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Dredging within the Water Framework Directive A crisis waiting to happen?

The basic concept and objectives of the Water Framework Directive (WFD) are commendable. They seek to define, and then conserve or improve, water quality standards and, thus, aquatic habitats on a river basin scale.

A river basin is more than just a hydrodynamic system, holding and moving water. It is also a water/sediment system. Water and sediment are inextricably linked and finely balanced in a water/sediment continuum. The sediment forms the banks and the base of the water containing system. This same sediment is often picked up, moved by the water and deposited in another part of the system. Most of the sedimentary features of the river basin are, thus, in a form of dynamic equilibrium, where the sediment picked up by the water is roughly equivalent to the sediment placed by the system. Where inequalities in this balance occur, features such as banks, riverbeds and islands are likely to be slowly changing. Natural erosion may be taking place in one place and accretion may be occurring at another. Without this sediment balancing act, many of our greatest European deltas, such as exist in northern Germany, The Netherlands and the Po Valley in Italy, would never have formed.

Dredging is carried out in many river basin systems. In particular, maintenance dredging has been carried out for centuries by man to control the local water/sediment balance in order to maximise its benefit for recreation, aesthetics and economic transportation. The means by which this may be achieved in an environmentally and ecologically friendly manner are now well known and practised by the dredging industry. The Central Dredging Association and the International Association of Dredging Companies have published a series of guides covering this aspect of dredging work and are able to advise conservation authorities and regulators on this subject.

An inevitable effect of carrying out dredging operations is re-suspension of sediment to the surrounding water column. This re-suspension is of a short-term nature and often at a level that is far less severe than sediment re-suspension by natural effects, such as storms, tidal flows and floods. Whereas these latter effects cannot be changed and

must, perforce, be recognised within the implementation of the WFD, the man-made effects are in danger of being outlawed by this same directive. This is perhaps because the WFD is largely aimed at fresh water river basins, but large amounts of dredging for navigation are carried out in the complex estuarial salt/brackish waters, which are also covered by the directive. In effect the WFD recognises the needs and benefits of managing water quality on a river basin scale, but fails to recognise the same requirement for sediment basin management.

Sediment is not a contaminant, but an essential component of the water/sediment continuum that is the essence of the river basin. Materials in suspension, even in very high concentrations, are not pollutants, but typical components of water bodies in estuaries or in coastal zones. If they do become contaminated due to man-made discharges to the environment elsewhere, then a programme of measures has to be provided to enhance quality. If the sediment relationships are not considered properly, inappropriate controls and restrictions may be placed on dredging and associated operations, with possibly dramatic consequences.

A vast amount of work in the management of sediment in the marine environment has been undertaken by those bodies whose concern is the quality of the sea, notably the London and OSPAR Conventions. This work is a crucial component of any serious attempt to manage water quality and sediment on a river basin scale. Now is the time to harness this experience and to work with other impartial organisations, such as CEDA, to develop rational and practical ways of implementing the WFD. If this opportunity is not taken we are at a severe risk of degrading the habitats we wish to enhance and placing a millstone around the necks of those wishing to continue using the rivers and seas for justifiable recreational and commercial purposes.