

# GenOA week 2025

17 – 21 novembre 2025

## Gestione dei prodotti digitali della ricerca nelle Infrastrutture di Ricerca: l'esperienza di LifeWatch Italia.

Ilaria Rosati | National Research Council



# Open Science principles & practices

Open science is a set of principles and practices that aim to make scientific research from all fields accessible to everyone for the benefit of scientists and society as a whole. The production of that knowledge itself is inclusive, equitable and sustainable.

UNESCO Recommendation on Open Science 2022 version 1.  
<https://doi.org/10.54677/UTCD9302>

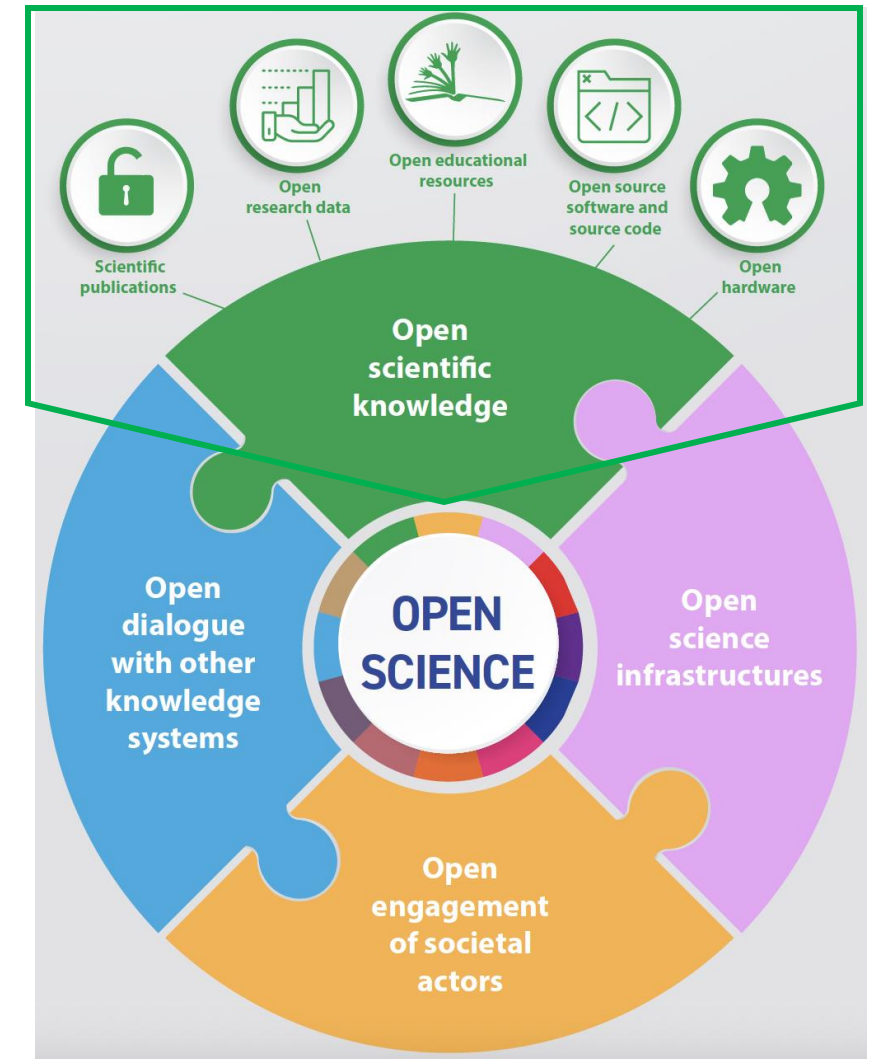


Image: [UNESCO Open Science brochure](#)

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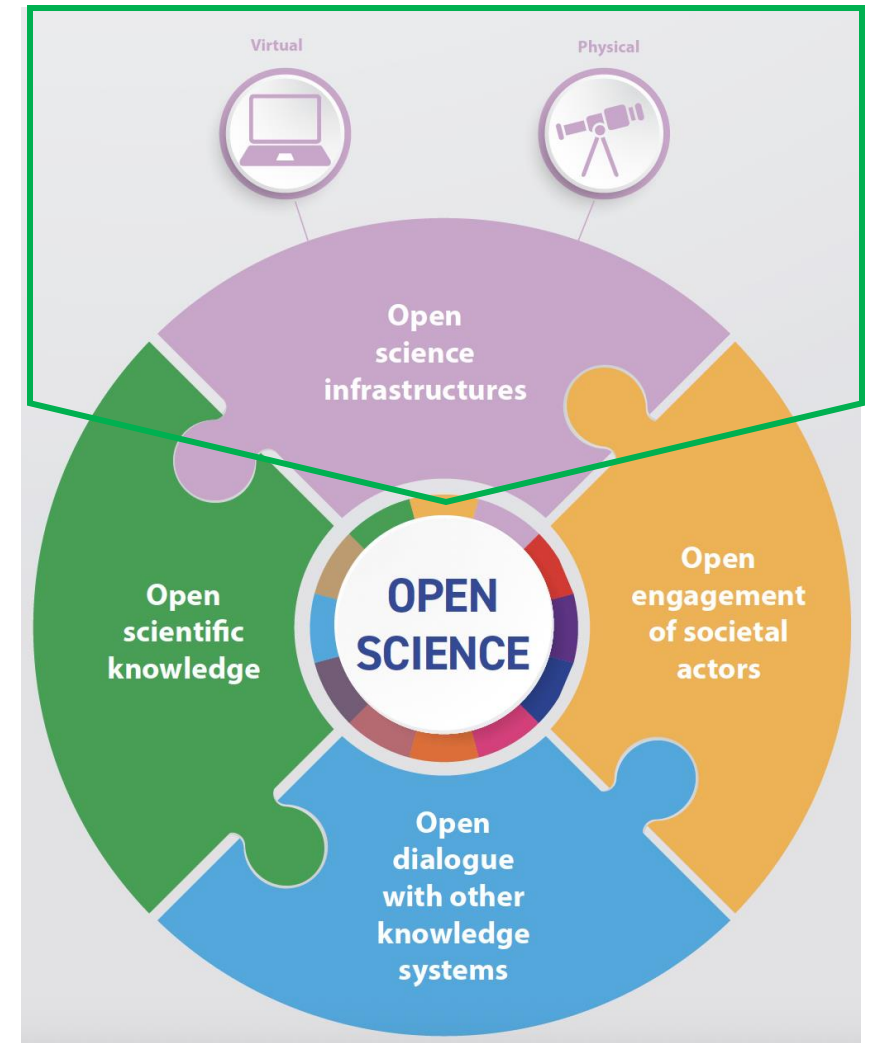


Image: [UNESCO Open Science brochure](#)

# What are Research Infrastructures?

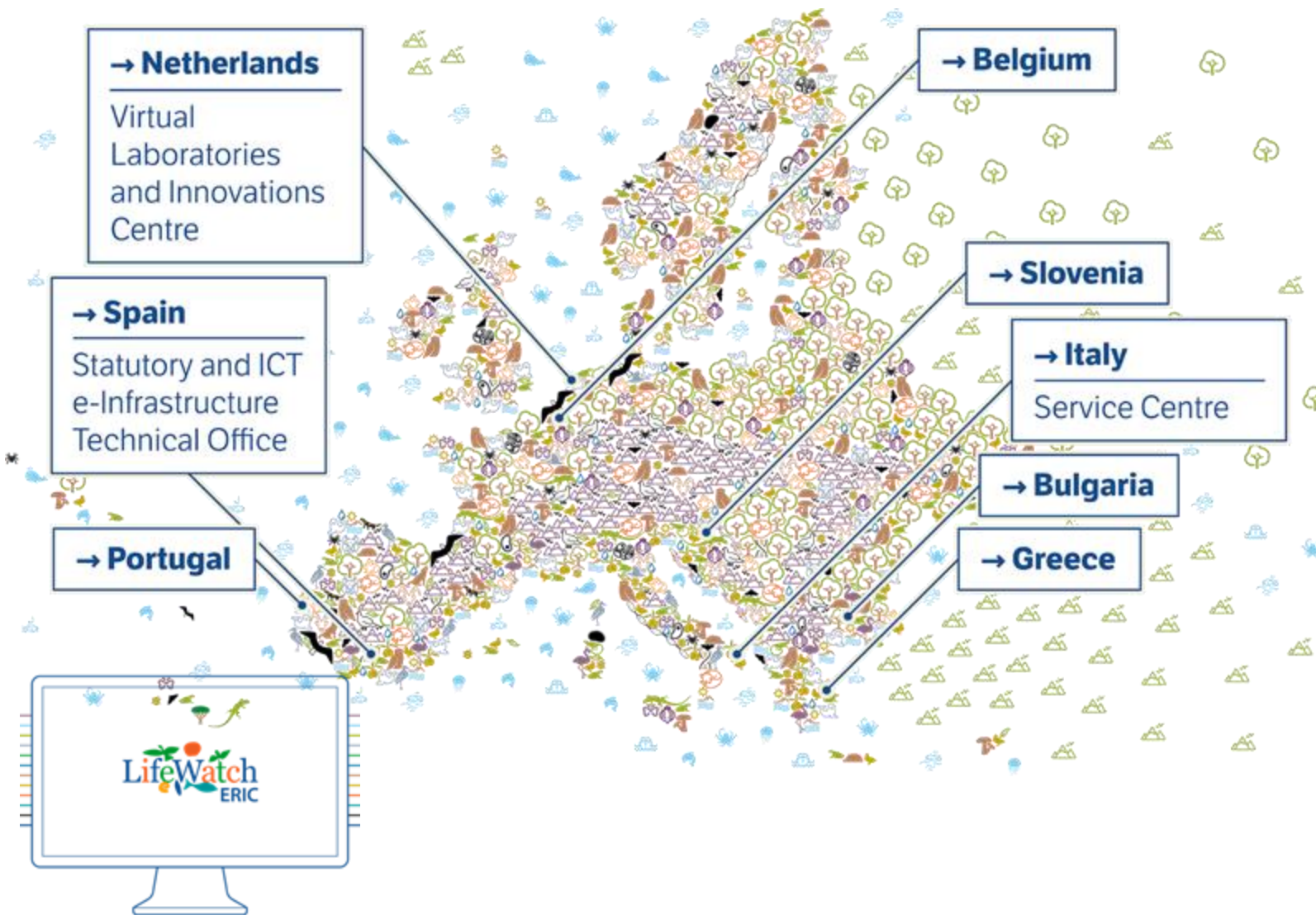
Research Infrastructures are facilities that provide resources and services for research communities to conduct research and foster innovation. They can be used beyond research e.g. for education or public services and they may be single-sited or distributed.



## ESFRI Environment RIs

<b>ACTRIS</b>	Aerosol, Clouds and Trace Gases Research Infrastructure	DISTRIBUTED	landmark
<b>DANUBIUS-RI</b>	International Centre for Advanced Studies on River-Sea Systems	DISTRIBUTED	project
<b>eLTER RI</b>	Integrated European Long-Term Ecosystem, critical zone and socio-ecological Research Infrastructure	DISTRIBUTED	project
<b>DiSSCo</b>	Distributed System of Scientific Collections	DISTRIBUTED	project
<b>EMSO ERIC</b>	European Multidisciplinary Seafloor and water-column Observatory	DISTRIBUTED	landmark
<b>EISCAT_3D</b>	Next generation European Incoherent Scatter radar system	SINGLE-SITED	landmark
<b>EURO-ARGO ERIC</b>	European contribution to the international Argo Programme	DISTRIBUTED	landmark
<b>EPOS ERIC</b>	European Plate Observing System European Research Infrastructure Consortium	DISTRIBUTED	landmark
<b>IAGOS</b>	In-service Aircraft for a Global Observing System	DISTRIBUTED	landmark
<b>ICOS ERIC</b>	Integrated Carbon Observation System	DISTRIBUTED	landmark
<b>LifeWatch ERIC</b>	e-Infrastructure for Biodiversity and Ecosystem Research	DISTRIBUTED	landmark

# LifeWatch ERIC



Is a European Research Infrastructure Consortium providing **eScience research facilities** to scientists investigating biodiversity and ecosystem functions and services in order to support society in addressing key planetary challenges

<https://www.lifewatch.eu>



# LifeWatch Italy

LifeWatch Italy has been established as a Joint Research Unit (JRU) in 2010 coordinated by the CNR. It has now 36 members including research institutes, universities and associations seeking to reinforce integrated scientific research on biodiversity and ecosystems.



# LifeWatch Italy Strategic Objective



National Hub for biodiversity and ecosystem research and knowledge

- Main point access to **FAIR** and **Open data** and other **research products**
- **e-Science services** and **platforms** for supporting a **FAIR** and **Open** research lifecycle

# LifeWatch Italy Digital Infrastructure

## Open & FAIR Research Lifecycle








-  Findable
-  Accessible
-  Interoperable
-  Reusable
-  Open

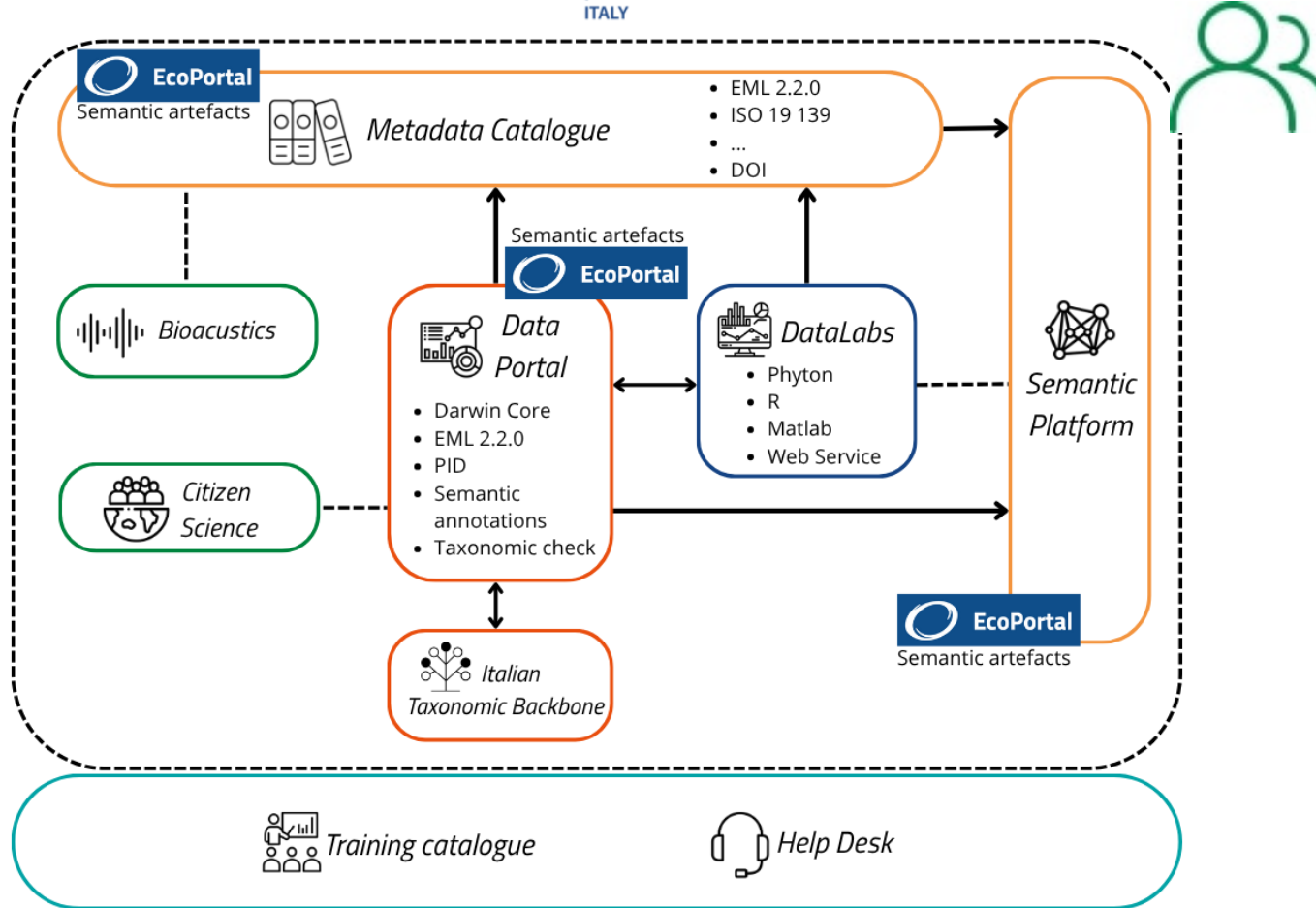


Image: Icons by Freepik from [www.flaticon.com](http://www.flaticon.com) and ARDC <https://conference.eresearch.edu.au/fair-go-new-resources-to-support-fair-data/>

Image: Muresan, Alexandra Nicoleta; Rosati, Ilaria (2025). Data Lifecycle Framework for LifeWatch Italy. figshare. Figure. <https://doi.org/10.6084/m9.figshare.30847574.v1>

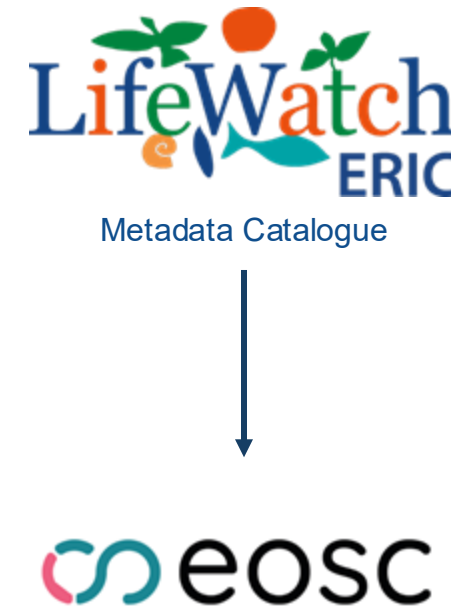
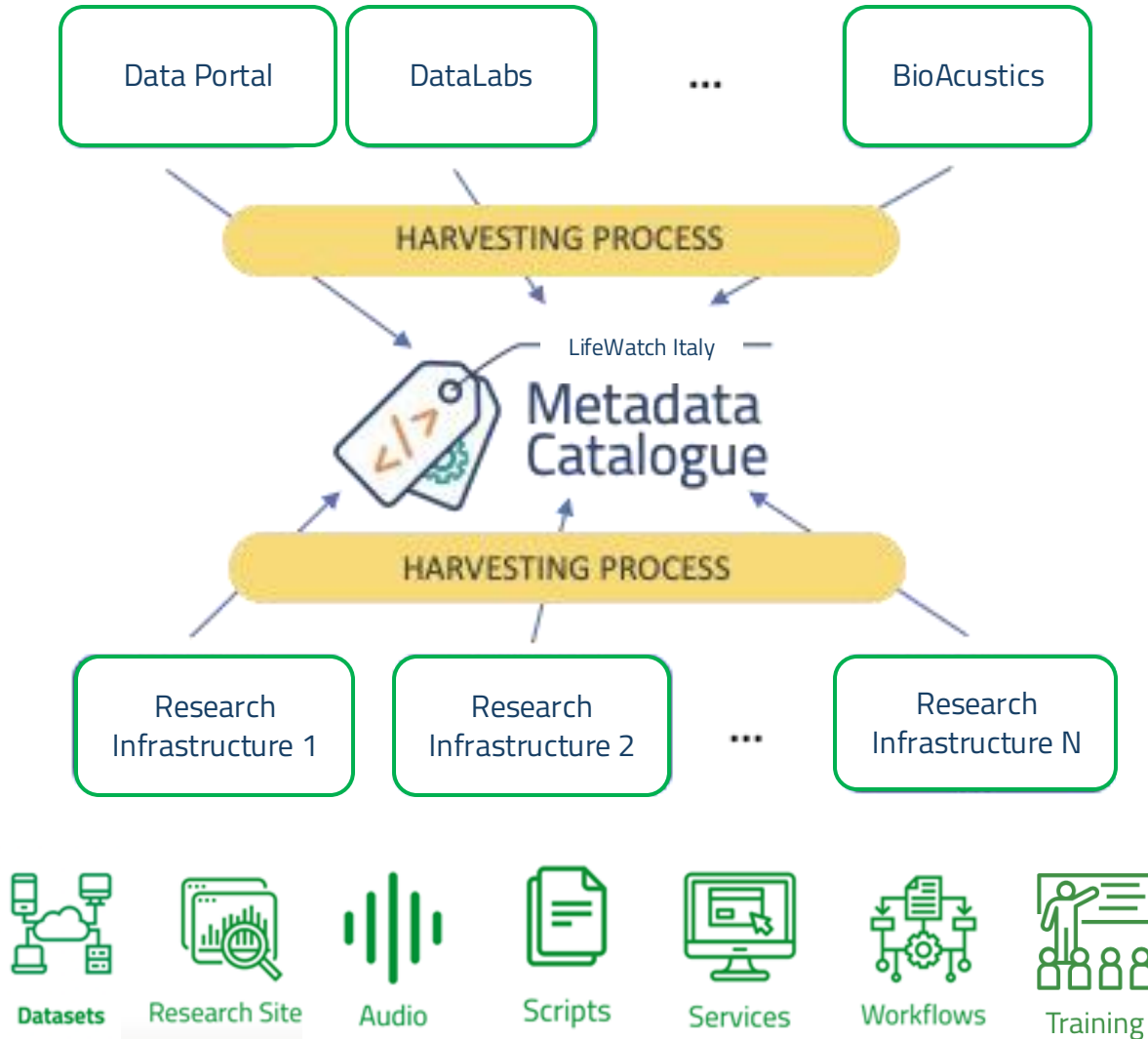


# LifeWatch Italy Digital Infrastructure



- Researchers
- Citizen Scientists
- Data Scientists
- Semantic experts
- Data Managers
- Data Stewards
- Data Custodians
- Software/Application Developers
- Training Officer
- Research Infrastructure Managers
- .....

# LifeWatch Italy FAIR & Open Research Products



# LifeWatch Italy Data Portal

➤ Share, search and use datasets and associated metadata

The screenshot displays the LifeWatch Italy Data Portal search results page. The interface features a green header with the 'LifeWatch ITALY' logo on the left and a 'Search' button on the right. Below the header, a green banner contains the word 'Search' and a breadcrumb trail 'Home / Search'. The left sidebar includes a navigation menu with categories: DATA (Advanced Search, Semantic Search, Statistics, Portals), SUBMIT DATA, SUPPORT, and ABOUT. The main content area shows a search bar with the text 'Search phrase ...' and a 'Search' button. Below the search bar, it indicates 'Now showing 1 - 5 of 5' results. The results are listed with filters on the left: Keyword, Creator, Organization, Year, Location, Taxon, Identifier, and Portal. The first result is by Ilaria Rosati et al. (2021) regarding benthic macroinvertebrates in coastal lagoons. The second result is by Giuseppe Scarcella et al. (2024) regarding the distribution and abundance of *Anadara* spp. in the Northern Adriatic Sea. The third result is by National Research Council (2024) regarding marine zooplankton. The fourth result is by Ernesto Azzurro et al. (2024) regarding marine zooplankton. The fifth result is by Sonia Smeraldo et al. (2024) regarding marine zooplankton. A map of Europe is shown on the right, with a blue box highlighting the Northern Adriatic Sea region, corresponding to the location of the second result.

LifeWatch ITALY

DATA  
Advanced Search  
Semantic Search  
Statistics  
Portals  
SUBMIT DATA  
SUPPORT  
ABOUT

Search

Home / Search

Search phrase ... Search

Now showing 1 - 5 of 5

Filter by

- Keyword
- Creator
- Organization
- Year
- Location
- Taxon
- Identifier
- Portal

Reset filters

Settings

https://data.lifewatchdev.eu/search

Ilaria, Rosati, National Research Council - Research Institute on Terrestrial Ecosystems; Alberto, BASSET, University of Salento; 2021. *Benthic macroinvertebrates communities data collected in 15 coastal lagoons of Mediterranean and Black sea by using the leaf pack technique*  
<https://data.lifewatchdev.eu/handle/123456789/129548>

Giuseppe, Scarcella, National Research Council of Italy (CNR), Institute for Marine Biological Resources and Biotechnology (IRBIM); Marina, Chiappi, National Research Council of Italy (CNR), Institute for Marine Biological Resources and Biotechnology (IRBIM); Francesca, Luzzi, National Research Council of Italy (CNR), Institute for Marine Biological Resources and Biotechnology (IRBIM); Pierluigi, Strafella, National Research Council of Italy (CNR), Institute for Marine Biological Resources and Biotechnology (IRBIM); 2024. *Distribution and abundance of Anadara spp. in the Northern Adriatic Sea - v2*  
<https://doi.org/10.48372/ZS4D-EM32>

National Research Council; 2024. *marine\_zooplankton*  
<https://data.lifewatchdev.eu/handle/123456789/129154>

ernesto azzurro; Ernesto, Azzurro, National Research Council of Italy (CNR), Institute for Marine Biological Resources and Biotechnology (IRBIM); sonia smeraldo; Sonia, Smeraldo, National Research Council of Italy

7 4 5 1

<https://data.lifewatchitaly.eu>

# LifeWatch Italy Data Portal

System overview, users categories, roles and main functionalities

The screenshot displays the LifeWatch Italy Data Portal interface. The top navigation bar is green and contains the LifeWatch Italy logo on the left and the user profile 'ilaria.rosati@cnr.it' on the right. The main content area has a green header with the word 'Search' and a breadcrumb 'Home / Search'. Below this, there is a search bar and a 'Show all' button. The left sidebar is a vertical menu with various sections: DATA, JOBS, SUBMIT DATA, SUPPORT, ABOUT, ADMIN DASHBOARD, DATASETS WORKFLOW, ADMINISTER WORKFLOW, MY PROFILE, MY DATASETS, MY PORTALS, and LOGOUT. The main content area shows search results for the keyword 'marine\_zooplankton', listing several records with details about the National Research Council of Italy (CNR) and the Institute for Marine Biological Resources and Biotechnology (IRBIM). A map of the Mediterranean region is also visible, showing data points.



Researcher= Data Provider  
Reviewer= Data Steward or  
Data Manager  
Administrator= Data Custodian



# LifeWatch Italy Data Portal

System overview, users categories, roles and main functionalities



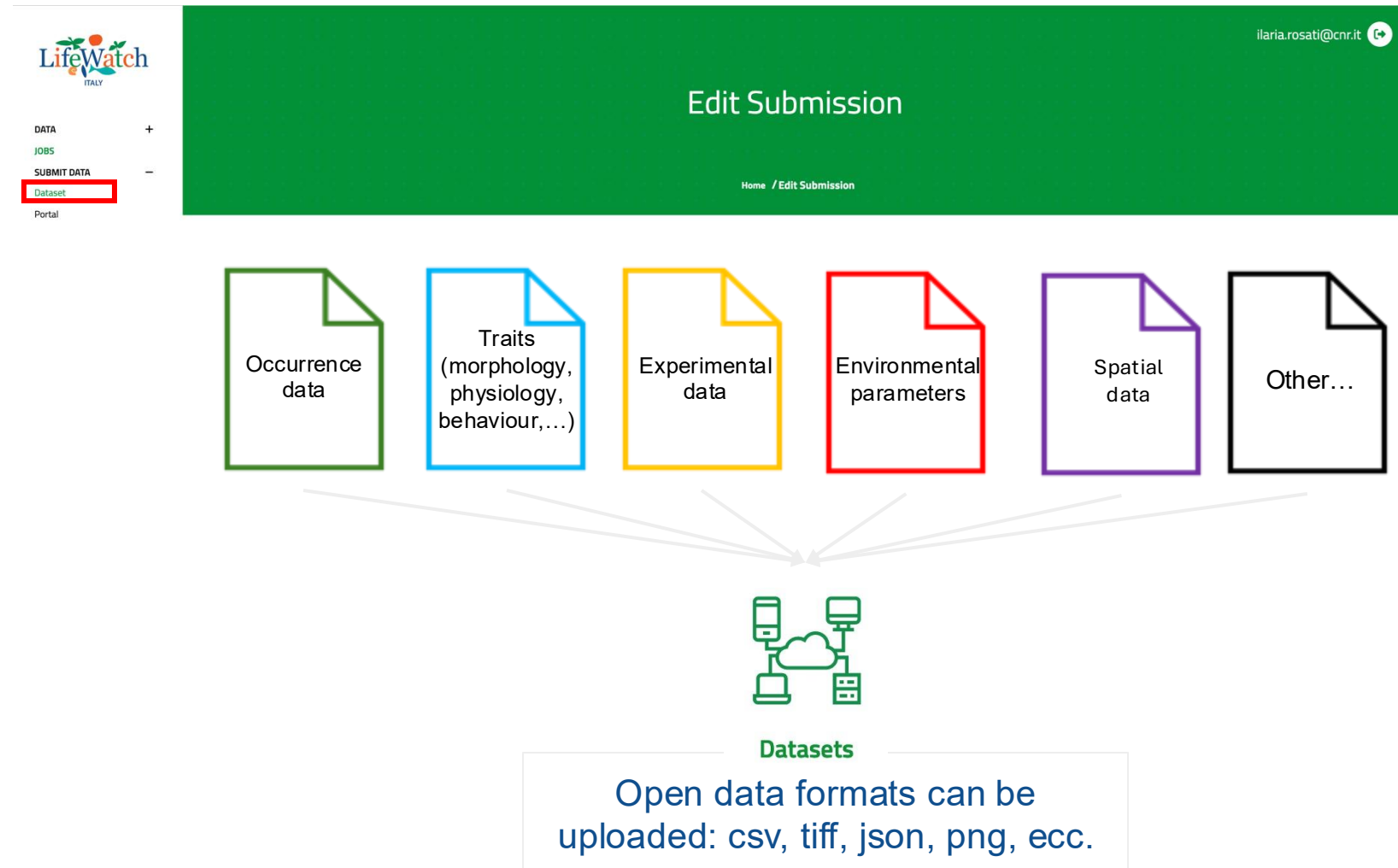
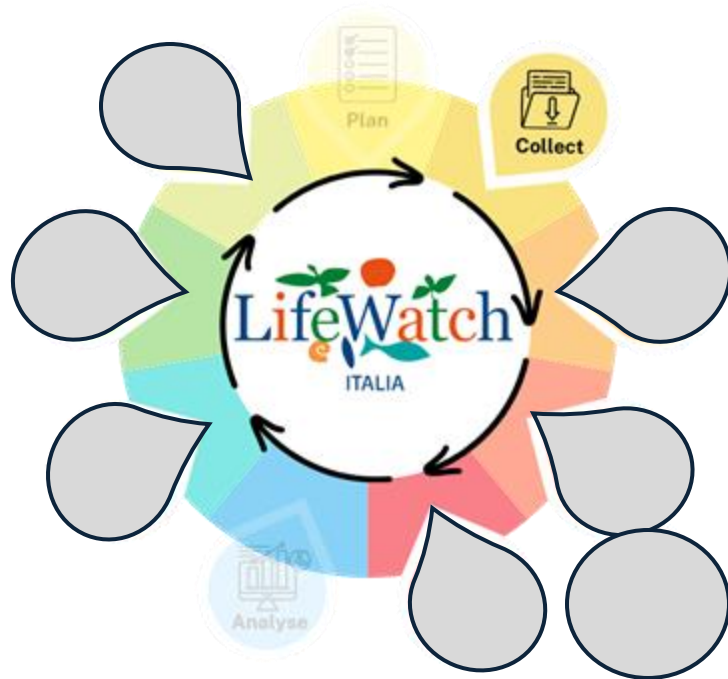
Researcher= Data Provider  
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Section	Functionality	Role		
		Researcher	Reviewer	Administrator
JOBS (or MY JOBS)	Data Curation	x	x	x
SUBMIT DATA	Dataset	x	x	x
	Portal	x	x	x
ADMIN DASHBOARD	Metadata Configurator			x
	Groups Management			x
	User Management			x
	Harvesting			x
	Search Configurator			x
	Statistics Configurator			x
	Dataset Management			x
DATASETS WORKFLOW	Data and Metadata Review Workflow		x	x
ADMINISTER WORKFLOW	Data and Metadata Review Workflow			x
MY PROFILE	Owner Profile Management	x	x	x
MY DATASETS	Owner Datasets Management	x	x	x
MY PORTALS	Owner Portals Management	x	x	x

# LifeWatch Italy Data Portal



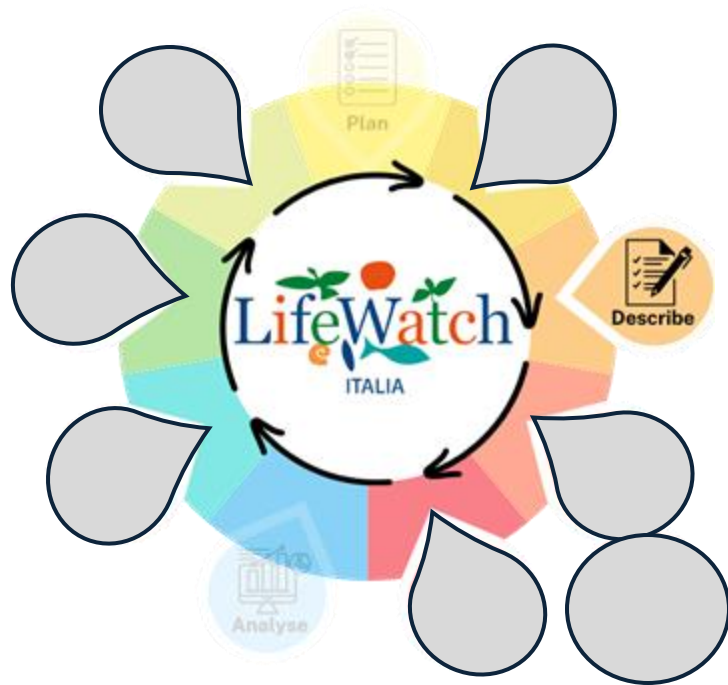
Researcher  
Reviewer



# LifeWatch Italy Data Portal



Researcher  
Reviewer



LifeWatch  
ITALY

DATA +  
JOBS  
SUBMIT DATA -  
Dataset  
Portal

ilaria.rosati@cnr.it

## Edit Submission

Home / Edit Submission

Drop files to attach them to the item, or [browse](#)

General information

Person organisation

Coverage

License

Project Detail

Methods

**Ecological Metadata Language 2.2.0** as metadata schema for describing ecological data.

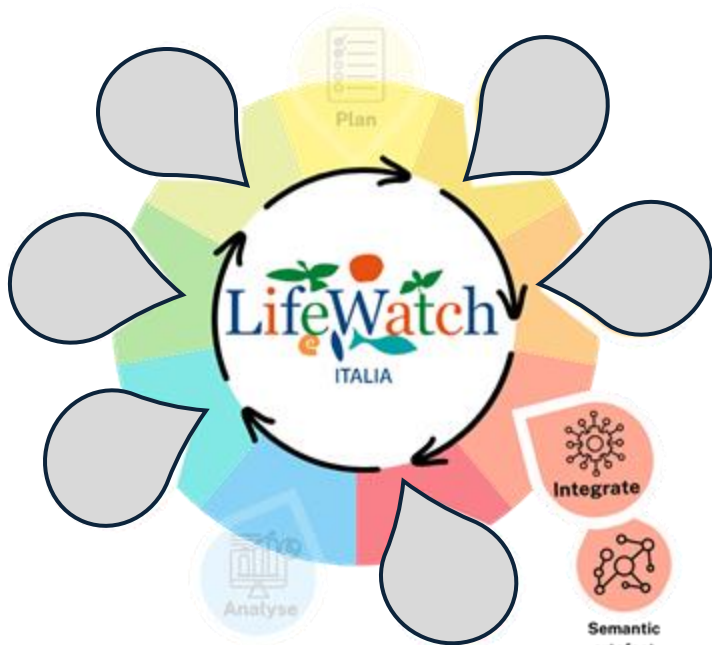
Every section contains a set of attributes, e.g. Title, Publication date, Temporal coverage, Taxonomic coverage, ect, to thoroughly describe your data.

<https://eml.ecoinformatics.org/eml-schema>

# LifeWatch Italy Data Portal



Researcher  
Reviewer  
Semantic experts



<EcoPortal

<https://ecoportal.lifewatch.eu>

Semantic  
Annotation

LifeWatch ITALY

DATA +  
JOBS  
SUBMIT DATA -  
Dataset  
Portal

ilaria.rosati@cnr.it

## Edit Submission

Home / Edit Submission

Hierarchical tree view

Keywords

Keyword information

Keyword thesaurus

EuroVoc Core Concepts

biodiversity

The name of a thesaurus from which the keyword is derived.

Property Label

has context

Property URI

http://ecoinformatics.org/oboe/oboe.1.2

The persistent URI used to identify a property from a vocabulary.

Value Label

biodiversity

Value URI

http://eurovoc.europa.eu/5463

The persistent URI used to identify a value from a vocabulary.

Enter appropriate subject keywords or phrases.

Add more

variable 1

biodiversity loss 1

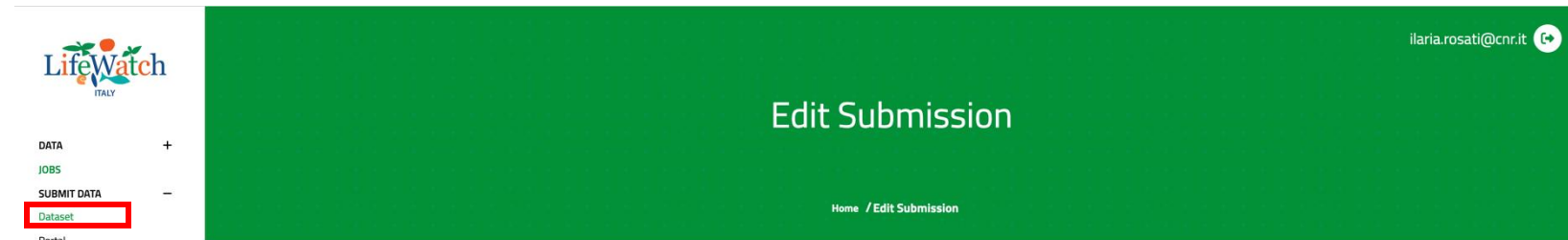
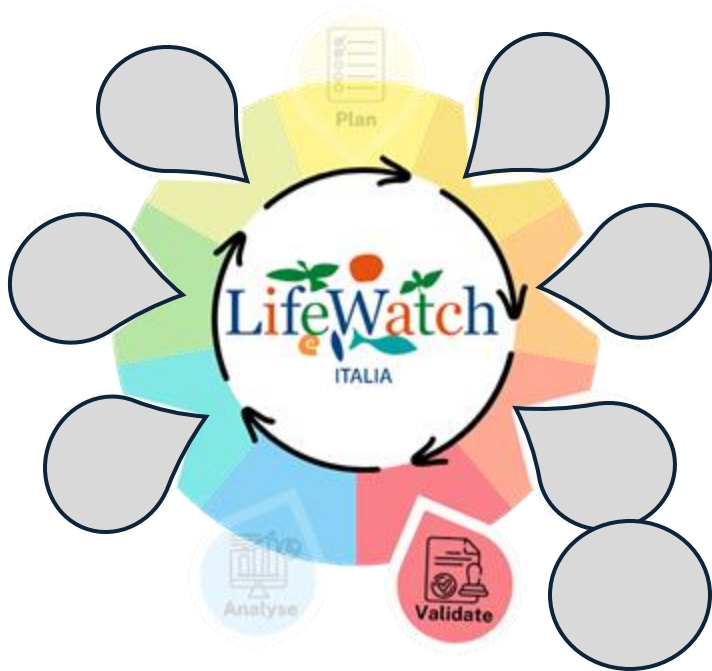
- Data harmonisation
- Data standardisation
- Data reuse



# LifeWatch Italy Data Portal



Researcher  
Reviewer



## Metadata Validation



The xml file is  
checked against  
the EML schema  
validator (.xsd file)

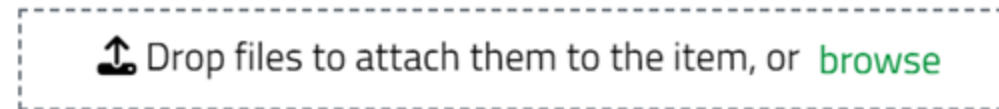
# LifeWatch Italy Data Portal



Researcher  
Reviewer



## Data Curation and Validation



LW-ITA Data Schema based on  
DarwinCore and controlled vocabularies

scientificName	samplingProtocol	bodyLength
<i>Idotea balthica</i>	hand operated ekman grab	4.5

Validated data

scientificName
<i>Idotea balthica</i>

Taxonomic check

# LifeWatch Italy Data Portal



Researcher  
Administrator



The screenshot shows the LifeWatch Italy Data Portal interface. On the left, a 'Filter by' sidebar lists categories: Keyword, Creator, Organization, Year, Location, Taxon, Identifier, and Portal, each with a '+' icon. Below the list is a 'Reset filters' button. The main content area displays search results, including a search phrase input, a 'Now showing 1 - 10 of 11' indicator, and a list of records with their titles, authors, and URLs. Two overlays are present: a 'Keyword' filter overlay on the top right and a 'Portal' filter overlay on the bottom right. Both overlays list categories with checkboxes and counts. Red arrows point from the overlays to the main content area, and a red arrow points from the 'Portal' overlay to a map of Italy.

**Keyword Filter:**

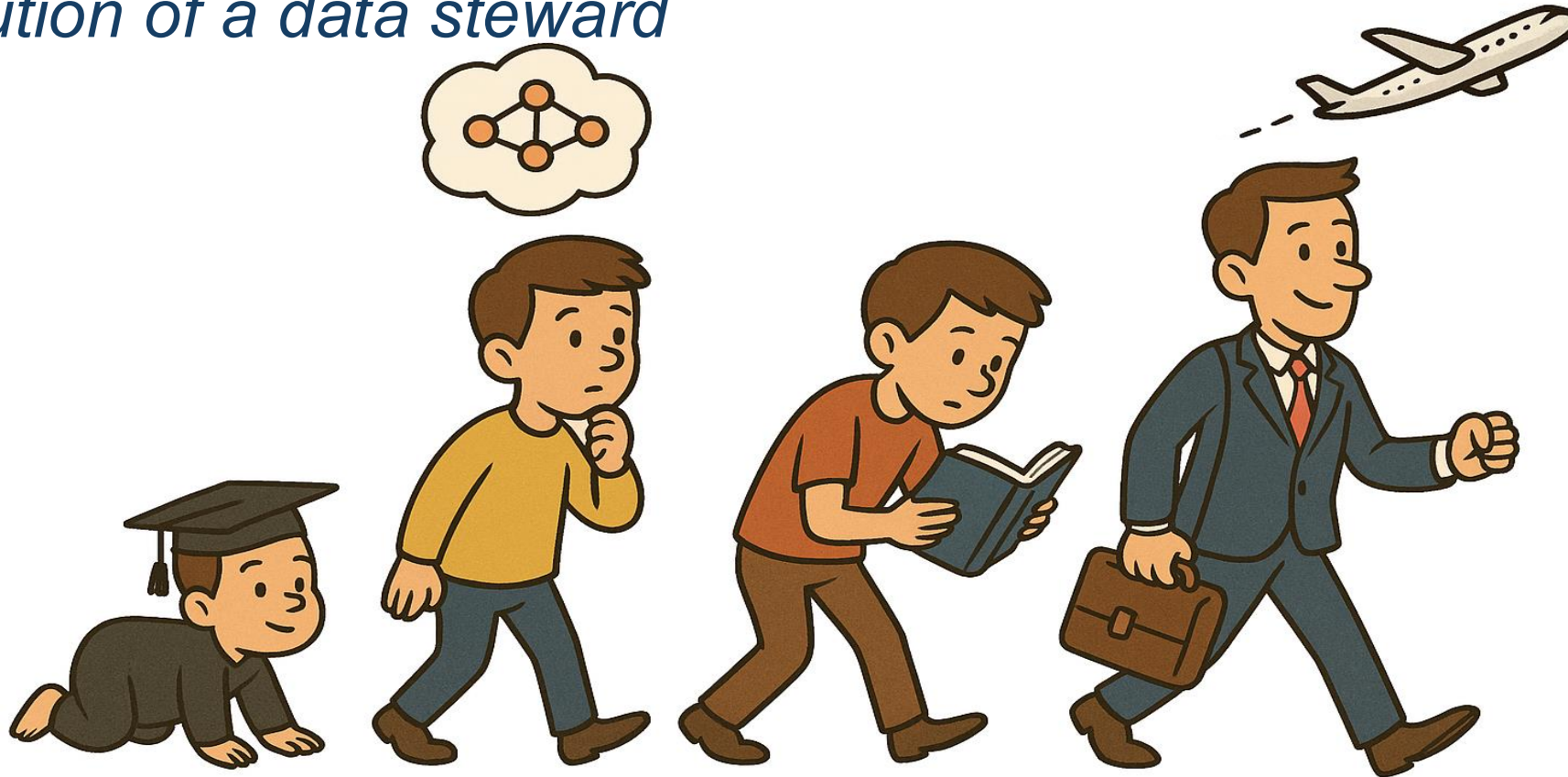
- ☐ Biodiversity (2)
- ☐ Aquatic Habitats (1)
- ☐ Biosphere (1)
- ☐ Body size (1)
- ☐ Coastal Habitat (1)
- ☐ Coastal lagoons (1)
- ☐ Intertidal (1)
- ☐ Processes (1)
- ☐ Intertidal Zone (1)
- ☐ Invertebrates (1)
- ☐ Lagoon (1)

**Portal Filter:**

- ☐ California MPA Monitoring Data Portal (4)
- ☐ MCR LTER: Coral Reef: Rates of benthic coral reef community metabolism from 2007 ongoing (2)
- ☐ Biological invasions USEit (1)

# LifeWatch Italy Data Steward

*The evolution of a data steward*



## GRADUATE

The newborn DS got a Bachelor, Master, or PhD in any discipline, BUT data management

## RDM CURIOSITY

The DS begins to explore RDM concepts, questioning how data should be managed and shared

## SELF-TAUGHT

The DS studies independently: reading articles, learning from international initiatives, and building expertise through personal effort.

## PROFESSIONAL DS

Eventually, the DS becomes knowledgeable. Now **seek opportunities abroad**, where the position is more established and valued.





**Ilaria Rosati**

CNR-IRET



**Lucia Vaira**

LifeWatch ERIC



**Davide Raho**

CNR-IRET



**Francesco De Leo**

CNR-IRET



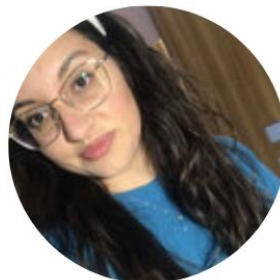
**Cristina Di Muri**

CNR-IRET



**Andrea Tarallo**

CNR-IRET



**Martina Pulieri**

University of Salento



**Mariantonietta La Marra**

University of Salento



**Eftychia Tzafesta**

LifeWatch ERIC



**Majid Fiaz**

LifeWatch ERIC

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**Thank you  
for your attention!**

*ilaria.rosati@cnr.it*

