BioSpace25 - Biodiversity insight from Space
10 - 14 February 2025 | ESA-ESRIN | Frascati - Italy

Observation, EBVs & Indicators to Facilitate Reporting & Progress on International Biodiversity Targets

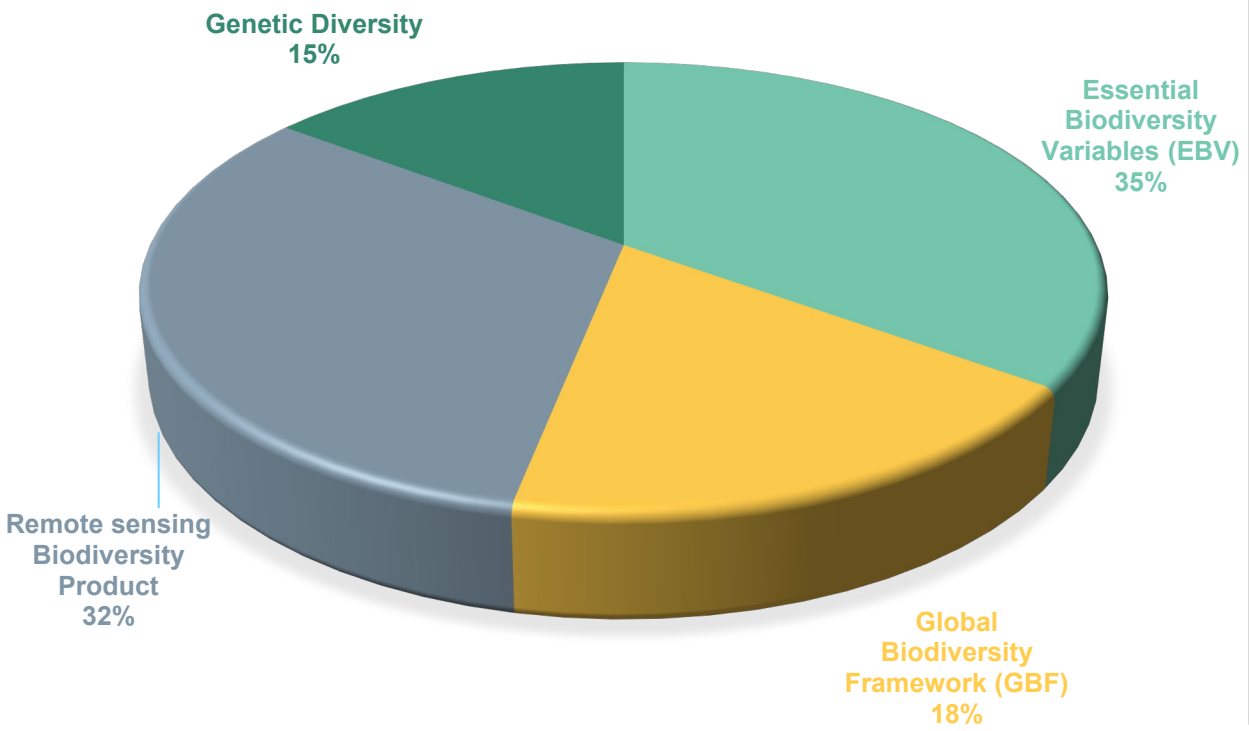
Claire L. Brown & Susanna Baena (UNEP-WCMC) ; Petteri Vihervaara & Maria H. Hällfors (Finnish Environment Institute); Elnaz Neinavaz, Margarita Huesca & Roshanak Darvishzadeh (ITC, University of Twente); Maria J. Santos, Meredith Schuman, Claudia Roeoesli, Isabelle Helfenstein & Oliver Selmoni (University of Zurich); Bruno Smets & Eline Vanuytrecht (VITO); Katie L. Millette, (GEO BON, McGill University)

ESA UNCLASSIFIED - For ESA Official Use Only

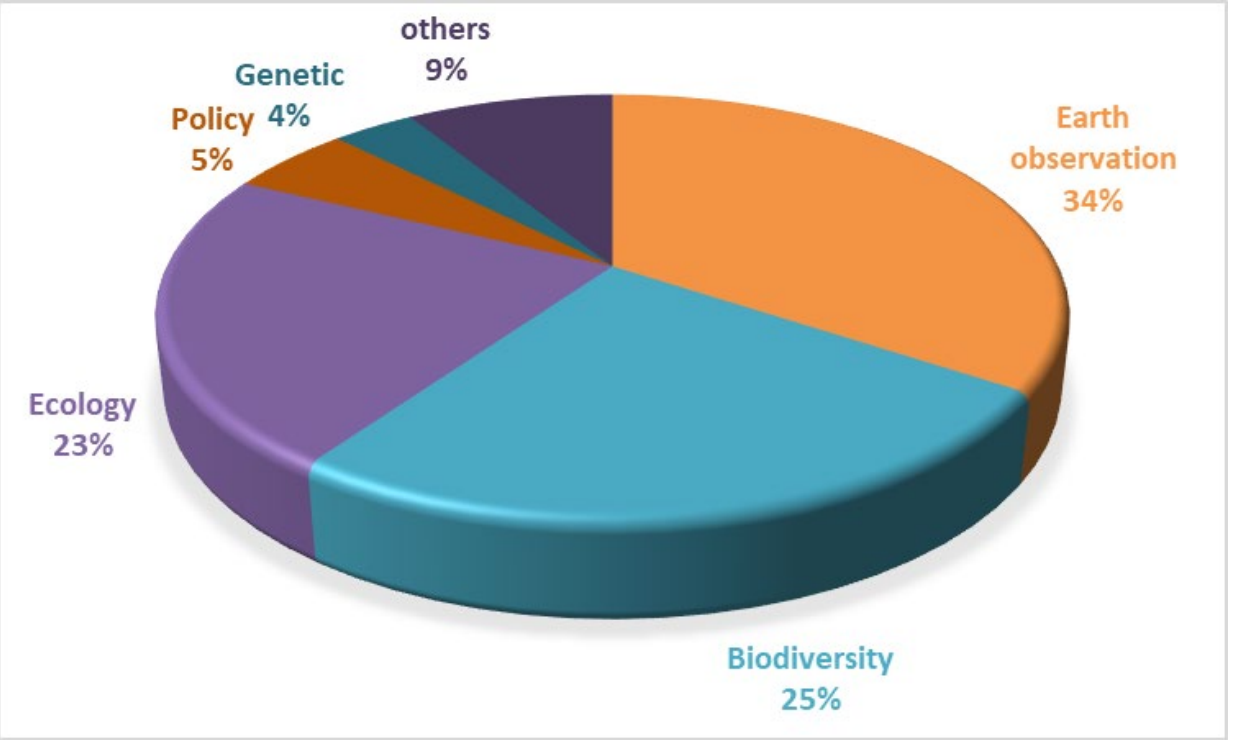
→ THE EUROPEAN SPACE AGENCY

Workshop Participants

Familiarity with the following topics

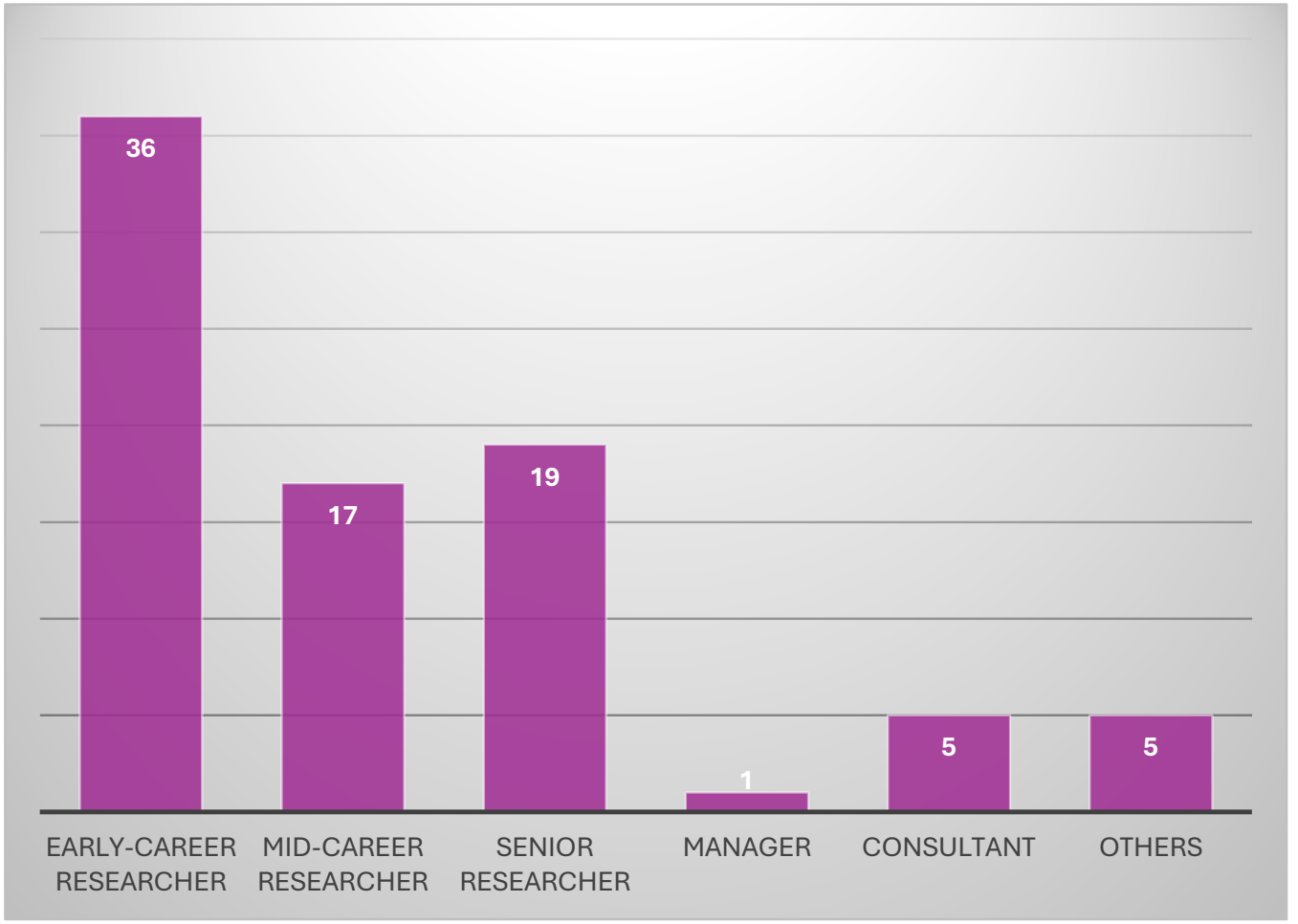


Area of expertise of the participants and professional background

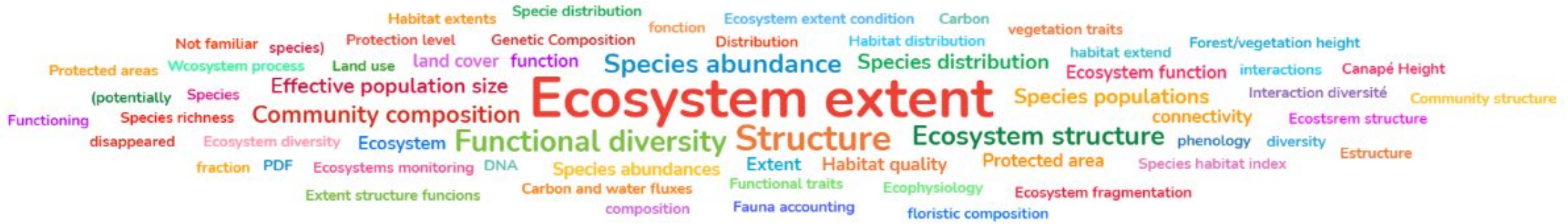


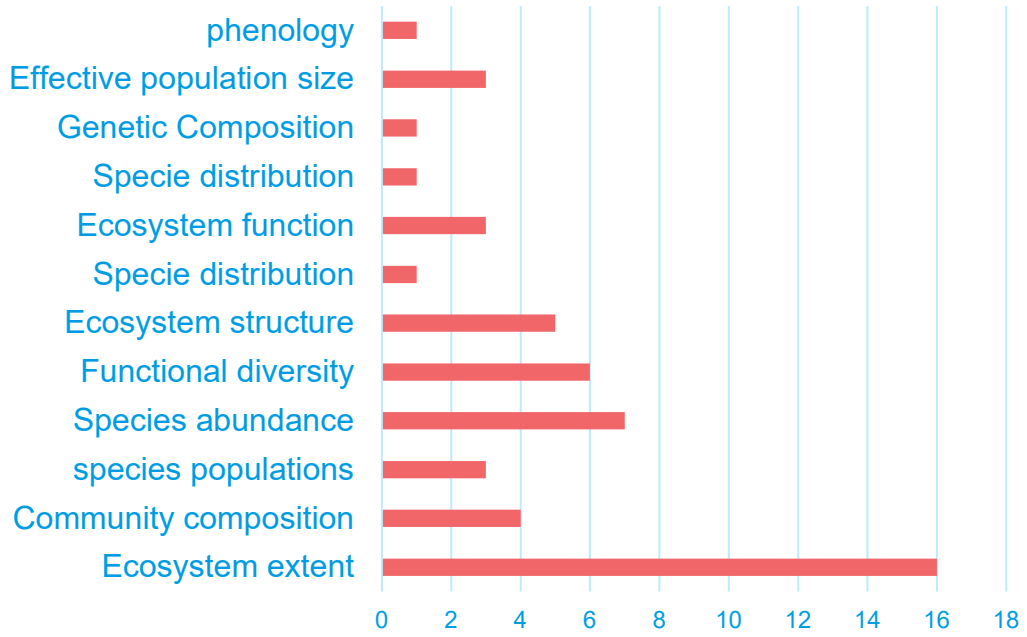
Workshop Participants

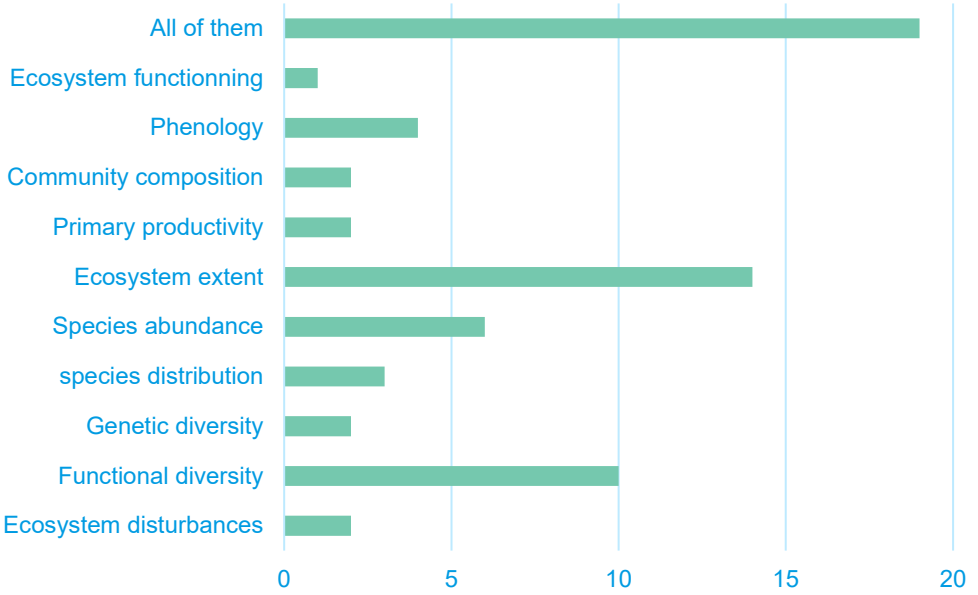
Job category of the participants



Which EBV do you see as (most) relevant for the GBF targets?







Which Remote Sensing Biodiversity Products are you using?

143

Which EBVs are relevant for the GBF targets?

Target 1: Plan and Manage all Areas To Reduce Biodiversity Loss

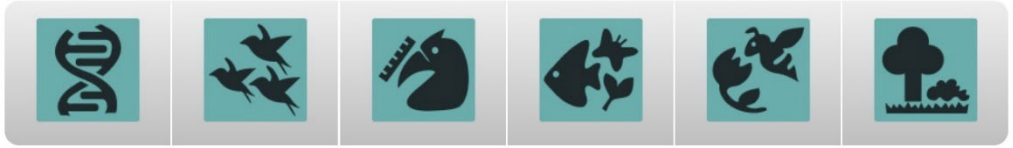
- Ecosystem structure
- Species abundance
- Primary production
- Taxonomic/phylogenetic diversity
- Phenology
- Reproduction
- Ecosystem disturbances
- Species distributions
- Physiology

Target 2: Restore 30% of all Degraded Ecosystems

- Primary production
- Reproduction
- Species abundance
- Species distributions
- Community Composition
- Ecosystem structure
- Trait diversity
- Ecosystem functioning
- Interaction diversity

Target 3: Conserve 30% of Land, Waters and Seas

- Species distributions
- Reproduction
- Ecosystem structure
- Ecosystem disturbances



There are several EBVs that are relevant for each GBF target

Some of the EBV candidates repeatedly selected as relevant to GBF targets

GBF is based on policy targets, while EBVs are scientific definition of measuring biodiversity

Recommendation:

- Educate each other about our needs and what are doing.
- There is confusion between the EBVs proposed by GEO BON and the EBV list prepared by the EuropaBON project.

Reviewing the RS-Biodiversity Products linked to EBVs

Case by case different RS products may be needed

More RS products that be considered as RS Biodiversity Products (update list)

Accessibility and Scalability are still an issue for some of the RS Biodiversity Products

Despite progress, it is still difficult to assess improvements in accuracy and maturity of the RS Biodiversity Products

Gaining trust of the end-users

Main message:

- We need to improve the models we use to retrieve RS-Biodiversity products

nature ecology & evolution

Explore content ⌄ About the journal ⌄ Publish with us ⌄

nature > nature ecology & evolution > perspectives > article

Perspective | Published: 13 May 2021

Priority list of biodiversity metrics to observe from space

Andrew K. Skidmore, Nicholas C. Coops, Elnaz Neinavaz, Abebe Ali, Michael E. Schaepman, Marc Paganini, W. Daniel Kissling, Petteri Vihervaara, Roshanak Darvishzadeh, Hannes Feilhauer, Miguel

What needs to happen on the science policy interface to support the use of EBVs and improve indicators?

- The EBV framework is too complex for politicians and decision makers
- More standardization and guidance are needed on how to translate EBVs into GBF indicators
- EBVs are only descriptive, not providing direct information on biodiversity
- The ranking of EBVs' importance is ecosystem-dependent, but some guidance is still necessary
- The EBV framework requires distinct levels of EBVs for the different levels at which decision-makers or reporting agencies operate
- Thresholds are needed to guide the categorization process
- Address countries needs

Which Remote Sensing Biodiversity Products can inform reporting on these indicators?

Any RS biodiversity products with continuity is relevant to the GBF indicators discussed.

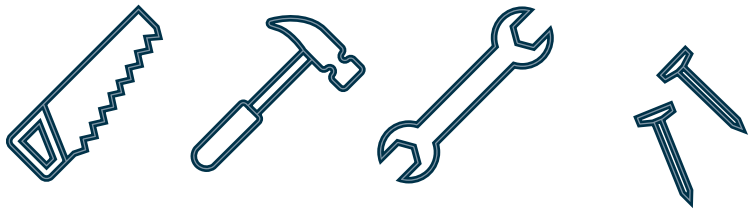
Trust, understanding and accessibility still required among conservationist, policy makers, EO experts, etc. (everybody involved I biodiversity).

ECV products ae complementary and in some cases necessary to be used for reporting GBF indicators

Maturity and utility are not the same for the EO products

Message: If EO data is made understandable for non-EO experts, they would use it—not just EO-driven products

Conclusions



RS Biodiversity Products

EBVs

Conservationist, policy makers, & EO experts

Thank You!