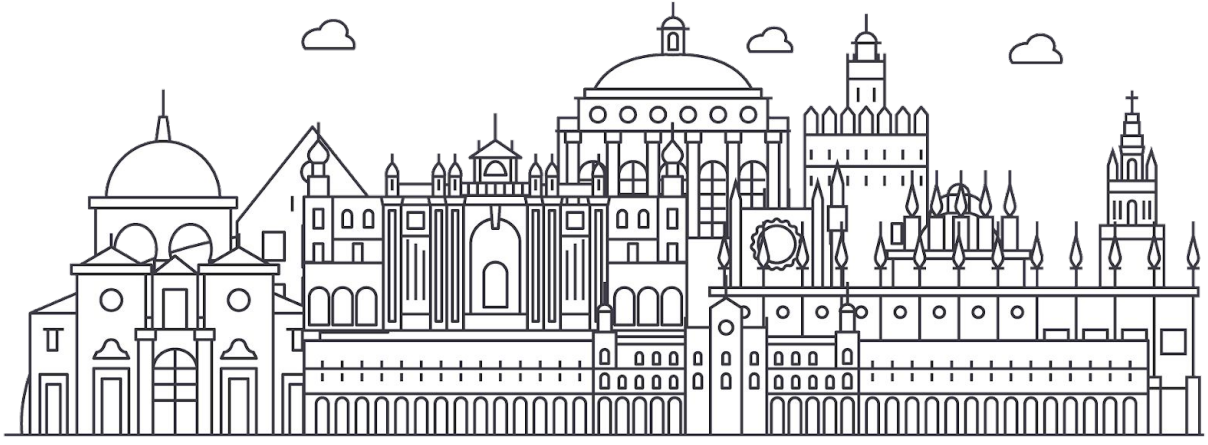
BEeS

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

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EOSC, FAIR data, Open Science: What Why How

Katrina Exter, OpenScience@VLIZ

VLIZ pioneer in marine science

Data Management is ……

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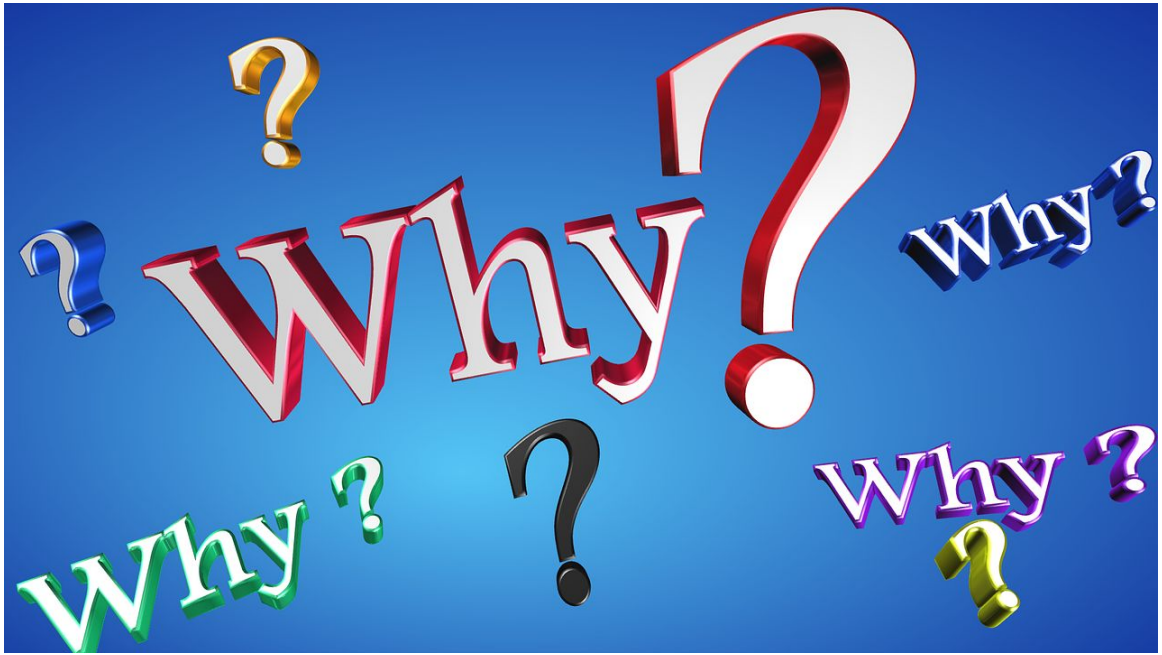
Data Managers are ……



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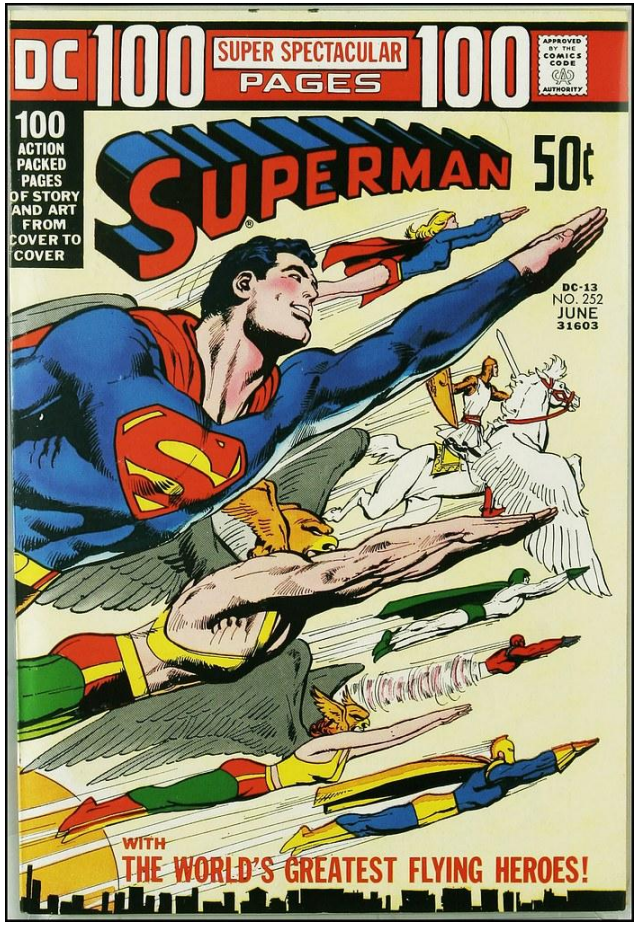


Open, FAIR, EOSC: what do these mean?

Open Science

Providing unhindered access to scientific results and outputs: to data, tools, knowledge, publications, created from publicly-funded research

Open, **FAIR**, EOSC: what do these mean?

FAIR

An approach to providing Open Science in a way that makes it useful. Making scientific outputs

- Findable google is not just for finding cats or looking up the Eurovision winners
- Accessible now I have found it, I need to access it
- Interoperable now I have accessed it, I need to understand it, I need to be able to open it
- Re-usable I need to be able to trust it, repeat it, re-use it

Open, FAIR, **EOSC**: what do these mean?

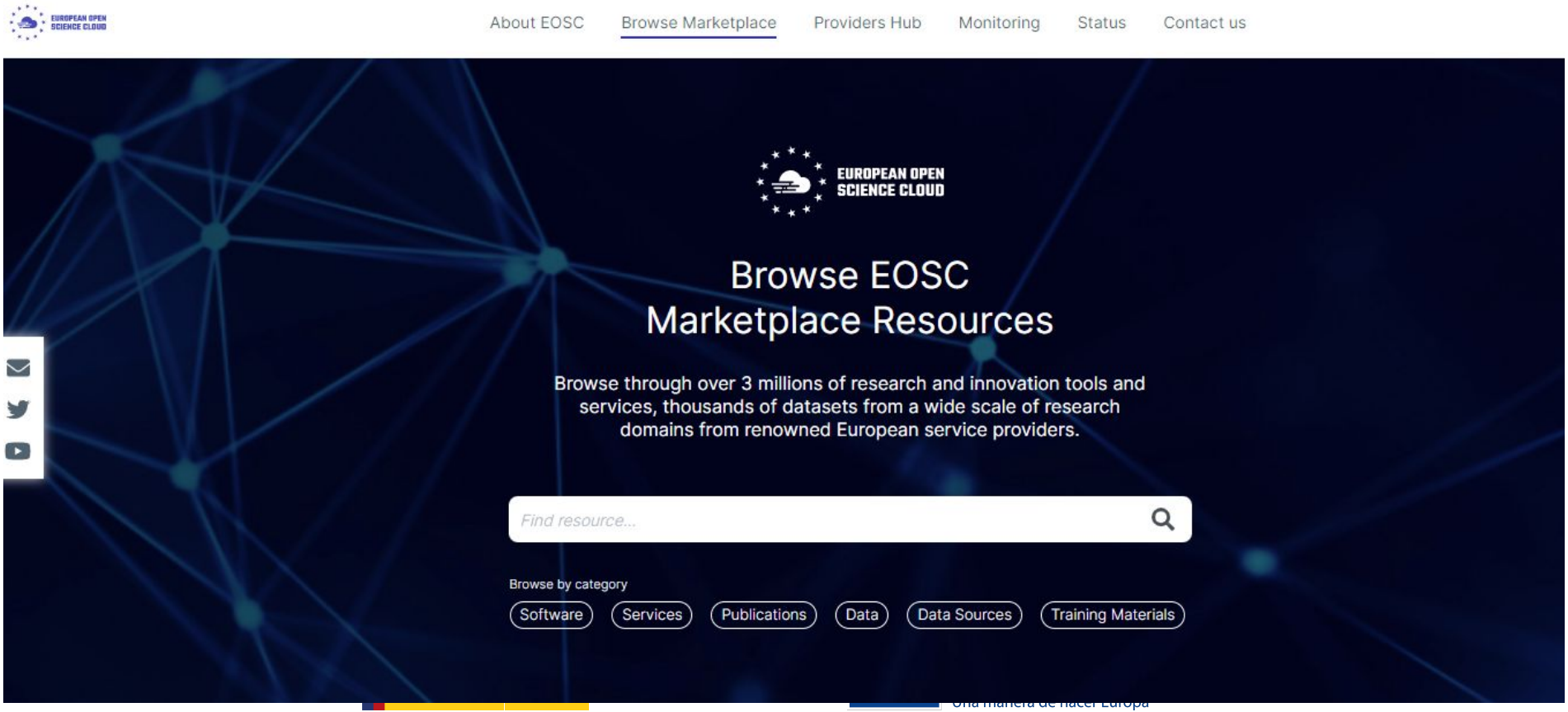
EOSC

European Open Science Cloud: an online, cloud-based portal for publishing scientific outputs

A driver for scientists to make their data, publications, and tools, Open

EOSC Portal/Marketplace

Your unified access to the European hub of research data, tools and services for innovation and education → search engine for data, software, publications, training material, services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Filters

Research step clear all

- [ ] Discover Research Outputs (10)

Access right clear all

- [x] Open access (10)
- [ ] Restricted (0)
- [ ] Closed (0)
- [ ] Embargo (0)

Year range clear all

Start date

Select start date

End date

Select end date

10 search results Data

Clear all filters | Access right: Open access X | Document type: Dataset X | Scientific domain: 0105 earth and related environmental sciences X

Dataset | Open Access | English

Early succession in benthic hard bottom communities in Kongsfjorden, Svalbard - biomass

Open access | Type: dataset

Author names: Schmiing Mara Laudien Jürgen Sahade Ricardo José

DOI: 10.1594/pangaea.351151

Field of Science: 01 natural sciences 0105 earth and related environmental sciences 0106 biological sciences 010504 meteorology & atmospheric sciences 010604 marine biology & hydrobiology

Event label DEPTH, water DATE/TIME Date/time end Duration, number of days Sample code/label Ectocarpus sp. Desmarestia aculeata Desmarestia viridis Desmarestia sp. Dictyosiphon foeniculaceus Corallinaceae Hildenbrandia rubra Phaeostroma pustulosum Phycodrys rubens Acrosiphonia sp. Foraminifera, benthic Porifera Lafoea sp. Obelia dichotoma Hydractinia sp. Autolytus sp. Circeis spirillum Harmothoe imbricata Janua pagenstecheri Jugaria granulata Paradexiospira vitrea Paradexiospira cancellata Polynoide, juvenile Spionida, planktic, juvenile Spionida, benthic, juvenile

Filters

Research step clear all

- [ ] Process and Analyse (41)
- [ ] Discover Research Outputs (22)
- [ ] Access Research Infrastructures (8)
- [x] Manage Research Data (5)
- [ ] Access Computing and Storage Resources (3)
- [ ] Publish Research Outputs (3)
- [ ] Access Training Material (1)
- [ ] Find Instruments & Equipment (0)

Horizontal service clear all

- [ ] no (5)
- [ ] yes (0)

Order type clear all

- [x] Open access (5)
- [ ] Order required (3)
- [ ] Other (0)

Categories clear all

- [ ] Processing & Analysis (3)
- [ ] Access physical & eInfrastructures (2)
- [ ] Sharing & Discovery (1)

5 search results Services

Clear all filters | Research step: Manage Research Data X | Order type: Open access X | Scientific Domains: Natural Sciences X | Scientific Domains: Earth & Related Environmental Sciences X | Scientific Domains: Biological Sciences X | Scientific Domains: Computer & Information Sciences X | Scientific Domains: Physical Sciences X | Scientific Domains: Chemical Sciences X | Scientific Domains: Other Natural Sciences X | Scientific Domains: Mathematics X

Service | Open Access | English

VAMDC Species Database

Open access | Type: service

Scientific domain: Natural Sciences>Chemical Sciences Natural Sciences

Organisation: Virtual Atomic and Molecular Data Centre

ENVRI-FAIR | atomic data | chemical species | molecular data | vamdc

This service is a website providing the list of all the chemical species available in the VAMDC architecture. By using a graphical user interface it is possible to know in which database one can expect to find data related to a given species. The servi...

Show more

Service | Open Access | English | German

de.NBI Cloud: Cloud Computing for Life Sciences

Open access | Type: service

Scientific domain: Medical & Health Sciences>Health Sciences Medical & Health Sciences Natural

Open, FAIR: why are they important?

The philosophical POV

- Because we should Publicly-funded science should be available for public consumption.
- Science is important Crazy cats are funny but they are not important: science is!
- Because we can Making data F A I R is not rocket science: in this 21st century we have the data technology to do this

Open, FAIR: why are they important?

The practical POV

- To satisfy the funders Funders need to know and to show what they are funding
- To reach other users Scientific knowledge should be able to filter through society
- For your publications Journals more and more require data releases to accompany scientific publications; data and software papers are becoming more important
- Publicity Institutes/organisations that provide data services benefit from being visible on portals such as EOSC

Open, FAIR: why are they important?

The personal POV

- Visibility Make your outputs Open and FAIR, more people can find them and use them …
- Acknowledgement …leading to citations, collaborations, recognition
- Enabling ...leading to more science
- You scratch my back, I'll scratch yours Much science relies on being able to access an abundance of data that cannot be created by a single person/body alone

Some EU-funded Open and FAIR projects

- EOSC Life: *Building a digital space for the life sciences*
- ENVRI-FAIR: *Connecting of the Cluster of Environmental Research Infrastructures to EOSC*
- EOSC Future: *Implementing EOSC, giving European researchers access to a wide web of FAIR data and related services*
- Blue Cloud: *Your Open Science platform for collaborative marine research*
- FAIR EASE: *The first interdomain digital architecture for integrated use of environmental data*
- Marco Bolo: *To better understand marine biodiversity decline and restore ocean health*

A story of one dataset

ASSEMBLE Plus (Horizon no. 730984) ran two Biodiversity Observation Network projects

- Material samples and environmental measurements of the marine environment were collected
- DNA and images of collected organisms were created
- Species lists were produced from DNA analysis; species counts from the images
- The data were made FAIR immediately and published

The data were found and consequently used by others

- MyGod (https://test.sb-roscoff.fr/mygod/) virtual genomic observatory (species lists)
- LifeWatch Tesseract (omics part)
- FAIR Ease Virtual Research Environment (data exploration)
- MetaGOflow, a workflow for the analysis of marine Genomic Observatories shotgun metagenomics datapipeline (omics part)

What can *you* do to make science open and FAIR?

- Don’t start experiments before talking to a data manager and making a plan (DMP)
- Then *do* the management: A little bit at each step of your experiment
  - Describe
  - Format
  - Save
  - Link
- As you are the expert in science, rely on the experts to make your data FAIR: ask for help where you need it
- Publish - share!

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