

ECO – LAGUNES:

Environmental management of lagoon areas with aquaculture uses

15 April 2009 – 15 April 2011 – Project leader: Hérault General Council

Oyster spat collection tables,
Bassin d'Arcachon**Context:**

Lagoon areas are environments that are rich in biodiversity and which constitute a major local revenue source.

Classified as a Natura 2000 area, the meadows under study are subject to pressures that can cause them to decline. Among the many causes identified, the proliferation of invasive algae and the onset of anoxic crises occur repeatedly: this can result in a loss of biodiversity, a disturbance in ecological balance, and lost aquaculture productivity.

Communities are often ill-equipped to deal with these pressures and require sustainable solutions.

The aim of this project is therefore to address the environmental issues associated with increases in invasive algae, to remove them from the environment, and to tackle the knock-on effects on biodiversity brought about by their removal.

**Goals:**

The ultimate goal is to demonstrate that by preserving biodiversity, the environmental management of lagoon aquatic environments can ensure the development of sustainable economic activity

A number of medium-term goals have also been set:

- Harmonise tools for monitoring the growth of phanerogam meadows;
- Develop a tool for managing the collection of invasive species in order to encourage the development of the phanerogam meadows, which are emblematic species.
- Demonstrate that the development of phanerogam meadows enables biodiversity to be restored;
- Demonstrate that restoring biodiversity helps maintain an ecological balance, and limits the growth of the toxic micro-phytoplankton *Alexandrium catenella*.



Water weed cutter

Biochemical analysis of
Zostera extractsMeasuring Zostera
photosynthesis activity**Planned Task Groups (TG):**

- **TG1: Project coordination and management.**
- **TG2: Long-term monitoring of the state of health of the meadows at the various test sites.** Tasked with the development of joint methodologies to enable monitoring of the development and state of health of meadows throughout the duration of the project and beyond.
- **TG3: Management and economic impact of invasive species collection.** The goal is to propose a method for organising the collection of invasive algae (creation of a methodology guide for local managers).
- **TG4: Impact of the collection of invasive species on the quality of aquatic environments.** The impact of collection will be studied both at the experimental (mesocosm) and at the lagoon level.
- **TG5: Study of interactions between meadows, macro-algae and the toxic micro-algae *Alexandrium catenella*.** The aim is to identify the substances produced by marine plants and algae that inhibit the growth of the toxic phytoplankton *Alexandrium catenella*.
- **TG6: Project monitoring and evaluation.**
- **TG7: Project publicity, awareness-raising and financing.** Creation of a resource centre for local managers is planned, which could in turn lead to the setting up of a technical support unit.

Expected results:

- development of a simple tool for diagnosing the state of conservation of phanerogam meadows
- contribution to knowledge about interactions between meadows and *Alexandrium*
- Creation of a methodology guide for algae collection, for local managers, etc.

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