

NOTIFICATION OF PROPOSED RESEARCH CRUISE

PART A: GENERAL

1. *NAME OF RESEARCH SHIP* Belgica *CRUISE NO.* 2003/27
2. *DATES OF CRUISE* From:27/10/2003 To: 31/10/2003
3. *OPERATING AUTHORITY* Belgian Navy under contract for Belgian Ministry of Science Policy, Management Unit of the North Sea Mathematic Model "MUMM", 3deg & 23deg Linierregimentsplein, 8400 Oostende,

Telephone: 32(0)59 70 01 31
Facsimile: 32(0)59 70 49 35
Email: bmmost@mumm.ac.be
4. *OWNER* Belgian state represented by Minister for Science Policy
(if different from No. 3)
5. *PARTICULARS OF SHIP*
NAME: Belgica
NATIONALITY: Belgian
OVERALL LENGTH: 51 metres
MAXIMUM DRAUGHT: 4.5 metres
NET TONNAGE: 232 NRT
PROPULSION: diesel
CALL SIGN: ORGQ
REGISTERED PORT & NUMBER:
(if registered fishing vessel)
6. *CREW*
NAME OF MASTER: P. Ramboer, 1LZ
NO. OF CREW: 15
7. *SCIENTIFIC PERSONNEL*
NAME AND ADDRESS OF SCIENTIST IN CHARGE: Dr. Natacha Brion,
Dienst Analytische en Millieu Chemie
(WE ANCH)
Vrije Universiteit Brussel,
Pleinlaan 2,
1050 Brussel,
Belgium.

TEL./TELEX/FAX NO:

NUMBER OF SCIENTISTS: 15
8. *GEOGRAPHICAL AREA IN WHICH SHIP WILL OPERATE*
(with reference to latitude and longitude)
Belgian, Dutch, French and UK continental shelves.
Between 50deg 50'00 N 1deg 10'00 E and 52deg 30'00 N 03deg 35'00 E
9. *BRIEF DESCRIPTION OF PURPOSE OF CRUISE*
Global change, ecosystems and biodiversity SPSD 2 (OSTC Scientific Support plan for sustainable development) programme.
CANOPY: Biogeochemical carbon, nitrogen and phosphorus fluxes in the North Sea.

10. *DATES AND NAMES OF INTENDED PORTS OF CALL*

Zeebrugge 27/10/03 to 31/10/03 Departure - Arrival

11. *ANY SPECIAL REQUIREMENTS AT PORTS OF CALL*

N/A

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PART B: DETAIL

1. *NAME OF RESEARCH SHIP* Belgica *CRUISE NO.* 2003/27
2. *DATES OF CRUISE* From: 27/10/2003 To: 31/10/2003
3. a) *PURPOSE OF RESEARCH AND GENERAL METHODS (if the research work is being taken on behalf of a research institution of a third state, it is the responsibility of that state to obtain prior permission; it is essential that written confirmation that this has been done is obtained and quoted in this application).*

The project "CANOPY" aims to determine the importance of the internal cycling processes of uptake and regeneration of carbon, nitrogen and phosphorus in the Southern Bight of the North Sea. These results will be compared with the inputs and outputs of C-N-P in order to visualise the global functioning of the considered ecosystem. Moreover, the relative importance of the most important C-N-P compounds in these processes will be investigated. These data will allow us to calculate the ecosystem variables (uptake rate, regeneration rate etc) with a mass balance equation model (Elskens, 1999) including uncertainty ranges.

A global budgeting of C-N-P for the Southern Bight of the North Sea will be provided.

4. *ATTACH CHART (showing (on an appropriate scale) the geographical area of the intended work, positions of intended stations, tracks of survey lines, positions of moored/seabed equipment, areas to be fished)*

See chart 1

5. a) *TYPES OF SAMPLES REQUIRED (e.g. Geological/Water/Plankton/Fish/Radionuclide)*

Water, sediment

- b) *METHODS OF OBTAINING SAMPLES (e.g. dredging/coring/drilling/fishing, etc.)*

(When using fishing gear, indicate fish stocks being worked, quantity of each species required, quantify of fish to be retained on board)

Niskin bottles (2x10l) and carousel in situ measurements (SCTD, ...); box corer

6. *DETAILS OF MOORED EQUIPMENT*

N/A

<u>Laying</u>	<u>Recovery</u>	<u>Description</u>	<u>Depth</u>	<u>Latitude</u>	<u>Longitude</u>
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7. *ANY HAZARDOUS MATERIALS (Chemicals, Explosives, Gases, Radioactive etc) (use separate sheet, if necessary)*

N/A

- a) *TYPE AND TRADE NAME*
- b) *CHEMICAL CONTENT (& FORMULA)*
- c) *IMO IMDG CODE REFERENCE & UN. NO.*
- d) *QUANTITY & METHOD OF STOWAGE ON BOARD*

e) *IF EXPLOSIVES GIVE DATE(S) OF DETONATION*

- *Method of detonation*
- *Position of detonation*
- *Frequency of detonation*
- *Depth of detonation*
- *Size of explosive charge in Kgs*

8. *DETAIL & REFERENCE OF*

a) *ANY RELEVANT PREVIOUS/FUTURE CRUISES*

Previous cruises in the same area were done between 1998 and 2000 on board RV Belgica (BG9809, BG9821, BG9910, BG9916, BG9922, BG0009, BG0024) in the framework of the research program PODO I, Biogeochemie van nutriënten, metalen en organische micropolluenten in de Noordzee. (MM/DD/11)).

Future cruises in the present research CANOPY program are planned in December 2003, February, April and June 2004 on board RV Belgica.

b) *ANY PREVIOUSLY PUBLISHED DATA RELATING TO THE PROPOSED CRUISE*

Onderzoeksprogramma PODO I, Biogeochemie van nutriënten, metalen en organische micropolluenten in de Noordzee (MM/DD/11).

Brion, N., W. Baeyens, S. De Galan, K. Parmentier, M. Elskens and R. Leane. The North Sea Shelf in the nineties: source or sink for N and P to the North Atlantic Ocean? ingediend bij BIOGEOCHEMISTRY.

Borges, A.V., Frankignoulle, M. (1999). Daily and seasonal variations of the partial pressure of CO₂ in surface seawater along the Belgian and southern Dutch coastal areas. J. Mar. Syst. 19, 251-266.

Frankignoulle, M., Borges, A.V. (2001). European continental shelf as a significant sink for atmospheric carbon dioxide. Global Biogeochem. Cycles, in press.

9. *NAMES AND ADDRESSES OF SCIENTISTS OF THE COASTAL STATE(S) IN WHOSE WATERS THE PROPOSED CRUISE TAKES PLACE WITH WHOM PREVIOUS CONTACT HAS BEEN MADE*

The Netherlands: Dr. Remy Laane, RIKZ, PO Box 20907, NL-EX The Hague, The Netherlands.

UK: Dr. Ian Joint, Plymouth Marine Laboratory, Prospect Place, Plymouth, PL1 3DH, UK

France: Josette Garnier, UMR Sisyphe CNRS, Université Pet M. Curie, Tour 26, étage 5, 4 place Jussieu, F-750005 Paris, France.

10. STATE

a) *WHETHER VISITS TO THE SHIP IN PORT BY SCIENTISTS OF THE COASTAL STATE CONCERNED WILL BE ACCEPTABLE*

Yes

b) *PARTICIPATION OF AN OBSERVER FROM THE COASTAL STATE FOR ANY PART OF THE CRUISE TOGETHER WITH THE DATES AND PORTS FOR EMBARKATION/DISEMBARKATION*

N/A

c) *WHEN RESEARCH DATA FROM THE INTENDED CRUISE IS LIKELY TO BE MADE AVAILABLE TO THE COASTAL STATE AND BY WHAT MEANS*

Cruise report available within 2 months (on request)

PART C: SCIENTIFIC EQUIPMENT

COASTAL STATE: The Netherlands

PORT CALL:

DATES:

11. COMPLETE THE FOLLOWING TABLE - SEPARATE PAGE FOR EACH COASTAL STATE
(indicate "Yes" or "No")

<i>List of all major marine scientific equipment, including scientific sonar other than standard navigational echo sounders it is proposed to use and indicate waters in which it will be deployed</i>	<i>In territorial</i>	<i>On continental shelf</i>
Niskin bottles (2X10L)	Yes	Yes
In situ measurements SCTD	Yes	Yes
Underway measurements of pCO ₂ and NO ₃	Yes	Yes
Box corer	Yes	Yes

PART C: SCIENTIFIC EQUIPMENT

COASTAL STATE: United Kingdom

PORT CALL:

DATES:

11. COMPLETE THE FOLLOWING TABLE - SEPARATE PAGE FOR EACH COASTAL STATE
(indicate "Yes" or "No")

<i>List of all major marine scientific equipment, including scientific sonar other than standard navigational echo sounders it is proposed to use and indicate waters in which it will be deployed</i>	<i>In territorial</i>	<i>On continental shelf</i>
Niskin bottles	Yes	Yes
In situ measurements	Yes	Yes
Underway measurements of pCO2 and NO3	Yes	Yes
Box corer	Yes	Yes

(On behalf of the Principal Scientist)

Dated 08/07/2003

N.B. IF ANY DETAILS ARE MATERIALLY CHANGED REGARDING DATES/AREA OF OPERATION AFTER THIS FORM HAS BEEN SUBMITTED, THE COASTAL STATE AUTHORITIES MUST BE NOTIFIED IMMEDIATELY.