

C.I.P.S

MODELE MATHEMATIQUE DE LA
POLLUTION EN MER DU NORD

985
TECHNICAL REPORT
1974/05 BIOL.03

TECHNICAL REPORT

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ETUDE DU ZOOPLANCTON :

Calcul des biomasses

des croisières

de janvier 1974 à mai 1974

par

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Onderzoek CIPS

Cruise Janssen 1974

	1101 24-1-74 13.00 - 2m	1105 24-1-74 - 2m	1155 14-1-74 - 2m	1116 25-1-74 - 2m
	min.-max.	min.-max.	min.-max.	min.-max.
<u>Vers gewicht</u> $\mu\text{g}/\text{m}^3$				
<u>Cnidaria</u>				
<u>Acnidaria</u>				
<u>Ctenophora</u>				
<u>Nemathelminthes</u>				
Rotatoria spec.				
Nematoda spec.	13			
<u>Mollusca</u>				
Gastropoda (1)			120	
Lamellibranchia (1)	1300	1500	450	
<u>Annelida</u>				
Polychaeta spec.	6401	173	1384	
Lanice spec.				
<u>Crustacea</u>				
Copepoda nauplii	4977	2844	26781	6241
Copepoda copepodiet	7392	1848	24552	7128
Copepoda adult.	7032	236	1984	3226
Cirripedia (1)	160		160	
Ostracoda				
Decapoda (1)				
Mysidacea				
Cumacea				
Isopoda	181			
Amphipoda				
Cladocera				
<u>Bryozoa (1)</u>				
<u>Chaetognatha Sagitta spec.</u>				
<u>Echinodermata Larvae spec.</u>				
<u>Tunicata Oikopleura</u>	5190	1730		
<u>Pisces (e - 1)</u>				
TOTAAL	32646	8331	55431	16595
GEMIDDELDDE				
<u>Drooggewicht</u> $\mu\text{g}/\text{m}^3$	6529	1666	11086	3319
<u>Koolstof</u> $\mu\text{g}/\text{m}^3$	2612	666	4434	1328
<u>Stikstof</u> $\mu\text{g}/\text{m}^3$	718	183	1219	365
<u>Fosfor</u> $\mu\text{g}/\text{m}^3$	65	16	111	33

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Onderzoek CIPS

Cruise Janvie - Febr. 1974

	M20 13.30	25.1.74 -2m	N01 15.10	26.2.74 -2m	N09 11.30	26.2.74 -2m	M55 12h	25.2.74 -2m
	min.-max.	min.-max.	min.-max.	min.-max.	min.-max.	min.-max.	min.-max.	min.-max.
<u>Vers gewicht</u> $\mu\text{g}/\text{m}^3$								
<u>Cnidaria</u>								
<u>Acnidaria</u>								
<u>Ctenophora</u>								
<u>Nemathelminthes</u>								
Rotatoria spec.								
Nematoda spec.	26	13		39				
<u>Mollusca</u>								
Gasteropoda (1)								
Lamellibranchia (1)	300			2600				
<u>Annelida</u>								
Polychaeta spec.	173	4671		1384				
Lanice spec.	3280							
<u>Crustacea</u>								
Copepoda nauplii	7505	2054		7979				
Copepoda copepodiet	3696	1320		9504				
Copepoda adult.	2090	334		6806				
Cirripedia (1)				640				
Ostracoda								
Decapoda (1)								
Mysidacea								
Cumacea								
Isopoda								
Amphipoda								
Cladocera	362							
<u>Bryozoa (1)</u>								
<u>Chaetognatha Sagitta spec.</u>								
<u>Echinodermata Larvae spec.</u>								
<u>Tunicata Oikopleura</u>	3460	20760		31140				
<u>Pisces (e - 1)</u>				24126				
TOTAAL	20892	29152		84218				
GEMIDDELDE								
<u>Drooggewicht</u> $\mu\text{g}/\text{m}^3$	4178	5820		16844				
<u>Koolstof</u> $\mu\text{g}/\text{m}^3$	1671	2331		6738				
<u>Stikstof</u> $\mu\text{g}/\text{m}^3$	460	641		1853				
<u>Fosfor</u> $\mu\text{g}/\text{m}^3$	42	55		168				

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Onderzoek CIPS

Cruise Mars 1974

	15h	2h	1330	2h
	min.-max.	min.-max.	min.-max.	min.-max.
<u>Vers gewicht</u> $\mu\text{g}/\text{m}^3$				
<u>Cnidaria</u>				
<u>Acnidaria</u>				
Ctenophora				
<u>Nemathelminthes</u>				
Rotatoria spec.				
Nematoda spec.	13			
<u>Mollusca</u>				
Gasteropoda (1)				
Lamellibranchia (1)	600	100	500	
<u>Annelida</u>				
Polychaeta spec.	173		519	
Lanice spec.	410			
<u>Crustacea</u>				
Copepoda nauplii	1264	1975	3476	
Copepoda copepodiet	528	2112	1584	
Copepoda adult.	266	338	0	
Cirripedia (1)	160			
Ostracoda				
Decapoda (1)				
Mysidacea				
Cumacea				
Isopoda				
Amphipoda				
Cladocera				
<u>Bryozoa (1)</u>				
<u>Chaetognatha Sagitta spec.</u>				
<u>Echinodermata Larvae spec.</u>				
<u>Tunicata Oikopleura</u>		3460	1730	
<u>Pisces (e - 1)</u>				
TOTAAL	3414	11349	7809	
GEMIDDELTE				
<u>Droorgewicht</u> $\mu\text{g}/\text{m}^3$	623	2270	1562	
<u>Koolstof</u> $\mu\text{g}/\text{m}^3$	273	908	625	
<u>Stikstof</u> $\mu\text{g}/\text{m}^3$	75	250	172	
<u>Fosfor</u> $\mu\text{g}/\text{m}^3$	7	23	16	

Onderzoek CIPS

Cruise April - mai 1974

		1701 13h	290474 2m	1752 16h40	290474 2m	1705 16h	290474 -2m	1755 830	30.4.74 -2m
		min.-max.	min.-max.	min.-max.	min.-max.	min.-max.	min.-max.	min.-max.	min.-max.
— Vers gewicht $\mu\text{g}/\text{m}^3$									
<u>Cnidaria</u>									
<u>Acnidaria</u>									
Ctenophora									
<u>Nemathelminthes</u>									
Rotatoria spec.									
Nematoda spec.		13				13			13
<u>Mollusca</u>									
Gastropoda (1)									
Lamellibranchia (1)		8250	120 1300			18300			1800
<u>Annelida</u>									
Polychaeta spec.		14705	6228			22663			13840
Lanice spec.		5330				2460			
<u>Crustacea</u>									
Copepoda nauplii		44951	84603			157289			152312
Copepoda copepodiet		73920	63888			101112			141960
Copepoda adult.		31472	34280			53602			144498
Cirripedia (1)		1280	320			480			160
Ostracoda									
Decapoda (1)		49860							24930
Mysidacea									24930
Cumacea									
Isopoda									
Amphipoda									
Cladocera									940
<u>Eryozoa (1)</u>									
<u>Chaetognatha Sagitta spec.</u>									
<u>Echinodermata Larvae spec.</u>									
<u>Tunicata Oikopleura</u>		1730	10320			72660			22490
<u>Pisces (e - 1)</u>			24126			24126			
TOTAAL		231511	250181			452705			527873
GEMIDDELTE									
— Drooggewicht $\mu\text{g}/\text{m}^3$		46302	50036			90541			105575
— Koolstof $\mu\text{g}/\text{m}^3$		18521	20014			36216			42230
— Stikstof $\mu\text{g}/\text{m}^3$		5093	5504			9960			11613
— Fosfor $\mu\text{g}/\text{m}^3$		463	500			905			1056

Onderzoek CIPS

Cruise April - Mai 1974

	M09 300474 14.30 - 2m	M09 300474 18.50 - 2m	M55 2-5.74 12.30 - 2m	M11 23-4.74 6h - 2m
	min.-max.	min.-max.	min.-max.	min.-max.
— Vers gewicht $\mu\text{g}/\text{m}^3$				
<u>Cnidaria</u>				
<u>Acnidaria</u>				
Ctenophora				
<u>Nemathelminthes</u>				
Rotatoria spec.				
Nematoda spec.	13	39		
<u>Mollusca</u>				
Gasteropoda (1)				
Lamellibranchia (1)	50	200	8900	350
<u>Annelida</u>				
Polychaeta spec.		692	18744	79926
Lanice spec.	410			820
<u>Crustacea</u>				
Copepoda nauplii	114 866	58697	255170	265519
Copepoda copepodiet	66264	36696	172656	285558
Copepoda adult.	48898	9984	361528	175238
Cirripedia (1)		160	160	1280
Ostracoda				
Decapoda (1)	49860	224370	49860	24930
Mysidacea				
Cumacea				
Isopoda				
Amphipoda				
Cladocera	30080	20680		
<u>Bryozoa (1)</u>				
<u>Chaetognatha Sagitta spec.</u>				
<u>Echinodermata Larvae spec.</u>				
<u>Tunicata Oikopleura</u>	124560	65740	15570	159160
<u>Pisces (e - 1)</u>	72378			24126
TOTAAL	507379	417258	882588	1016907
GEMIDDELDE				
— Drooggewicht $\mu\text{g}/\text{m}^3$	101476	83452	176512	203381
— Koolstof $\mu\text{g}/\text{m}^3$	40590	33321	70607	81352
— Stikstof $\mu\text{g}/\text{m}^3$	11162	9180	19412	22372
— Fosfor $\mu\text{g}/\text{m}^3$	1015	835	1765	2034

Onderzoek CIPS

Cruise Asai mei 1991

	M01 270574 13h -2m	M04 190474 5h30 -2m	M71 80574 830 2m	M16 18474 1710 -2m
	min.-max.	min.-max.	min.-max.	min.-max.
— Vers gewicht $\mu\text{g}/\text{m}^3$				
<u>Cnidaria</u>				
<u>Acnidaria</u>				
Ctenophora				
<u>Nemathelminthes</u>				
Rotatoria spec.				
Nematoda spec.	13			
<u>Mollusca</u>				
Gastropoda (1)				
Lamellibranchia (1)	1400	1800	1800	1000
<u>Annelida</u>				
Polychaeta spec.	3806	1320	6228	3432
Lanice spec.				
<u>Crustacea</u>				
Copepoda nauplii	72996	104675	99540	130903
Copepoda copepodiet	141240	49368	91344	111144
Copepoda adult.	15858	14278	20034	7586
Cirripedia (1)	1280	1440		
Ostracoda				
Decapoda (1)	49860		24930	
Mysidacea				
Cumacea				
Isopoda		181		
Amphipoda		940	8460	1880
Cladocera				
<u>Bryozoa (1)</u>				
<u>Chaetognatha Sagitta spec.</u>			1930	
<u>Echinodermata Larvae spec.</u>				
<u>Tunicata Oikopleura</u>	6920	103800	207600	12110
<u>Pisces (e - 1)</u>				48252
TOTAAL	297373	277202	461926	316307
GEMIDDELDE				
— Drooggewicht $\mu\text{g}/\text{m}^3$	59475	55500	92325	63261
— Koolstof $\mu\text{g}/\text{m}^3$	23790	22224	36954	25304
— Stikstof $\mu\text{g}/\text{m}^3$	6542	6112	10162	6959
— Fosfor $\mu\text{g}/\text{m}^3$	595	556	923	633

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Onderzoek *CIPS*
Cruise *Avril-mai 1974*

	1330	1331	1332	1333
	min.-max.	min.-max.	min.-max.	min.-max.
<u>Vers gewicht</u> <i>kg/m³</i>				
<u>Cnidaria</u>				
<u>Acnidaria</u>				
<u>Ctenophora</u>				
<u>Nemathelminthes</u>				
Rotatoria spec.				
Nematoda spec.		13		
<u>Mollusca</u>				
Gastropoda (1)				
Lamellibranchia (?)	13000	1550	250	
<u>Annelida</u>				
Polychaeta spec.	16083	692	1038	
Lanice spec.	3280	3280		
<u>Crustacea</u>				
Copepoda nauplii	58460	134774	64859	
Copepoda copepodiet	46728	57552	25344	
Copepoda adult.	3834	38144	5014	
Cirripedia (1)	1600	480		
Ostracoda				
Decapoda (1)				
Mysidacea				
Cumacea				
Isopoda		121		
Amphipoda				
Cladocera		6580		
<u>Bryozoa (1)</u>				
<u>Chaetognatha Savitta spec.</u>				
<u>Echinodermata Larvae spec.</u>				
<u>Tunicata Dikopleura</u>		217980		
<u>Pisces (e - 1)</u>				
TOTAAL	143051	461226	96505	
GEMIDDELDE				
<u>Drooggewicht</u> <i>kg/m³</i>	28610	92245	19301	
<u>Koolstof</u> <i>kg/m³</i>	11444	36898	7720	
<u>Stikstof</u> <i>kg/m³</i>	3147	10147	2123	
<u>Fosfor</u> <i>kg/m³</i>	286	922	193	

Onderzoek CIPS

Cruise Mai 1976

		17.5.76 12.00	18.5.76 12.00	19.5.76 12.00	20.5.76 12.00
		10.10	10.10	10.10	10.10
		min.-max.	min.-max.	min.-max.	min.-max.
Vers gewicht kg/m^3					
<u>Cnidaria</u>					
<u>Acnidaria</u>					
Ctenophora					
<u>Nemathelminthes</u>					
Rotatoria spec.					
Nematoda spec.		26	26		
<u>Mollusca</u>					
Gastropoda (1)					
Lamellibranchia (1)		8150	450		50
<u>Annelida</u>					
Polychaeta spec.		14878	4152	692	173
Lanice spec.		6560			
<u>Crustacea</u>					
Copepoda nauplii		71021	34912	44003	10270
Copepoda copepodiet		93456	24024	18480	29568
Copepoda adult.		38020	23416	19536	57703
Cirripedia (1)		800			
Ostracoda					
Decapoda (1)		24930			
Mysidacea					
Cumacea		24930			24930
Isopoda					
Amphipoda					
Cladocera					
<u>Brvozoa (1)</u>					
<u>Chaetognatha Savitta spec.</u>			1930		
<u>Echinodermata Larvae spec.</u>					
<u>Tunicata Oikopleura</u>		178190	15570	31140	19030
<u>Pisces (e - 1)</u>				24126	
TOTAAL		460961	109426	137972	141724
GEMIDDELDSE					
Drooggewicht kg/m^3		92192	21297	22595	28345
Koolstof kg/m^3		36872	2259	11035	11338
Stikstof kg/m^3		10141	2409	3035	3118
Fosfor kg/m^3		922	213	276	224

Onderzoek CIPS

Cruise Anco 1974

	M16 15-74 16h. -2m	M16 25-74 16h. -2m	M22 25-74 8.20 -2m	M16 30-74 10.30 -2m
	min.-max.	min.-max.	min.-max.	min.-max.
<u>Vers gewicht</u> kg/m^3				
<u>Cnidaria</u>				
<u>Acnidaria</u>				
Ctenophora				
<u>Nemathelminthes</u>				
Rotatoria spec.				
Nematoda spec.		52		
<u>Mollusca</u>				
Gastropoda (1)				
Lamellibranchia (1)	150	550	8250	100
<u>Annelida</u>				
Polychaeta spec.	2375	3633	865	
Lanice spec.			3280	2050
<u>Crustacea</u>				
Copepoda nauplii	291510	418305	97960	27334
Copepoda copepodiet	206712	219120	282216	73392
Copepoda adult.	68770	79290	67288	175250
Cirripedia (1)	160	160		
Ostracoda		49860		
Decapoda (1)				
Mysidacea				
Cumacea				
Isopoda				
Amphipoda				
Cladocera	18800	49820	37600	27200
<u>Bryozoa (1)</u>				
<u>Chaetognatha</u> Sarritha spec.				
<u>Echinodermata</u> Larvae spec.				
<u>Tunicata</u> Dikopleura	249120	548410	70930	688540
<u>Pisces</u> (e - 1)				120630
TOTAAL	837598	1369200	568389	1115156
GEMIDDELDE				
<u>Drooggewicht</u> kg/m^3	167520	273840	113678	223031
<u>Koolstof</u> kg/m^3	67008	109536	45471	89212
<u>Stikstof</u> kg/m^3	12427	30122	12505	24533
<u>Fosfor</u> kg/m^3	1675	2738	1137	2230

Laboratorium voor Ekologie en Systematiek - V.U.B.

Onderzoek CIPS

Cruise mei 1974

Net 25-5-74

1347

— Vers gewicht $\mu\text{g}/\text{m}^3$

Cnidaria

Acnidaria

Ctenophora

Nemathelminthes

Rotatoria spec.

Nematoda spec.

Mollusca

Gasteropoda (1)

Lamellibranchia (1)

Annelida

Polychaeta spec.

Lanice spec.

Crustacea

Copepoda nauplii

Copepoda copepodiet

Copepoda adult.

Cirripedia (1)

Ostracoda

Decapoda (1)

Mysidacea

Cumacea

Isopoda

Amphipoda

Cladocera

Eryozoa (1)

Chaetognatha *Saritta* spec.

Echinodermata Larvae spec.

Tunicata *Oikopleura*

Pisces (e - 1)

TOTAAL

GEMIDDELDE

— Drooggewicht $\mu\text{g}/\text{m}^3$

— Koolstof $\mu\text{g}/\text{m}^3$

— Stikstof $\mu\text{g}/\text{m}^3$

— Fosfor $\mu\text{g}/\text{m}^3$

min.-max.	min.-max.	min.-max.	min.-max.
450			
173			
4997 4422 21934			
5190			
36912			
7322			
2953			
312			
24			