

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

1976 RESEARCH VESSEL PROGRAMME

REPORT: RV CLIONE: CRUISE 16

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

STAFF

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DURATION

Left Lowestoft 1600 h 16 November  
Arrived Lowestoft 0100 h 26 November

LOCALITY

Southern North Sea

AIMS

1. To study the locomotory behaviour of sole, eels and dogfish.
2. To sample fish using a Granton trawl and a 2 m<sup>2</sup> frame trawl, in order that the catch might be compared with samples taken simultaneously at the Sizewell Nuclear Power Station seawater intake screen by Dr Utting (CEGB, Fawley).

NARRATIVE

CLIONE sailed at 1600 h 16 November. An area close to the Sizewell buoy was surveyed prior to fishing which took place between 2200 and 0430 h. During this period three bottom and three midwater hauls were made, fishing the two gears alternately. CLIONE then steamed to the Shipwash and an acoustically tagged eel was released at 1130 h. This track was terminated at 1000 h 19 November. CLIONE then steamed south to the Wallet and sole 1 was released at 1400 h. This was lost at 0040 h 20 November. Sole 2 was released in the East Swin at 1315 h; however, contact was lost at 1500 h. Sole 3 was released between the Shipwash and the Inner Gabbard at 1800 h but had to be abandoned at 2130 h 22 November, when it moved on to Long Sand Head. CLIONE steamed overnight to Sizewell and dogfish 1 was tracked for a short while (0730-1130 h) before fishing began close to the power station. Three alternate hauls were made in midwater and on the bottom, as previously, ending at 1930 h. Sole 4 was released in the area at 2224 h and the track finished at 2337 h 24 November. Dogfish 2 was released at 0730 h the following morning but contact was lost at 1100 h. Dogfish 3 was released at 1300 h the same day and tracked until 0900 h 26 November. CLIONE docked at 1300 h the same day.

## RESULTS

### 1. Sole

Four tracks were made. The first in the Wallet (33 h duration) showed selective tidal transport in a north-easterly direction and the fish was further from the bottom by night than by day. Sole 3 (track was 28 h duration) moved southwards on the southerly tide and was abandoned on Long Sand Head. Sole 4 (track was 24 h duration) was the only fish to be caught and released in the same position and only local movements were observed with no movements into midwater. Sole 2 was lost a few hours after release. Difficulty was experienced in all sole tracks due to burying behaviour (particularly in the Wallet and the East Swin). Buoyancy collars were devised for the tag but tests revealed a diminution of the signal. Further work to overcome this problem is needed.

### 2. Eels

A single eel was tracked (47 h duration) between the Shipwash and the Inner Gabbard. The eel remained in midwater on both northerly and southerly tides. However, descents to the bottom were made at each slack water but only for brief periods. This eel was still freshwater-adapted and it is possible that marine adaptation might involve the ability to use selective tidal transport. The eel was markedly nearer the surface by night than by day.

### 3. Dogfish

Three dogfish were tracked in the Sizewell Bank area, the durations being 5, 4 and 21 h. The first fish spent the entire time on the surface and the second was lost. The third fish clearly showed selective tidal transport moving down to the Shipwash on southerly tides. Small-scale movements were observed with reference to sand ridges.

4. Two Granton and frame trawl samples were collected at Sizewell Bank buoy, about 2 miles off Sizewell Power Station, on the night of 16/17 November and 23 November to coincide with the 6 h low water Spring and Neap tide periods. The Granton catch was light and consisted largely of flounders and whiting. The frame trawl, fishing pelagically, caught largely 0-group whiting. These catch data will be compared with sample fish taken off the power station intake screens as part of a CEGB research project.

M Greer Walker  
2 December 1976

SEEN IN DRAFT    JRF  
                  GFL

INITIALLED        AJL

#### DISTRIBUTION

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