North-western European Seas: How to Restore Damaged Coastal Marine Habitats?

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With the launching of the new Directive on the Marine Strategy, the European Union has completed a whole set of legal tools for attaining a better ecological status of the marine environment. The strategy comes as a complement to existing directives such as the Water Framework Directive, the Habitats Directive or the Bird Directive. The objective of this paper is, firstly, to analyse the benefits brought by the older directives in the management of north-western European seas: the English Channel, the Celtic Sea, the North Sea and the Baltic Sea. All these enclosed or semi-enclosed waters sit on the European coastal shelf and are epi-continental ecosystems. They are subject to various pressures due to human activities and in addition, global warming is affecting coastal habitats. Secondly, the paper will show how these disturbances impinge on goods and services provided by these ecosystems. In particular, it will give examples of how certain estuarine habitats have been damaged by misuse and unwise management.

The main part of the article will be devoted to efforts for restoring water quality in some industrialised

estuaries during the few past decades. It will then compare strategies for the recovery of damaged habitats and the restoration of lost ecological functionalities. Case studies will be taken from the Seine in France, the Mersey and the Humber in England, the Scheldt in Belgium and the Netherlands and the Elbe in Germany. The Kuronian lagoon (Lithuania) will be selected from the Baltic Sea.

Through comparing the various restoration schemes, policies will be assessed. The discussion will then put together the various approaches. Resting on a rigorous scientific approach, the discussion will propose a synthetic approch to restoration. It will consider:

1. Efficient procedures of socio-ecological evaluation
2. A methodology to assess the ecological qua lit y of systems considered
3. Rigorous monitoring programs, resting on a relevant choice of indicators
4. Participation of local communities

in order to define strategies compatible with conservation and sustainable development at the regional and European level.

The conclusion will demonstrate that any intervention on an estuarine ecosystem should be incorporated into a global restoration plan, working on the long-term. An ecological vision on the long- term would mean analyzing the past to predict