

# 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 a 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:

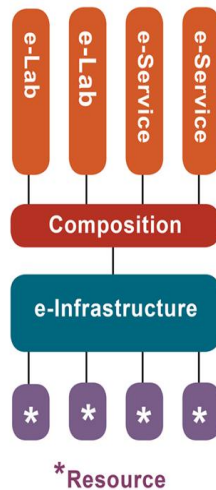
- ❖ Develop new ways of collaboration, in an **open-access research environment** to solve complex societal and scientific questions on biodiversity and ecosystems
- ❖ **Link all kinds of biodiversity related databases** (e.g. collections, long-term monitoring and abiotic data) to **tools** for analysis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

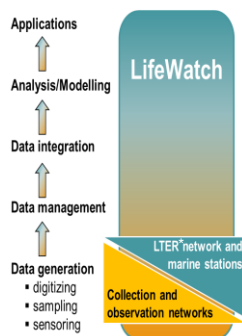
- ❖ **Resources**, such as data repositories, computational capacity and observation (sensor) networks, that are connected to
- ❖ the **e-Infrastructure**, to enable sharing of these resources across Europe in a distributed fashion
- ❖ to facilitate the **composition** of specific toolkits, workflows,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