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

1982 RESEARCH VESSEL PROGRAMME

REPORT: RV CLIONE : CRUISE 5

(PROVISIONAL: Not to be quoted without prior reference to the authors)

STAFF:

Part (a)	R J Law (SIC)	Part (b)	M S Rolfe (SIC)
	M J Waldoock		M G Norton
	T W Fileman		D Bucke
	Denise Miller		S W Feist
	Catherine Wright		R N Crossett (C.S.G)
	E K Andrulewicz (Inst of Meteorology, Gdynia, Poland)		D S Limpenny

DURATION:

Left Lowestoft 1500 h, 2 April
Arrived Lowestoft 1305 h, 17 April
(All times are Greenwich Mean Time)

LOCATION:

English Channel and Liverpool Bay

AIMS:

Part (a)

1. To carry out a pre-exploitation baseline hydrocarbon survey in the licensed exploration areas west of the Isle of Wight.
2. To test the applicability of the 'Aquatracka' towed fluorimeter to the continuous monitoring of hydrocarbon levels in seawater whilst steaming through the Solent.
3. To repeat background measurements of hydrocarbon levels in subsurface seawater in the Irish Sea and English Channel.

Part (b)

1. To assess the incidence of disease, especially fin rot, in fish stocks in Liverpool Bay and the Irish Sea.

Additional

2. To collect 14 sediment samples from the vicinity of the Liverpool Bay sewage sludge dumping ground for physical and chemical analysis.
3. To collect fish samples from Liverpool Bay and the NE Irish Sea for chemical analysis.
4. To collect stomachs from certain fish species from the NE Irish Sea for Mr D Symonds.

NARRATIVE:

CLIONE left Lowestoft at 1500 h, 2 April arriving off the Isle of Wight by 0900 h 3 April. The 'Aquatracka' towed fluorimeter was deployed at 0948 h and towed at a depth of 5 m through the Eastern Solent and Southampton Water, the tow terminating at 1740 h off Hythe.

The collection of subsurface water and sediment samples for hydrocarbon analysis began at 0611 h 4 April off Kimmeridge and terminated at 1119 h 6 April, 42 stations having been worked. CLIONE then set sail for Fleetwood in deteriorating weather, which had become so bad by the early hours of 7 April that it proved impossible to round Land's End, and CLIONE sheltered at anchor in the Helford River, finally docking in Falmouth at 1010 h 7 April to exchange scientific staff and replenish water and stores for the second part of the cruise.

Part (b)

CLIONE left Falmouth at 1812 h 8 April with the second scientific team aboard. The weather had improved considerably and CLIONE reached Liverpool Bay without delay. Trawling (Aim 1) commenced at 0534 h 10 April just north west of the sewage sludge dumping ground where seven hauls were made. At each station all fish of commercial species were carefully examined for the presence of disease or other abnormality (damage clearly resulting from current trawling was not recorded). The great majority of fish were length-measured. Colour photographs and samples for histopathology were taken as necessary. In addition samples of whole, healthy fish and epibenthos were taken for chemical analysis and, whenever possible, stomachs were removed from a range of commercial fish species for Mr D Symonds (Aim 3). On 11 April a further 6 trawling stations were worked in a less well-known area between the dumping ground and the Bar light float. At one station the trawl belly was torn out and had to be replaced. Trawling continued on 12 April in two further areas; firstly, off the Constable Bank (south west of the dumping ground) where four hauls were made and then two hauls were made 15 miles north west of the dumping ground. CLIONE then steamed towards Morecambe Bay on the evening of 12 April and on the following day three trawl hauls were made 5-7 miles off Barrow-in-Furness and another in the Lune Deep (where trawling was restricted to one haul by the tide). Before returning to the dumping ground area, CLIONE anchored off Barrow-in-Furness for necessary repairs to an oil cooler. On the morning of 14 April, 14 stations were worked in the vicinity of the dumping ground using a 0.1 m² Day grab. Sediment samples were collected for physical and chemical analysis (Aim 2). The remaining sediments were sieved using a 1 mm mesh to separate the benthos which was picked out on board and, where possible, identified. No samples were retained. Following the grabbing, CLIONE steamed to a position 25 miles northwest of the dumping ground where two concluding hauls were made before CLIONE left the area at 1820 h 14 April and steamed homewards. At 0842 h 16 April Dr Crossett and Mr Bucke were put ashore at Weymouth by inflatable boat. CLIONE then continued her journey and berthed at Lowestoft at 1305 h 17 April.

RESULTS:

Part (a)

Aim 1 was successfully completed, 42 of the intended 47 stations being worked in the time available. Water samples were analysed by UV fluorescence spectroscopy aboard CLIONE, and concentrations found were close to background values expected for the area. Sediment samples were frozen for later analysis at Burnham.

Aim 2 was also completed. The 'Aquatracka' proved to be insufficiently sensitive to be useful for monitoring seawater hydrocarbon levels close to background, and is only likely to be useful in heavily polluted areas, such as those impacted by oil spills.

Aim 3 was abandoned, owing to bad weather and the fact that Part a of the cruise ended in Falmouth rather than Fleetwood.

Part (b)

Aim 1 was satisfactorily completed in good time mainly due to the fine weather and reliable trawling ground information available. Apart from the station in the Lune Deep, where the catch was very small, an average of 555 fish was examined at each haul, totalling over 13,000 fish. Substantial damage to the gear was sustained at only one station. Plaice, dab, whiting and flounder dominated the catches together with cod, dover sole, lemon sole, mackerel and red gurnard. A range of abnormalities were observed including epithelial hyperplasia, fin rot, ulcers and lymphocystis. A detailed assessment of the results must await further analysis but a preliminary report containing further information is available from the SIC (M.S.R).

Aim 2 was satisfactorily completed. Sediment samples were collected from 14 stations. From the superficial inspection made of the sievings, the benthos seemed very sparse.

Aim 3 was completely successful with samples of 16 species of fish and epibenthos taken from the vicinity of the dumping ground, the Lune Deep and elsewhere in the NE Irish Sea.

Aim 4 was completed. Stomachs were retained from a range of size groups from six fish species.

R J Law
M S Rolfe
23 April 1982

SEEN IN DRAFT:
J R F

INITIALED:
H W H

DISTRIBUTION:

Basic List +
R J Law
M J Waldoek
T W Fileman
Denise Miller
Catherine Wright
E K Andrulewis
M S Rolfe (20)
M G Norton
D Bucke
S W Feist
R N Crossett
D S Limpenny
J E Portmann
R A A Blackman
J M Davies (DAFS)
A D Read (DEn)

CLIONE 5 b/82

8-17 April 1982

— Granton trawl stations

Stn. 22-23

Stn. 20

Lune Deep
Stn. 21

54°N

IRISH SEA

Stn. 38-39

Stn. 18-19

Stn. 1-7*

sewage sludge
dumping ground

Stn. 8-13*

Bar L.F.

Stn. 14-17

14 grabbing stations
(Stn. 24-37)

R. Ribble

R. Mersey

53° 30'N

R. Dee

ANGLESEY

NORTH WALES

* Some trawling stations omitted
for sake of clarity.

4°W

3°30'W

3°W

