

Eco-AlpsWater

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

Priority 3: Liveable Alpine Space. SO3.2 - Enhance the protection, the
conservation and the ecological connectivity of Alpine Space

Deliverable D.T2.3.1

Report: Decision maker meeting for mutual discussion and identification of innovative protocols

Project Eco-AlpsWater

Work Package WPT2

Activity A.T2.3

Deliverable D.T2.3.1

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Abstract

The output of the Deliverable D.T2.3.1 consists of a report of stakeholders feedback on the harmonization of approaches in the Alpine region and the inclusion of innovative methods based on eDNA analyses and NGS technologies in the next monitoring approaches.

The adoption of common transnational approaches for water quality monitoring in the Alpine region is one of the main aim of the EAW project. In this area, most of the countries adopt national/regional methods compliant to the WFD. Even though, many differences among countries have been pointed out in the survey AT2.1 . Moreover, Switzerland, as a non-EU country, applies methods based on the Swiss Water Protection Ordinance (WPO 1998). This wide survey in the Alpine region highlighted the weakness and potential implementation of approaches intra and inter countries, in the context of previous intercalibration processes (CIRCA, Alpine GIG 2014). The EAW project evaluated how and where innovative approaches based on eDNA and NGS technologies could bridge the gaps and weakness of traditional methods, to develop a next generation monitoring approach shared across the countries in the Alpine space. These aspects were discussed with relevant and knowledge stakeholders during regional meetings in each country.

The possible inclusion of innovative methods based on eDNA analyses and NGS technologies in the next monitoring approaches for the assessment of biodiversity and ecological status of waterbodies was positively embraced by Stakeholders. They identified potential advantages and opportunities:

- More information obtained with one sampling
- Increase of the spatio-temporal coverage in monitoring
- Possibility of sampling hard to reach locations and study complex environments
- Investigation of a larger part of biodiversity, including biological groups whose taxonomy is complex and time-consuming, and taxa which are not monitored yet, thus to obtain a more taxonomically complete inventory and answer new ecological questions
- Detection of non-native species and native (e.g. rare)
- Detection of pathogens and vectors
- Less invasiveness (e.g. for fish and in vulnerable ecosystems)
- Time and cost reduction (possible analysis of numerous samples)

All these favourable aspects support the use of eDNA approach as a complementary tool to existing methods for ecological status assessment and water management, and as a way to facilitate the harmonization EU and CH approaches. To reach this goal, national strategies are required, including a standardization of eDNA approaches, the establishment of exhaustive reference databases, and the acquisition of new competences by environmental agencies in charge of water quality monitoring.