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FRV *Clupea*

Cruise 0904C

REPORT

2-17 June 2004

Ports

Start point: Fraserburgh
Half landing: Fraserburgh
End point: Fraserburgh

Personnel

A Weetman OIC
C Shand
B Ward

Gear

50 mm prawn trawl BT 149B, plus Scanmar
Day grab and table
Towed TV sledge, umbilical towing cable and cameras (plus backup)
TV drop frame

Objectives

- To obtain estimates of distribution and abundance of *Nephrops* in the Firth of Forth and Moray Firth using underwater cameras.
- To collect sediment samples at each station.
- To use trawl caught samples of *Nephrops* to examine biological features at different sites throughout the survey areas.
- The TV survey will also be used to collect data on other potential commercial species.
- Complete TV and trawl surveys in Firth of Forth for EPS Group.
- Collect sediment samples off Aberdeen for EPS Group.
- Collect biological data for EU Data Regulation requirements.
- Collecting digital video footage from the Inner Moray Firth for EPS Group's Impact Assessment survey.

Estimated Project Time: 15 Days RV0405

Narrative

Clupea sailed from Fraserburgh on 2 June 2004, headed south to the Firth of Forth, stopping off *en-route* to obtain three sediment samples for the EPS Group and arriving at St Andrews Bay at 2030. The first day of survey work cleared the most exposed, easterly stations as the weather was favourable. A trawl station was then carried out on *Nephrops* grounds by Eyemouth, and the vessel anchored at Coldingham Bay overnight. The trawl haul supplied samples for carapace length, sex, female ovary staging, tail width and total weight measurements, to be used in house and to comply with EU Data Regulation requirements. On the first TV tow of 4 June, a bolt on the winch was observed to be making contact with the TV cable, cutting in to the outer sleeve. This had to be resolved before any more TV work could continue, so the vessel headed for Leith, where *Clupea* was met by Marr Vessel Management's senior ship's engineer and a local marine engineering company. The problematic bolt was ground down, bobbins on the guiding-on bars were replaced, and the micro switch on the spooling gear was removed, cleaned and replaced. Two further hours were spent in Leith on the morning of 5 June correcting a problem with the micro switch before heading back in to the Firth and completing TV stations off the North coast. However, the guiding on gear was still not fully operational, and although in good conditions and with a great deal of care, operations could continue, the situation was far from ideal, with a risk of damage to the cable if conditions deteriorated (as forecast). It was arranged for the vessel to return to Leith on the night of 6 June. *Clupea* anchored in Fidra Bay on the night of 5 June. During 6 June, the seven most westerly TV stations were completed, followed by four fishing tows requested by the EPS Group over grounds near Inchkeith. However, one of these hauls provided enough *Nephrops* for morophometric measurements in addition to the sample requirements from the EPS Group. Once the fishing was completed, *Clupea* headed for Leith, arriving at 1900. On 7 June the engineering company replaced the guiding on gear, and manufactured a bracket to brace the spooling guides. By 2200 that night the bracket was in place, and the situation was resolved. After leaving Leith on 8 June, TV survey work continued to the south and south east of the Isle of May, in force 5 winds. The winch components which had been repaired over the last few days worked well, although an intermittent problem with power to the TV winch had developed, causing the winch, on occasion, to struggle to recover the sledge. Before anchoring to the west side of the Isle of May in thick fog, one fishing tow was carried out. On 9 June, two TV stations and one fishing site had to be surveyed before heading to Fraserburgh, arriving in port at 2100. Thursday 10 June was spent in port as a rest day. TV work began again on 11 June in the Moray Firth, anchoring in Aberdour Bay over night. Sea conditions on 12 June improved as the day progressed, allowing for a high number of TV sites to be surveyed, and the vessel anchored for the night in Cullen Bay. On13 June, several more TV sites were surveyed and one haul was made before anchoring off Lossiemouth for the night. On 14 June, with the winch hydraulics problems and poor weather conditions, *Clupea* headed further west to gain some shelter from the mainland. The inner Moray Firth stations were achievable, and as the weather worsened, *Clupea* set a course for Tarbat, hoping that the land would provide some protection for the northerly stations situated there. Three sites were surveyed and one trawl haul was made before *Clupea* headed to Embo to anchor in shelter from the north westerly gale. Work on 15 June was initially kept close to the mainland, as conditions were too rough further east. Three additional stations were surveyed over traditional *Nephrops* trawling grounds before *Clupea* headed due south to trawl on grounds where high burrow counts had earlier been observed, before moving on to Lossiemouth to anchor. On 16 June *Clupea* steamed east to the commercial fishing grounds in the deep trench to carry out one trawl station, before steaming for Fraserburgh, where she arrived in port at 1500. Once in port the winch hydraulics were examined to ascertain the continuing hydraulic problem. The scientific staff left *Clupea* at 0830 on 17 June, with all scheduled TV stations surveyed, all EPS requests fulfilled, sediment samples from each TV site, and trawls providing baseline data for morophometrics and EU requirements.

Results

The position of the TV stations and trawl tows are shown on the tables below.

Sediment samples were collected at all suitable sites.

Video recordings of *Nephrops* burrow densities have been verified, with the results yet to be analysed.

All sediment and biological samples have been passed on to the EPS group.

Biological and morophometric data has been collated and will be used as part of the EU data gathering regulations.

A Weetman
1 November 2004

Seen in draft: A Simpson, OIC *Clupea*

Firth of Forth TV Sites

TV Station No	Latitude	Longitude
FF04801	5616.007N	0220.484W
FF04802	5614.537N	0223.312W
FF04803	5613.901N	0223.769W
FF04804	5613.071N	0222.081W
FF04805	5613.109N	0217.706W
FF04806	5606.981N	0216.396W
FF04807	5559.840N	0203.638W
FF04808	5558.732N	0200.751W
FF04809	5557.420N	0207.941W
FF04810	5604.190N	0305.312W
FF04811	5608.324N	0300.442W
FF04812	5606.894N	0256.898W
FF04813	5605.344N	0258.433W
FF04814	5606.891N	0254.483W
FF04815	5607.559N	0252.453W
FF04816	5606.640N	0248.555W
FF04817	5609.659N	0245.249W
FF04818	5607.007N	0242.685W
FF04819	5606.113N	0245.467W
FF04820	5605.284N	0251.498W
FF04821	5604.520N	0253.800W
FF04822	5601.978N	0259.166W
FF04823	5600.946N	0259.449W
FF04824	5600.348N	0305.630W
FF04825	5601.565N	0310.246W
FF04826	5609.229N	0237.393W
FF04827	5608.930N	0236.132W
FF04828	5607.919N	0235.697W
FF04829	5604.727N	0230.991W
FF04830	5604.253N	0229.679W
FF04831	5602.836N	0222.668W
FF04832	5604.441N	0222.145W
FF04833	5605.030N	0222.836W
FF04834	5607.216N	0221.941W
FF04835	5607.480N	0223.547W
FF04836	5607.263N	0226.280W
FF04837	5608.850N	0228.741W

Moray Firth TV Sites

TV Station No	Latitude	Longitude
MF047001	5751.06N	0153.87W
MF047002	5752.27N	0203.10W
MF047003	5751.71N	0205.89W
MF047004	5752.60N	0206.84W
MF047005	5753.089N	0205.125W
MF047006	5758.256N	0206.848W
MF047007	5754.117N	0214.067W
MF047008	5750.391N	0211.998W
MF047009	5749.829N	0213.145W
MF047010	5749.275N	0208.231W
MF047011	5745.174N	0207.728W
MF047012	5748.707N	0222.942W
MF047013	5746.734N	0226.792W
MF047014	5758.345N	0237.551W
MF047015	5755.605N	0252.677W
MF047016	5753.491N	0252.033W
MF047017	5749.762N	0248.702W
MF047018	5750.090N	0244.124W
MF047019	5749.221N	0241.578W
MF047020	5748.917N	0239.566W
MF047021	5745.511N	0235.919W
MF047022	5745.831N	0236.165W
MF047023	5747.567N	0236.215W
MF047024	5747.558N	0240.249W
MF047025	5747.928N	0244.805W
MF047026	5750.347N	0303.278W
MF047027	5752.664N	0312.051W
MF047028	5750.410N	0317.364W
MF047029	5749.385N	0314.815W
MF047030	5748.962N	0321.703W
MF047031	5742.400N	0341.515W
MF047032	5742.386N	0341.515W
MF047033	5740.819N	0344.360W
MF047034	5756.420N	0337.478W
MF047035	5756.889N	0333.588W
MF047036	5754.279N	0351.725W
MF047037	5753.206N	0349.443W
MF047038	5749.464N	0330.880W
MF047039	5746.557N	0325.890W
MF047040	5751.668N	0323.869W
MF047041	5752.638N	0322.027W
MF047042	5752.507N	0319.763W
MF047043	5752.638N	0317.211W
MF047044	5752.737N	0314.872W

Firth of Forth Trawl Sites

Trawl	Shot		Hauled	
C04/124	55 53.607N	02 08.818W	55 53.650W	02 08.818W
C04/125	56 09.175N	02 45.240W	56 07.611W	02 52.872W
C04/126	56 00.560N	03 06.516W	56 01.140W	03 05.266W
C04/127	56 01.822N	03 04.640W	56 02.417W	03 03.106W
C04/128	56 03.790N	03 00.185W	56 04.480W	02 57.749W
C04/129	56 01.210N	02 58.780W	56 00.500W	02 59.950W
C04/130	56 09.170N	02 33.530W	56 08.962W	02 35.730W
C04/131	56 09.390N	02 22.695W	56 01.060W	02 24.620W

Moray Firth Trawl Sites

Trawl	Shot		Hauled	
C04/132	57 48.883N	03 15.495W	57 48.288N	03 17.760W
C04/133	57 54.690N	03 33.005W	57 53.430N	03 35.680W
C04/134	57 46.628N	03 24.976W	57 44.700N	03 29.660W
C04/135	57 46.740N	02 36.077W	57 46.682N	02 26.604W

EPS Sediment Samples

Position		Depth (m)
57 04.847N	02 02.269W	46
57 04.088N	02 02.749W	52
57 03.363N	02 03.404W	53