

NOTIFICATION OF PROPOSED RESEARCH CRUISE**Part A: GENERAL**

1. **Name of research ship:** RV Pelagia
2. **Cruise dates:** 19 June - 7 July 2006.
- 3a. **Operating authority:** Royal Netherlands Institute for Sea Research (NIOZ)
Telephone: (+31) (0)222-369300
Telefax: (+31) (0)222-319674
- 3b. **Operating agent:** Netherlands Institute for Sea Research (NIOZ)
Telephone: (+31) (0)222-369300
Telefax: (+31) (0)222-319674
4. **Owner:** Royal Netherlands Institute for Sea Research (NIOZ)
5. **Particulars of ship:**

name:	Pelagia
nationality:	Dutch
overall length:	66.00 meters
maximum draught:	4.00 meters
nett tonnage:	1553 NRT
propulsion:	2 diesel electric Elliott White Gill Bow Truster
call sign:	PGRQ
6. **Crew:**

name of master:	J. Ellen
number of crew:	10
7. **Chief scientist:**

name:	G.C.A. Duineveld
addresses:	Royal Netherlands Institute for Sea Research P.O. Box 59 1790 AB Den Burg
telephone:	(+31) (0)222-369300/
telefax:	(+31) (0)222-319674
e-mail address:	duin@nioz.nl

**8. Geographical area in which the ship will operate:
(with reference in latitude and longitude)**

Rockall Bank and Hatton Bank, 12°00 W to 21°00 W, and 54°00 N to 60°00 N
Mingulay Reef, 6°00 W to 8°00 W, and 56°30 N to 58°30 N

9. Brief description of purpose of cruise:

Biological research on the cold-water coral community. This research forms part of the international HERMES project funded by the European Community

10. Names and dates of intended ports of call:

Galway (Ireland), 19 June 2006
Oban (Scotland), 7 July 2006

11. Any special logistic requirements at ports of call:

No special requirements

Part B: DETAIL

1. Name of research ship: RV Pelagia

2. Cruise dates: 19 June - 7 July 2006.

3. Purpose of research and general operational methods:

Biological research on the cold-water coral community. This research forms part of the international HERMES project. HERMES is a so-called Integrated Project funded by the EU. Its objective is a comparative study on functioning of biodiversity hotspots along the European continental margin. Cold coral ecosystems form one of the target habitats of HERMES. In the workpackage dealing with cold corals, the following aspect will be studied: 1) supply of C, N and the fate of these compounds using stable isotopes; 2) biodiversity of the community in relation to the food web; 3) settling rates and conditions of corals and associated organisms. In this study we will cooperate with international partners in HERMES and national partners in BIOSYS. Data will be collected by deploying bottomlanders. Biological samples will be taken by boxcorer, dredge, Rosette-sampler, waterbox and waterpumps.

HERMES aims to develop a better understanding of marine biodiversity and ecosystem functioning in Europe's deep waters by integrating biodiversity expertise (including microbial ecologists, taxonomists, systematicists, geneticists) with that of geologists, sedimentologists, physical oceanographers and biogeochemists, so that generic principles of the relationships between biodiversity and ecosystem functioning can be resolved. In this programme, the role and contribution that a diverse suite of deep-sea ecosystem "hotspots" provide in creating the heterogeneity and biodiversity richness of Europe's deep ocean margins will be established.

The particular aim of the Workpackage 'Coral Reef and Carbonate Mound Systems' is to understand the structure, functioning and dynamics of deep-water coral ecosystems under different trophic regimes and under different climatic settings. To investigate the change of biodiversity which affected deep-water coral ecosystems during the last glacial-interglacial cycle and to forecast how the ecosystem will react to future environmental change. To study the links between deep-water circulation patterns and the likely geosphere-biosphere coupling of deep-water coral ecosystems in hydrocarbon provinces. The overall aim is to analyse and minimise the negative impacts of human activities on deep-water coral ecosystems through provision of mitigation options, risk assessments and recommendations for management and conservation.

Specific tasks of NIOZ partner (Duineveld/Lavaleye/ Bergman) in cooperation with HERMES partners:

- Assess species variety in modern coral ecosystems thriving under contrasting trophic regimes and compare with environmental conditions at the last glacial maximum [taxonomy and systematics, biodiversity indexing].
- Analyse food and nutrient utilisation and build a food-web model for deep-water coral ecosystems in conjunction with WP 7 [particle flux, nitrogen & carbon isotopy, lipids, C/N analysis, modelling].

- Decipher species relationships such as symbiosis, parasitism and predator-prey interactions from microbial to vertebrate scales [analysing the endolithic (bioerosion), fouling macrofauna and microbial community interactions, aquaria experiments].
- Output: Deep-water coral system model along a trophic gradient. Time frame April 2005-April 2009.

4. Attach chart showing (on an appropriate scale) the geographical area of the intended work, positions of intended stations/hydrographic sections:

Area 1 (Rockall and Hatton Bank) will be the main research area. Area 2 (Mingulay Reef) will only be researched if time permits.

Proposed research areas R.V. Palagia
19 June - 7 July 2006



5a. Type of samples required: Water-samples
Bottom-fauna samples

5b. Methods by which samples will be obtained (including dredge/core/drill techniques):

Rosette-sampler, Waterbox and Waterpump for watersamples.
Boxcore and dredge for bottomfauna (benthos) samples

6. Details of moored equipment:

Up to three benthic landers (about 3m high) will be deployed between 100-1500m depth at the seabottom. These landers will record currents, particles in the water, pigments, particle flux and temperature. Besides it will have a settlement experiment monitored by video camera's. Intension is to use the landers for short (few days) as well as long (max. one year) deployments.

7. Explosives :

No explosives.

8. Detail and reference of:

a. Any relevant previous/future cruises:

We participated in the Moundforce 2004 expedition with the RV Pelagia in the same area (Chief Scientist H.de Haas, NIOZ). The first HERMES cruise with the RV Pelagia was carried out at Rockall Bank and Porcupine Bank from 21 June - 21 July 2005.

b. Any previous published research data relating to the proposed cruise:
(Attach separate sheet if necessary)

Duyf, F.C.van, G.C.A. Duineveld and others, 2005. Biodiversity, ecosystem functioning and food web complexity of deep water coral reefs in the NE Atlantic (Rockall Bank and Porcupine Bank). - BIOSYS-HERMES 2005 Cruise Report, NIOZ, Texel. pp. 1-31, Appendix I-VII.

9. Names and addresses of scientists of the coastal state in whose waters the proposed cruise takes place with whom previous contact has been made:

Dr. A. Grehan, Martin Ryan Marine Science Institute, National University of Ireland, Galway, Ireland.

Dr. M.Roberts, Dunstaffage Marine Laboratory, Scottish Association for Marine Science, Oban, Scotland.

10. State:

a. Whether visits to the ship in port by scientist of the coastal state concerned will be acceptable:

Yes

b. Whether it will be acceptable to carry on board an observer from the coastal state for any part of the cruise and dates and ports of embarkation/-disembarkation:

Yes.

c. When research data from intended cruise is likely to be made available to the coastal state and if so, by what means:

The data will be made available through a scientific publication.

UNITED KINGDOM

SCIENTIFIC EQUIPMENT

11. Complete the following table - include a separate copy for each coastal state (indicate "Yes" or "No" if applicable)

Marine scientific equipment used	water depth (m)	fisheries research	distance of research to coast in nautical miles			
			< 3	3-12	12-50	50-200
<u>For Rockall Bank</u>						
Rosette sampler	0-1500	no	no	no	no	yes
Waterbox	0-1500	no	no	no	no	yes
SAPS (waterpump)	0-1500	no	no	no	no	yes
Boxcorer	400-1500	no	no	no	no	yes
Dredge	400-1500	no	no	no	no	yes
Bottom-lander	400-1500	no	no	no	no	yes
<u>For Mingulay Reef</u>						
Rosette sampler	0-400	no	yes	yes	yes	yes
Waterbox	0-400	no	yes	yes	yes	yes
SAPS (waterpump)	0-400	no	yes	yes	yes	yes
Boxcorer	100-400	no	yes	yes	yes	yes
Dredge	100-400	no	yes	yes	yes	yes
Bottom-lander	100-400	no	yes	yes	yes	yes

List of intended sampling stations during Pelagia cruise

The position of stations will be discussed during the annual meeting of the HERMES project in April 2006 with the other partners of HERMES.

References

None