

NH

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

1986 RESEARCH VESSEL PROGRAMME

REPORT: RV CIROLANA: CRUISE 1

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

STAFF:

S J Lockwood
M H Beach
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D R-Eaton
P R Witthames
W Riley
A Canario (Portugal)

DURATION:

Left Lowestoft 1300 3 January 1986
Arrived Lowestoft 0830 23 January 1986
(All times are Greenwich Mean Time)

LOCALITY:

English Channel and Southern Bight

AIMS:

1. To undertake an acoustic survey of pelagic shoals in the English Channel.
2. To identify pelagic fish shoals by trawling and to take biological samples.
3. To tag bass.
4. To trawl for female plaice and study the physiology and endocrinology of sexual maturation.

NARRATIVE:

CIROLANA left her berth at 1400 hours, 3 January and made for the Brown Ridge where fishing for plaice began at dawn 4 January. Very few plaice were caught, either in daylight or darkness, and none were suitable for the maturation or fecundity studies. Overnight, the ship steamed to the eastern Channel and began the acoustic survey at 1030 hours, 5 January. The survey continued without interruption for two days but gales on 7 January caused aeration problems. The survey stopped off the Needles and the ship anchored overnight off Yarmouth. The survey resumed the afternoon of 8 January and continued until early morning 10 January when westerly gales caused further aeration problems, surveying ceased and CIROLANA anchored in Tor Bay. For the next five days, westerly gales limited work to surveying and trawling for plaice in western Lyme Bay, when not anchored in Tor Bay. In the afternoon of 15 January we left Tor Bay and steamed west to Eddystone Bay which we could survey in the lee of the Cornwall peninsula. By 17 January conditions had moderated sufficiently to permit surveying between Mounts Bay and Ushant. On 18 January the ship returned to Eddystone Bay and spent the day pelagic trawling for bass. The next day the fishing gear was changed for plaice fishing but by mid morning severe westerly gales once more cut the programme short and CIROLANA sought shelter in Mevagissey Bay. A further demersal trawl haul was made in Eddystone Bay at dawn, 20 January before resuming the acoustic survey. Just after dusk a large shoal of fish was located 7 miles SE

of Start Point. After sampling with the demersal trawl the extent of the shoal was mapped by steaming a tight acoustic grid across it. This was abandoned at 0300 hours 21 January in storm conditions and CIROLANA commenced the journey back to the Brown Ridge, where trawling resumed 0700 h, 22 January. Trawling ceased at 1230 h in rapidly deteriorating, gale conditions and CIROLANA set course for Lowestoft at 1430 h. She berthed at 0830 h, 23 January.

RESULTS:

Aim 1. A total of 1762 miles were steamed during the acoustic survey (Figure 1). Compared with similar surveys a decade or so earlier, there was a noticeable paucity of pelagic fish shoals. Sprat shoals were found in Lyme Bay, scad shoals around the south Devon headland and thirty miles south of Lands End. Pilchard shoals were concentrated south and east of the Eddystone Light where they were being fished by locally registered vessels. No mackerel shoals were found other than the fish in close association with scad 7 miles south east of Start Point.

The acoustic survey was made with a lightweight towed body 38kHz transducer & Simrad analysing equipment (EK400 & Simrad QM & QD echo integrator). All the equipment operated satisfactorily and acceptable results were obtained at a towing speed of 10 kts and sea states up to 9 on the Beaufort scale. Additional microcomputers were used with the survey equipment and the opportunity taken to define the survey procedure so that estimates of fish biomass (tonnes/kg²) could be calculated during the survey. About 40,000 acoustic measurements were collected and stored using a spreadsheet program which enabled a graphical presentation of biomass in each of the 10 layers used throughout the survey. The immediate availability of the data and the species mix (from trawl samples) enabled estimates of biomass to be made. A mixed shoal of mackerel and scad off Start Point was surveyed, following a series of close transects. Provisionally, it was estimated to comprise 50,000 t mackerel and 20,000 t scad.

Aim 2. Fish shoals were identified by trawling with either a Portuguese high head-line trawl or 1600 Engel trawl, depending on where the shoal was positioned, in the water column. The only problems encountered were with a 1600 Engel tow in relatively shallow water when conditions were less than ideal. The belly panel was torn.

Otoliths were collected from stratified samples of mackerel, pilchard and scad. Demersal fish otoliths were also collected in the western English Channel at the level specified in the Celtic Sea trawl survey schedule.

Aim 3. No bass concentrations were found and no current fishing activity was known to the D.I. South-West or commercial vessels consulted during the cruise.

Four bass were taken during the cruise and two of these were tagged and released, but none were caught in the three 3 hour Engel trawl hauls made south of the Eddystone Reef.

Tagged bass releases:

E90	1686	29 cm	50° 37'N	01° 42'W
E90	1868	41 cm	50° 22'N	03° 12'W

Aim 4. Two stage 4 plaice ovaries were collected from the Brown Ridge.

Twenty maturing plaice were used to incubate ovaries in vitro to produce egg maturation factor. Additionally, pituitaries were collected from about 500 dabs. They have been shown to be effective in inducing maturation of plaice ovaries.

Aim 5. During the cruise 40 samples of blood were collected from 12 species of fish for Dr Jamieson. Six common dolphins (*Delphis delphis*) were taken (drowned) in the pelagic trawl south of Eddystone. Two were frozen whole and four were eviscerated and refrigerated. The heart, stomach, liver, kidneys and genitalia of the eviscerated specimens were preserved in formalin. All were returned for collection by the Sea Mammal Research Unit.

Four velvet swimming crabs, six spider crabs and four edible crabs were returned live for collection by the Zoology Department, the University of Hull.

Twelve female lesser spotted dogfish were returned live: for collection by Zoology Department, Cambridge University.

S J Lockwood
27 January 1986

• EN IN DRAFT:

M J Willcock (Master)
W M May (Skipper)

INITIALLED:

D J G

DISTRIBUTION:

Basic List +
S J Lockwood
M H Beach
A P Scott
C R Hood
L E Woolner
G Pickett
D R Eaton
P R Witthames
W Riley
A Canario (Portugal)

Figure 1

