



MARQUOPOLEAU

DETECTING THE ORIGIN OF COASTAL WATER POLLUTION

More stringent bacteriological norms imposed by new regulations governing bathing and shellfish farming came into force in 2011. These require authorities to possess the tools to manage bathing areas and to produce vulnerability profiles which record and grade potential sources of pollution for fish-farming area waters.

These decision-making tools for water quality managers and project managers should minimise the risk of declassification and closure of sites and the resulting socioeconomic consequences.

The MARQUOPOLEAU project developed and validated microbial and chemical markers for identifying sources of pollution (Microbial Source Tracking) and their human, bovine or porcine origins.

During the project, two sub catchments of the Elorn River were selected - Pen an Traon and Justiçou - to test the effectiveness of these markers over one year and to validate them in the natural environment. The methods were assessed for robustness and consistency using results obtained in partner laboratories during interlaboratory testing.

In response to demands from water quality managers, a 'marker toolkit' is now available for water analysis labs. The list of markers is included in the partner labs' service catalogues.

The tools can be used in bathing, shellfish-farming and catchment area waters to examine different sources of pollution as part of the analysis process, to identify one-off instances of pollution in order to determine their origin and to speed up analysis so that bathing areas can reopen. Examples of economic spinoffs are:

- Reduced costs by avoiding missed sales and the economic and social consequences associated with the closure of beaches and shellfish-farming areas;
- Market prospects for partner labs: Eurofin and Idhesa estimate between 100,000 and 150,000 euros per year in analysis service sales.

The projet has been the subject of 3 international publications and 3 scientific articles. It was also presented at 8 national and international symposiums.

Ifremer took part in an international interlaboratory testing programme for Bacteroidales markers and bacteriophages set up by American labs. This programme validated the project's Bacteroidales markers at international level (see upcoming issue

Partners

Companies

Laboce, Brest [Project Developer]
Eurofins Expertises Environnementales, Maxéville
Eurofins Hydrologie, Ploemeur

Research centers

CNRS Géoscience, Rennes
Ifremer, Brest
IRSTEA, Rennes
Université d'Angers

Local authorities

Agence de l'eau Loire-Bretagne
Agence régionale de Santé
Brest métropole
Syndicat Mixte de l'Elorn

Funders

- Fonds Unique Interministériel
- Conseil régional de Bretagne
- Conseil départemental du Finistère
- Conseil départemental du Morbihan
- Brest métropole

Labelisation

21/11/2008

Overall budget

2 283 K€

of "Water Research").

A user's guide to the markers for water quality managers is being produced at the request of the Loire-Bretagne water agency (Agence de l'eau Loire-Bretagne).

The development of microbial source tracking for use with shellfish is underway as part of the RiskManche project (Interreg IVA) at Ifremer and the CNRS Géosciences research unit in Rennes.