CAMPAIGN REPORT BMM-Measuring service Ostend 2003/30

24.11.2003 till 28.11.2003

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1. Scienctist team

ENDIS-RISKS team:

E. Monteyne
M. Neyts
A. Ghekiere
H. Noppe
K. Polfliet
N. Fockedey
G. Desmet
A. Van Kenhove
D. Peelaers

SISCO team:

V. Carbonnel
L. Rebreanu
M. Tsagaris

2. Objectives of the campaign

2.1 ENDIS-RISKS – Roose

The goal of the project is to get better insight into the distribution and the possible effects of hormone disrupting substances in the Scheldt Estuary. The components to be analysed are mentioned on the OSPAR list of priority substances or are mentioned as hormone disrupting components on the OSPAR list of candidate substances. Also the short and long term effects of these components will be evaluated in the laboratory and in the field. For the priority substances the fysico-chemical distribution (speciation between the different compartments: sediment, water, suspended particulate matter), their concentrations in biota (mysids and gobies) and geographical spreading will be measured. Possible toxicological effects will also be investigated on an ecological important group of endemic organisms (mysids). For this purpose acute as well as chronical effects are studied on individual and population level and compared to historical data.

2.2 SISCO – Chou

The general goal of the project "SISCO" is to get better insights into the bio-chemical cycle of Si and its antropogenic disturbance in the Scheldt Estuary. The bio-chemical cycle of dissolved Si in aquatic ecosystems is important to structure biological societies. The excess of N and P relative to Si, carried from rivers to the coastal zone, has a dramatic effect on the food webs in the coastal seas.

The origin and sinks of Si in the Scheldt estuary will be defined. Important processes controlling the bio-chemical behaviour of Si in the water column will be measured. The early diagenesis of Si will be evaluated in order to determine the flux of Si (retained) in the sediment as well as the internal recycling of Si in the sediments. At last the Si flux of the Scheldt to the southern bay of the North Sea will be quantified by using a coupled hydro-dynamic bio-geochemical model in which the input of the most important supplying rivers, the fraction retained in the estuary, as well as the fraction reaching the coastal zone are determined. This will permit the evaluation of the impact of Si on eutrophication of the coastal zone via the alteration in the composition of the species of phyto-plankton.

2.3 SIMULTAAN MEETCAMPAGNE BMM – RIKZ

Simultane ijkmeting ecologie met verschillende oceanografische schepen met als doel de kwaliteit van de staalname en substaalname na te gaan. Voor de uitvoering van de meting is gekozen voor vier locaties in de Westerschelde en monding. Op iedere loctie zullen gelijktijdig in-situ metingen worden verricht en monsters genomen worden. De monsters worden door de laboratoria van BMM Oostende en RIKZ Middelburg geanalyseerd. Met deze opzet kan aantoonbaar worden gemaakt dat er onderling vergelijkbaar resultaten worden behaald en dat er aan bepaalde eisen wordt voldaan.

3. Operations

Monday 24 Nov 2003

(refer to 4, Remarks)

Tuesday 25 Nov 2003

(refer to 4, Remarks)

Wednesday 26 Nov 2003

Start Zeebrugge 17h30
Station S01 Vlissingen
19h12 : Water sampling (Go Flo/Niskin)
19h41 : Sediment sampling (Van Veen) (Slibrijk!)
Return to Zeebrugge from 19h50

(refer to 4, Remarks)

Thursday 27 Nov 2003

(refer to 4, Remarks)

Friday 28 Nov 2003

(refer to 4, Remarks)

4. Remarks regarding measurment instruments and the campaign in general

Recently the Belgica was hampered by problems with the generator. In order to solve it an auxillary generator was installed on the Belgica. This implied that the sleeping container could not be placed on the deck of the Belgica. For this reason it was decided that the following 3 scientists would not participate in the campaign: B. Beuselinck, P. Roose and C. Soin.

Because of the decision that P. Roose would not join the campaign and that the official replacement of the chief scientist, Lei Chou, did not participate in the campaign either, it was decided after the necessary consultation that E. Monteyne would be assigned as chief scientist for this campaign. K. Deneudt was replaced by D. Peelaers.

Due to the continued problems with the generator of the Belgica the campaign could not start on the foreseen date as described in the cruise programme 03/30. In preparation of the delayed embarkment the scientists teams were held on standby. On tuesday 25 Nov. it was decided, after proper consultation, to leave the port on wednesday morning at 06h30. The scientists and their equipment embarked on Tuesday evening.

The new departure of the Belgica on wednesday 26 Nov. set at 06h30 was hindered due to problems with the gyro-compass. These problems were only solved by 17h00. This allowed the Belgica to sail off at 17h30. Still, this made it possible to sample wednesday 25 Nov. at the Stations Vlissingen, Terneuzen and Hansweert for water and sediment, in order to minimize the loss of samples due to the delays. It was decided that fishing would not take place because of to the late hour and for safety reasons.

At Vlissingen the emergency generator caused new problems which forced the Commander of the Belgica to return immediately to Zeebrugee for technical and safety reasons and to cancel campaign 03/30 for that week.

The initial technical problems wih the Belgica severely hampered the participation in the simultaneous sampling programme. At one time, participation for one sampling event still seemed possible. For this reason rendez-vous was foreseen at 10 o' clock in Terneuzen. However, the above problems made it impossible to participate with the simultaneous sampling programme. This has accordingly been communicated to the Argus N.V.

5. Executed sampling programme ENDIS-RISKS and SISCO

Scheldt River

STATION	POSITIE		ODAS	SCTD	Water sampling	Sediment	Suspended particulate matter (SPM)	Fish tracks
	N.B.	O.L.						
S01	51 25.00	3 34.20	X	X	X	X		

ODAS = automatic registration of :
navigation parameters en bathymetry
meteo parameters (inclusive solar radiation)
salinity en temperature (thermosalinographe Seabird SBE21)
fluorescence (Turner Design fluorimeter model 10AU)
temperature (Rosemount temperatuurssensor)

CTD = Conductiviteit (Saliniteit), Temperatuur, Diepte gekoppeld met Densiteit, Turbiditeit met OBS-sensor, LiCor Quantameter (PAR).

6. Detailed overview sampling programme ENDIS-RISKS and SISCO

Scheldt River

STATION	WATER SAMPLING				SEDIMENT		SPM	FISH TRACKS	
	WATER NISKIN (5 l)		WATER GO FLO (10 l)	WATER NISKIN (10 l)	Van Veen	Boxcorer	Centrifuge	Beam trawl	Hyperbentic sledge
	SPM	DOC POC	Endocrine Disruptors	Radiotracer Incubation					
S01	X	X	X	X	X	X			