

R1/6

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FRV *Clupea*

Cruise 9/90

9CR90

REPORT

6-24 August 1990

### Personnel

J R G Hislop	PSO (in charge)
A P Robb	HSO
M A Bell (Miss)	SO
F Burns	ASO

### Objective

To study the diel behaviour patterns and the predators and prey of 0+ and 1+ gadoids in the northwestern North Sea.

### Narrative

*Clupea* left Buckie on the evening of 6 August and reached east Shetland waters on the afternoon of the following day. Exploratory hauls with the midwater trawl were made to locate pelagic 0-group gadoids. During the period 9-11 August a series of midwater and demersal trawls, during which each of three depth strata was fished at 4 h intervals over the 24 h period, was successfully completed in moderately deep water (110-120 m) east of Yell. Further exploratory hauls were then made east of Orkney and in the outer Moray Firth in an unsuccessful attempt to locate another suitable working area. After the half landing in Kirkwall on 14 August *Clupea* moved south. Suitable quantities of 0-group gadoids (haddock, whiting and Norway pout) were found off the Angus coast and two time series of trawl hauls were made, one in shallow water (50 m) and one in deeper water (110 m). During this time *Clupea* operated from Montrose. On completion of the programme the scientific equipment was unloaded and the scientific personnel left the ship in Aberdeen on 23 August. *Clupea* then returned to Buckie, docking on 24 August.

### Results

This was the first time *Clupea* had carried two trawls on her net drum. Because weather conditions were generally good, no serious problems were experienced in changing gears between hauls at sea, even though this meant alternating between Superkrub (pelagic) and conventional demersal trawl boards. However, for reasons of speed, safety and convenience it is recommended that dual-purpose boards be used on any future cruises of this nature.

A total of 64 half hour hauls was made, 42 with the pelagic trawl and 22 with the demersal trawl. 0-group whiting were caught in all pelagic hauls, in numbers ranging from 10 to 580 per 30 minutes. East of Shetland, catches of whiting in pelagic hauls were consistently and considerably higher than in demersal hauls. At both the deep water and shallow water stations near Montrose demersal catches were much larger than pelagic catches during the hours of daylight. During the hours of darkness, however, numbers of whiting caught on the bottom and in midwater were similar, although much smaller than the numbers caught on the bottom in daylight. These results indicate that in August a considerable proportion of

0-group whiting have not yet fully adopted a demersal way of life. In contrast, although moderate numbers of 0-group haddock (up to 1,800 per 30 minutes) were caught with the bottom trawl, virtually none was caught in midwater. Small numbers of 0-group Norway pout were caught in midwater, but only during the hours of darkness.

The following approximate numbers of fish stomachs were collected to study predation by and on 0-group gadoids:

Cod	40	Plaice	80
Haddock	590	Lemon sole	130
Whiting	1165	Common dab	430
Norway pout	275	Long rough dab	350
Herring	40	Miscellaneous spp.	210
Scad	90		

J R G Hislop  
5 September 1990

Seen in draft: W Smith

