R1/3

Not to be cited without prior reference to the Marine Laboratory, Aberdeen

RV *Dana*

Cruise D0797 (Marine Laboratory Cruise 1497H)

REPORT

21-30 April 1997

Personnel

S P R Greenstreet SSO (Assistant Cruise Leader)

Out-turn days per project: 8 days C578

Objectives

1. To carry out an echo-integrator survey to determine the biomass and distribution of pelagic fish in an area off the Firth of Forth. This survey to be carried out during daylight hours when sandeels are most likely to have emerged from the seabed. Trawling to be carried out in areas with high densities of pelagic fish in order to determine fish species, size and age composition and weight-length relationships of the pelagic fish species and their main fish predators.

2. To map seabed sediment type using the acoustic system RoxAnn. Sediment samples to be collected by Box Corer from areas of varying sediment type, as determined by RoxAnn, so as to "groundtruth" the RoxAnn data. A video camera system to be deployed at each Box Core station in order to determine sediment macro-structure over a larger seabed region.

3. To sample sandeels buried in the sediment using a modified scallop dredge from a range of different sediment habitats and over a range of water depths. This sampling to be carried out at night when sandeels are usually absent from the water column.

4. To collect meteorological data, sea surface salinity, temperature and phytoplankton load, and water current velocity and direction at various depths continuously during the course of the cruise. To collect information on water temperature and salinity profiles at regular intervals throughout the cruise.

Narrative

The marine laboratory's scientific equipment was loaded onto *Dana* on the morning of 21 April at Aberdeen and the ship sailed at 1300 hours. Whilst steaming for the Firth of Forth the acoustic integration equipment was tested and the RoxAnn system calibrated.

Nocturnal dredging for sandeels commenced on the night of 21 April and two stations where sampled each night from then on, finishing on the night of 28 April. A total of 16 stations were visited. At each station between three and seven dredge samples were collected. The dredge was towed for 15 minutes on each deployment. Although the dredge was towed in various directions at each station, the vessel attempted to place the central point of each tow on the

Figure 1. Chart showing central point of each five minute acoustic survey period and the locations of EXPO trawl sample stations.