

# Improving Biodiversity Data and Services discoverability: the LifeWatch ERIC Metadata Catalogue

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The LifeWatch ERIC Metadata Catalogue is a centralized platform for discovering and disseminating data and services, ensuring equitable access to information and promoting inclusivity in biodiversity and ecosystem research and conservation efforts. LifeWatch ERIC Metadata Catalogue was designed to tackle several challenges, critical for biodiversity and ecosystem research:

- **Data & Services Fragmentation:** Biodiversity data and services are often scattered across various sources, including research institutions, government agencies, non-profit organizations, and citizen science projects. This fragmentation makes it challenging to discover, access, and integrate relevant datasets or services, hindering comprehensive analyses and decision-making.
- **(Meta)Data & Services Heterogeneity:** Biodiversity data and services come in diverse formats, structures, and standards, making it difficult to harmonize and reconcile information from different sources. This heterogeneity poses significant barriers to data interoperability, integration and analysis, impeding collaborative research efforts.
- **Metadata Inconsistencies:** Inconsistent or incomplete metadata descriptions further exacerbate challenges related to data and services discovery and interpretation. Without standardized metadata practices, researchers may struggle to understand the context, quality, and limitations of available datasets and services, leading to potential misinterpretations or biases in analyses and conclusions.
- **Data Quality and Reliability:** Ensuring the quality, accuracy, and reliability of biodiversity data is paramount for robust scientific research and evidence-based decision-making. However, without comprehensive metadata documenting data and services provenance, methodologies, and quality assessments, it becomes challenging to assess the trustworthiness of available datasets, potentially compromising the integrity of research outcomes.
- **Limited Data Accessibility:** Biodiversity data and services accessibility remains a significant concern, particularly in regions with limited technological infrastructure or resources.

LifeWatch ERIC has adopted GeoNetwork as technology for its Metadata Catalogue, obtaining numerous advantages: open-source flexibility, geospatial capabilities, standards compliance, user-friendly interface, metadata management features, interoperability, scalability, performance, and community support. Different showcases have been developed in the latest years to demonstrate the data and services discoverability across different institutions and research infrastructures, like the one developed jointly with ANAEE and eLTER for the Research Sites in the ENVRI FAIR contest (<https://envri.eu/home-envri-fair/>), or the metadata harvesting from the GBIF network. The Metadata Catalogue has been continuously improving, progressively incorporating new features: a template based on a profile of EML 2.2.0 standard, developed for ecological datasets; a template with the LifeWatch ERIC profile of ISO 19139/119, developed for services; customizations to supply DOI assignment, if needed, using the Datacite services; metadata FAIRness evaluation, added thanks to the F-UJI tool (<https://www.f-uji.net>). Continuous developments are planned to keep on improving the quality of metadata, the next step will be the integration with the LifeWatch ERIC semantic repository Ecoportal ([ecoportal.lifewatch.eu](http://ecoportal.lifewatch.eu)) and with AI technology to ensure metadata's consistency.

Furthermore, LifeWatch ERIC is an EOSC Candidate Node and is working to federate the Metadata Catalogue in the context of the EOSC-Beyond project.

## Topic

Needs and solutions in scientific computing: Platforms and gateway

**Primary author:** FIORE, Nicola (LifeWatch ERIC)

**Co-authors:** Prof. BASSET, Alberto (LifeWatch ERIC); Dr ROSATI, Ilaria (CNR IRET); Dr VAIRA, Lucia (LifeWatch ERIC); MARROCCO, Vanessa (LifeWatch ERIC)

**Presenter:** FIORE, Nicola (LifeWatch ERIC)

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