

## POSTDOC POSITION ON AQUATIC CARBON IN INLAND WATERS in Bordeaux (France)

A 2-year PostDoc position is available (12 months + 12 months renewable), at Environnements et Paléoenvironnements Océaniques et Continentaux (UMR EPOC, <https://www.epoc.u-bordeaux.fr/>) in Bordeaux (France). Ideal start date is December 2023 with some flexibility to start later.

### Project description:

Shallow inland waters play an essential role in the carbon aquatic cycle. Recently, littoral zones of lakes and ponds have been recognized as major sources of carbon to the atmosphere, as here a variety of dissolved organic compounds stimulate bacterial respiration and thus CO<sub>2</sub> and CH<sub>4</sub> emissions. Respiration is however counterbalanced by the presence of aquatic primary production, which significantly buffers carbon emissions through sequestration and radial oxygen loss; this turns submerged sediments into carbon sinks, whereas air-exposed sediments constitute carbon sources.

Under climate change scenarios and increasing anthropic water withdrawals, the occurrence of prolonged periods of drought, accompanied by boosted evapotranspiration in shallow waters, will significantly increase the surface of air-exposed sediments within flat areas of lakes. The shift from submerged to air-exposed habitats will potentially induce the loss of submerged vegetation and the increase of carbon emissions. Nevertheless, the final result on the carbon budget could depend on the inherent trophic degree of the aquatic system, with little potential impact on oligo-mesotrophic waters.

### PostDoc assignments:

On a seasonal basis, the post-doc will quantify carbon fluxes at water-air and sediment-air interfaces of large shallow lakes by flux chamber technique; he/she will upscale fluxes to the littoral zones of the whole lake, according to different scenarios of lowering of the water level generated through hydrological modelling on the lake watershed. According to his/her penchant, he/she will participate to the development of a spatial macrophyte distribution model for the prediction of suitable aquatic habitats and to the setup of microcosms for priming effect measurements. The post-doc will be part of a multidisciplinary team (biogeochemistry, hydrogeology, botany, policy making and territory planning) aimed at strengthening environmental policies at the watershed scale.

### Requirements:

- The successful candidate will have a PhD degree in a relevant field and a demonstrable publication record. Researchers with experience in biogeochemistry and limnology are particularly encouraged to apply. Experience with gaschromatography, automatic probes and GIS would be highly beneficial.
- The candidate must be able to manage his/her research project and should have an excellent level of spoken and written English. Also, some knowledge of French language is desirable.
- The candidate must have good organizational skills. Willingness and motivation to occasionally participate to other projects and collaborate in scientific papers related to the same area of expertise is highly desirable.

### How to apply:

For informal enquiries, please contact Cristina Ribaudo ([cristina.ribaudo@ensegid.fr](mailto:cristina.ribaudo@ensegid.fr)) or call +33556846940. To apply, please send a short cover letter and your CV (including the contact information of 2 references) by October 15<sup>th</sup> 2023.



**Project location:** The Vigie-Lacs project is headed by INRAE and focuses on shallow lakes and ponds near the ocean within the French Atlantic Coast. Here, several oligo-mesotrophic aquatic systems develop on sandy substratum and are hotspots for biodiversity.

Bordeaux is an easy-living city and definitely provides an unparalleled living environment for young workers, thanks to its cultural, sporting, artistic and festive offerings.