their experiences, and contributed thoughtful insights to this project. Their perspectives were central to understanding the strengths and challenges of the UK biodiversity monitoring landscape and to shaping the emerging vision for a UK Biodiversity Observation Network.

We are also grateful to colleagues and collaborators who supported the design, facilitation, and delivery of the workshop at the British Ecological Society Annual Meeting.

This work was a NC-UK Stakeholder Engagement Fund supported project.

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6. Appendix A

Questions

1. Can you briefly describe your:
   a. For academics: work using or collecting biodiversity monitoring data?
   b. For non-academics: organisation and your role within it?
      i. Does your organisation generate and/or use any biodiversity monitoring data?
      ii. Does your organisation provide biodiversity monitoring data to different users?

From their answer to the above questions we can decide whether to ask questions for data users or data creators. If their answer does not put them clearly in one category or the other, we can ask a mix of questions or ask them if they want to be interviewed as a data user or a data creator.

Questions around data users' needs

1. What biodiversity monitoring data have you used in your work?
2. How do you use biodiversity monitoring data?
   a. What research questions?
   b. What types of analysis?
   c. At what scale?
3. How do you quality control or ensure accuracy of the data you use?
4. What biodiversity monitoring data are you aware of but don't use?
5. What are the barriers to using them?
6. What would make you use them?
7. Is there anything else you would like to do with the data, but you can't because the data is not suitable?
8. What would you need to be able to do it?
9. As a user of biodiversity data, how do you think you would benefit from a UK BON?

Questions for data creators/providers

1. What biodiversity data does your organisation generate/provide?
2. Why is the data collected?
3. Who are the main users of the data?
4. Are there any potential users that you haven't been able to reach?
   a. Who are they?
   b. What are the barriers to them using your data?
   c. What are the possible solutions to these barriers?
5. Does the data flow into any national publicly accessible databases?
   a. If yes
      i. Which databases
      ii. What are the benefits of the data going there?
   b. If no
      i. Why not? What are the barriers?
      ii. What are the possible solutions to these barriers?
6. How do you interact with researchers and research organisations?
7. How do you interact with other organisations that do biodiversity monitoring?
8. How do you think your organisation would benefit from a UK BON?

9. How do you see your organisation contributing to a UK BON?

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