

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

1996 RESEARCH VESSEL PROGRAMME

REPORT: RV CORYSTES: CRUISE 3

STAFF: G P Arnold (SIC)
C M O'Brien
B H Holford
B F Riches
A A Buckley
M O Eagle

DURATION: Left Lowestoft 1130 h 9 February
Arrived Lowestoft 2200 h 20 February

LOCALITY: North Sea

AIMS:

1. To release 100 plaice tagged with electronic data storage tags and 100 controls tagged with Petersen discs tags.
2. To track migrating plaice equipped with long-life transponding acoustic tags and to estimate their swimming speed and orientation by simultaneous use of the sector scanning sonar and the acoustic Doppler current profiler (ADCP).
3. To relay a minipod guard buoy in Tees Bay.
4. To carry out trials of 34 kHz transponding acoustic tags.

NARRATIVE:

CORYSTES sailed on the midday tide on 9 February. Weather conditions were unsuitable for tracking and she proceeded directly to Tees Bay, where she lay overnight before laying a new guard boy the following morning. With aim 3 accomplished CORYSTES returned south, arriving off Sheringham at 2200 h, 10 February. Scanner and tag trials were carried out in sheltered conditions the following morning and in the afternoon CORYSTES steamed to a position south of Smiths Knoll, where the first fish was released at 1700 h 11 February. This fish was lost in bad weather at 0720 h 12 February. A second fish was released close to Southwold at 1400 h and tracked until 1700 h on 14 February, when it had to be abandoned because of a technical fault with the sector scanning sonar. CORYSTES spent the night off Southwold where repairs to the electrical system controlling the hydraulic stabilisation package were carried out the following day. A third fish was released at position 52° 19.43' N 02° 05.39' E at 1815 h and tracked until 1115 h 16 February, when it was abandoned because of another fault with the electrical control system of the stabilisation package. CORYSTES then sought shelter from bad weather and remained at anchor in Corton Roads until 0900 h 18 February. With repairs completed, the fourth fish was released at 1150 h at a position 52° 20' N 02° 7.2' E. It was followed until 0345 h 19 February, when the track was abandoned because of gale force northerly winds. CORYSTES then dodged for 36 h until the cruise was

terminated on instructions from the laboratory, because of the large oil spill from the tanker 'Sea Empress' in Milford Haven.

RESULTS:

1. Because of bad weather, it was not possible to collect live plaice by charter vessel at Smiths Knoll during late January and early February, as planned, and aim 1 could not therefore be attempted.
2. Four plaice were tracked for periods of 14, 51, 16 and 15 h. Fish 2 swam offshore and remained on or close to the sea bed throughout the track, whilst the other three fish showed selective tidal stream transport. Fish 1 and 3 moved north; fish 4 moved south. The ADCP was run nearly continuously during these tracks and measurements of tidal stream speed and direction were made during most of the periods when the fish were in midwater. The new wire 'saddle' for the acoustic tags designed during CORYSTES 12b/95 worked very well. Some problems were experienced with large female plaice in an advanced stage of maturity which became 'egg-bound' and could not be used for tracking.
3. Aim 3 was carried out without any disruption to the other aims of the cruise.
4. Aim 4 was accomplished using an anchored mooring (water depth approx. 20 m) with a 34 kHz tag suspended at a depth of 15 m. The tag was tracked as the ship drifted away from the mooring and was clearly discernible (both visually and audibly) with the SM 600 sonar out to a range of 3400 m. With the ship steaming slowly back towards the mooring, the target was easily tracked down to a range of 250 m. The sonar settings were recorded for use during future cruises.

G P Arnold
20 February 1996

SEEN IN DRAFT: B A Chapman (Master)
W M May (Senior Fishing Mate)

INITIALLED: GPA

DISTRIBUTION:

Basic list +
G P Arnold
C O'Brien
B H Holford
B F Riches
A A Buckley
M O Eagle
Clerk to Eastern SFC; FCO