

LifeWatch – a European e-science and observatory infrastructure supporting access and use of biodiversity and ecosystem data

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Rising to the Challenge

LifeWatch is an European Strategy Forum on Research Infrastructures (ESFRI) initiative entering its construction phase in Feb 2011. It strives to become a European Research Infrastructure Consortium (ERIC), with the goals to:

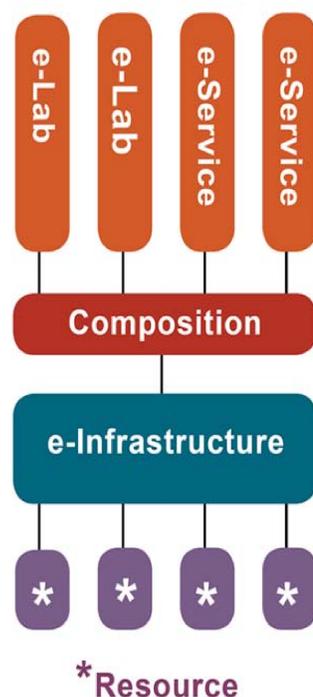
- ❖ Develop new ways of collaboration, in an **open-access research environment** to solve complex societal and scientific questions on biodiversity and ecosystems;
- ❖ **Link all kinds of biodiversity related databases** (e.g. collections, long-term monitoring and abiotic data) to tools for analysis and modeling;
- ❖ Open entirely **new avenues for research** with the potential for new targeted data generation.

As well as serving scientists in Europe, LifeWatch aims to serve the Group on Earth Observations Biodiversity Observation Network (GEO-BON) and the Intergovernmental science-policy Platform on Biodiversity and Ecosystem Services (IPBES).

How will LifeWatch operate?

LifeWatch will provide one common access point for (citizen) scientists and policymakers to discover, analyze, and target new and available data. An agile architecture, based on Open Distributed Processing (ODP), OGC Standards, INSPIRE Directive compliance, will deliver:

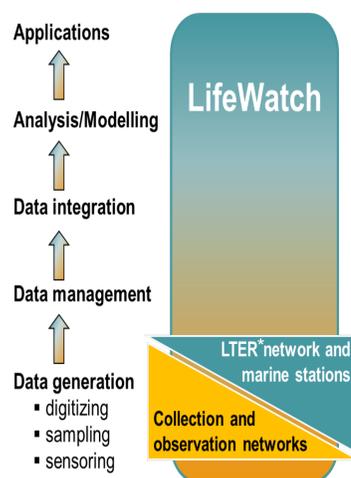
- ❖ **Resources**, such as data repositories, computational capacity and observation (sensor) networks, that are connected to
- ❖ the **e-Infrastructure**, to enable sharing of these resources across Europe in a distributed fashion
- ❖ to facilitate the **composition** of specific toolkits, workflows, and datasets
- ❖ that results in a user oriented infrastructure, providing **e-services** and 'e-laboratories' or virtual labs, where users can collaborate, communicate and experiment across countries and research disciplines in new ways.



What will LifeWatch do?

LifeWatch will

- ❖ build on **existing data networks**, and promote standards
- ❖ develop **virtual labs** ranging over ecosystems such as the arctic biome, marine wetlands, plains & meadows, forests & mountains
- ❖ **range over topics** such as biodiversity at different scales, biodiversity in space & time, observing biodiversity and ecosystems, and man as actor and factor in biodiversity and ecosystems
- ❖ **Cover disciplines** from taxonomy to physiology and to macro-ecology

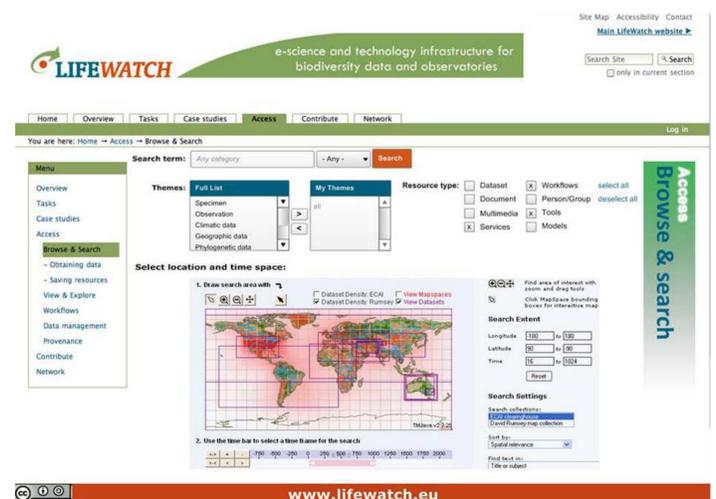


* LTER – Long Term Ecosystem Research

LifeWatch and data providers

The availability of data is a key for the perception of LifeWatch by the scientific community and the general public. A particular strength of LifeWatch will be that it is a **trusted infrastructure**:

- ❖ For **Users**: LifeWatch provides reliable access to high-quality data
- ❖ For **Data Providers**: LifeWatch provides controlled access to data, traces usage of data, and gives credits to the originators of data



A fundamental tool is the **LifeWatch Data Catalogue**, with its details of data providers, known data sets and access mechanisms. The institutional / national repositories are the basis of data deposition, with LifeWatch acting through its Data Catalogue as a single point of access to this loose federation of distributed sources.

LifeWatch requirements and procedures for Data Providers

A "Service Level Description" will be set up with every Data Provider. This exactly states which capabilities a provider will offer and covers:

- ❖ **Technical specification** of the interface (agreed exchange format and protocol, information model)
- ❖ Agreement on **level of availability** of the data (= service level) and the expected data quality
- ❖ **Tests** to be completed before a data provider can be 'admitted' as a LifeWatch Data Provider
- ❖ Provision for continuous **monitoring of the service level**

LifeWatch support for Data Providers

- ❖ **Publishing software** (e.g. protocol interfaces, conversion models)
- ❖ Implementation **Rules** and **Cookbooks**
- ❖ Provision of **tests** (conformance, quality)
- ❖ **Training** of staff

The most promising strategy will be to set up LifeWatch-conformant Service instances based on publishing software available from LifeWatch.

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