

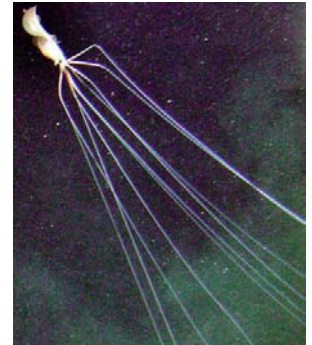


PN1: Longitudinal and latitudinal changes in mesopelagic/bathypelagic nekton fauna (fishes, cephalopods and crustaceans) along the mid-Atlantic Ridge

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Aims:

1. Map the distribution and composition of pelagic nekton over the northern MAR.
2. Compare pelagic nekton abundance and assemblage structure over and away from the MAR.
3. Determine pelagic nekton abundance and assemblage structure as a function of latitude and known biogeographic provinces.



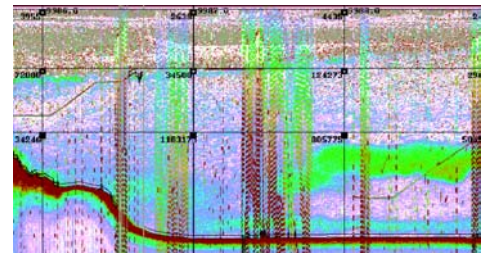
Hypothesis:

1. *Pelagic biomass is enhanced over the MAR relative to surrounding waters.*
2. *Pelagic assemblage structure over the MAR differs from surrounding waters.*
3. *The MAR pelagic assemblage changes along a latitudinal gradient through changes in the distribution of its components.*
4. *The MAR effects the vertical distribution of the pelagic nekton.*

Strategy: Broad-scale surveys, with multiple cross-ridge transects between Iceland and the Azores, and meso-scale and repeat surveys focused on the two southern MAR-ECO sub-areas

Technology:

- **Multiple-opening-closing nets and trawls** (MOCNESS, and large pelagic trawls with three cod-ends.)
- **Hydroacoustics** (multi-frequency systems on ship hull, towed vehicle, acoustic buoy and bottom-mounted buoy).
- **Optics and Bioluminescence profiling** (vertical and underway plankton profilers, OPC, UVP, free-fall landers).
- **Remotely Operated and Autonomous Vehicles** (ROV "Aglantha", AUV "Hugin")
- **Manned submersibles MIR1 and 2.**
- **Molecular genetic analysis**
- **Experiments on artificial fertilization** (life history studies on deep-dwelling fishes)



Deliverables:

- New information on **abundance and distribution patterns** of mid-oceanic pelagic nekton based on a combined effort using state-of-the art acoustics, optics, depth-stratified samplers and direct observation from submersibles.
- Data on species composition, **community structure and diversity**, determined by top taxonomists, using classical techniques and molecular **genetics**.
- **New discoveries and descriptions** of deep-living fish, cephalopods and crustaceans.
- **Papers** published in high-ranking science journals, and **popular presentations** raising the public awareness of open ocean animals and their ecology (website, journals, press, books, exhibitions, school network)

Schedule: Preparation of field work: 2002-2003, Sampling and observation at sea: 2003-2005, Analysis and dissemination: 2005-2008.

Commitments: Labour and travel costs.

Additional needs: Travel cost, data analysis, PN1 post doctoral fellowship, Russian involvement

Proposals accepted: EU 5th Framework Programme, OASIS Project (Portugese contribution)

Proposals submitted: UK Natural Environment Research Council (Prof. Priede), US NOAA OEI (MIR-cruise and Bear Seamount cruise, M. Vecchione), Kongsberg Maritime Ltd, Norway (OR.Godø).

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