R1/3

H23

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Charter Vessel Cruise

MV *Nich-Tola*

Report

18-19 August 1990

Personnel

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Objectives

1. To compare suction dredging with quadrat sampling as a means of conducting intertidal cockle surveys.

2. To calibrate suction dredging against quadrat sampling.

3. To measure suction dredge efficiency.

4. To estimate the proportion of dredge damaged cockles to undamaged cockles.

Narrative

The scientific staff joined *Nich-Tola* at 0930 on 18 August. *Nich-Tola* then departed from Annan on the morning tide and made for the Rough Scar area of the North Bank where testing of a specially fabricated discard retention device commenced. After a sampling technique had been established using the new device, 10 timed samples were taken during normal fishing operations. Samples of both the catch (ie those cockles retained by the deck mounted rotary riddle) and the rejects (ie those passing through the riddle) were taken. The start and finish of the sample periods were marked on the suction dredge track so that the distance covered could be measured and quadrat samples taken on the subsequent low tide. *Nich-Tola* returned to Annan at 1330. A further four samples using different time intervals were taken on 19 August before the charter was completed.

Results

All 14 marked sections of suction dredge track were found. The numbers and ages of cockles for the catch and rejected cockles are shown in Table 1 along with the area covered by the dredge during the sampling period for each haul. The total number of damaged rejected cockles for each haul is also shown. Table 2 shows the number of cockles adjacent to the track compared with the numbers found within it. The numbers of cockles in Table 2 are those obtained from the quadrat samples raised to the area of the dredge track for each haul for comparison with Table 1. A full analysis of the results will be carried out after the November/December suction dredge charter.

T Howell
9 November 1990

TABLE 1

Commercial cockle catch compared to number of rejected, and damaged rejected, cockles

Haul number	Area m^2 covered		Age						Damaged rejects
			0	1	2	3	4	5	
1	8.5	Catch		48	4		2		10
		Rejects	32	166	6				
2	10.9	Catch		640	138	50	4	4	46
		Rejects	109	757	33				
3	11.6	Catch		383	43	7			28
		Rejects		262					
4	13.1	Catch		242	52	5	3		43
		Rejects		377	3				
5	12.9	Catch		176	22	2	2		120
		Rejects	122	354	12	2			
6	9.3	Catch		845	89	11	11		74
		Rejects	132	420					
7	7.4	Catch		465	92				52
		Rejects	56	680	24				
8	9.1	Catch		92	38	2			2
		Rejects		162	6				
9	10.9	Catch		151	88	12	2		19
		Rejects		237	22				
10	10.8	Catch		477	114	3			18
		Rejects	9	357	21				
11	24.9	Catch		6	2				4
		Rejects	7	11	2				
12	90.0	Catch		21					-
		Rejects	1,737	195					
13	95.0	Catch		1,329	10				-
		Rejects	454	677					
14	-	Catch		25					-
		Rejects	1,000	217					

TABLE 2

Quadrat samples inside and outside the dredge track - numbers raised to the area covered by the dredge track

Haul number	Area m^2 covered		Age			
			0	1	2	3
1	8.5	Inside		128		
		Outside	255	340	43	
2	10.9	Inside	491	327	55	
		Outside	1,908	1,363	218	
3	11.6	Inside		116		
		Outside	58	1,044	116	
4	13.1	Inside	197	131		
		Outside		1,310		
5	12.9	Inside	194	129	65	
		Outside	2,387	1,935	129	65
6	9.3	Inside	837	93		
		Outside	744	1,349		47
7	7.4	Inside	37	37		
		Outside	37	296		
8	9.1	Inside		46		
		Outside		319		
9	10.9	Inside	55			
		Outside	109	600	46	
10	10.8	Inside	108	54		
		Outside	864	1,620	55	
11	24.9	Inside		125		
		Outside		498	108	
12	90.0	Inside	11,250	900		
		Outside	16,200	2,250	125	
13	95.0	Inside	5,225	7,125		
		Outside	3,800	19,950		
14	-	Inside	-	-	475	
		Outside	-	-	475	
					-	
					-	