

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

1. Name of research ship: RV Pelagia

2. Cruise dates: 14/3/06 – 4/4/06.

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 Elliot White Gill
Bow Thruster
call sign: PGRQ

6. Crew: name of master: J. Ellen
number of crew: 10

7. Chief scientist: name: Dr J. Nicholls
addresses: School of Biological Sciences,
Queen Mary, University of London,
Mile End Road,
Mile End,
London
E1 4NS
United Kingdom
telephone: (+44) (0)207882-3640
telefax: (+31) (0)207882-0973
e-mail address: j.c.nicholls@qmul.ac.uk

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

Atlantic shelf break (48°N, 11°W), through the south western approaches, St Georges Channel and into western Irish Sea (54°N, 5°W)

9. Brief description of purpose of cruise:

To research the occurrence and regulation of anaerobic ammonium oxidation in sediments with varying organic carbon contents and reactivities.

10. Names and dates of intended ports of call:

None

11. Any special logistic requirements at ports of call:

N/A

Part B: DETAIL

1. Name of research ship: RV Pelagia

2. Cruise dates: 14/3/06 – 4/4/06.

3. Purpose of research and general operational methods:

To research the occurrence and regulation of anaerobic ammonium oxidation in sediments with varying organic carbon contents and reactivities. This will involve using a NIOZ box corer to collect sediment from depth and a CTD rosette to collect overlying water for incubations.

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

An approximate cruise track is attached.

5a. Type of samples required:

Sediment and water.

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

NIOZ box coring for sediment samples

CTD for water samples

6. Details of moored equipment:

N/A

7. Explosives:

No explosives.

8. Detail and reference of:**a. Any relevant previous/future cruises:**

Cruises were held in March/April (RV Pelagia) and September (RRS Charles Darwin) 2005 in the same area

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

Trimmer, M., R. J. Gowen, B. M. Stewart, and D. B. Nedwell. 1999. The spring bloom and its impact on benthic mineralisation rates in western Irish Sea sediments. *Mar. Ecol. Prog. Ser.* 185:37-46.

Trimmer, M., D. B. Nedwell, D. B. Sivyer, and S. J. Malcolm. 2000. Seasonal benthic organic matter mineralisation measured by oxygen uptake and denitrification along a transect of the inner and outer River Thames estuary, UK. *Mar. Ecol. Prog. Ser.* 197:103-119.

Trimmer, M., J.C. Nicholls, B. Deflandre. 2003. Anaerobic ammonium oxidation measured in sediments along the Thames Estuary, United Kingdom. *Appl. Environ. Microbiol.* 69:6447-6454.

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:**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.

COASTAL STATE: 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
Box core + CTD	<100	No			Yes	
Box core + CTD	100	No				Yes

List of intended sampling stations during Pelagia cruise

(Positions and depths of stations are approximate)

- Station 1 – Shelf break, 11°W 48°N, depth = 1000m, >200 nautical miles from coast.
 Station 2 – Shelf break, 10°W 48.5°N, depth = 500m, >200 nautical miles from coast.
 Station 3 – Shelf break, 10°W 48.6°N, depth = 200m, >200 nautical miles from coast.
 Station 4 – Shelf, 6°W 51°N, depth = 100m, 50-200 nautical miles from UK and Ireland coast.
 Station 5 – St Georges channel approaches, 8°W 50°N, depth = 100m, 50-200 nautical miles from UK and Ireland coast.
 Station 6 – Irish Sea gyre, 4.5°W 53.5°N, depth = <100m, 12-50 nautical miles from UK and Ireland coast.

References

- Dalsgaard, T., and B. Thamdrup. 2002. Factors controlling anaerobic ammonium oxidation with nitrite in marine sediments. *Appl. Environ. Microbiol.* 68:3802-3808.
- Herbert, R. A. and D. B. Nedwell. 1990. Role of environmental factors in regulating nitrate respiration in intertidal sediments, p. 77-91. In N. P. Revsbech and J. Sørensen (ed.), *Denitrification in soil and sediment*. Plenum Press, New York.
- King, D. H., and Nedwell, D. B. 1987. The adaptation of nitrate-reducing bacterial communities in estuarine sediments in response to overlying nitrate load. *FEMS Microbiol. Ecol.* 45: 15-20.
- Nielsen, L. P. 1992. Denitrification in sediment determined from nitrogen isotope pairing. *FEMS Microbiol. Ecol.* 86: 357-362.
- Rysgaard, S., N. Risgaard-Petersen, and Sloth, N. P. 1996. Nitrification, denitrification, and nitrate ammonification in sediments of two coastal lagoons in Southern France. *Hydrobiol.* 329:133-141.
- Seitzinger, S. P. 1987. Nitrogen biogeochemistry in an unpolluted estuary: the importance of benthic denitrification. *Mar. Ecol. Prog. Ser.* 41:177-186.
- Thamdrup, B., and T. Dalsgaard. 2002. Production of N₂ through anaerobic ammonium oxidation coupled to nitrate reduction in marine sediments. *Appl. Environ. Micro.* 68:1312-1318.
- Trimmer, M., R. J. Gowen, B. M. Stewart, and D. B. Nedwell. 1999. The spring bloom and its impact on benthic mineralisation rates in western Irish Sea sediments. *Mar. Ecol. Prog. Ser.* 185:37-46.
- Trimmer, M., D. B. Nedwell, D. B. Sivy, and S. J. Malcolm. 2000. Seasonal benthic organic matter mineralisation measured by oxygen uptake and denitrification along a transect of the inner and outer River Thames estuary, UK. *Mar. Ecol. Prog. Ser.* 197:103-119.
- Trimmer, M., J. C. Nicholls, B. Deflandre. 2003. Anaerobic ammonium oxidation measured in sediments along the Thames Estuary, United Kingdom. *Appl. Environ. Microbiol.* 69:6447-6454.
- Van de Graaf, A. A., A. Mulder, P. De Bruijn, M. S. M. Jetten, L. A. Robertson, and J. G. Kuenen. 1995. Anaerobic oxidation of ammonium is a biologically mediated process. *Appl. Environ. Microbiol.* 61:1246-1251.

