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A FAIR and User-Friendly Web Application for Democratizing Research on Zoosporic Parasites in Aquatic Systems

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Consiglio Nazionale delle Ricerche

CNR IRET

A FAIR and User-Friendly Web Application for Democratizing Research on Zoosporic Parasites in Aquatic Systems

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Zoosporic parasites play a crucial, yet often overlooked, role as invisible regulators of ecosystems, posing significant challenges to microalgae production. A comprehensive understanding of parasite-host interactions is not merely an ecological concern but a fundamental requirement for ensuring the sustainability of algae-based resources and industrial-scale production.

The ParAqua database represents the first structured effort to centralize knowledge on zoosporic parasites, integrating *in situ* observations, genetic data (from NCBI), and literature data, to provide a comprehensive understanding of algae-parasite interactions.

PARAQUA

LifeWatch ITALIA

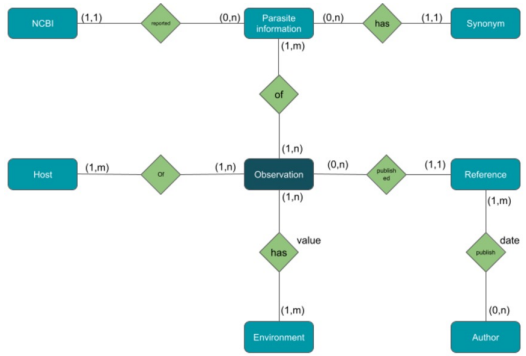
cost EUROPEAN COOPERATION IN SCIENCE & TECHNOLOGY

Funded by the European Union

Analyzing Research Needs

- The taxonomy of the parasite and its fixed traits.
- The taxonomy of the host algae and its fixed traits.
- Observation variables collected on the sampling event.
- Genetic data collected from the NCBI database.
- Synonymous parasites names.
- Literature sources for the data gathered in the other categories.
- Information about the authors of the referenced literature.

Designing Conceptual Model

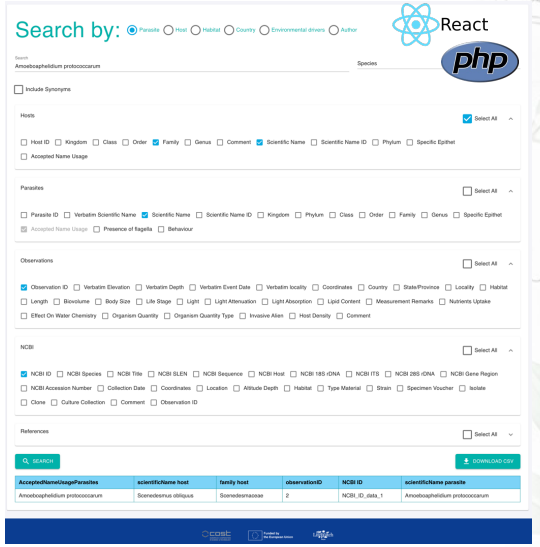


Harmonizing Data

Use of Controlled Vocabularies: Darwin Core, LifeWatch Traits Thesaurus, Dublin Core, NCBI

Democratizing

Developing a web-application for data access. User-friendly UI for structured queries to get a navigable data-table output and downloading files in CSV. Stateless Restful API for JSON files.



CSV

API

JSON

Davide RAHO