BEeS

The LifeWatch ERIC Biodiversity & Ecosystem eScience Conference

Seville
22-24/05/23

Threats and challenges to biodiversity and ecosystem conservation from an eScience perspective

LifeWatch ERIC

GOBIERNO DE ESPAÑA MINISTERIO DE CIENCIA E INNOVACIÓN

UNIÓN EUROPEA
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Una manera de hacer Europa

The LifeWatch Species Information Backbone: an update and perspectives

Stefanie Dekeyzer, Leen Vandepitte, WoRMS Data Management Team, EurOBIS Data Management Team, Marine Regions Data Management Team

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The Flanders Marine Institute (VLIZ), InnovOcean Campus, Jacobsenstraat 1, 8400 Oostende, Belgium

LifeWatch Species Information Backbone

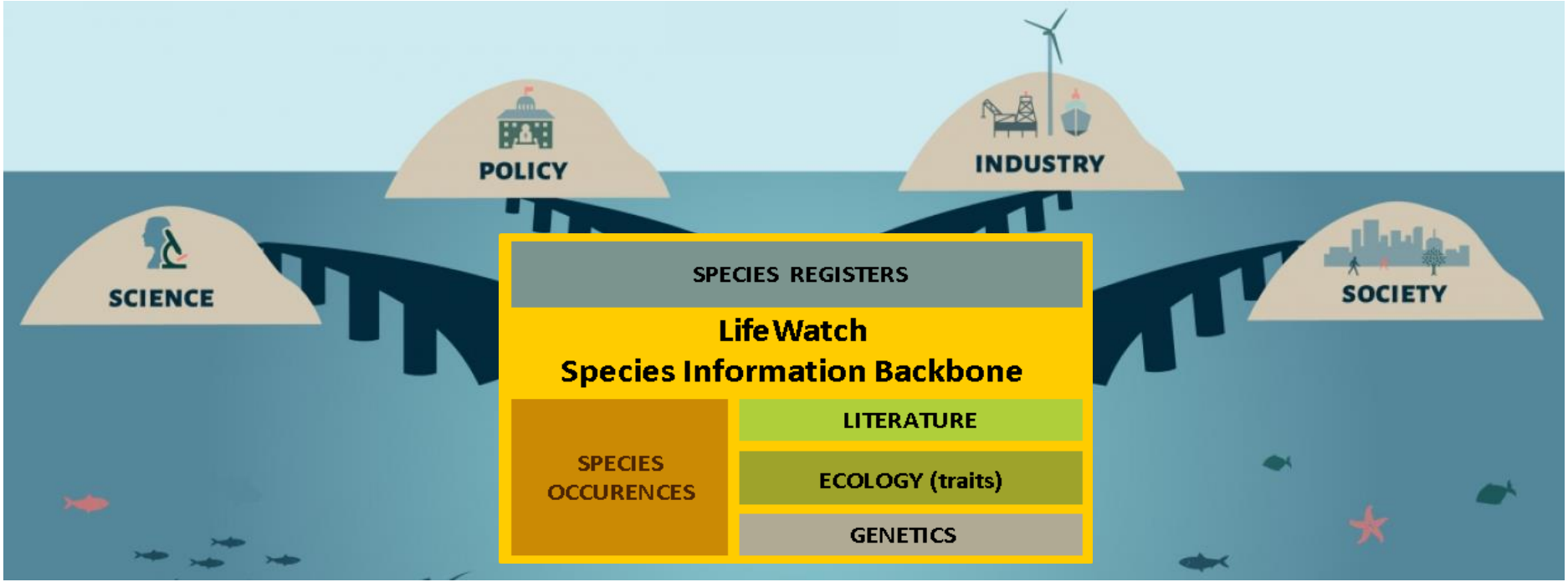
Refreshing our memory…

- Builds on expert validated and literature-based info
- Facilitates standardization of species data
- Facilitates (virtual) integration of distributed data repositories & operating facilities
- Driving force behind the species information services of the Belgian LifeWatch.be e-Lab.

Coordination by VLIZ, at 3 levels

1. System architecture & development
   = setting up the LW-Species Information Backbone
2. Data management
   = completing and updating taxonomic & related data (DMT)
3. Community support
   = organize & mobilize (taxonomic) experts

LifeWatch Species Information Backbone



Outside VLIZ

algaeBASE

FishBase

SeaLifeBase

Catalogue of Life

eol Encyclopedia of Life

@VLIZ

WoRMS World Register of Marine Species

Interim Register of Marine and Nonmarine Genera

Aphia

SPECIES REGISTERS

LifeWatch Species Information Backbone

SPECIES OCCURENCES

LITERATURE

ECOLOGY (traits)

GENETICS

Aphia

IMIS

Aphia

Aphia

Marineregions.org

towards a standard for georeferenced marine names

About Gazetteer Maritime Boundaries

EurOBIS

EMODnet European Marine Observation and Data Network

European Tracking Network ETN

Aphia

Australian Biological Resources Study

Biodiversity Heritage Library

ZooKeys

ZooBank

polytraits

NCBI

ENA European Nucleotide Archive

international BARCODE OF LIFE

OBIS OCEAN BIODIVERSITY INFORMATION SYSTEM

iDigBio Integrated Digitized Biocollections

GBIF

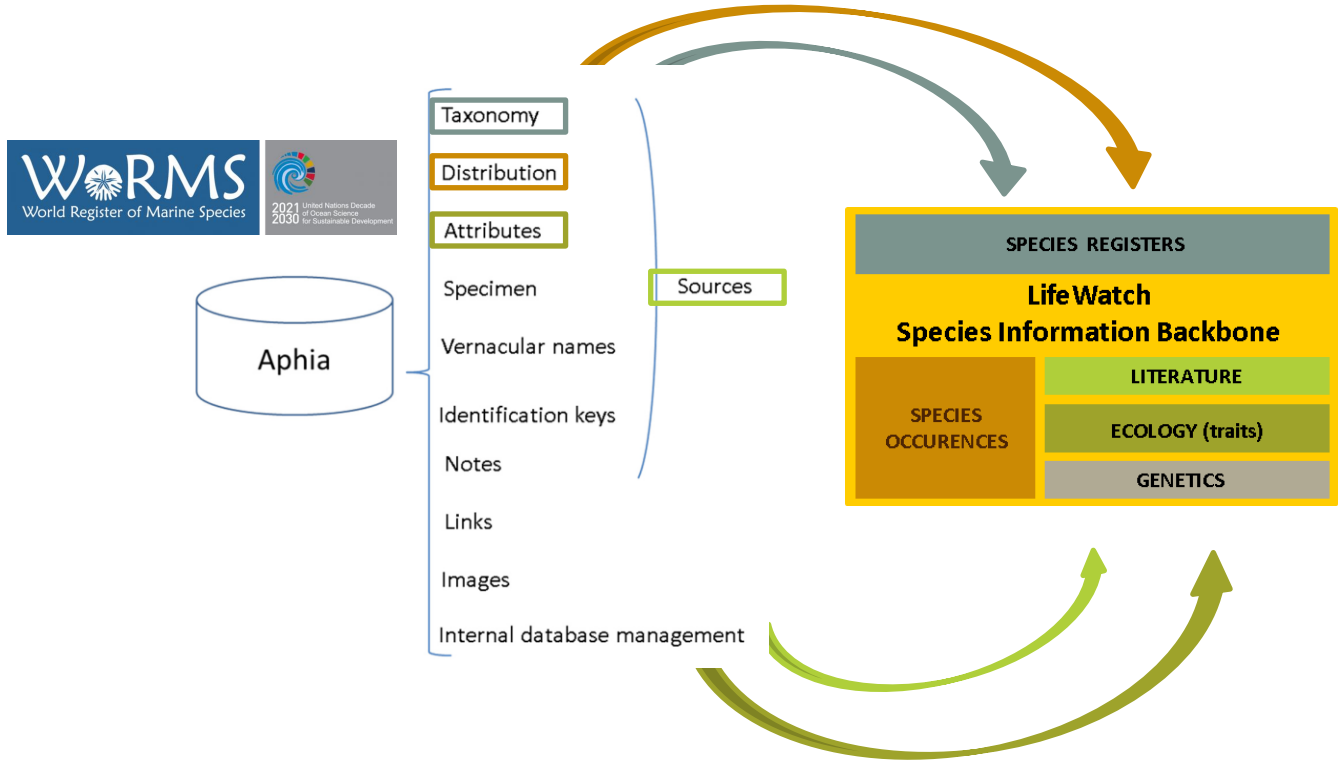
LifeWatch ERIC

ENVRI FAIR

DiSSCo Distributed System of Scientific Collections

elixir

WoRMS: current data flows



Accepted marine species
242 386 (98% checked)

Marine species names, including synonyms
498 581

Species with image
42 241 (61% checked)

WoRMS editors
319

Registered institutional users
421

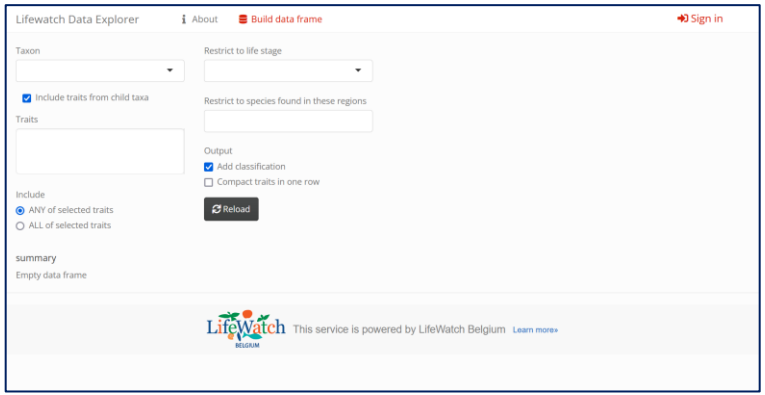
Webhits
94 636 312 (In 2022)

Citations
7461

https://marinespecies.org/aphia.php?p=webservice

WoRMS: new tools and perspectives

New tool: Traits Data Explorer
https://rshiny.vsc.lifewatch.be/traits-data/



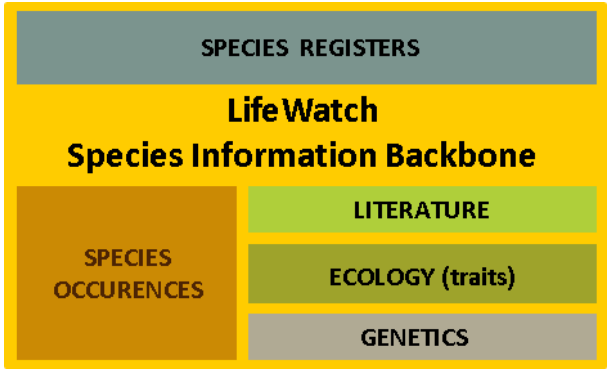
Next steps:

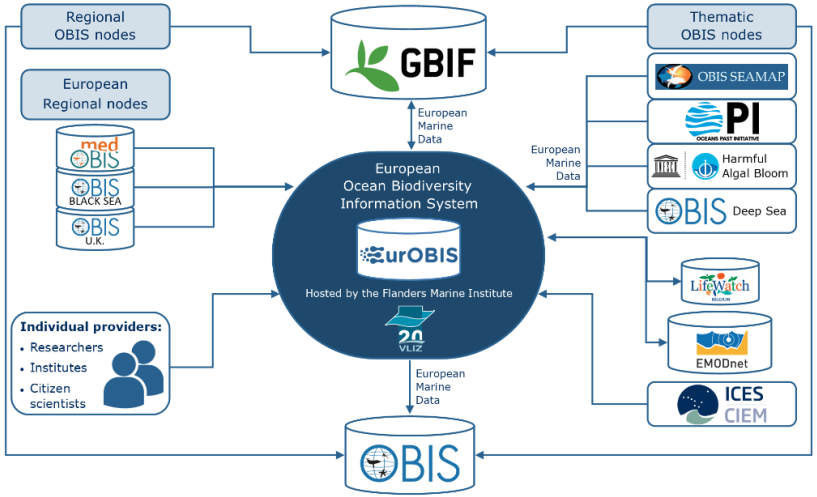
Continue what we are already doing:
- System maintenance and improvements.
- Data management.
- Support the society.

And more:
- Collect essential species trait information.
- Focus on commercially and ecologically relevant species.
- Make deep links with major genetic data resources.
- Incorporate (established) temporary names

EurOBIS: current data flows

EurOBIS
European Ocean Biodiversity Information System



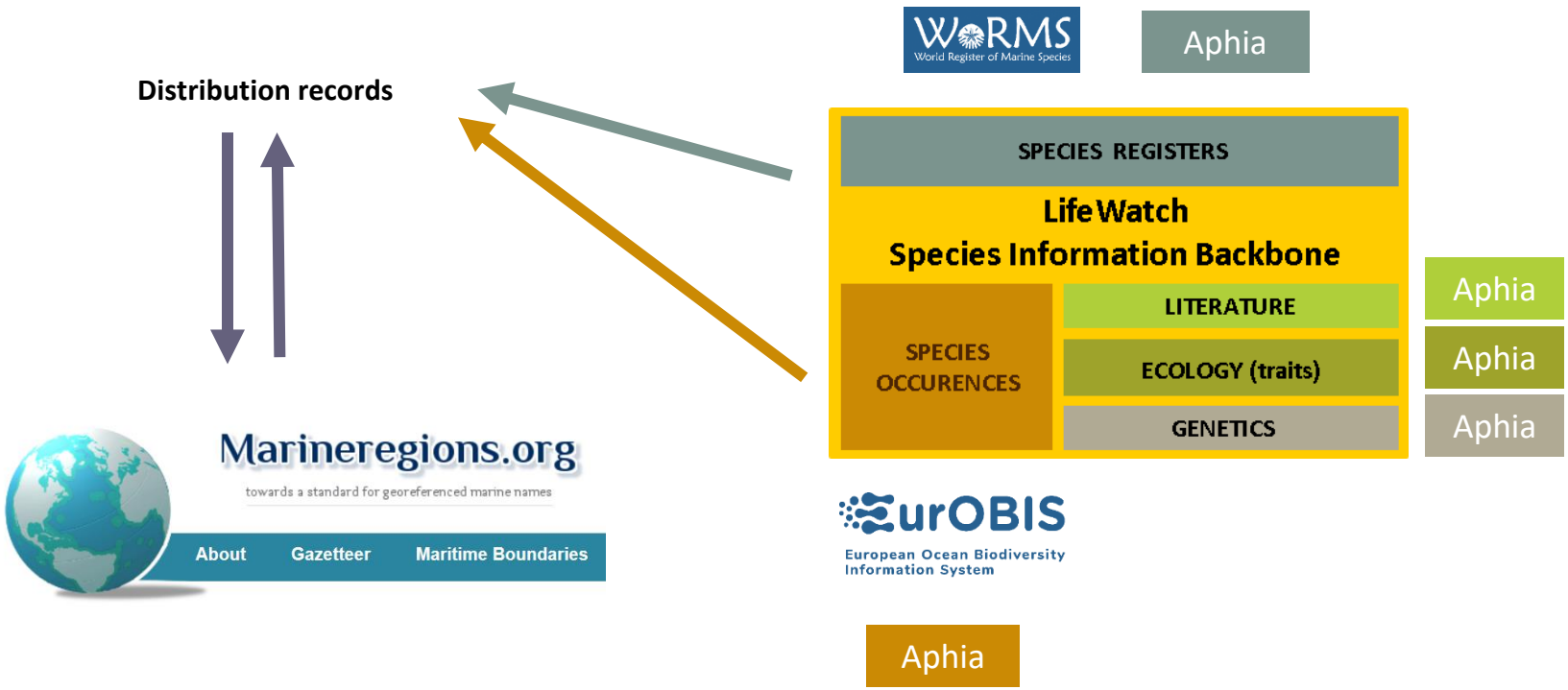


Next steps:

- Preparations to include genetic data.
- Match with BODC (parameter vocabs) to standardize the eMOF of the Darwin Core.
- Continuous efforts to make the data FAIR.

https://eurobis.org/data_access_services

Marine Regions: current data flows



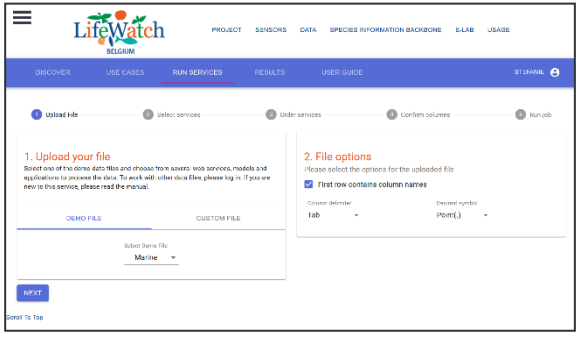
https://marineregions.org/webservices.php

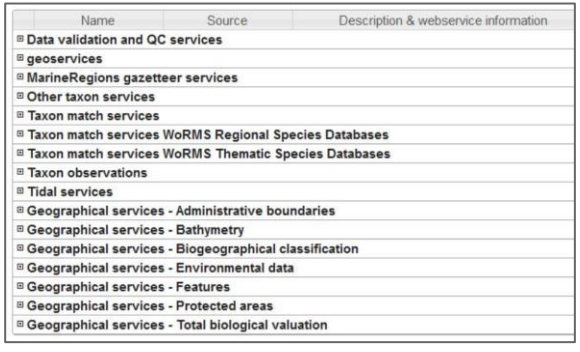
Why the LW SIBb? Establishing workflows

Example questions to be answered by the LifeWatch Species Information Backbone:

- *Where does species X appear?*
- *Which (macro)benthic species live in the North Sea at depths between 50-100m?*
- *Which alien species are known to occur in the Mediterranean Sea?*
- *How does my marine species list relate to the African Register of Marine Species?*
- *Which species from the Habitat/Bird Directive are on the IUCN Red List?*

LifeWatch data services available (or in development) to answer these questions.





https://lifewatch.be/en/e-lab
https://lifewatch.be/data-services/

https://www.lifewatch.eu/thematic-services/

Impact

Fisheries data initiatives

Assessing the state of the oceans

How WoRMS and OBIS guided BASF as a lighthouse

WoRMS featured in Blue Planet II

SCIENCE

POLICY

INDUSTRY

SOCIETY

SPECIES REGISTERS

LifeWatch
Species Information Backbone

SPECIES OCCURENCES

LITERATURE

ECOLOGY (traits)

GENETICS

https://lifewatch.be/en/users

Ongoing use case: MareGraph

Towards an Interoperable Marine Knowledge Graph

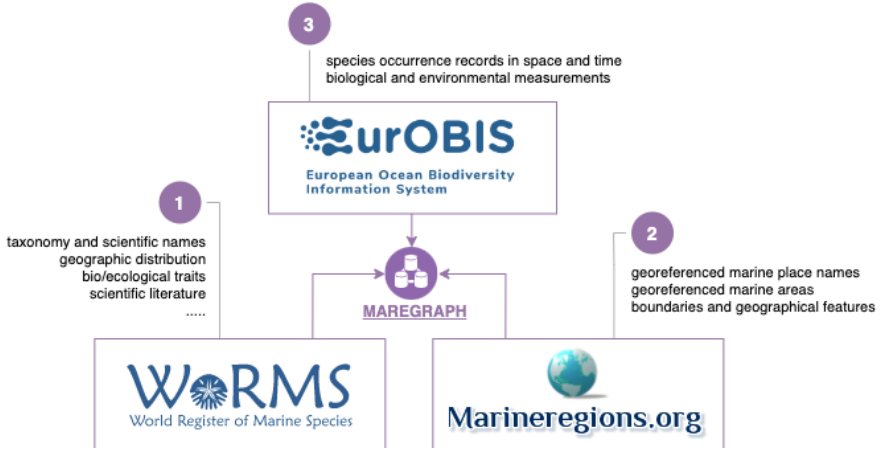
MareGraph

DIGITAL EUROPE framework – DG CNECT

Goals:

- Easy availability, quality, and usability of public sector information.
- Complying with requirements of the Open Data Directive.
- Boost the re-use and combination of open public data across the EU for the development of information products and services, including AI applications.

Grants will support public administrations at local, regional and national level in **increasing semantic, technical and legal interoperability and data portability** of the High Value Datasets:



VLIZ IDLab imec DIGITAAL VLAANDEREN Vlaamse overheid + 2 subcontractors

Thank you for listening! Questions?

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@LifeWatchVLIZ

WoRMS World Register of Marine Species
2021 2030 United Nations Decade of Ocean Science for Sustainable Development

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EurOBIS
European Ocean Biodiversity Information System

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Thank you! | www.lifewatch.eu/bees-2023