

Marine Benthic Studies

OF THE SEASHORE AND SEAFLOOR

Remote or *in situ* sampling of the intertidal or subtidal habitats by
AQUAFAC INTERNATIONAL SERVICES LTD.



Marine benthic studies may be required for a number of different reasons e.g. baseline data required for EIAs, characterising surveys of conservation sites, pre and post dredging surveys, marina/pier developments.

AQUAFAC has the capabilities and expertise to plan and design these benthic surveys, to carry out the sampling, to process the samples and identify the fauna to species level for statistical analysis.

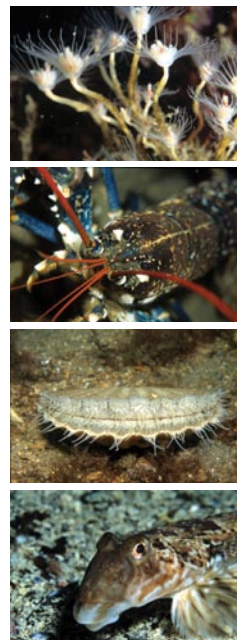
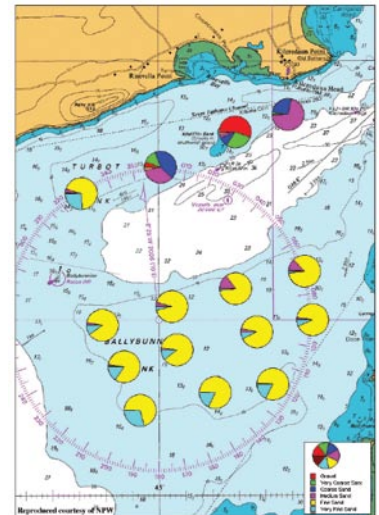
Sampling can be carried out in a number of ways depending on the habitat type. Intertidal and subtidal muds and soft sediments can be sampled using a corer along a transect or a grab sampler at subtidal sites. AQUAFAC has at its disposal both a van Veen and a Day Grab sampler. For harder, more compact sediments a Rallier du Baty dredge sampler can be used. Alternatively, *in situ* diver cores can be taken at the required sampling locations, given suitable water depths.

Following sample collection, all samples are processed and treated in line with current guidelines and methodologies.



SEDIMENT

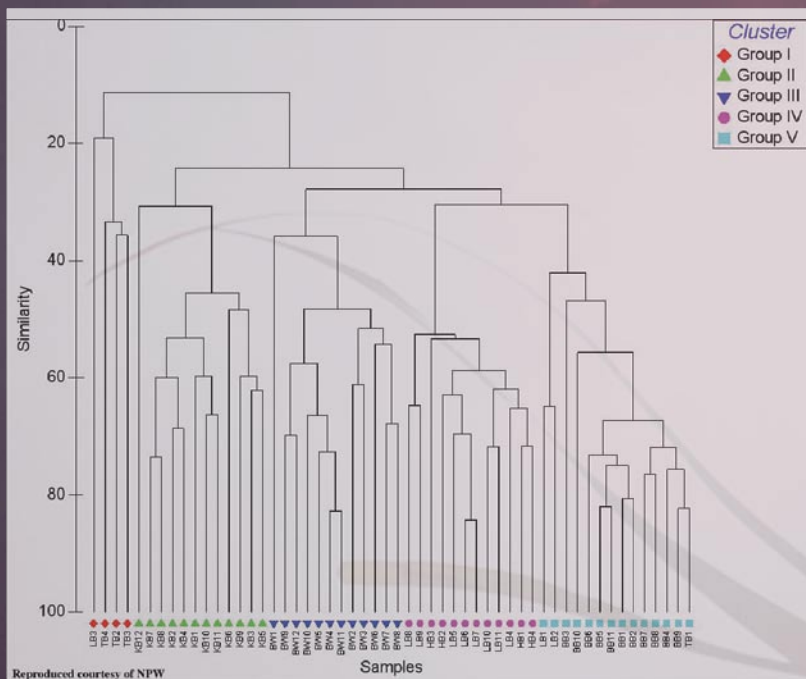
Analysis of sediment samples can include sediment grain size, total organic carbon content, heavy metal levels, PAHs, PCBs, TBT, oil identification and dioxins.



FAUNA

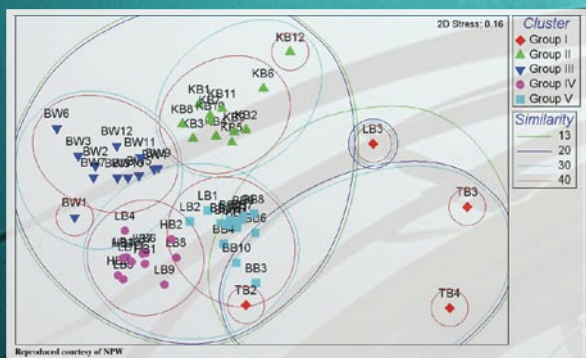
One of AQUAFAC's core fields of expertise is the identification of coastal and shelf marine flora and fauna. Our in-house specialists and consultants cover such diverse groups as sponges, coelenterates, polychaetes, crustaceans, molluscs, echinoderms, bryozoans, tunicates, minor invertebrate phyla, fish and birds. All our specialists are experts in their fields and regularly publish reviews and revisions of their specific taxa in international journals. Following species identification, statistical analysis is carried out using the PRIMER® package.





CLUSTER

PRIMER® consists of a wide range of univariate, graphical and multivariate routines for analysing the species/samples abundance (or biomass) matrices that arise from the results of biological monitoring of environmental impacts and more fundamental studies in community ecology, together with associated physical-chemical data.

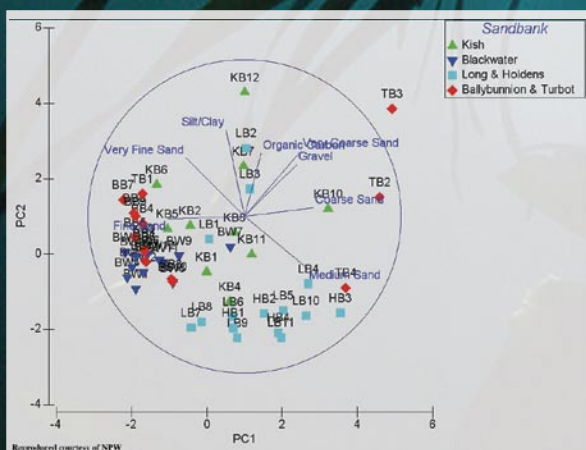


MDS

CLUSTER analysis is used to identify 'natural groupings' of samples based on the faunal assemblages at each station.

MDS plots are another way of graphically representing the samples based on their similarity (or dissimilarity) to each other.

SIMPER analysis allows the identification of the species responsible for the similarities (or dissimilarities) seen between stations.



PCA

PCA plots are similar to MDS plots; however, they are based on environmental parameters not species abundance.

PROJECTS UNDERTAKEN BY AQUAFAC INCLUDE:

- The Shannon Bar
- The Long Bank, Co. Wexford
- Outer Dundalk Bay
- Inner Galway Bay
- North Sea
- Porcupine Basin



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