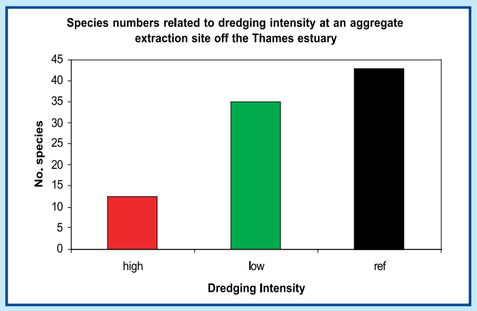
EXAMPLES OF THE OUTCOME OF FIELD EVALUATIONS

CEFAS
The Centre for Environment, Fisheries & Aquaculture Science

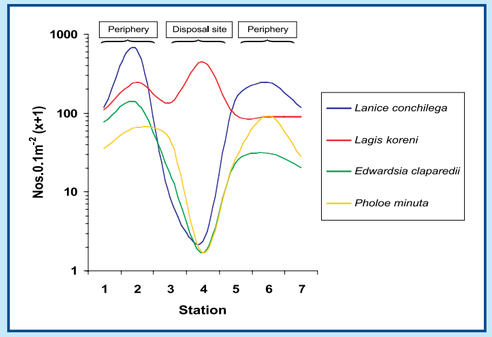
Marine aggregate extraction

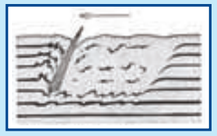
- The photographs are of samples of the epifauna (i.e. animals inhabiting the surface of the seabed) collected from a reference site and areas of high and low dredging intensity at an aggregate extraction site off the Thames Estuary.

- This graph and MDS plot demonstrates that the low dredging intensity (low) and reference sites (ref) are more similar to each other than they are to the high dredging intensity samples (high).

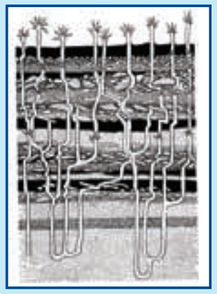


Dredged material relocation





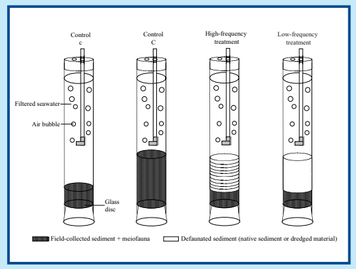
Lagis koreni

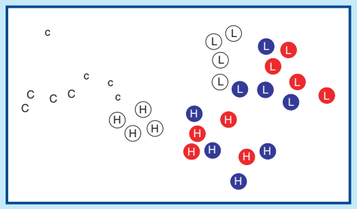


Lanice conchilega

- Accompanying the expected reductions in densities at the disposal site there is evidence of peripheral enhancement of a range of species.
- Also, the trumpet worm *Lagis* is clearly capable of rapid recolonisation of newly deposited material.
- Studies at sea disposal sites under FEPA are now being extended to estuarine "beneficial use" schemes.

Microcosm studies



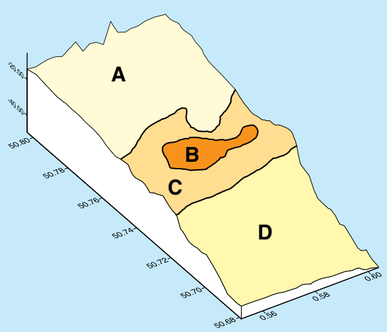


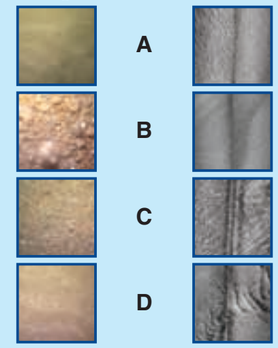
- The response of nematode assemblages was mainly determined by the deposition frequency rather than the type of sediment or the degree of contamination. The deposition of sediment in one large dose at the beginning of the experiment caused more severe changes in assemblage structure than the same quantity deposited in several smaller doses.
- The observed trends demonstrate the potential of small-scale laboratory experiments for testing the quality of contaminated dredged material at the licensing stage, i.e. prior to the issue of a disposal licence.

Broad-scale benthic quality assessment

- The epifauna were sampled by beam trawl in UK coastal and offshore waters, under NMMP auspices.
- The distribution of assemblage types, and their association with environmental variables, was then determined.

Habitat mapping





Biotope	Description	Characteristic Species
A	Shallow water, polychaete dominated fine sand	Polychaete worms such as *Spiophanes bombyx*, *Magelona johnstoni*, *Nephtys cirrosa* and *Aphrodita aculeata.*
B	Disturbed (dredged) sandy gravel	Whelks of the genus *Hinia.*
C	Coarse, undredged gravel with attached epifauna	The soft coral Dead Man's Fingers (*Alcyonium digitatum*). The sea urchin *Psammechinus miliaris*, the sea anemone *Metridium senile*, the hydroid *Sertularia*, the serpulid polychaete *Pomatoceros triqueter* and the encrusting bryozoan *Schizomavella*.
D	Deeper water, coarse sand	The brittle star *Ophiura ophiura*.

Other key studies

- Offshore oil and gas
- Bioremediation of oiled sediments
- Recovery of impacted environments
- Development of "performance indicators"
- Microbial benthic studies

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