

The Marine Pollution Monitoring Management Group (MPMMG), following a review of monitoring carried out in UK estuaries and coastal waters, concluded that there would be considerable merit in the regular sampling of a network of marine monitoring stations. The spatial Phase I (National Monitoring Programme) was implemented between 1993 and 1998 and the second temporal Phase (National Marine Monitoring Programme) was initiated in 1999 and is ongoing.

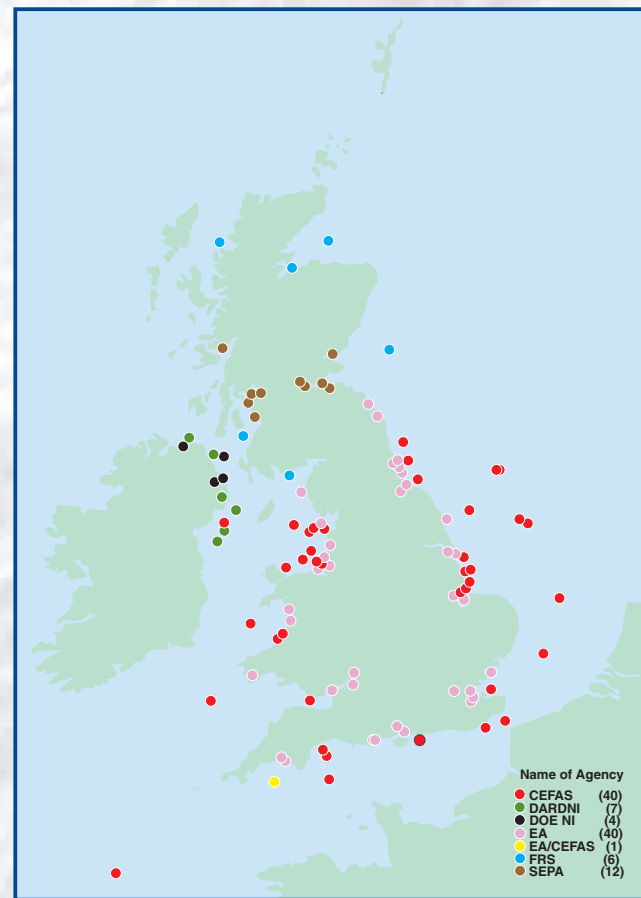


Figure 1: 'Since 1999 (under Phase 2) of the National Marine Monitoring Programme 110 inshore, coastal and offshore stations have been sampled regularly by 6 UK agencies.'

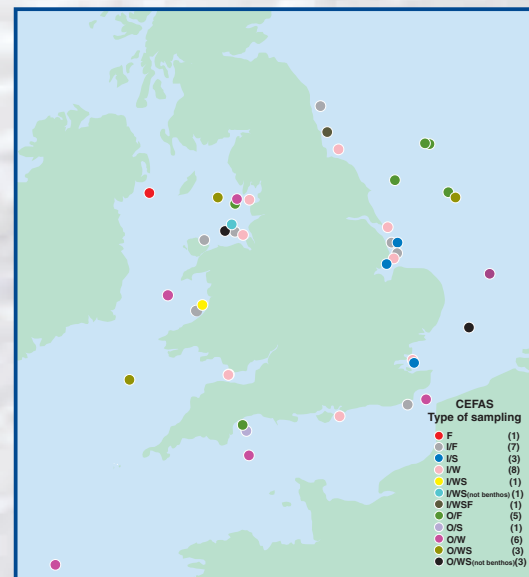


Figure 2: The type of sampling undertaken by CEFAS as part of the UK National Marine Monitoring Programme
(F = Fish, I = Intermediate location, S = Sediment & Benthos, W = Water, O = Offshore location).



The results of the first phase of monitoring (National Monitoring Programme) were reported in 1998. MPMMG (1998). National Monitoring Programme: Survey of the Quality Status of UK Coastal Waters. Aberdeen, pp80, ISBN. 0 9532838 3

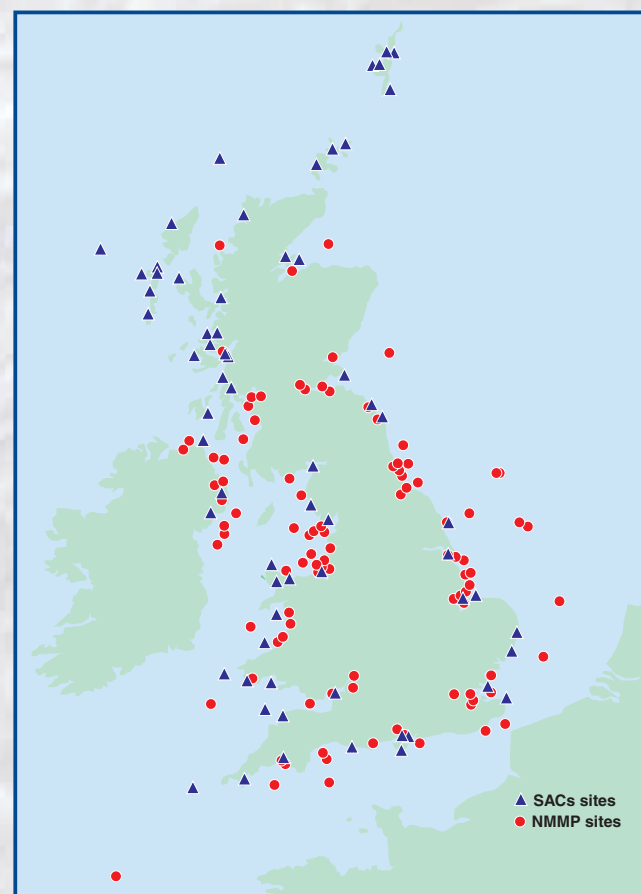


Figure 3: Nature conservation monitoring sites (blue symbols) and NMMP quality status monitoring sites (red symbols). It is apparent that the sectoral monitoring interests (conservation and pollution) cover the entire UK coastal environment.

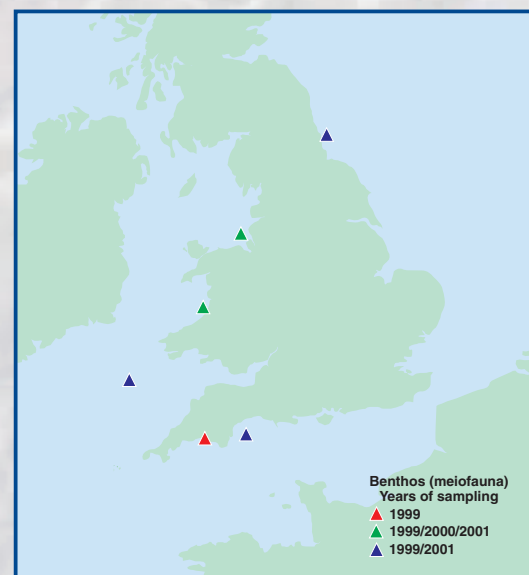


Figure 4: CEFAS NMMP sample stations investigated for meiofauna.

The overall aims of the NMMP are:

- To initiate monitoring programmes to detect, with appropriate accuracy, long-term trends in physical, biological and chemical variables at selected estuarine and coastal sites.
- To support and ensure consistent standards in national and international monitoring programmes for marine environmental quality required by EC Directives² and the OSPAR³ Convention.
- To make recommendations to the MPPMG as to how new monitoring analyses and techniques are best implemented in the UK.
- To co-ordinate, make optimum use of, and gain maximum information from marine monitoring in the UK.
- To provide and maintain a high quality dataset of 'key' chemical and biological determinands.
- To produce reports which disseminate assessments of the quality status of UK coastal waters at regular intervals (present aim every three years).

The first phase of monitoring was executed between 1993 and 1995 with further spatial gaps addressed between 1996 and 1998. The Phase I objectives permitted a comparison of the concentration of contaminants between sites (e.g. spatial distribution) and to highlight areas with high concentrations of contaminants which would merit a temporal trend survey. One of the major achievements of the first phase of the NMMP has been to establish widely accepted quality assurance and control schemes which cover both sample analysis (biological, physical, ecotoxicological and chemical) and field sampling techniques.

Monitoring under phase 2 objectives commenced in 1999 (Fig. 1 & 2), concentrating on temporal trend monitoring in line with the initial objectives and the introduction of new biological effects techniques.

The NMMP seeks to integrate national and international monitoring programmes across the UK agencies within the sector of marine pollution monitoring. However, it does not at present represent all the marine monitoring being implemented by these agencies and others, but it complements existing programmes (Fig. 3). It is noteworthy, that many of the new policy drivers such as the Water Framework Directive (2000/60/EC), Habitats Directive (92/43/EEC) and the five OSPAR strategies require that an integrated approach is taken to manage and protect the marine environment and that quality status is assessed at the ecosystem level. It is recognised that in order to provide the required integrated assessments the NMMP needs to be developed in relation to other monitoring sector activities (Fig. 8).

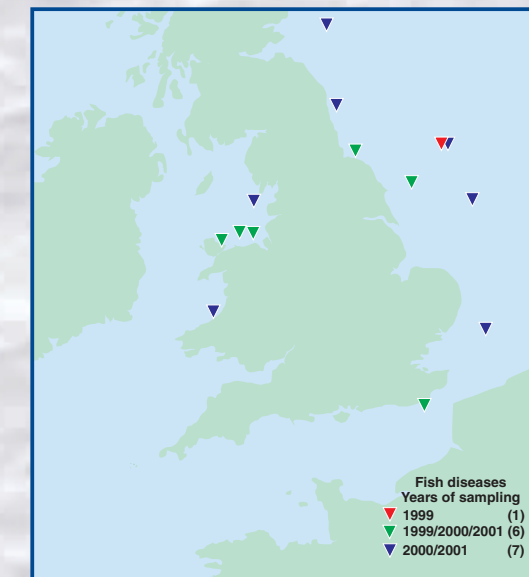


Figure 5: CEFAS NMMP sites trawled for fish disease investigations.

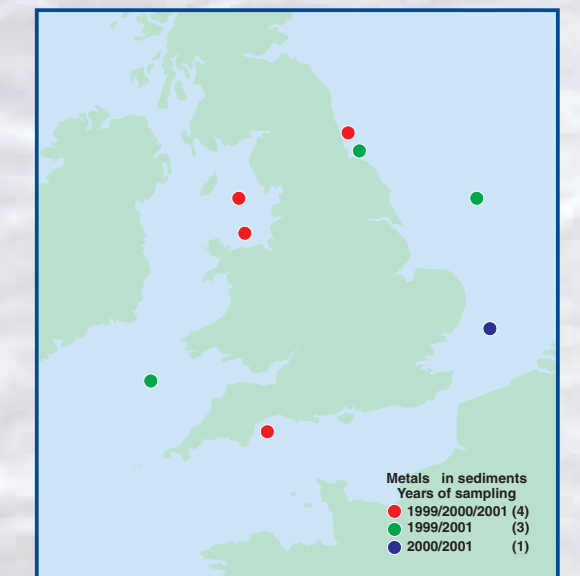


Figure 6: CEFAS NMMP sites sampled for metals in sediments.

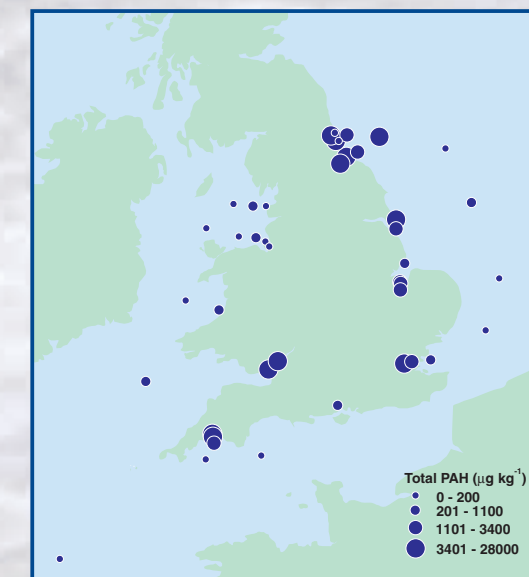
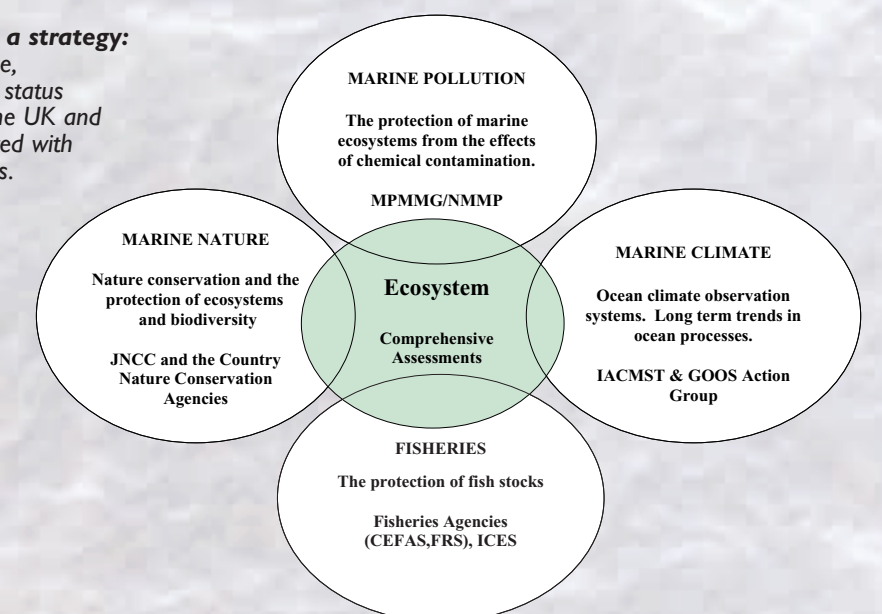


Figure 7: Environment Agency and CEFAS NMMP sites sampled for PAH in sediment showing results of analysis for samples reported in 1998.

Figure 8: Developing a strategy: the principal compliance, operational and quality status monitoring sectors in the UK and the organisations charged with managing their interests.



¹ Centre for Environment, Fisheries and Aquaculture Science (CEFAS), Department of Agriculture and Rural Development Northern Ireland (DARDNI), Department of Environment Northern Ireland (DoENI), Environment Agency (EA), Fisheries Research Services (FRS), Scottish Environment Protection Agency (SEPA).

² Dangerous Substances, Shellfish Growing Waters and Shellfish Hygiene, Nitrates, Habitats and Water Framework Directives are partly fulfilled by the NMMP.

³ The OSPAR Convention requires Contracting Parties to “co-operate in carrying out monitoring programmes”, to develop quality assurance methods, and assessment tools, to “carry out research which is considered necessary to increase knowledge and understanding of the marine environment”, and imposes on the OSPAR Commission duties to “define and implement collaborative monitoring” programmes, to “approve the presentation and interpretation of their results” and to “carry out quality status assessments”. This is delivered by the Joint Assessment Monitoring Programme (JAMP) to which the NMMP contributes and which sets out the basis on which the OSPAR Contracting Parties will work together over the period until 2010.