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DEPARTMENT OF AGRICULTURE [NI]  
FISHERIES RESEARCH LABORATORY

CRUISE REPORT - LF/8/89

NORTH COAST SCALLOP STOCKS 27 February - 3 March 1989

PERSONNEL

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OBJECTIVES

To carry out an exploratory survey of the scallop resources of the North Londonderry and Antrim coast and measure the following population parameters:

- a. catch per unit effort.
  - b. age composition.
  - c. weight, height and length of individual scallops.
3. Collect selected samples of scallop abductor muscle tissue for future metal analysis.
  4. Fix samples of gonad tissue for histological study.
  5. Identify and quantify macrofauna associated with Pecten maximus.

NARRATIVE

RV Lough Foyle departed from Belfast at 23.50 on Sunday 26 February following the north Antrim coast. Owing to a severe NW gale the vessel was forced to make directly for the shelter of Lough Foyle where anchor was dropped at 08.30 on Monday 27 February. Due to a deterioration in weather conditions the vessel had to remain at anchor off Moville until Wednesday 1 March when a docking was made into Londonderry. Although improved weather on 2nd March enabled RV Lough Foyle to resume work the prospect of further storms resulted in a decision to complete stations 1-10 on the Thursday [2.3.89] and return to home port overnight. The cruise ended at 09.30 on Friday 3 March when RV Lough Foyle docked in Belfast.

METHODS

The gear used during the cruise was a beam with four 2-foot scallop dredges of the design currently used in the commercial

fishery. Each dredge was fitted with a small meshed liner to aid retention of small animals. Catches were sorted and the associated fauna was identified and counted. The length and weight of commercial fish species was recorded. Scallops were aged, weighed and measured [length and height]. Selected age classes [normally 6-year-olds] had their abductor muscle removed which was frozen for future metal analysis. Gonads were examined and specimens at different stages of maturation fixed in Bouin's fluid for histological study. Shell samples from station 1 were retained for detailed morphometric analysis on return to Coleraine.

## RESULTS

Figure 1 shows the approximate position of each station and details are given in appendix 1. Table 1 shows the number of scallops caught per hour at each age and the number below the minimum landing size of 110mm shell length. Catches were excellent and demonstrated commercially viable quantities. Although weather conditions could be restrictive to regular exploitation of the grounds explored, catch per unit effort was far superior to the County Down grounds surveyed the previous week [LF/7/89]. As with the Irish Sea scallop populations there was an absence of 1-year and 2-year animals. The general age structure, however indicated good recruitment with 4 to 5-year olds dominating most stations sampled. The predominance of old [9+] scallops in several areas suggests under exploitation of these grounds.

The fauna associated with Pecten are shown in table 2 and was found to consist of over 20 taxa. Although echinoderms and crustaceans were less abundant than in the east coast survey [LF/7/89] commercial fish species were more common with anglerfish [Lophius piscatorius] being the most dominant species.

Scallop gonads examined showed advanced stages of maturity in all areas supporting the view that spring spawning scallops dominate these populations. Data from metal analysis of abductor muscles and histological investigations will be analysed, when available, along with the population data collected on the cruise.

R.P. Briggs, SIC  
3 March 1989

**FIGURE 1**

**POSITION OF STATIONS SAMPLED**

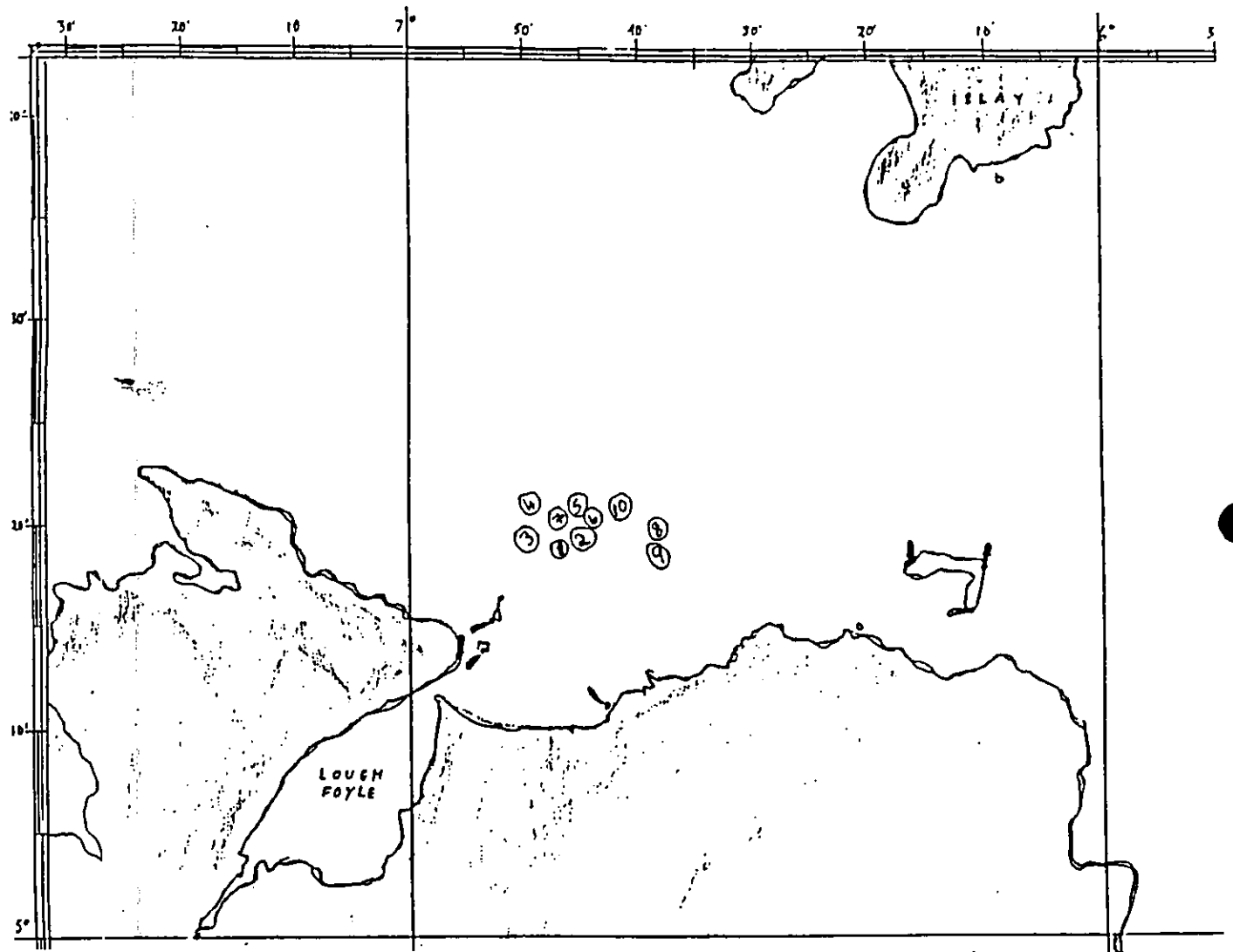


Table 1

**AGE COMPOSITION OF SCALLOP SAMPLES**  
 [numbers corrected to catch per hour by 4 x 2' dredges]

AGE	1	2	3	4	5	6	7	8	9	9+	total	<110
1	-	-	6	22	8	6	6	4	4	6	62	19
2	-	-	7	18	23	9	14	5	9	21	106	14
3	-	-	12	43	14	22	24	14	6	14	149	36
4	-	-	5	16	6	11	6	7	7	23	81	16
5	-	-	17	39	25	14	15	14	8	31	162	46
6	-	-	11	24	18	17	18	7	24	24	143	22
7	-	-	9	19	15	10	19	14	10	7	103	19
8	-	-	-	5	1	4	-	-	3	3	16	-
9	-	-	1	6	7	5	4	3	-	2	31	5
10	-	-	-	4	3	3	4	-	2	4	18	3

Table 2

**FAUNA ASSOCIATED WITH PECTEN MAXIMUS**

° SPECIES	° OCCURRENCE °	
-----		
° Echinodermata		
° Asterias rubens <i>common starfish</i>	° ***	
° Luidia spp	° *	
° Porania pulvillus <i>- common star</i>	° **	
° Stichastrella rosea	° **	
° Henricia oculata	° **	
° Crossaster papposus <i>sun-star</i>	° **	
° Ophiothrix fragilis <i>- brittle star</i>	° **	
° Echinus esculentus <i>- edible sea urchin</i>	° **	
° Crustacea		
° Cancer pagurus	° **	
° Macropodium spp	° *	
° Eupagurus bernhardus	° **	
° Mollusca		
° Eledone spp	° **	
° Pecten maximus	° ****	
° Chlamys opercularis	° **	
° Pinna fragilis <i>- fan mussel</i>	° **	
° Pisces		
° Merlangius merlangus	° *	
° Lophius piscatorius	° ***	
° Raja montagui	° *	
° Raja naevus	° *	
° Solea solea	° *	
° Ammodytes tobianus	° *	
° Pleuronectes platessa	° *	
° Microstomus kitt	° *	
° Glyptocephalus cynoglossus	° *	

**ABUNDANCE KEY**  
 present in:

*	1 station
**	2-5 stations
***	6-9 stations
****	10 stations

Appendix 1

<b>STATION</b>	<b>SHOT</b> [long-lat]		<b>HAULED</b> [long-lat]		<b>DEPTH m</b> [s-h]
1	55 17.70N	6 45.29W	55 20.87N	6 48.97W	61-68
2	55 20.61N	6 47.97W	55 18.61N	6 44.26W	68-67
3	55 17.39N	6 46.52W	55 50.57N	6 51.39W	55-70
4	55 21.50N	6 50.90W	55 21.10N	6 49.00W	74-68
5	55 20.91N	6 48.50W	55 20.60N	6 43.73W	68-76
6	55 20.32N	6 43.80W	55 18.77N	6 46.45W	72-65
7	55 18.33N	6 48.12W	55 20.07N	6 43.50W	59-73
8	55 20.05N	6 42.43W	55 19.77N	6 36.73W	78-84
9	55 20.04N	6 37.37W	55 18.37N	6 41.59W	85-87
10	55 18.80N	6 42.70W	55 22.80N	6 43.90W	85-86