

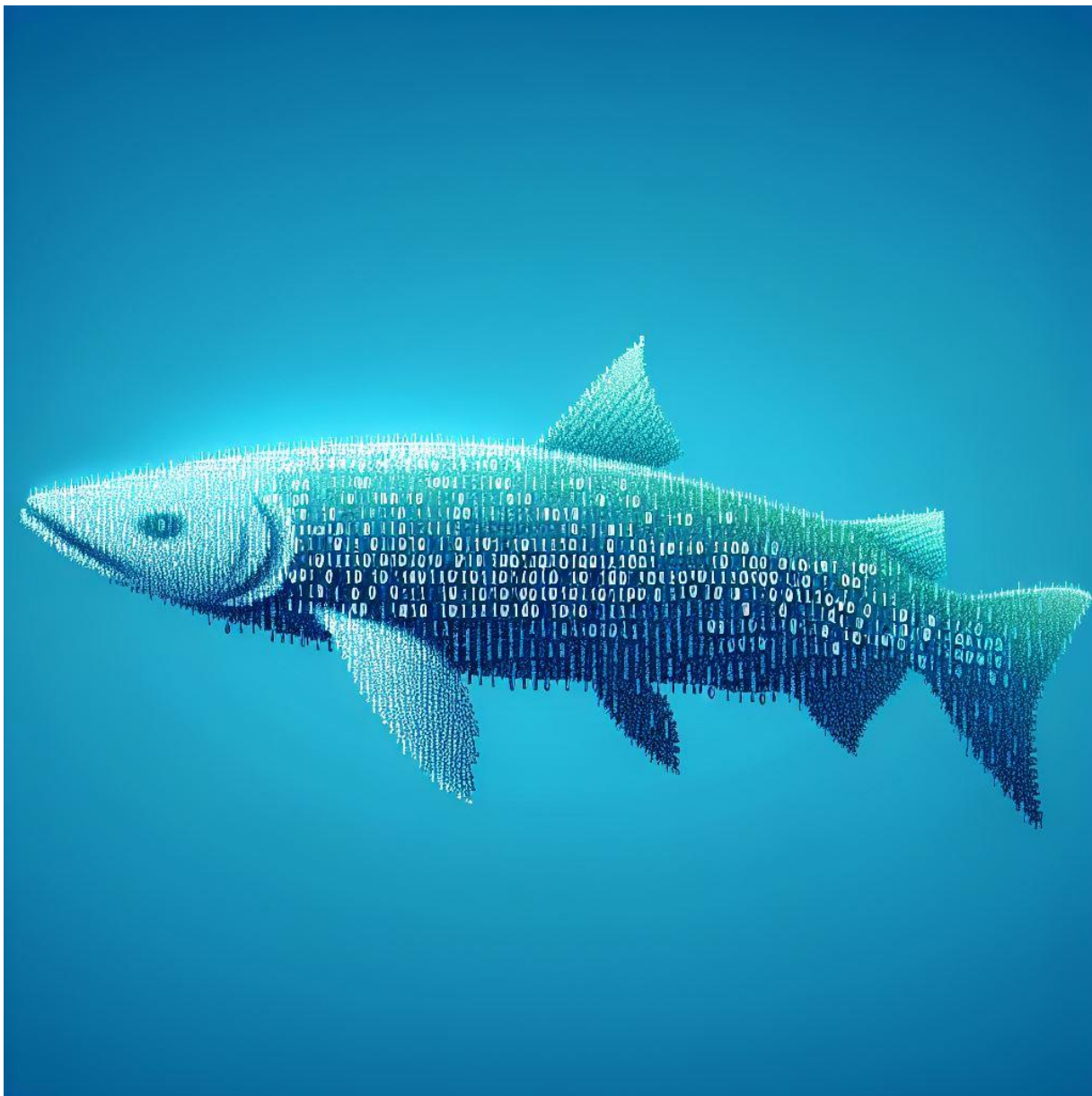


Fakulta rybářství
a ochrany vod
Faculty of Fisheries
and Protection
of Waters

Jihočeská univerzita
v Českých Budějovicích
University of South Bohemia
in České Budějovice



South Bohemian Research Center
of Aquaculture and Biodiversity
of Hydrocenoses



CENAKVA LRI

Jaromír Kovárník
Brno 21-22. 5. 2025



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Faculty of Fisheries and Protection of Waters

Core Focus:

- Research and education in freshwater fisheries, aquaculture, and water protection.

Main Activities:

- Applied research and commercialization.
- Lifelong learning programs.
- Partnerships with industry, government agencies, and other institutions.

Unique Position:

- Europe's leading freshwater research facility
- Unique experimental facilities for aquaculture research





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South Bohemian Research Center of Aquaculture and Biodiversity of Hydrocenoses (CENAKVA)

Focus Areas:

- Quality of freshwater fish
- Biology and conservation of sturgeons
- Sustainable pond and intensive aquaculture
- Biology and conservation of crayfish and other invertebrates
- Water quality and aquatic environment

Research Facilities:

40 hectares of experimental ponds, Closed recirculating and aquaponic systems
Breeding and reproduction of nearly 30 species of freshwater fish and crustaceans
Laboratories: Advanced biological, chemical, and toxicological laboratories



•**Sturgeon Gene Bank:** It is a gene bank of European significance, encompassing various sturgeon species (in vitro and in vivo).

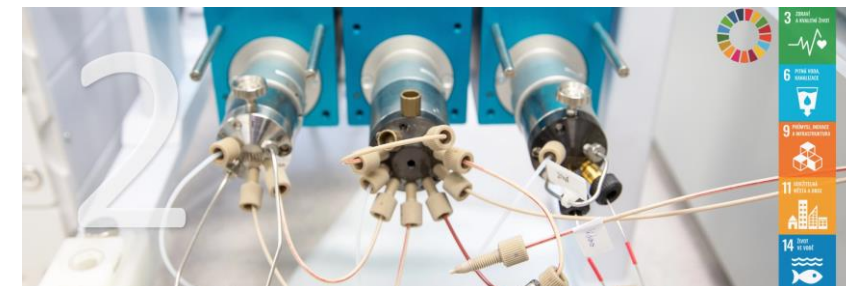


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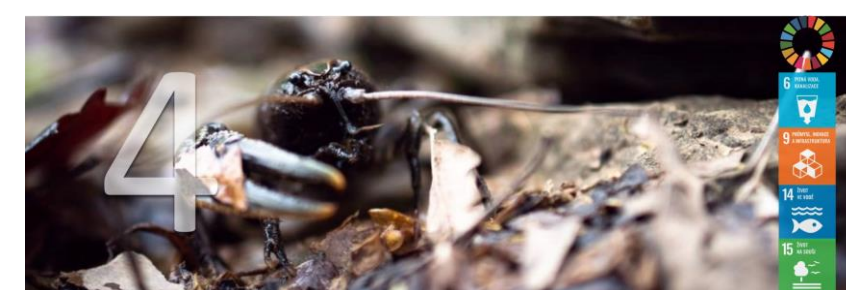
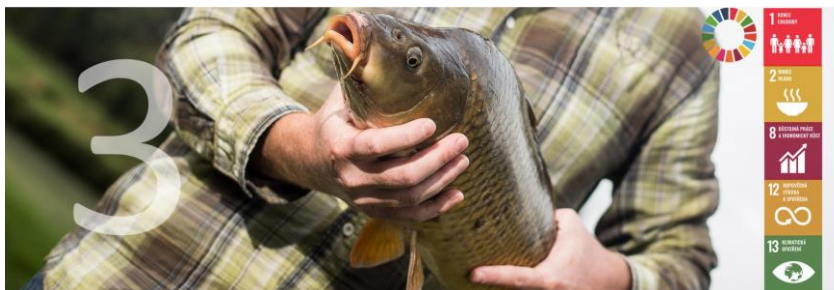
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- **RP1: Reproductive and Genetic Procedures for Fish Biodiversity Conservation and Aquaculture**
 - Focuses on fish reproduction and genetics to conserve biodiversity and support aquaculture
- **RP2: "New" Pollutants in the Environment and Their Effect on Freshwater Ecosystems**
 - Investigates the impact of emerging pollutants on freshwater ecosystems and seeks ways to mitigate these effects
- **RP3: Sustainable Aquaculture with Responsible Water and Nutrient Management**
 - Aims to develop sustainable aquaculture practices that efficiently use water and nutrients.
- **RP4: Freshwater Ecosystems in the Era of Global Change**
 - Studies freshwater ecosystems and their responses to global changes, such as climate change





Data types

Tabular Data:

- **Formats:** .xls, .xlsx, .csv
- **Usage:** Measurement and weighing of fish, growth and mortality data, feeding experiments, toxicological studies, growth curves, biochemical data.

Video Files:

- **Formats:** .avi, .mp4, .mkv
- **Usage:** studies on fish and crayfish behavior, videos of cell behavior, fish appearance and species recognition.

Image Files:

- **Formats:** .tiff, .jpg, .png
- **Usage:** Microscopy images, shape analysis and species recognition.



Data types

Specific Scientific Formats

- Formats: **.fsa** (DNA sequencing), **.fcs** (cytometry), **.fastq** (raw sequence reads), **.bw** (BigWig, methylation visualization), **.bed** (DNA annotations), **.bam** (aligned sequence data)
- Usage: DNA sequencing data and cytometric measurements.

Other Formats:

- Formats: **.txt** (text data), **.pdf** (documents and reports)



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CENAKVA

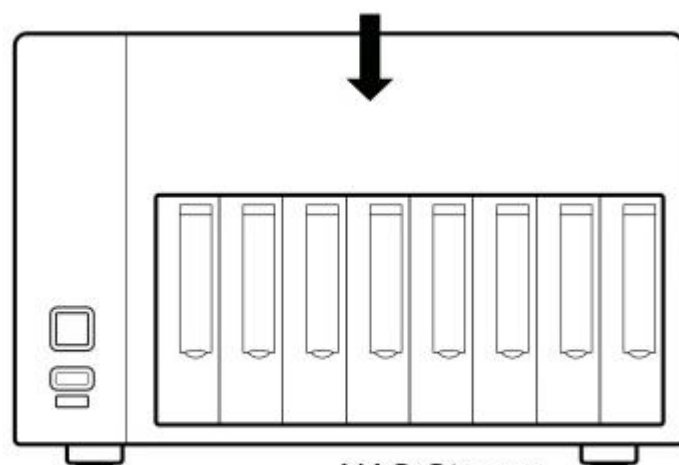
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Data management

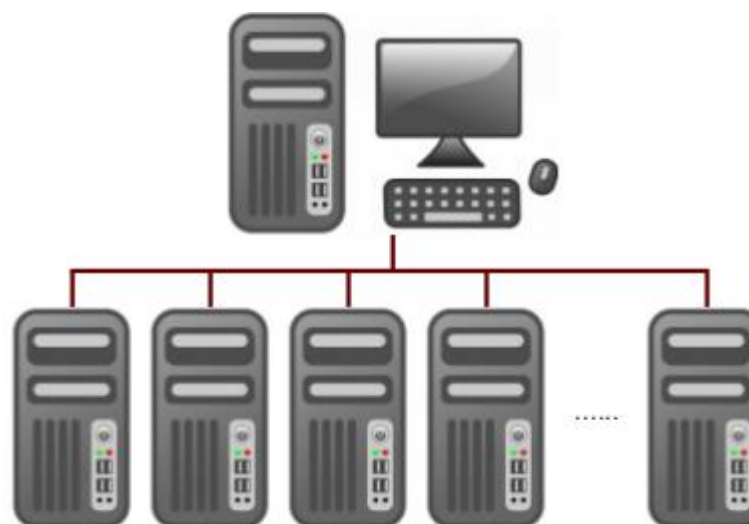


OneDrive

ownCloud



NAS Storage



Computer cluster

ELN

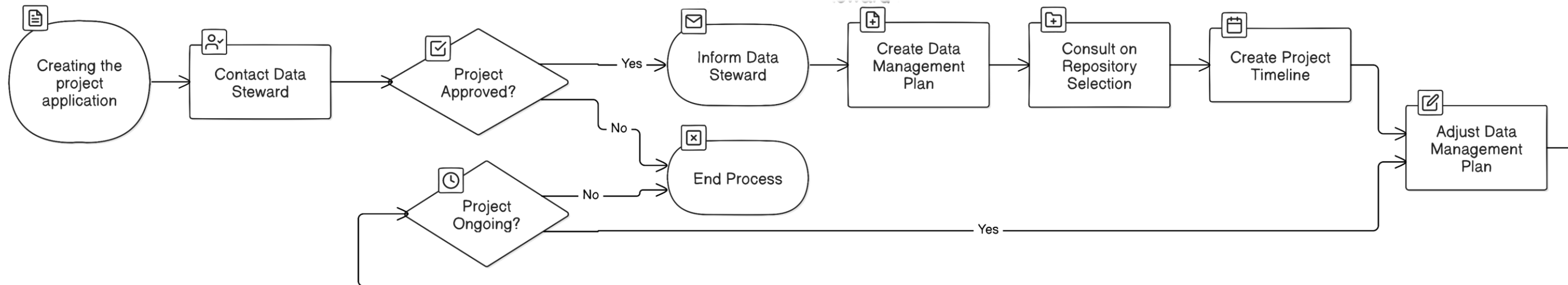


- BioWes
- eLabFTW (Experimental)



Data management

- Established Data Stewards position





Open Science Communication

- 1. Data steward:** personal communication in all laboratories
- 2. Lectures and Training:** lectures and training sessions where researchers can learn about the principles and benefits of open science.
- 3. Regular informing about new developments in open science:** Researchers regularly receive important information about open science through e-mails, which include updates, new policies, and opportunities for involvement.
- 4. Information on a Specialized Page at USB and FFPW**
- 5. Participation in International Events, such as OAW (Open Access Week):** Researchers can participate in international events like Open Access Week, where the latest trends and challenges in open science are discussed, and best practices are shared.



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Repositories

General data repositories:

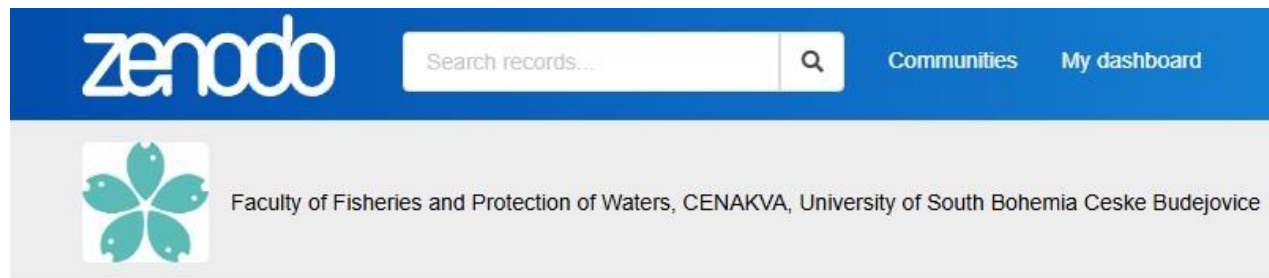
- Zenodo
- Mendeley Data
- Dryad

Subject-specific data repositories:

- NCBI
 - Provides access to biomedical and genomic information.

Other Subject-specific storage

- www.iaffd.com
- www.feedipedia.org
 - data from the fish feeding experiments.





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Open Access

Open Access - Open Data:

- CENAKVA provides open access to various datasets.
- List of FAIR datasets is on CENAKVA website. (<https://www.frov.jcu.cz/en/faculty/faculty-parts/south-bohemian-research-centre-for-aquaculture-and-biodiversity-of-hydrocenoses-cenakva/large-research-infrastructure-cenakva#7>)

Open Access - Infrastructure:

- CENAKVA operates as an open infrastructure, providing access to its capacity for external researchers.
- Researchers can use CENAKVA's facilities and expertise for free, on the basis of an approved project.





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EOSC - CZ

Working groups:

- Environmental Sciences
- Bio/Health/Food

Institutional repository

- based on Dspace
- limited capacity
- **under construction**



Potential cooperation with MUNI on repository for toxicological data



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ESFRI



DANUBIUS-RI

Danubius RI: International Centre for Advanced Studies on River-Sea Systems. CENAKVA is a leading partner in this research infrastructure.



eLTER RI: Integrated European Long-Term Ecosystem Research Infrastructure. CENAKVA is part of this infrastructure through the national network LTER-CZ.



GenoPHEnix: European research infrastructure focused on studying interactions between genome and phenome for terrestrial and aquatic agricultural systems. CENAKVA is the main partner in the project proposal, which has already been submitted.

Other international project consortia





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Thank you for your attention