

The OpenBiodiv logo consists of a green molecular-like structure of three circles connected by lines, followed by the text 'OpenBiodiv' in a green sans-serif font.

What is OpenBiodiv?

OpenBiodiv is the very first **Resource Description Framework (RDF)-based semantic knowledge graph database for biodiversity**.

It offers a **free-to-use and no-registration-required portal** to browse and locate relevant and linked biodiversity data from a vast number of publications.

Using RDF, OpenBiodiv allows for much more **in-depth exploration of this data**, compared to alternative methods. As a result, OpenBiodiv exposes 'hidden' links between data items across published content.

Who is OpenBiodiv for?

OpenBiodiv is targeted at **researchers seeking to explore biodiversity publications** in context through in-depth bibliographic exploration of various types of biodiversity data (i.e. taxon names, taxonomic treatments, sequences, figures, tables, collections, persons and more).

For **users with knowledge in SPARQL and RDF**, OpenBiodiv provides additional opportunities to run complex open-ended queries and produce finely refined results.

What data is in OpenBiodiv?

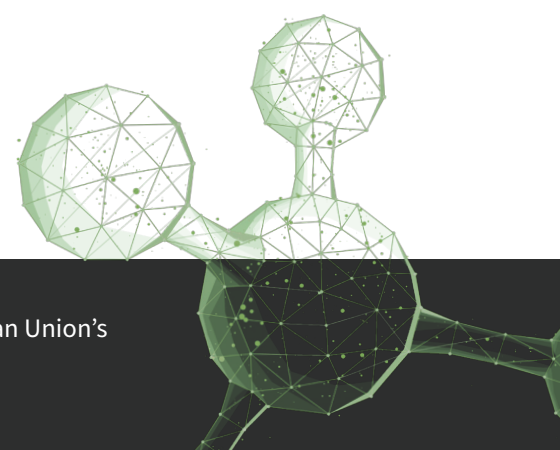
OpenBiodiv is a graph database of biodiversity knowledge extracted from the scientific literature. OpenBiodiv indexes full-text articles published by Pensoft and taxonomic treatments extracted by Plazi from over 60 additional journals. Then, it converts them to RDF to build an Open Biodiversity Knowledge Management System (OBKMS).

As of the moment of writing, the knowledge graph contains data from over **30,000** biodiversity articles, including nearly a million taxon names, more than **130,000** sequences, **240,000** authors and much more.

Thanks to the data publishing and text mining workflows developed by Pensoft and Plazi, the biodiversity data in OpenBiodiv is growing daily.

What does OpenBiodiv do?

OpenBiodiv runs in-depth searches of published biodiversity data to identify the papers and sections within them, which are most relevant to the question of the user. Beyond pointing users to a relevant paper, it also gives information and re-directs the user to the accurate place within the original article, where the related data item has been mentioned.



taxonomy	2
methods	1

Article	Sections	DOI
Tosanoides obama, a new basslet (Perciformes, Percoidei, Serranidae) from deep coral reefs in the Northwestern Hawaiian Islands	etymology (1) figure (1) figure (1) figure (1) figure (1) figure (1) figure (1) abstract (1) bibliographic reference list (bibliographic reference) (1) treatment sections (nomenclature) (1) ecology (2) table (1) distribution (3) acknowledgements (1)	https://doi.org/10.3897/zookeys.641.11500

The screenshot shows the ZooKeys website interface. The top navigation bar includes 'Home', 'Articles', 'About', 'About Pensoft', 'Books', 'Journals', 'Blog', 'Register', and 'Login'. The main content area displays the article title 'Tosanoides obama' and its DOI. A sidebar on the right contains a 'Contents' tab and a list of sections: 'Article title', 'Abstract', and 'Keywords'. The article text is visible, mentioning the species name and its honorific reference to Barack H. Obama.

What challenges does OpenBiodiv address?

In their studies, biodiversity researchers need to use and refer to extensive and diverse biodiversity data, e.g. taxon names, treatments, collections, authorities, genetic sequences, tables, images, etc. However, this data is typically scattered across a vast number of articles or belong to dissociated databases.

OpenBiodiv **brings all those data types together** and provides semantic enhancements to them, making them **FAIR, easily findable** and **re-usable**.

Four ways to query OpenBiodiv

- 1 General SPARQL-based semantic search
- 1 User apps for in-depth literature exploration (based on Elasticsearch)
- 3 SPARQL endpoint & sample SPARQL queries
- 2 RESTful API

1 Humans

2 Computers

3 Humans & Computers

Type of questions you can 'ask' OpenBiodiv via SPARQL

- Which publications contain treatments of the beetle genus Carabus?
- Which publications about the plant genus Ambrosia are published by author X and/or author Y?
- Which publications provide treatments of specimens kept at the National Museum of Natural Sciences in Madrid?

