

# Zero Pollution for air, water and soil

Interreg Europe Policy Learning Platform, 12 January 2023

## *Water quality monitoring with the use of robotics boats*

**Katsouras G., Samios St.**  
Research and Development  
EYDAP SA  
*BIGDATA4RIVERS*



# Good Practice of EYDAP for Region of Attica in GREECE

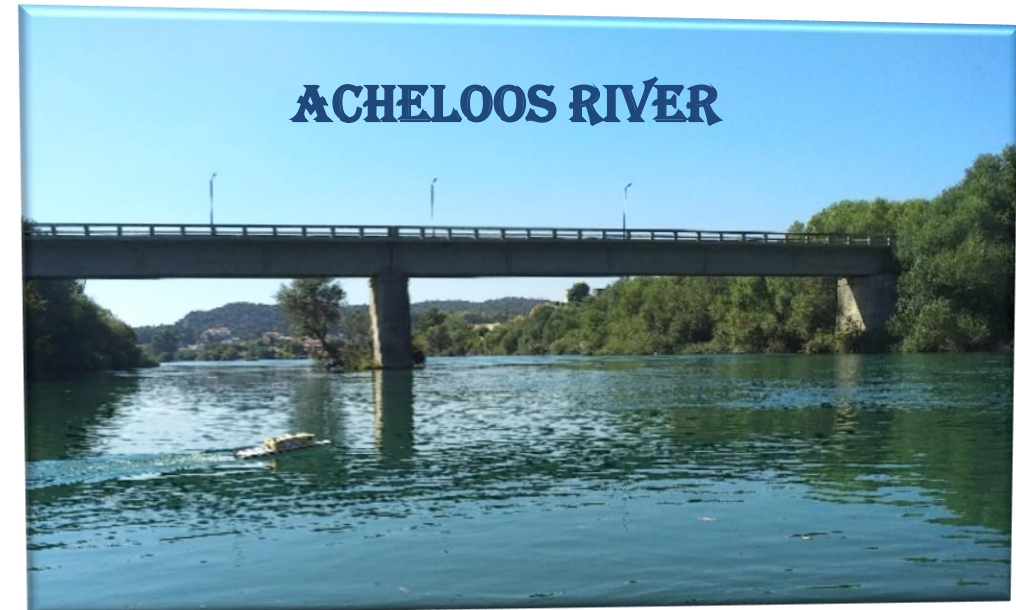


## Problem/challenge and use case in the Athens metropolitan region

- Problem:**
- ⦿ *Not Real time monitoring*
  - ⦿ *Data management focuses on small parts of rivers and lakes*
  - ⦿ *Inadequate water quality data*

### Challenge:

- ⦿ *Improved management on catchment scale*
- ⦿ *Fast & flexible data collection*
- ⦿ *Scanning of larger areas*
- ⦿ *High level of customization*
- ⦿ *Low lab equipment management*



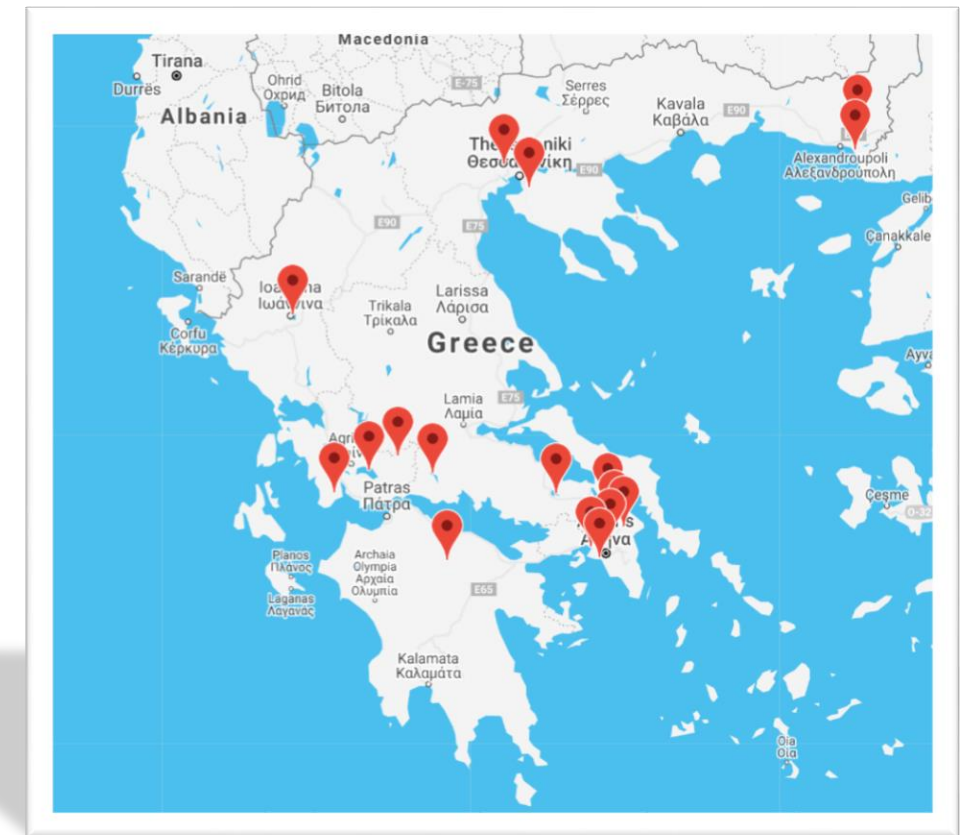
# EYDAP is an experienced operator in Greece



- Over 60 campaigns since 2019 in over 20 catchments in Greece
- **A Unique Value Proposition** to stakeholders concerned with water quality:

**1. Water monitoring with autonomous unmanned surface vehicles (USV)**

**2. Real time monitoring & visualization platforms**



# Unmanned Surface Vehicles (USV) with sensors



## ***Basic set of sensors***

- Chlorophyll -a
- Conductivity
- Dissolved Oxygen
- pH & Temperature



INTCATCH



2020

## ***Innovative sensors and systems***

- ISA (TN, o-PO<sub>4</sub>, NO<sub>3</sub>, TSS)
- Hydrocarbons and Refined-oils
- On-board sampler (4\*500ml)
- On-site systems for the determination of E. Coli, Genomics/ DNA-analysis



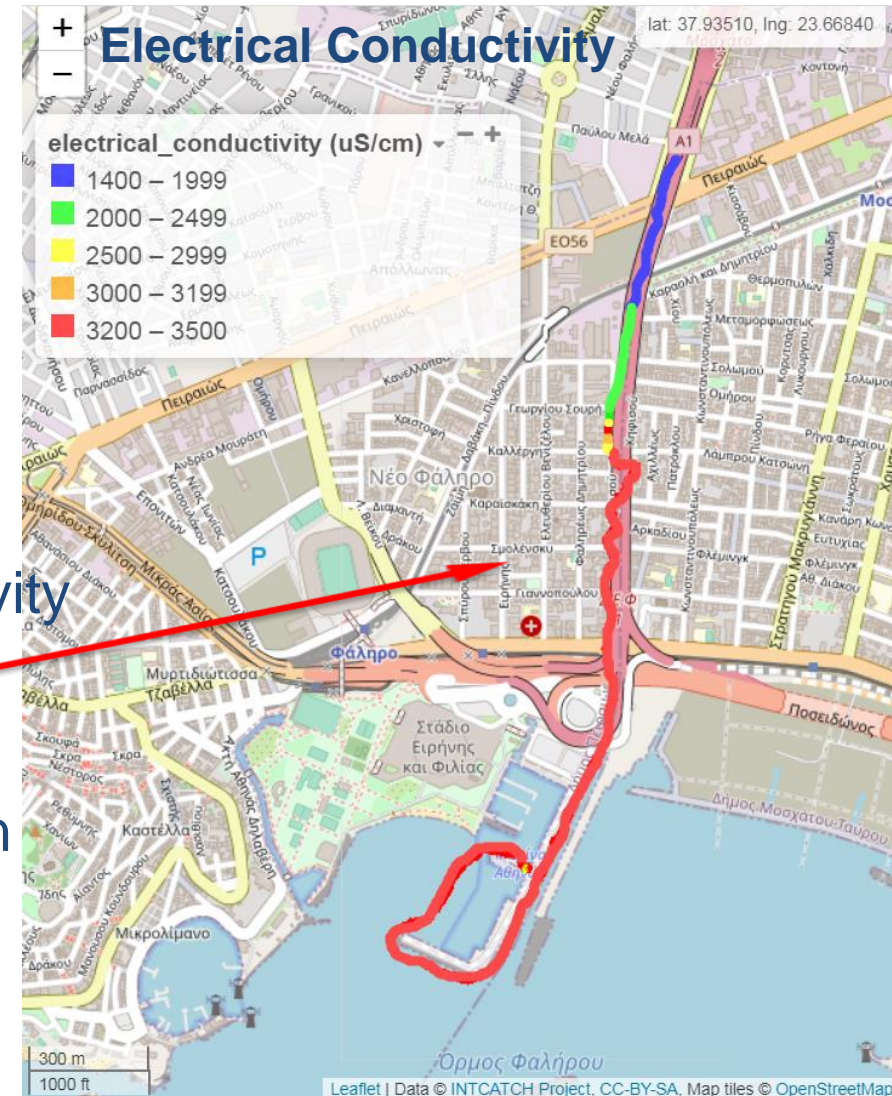
# Monitoring by autonomous boats in Greek Rivers: The case study of Kifissos River



- longest river in Attica Region (Athens)
- Area of river basin: 381 Km<sup>2</sup> Length: 22km  
Estuary in the Phaleron Bay
- Urban pressures, especially downstream of the river (last 8 km along Athens)



- Range 1400 - 3500  $\mu\text{S}/\text{cm}$
- Clear trend of conductivity increasing towards Kifissos estuaries
- Sea waterfront intrusion





# Next steps/sustainability of GOOD PRACTICE

- ④ It achieves a more thorough monitoring campaign *both in space and time* and provides **significantly higher amount of water quality data** without requiring labour-intensive and costly monitoring schemes.
- ④ It allows *monitoring of ecological status* more accurately with **emphasis on phytoplankton growth**.
- ④ It allows the collection of many discrete **samples** and provides with a **representative coverage of the whole catchment** (rivers & lakes) required for chemical classification of a water body.
- ④ *Obtain variations due anthropogenic* (urban, agricultural, industrial etc.) or *natural pressures*.



Request a Quote

[www.interregeurope.eu/bigdata4rivers/](http://www.interregeurope.eu/bigdata4rivers/)

[www.intcatch.eu](http://www.intcatch.eu)

[www.eydap.gr](http://www.eydap.gr)

# Thank you!

## News

**Dr Samios Stelios**  
Head of R&D EYDAP  
samios@eydap.gr



# Interreg Europe



European Union | European Regional Development Fund

## EYDAP SA AND INTCATCH GOOD PRACTICE FOR THE EUROPEAN PROGRAM INTERREG BIGDATA4RIVERS

22 June 2020, Athens, Greece

