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MINISTRY OF AGRICULTURE, FISHERIES AND FOOD
FISHERIES LABORATORY, LOWESTOFT, SUFFOLK, ENGLAND

1979 RESEARCH VESSEL PROGRAMME

REPORT: RV CLIONE: CRUISE 10/79
(PROVISIONAL: Not to be quoted without prior reference to the author)

STAFF

K Brander
I Davies
M Boon
L Emerson
M Siddeek
S Scrope-Howe (Menai Bridge)

DURATION

Left Lowestoft 1230 h 27 September
Returned to Lowestoft 0430 h 29 September
Left Lowestoft 1500 h 30 September
Arrived Lowestoft 0615 h 17 October
All times are Greenwich Mean Time

LOCALITY

Irish Sea

AIMS

1. To carry out a survey of 0- and I-group gadoids using the Granton trawl and frame trawl.

2. To tag young cod along the Irish coast for studies of recruitment.

3. To study tagging mortality in plaice.

4. To repeat the groundfish survey of Cardigan Bay.

5. To study the distribution of zooplankton in relation to fronts in the northern Irish Sea.

6. To collect samples for monitoring of pesticide residue and metal levels in fish.

7. To collect samples of hearts for quantitative heart weight studies.

NARRATIVE

CLIONE sailed from Lowestoft on 27 September but had to return when the main 25 kw alternator was damaged and the standby A.C. engine started to leak oil. The ship docked at 0430 h on 29 September and sailed again on 30 September after the main alternator had been removed for repair and the oil leak in the standby had been rectified.

The frame trawl grid was started on the evening of 2 October in St Georges Channel and bottom trawling with the Granton began on the morning of 3 October in Cardigan Bay. This pattern of work, using the frame trawl at night and the Granton by day, carried on without interruption until the

ship put into Douglas on the morning of 9 October. The station positions are shown on the attached chart. Surface temperature, salinity, turbidity and chlorophyll were monitored in order to detect the presence of any fronts and vertical plankton hauls were carried out after each frame trawl station north of 53°30'N.

CLIONE left Douglas at 0800 h 10 October and the remainder of the frame trawl grid and bottom trawl stations in the northeast Irish Sea were completed by the morning of 11 October. The intention had been to carry out two bottom trawl hauls in the North Channel, but poor weather and lack of engine power close to a lee shore ruled this out and the day was spent dodging. Fishing recommenced on 12 October, off St John's Point, and the Granton trawl survey was completed by the evening of 13 October. The following day four trawl stations were worked in Cardigan Bay to complete Aim 4. As insufficient time was left to begin any of the tagging work the ship sailed for home.

On the morning of 15 October a concentration of small liners was found off the Manacles and a short survey was carried out for mackerel shoals. Two shoals were located with the sonar and an echo-trace of each was made. Feathering confirmed that they were small mackerel.

RESULTS

1. The area and depth stratified bottom trawl survey for 0- and I-group gadoids was carried out successfully, although the planned design had to be modified slightly for practical reasons. The original plan to sample in four depth zones proved impossible, as fishable grounds could not be found in all depths in all areas. Instead two depth strata (0-50m, 50m +) were worked and limited comparisons will be possible within these ranges. Most of the deep stations are close together because the area of deep water is not large. The deep stations for Area 2 (northeast quarter) are, in fact, well over into the western part of the Irish Sea.

   Station 15, off the south coast of Ireland, had to be deleted and replaced by station 21 due to gear damage. At station 56 the trawl was severly damaged by towing into a wreck. Two stations planned for the North Channel had to be abandoned and replaced further south due to poor weather and logistic difficulty.

   The 32 valid hauls produced 134 0-group cod, 139 I-group cod, 3495 0-group whiting, 1070 I-group whiting and small numbers of 0-group haddock and hake. 0-group cod occurred at all depths, mainly in the northern Irish Sea. I-group cod were more widely distributed, with reasonable numbers taken all down the Irish coast, but very few at the deeper stations. 0-group whiting were more abundant in the western Irish Sea at all depths and again the I-groups were more widely distributed. The two way analysis of variance confirms these broad conclusions.

   Judging by these results one may have some confidence that the gear used and the survey design adopted will provide an adequate means of estimating the recruiting year classes of cod and whiting as 0- and I-groups. The distributions are fairly consistent with those of the frame trawl survey carried out on CLIONE 7/79.

2. 37 hauls were carried out with the Lowestoft 2m square frame trawl, fishing down to within 2m of the bottom. The positions of the stations, which were in a fairly regular grid, are shown on the track chart. Only eight whiting, one cod and a few clupeoids were caught altogether, confirming that this gear is only suitable for use earlier in the year,

when the fish are smaller and mainly pelagic.

Two flowmeters were damaged and the net was torn on several occasions when it was shot with a following sea and became caught on the frame. Under such conditions great care has to be taken to shoot the gear slowly.

3. Eight bottom trawl stations were carried out in Cardigan Bay to complete Aim 4. As usual the predominant species was thornback ray., with some sprats and small gadoids.

4. Samples of zooplankton were taken at all frame trawl positions north of 53°30' using a prototype twin vertical net provided by Mr Scrope-Howe. Although the gear worked reasonably well it was damaged in heavy swell and a single net was used instead. No fronts were detected from the continuous record of surface temperature and salinity, probably due to poor weather before and during the cruise causing vertical mixing of the water column. All zooplankton samples were preserved for study at Menai Bridge.

5. A total of 69 fish of 4 different species were frozen for residue monitoring.

6. 171 hearts were collected from 19 species of fish for quantitative heart weight studies.

7. 12 boxes of small gadoids and 2 boxes of sprats were frozen for use as fish food.

8. Samples of small gadoids and flatfish were frozen for Mr Blacker for use on fish identification courses.

9. The numbers of fish measured and otolithed were as follows:-

	Measured	Otolithed
Plaice	572	269
Sole	48	48
Whiting	2850	106
Cod	279	90
Brill	13	13
Hake	116	4
Rays	233	

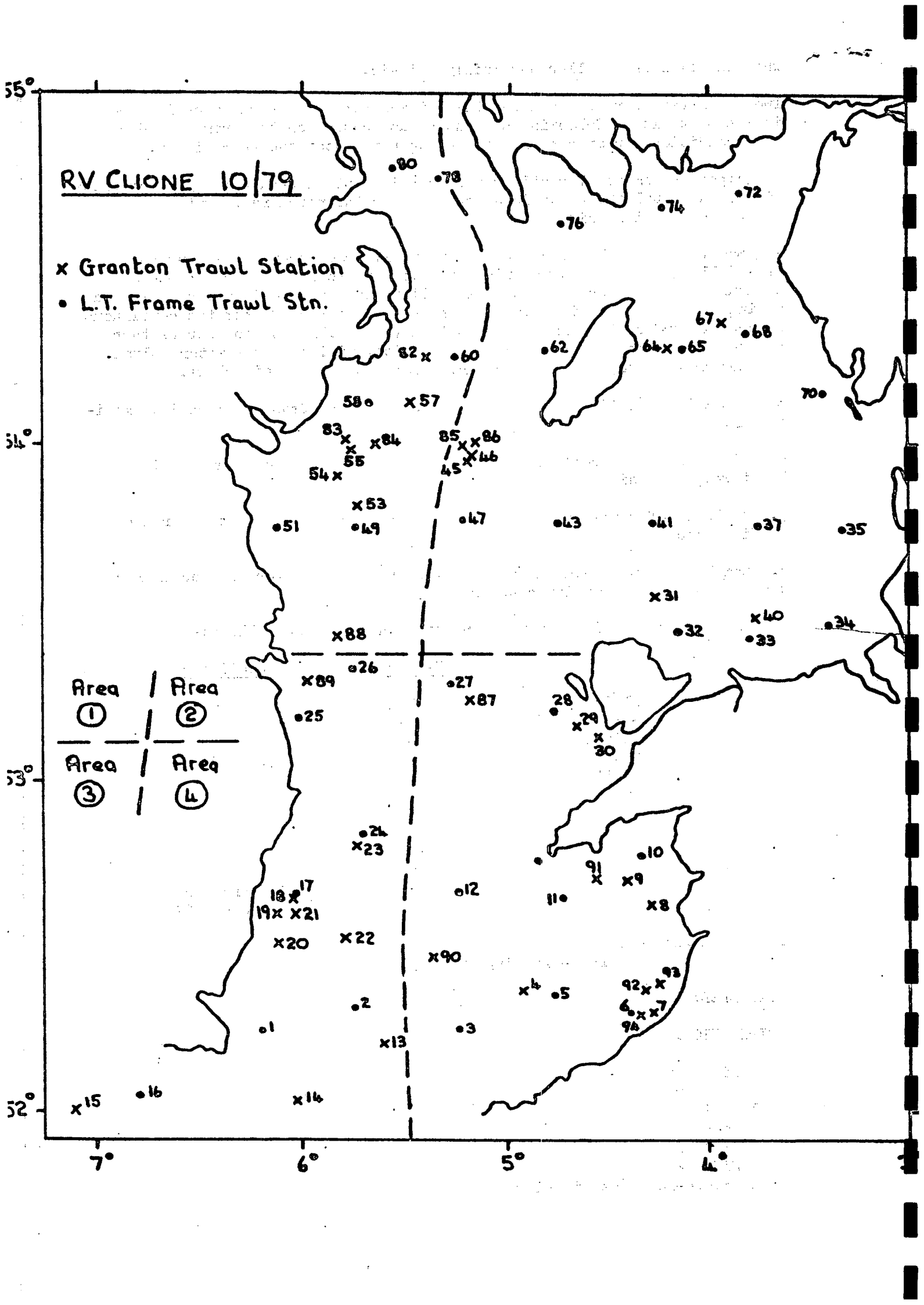
Keith Brander
12 November 1979

SEEN IN DRAFT: J R French - Master
G F Lee - Fishing Skipper

INITIALLED: AJL

DISTRIBUTION:

Basic List
K Brander
I Davies
M Boon
L Emerson
M Siddeek
S Scrope-Howe (Menai Bridge)


RV CLIONE 10/79
x Granton Trawl Station
• L.T. Frame Trawl Stn.
Area 1
Area 2
Area 3
Area 4
55°
54°
53°
52°
7°
6°
5°
4°