CENTRE FOR ENVIRONMENT, FISHERIES AND AQUACULTURE SCIENCE
LOWESTOFT LABORATORY, LOWESTOFT, SUFFOLK NR33 0HT

2004 RESEARCH VESSEL PROGRAMME

PROGRAMME: RV CEFAS ENDEAVOUR: CRUISE 2

STAFF:

T W Boon (SIC)
B Harley (2 SIC)
A Payne
M Etherton
M Brown
D Brown
B Horton (18 - 23 Feb)
R Rogers (18 - 23 Feb)
M Locker (NFFO representative) (18 - 22 Feb)

DURATION: 11 February – 23 February

LOCATION: North Sea

AIMS:

1. To participate in the ICES co-ordinated International Bottom Trawl Survey for quarter 1. To fish over an allocated area of the North Sea using a standard GOV trawl in order to obtain information on:
   a) Distribution, size composition and abundance of all fish species caught.
   b) Age – length distribution of selected species.
   c) Distribution of fish in relation to their environment.
   d) Distribution of macrobenthos and anthropogenic debris.
   e) Surface and bottom temperature and salinity data using CTD.
   f) Length weight information using individual fish measurements.

2. To collect material for fish identification courses (C Fox, CEFAS Lowestoft)

3. To investigate, time permitting, the effects on catches of trawl rigging variations.

NARRATIVE:

(all times are UTC)
RV CEFAS Endeavour sailed from Lowestoft at 1140h on 11 February. The survey was begun off Dunwich (ICES rectangle 33F1) where a single haul was made that afternoon. Sampling at each station consisted of one thirty-minute tow with the GOV trawl. Temperature and salinity profiles were obtained using a SAIV micro CTD attached to the headline of the trawl on the forward part of

the starboard wing. An overnight passage was made to the southern end of the survey area, off North Foreland. Thereafter daily programmes of three or four hauls were completed in continuing good weather. Slight damage was sustained when the trawl clipped the unmarked end of a pot string at the end of a tow off the north Norfolk coast but this haul was worked up as predominantly valid. The northernmost hauls were completed on 17 February during one of which a deck crewman sustained leg injuries when a wire rope parted. By the early morning of 18 February the crewman's condition was such as to need medical treatment. A rendezvous was made with the Whitby lifeboat just off their home port but sea conditions prevented a transfer. The casualty was taken ashore in the ships jet boat, escorted by the lifeboat. A single haul was made late morning during which damage was sustained to the net. Two CEFAS staff, a crewmember and a representative of the NFFO were picked up from Bridlington during the afternoon.
The standard rigged GOV was replaced with one rigged for hard ground. This gear arrangement had been successfully used during the westerly quarter 4 survey 2003 and included the following changes to the standard rigged GOV. The cetre square and bosom reset from 5m to 3m, middle bridles removed, sweeps reduced from 50m to 20m of wire plus 2m of heavy chain and groundgear replaced with rockhoppers. Three hauls were made close into the Yorkshire coast on 19 February and three hauls the following day further offshore in the area of the Cleaver Bank and Outer Silver Pit. The gear was changed again to a standard rig but with the centre square and bosom reset from 5m to 3m. Fishing recommenced late morning on 21 February, repeating a haul made earlier with standard rigged gear in ICES rectangle 37F1. A repeat haul was also made later that day in rectangle 38F1. The weather deteriorated over night. With more than 40 knots of wind registering at first light, it was not possible to commence fishing operations and the vessel was taken into the anchorage under Flamborough Head. During early afternoon M Locker was transferred to an angling boat making for Bridlington. Endeavour left the anchorage at 0730h 23 February and proceeded to a position fished earlier, 15nml off Hornsea. With 4m plus swells, the limitations of the deck cranes prevented fishing. The prevailing winds and short term forecast indicated little likelihood of an improvement in the sea conditions so a course was set for Lowestoft. Endeavour was docked at 2206h 23 February.

RESULTS:

Aim 1. Twenty-one 30 minute GOV trawl stations were successfully completed. Gear damage was sustained during two hauls, one of which was invalidated and the other worked up as reduced duration. Trawling was carried out using the standard specification for International Bottom Trawl Surveys (North Sea). A SAIV micro CTD was used attached to the starboard wing of the trawl to obtain temperature and salinity data at each of the 21 trawling stations. A chart indicating the position of each trawl station is attached (Figure 1). Scanmar equipment was used to monitor headline height, wing spread and door spread. The performance of this equipment was much improved since additional transducers have been coupled into the system. Disappointingly, the attendance on the cruise of a Scanmar specialist was cancelled at short notice. Further monitoring of this system is still required. At each station, the catch of each species was weighed and all fish, or representative samples, were measured. Samples of otoliths for age determination were taken as specified in standard instructions. Benthos and crustacea were identified to the species wherever possible and recorded as present. Any anthropogenic waste material was recorded and weighed. The resultant data were input to computer database using the CEFAS Electronic Data Capture System. These data will be analysed at CEFAS Lowestoft and will provide a major input to the ICES assessment of North Sea gadoids and pelagic species.

Aim 2. Specimens of 14 different species were preserved for the Laboratory's fish identification courses. (C Fox, CEFAS)

Aim 3. Using information obtained by the NFFO representative, a GOV rigged for hard ground was worked at six positions without gear damage. Catches were small and did not contain any larger cod. The NFFO representative suggested that the towing speed was too high and the attack angle of the sweeps too great for successful cod fishing. Two comparative hauls were made with standard rig GOV but with the centre square and bosom reset from 5m to 3m. A provisional analysis indicated that catch compositions were similar to those made with a standard GOV. A chart indicating the position of each experimental trawl station is attached (Figure 2).

MISCELLANEOUS:

1. Five samples of sardine (*Sardina pilchardus*), three of 100 fish and two of 50 fish, were deep frozen for the SARDYN project. (B Roel, CEFAS, on behalf of Y Stratoudakis, IPIMAR, Portugal)
2. Tissue samples were collected from 50 *Raja spp* (27 *Raja clavata*, 22 *Raja radiata*, 1 *Raja montagui*) for genetic studies. (J Ellis, CEFAS, on behalf of M Chevelot, Groningen University, Netherlands)
3. Cod (*Gadus morhua*) gonad samples from 9 fish were processed for fecundity studies. (P Witthames, CEFAS).
4. One spurdog (*Squalus acanthias*) was tagged with a Petersen disc. (J Ellis, CEFAS)
5. Three berried hen crabs (*Cancer pagurus*) were frozen whole for microsatellite DNA analysis. (D Eaton, CEFAS)
6. A selection of invertebrates and 50 whiting (*Merlangius merlangus*) were collected as material for a local high school science fair. The requirement for a selection of fish species to demonstrate fish diversity is still outstanding from this request. (J Ellis, CEFAS)

T W Boon
23 February 2004

SEEN IN DRAFT:

Master	R McCurry
Senior Fishing Mate	B Salter

INITIALLED:

Surveys Contract Manager	R Millner

DISTRIBUTION:

Basic list +	T W Boon	B Harley	A Payne
	M Etherton	M Brown	D Brown
	B Horton	R Rogers	
	A Locker (NFFO)	M Locker (NFFO)	

Figure 1. Stations fished with Standard NS IBTS GOV

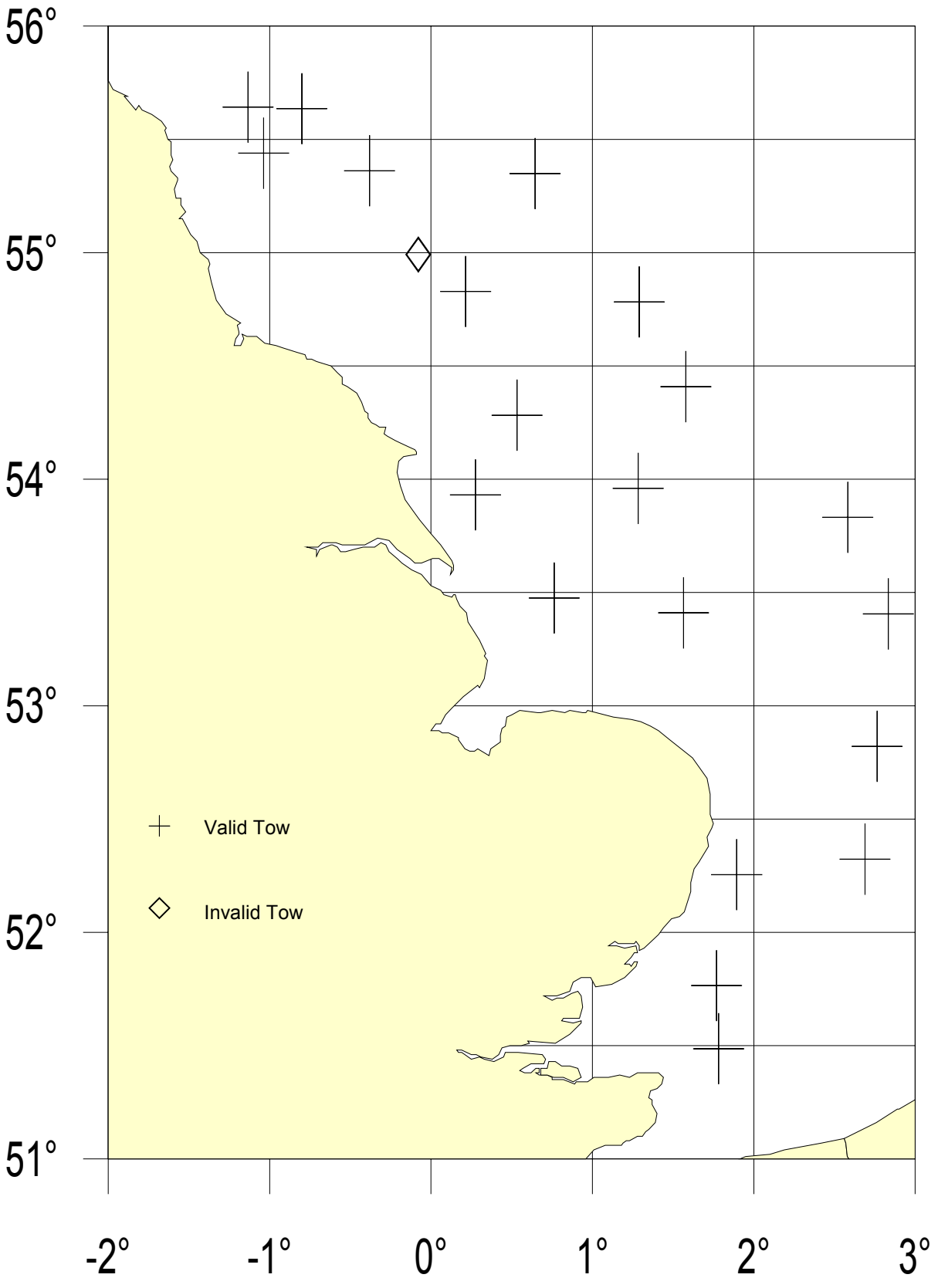

Figure 2. Stations fished with alternative rigged GOV