Harnessing the value of Scottish marine biodiversity data to benefit nature and support a blue economy:

Streamlining data flows and unlocking marine data sources

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Why is there a greater need than ever before to access and use marine biodiversity datasets?

- **The twin challenges:** global climate emergency and biodiversity crisis
- **A robust evidence base** to support policy, inform decision making and to protect biodiversity and monitor change
- **A Blue Economy:** the "*sustainable use of ocean resources for economic growth, improved livelihoods, and jobs while preserving the health of ocean ecosystem*.“ World Bank
- **Blue growth:** increasing sustainable human activity in the marine environment – cumulative impacts assessment and spatial planning
- **Scotland’s green recovery** from the COVID-19 pandemic

What are some of the barriers to using marine biodiversity data in Scotland?

"Difficult to find data – there's no easy way to collate data from multiple systems and know whether relevant datasets have been missed"

"Data duplication across systems"

"There are so many different online portals that it's difficult to know where to go to and know when new data has been published"

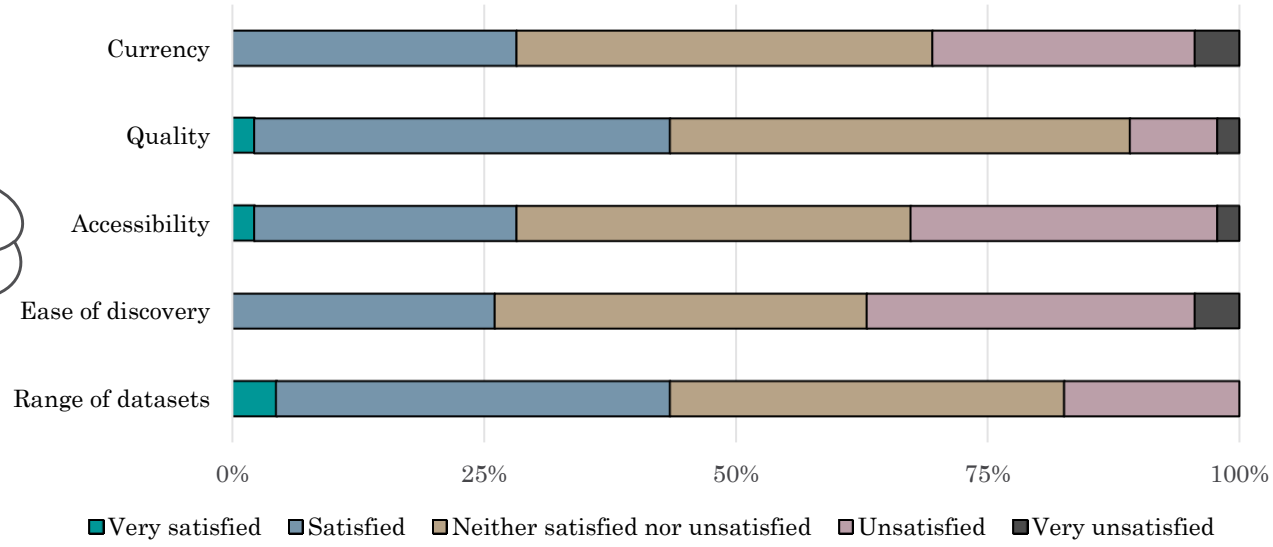
"Access to industry data can be difficult"

"Lack of data standardisation / consistency in format"

"Copyright preventing data from being re-used"

"Reliability and accuracy of records"

Level of satisfaction with the currency, quality, accessibility, discovery and range of available datasets



Self-selected survey respondents, n= 46

Scottish marine biodiversity data review project

Project aim:

To **coordinate** and **streamline** the flow of Scottish marine biodiversity data between organisations into existing downstream infrastructures so that high-quality marine survey data can be **easily accessed**, **collated & used by others**

- *An adjunct to the 2018 Scottish Biodiversity Information Forum (SBIF) Review*

- *Being led by NatureScot in collaboration with key sector stakeholders*

  - *public sector,*
  - *eNGOs*
  - *industry*
  - *academia*

What did we focus on?

Stakeholders:

- **Engagement and collaboration** with key marine data stakeholders **across 4 sectors** – documenting views, needs and requirements

- Identify where the marine community feel the **barriers**, **gaps** and **dysfunctional** or **duplicated** workflows exist

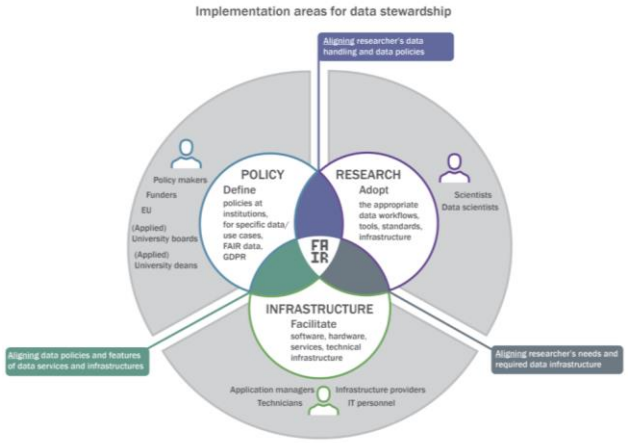
Infrastructure and resource:

- **Exploring:** What, where, when and how

Data sharing and accessibility:

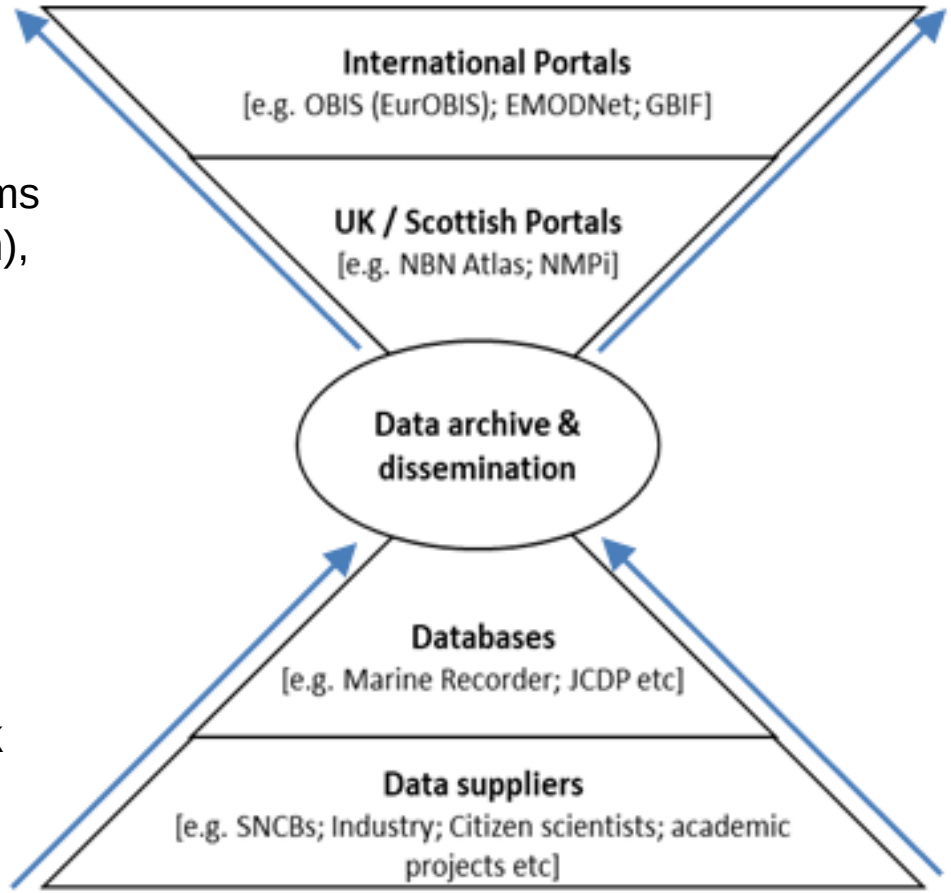
- Harnessing digital **technology and tools** for managing data for the benefit of nature recovery

- Supporting the *'measure once use many times principle'* and the ultimate goal of **FAIR data**



How have we gone about doing this?

- **Stakeholder questionnaire**
- **Data flow mapping exercise** of key players and systems for biodiversity receptors (inc. mammals, benthic, birds, fish), across sectors
- **Benthic data flow options appraisal** – detailing rationale/niche of key systems, pros/cons of options, costs/resource and infrastructure involved etc
- **1-2-1 stakeholder discussions** – ‘user stories’
- **Working together with UK MEDIN and its network of DACs** to foster join-up between Scottish and UK aspirations for marine biodiversity data recording



Working towards achieving the objective of streamlined data flow pathways and removing barriers to marine biodiversity data sharing, access, collation and use

Needs and requirements:
Stakeholder questionnaire & data flow mapping results

Recurring themes across sectors and biodiversity receptors* *including: mammals, benthic, fish, birds	
Data users (stakeholder questionnaire results)	Data suppliers and managers (receptor data flow mapping analysis work)
One place to go to search, browse and find data for downloading – better sign-posting	Clear sign-posting and guidance on where to submit datasets to and format required
A portal for access to all databases that's user friendly and kept up to date with a live feed to show what data has been added and when	An established and agreed mechanism for collating records submitted directly to the NBN and DASSH into core receptor databases for use in policy / advice
Access to complete datasets at a fine scale granularity	An efficient mechanism for submitting datasets to data archive centres for archival and onward publication
Encouragement of more open data sharing practices; including a requirement for commercial developers to share their data with the relevant Government Bodies (e.g. SNCBs) – used in decision making	Mobilisation of data collected by the commercial and academic sectors and held on individual organisation servers and hard-drives into core databases for use in policy and advice
Good metadata and standardised data structures, with more cooperation in format and presentation	A holistic view of the dataset is retained and clear links between processed data and raw data are established when stored in separate repositories
Robust quality assurance process and a clear audit/labelling of data quality	Unique identifier that stays with the data throughout its lifetime so that when data is collated from multiple sources, duplicate records can be easily identified
Better curation of the datasets held – with clear articulation of whose responsibility it is for data updates / corrections	Streamlining of data flows so that data enters the network into core databases and gets distributed outwards to portals
Resource for data management and infrastructure maintenance	People resource and funding made available for infrastructure maintenance and development
Data absence gaps addressed	A defined and efficient workflow for coordinating and mobilising data collected through citizen science initiatives into the wider data network

What are the next steps?

- **Produce a final report (Q4 f/y 2021/22)**
  - Documenting stakeholder needs and requirements
  - Making recommended improvements to the marine biodiversity data infrastructure in Scotland
  - Identifying quick wins with biggest impact and benefit to multiple receptors, UK countries and/or sector stakeholder groups
  - Opportunities for collaboration with the terrestrial and freshwater biological recording infrastructure through SBIF and the Better Biodiversity Data Project
- **Prioritise and progress implementation of the report recommendations**
  - Continue momentum in discussions and collaboration with stakeholders

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Thank you