Innovative Ecological Assessment and Water Management Strategy for the Protection of Ecosystem Services in Alpine Lakes and Rivers

Eco-AlpsWater

www.alpine-space.eu/eco-alpswater

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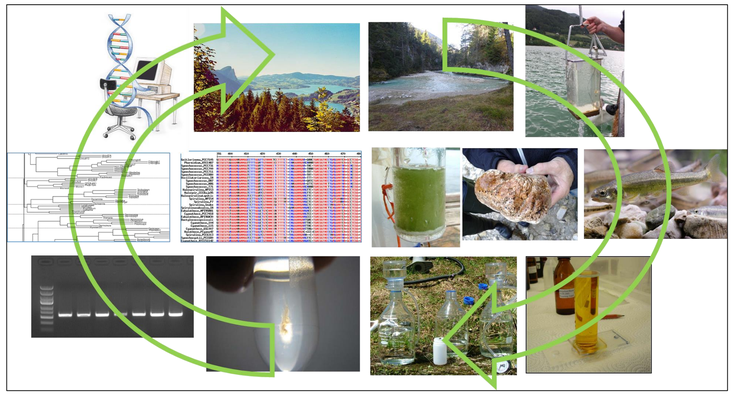
In a nutshell

The aim is to improve the traditional monitoring approaches (Water Framework Directive 2000/60/EC-EU WFD and, in Switzerland, the Water Protection Ordinance-WPO) by using advanced DNA sequencing techniques such as metabarcoding. The new approach will make use of Next Generation Sequencing (NGS) to analyze environmental DNA in waterbodies (which allow rapid species identification at low costs, from fish to bacteria), and smart technologies (automation in data processing, data storage, information retrieval). The project runs from April 2018 to April 2021.

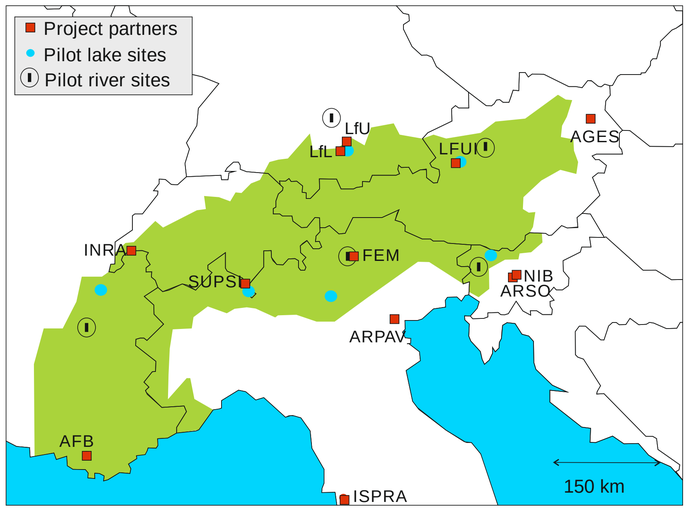


Metabarcoding Workflow

Main output

- Metabarcoding Innovative methods
- Policy on data storage and handling
- Harmonization of EU-WFD and CH-WPO approach
- Implementation of traditional & NGS monitoring
- Improved transnational cooperation structures
- Strategic elements and policy recommendation

Project structure and pilot sites



Lakes: Starnberg, Mondsee, Bled, Garda, Lugano, Bourget
Rivers: Wertach, Steyr, Soca, Adige, Drac/Drome

WP1: Innovative monitoring approaches

Develop and test metabarcoding protocols

WP2: Harmonization of approaches for water quality assessment

Identify gaps in the present monitoring approaches

WP3: Local pilot implementation

Implement novel metabarcoding techniques in water bodies

WP4: Next generation biomonitoring and Policy

Improve management of water resources and ecosystem services using the new, innovative approaches

12 partners and 37 observers from 6 countries

5 research institutions:

- FEM, Fondazione Edmund Mach (IT), Lead partner
- LFUI, Leopold Franzens University Innsbruck (AT)
- NIB, National Institute of Biology (Sl)
- INRA, National Institute for Agricultural Research (FR)
- SUPSI, University of Applied Sciences and Arts (CH)

7 national/regional public authorities:

- ARPAV, Regional Agency for Environmental Protection and Prevention of Veneto (IT)
- ARSO, Slovenian Environment Agency (SI)
- LfL, Bavarian State Research Center for Agriculture, (DE)
- AGES, Austrian Agency for Health and Food Safety (AT)
- ISPRA, Italian National Institute for Environmental Protection and Research (IT)
- LfU, Bavarian Environment Agency (DE)
- AFB, The French Agency for Biodiversity (FR)

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