

R1/6

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

FRV *Clupea*

Cruise 0300C

## REPORT

9-23 February 2000

### Personnel:

J Kinnear (In charge)  
C Shand  
I Tuck  
A Weetman

### Gear:

50 mm prawn trawl BT 149B (plus scanmar)  
BT116 trawl with modified ground gear  
Day grab  
Towed TV sledge, umbilical towing cable and cameras (plus backup)  
Drop frame camera system

### Objectives:

#### Part 1:

- a) To obtain estimates of distribution and abundance of *Nephrops* in selected sealochs on the NW coast using underwater cameras.  
  
Lochs - Nevis, Hourn, Duich, Kishorn, Torridon, Ewe, Broom, Inver, A'Chairn Bhain, Laxford, Inchard and Eriboll.
- b) To collect sediment samples at each station.
- c) To use trawl caught samples of *Nephrops* to examine biological features at different sites throughout the survey areas.
- d) The TV survey will also be used to collect data on other potential commercial species.

#### Part 2:

- a) To study *Nephrops* burrow occupancy rates in the Moray Firth using TV and the modified trawl gear.

**Out-turn days per project:** MO1T; 15 days

## Narrative:

Staff joined the vessel at 0900 hours on Wednesday 9 February. Severe weather prevented sailing until Saturday 12th. *Clupea* sailed to Sandwick Bay in deteriorating weather, anchoring for the night. An attempt was made the following day to proceed through the Pentland Firth. Continuing strong NW winds forced the vessel to turn back. *Clupea* returned to the Moray Firth and work was started on *Nephrops* burrow occupancy trials, originally scheduled for the last part of the trip. Initial tows with the modified ground gear proved successful but deteriorating sea conditions prevented the deployment of the TV sledge to monitor the ground gear tracks. *Clupea* steamed to a more sheltered area and the exercise was successfully repeated. On the 16th the weather moderated sufficiently to allow *Clupea* to proceed overnight through the Pentland Firth, arriving in Gairloch on the 17th. The TV survey of the Loch Torridon area began on the 18th and was completed on the 19th. Thirteen stations being surveyed. *Clupea* then sailed to Loch Kishorn where six stations were completed before steaming north to Gairloch where she anchored for the night. A further seven stations were completed in Loch Broom and Enard Bay. One station in Loch Broom had to be abandoned because of the large numbers of creels in the area. *Clupea* then proceeded to Lochinver for the night. The following morning *Clupea* steamed to Loch A'Chairn Bhain where a further three stations were completed. In deteriorating weather conditions *Clupea* then set sail for the Moray Firth, arriving off Cullen at 0400 hours on the 22nd. The final day was spent evaluating a new zoom camera for use during future surveys. *Clupea* docked in Fraserburgh at 1500 hours on the 22nd.

## Results:

1. Preliminary estimates of mean *Nephrops* burrow densities for each station are shown in the table. Further analysis will be conducted in the laboratory.
2. Initial results with modified trawl ground gear has shown that it should be possible to use the method to estimate *Nephrops* burrow occupancy by lightly filling in existing burrows on a previously surveyed area. Any burrows containing *Nephrops* appear to be rapidly re-excavated as observed by a repeat TV survey over the area. Full analysis of the tapes has yet to be carried out.
3. No trawl caught samples of *Nephrops* were obtained during the sea loch survey due to the proximity of creels in all suitable areas.
4. Sediment samples using the Day grab had to be stopped due to the failure of the spooling mechanism on the winch.

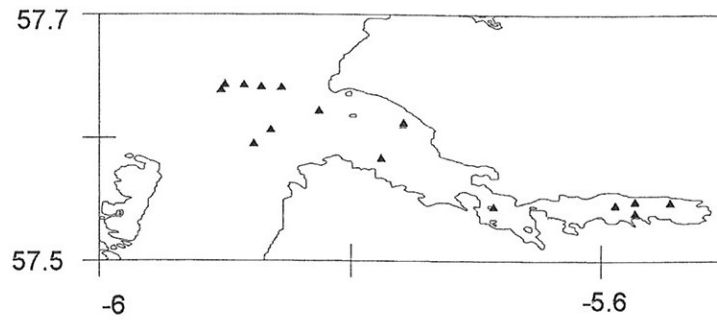
J Kinnear  
7 March 2000

Seen in draft: A Simpson, OIC

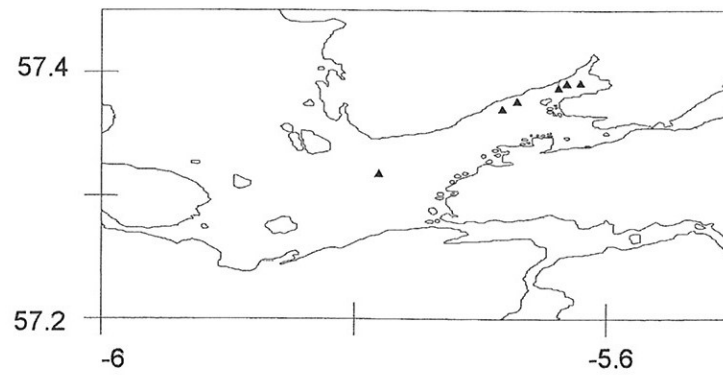
Haul No.	Latitude	Longitude	No. Nephrops burrows 10m2
	LOCH	TORRIDON	
T001	57.6390	-5.9033	2.87
T002	57.6435	-5.9003	3.22
T003	57.6432	-5.8852	2.70
T004	57.6417	-5.8715	2.45
T005	57.6412	-5.8553	3.19
T006	57.6222	-5.8255	4.60
T007	57.6067	-5.8640	5.00
T008	57.5955	-5.8777	3.80
T009	57.5835	-5.7762	1.18
T010	57.5457	-5.5890	3.97
T011	57.5487	-5.5732	4.81
T012	57.5392	-5.5732	6.79
T013	57.5477	-5.5450	2.98
T014	0.0000	0.0000	na
T015	57.5442	-5.6865	2.15
T016	57.6123	-5.7582	1.79
	LOCH	KISHORN	
K001	57.3913	-5.6315	2.62
K002	57.3877	-5.6382	1.57
K003	57.3770	-5.6712	8.37
K004	57.3705	-5.6828	3.41
K005	57.3917	-5.6207	7.41
K006	57.3183	-5.7808	3.41
	LOCH	BROOM	
B001	57.9523	-5.4095	2.50
B002	57.9898	-5.3732	6.45
B003	58.0230	-5.3860	3.00
B004	57.9430	-5.2767	5.08
	ENARD	BAY	
E001	58.1210	-5.3678	4.38
E002	58.1088	-5.3595	7.80
E003	58.1295	-5.3147	10.32
	LOCH	A'CHAIRN	BHAIN
C001	58.2562	-5.0603	7.38
C002	58.2457	-4.9925	5.23
C003	58.2320	-4.9573	1.74

Table 1      Number of *Nephrops* 10m2 for each TV station

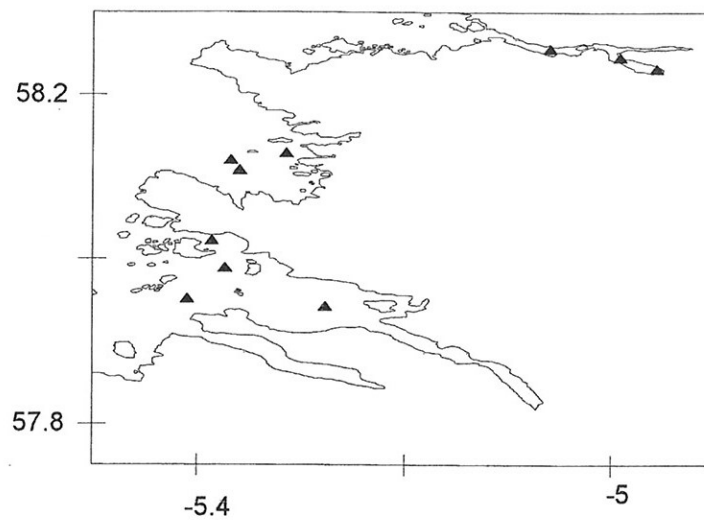
### LOCH TORRIDON



### LOCH KISHORN



### LOCH BROOM, ENARD BAY AND LOCH CHAIRN BHAIN



TV SURVEY STATIONS