Cockles

The common cockle provides important regulating services from water filtration and erosion control to nitrogen and phosphorous removal and potential carbon sequestration.

COCKLES

COCKLES project has been collating evidence and data from the 5 partner countries: Portugal, Spain, France, Ireland and the UK, to demonstrate the substantial role played by the common cockle* in provisioning, regulating as well as providing cultural and supporting services.

*Common cockle is *Cerastoderma edule*

Co-Operation for Restoring CocKle SheLIfisheries and its Ecosystem Services in the Atlantic Area (AA)

Interreg Atlantic Area
European Regional Development Fund

EUROPEAN UNION

Regulating services

Provided by the common cockle

Ecosystem services from harvesting cockles

Nitrogen and phosphorous removal

Both nitrogen and phosphorus are assimilated by cockles for tissue and shell growth.

When cockles are harvested, the nitrogen, phosphorus and carbon in their flesh and shell is removed from the marine system, helping to clean the water.

Potential carbon sequestration

Bivalves sequester carbon in the form of calcium carbonate during shell formation.

However, the biogeochemical processes involved also result in the release of some carbon dioxide into the atmosphere.

Ecosystem services from cockles underwater

Water filtration

Cockles are filter-feeders, consuming small particulate matter suspended in the water such as plankton, plant debris and soil particles. Waste materials are deposited on the seabed.

Healthy and productive cockle beds can filter large volumes of water and improve water quality.

These processes can reduce excess nutrients in coastal water and prevent harmful algal blooms.

Nitrogen in the cockle biodeposits can be transformed through denitrification processes by bacteria (released as unreactive nitrogen gases N_2 or N_2O).

Erosion control

The influence of cockles on sediment dynamics is complex. They can either increase or reduce sediment stability depending on the type of sediment and which microbial organisms are present.