# From data to decisions

## PACKAGING MARINE BIODIVERSITY DATA AND INFORMATION TO SUPPORT DECISION-MAKING

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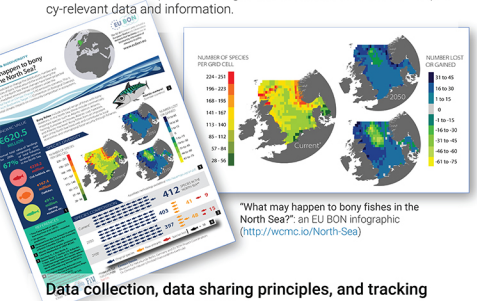
### Abstract

Marine biodiversity data are often not **discoverable** (e.g., not uploaded to a public repository or have poorly documented—or even absent—metadata), **accessible** (e.g., licensing restrictions), or **digestible** (e.g., available in standardised formats that can be translated into policy-relevant outputs). Regional Biodiversity Observation Networks (BONs), such as the Group on Earth Observation's European and Marine Biodiversity Observation Networks (EU BON and mBON), advance the availability of data that are required to assess the current status and future trends of biodiversity, monitor progress towards regional and global biodiversity conservation targets. Here, we highlight a few of the elements of knowledge exchange required to inform marine biodiversity policy, highlighting current barriers to, and potential bridges to facilitate, communication of policy-relevant data and information.




"What may happen to bony fishes in the North Sea?": an EU BON infographic (http://wcmc.io/North-Sea)

### Data collection, data sharing principles, and tracking contributions through DOIs

The desire to obtain more data often produces situations where the information that data provides diverges from the information that decision-makers require (Nursey-Bray et al. 2014). Moreover, appropriate attribution for data contributions are often lacking, preventing contributors from tracking their impact. The Global Biodiversity Information Facility (GBIF) and other organisations are increasingly integrating unique digital object identifiers (DOIs; via DataCite, for example) into their data workflows to facilitate tracking and citation of these contributions, and thereby incentivize open data sharing.

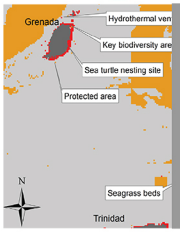

Credit: Scriberia (http://www.scriberia.co.uk/)

### Interoperable data and taxonomic backbones

Data standards supporting interoperability, such as those represented in GEOSS' Standards and Interoperability Registry, can help to improve data quality measures and facilitate comparison between datasets. Additionally, aligning taxonomic information with that of the targeted policy is an important--and often overlooked--consideration. The use of harmonised taxonomic reference systems (e.g., Pan-European Species-directories Infrastructure, or PESI) can help to strengthen the cross-applicability of data to multiple decision-making processes (de Jong et al., 2015).

### Indicators need to align with reporting requirements (i.e., thresholds and targets)

There is a need to identify overlapping reporting requirements that can be fulfilled through comparable, multi-purpose data, with indicators that are designed for application at the appropriate scale. Global indicators, while useful for tracking progress against global targets, may not be suitable for use at national or local scales.

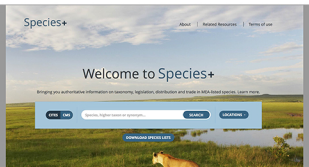



**The marine "Critical Habitat" methodology uses the International Finance Corporation's Performance Standard 6 criteria** to develop a high-level screening layer for businesses who wish to avoid designated or decribed areas of biodiversity importance, or important marine and coastal habitats, specifying "Likely" (red) and "Potential Critical Habitat" (orange).

(See Martin et al., 2015, doi: 10.1016/j.marpol.2014.11.007)

### Decision-makers need answers, not data!

Data must be communicated in a policy-relevant and non-technical manner, or risk failing to translate peer-reviewed science into policy (Petes et al., 2014). This can be achieved through dialogue, or knowledge exchange, between scientists and decision-makers (Young et al., 2014), while designing data collection with baseline reporting requirements or policy questions in mind can lead to policy-relevant outputs (Wetzel et al., 2015).




**Species+ (www.speciesplus.net)**, developed by UNEP-WCMC and the CITES Secretariat, is a website designed collaboratively to assist Parties with implementing the Convention on International Trade in Endangered Species (CITES), the Convention on Migratory Species (CMS) and other multilateral environmental agreements (MEAs). Species+ provides a centralised portal for accessing key information on species of global concern, which includes species that are listed in the Appendices of CITES and CMS, as well as other CMS Family listings and species including in the Annexes to the EU Wildlife Trade Regulations.

### Summary

In short, ensuring policy relevance requires a proactive understanding of how targeted data would be used (i.e., at what scale, by whom, and for which purpose) and the appropriate formats to support uptake of information. This initial overview of some of the important considerations for effective knowledge exchange at the science-policy interface will be further developed in the coming months.

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