

## 2. Cruise Diary

The ship left Milazzo Harbour on June 28 at 20.15. During the transfer to Urania Basin, DGPS was checked, all the power connections to the containers were prepared and dust collectors were fixed at the bow of the ship.

The main problems which arose during the transit were related to the power lines (220 and 380 volts) which could not provide all the required power and to the He bottle which was discovered to be empty, thus preventing any chromatographic analysis to be done on trap samples. The power problem was anyway solved during the transit to the first station.

After 37 hours of navigation, the ship arrived at the mooring location at Urania Basin (June 30<sup>th</sup>) and the whole mooring was recovered (UN-01-ST)

All the 3 sediment trap worked properly and no damage was observed for both the currentmetres and tiltmetres.

After recovery, the ship remained almost in position until the following operation at sea. During this period all the samples were photographed and processed for the different kinds of analysis.

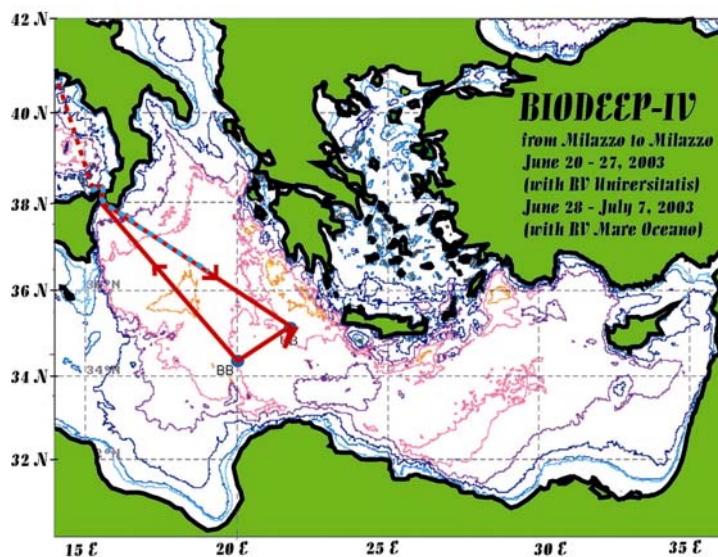
On June 2<sup>nd</sup> afternoon the mooring was re-deployed; due to problems with the cable on the winch, the operation required a longer time; finally the whole mooring was dropped at the same position.

Soon after deployment, the ship moved to the Bannock area and on July 3<sup>rd</sup> the second mooring, with 4 traps, was recovered (UN-02-ST). Some problems arose during recovery, as one trap (# 2) and the currentmetre below it came up tilted, with the cable in between being winded; this required a careful arrangement during recovery. 5 sample bottles of such trap were removed during recovery as they were partly detached from the collector, so that these samples were lost; all the other samples had to be carefully collected from the top of the collector.

Soon after recovery, the ship moved 20 miles to the N and remained in position during the following day. On July 5<sup>th</sup> the ship moved back to the Bannock site and the mooring was re-deployed without problems at the same location.

Soon after deployment, the ship started the transfer towards Milazzo.

A summary of the ship position and operations is shown in Figure 2.1 and Table 2.1.



**Figure 2.1** – Cruise track and mooring sites.

Meteorological conditions (**Table 2.2**) were good during the whole cruise. Air pressure was almost stable between 1018 and 1020 mbar and dry temperature varied from 26 to 29°C (**fig. 2.2**). Winds (**Fig. 2.3**) were predominantly from NW and NNW, with minor contributions from WNW and W and wind intensity was mostly from 3 to 4/5, with exceptional 5 from NNE (during the night from 4 to 5). Sea direction was almost the same as that of wind and sea force was from 3 to 4/5.

**Table 2.1 - Cruise diary**

N.B. Time is local time in Italy

Day	Time	Area	Event	Latitude N	Longitude E
28 June	20.00	Milazzo	Pilot on board for departure		
	20.15		Departure		
	20.25			38°13.8'	15°17.2'
	20.52			38°15.9'	15°17.2'
	21.30			38°19'	15°27.95'
	21.47			38°19.9'	15°32.05'
	22.00			38°18.85'	15°36.4'
	22.25			38°17.35'	15°39.2'
	22.35			38°15.25'	15°38.85'
	22.53			38°13.25'	15°35.95'
29 June	0.55		Navigation	37°55'	15°36'
	4.00			37°40'	16°10'
	5.20			37°35'	16°25'
	7.00			37°25'	16°45'
	8.05			37°18'	16°56'
	12.00			37°00'	17°43'
	14.00			36°50'	18°04.5'
	16.00			36°39'	18°27.5'
	18.00			36°28.2'	18°49.5'
21.00		36°11'	19°25.1'		
30 June	0.00			35°55.5'	19°58'
	2.00			35°44'	20°20'
	4.00			35°36.2'	20°42.5'
	6.00			35°28.5'	21°04'
	7.00			35°22.5'	21°15'
	7.55			35°19'	21°26'
	8.50		Arrival on the station		
	9.00		Start of communication with the release		
		9.20	Release of the traps from the bottom		
	9.54		Buoy at surface. Start of recovery		
12.30		Sediment traps on board	<b>UN-01-ST</b>		
		Ship remains on the point			
17.00			35°06.5'	21°35'	
1 July	4.00		Drifting to SSE	34°51.5'	21°33.5'
	7.30		Ship moves back to the station point	34°46.31'	21°34'
			All day in position		
			Night: slightly drifting to S		
	5.15		Ship moves back to the station point	35°09.5'	21°31.7'
2 July			Ship around the position		
	13.05		Start of deployment of the mooring		
	13.16		ballast at sea		

Day	Time	Area	Event	Latitude N	Longitude E
2 July	14.30	URANI	Stop of the operation for cable rearrangement (1500 m of mooring at sea)		
	20.00		re-start of deployment		
	22.17		End of operations		
	22.20				
3 July	2.00		Navigation to the Bannock area	34°54.2'	21°01'
	4.00			34°44'3"	20°44'1"
	7.00			34°29.8'	20°20'
	8.05			34°23.5'	20°09'
	8.30			34°21'	20°06'
	8.45	BANZON	Arrival on the station		
	13.13		Start of communication with the release		
	13.15		Release of the traps from the bottom		
	13.20		Buoy at surface. Start of recovery		
	14.22		Sediment traps on board	<b>UN-02-ST</b>	
19.15	Moving to the N				
4 July	4.00	OCCOK	Ship around 20 miles from BB	34°29'	20°05'
8.00			34°27'	20°08'	
5 July		OCCOK	Ship in position		
	13.00		Start of deployment of the mooring		
	13.13		ballast at sea		
	16.15		End of operations		
6 July	16.20			34°18.2'	20°02'
	20.00			34°43.8'	19°30.15'
	0.00	Navigation to Milazzo		35°10.8'	18°58.5'
	2.00		35°23.5'	18°44'	
	4.00		35°36.8'	18°28'	
	6.00		35°48.5'	18°11'	
	8.00		36°04'	17°53.5'	
	12.00		36°30.5'	17°21'	
	13.30		36°41.5'	17°09.2'	
	15.00		36°51.8'	16°56.5'	
	16.00		36°58'	16°48'	
	18.00		37°12'	16°33'	
	19.30		37°21.8'	16°18.3'	
20.00	37°25'		16°13.8'		
7 July	1.34				37°06'
	2.00			37°10.7'	15°36.6'
	2.20			37°13.65'	15°37'
	2.50			37°15.65'	15°41.12'
	3.45			37°20'	15°36.2'
	4.05			37°21.'	15°38.85'
	5.05			37°19.35'	15°30.5'
	6.00			37°18.1'	15°27'
	7.00		Arrival in Milazzo		
	9.00		In Port		



**Table 2.2 - Weather conditions during the Cruise**

Day	Time	Wind		Sea		Sky visibility	Air pressure	Dry temp	Wet Temp	Humidity
		Direction	Intensity (Beaufort)	Direction	Force (Beaufort)					
28 June	1 24	var.	4	SSW	1/2	6	1020	28		
29 June	2 4	SW	3	SW	2	7	1020	28		
	3 8	SW	3	SW	3	7	1020	29		
	4 12	WNW	4/5	WNW	4	6/7	1020	30		
	5 16	WNW	5	WNW	4	7	1020	29		
	6 20	WNW	5	WNW	4	7	1020	29		
30 June	7 24	WNW	4	WNW	3	6	1020	29		
	8 4	WNW	4	WNW	3	7	1020	29		
	9 8	NW	4	NW	3	7	1020	29		
	10 12	NW	4/5	NW	3	6/7	1019	30		
	11 16	NW	4/5	NW	3	6/7	1019	30		
1 July	12 20	NW	3	NW	3	7	1018	28		
	13 24	NW	4	NW	3/4	7	1018	28		
	14 4	NW	4	NW	3/4	7	1018	28		
	15 8	N	4	N	4	7	1018	29	24	66
	16 12	NNW	4/5	NNW	4	7	1018	30	25	67
2 July	17 16	NNW	4	NNW	3/4	7	1018	27	24	79
	18 20	NNW	4	NNW	4	7	1018	27	24	78
	19 24	NNW	4	NNW	4	6/7	1018	27	24	78
	20 4	NNW	4	NNW	4	7	1018	27	24	78
	21 8	NNW	3	NNW	3	7	1018	28	27	86
3 July	22 12	NNW	3	NNW	3	7	1018	29	28	80
	23 16	NNW	3/4	NNW	3/4	7	1018	28	27	80
	24 20	NNW	3	NNW	3	7	1018	27	25	78
	25 24	NNW	3	NNW	3	7	1018	27	26	80
	26 4	NNW	3	NNW	3	7	1018	27	26	80
4 July	27 8	NW	3	NW	3	7	1018	28	27	93
	28 12	NW	3	NW	2/3	7	1020	29	27	78
	29 16	NNW	3	NNW	3	7	1020	29	27	78
	30 20	NW	4	NW	3/4	7	1021	28	27	90
	31 24	NW	3/4	NW	3	7	1022	27	26	80
5 July	32 4	NW	3/4	NW	3	7	1022	27	26	80
	33 8	NW	3	NW	3	7	1022	27	25	85
	34 12	NW	3/4	NW	3	7	1023	29	28	76
	35 16	NW	3/4	NW	3	7	1023	29	28	76
	36 20	calm		calm		7	1023	29	28	71
6 July	37 24	W	2	W	2	7	1021	29	28	78
	38 4	W	3	W	3	7	1018	28	28	78
	39 8	W	3	W	3	7	1018	28	28	78
	40 12	W	3	W	3	7	1018	28	28	78
	41 16	NW	4	NW	3/4	7	1018	27	27	80
7 July	42 20	NNW	3	NNW	3	7	1018	27	27	80
	43 24	NNE	5	NNE	4/5	7	1018	27	27	80
	44 4	NNE	5	NNE	5	7	1020	27	26	80
	45 8	NNE	3	NNE	3	7	1020	27	26	80
	46 12	var.	2	NNW	2	7	1024	29	28	78
7 July	47 16	var.	2	NNW	2	7	1024	29	28	78
	48 20	var.	2	var.	2	7	1024	29	28	78
7 July	49 24									
	50 4	var.	2	var.	2	7	1024	29	28	78
	51 8	var.	2	var.	2	7	1024	29	28	78

**Figure 2.3 - Main wind direction and speed**

