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BMD
Biodiversity Meets Data

MS4 Online workshop and survey across consultative group

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2. Summary

This report outlines the underlying approach and stakeholder contributions to the online co-design activities facilitated by the Biodiversity Meets Data (BMD) team in Autumn 2025. These online co-design activities are part of a broader iterative stakeholder engagement process and provide a route for stakeholders to influence the design of the Single Access Point and underpinning Virtual Research Environments. An online workshop and survey were designed and implemented based on the approach, findings and feedback from the initial in-person co-design activities facilitated in September 2025. A brief introduction summarising this task is followed by an outline of the methodology for the completed online workshop and the ongoing survey. The participant representation is then summarised and the emerging insights from the stakeholder contributions to the online workshop outlined. Reflections and evaluation from both the BMD team and the stakeholders that participated provide important guidance for the design and implementation of future co-design activities. Finally, the next steps are highlighted with particular focus on the deliverable, *D1.1 List of 10-15 User Stories*, which will define the Virtual Research Environments to be delivered based on the stakeholder needs and priorities identified across the in-person and online co-design activities.

3. List of Abbreviations

BMD	Biodiversity Meets Data
EU	European Union
MS	Milestone
SAP	Single Access Point
VRE	Virtual Research Environment
WP	Work Package

4. Introduction

Iterative stakeholder engagement is crucial to the design and delivery of the Biodiversity Meets Data (BMD) project (see Wooldridge et al., 2025a). The BMD Single Access Point (SAP) and underpinning Virtual Research Environments (VREs) will be co-designed with project stakeholders, Natura 2000 site managers and policymakers, to ensure that the resulting tools are relevant and functional. At this stage of the project, the identification of stakeholders' biodiversity data, monitoring and analysis needs and priorities are key to defining the direction of the VREs. A series of co-design activities have been facilitated by the BMD team, to enable stakeholder participation in the project and to identify which requirements should be prioritised by the project to best support stakeholders in their work protecting and restoring Europe's biodiversity (see Wooldridge et al., 2025a). Following an initial round of in-person co-design activities in collaboration with Eurosite (see Wooldridge, 2025), two online co-design activities were coordinated and implemented to enable participation from a broader range of European stakeholders and to contribute to the longlist of stakeholder-produced user stories.

These online co-design activities are the focus of this report and are the basis of Milestone 4 (MS4) *'Online workshop and survey across consultative group'* (due November 30th 2025). An online user story workshop was facilitated on the 3rd of November 2025 and included a series of interactive activities and facilitated discussions designed to gather information about stakeholders' biodiversity data, monitoring and analysis needs. An online survey was opened (via Google Forms) on the 27th of October 2025 and remains open for stakeholder responses. Both of these co-design activities build on the findings and experience from earlier rounds of stakeholder engagement. The findings from these online co-design activities, in addition to the findings from the in-person co-design activities, feed into Deliverable 1.1 (D1.1), *'List of 10-15 User Stories'*, which will provide the BMD technical teams with clear guidance on the thematic direction of the VREs based on stakeholder contributions.

This report details the methodology applied in the online user story workshop and the online survey, both of which were based on the approach implemented during the in-person co-design activities while adapted to suit the online format (Section 5). As the online survey remains open to gather further stakeholder input, the remainder of this report focuses on the emerging findings (Section 6), reflections (Section 7) and next steps (Section 8) relating to the online user story workshop.

5. Methods

Online modes of engagement were selected for the two co-design activities covered in this report to enable a greater range of stakeholders from across Europe to participate in the project at this stage. The use of online engagement created the opportunity for stakeholders that missed the in-person co-design activities to get involved in the project. Travel and time costs for online engagement are significantly reduced and therefore help to lessen some potential barriers to participation for individuals that may not have the capacity or resources to join in-person activities. All stakeholder contributions, whether gathered via in-person or online co-design activities, are valued and treated equally. The methods applied for the online workshop and survey are detailed below. Further reflections on the efficacy of the online co-design activities can be found in Section 8.

5.1. Online User Story Workshop

As outlined in the MS3 report, a user story workshop is "a 2-hour long interactive workshop in which participants are invited to explore their biodiversity data, biodiversity monitoring and biodiversity analysis needs via a series of activities and facilitated discussions." (Wooldridge, 2025, p6). The online version of the workshop was held on MS Teams on the 3rd of November 2025, 14:00-16:00 CET. Invitations to participate in the workshop were disseminated widely by the BMD team via the following channels: BMD's BlueSky and LinkedIn accounts, the BMD newsletter, direct emails to colleagues, contacts and the BMD stakeholder network. Participants registered online via a short Google Form which included a consent form, contextual questions about the participant's work, and an optional diversity monitoring survey. Participants can be generally defined as biodiversity conservation practitioners from across Europe. This included representation from BMD's target stakeholder group (Natura 2000 site managers and policymakers). Participant representation is further elaborated on in Section 6.

The online user story workshop included the same questions, activities and prompts as the earlier in-person workshops with slight adaptations to the structure and facilitation of the workshop to better suit the online format (see Wooldridge, 2025, p15). For example, the reflection questions were asked via MentiMeter instead of separate discussions in pairs. Additionally, an online version of the user story activity sheet was created on Google Forms to enable participants to work together in their virtual breakout rooms and input responses directly onto the form. The online version of the user story activity sheet was also condensed to make it easier for participants to complete the activity independently. MentiMeter was used across various workshop activities to gather stakeholder contributions and prompt further discussion. Members of the BMD team from across the project's work packages attended as facilitators and notetakers.

5.2. Survey

Despite reducing the travel and time costs for participants, the online workshop still required participants to be available for a 2-hour meeting at a specific date and time. As the date and time scheduled for the online workshop may not have been suitable for some stakeholders, an online survey was also designed as an alternative co-design activity and route for engagement in the project. The survey was set up on Google Forms and includes the following sections: (i) Consent Form, (ii) About You, (iii) Questionnaire on Biodiversity Information Needs & Priorities, (iv) Feedback (optional), (v) Diversity Monitoring Questions (optional). The survey, which takes approximately 10-15 minutes to complete, asks the same questions as those included in the in-person and online workshops (see Wooldridge, 2025) though with an adapted structure to guide respondents to construct their own user-story independently.

The survey was made live on the 27th of October 2025 and was disseminated via various BMD communication channels with the support of the communications team (WP7) including: posts on the BMD BlueSky and LinkedIn accounts, direct emails to the list of over 250 stakeholders identified in the earlier stakeholder mapping process (see Wooldridge et al., 2025b), direct emails to the list of Natura 2000 sites with contact management information available on the EEA Natura 2000 Viewer (over 1100 email addresses, see European Environment Agency, 2025), dissemination via BMD consortium colleagues and contacts. Despite significant effort to disseminate the survey over a 3-week period, there was minimal engagement from stakeholders and limited responses have been gathered to date. This may

be in part due to: the short timeframe given to stakeholders to participate in the survey (approximately 3 weeks), a high frequency of BMD activities happening across September-October possibly leading to fatigue, or limited stakeholder capacity to engage at this time. Additionally, online modes of engagement present fewer benefits to participants than in-person modes of engagement which offer a greater level of networking, knowledge exchange and other benefits (e.g. international travel).

With this in mind, the WP1 team have defined a strategy for maintaining the online survey beyond the MS4 timeline. The online survey will be kept live for an extended period in order to gather additional stakeholder contributions to the project in the form of self-defined biodiversity information needs, priorities and user stories (up to 6 months). A QR code will be created for the survey, to allow the BMD team to include it in presentations and more easily distribute the survey across networks. The survey may also be used at future relevant events where stakeholders may be interested to discuss their biodiversity information needs and complete the survey in conversation with a representative from the BMD team (e.g. using an iPad at a BMD booth/stand).

6. Insights & Emerging Findings (Online Workshop)

This section provides an overview of participant representation in the online workshop and reflects on the emerging findings from an initial review of their contributions. Detailed thematic analysis of the qualitative data gathered from the online workshop will be carried out using NVivo alongside the qualitative data gathered during the two in-person user story workshops to ensure a consistent coding and analysis approach. The emerging findings detailed in section 6.2 below presents the range of themes highlighted by participants throughout the online user story workshop, with particular focus on the contributions made during the breakout room discussions facilitated by the BMD team.

6.1. Participant Representation

There were 28 people that signed up to join the online workshop. However, as is common with online events, several people did not attend on the day and several attendees did not stay for the full 2 hours. On the day, there were 19 people that attended the beginning of the workshop, 16 people participated in the initial framing activity using MentiMeter, 10 people joined the breakout room discussions and 9 people created user stories by the end of the workshop. Of the 19 participants that joined the workshop, including those that only stayed for the first 30 minutes, the following countries, roles, domains, realms and scales were represented (see Table 1):

Table 1: user story workshop participant representation across countries, roles, domains, realms and scales

Country	Role	Domain	Realm	Scale of implementation
Italy Bulgaria Romania Croatia Czechia Netherlands Austria Wales	Site managers (2) Policymakers (2) Researchers (8) Consultants (2) Data Suppliers (2) Other:	Governmental (5) Research / Institute (7) NGO (0) Private Business (5) Other (2) ('National Park' & 'Natural Resource Management')	Terrestrial (11) Freshwater (1) Marine (1) Terrestrial & Freshwater (3) Terrestrial & Marine (2)	Plot (0) Reserve (3) Regional (6) National (4) Transboundary (3)

Belgium Lithuania Scotland	Representative of the Protected Area Manager (1) Habitat and Species Monitoring (1) GIS Developer (1)		Freshwater & Marine (1)	

This question was only asked via MentiMeter and 16 of the 19 participants responded. Many participants worked across multiple scales and selected all that applied to their work. Some participants selected all scales listed on the activity sheet, other participants selected a range of scales such as plot-reserve-regional or regional-national-transboundary.

6.2. Emerging Findings

6.2.1. Framing the Discussions

The questions and prompts provided throughout the workshop guided participants to consider and share their biodiversity monitoring, data and analysis needs and priorities openly in discussion with other participants and the BMD team. The responses to the initial framing questions via MentiMeter give an indication of the range of expertise and interests present in the workshop. For example, while all workshop participants generally worked to protect and restore Europe's biodiversity, differing biological scales, drivers of biodiversity loss and categories of analysis were of interest for different participants (see Figure 1, Figure 2, and Figure 3).

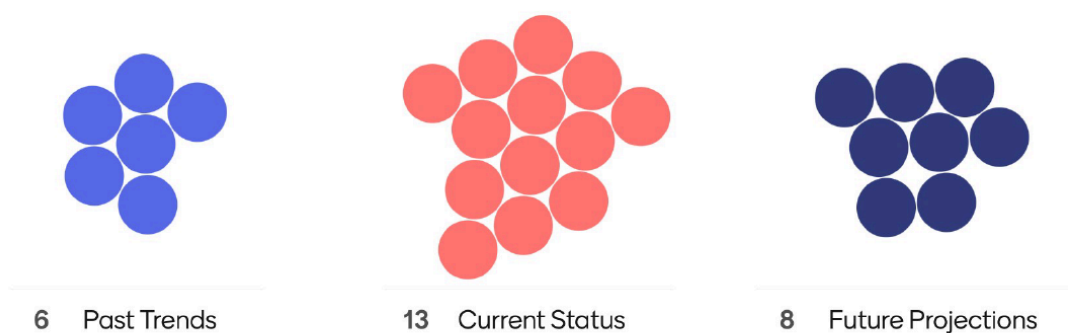## Which of the following is your primary interest?

| 6 Past Trends | 13 Current Status | 8 Future Projections |

Figure 1: participant preferences for different categories of analysis (MentiMeter)

What biological scale does your work focus on?

| 1 Genetic Diversity | 7 Populations | 13 Species Distributions |

| 8 Community Structure | 6 Ecosystem Processes |

Figure 2: biological scales represented in participant interests (all that apply, MentiMeter)

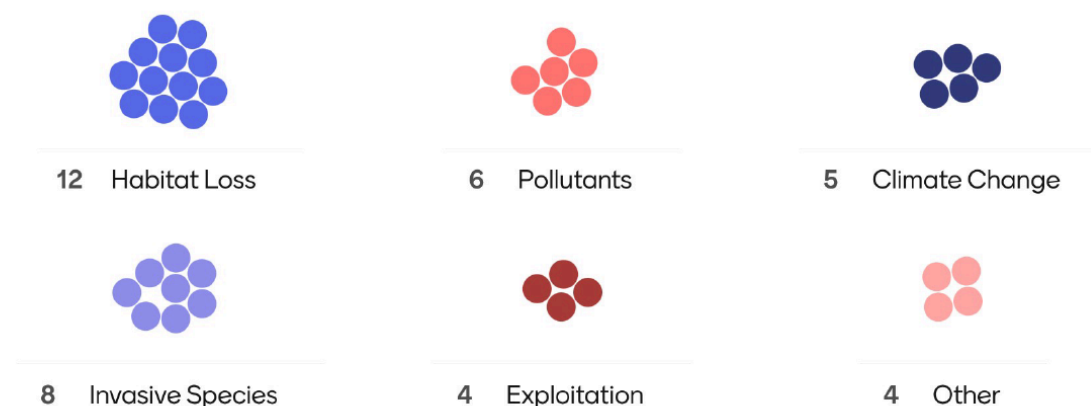## What drivers of biodiversity loss are you most interested in?

| 12 Habitat Loss | 6 Pollutants | 5 Climate Change |

| 8 Invasive Species | 4 Exploitation | 4 Other |

Figure 3: participant interests across different drivers of biodiversity loss (MentiMeter)

6.2.2. User Stories

Following the initial framing activity, participants were then moved into virtual breakout rooms and worked together in pairs to write their own user stories following the prompts set out in the online user story activity sheet. By the end of this activity, 9 stakeholder-produced user stories were completed and reflected the following biodiversity monitoring themes:

- The use of biodiversity information across multiple scales to design and implement management plans.
- The assessment of habitat quality to determine the appropriate locations for the implementation of restoration measures.

- The assessment of habitat and species status to advise site managers on habitat and species management.
- Understanding ecosystem status and trends to inform site managers and policymakers.
- The use of remote sensing to monitor species distribution, address threats to biodiversity and model ecological niches.
- Conducting long term biodiversity monitoring to effectively address drivers of change.
- Understanding human-nature relationships to inform biodiversity protection efforts.

6.2.3. Breakout Room Discussions

The themes explored in the user story activity were further elaborated on in the subsequent portion of the workshop during which participants were split into 3 breakout groups with a BMD facilitator and notetaker in each group. Participants were invited to discuss how they used biodiversity information in their work, how they felt biodiversity information could be improved and how these improvements might influence their work.

Participants shared that they used biodiversity information in some of the following ways:
- Developing methodologies for informing invasive species removal.
- Assessing effects of human exploitation on ecosystems (driver of change).
- Natura 2000 site management.
- Research projects and answering research questions.
- Providing data to policymakers.
- Different types of models used such as:
  o Species distribution modelling
  o Long term monitoring of biodiversity
  o Ecological niche modelling
  o Habitat suitability models

Participants suggested that biodiversity information could be improved in the following ways:
- Quality of data (metadata, contextual environmental data, quality control of data).
- Data harmonization, standardization of data to improve comparability.
- Addressing the high costs of marine monitoring.
- Improved collaboration and data sharing (particularly for marine organizations).
- Addressing lack of information/data (invertebrates, impacts of livestock, species recordings).

Participants suggested that improved biodiversity information might impact their work in the following ways:
- Availability and useability of data, filling data gaps.
- Access to data improving capacity for analyses.
- Targeted and more effective conservation measures.
- Scaling up of biodiversity monitoring models.
- Better understanding of (human) drivers of change and how this relates to ecosystem functions.
- Improve site management at the "local" level.

7. Reflections and Evaluation

7.1. Stakeholder Evaluation

At the end of the workshop participants were invited to reflect on the discussions they had over the 2-hour session and provide some optional feedback to the BMD team. The feedback from participants was generally positive and suggested that the topics covered in the workshop were relevant for their field of work (see Figure 4). Similar to previous workshops, participants were not particularly confident that their contributions would influence the BMD project. Going forward the BMD team will therefore work to communicate clearly with stakeholders how their contributions have influenced the project.

To what extent do you agree or disagree with the following statements?
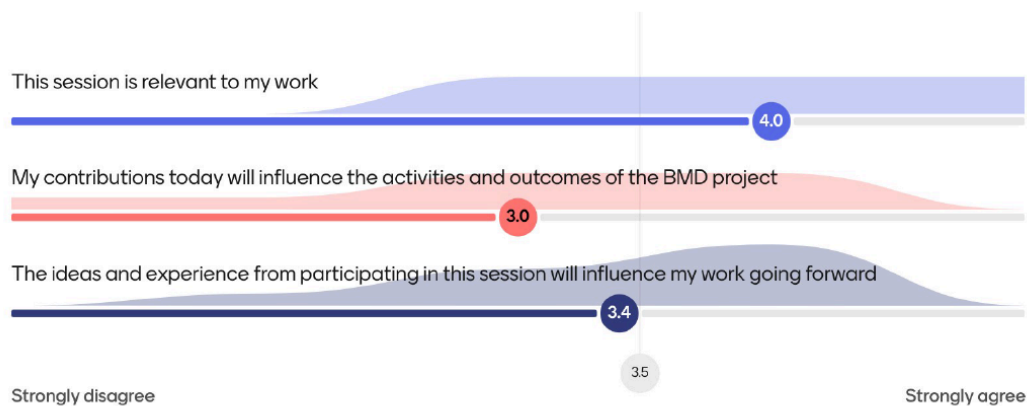

This session is relevant to my work — 4.0

My contributions today will influence the activities and outcomes of the BMD project — 3.0

The ideas and experience from participating in this session will influence my work going forward — 3.4

3.5

Strongly disagree — Strongly agree

Figure 4: stakeholder evaluation of workshop relevance, influence and impact on a scale of 1-5 (MentiMeter)

7.2. BMD Team Evaluation

Over the course of the project further co-design activities will be facilitated by the BMD team to continue to create opportunities for stakeholder participation in the design and delivery of the VREs and SAP. The BMD project maintains an adaptive and iterative approach to stakeholder engagement, to ensure that future activities are shaped by the feedback and experience gained throughout the engagement process. With this in mind, a number of reflections are recorded below, which should be considered by the BMD team going forward to minimise stakeholder fatigue and maximise participation and benefits for the stakeholders:

- As anticipated, the participation level throughout the online workshop slowly dropped over the two-hour period. With online activities, participants may be multi-tasking or only attend for a short period of time. This is something to consider when planning future co-design activities, as using tools such as MentiMeter to gather anonymous responses from participants at the beginning of an event may ensure important information is collected during the period when there is the largest number of participants.

- While online co-design activities minimise some barriers to participation (e.g. travel and time costs), the benefits for participants are also reduced in comparison to in-person co-design activities. The BMD team should consider how to create benefits for online participants, as this will incentivise long term participation in the project and work to reduce stakeholder fatigue.
- The initial MentiMeter questions and prompts included in the online user story activity sheet included categories predefined by the BMD team (e.g. 'site manager' as a role, 'governmental' as an organisation type). Some of the responses to these questions suggest that the predefined categories may be restrictive and interpreted in different ways. To ensure inclusivity the BMD team should reflect on this in the D1.1 reporting and analysis and provide definitions for categories to ensure clarity and consistency.

8. Next Steps

This milestone report has presented the methodology and findings from the online user story workshop and the approach applied for the ongoing online survey. An overview of the themes emerging from the stakeholder contributions to the online workshop was presented and illustrates some of the biodiversity monitoring needs highlighted by the stakeholders. Following the completion of MS4, the following next steps will be taken in the stakeholder engagement process underpinning the design and delivery of the VREs and SAP:

- Analysis and synthesis of the qualitative data gathered across the 3 user story workshops conducted from September-November 2025. Three lists of user stories will be produced: a longlist of stakeholder-produced user stories, a list of user stories based on stakeholder responses to workshop prompts outside of the user story activity, and a consolidated list of 10-15 user stories based on thematic analysis.
- Outline plans for targeted engagement in the marine realm due to underrepresentation in the co-design activities to date.
- Continued gathering of responses to the online survey for a period of 6 months, as an alternative route for stakeholder contributions, particularly for those that may not have the capacity to participate in co-design activities requiring travel or occupying hours of the working day.
- Moving forward with the next stages of the stakeholder engagement process:
  - Targeted in-person/online workshops for underrepresented stakeholders (e.g. marine realm, Southern Europe)
  - Plug-and-Play workshops
  - Focus groups on legacy data
  - Focus groups on the design of the VREs and SAP

9. References

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