SYNAQUA cross-border synergy for biomonitoring and preservation of aquatic ecosystems

Agnès Bouchez (INRA) & Jan Pawlowski (UNIGE)

Water Framework Directive (WFD) :

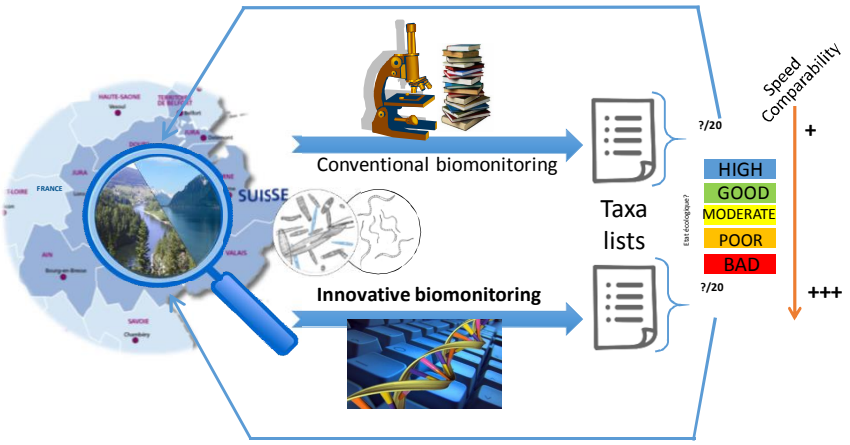
Tools for assessing the ecological status of aquatic environments based on the ecological profiles of species (e.g. diatoms / phytobenthos : IBD, IPS, IBL)

Many other needs for **biodiversity assessment and biomonitoring** through Europe (e.g. ID-CH)

→Taxonomic expertise required to identify species under a microscope !

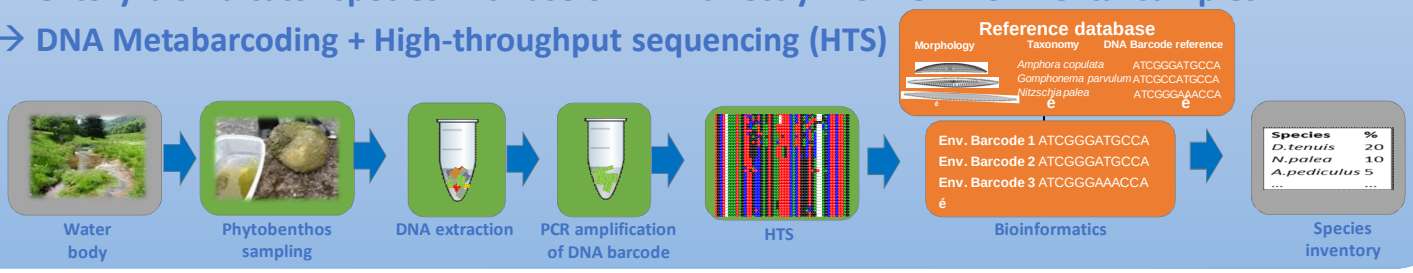
→Thousands of monitoring points in WFD networks for different water bodies !

→New propositions for reliable, higher-throughput biomonitoring?



Inventory bioindicator species with use of DNA directly from environmental samples

→ DNA Metabarcoding + High-throughput sequencing (HTS)

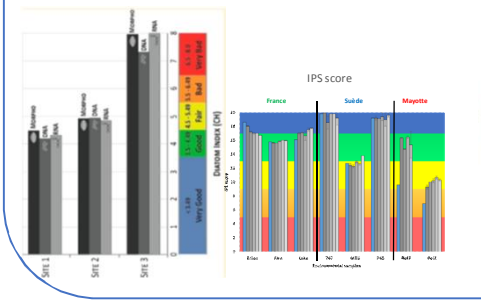


WP1 Environmental bioassessment

An innovative approach successfully tested at small scale :

→ metabarcoding and microscopy assess similar ecological status

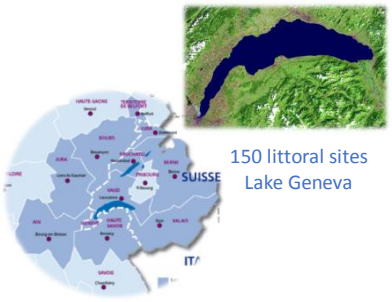
Kermarrec et al 2013, 2014, Visco et al 2015, Vasselon et al 2017



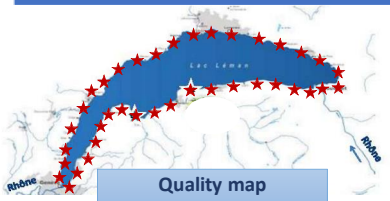
WP2 Development and validation

→To be tested at a larger scale

→Diatoms & oligochaetes



WP4 Preservation / restauration



Quality map
of littoral zones of lake Geneva

Restauration / preservation plan : where ?
Co-construction with local stakeholders

Support for :
- → Establishing a management plan
- → Fund raising for management actions
- → Future biomonitoring of actions

Awareness

School children

General public

WP4 Awareness campaign

Training

Environment managers

Implementation

Stakeholders

SYNAQUA partners : Asters Conservatoire d'espaces naturels Haute-Savoie · République et Canton de Genève · La Maison de la Rivière · oekotoxzentrum centre ecotox · ID-GENE ecodiagnostics · ASCONIT CONSULTANTS · INRA SCIENCE & IMPACT · UNIVERSITÉ DE GENÈVE

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