

### NOTIFICATION OF PROPOSED RESEARCH CRUISE

#### Part A: GENERAL

1. Name of research ship: RV Pelagia

2. Cruise dates: 15.08.2005-10.09.2005.

3a. Operating authority: Royal Netherlands Institute for Sea Research (NIOZ)  
Telephone: (+31) (0)222-369300  
Telefax: (+31) (0)222-319674

3b. Operating agent: Royal 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)

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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 Truster  
call sign: PGRQ

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

7. Chief scientist: name: Prof. Dr. Helmuth Thomas  
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:

- 8. Geographical area in which the ship will operate:  
(with reference in latitude and longitude)  
North Sea, 50°N-61°N, 3°W-11°E (see map)**

**9. Brief description of purpose of cruise:**

The role of coastal seas in the global carbon cycle will be assessed in a pilot study in the North Sea. The hypothesis of a "continental shelf pump" for uptake of carbon dioxide (CO<sub>2</sub>) from the atmosphere with subsequent transport to the open ocean will be tested for the North Sea as a nutrient-rich sea with high biological productivity. Interactions and temporal variability of the pools of carbon (C), nitrogen (N), phosphorus (P), and oxygen (O<sub>2</sub>) will be assessed also to describe the "biological CO<sub>2</sub> pump". The cruise will be carried out in the framework of the European 6<sup>th</sup> framework program as contribution to the Integrated Project CARBOOCEAN.

**10. Names and dates of intended ports of call:**

None

**11. Any special logistic requirements at ports of call:**

None

**Part B: DETAIL**

1. **Name of research ship:** RV Pelagia

2. **Cruise dates:** 15.08.2005-10.09.2005.

3. **Purpose of research and general operational methods:**

At the stations given in the map sampling of the entire water column will be carried at 8-15 depths.

At selected stations surface sediment samples will be taken.

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

The map indicates the entire sampling program, where as the attached stations list is restricted to the stations in the territorial waters.

5a. **Type of samples required:**

water column samples, and surface sediment samples, continuous registration of hydrographic and CO<sub>2</sub> parameters in the surface water.

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

continuous registrations: Aquaflow pump system of the ship

water column sampling: CTD rosette sampler

surface sediment samples: box corer

6. **Details of moored equipment:**

no moored equipment will be used

7. **Explosives:**

No explosives.

8. **Detail and reference of:**

a. **Any relevant previous/future cruises:**

The program is a follow-up of the previous cruise: previous cruises: 13.08.2001-07.09.2001, 05.01.2001-07.12.2001, 04.02.2002-15.03.2002 and 06.05.2002-26.05.2002

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

Thomas, H., Y. Bozec, K. Elkalay and H.J.W. deBaar (2004). Response to Comment on "Enhanced open ocean storage of CO<sub>2</sub> from shelf sea pumping". *Science*, 306, 5701, 1477 (DOI: 10.1126/science.1103193).

Thomas, H., Y. Bozec, K. Elkalay and H.J.W. deBaar (2004). Enhanced open ocean storage of CO<sub>2</sub> from shelf sea pumping. *Science*, 304, 5673, 1005-1008 (DOI: 10.1126/science.1095491).

Bozec, Y., H. Thomas, K. Elkalay and H.J.W. de Baar (2004) The continental shelf pump in the North Sea - evidence from summer observations. *Marine Chemistry*, doi: 10.1016/j.marchem.2004.07.006

**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:**

Prof. Dr. Andrew Watson  
University of East Anglia  
School of Environmental Sciences,  
Norwich NR4 7TJ, United Kingdom

**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 and to the CARBOOCEAN consortium according to the guidelines of the European Union. The data evaluation will be performed as co-operation in the CARBOOCEAN consortium. NIOZ will maintain the program data base, through which the data will be assessable for participants at any time of the program. The final data set of the entire program will be available to the funding agency (EU) and to the public at the end of the program approx. 2009.

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
CTD rosette	all	No	Yes	yes	yes	yes
Aquaflow	5m	No	Yes	yes	yes	yes
Boxcorer	bottom	No	Yes	yes	yes	yes

List of intended sampling stations during Pelagia cruise (see attached map)  
Stations list in British territorial waters

No.	°N	°E	No.	°N	°E
1	51	1.5	50	57	-1.5
6	52.6	2.5	54	58	-2.5
11	53.2	2.5	55	58	-1.5
12	53.2	1.5	56	58	-0.5
13	53.8	0.5	57	58	1
14	53.8	1.5	72	59	1.5
26	54.4	1.5	73	59	0.5
27	54.4	0.5	74	59	-0.5
32	55	2	75	59	-1.5
33	55	0.5	76	59.5	-2.5
34	55	-0.5	77	60	-2.5
35	56	-1.5	78	60	-1.7
36	56	-0.5	79	60	-0.5
37	56	0.5	80	60	0.5
38	56	2	81	60	1.5
39	56	3.5	90	61	1.5
47	57	2.25	91	61	0.5
48	57	0.875	92	61	-0.5
49	57	-0.5			

## References

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**Map of the entire working area**

The hatched area indicates the working area in British territorial waters.

