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Ado SEIRE

BENTHIC FAUNA IN THE DEEP AREAS OF THE GULF OF FINLAND AND EASTERN GOTLAND BASIN IN 1984 AND 1985

Ado SEIRE. SOOME LAHE SÜGAVAMATE ALADE JA GOTLANDI NÕO PÕHJALOOMASTIK 1984. JA 1985. AASTAL

Адо СЕЙРЕ. ДОННАЯ ФАУНА ГЛУБОКОВОДНЫХ РАЙОНОВ ФИНСКОГО ЗАЛИВА И ГОТЛАНДСКОЙ КОТЛОВИНЫ В 1984 И 1985 ГГ.

In June-July 1984 zoobenthos was sampled in 32 stations in the deep areas of the Gulf of Finland and Eastern Gotland Basin. In May 1985 a detailed zoobenthos sampling (27 stations) was conducted in the southern part of Eastern Gotland Basin.

In both years a 0.1 m² van Veen grab was used, one sample was taken per station. The bottom samples were washed through a 0.4 mm sieve and the animals were stored in 96° spirit.

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Gulf of Finland

In the eastern part of the Gulf of Finland at depths varying between 64 and 93 m a fairly diverse bottom fauna, including 9 species was present in June 1984 (Table 1 and the Figure). The following species with a total abundance of 640 ind./m² and total biomass 0.51 g/m² were observed at the 93 m depth: the polychaete *Harmothoë sarsi*, the crustaceans *Candona neglecta*, *Pontoporeia affinis* and *Mysis mixta* and the lamellibranch *Macoma baltica*.

The bottom fauna of the central part of the Gulf of Finland was very poor in June 1984 below 70 m (Table 1 and the Figure). The density recorded for the zoobenthos did not exceed 30 ind./m² at the depths of 70 and 84 m and 20 ind./m² at the depths of 94 and 113 m. At the 94 m depth only 2 species — *Candona neglecta* and *Mysis mixta* were present, at the depth of 113 m nothing but young specimens of *Macoma baltica* were found.

The zoobenthos of the depth region 72—88 m of the western part of the Gulf of Finland (Table 1 and the Figure) was in June 1984 represented by a very sparse population of *Harmothoë sarsi* (10—20 ind./m²) and young specimens of *Macoma baltica* (10—30 ind./m²). At one station (82 m) no bottom fauna was recorded in June 1984.

At the entrance to the Gulf of Finland (Table 2 and the Figure), in June 1984 9 taxa of bottom animals were registered at the depth of 83 m. The total abundance of the bottom fauna was 1100 ind./m² and the total biomass 1.87 g/m². The abundance values were dominated by those of

Table 1

The Gulf of Finland. Densities and biomasses of the bottom fauna in June 1984

Species	Eastern part								Central part								Western part					
	Stations																					
	6		5		6B		6A		9		7C		7A		7B		10		11		10A	
	Depth, m																					
	64		77		78		93		70		84		94		113		72		82		88	
	ind./m²	g/m²	ind./m²	g/m²	ind./m²	g/m²	ind./m²	g/m²	ind./m²	g/m²	ind./m²	g/m²	ind./m²	g/m²	ind./m²	g/m²	ind./m²	g/m²	ind./m²	g/m²	ind./m²	g/m²
Harmothoë sarsi							10	0.05	20	0.26							20	0.18			10	0.08
Candona neglecta	160	0.03	60	0.02	160	0.04	530	0.12	10	0.00	10	0.00	10	0.00								
Mesidotea entomon			10	6.28																		
Pontoporeia affinis	10	0.08	400	4.77			10	0.00														
Pontoporeia femorata			30	0.22																		
Mysis relicta	30	0.20	10	0.33	60	0.22							10	0.00								
Mysis mixta							20	0.22														
Insecta l. indet.					20	0.01																
Macoma baltica	30	0.74	10	0.00	10	0.00	70	0.12			20	0.00			20	0.00	10	0.00			30	0.00
Electra crustulenta var. *baltica*									+	+												
Total	230	1.05	520	11.62	250	0.27	640	0.51	30	0.26	30	0.00	20	0.00	20	0.00	30	0.18			40	0.08

Table 2

Densities and biomasses of the bottom fauna in June 1984

Species	The Entrance to the Gulf of Finland								Eastern Gotland Basin (northern part)							
	Stations															
	12C		12B		12A		12		15D		15C		15B		15A	
	Depth, m															
	83		95		112		118		86		94		105		120	
	ind./m²	g/m²	ind./m²	g/m²	ind./m²	g/m²	ind./m²	g/m²	ind./m²	g/m²	ind./m²	g/m²	ind./m²	g/m²	ind./m²	g/m²
Nematoda indet.	30	0.00	30	0.00												
Halicryptus spinulosus	130	0.03														
Harmothoë sarsi	70	0.92							10	0.26	40	0.32	20	0.45		
Candona neglecta	720	0.13														
Pontoporeia affinis	10	0.09														
Pontoporeia femorata	130	0.70														
Macoma baltica	10	0.00	10	0.05												
Total	1100	1.87	40	0.05					10	0.26	40	0.32	20	0.45		

ostracod *Candona neglecta* (720 ind./m²) and biomass values by polychaete *Harmothoë sarsi* (0.92 g/m²). At the depth of 95 m only nematodes and young specimens of *Macoma baltica* were present. The bottoms at the depth of 112 m and below were devoid of bottom fauna in June 1984.

Eastern Gotland Basin

In the northern part of the Eastern Gotland Basin, the only species noted at the depths of 86—105 m was *Harmothoë sarsi* (Table 2 and the Figure). No bottom fauna was recorded at 120 m depth in June 1984. The bottoms in the central part of the Eastern Gotland Basin at the depth of 60—70 m were, in July 1984, inhabited by quite diverse fauna (Table 3 and the Figure). At 62 m depth 12 taxa of bottom animals with total abundance 5830 ind./m² and total biomass 4.15 g/m² were recorded. At the depth of 70 m 10 taxa of zoobenthos were found. The number of taxa registered at the depth of 80 m was five, at the depth of 90 m — three and at the depth of 100 m — two. The bottoms at the depths of 110—120 m were populated merely by polychaete *Harmothoë sarsi*. In the samples taken at the depths of 130 and 140 m no bottom animals were recorded, but young specimens of *Pontoporeia affinis* were observed at the depth of 150 m.

In May 1985 ten species of bottom animals were recorded at the depth of 83 m in the southern part of the Eastern Gotland Basin (Table 4 and the Figure), namely, *Halicryptus spinulosus*, *Harmothoë sarsi*, *Pygospio elegans*, *Terebellides stroemi*, *Oligochaeta* sp., *Candona neglecta*, *Heterocyprideis sorbyana*, *Paracyprideis fennica*, *Diastylis rathkei* and *Macoma baltica*. At this depth the total abundance of the bottom fauna was 730 ind./m² and the total biomass 0.82 g/m². Unfortunately the bottom fauna

Table 3

Eastern Gotland Basin (central part). Densities and biomasses of the bottom fauna in July 1984

Species	Stations																			
	G10		G9		G8		G7		G6		G5		G4		G3		G2		G1	
	Depth, m																			
	62		70		80		90		100		110		120		130		140		150	
	ind./m²	g/m²	ind./m²	g/m²	ind./m²	g/m²	ind./m²	g/m²	ind./m²	g/m²	ind./m²	g/m²	ind./m²	g/m²	ind./m²	g/m²	ind./m²	g/m²	ind./m²	g/m²
Nematoda indet.	130	0.00	20	0.00			10	0.00												
Halicryptus spinulosus	300	0.03	140	0.03	30	0.00														
Harmothoë sarsi	80	0.01	30	0.00	20	0.00	50	0.05	850	0.57	780	0.57	380	0.03						
Terebellides stroemi	10	0.02																		
Pygospio elegans	630	0.25	390	0.24																
Oligochaeta indet.	40	0.01	70	0.01																
Candona neglecta					60	0.01														
Heterocyprideis sorbyana	3190	0.42	130	0.02																
Paracyprideis fennica	770	0.07	60	0.01																
Cythereis tuberculata	20	0.01																		
Mesidotea entomon	10	2.90																		
Pontoporeia affinis	80	0.11	50	0.07															20	0.00
Pontoporeia femorata			20	0.01																
Mysis mixta					10	0.02			10	0.04										
Macoma baltica	570	0.32	70	6.13	670	0.11	30	0.00												
Total	5830	4.15	980	6.52	790	0.14	90	0.05	860	0.61	780	0.57	380	0.03					20	0.00

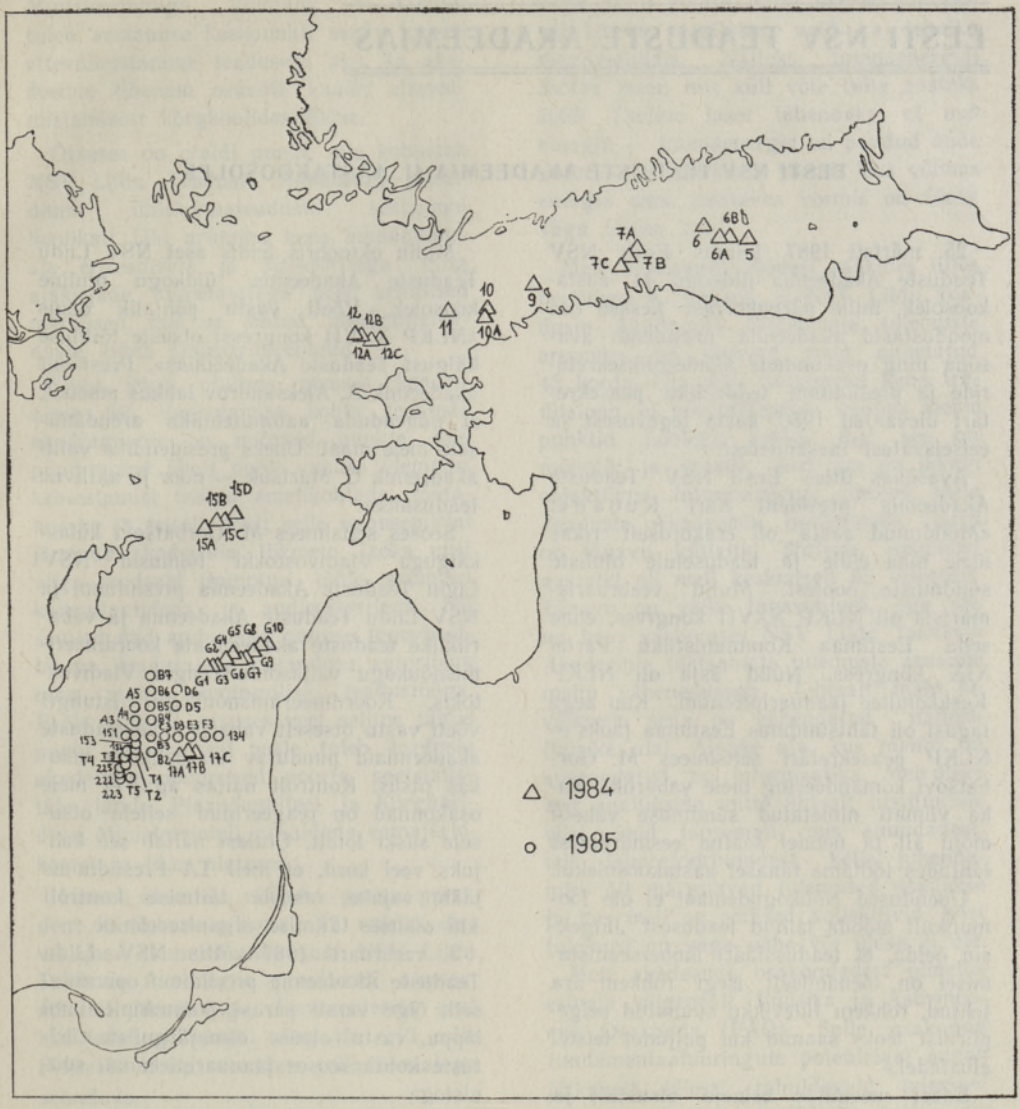
Eastern Gotland Basin (southern part). Densities and biomasses of the bottom fauna in June 1984 * and May 1985

Table 4

Species	Stations																			
	134		17C*		152		T3		225		222		223		F3		T4		T5	
	Depth, m																			
	83		110		119		119		120		121		123		125		125		126	
	ind./m²	g/m²	ind./m²	g/m²	ind./m²	g/m²	ind./m²	g/m²	ind./m²	g/m²	ind./m²	g/m²	ind./m²	g/m²	ind./m²	g/m²	ind./m²	g/m²	ind./m²	g/m²
Halicryptus spinulosus	40	0.00																		
Harmothoë sarsi	100	0.15	180	0.65									10	0.70	50	1.56			10	0.36
Scoloplos armiger			10	0.01																
Pygospio elegans	20	0.00																		
Terebellides stroemi	40	0.04																		
Oligochaeta indet.	10	0.00																		
Candona neglecta	200	0.05																		
Heterocyprideis sorbyana	30	0.01																		
Paracyprideis fennica	150	0.03																		
(Hyperia galba)					(10)	(0.03)														
Diastylis rathkei	70	0.51																		
Mysis relicta																				
Mysis mixta																				
Macoma baltica	70	0.03													10	0.53			10	0.01
Total	730	0.82	190	0.66	(10)	(0.03)							10	0.70	60	2.09			20	0.37

Species	Stations																			
	153		A3		T2		151		17B*		E3		B4		T1		B3		B5	
	Depth, m																			
	127		128		129		129		130		130		130		132		136		139	
	ind./m²	g/m²	ind./m²	g/m²	ind./m²	g/m²	ind./m²	g/m²	ind./m²	g/m²	ind./m²	g/m²	ind./m²	g/m²	ind./m²	g/m²	ind./m²	g/m²	ind./m²	g/m²
Harmothoë sarsi									60	0.06	20	0.02								
Mysis relicta					10	0.01														
Mysis mixta									10	0.05										
Total					10	0.01			70	0.11	20	0.02								

Species	Stations																			
	17A*		B2		D3		A4		C3		B6		D5		A5		B7		D6	
	Depth, m																			
	140		140		147		150		151		158		159		164		172		176	
	ind./m²	g/m²	ind./m²	g/m²	ind./m²	g/m²	ind./m²	g/m²	ind./m²	g/m²	ind./m²	g/m²	ind./m²	g/m²	ind./m²	g/m²	ind./m²	g/m²	ind./m²	g/m²
Nematoda indet.	10	0.00																		
Harmothoë sarsi (Hyperia galba)	1520	0.22			(10)	(0.06)														
Total	1530	0.22			(10)	(0.06)														



The zoobenthos sampling stations in the deep areas of the Gulf of Finland and Eastern Gotland Basin in 1984 and 1985.

at the depths between 84 and 109 m was not investigated in the southern part of the Eastern Gotland Basin either in 1984 or in 1985. In June 1984 polychaetes *Harmothoë sarsi* and *Scoloplos armiger* were recorded at 110 m depth, the bottom at the depth of 140 m (the deepest station sampled in 1984) was inhabited by quite a rich population of young specimens of *Harmothoë sarsi* (1520 ind./m^2; 0.22 g/m^2). The bottom samples taken at the depth region 119—130 m in May 1985 indicated a very sparse fauna, 9 samples out of 14 were devoid of zoobenthos. Below 130 m depth only dead bottom was observed in the southern part of the Eastern Gotland Basin in May 1985. *Hyperia galba*, a crustacean, found in the samples, taken at the depths of 119 and 147 m, is a pelagic invertebrate.

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