WCB acoustic survey cruise report *JR 87*

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general:

- because of weather and the lack of time this acoustic survey was run the other way around than usual. We started at the southeast end at W4.2 S and worked westwards. The first 2 acoustic transects W4.2 & W4.1 went fine. During the first night of CTD transect W3.2 the CTD had to re-terminated three times. The next mooring the weather turned to bad (force 8-9, winds up to 50 kn) that acoustic work was impossible. So decision was made to steam to the next waypoint for the night work W2.2 and start there as soon as weather permits. During the first CTD a further short of the system made a further re-termination of the cable necessary. After that the CTD worked without any further problems. Because of the time lost due to the re-termination only 3 of 5 CTDs were possible during that night. During the next day weather was fine so transect W3.2 and W2.2 were surveyed. In the night the last CTD transect W1.2 was done with all 5 CTDs. The next morning we turned around and run the transect back for the acoustics. During this time decision was made to stop our activities at the end of the next acoustic transect and therefore to short the WCB survey by two acoustic transects. This was done to give the other party on board (JR 80) a realistic chance to get a bulk of their work done and especially their moorings into the water. Otherwise they would have been absolute no time of contingency due to bad weather, CTD problems etc.

EK60 operations:

- The sampling interval was 1 sec. and the water depth was set to 300 m, which produces 25 MB of data each 23 min
- Parallel to the EK60 raw data, Ecolog ek6 data were saved
- The SSU was working very well with the EA500 and the EK60, so only minor interference was visible.
- There were only twice operating problems with the EK60 software when the software froze and the program had to be restarted. Compared to the problems on JR82 with the permanent loss of the GPT signal a big improvement!!

XBT operations:

- During the survey the XBT system worked very well and we had only 2 failures when birds came in contact with the wire during operation.

CTD operations:

- During the survey the CTD system had to re-terminated 4 times. Because of it we lost 2 CTD stations. The CTD system was operated by the other party (JR80), which used their own CTD system. The offer to do the CTDs for us and to analyse the data was highly appreciated. So many thanks for that!! The Cable monitoring system (CLAM) worked fine this time, we had no problems at all.

EK 60 settings on JR 87 (28.04.03 – 02.05.03)

general:

ping mode: **external trigger**
ping interval: **1 sec**
(1 sec interval and depth range 300m produces 25 MB of data each 23 min)

salinity: **33.7**
sound velocity: **1457 m/s**
water temperature: **2.1 °C**

TS detection (for all 3 transceivers):

min Ecolength: **0.8**
max Ecolength: **2.5**
max phase Dev: **2.0**
max gain comp: **6.0**

38 kHz Transceiver:

mode: **active**
transducer type: **ES38**
pulse length: **1.024 ms**
max. power: **2000 W**

gain: **24.19 dB**
sa correction: **-0.07 dB**
sample interval : **0.1865m**
beam angle: **-20.70 dB**
absorption: **10.05 dB/km**
sound velocity: **1457m/s**

range: **0 – 300 m**
TVG: **20 log R**

120 kHz Transceiver:

mode: **active**
transducer type: **ES120-7**
pulse length: **1.024 ms**
max. power: **1000 W**

gain: **22.43 dB**
sa correction: **-0.42 dB**
sample interval: **0.1865m**
beam angle: **-20.70 dB**
absorption: **27.21 dB/km**
sound velocity: **1457m/s**

range: **0 – 300 m**
TVG: **20 log R**

200 kHz Transceiver:

mode: **active**
transducer type: **ES200-7**
pulse length: **1.024 ms**
max. power: **400 W**

gain: **26.30 dB**
sa correction: **0.00 dB**
sample interval: **0.1865m**
beam angle: **-20.70 dB**
absorption: **40.45 dB/km**
sound velocity: **1457m/s**

range: **0 – 300 m**
TVG: **40 log R**

Station Name Mobilization	Activity	Lat Decimal	Lon Decimal	Dist, n.mi.	Dist, km	Speed	Transect time, h	Activity time, h	Completed Z
Waypoint_W.4.2.S	**Acoustics**	**-53.8532**	**-37.5937**						29/04/2003 10:00
Waypoint_W.4.2.N	Acoustics	-53.1484	-37.8322	43.1	79.8	10	4.31	0.00	29/04/2003 14:18
Waypoint_W.4.1.N	Acoustics	-53.1642	-37.9643	4.8	9.0	7.3	0.66	0.00	29/04/2003 14:58
Waypoint_W.4.1.S	Start	-53.8692	-37.7279	43.1	79.9	9.7	4.45	0.00	29/04/2003 19:25
Waypoint_W.3.2.S	**Start**	**-53.8904**	**-37.9067**						
Waypoint_W.3.2.S	CTDN 250	-53.8904	-37.9067	0.0	0.0	1	1.00	0.50	29/04/2003 20:55
Waypoint_W.3.2.S		-53.8904	-37.9067	10.8	20.0	7	1.54	0.00	29/04/2003 22:27
Station_W.3.2.S	CTD 250	-53.7141	-37.9658	0.0	0.0	1	0.00	0.50	29/04/2003 22:57
Station_W.3.2.S		-53.7141	-37.9658	10.8	20.0	6.5	1.66	0.00	30/04/2003 00:37
Station_W.3.2.M	CTDN MID	-53.5378	-38.0243	0.0	0.0	1	0.00	1.80	30/04/2003 02:25
Station_W.3.2.M		-53.5378	-38.0243	10.8	20.0	7	1.54	0.00	30/04/2003 03:57
Station_W.3.2.N	CTD 1000	-53.3614	-38.0825	0.0	0.0	1	0.00	1.00	30/04/2003 04:57
Station_W.3.2.N		-53.3614	-38.0825	10.8	20.0	7	1.54	0.00	30/04/2003 06:30
Waypoint_W.3.2.N	CTDN 1000	-53.1852	-38.1403	0.0	0.0	1	0.00	1.00	30/04/2003 07:30
Waypoint_W.3.2.N		-53.1852	-38.1403	0.0	0.0	1	0.00	1.00	30/04/2003 08:30
Waypoint_W.2.2.N	**Start**	**-53.2551**	**-38.7508**						30/04/2003 19:29
Waypoint_W.2.2.N	CTDN 1000	-53.2551	-38.7508	0.0	0.0	1	0.00	2.80	30/04/2003 22:17
Waypoint_W.2.2.N		-53.2551	-38.7508	10.8	20.0	7	1.54	2.70	01/05/2003 02:31
Station_W.2.2.N	CTD 1000	-53.4318	-38.6953	0.0	0.0	1	0.00	1.00	01/05/2003 03:31
Station_W.2.2.N		-53.4318	-38.6953	10.8	20.0	7	1.54	0.50	01/05/2003 05:34
Station_W.2.2.M		-53.6075	-38.6403	0.0	0.0	1	0.00	0.00	01/05/2003 05:34

Station_W.2.2.M		-53.6075	-38.6403	10.8	20.0	7	1.54	0.00	01/05/2003 07:06
Station_W.2.2.S	CTD 250	-53.7851	-38.5835	0.0	0.0	1	0.00	0.50	01/05/2003 07:36
Station_W.2.2.S		-53.7851	-38.5835	10.8	20.0	10	1.08	0.00	01/05/2003 08:41
Waypoint_W.2.2.S		-53.9616	-38.5269	0.0	0.0	1	0.00	0.00	01/05/2003 08:41
Waypoint_W.2.2.S		-53.9616	-38.5269	10.0	18.5	10	1.00	0.00	01/05/2003 09:41
Waypoint_W.3.2.S	**Start**	**-53.8904**	**-37.9067**						01/05/2003 10:02
Waypoint_W.3.2.N	Acoustics	-53.1852	-38.1403	43.1	79.8	9.7	4.44	0.00	01/05/2003 14:28
Waypoint_W.2.2.N	Acoustics	-53.2551	-38.7508	21.6	40.0	11.5	1.88	0.00	01/05/2003 16:21
Waypoint_W.2.2.S	Acoustics	-53.9616	-38.5269	43.1	79.8	13.4	3.22	0.00	01/05/2003 19:34
Waypoint_W.2.1.S	**Start**	**-53.994**	**-38.819**						01/05/2003 21:00
Waypoint_W.1.2.S	CTDN 250	-54.0233	-39.089	10.8	20.0	10	1.08	0.00	01/05/2003 22:04
Waypoint_W.1.2.S		-54.0233	-39.089	0.0	0.0	1	0.00	1.00	01/05/2003 23:04
Station_W.1.2.S	CTD 250	-53.8464	-39.1435	10.8	20.0	10	1.08	0.00	02/05/2003 00:09
Station_W.1.2.S		-53.8464	-39.1435	0.0	0.0	1	0.00	1.00	02/05/2003 01:09
Station_W.1.2.M	CTDN MID	-53.6695	-39.1973	10.8	20.0	7.5	1.44	0.00	02/05/2003 02:35
Station_W.1.2.M		-53.6695	-39.1973	0.0	0.0	1	0.00	1.00	02/05/2003 03:35
Station_W.1.2.N	CTD 1000	-53.4926	-39.2511	10.8	20.0	8.5	1.27	0.00	02/05/2003 04:51
Station_W.1.2.N		-53.4926	-39.2511	0.0	0.0	1	0.00	3.00	02/05/2003 07:51
Waypoint_W.1.2.N	CTDN 1000	-53.3157	-39.3042	10.8	20.0	8.5	1.27	0.00	02/05/2003 09:08
Waypoint_W.1.2.N	**Start**	-53.3157	-39.3042						02/05/2003 10:07
Waypoint_W.1.2.S	Acoustics	-54.0233	-39.089	43.1	20.0	11.4	3.78	0.00	02/05/2003 13:54
Waypoint_W.2.1.S	Acoustics	-53.994	-38.819	9.7	17.9	11	0.88	0.00	02/05/2003 14:46
Waypoint_W.2.1.N	Acoustics	-53.287	-39.0382	43.1	79.9	10.2	4.23	0.00	02/05/2003 19:00