ISTITUTO DI SCIENZE MARINE
(ISMAR - Sede di Trieste)

Nave Urania

RAPPORTO DI CAMPAGNA
VECSES- 1

Responsabile : Giulio Catalano
Area di studio: Mare Adriatico

Afferenza: Istituto di Scienze Marine, Sede di Trieste
Viale Gessi, 2
34123 Trieste

Obiettivi

Il tema di ricerca della campagna VECSES 1 e' comune a due progetti, il primo, VECTOR, e' un progetto MUR-FISR inquadrato nel Programma Nazionale di Ricerca sul Clima ed il secondo, SESAME, e' un "integrated project", priorita' 6.3 "Global change and ecosystems", del VI Programma Programma Quadro europeo.

VECTOR. Per quanto riguarda questo progetto (VulnErabilita' delle Coste e degli ecosistemi marini italiani ai cambiamenti climaTici e loro ruolO nei cicli del caRbonio mediterraneo), esso si propone, fra l'altro, di studiare "… gli impatti piu' significativi dei cambiamenti climatici in atto sull'ambiente marino mediterraneo ed il ruolo di questo bacino nel ciclo planetario della CO2 …". In questo contesto l'Alto ed il Medio Adriatico sono stati individuati come aree focali per lo studio di:
-la cinetica di trasferimento della CO2 all'interfaccia aria-mare ed il suo immagazzinamento attraverso il mescolamento tra acque di superficie e acque profonde (intermedie e di fondo);
-la stima della quantità di CO2 assorbita dal mare e della sua variazione nello spazio e nel tempo (sia derivata da modelli accoppiati di simulazione che da misure dirette);
-i feedback (positivi o negativi) esercitati da modifiche nella stratificazione, negli apporti di macro e micronutrienti e nel funzionamento delle reti trofiche sull'uptake di CO2 da parte del mare;
-i processi di trasferimento verticale legati alla trasformazione del carbonio nella rete trofica fino alla sua sedimentazione;
-il seppellimento del C nel sedimento e la sua fuoriuscita dal sistema su scale temporali secolari.
La presente attivita' di campagna risponde in particolare nella Linea di ricerca 6 di VECTOR, "Il ruolo della piattaforma continentale dell'Adriatico settentrionale nei cicli del carbonio del Mediterraneo (CARADRI – Resp. Ravaioli)", in cui si intende studiare un possibile effetto di "Continental Shelf Pump" per la CO2 presente dnlla piattaforma adriatica fino alla linea batimetrica dei 100 m. Come e' noto l'Adriatico settentrionale, soprattutto per effetto dei venti freddi provenienti dai quadranti N e NE, e' in inverno una zona di formazione di acqua densa destinata a confluire nell'acqua di fondo del Mediterraneo. A questo processo, climaticamente sensibile, sono legati diversi effetti "benefici" quali: il rimescolamento della colonna d'acqua ed il ripristino dei nutrienti nello strato superficiale, il rinnovo dell'acqua di fondo nelle fosse adriatiche, la cattura per "pompa di solubilita' " di CO2 atmosferica e sua subduzione nello strato profondo, richiamo di acqua "nuova" da sud e contributo al trasporto oltre la sella di Otranto di sostanze prodottesi nei processi biogeochimici avvenuti nella parte settentrionale del bacino. Proprio sotto quest'ultimo profilo, il nord Adriatico presenta una precoce fioritura, normalmente alla fine dell'inverno (febbraio-marzo) prima dell'instaurarsi della stabile stratificazione estiva, che potrebbe funzionare da prima cattura delle CO2 disciolta. Cio' farebbe ipotizzare la possibile presenza di una efficiente "biological pump" per la CO2 . Infatti formazione di acqua densa, contemporanea alta produzione primaria e zona di piattaforma, sono i tre requisiti che candidano un'area a funzionare come "Continental Shelf Pump". La conferma dell'esistenza di questo meccanismo per l'Adriatico settentrionale nel periodo piu' probabile cioe' quello post-convettivo invernale e' quanto noi ci proponiamo di verificare e, in caso positivo, valutarne l'efficienza in rapporto agli obiettivi generali di VECTOR.

SESAME (Southern European Seas: Assessing and Modelling Ecosystem changes" punta a definire e predire cambiamenti nell'ecosistema dei mari sud europei, Mediterraneo e mar Nero, nel quadro dello scenario climatico presente e futuro possibile. Saranno combinati fra loro: informazioni esistenti, modelli, simulazioni e scenari comprendenti un largo spettro di caratteristiche fisiche, ecologiche e di processi che caratterizzano questi mari sud europei. I modelli saranno testati contro data set storici e nuove misure oceanografiche a scala regionale e di bacino per: "…to assess (during the last 50 years) and predict (over the next 50 years) the combined effects of natural and anthropogenic forcings on the marine ecosystem dynamics under different global scenarios". Tramite modelli biogeochimici si cerchera' quindi di delineare quali potrebbero essere i scenari derivanti da cambiamenti di temperatura, di produzione primaria e riciclo di materia, pH, di indice trofico e di struttura e funzionamento della rete trofica. A SESAME partecipano, oltre all'Italia, Spagna, Francia, Germania, Belgio, UK, Slovenia, Croazia, Grecia, Malta, Tunisia, Bulgaria, Romania, Turchia, Russia, Ucraina, Georgia, Israele, Egitto, Libano e Cipro. In questo ambito al WP2 di SESAME e' stato assegnato il seguente obiettivo: "…the assessment of the current ecosystem status" da portare a termine mediante l'effettuazione di 10 crociere internazionali, multidisciplinari, coordinate ed effettuate contemporaneamente con piu' navi lungo opportuni transetti del Mediterraneo e mar Nero (fig. 1) in due periodi: marzo-aprile e agosto-settembre 2008.
Uno di questi transetti multidisciplinari e' stato fissato lungo l'asse longitudinale dell'Adriatico per il coordinamento di ICRAM –Chioggia. Questa attivita' di campagna e' stata inquadrata nelle crociere VECSES di cui VECSES 1, coordinata da CNR-ISMAR-TS, costituisce il primo atto operativo.

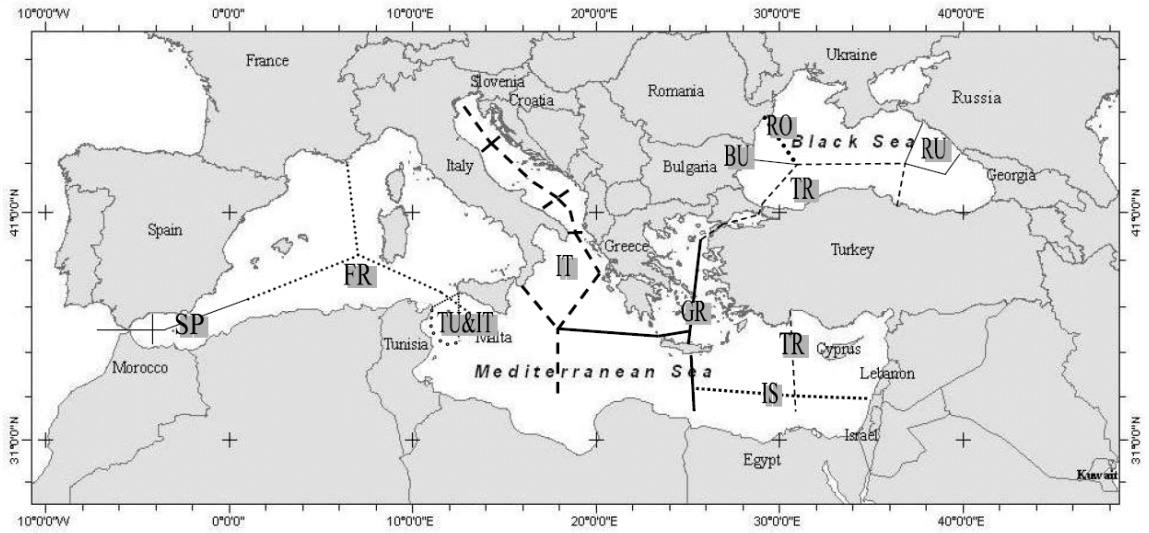

Fig. 1 SESAME - Mappa originaria dei transetti multidisciplinari internazionali previsti

Periodi operativi di VECSES 1

I leg Trieste, 14 febbraio 2008 (imbarco di personale e strumenti)
Fano (rada), 21 febbraio 2008 (cambio di personale)

II leg Fano (rada), 21 febbraio 2008 (cambio di personale)
Bari, 27 febbraio 2008 (sbarco del personale che non prosegue per SESAME – Ionio)

Ricercatori partecipanti

Hanno preso parte alla campagna VECSES 1:

Giulio Catalano (capospedizione)	CNR – ISMAR – Trieste (I e II leg)	Ocean. Chimica	giulio.catalano@ts.ismar.cnr.it
Anna Luchetta	CNR – ISMAR – Trieste (I e II leg)	"	anna.luchetta@ts.ismar.cnr.it
Carolina Cantoni	CNR – ISMAR – Trieste (I leg)	"	carolina.cantoni@ts.ismar.cnr.it
Stefano Cozzi	CNR – ISMAR – Trieste (II leg)	"	stefano.cozzi@ts.ismar.cnr.it
Mauro Bastianini (referente)	CNR – ISMAR – Venezia (I leg)	Ocean. Biol.	mauro.bastianini@ismar.cnr.it
Alessandra Pugnetti	CNR – ISMAR – Venezia (I leg)	"	alessandra.pugnetti@ismar.cnr.it
Silvia Giuliani	CNR – ISMAR – Bologna (I leg)	Sedimentologia	silvia.giuliani@bo.ismar.cnr.it
Luca Bellucc (referente)	CNR – ISMAR – Bologna (I leg)	"	luca.bellucci@bo.ismar.cnr.it
Leonardo Langone	CNR – ISMAR – Bologna (II leg)	"	leonardo.langone@ismar.cnr.it
Stefano Miserocchi (referente)	CNR – ISMAR – Bologna (II leg)	"	stefano.miserocchi@ismar.cnr.it
Dario Marconi (referente)	Universita' della Tuscia (II leg)	Geochimica	dariuss@libero.it
Vedrana Kovacevic (referente)	OGS – Trieste, OGA (I leg)	Ocean. Fis.	vkovacevic@ogs.trieste.it
Franco Arena	OGS- Trieste, OGA (I leg)	"	farena@ogs.trieste.it
Stefano Kuchler	OGS- Trieste, OGA (I e II leg)	"	skuchler@ogs.trieste.it
Paola Del Negro (referente)	OGS- Trieste, BIO (I leg)	Ocean Biol.	pdelnegro@ogs.trieste.it
Vanessa Cardin (referente)	OGS- Trieste, OGA (II leg)	Ocean. Fis.	vcardin@ogs.trieste.it
Manuel Bensi	OGS- Trieste, OGA (II leg)	"	mbensi@ogs.trieste.it
Valentina Tirelli (referente)	OGS- Trieste, BIO (II leg)	Ocean Biol.	vtirelli@ogs.trieste.it
Alessandro Paoli	OGS- Trieste, BIO (II leg)	"	apaoli@ogs.trieste.it
Michele Giani (referente)	ICRAM- sede di Chioggia (I e II leg)	Ocean. Chimica	m.giani@icram.org
Federico Rampazzo	ICRAM- sede di Chioggia (I e II leg)	"	federico_rampazzo@yahoo.it
Fabio Savelli	ICRAM- sede di Chioggia (II leg)	"	f.savelli@icram.org
Luis Monticelli (referente)	CNR-IAMC – sede di Messina (I leg)	microbiologia	luis.monticelli@iamc.cnr.it
Gabriella Caruso	CNR-IAMC – sede di Messina (I leg)	"	gabriella.caruso@iamc.cnr.it
Elisa Malisana (referente)	CONISMA – Biol. Mar. TS (I leg)	Ocean Biol	elirolling@yahoo.it
Raffaella Casotti (referente)	Stazione Zoologica – Napoli (I leg)	"	raffa@szn.it
Cecilia Balestra	Stazione Zoologica – Napoli (I leg)	"	cecilia.balestra@szn.it
Charles Vidoudez	Stazione Zoologica – Napoli (I leg)	"	

Parametri misurati o campioni raccolti

Parametro	Ente	Acronimo
Meteo (Air Temperature-Atmospheric Pressure-Wind Speed-Wind Direction)	OGS-OGA	Meteo
pCO2 air	ISMAR-TS	pCO2
Current vertical profile	OGS-OGA	ADCP
CTD (Seawater temperature, Salinity, Dissolved Oxygen, Fluorescence, Trasmittance Underwater Irradiance)	OGS-OGA	CTD
Temperature (SIS Thermometer)	OGS-OGA	Term
Salinity (salinometer)	OGS-OGA	Sal
Ossigeno disciolto	ISMAR-TS	DO
pH	ISMAR-TS	pH
Total CO2	ISMAR-TS	TCO2
Nutrients – NO3, NO2, NH4, PO4, Si(OH)4	ISMAR-TS	Nut
Total Dissolved Phosphorus	ISMAR-TS	TDP
Total Dissolved Nitrogen	ISMAR-TS	TDN
Metals (ICP-MS)	UNI-TUSCIA	M
Ammonium (UV-method)	UNI-TUSCIA	NH4
Dissolved Organic Carbon	ICRAM	DOC
Chromoforic Organic Matter	ICRAM	CDOM
Chlorophyll	ICRAM	Chl
Particulate Organic Carbon	ICRAM	POC
Particulate Nitrogen	ICRAM	PN
Particulate Phosphorus	ICRAM	TPP
Phytoplankton Pigments	ICRAM	HPLC
Phytoplankton biomass	ISMAR-VE	BF
Primary productivity	ISMAR-VE	PP
Chlorophyll	ISMAR-VE	CHL
Dark Community Respiration	ISMAR-VE	RESP
Net phythoplankton	ISMAR-VE	RF
Pico-plankton	OGS-BIO	Pico
Nano-plankton	OGS-BIO	Nano
Phytoplankton	OGS-BIO	PHY
Micro-Zooplankton	OGS-BIO	Microzoo
Bacterial Carbon Production	OGS-BIO	BCP
Bacterial Community	OGS-BIO	BC
Net Meso-zooplankton	OGS-BIO	Mesozoo
Bacterial Production	IAMC-ME	BP
Pico-plankton	IAMC-ME	Pico
Respiration (ETS)	IAMC-ME	R
Exoenzimatic Activity	IAMC-ME	EEA
Micro-zooplankton	CONISMA-TS	Microzoo
Heterotrophic and Autotrophic picoplankton abundance	SZN	FCM
Picoplankton growth rate	SZN	GR
Dissolved and Particulate Aldheids	SZN	CH
Diatom Strain Isolation	SZN	STR
Cellular lysis rate	SZN	LR
Total Suspended Matter	ISMAR-BO	TSM
Particulate Organic Carbon	ISMAR-BO	POC
U/Th disequlibrium	ISMAR-BO	U/Th
O_2 microprofiles, resistivity	ISMAR-BO	
forams	ISMAR-BO	
x-ray, magnetic susceptibility	ISMAR-BO	
pH and Eh profiles	ISMAR-BO	
OC content and stable isotopes, humic acids	ISMAR-BO, ICRAM	
^{210}Pb, grain size	ISMAR-BO	

Rilievi eseguiti

In figura 2 sono riportate le stazioni eseguite nel I leg della campagna VECSES 1. Tutte le stazioni riportate sono appartenenti al progetto VECTOR, ma alcune sono in comune con il progetto SESAME

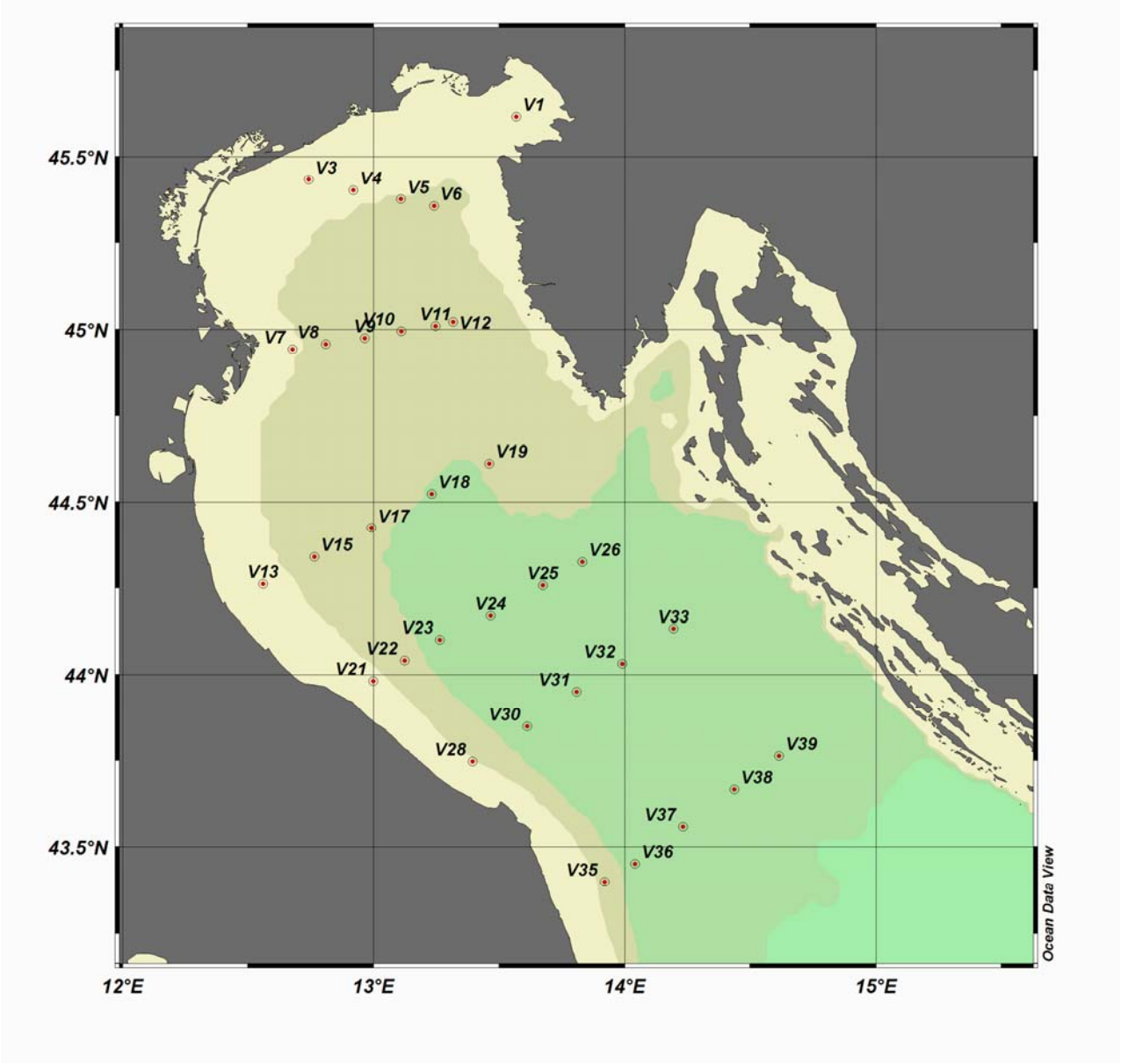

Fig. 2 Mappa delle stazioni eseguite nel I leg di VECSES 1

In tabella 1 (All. 1) sono riportate tutte le stazioni eseguite nel leg 1 con indicate posizioni, date e quote di campionamento. In tabella 2 (All. 1) sono elencati tutte le misure ed i parametri campionati da OGS-OGA, ICRAM, ISMAR-VE, ISMAR-BO e IAMC. In tabella 3 (All. 1) sono elencati tutte le misure ed i parametri campionati da CONISMA-TS, OGS-BIO, ISMAR-TS, SZN

In figura 3 sono rappresentate tutte le stazioni di SESAME. Tranne alcune, coincidenti con quelle di VECTOR ed eseguite durante il I leg,, tutte le altre sono state eseguite nel II leg.

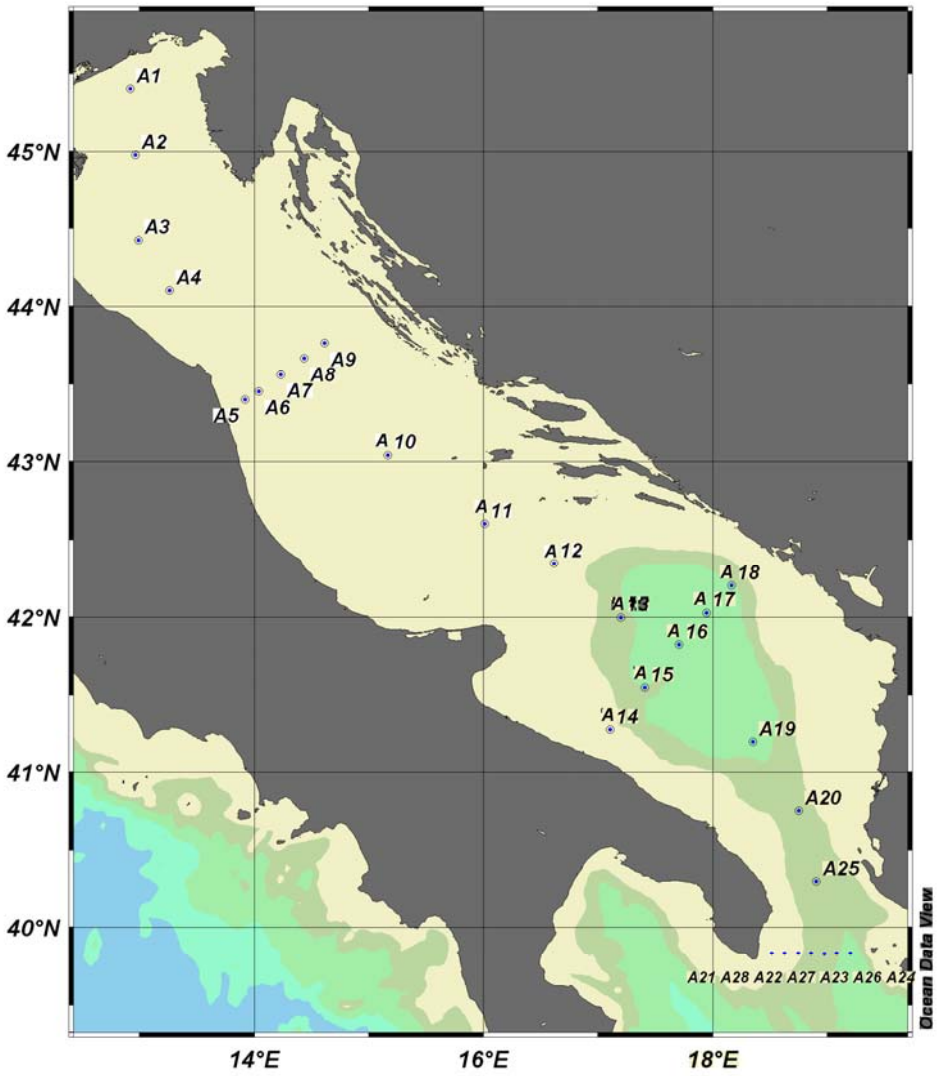

Fig. 3 Mappa delle stazioni del progetto SESAME (I e II leg)

In tabella 1 (All. 2) sono riportate tutte le stazioni eseguite nel leg 2 con indicate posizioni, date e quote di campionamento. In tabella 2 (All. 2) sono elencati tutte le misure ed i parametri campionati da OGS-OGA, ICRAM, ISMAR-VE, ISMAR-BO e IAMC. In tabella 3 (All. 2) sono elencati tutte le misure ed i parametri campionati da CONISMA-TS, OGS-BIO, ISMAR-TS, SZN

Nelle stazioni A5, A10, A16 del programma SESAME sono stati eseguiti campionamenti di sedimento mediante box corer e sono stati sub-campionati differenti livelli di sedimento secondo i dettagli riportati nell'Allegato 3

Strumentazione impiegata

- Sistema di navigazione PDS 2000
- GPS differenziale FUGRO SEASTAR
- Ecoscandaglio DESO 25
- Centralina meteorologica AANDERAA 3660
- Net radiation sensor AANDERAA 2811
- CTD SBE 911 plus dotato di
  - I leg
    - Sensore Temp primario s/n 4440
    - Sensore Cond primario s/n 3172
    - Sensore Temp Secondario 1717
  - II leg
    - Sensore Temp primario s/n 1183
    - Sensore Cond primario s/n 923
    - Sensore Temp secondario s/n 1709
    - Sensore Cond secodanrio s/n 1487
    - Sensore SBE 43 Ossigeno 946
- Fluorometro Chelsea 065600/001
- Trasmissometer 954DR
- Rosette General Oceanics mod. SA1-241 dotato di 24 bottiglie niskin da 10 litri
- ADCP da scafo RDI Ocean surveyor da 75 kHz
- ADCP Warhorse 300 kHz
- Box corer oceanico a box cilindrico di 32 cm di diametro e 52 cm di altezza marca P.A.Smith (NIOZ)
- Retino per mesozoo plancton WP2 da 200 μm
- Retino per fitoplancton (maglia 20 μm)
- Sistema per la produzione di acqua deionizzata
- Frigorifero + 4°C
- Congelatori – 20°C
- Container ISO 10 messo a disposizione dal CONISMA per il trattamento dei campioni per la produttivita' primaria

Osservazioni

Tutta la crociera si e' svolta in condizioni meteo-marine molto favorevoli, se riferite al mese di febbraio in cui la crociera si e' svolta. Questo ha consentito di lavorare tutti giorni ed esaurire completamente il programma previsto; anzi, laddove le scorte di materiale a disposizione lo hanno consentito, sono stati eseguiti ulteriori rilievi oltre quelli programmati. La soppressone di un'unica stazione, avvenuta nel golfo di Trieste, e' stata dovuta alla mancanza di permessi per operare in acque slovene. In fronte alla Croazia, con il consenso di MARISTAT, si e' operato nelle acque internazionali al di fuori della fascia costiera di 12 miglia, ma all'interno della ZEE unilateralmente dichiarata da quel paese. I permessi per lavorare nelle acque greche sono pervenuti direttamente a bordo durante la campagna, ma in tempo per l'esecuzione completa del transetto di Otranto, la stazione piu' orientale del quale cadeva in acque greche.
Il favorevole svolgimento delle operazioni e le condizioni meteorologiche hanno inoltre permesso il recupero della boa AM1 dell'OGS, annunciata alla deriva sul transetto Bari – Dubrovnik, proprio durante le nostre operazioni in quella zona.

Pur avendo, nel complesso, durante la crociera funzionato tutto, si ritiene opportuno segnalare la necessita' di ammodernare il sistema "rosette sampler" e ancor di piu' rinnovare le bottiglie niskin su di esso montate.
Si fa presente inoltre che l'utilizzo dell'e-mail e' diventato ormai un comune strumento di lavoro e che, in questa ottica, il sistema di comunicazione della nave URANIA dovrebbe venir migliorato o aggiornato in modo da essere operativo sempre ed in tutte le zone. Al caso venga pure aggiornato il costo del servizio che potrebbe funzionare come un intranet di bordo con collegamento ad internet "controllato" dal gestore dell'intranet.

Ringraziamenti

Si ringrazia il Comandante della nave URANIA, Cap. Emanuele Gentile, ed il suo equipaggio per l'indispensabile assistenza fornita nelle operazioni marinaresche e nelle operazioni di carico e scarico dei materiali. Un altrettanto sentito ringraziamento va ai tre tecnici di bordo Celletti, Fabbri e Moroni che, con la loro competenza, ci hanno assistito nell'uso quotidiano della strumentazione di bordo e sono intervenuti per annullare i piccoli inconvenienti che inevitabilmente si creano durante lo svolgimento delle attivita' sul campo.

Il capo spedizione
Giulio Catalano

ALL. 1 TAB 1 VECSES 1 CRUISE LEG 1

Seq. Number	SESAME station code	VECTOR station code	Lat [°N] deg mm.mmm	Long [°E] deg mm.mmm	Date mmm dd yyyy	Time (UTC) hh:mm:ss	Bott.Depth [m]	Niskin bottle number effectively closed	Sampling CTD depth [m]	Comments
1		v1	45 37.00	013 34.10	Feb 15 2008	06:57:53	25.6	1, 2, 3, 4 5, 6, 7, 8 10, 11, 12 13, 14, 15, 16 18, 19, 20, 21, 22, 23, 24	23.5 19.6 9.7 5.4 2.1	 9 not closed 17 not closed
2	SIT1A01	v4	45 24.06	012 55.22	Feb 15 2008	11:40:19	27.7	1, 2, 3, 4 5, 6, 7, 8 10, 11, 12 13, 14, 15, 16 17, 18, 19, 20, 21, 22, 23, 24	24.4 20.4 10.1 5.3 2.2	 9 not closed
3		v3	45 25.95	012 44.54	Feb 15 2008	16:07:28	24	1, 2, 3, 4 5, 6, 7, 8 9, 10, 11, 12 13, 14, 15, 16	20.4 12.8 6.0 2.2	2 was leaking
4		v5	45 22.51	013 06.57	Feb 15 2008	18:55:20	31	1, 2 3, 4 5, 6 7, 8	25.6 20.4 9.9 4.9 2.7	 9 and 10 not closed
5		v6	45 21.35	013 14.45	Feb 15 2008	20:03:00	30	1, 2, 3, 4 5, 6, 7, 8 10, 11, 12, 13 14, 15, 16, 17 18, 19, 20, 21, 22	27.1 17.7 12.6 7.1 2.6	 9 not closed
6		v7	44 56.52	012 40.66	Feb 16 2008	05:10:27	30	1, 2, 3, 4 5, 6, 7, 8 9, 10, 11, 12, 13 14, 15, 16, 17 18, 19, 20, 21, 22, 23, 24	26.2 20.3 15.4 10.7 4.7	
7		v8	44 57.45	012 48.66	Feb 16 2008	07:06:30	31	1, 2, 3, 4 5, 6, 7, 8 9, 10, 11, 12, 13	28.3 20.2 16.4	

ALL. 1 TAB 1 VECSES 1 CRUISE LEG 1

Seq. Number	SESAME station code	VECTOR station code	Lat [°N] deg mm.mmm	Long [°E] deg mm.mmm	Date mmm dd yyyy	Time (UTC) hh:mm:ss	Bott.Depth [m]	Niskin bottle number effectively closed	Sampling CTD depth [m]	Comments
								14, 15, 16, 17 18, 19, 20, 21 22, 23, 24	10.6 5.5 2.2	
8	SIT1A02	v9	44 58.49	012 57.95	Feb 16 2008	09:07:19	35	1, 2, 3, 4 5, 6, 7, 8 9, 10, 11, 12 13, 14, 15, 16 17, 18, 19, 20 21, 22, 23, 24	31.8 21.0 14.9 10.3 5.9 2.2	
9		v9bis	44 58.51	012 58.01	Feb 16 2008	12:12:09	35	1, 2 3, 4 5, 6 7, 8 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24	32.3 20.4 14.5 5.6 2.4	
10		v10	44 59.73	013 06.69	Feb 16 2008	15:16:49		1, 2 3, 4 5, 6 7, 8 9, 10 11, 12	33.7 27.8 18.5 9.9 5.1 2.2	inside the file time is UTC+1
11		v11	45 00.56	013 14.81	Feb 16 2008	16:19:49	39	1, 2 3, 4 5, 6 7, 8 9, 10 11, 12	36.7 30.3 20.4 10.6 5.4 2.1	inside the file time is UTC+1
12		v12	45 01.32	013 18.99	Feb 16 2008	17:14:18	39	1, 2, 3, 4 5, 6, 7, 8 9, 10, 11, 12	36.7 25.6 15.9	inside the file time is UTC+1

ALL. 1 TAB 1 VECSES 1 CRUISE LEG 1

Seq. Number	SESAME station code	VECTOR station code	Lat [°N] deg mm.mmm	Long [°E] deg mm.mmm	Date mmm dd yyyy	Time (UTC) hh:mm:ss	Bott.Depth [m]	Niskin bottle number effectively closed	Sampling CTD depth [m]	Comments
								13, 14, 15, 16 17, 18, 19, 20 21, 22, 23, 24	10.3 5.0 2.2	
13		v13	44 15.64	012 33.62	Feb 17 2008	07:03:35	16	1, 2, 3, 4, 5 6, 7, 8, 9, 10 11, 12, 13, 14, 15, 16, 17	13.2 8.3 2.5	inside the file time is UTC+1
14		v15	44 20.36	012 45.87	Feb 17 2008	08:41:58	37	1, 2 3, 4 5, 6 7, 8 9, 10, 11, 12	34.1 20.8 10.7 5.6 3.0	inside the file time is UTC+1
15	SIT1A03	v17	44 25.40	012 59.52	Feb 17 2008	10:00:11	41.5	1, 2, 3, 4 5, 6, 7, 8 9, 10, 11, 12 13, 14, 15, 16 17, 18, 19, 20 21, 22, 23, 24	38.9 30.0 20.2 9.6 5.1 2.5	inside the file time is again UTC 21 a hole where the handle is missing???
16	SIT1A03bis	v17bis	44 25.42	012 59.42	Feb 17 2008	13:11:46	41	1, 2 3, 4 5, 6 7, 8, 9, 10, 11, 12	37.8 20.7 10.6 2.7	
17		v18	44 31.37	13 13.709	Feb 17 2008	15:55:02	47	1, 2 3, 4 5, 6 7, 8 9, 10 11, 12 13, 14, 15	45.2 40.0 30.6 20.5 10.6 5.1 2.2	
18		v19	44 36.62	013 27.71	Feb 17 2008	17:29:23	44	1, 2, 3, 4 5, 6, 7, 8	41.8 30.4	

ALL. 1 TAB 1 VECSES 1 CRUISE LEG 1

Seq. Number	SESAME station code	VECTOR station code	Lat [°N] deg mm.mmm	Long [°E] deg mm.mmm	Date mmm dd yyyy	Time (UTC) hh:mm:ss	Bott.Depth [m]	Niskin bottle number effectively closed	Sampling CTD depth [m]	Comments
								9, 10, 11, 12	20.2	
								13, 14, 15, 16	10.0	
								17, 18, 19, 20	6.5	
								21, 22, 23, 24	2.3	
19	SIT1A04	v23	44 06.02	013 15.91	Feb 18 2008	05:08:14	59	1,2, 3, 4	56.8	SESAME station changed to v23
								5, 6, 7, 8	50.1	
								9, 10, 11, 12	20.4	
								13, 14, 16, 16	10.0	
								18, 19, 20	5.2	17 not closed
								21, 22, 23, 24	2.4	
20		v22	44 02.43	013 07.47	Feb 18 2008	06:49:37	45.5	1, 2	43.1	
								3, 4	28.8	
								5, 6	14.8	
								7, 8	9.3	
								9, 10	5.4	
									2.2	11, 12 not closed
21		v21	43 58.85	013 00.02	Feb 18 2008	07:57:15	17.7	1, 2, 3, 4, 5	15.4	
								6, 7, 8, 9, 10	10.5	
								11, 12, 13, 14, 15	6.2	
								16, 17, 18, 19, 20	1.8	
22		v21bis	43 58.86	013 00.02	Feb 18 2008	08:46:48	17.7	1,2,3,4,5	15.5	
								6, 7, 8 ,9 10	8.1	
								12, 13, 14, 15	5.1	11 not closed
								16, 17, 18, 19, 20, 21		
								22, 23, 24	2.3	
23		v24	44 10.15	013 27.98	Feb 18 2008	16:01:39	66	1, 2	63.5	
								3, 4	50.6	
								5, 6	38.4	
								7, 8	20.6	
								9,10	10.5	
								11, 12	5.6	
								13, 14	1.9	
24		v25	44 15.41	013 40.49	Feb 18 2008	18:53:26	67	1, 2, 3, 4	65.3	
								5, 6	50.8	

ALL. 1 TAB 1 VECSES 1 CRUISE LEG 1

Seq. Number	SESAME station code	VECTOR station code	Lat [°N] deg mm.mmm	Long [°E] deg mm.mmm	Date mmm dd yyyy	Time (UTC) hh:mm:ss	Bott.Depth [m]	Niskin bottle number effectively closed	Sampling CTD depth [m]	Comments
								7, 8	30.8	
								9, 10, 11, 12	23.4	
								13, 14, 15, 16	10.5	
								17, 18, 19, 20	5.7	
								21, 22, 23, 24	2.0	
25		v26	44 19.43	013 49.91	Feb 18 2008	20:13:46	63	1, 2	59.4	
								3, 4	40.5	
								5, 6	20.4	
								7, 8	10.3	
								9, 10	5.5	
								11, 12	1.8	
26		v31	43 57.02	013 48.60	Feb 19 2008	05:43:18	75	1, 2, 3, 4	72.0	
								5, 6, 7, 8	50.2	
								9, 10, 11, 12	20.4	
								13, 14, 15, 16	10.1	
								17, 18, 19, 20	5.3	
								21, 22, 23, 24	2.1	
27		v30	43 50.92	013 36.70	Feb 19 2008	07:49:12	68	1, 2	66.6	
								3, 4	45.8	
								5, 6	20.3	
								7, 8	10.0	
								9, 10	5.5	
								11, 12	2.0	
28		v28	43 44.77	013 23.74	Feb 19 2008	09:17:25	19.5	1, 2, 3, 4, 5	17.2	
								6, 7, 8, 9, 10	12.1	
								11, 12, 13,14, 15	8.3	
								16, 18, 19	4.4	17 not closed
								20, 21, 22, 23, 24	1.9	
29		v32	44 01.83	013 59.45	Feb 19 2008	17:32:39	70.5	1, 2	67.3	
								3, 4	50.2	
								5, 6	20.1	
								7, 8	10.0	
								9, 10	5.1	
								11, 12, 13	2.2	
30		v33	44 07.90	014 11.75	Feb 19 2008	19:02:00	72	1, 2, 3, 4	68.0	

ALL. 1 TAB 1 VECSES 1 CRUISE LEG 1

Seq. Number	SESAME station code	VECTOR station code	Lat [°N] deg mm.mmm	Long [°E] deg mm.mmm	Date mmm dd yyyy	Time (UTC) hh:mm:ss	Bott.Depth [m]	Niskin bottle number effectively closed	Sampling CTD depth [m]	Comments
								5, 6, 7 8, 9, 10, 11 12, 13, 14, 15 16, 17, 18, 19 20, 21, 22, 23, 24	50.7 25.6 10.7 5.7 1.9	
31	SIT1A05	v35	43 23.85	013 55.27	Feb 20 2008	05:36:41	32.8	1, 2, 3, 4 5, 6, 7, 8 9, 10, 11, 12 13, 14, 15, 16 17, 18, 19, 20, 21, 22, 23, 24	29.9 20.1 10.0 5.2 2.0	
32	SIT1A06	v36	43 27.06	014 02.47	Feb 20 2008	07:04:08	64.3	1, 2, 3 4, 5, 6 7, 8, 9 10, 11, 12 13, 14, 15 16, 18	62.0 50.4 20.5 10.3 5.2 2.1	17 not closed
33	SITA07	v37	43 33.55	014 13.93	Feb 20 2008	08:47:49	85.7	1, 2, 3, 4 5, 6, 7, 8 9, 10, 11, 12 13, 14, 15, 16 18, 19 20, 21, 22, 23, 24	50.8 40.5 20.9 11.0 5.7 1.9	17 not closed
34	SITA07bis	v37bis	43 33.62	014 13.97	Feb 20 2008	10:26:59	85.7	1, 2, 3, 4 5, 6, 7 8, 9, 13, 14, 15, 16	81.9 2.1	17 closed in the air; two among 10, 11, 12 closed with delay
35	SITA08	v38	43 39.91	014 26.27	Feb 20 2008	15:11:07	83	1, 2, 3 4, 5, 6 7, 8, 9 10, 11, 12 13, 14, 15 16, 17, 18	79.8 50.7 30.5 20.8 10.8 5.7	

ALL. 1 TAB 1 VECSES 1 CRUISE LEG 1

Seq. Number	SESAME station code	VECTOR station code	Lat [°N] deg mm.mmm	Long [°E] deg mm.mmm	Date mmm dd yyyy	Time (UTC) hh:mm:ss	Bott.Depth [m]	Niskin bottle number effectively closed	Sampling CTD depth [m]	Comments
								19, 20, 21, 22, 23, 24	2.1	
36	SITA09	v39	43 45.78	014 36.91	Feb 20 2008	16:49:02	78.4	1, 2, 3, 4	75.8	
								5	66.1	
								6, 7, 8	50.6	
								9, 10, 11	20.5	
								12, 13, 14, 15	10.4	
								16, 17	5.5	
								18, 19, 20, 21	2.4	

ALL. 1 TAB 2 VECSES 1 CRUISE LEG 1								
				OGS-OGA	ISMAR VE	ISMAR BO	ICRAM	IAMC ME
SESAME station code	VECTOR station code	Niskin bottle number effectively closed	Sampling CTD depth [m]	CTD, ADCP;Meteo				
	V1	1, 2, 3, 4	23	sal	BF, CHL		DOC, CDOM,POC, PN, TPP, δ13C,	BP,EEA,Pico,R
		5, 6, 7, 8	20				DOC, CDOM,POC, PN, TPP, δ13C,	BP,EEA,Pico,R
		10, 11, 12	10		BF, CHL,		DOC, CDOM,POC, PN, TPP, δ13C,	BP,EEA,Pico,R
		13, 14, 15, 16	5				DOC, CDOM,POC, PN, TPP, δ13C,	
		18, 19, 20, 21, 22, 23, 24	2	sal	BF, CHL,		DOC, CDOM,POC, PN, TPP, δ13C,	BP,EEA,Picp,R
SIT1A01	V4	1, 2, 3, 4	24		BF, CHL, PP		DOC, CDOM,POC; TPP, δ13C,Chl	BP,EEA,Pico,R
		5, 6, 7, 8	20	sal	BF, CHL	U/Th, TSM, POC	DOC, CDOM,POC; TPP, δ13C,Chl	
		10, 11, 12	10		BF, CHL, PP, RESP	U/Th, TSM, POC	DOC, CDOM,POC; TPP, δ13C,Chl	BP,EEA,Pico,R
		13, 14, 15, 16	5		BF, CHL, PP	U/Th, TSM, POC	DOC, CDOM,POC; TPP, δ13C,Chl	BP,EEA,Pico,R
		17, 18, 19, 20, 21, 22, 23, 24	2		BF, CHL, PP, RF, RESP	U/Th, TSM, POC	DOC, CDOM,POC; TPP, δ13C,Chl	BP,EEA,Pico,R
	V3	1, 2, 3, 4	20					
		5, 6, 7, 8	13					
		9, 10, 11, 12	6					
		13, 14, 15, 16	2					
	V5	1, 2	26					
		3, 4	20					
		5, 6	10					
		7, 8	5					
			3					
	V6	1, 2, 3, 4	27	sal	BF, CHL		DOC,POC,PN, TPP, δ13C	BP,EEA,Pico,R
		5, 6, 7, 8	18		BF, CHL		DOC,POC,PN, TPP, δ13C	BP,EEA,Pico,R
		10, 11, 12, 13	13				DOC,POC,PN, TPP, δ13C	BP,EEA,Pico,R

ALL. 1 TAB 2 VECSES 1 CRUISE LEG 1								
				OGS-OGA	ISMAR VE	ISMAR BO	ICRAM	IAMC ME
SESAME station code	VECTOR station code	Niskin bottle number effectively closed	Sampling CTD depth [m]	CTD, ADCP;Meteo				
		14, 15, 16, 17	7				DOC,POC,PN, TPP, δ13C	BP,EEA,Pico,R
		18, 19, 20, 21, 22	3	sal	BF, CHL, RF		DOC,POC,PN, TPP, δ13C	BP,EEA,Pico,R
	V7	1, 2, 3, 4	26		BF, CHL		DOC, CDOM,POC,PN, TPP, δ13C	BP,EEA,Pico,R
		5, 6, 7, 8	20				DOC, CDOM,POC,PN, TPP, δ13C	BP,EEA,Pico,R
		9, 10, 11, 12, 13	15		BF, CHL		DOC, CDOM,POC,PN, TPP, δ13C	BP,EEA,Pico,R
		14, 15, 16, 17	11				DOC, CDOM,POC,PN, TPP, δ13C	
		18, 19, 20, 21, 22, 23, 24	5		BF, CHL, RF		DOC, CDOM,POC,PN, TPP, δ13C	BP,EEA,Pico,R
	V8	1, 2, 3, 4	28					
		5, 6, 7, 8	20					
		9, 10, 11, 12, 13	16					
		14, 15, 16, 17	11					
		18, 19, 20, 21	5					
		22, 23, 24	2		BF, CHL, RF			
SIT1A02	V9	1, 2, 3, 4	32	sal	BF, CHL, PP	U/Th, TSM, POC	DOC, CDOM, POC, PN, TPP, δ13C, Chl-a, HPLC pigments	BP,EEA,Pico,R
		5, 6, 7, 8	21			U/Th, TSM, POC	DOC, CDOM, POC, PN, TPP, δ13C, Chl-a, HPLC pigments	BP,EEA,Pico,R
		9, 10, 11, 12	15		BF, CHL, PP, RESP		DOC, CDOM, POC, PN, TPP, δ13C, Chl-a, HPLC pigments	BP,EEA,Pico,R

ALL. 1 TAB 2 VECSES 1 CRUISE LEG 1								
				OGS-OGA	ISMAR VE	ISMAR BO	ICRAM	IAMC ME
SESAME station code	VECTOR station code	Niskin bottle number effectively closed	Sampling CTD depth [m]	CTD, ADCP;Meteo				
		13, 14, 15, 16	10			U/Th, TSM, POC	DOC, CDOM, POC, PN, TPP, δ13C, Chl-a, HPLC pigments	
		17, 18, 19, 20	6	sal	BF, CHL, PP		DOC, CDOM, POC, PN, TPP, δ13C, Chl-a, HPLC pigments	BP,EEA,Pico,R
		21, 22, 23, 24	2		BF, CHL, PP, RF, RESP	U/Th, TSM, POC	DOC, CDOM, POC, PN, TPP, δ13C, Chl-a, HPLC pigments	
	V9bis	1, 2	32					
		3, 4	20					
		5, 6	14					
		7, 8	6					
		9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24	2				POC, PN, TPP (6 replicates)	
	V10	1, 2	34					
		3, 4	28					
		5, 6	18					
		7, 8	10					
		9, 10	5					
		11, 12	2					
	V11	1, 2	37					
		3, 4	30					
		5, 6	20					
		7, 8	11					
		9, 10	5					
		11, 12	2		BF, CHL, RF			
	v12	1, 2, 3, 4	37		BF, CHL		DOC, CDOM, POC,PN, TPP, δ13C, Chl	BP,EEA,Pico,R
		5, 6, 7, 8	26				DOC, CDOM, POC,PN, TPP, δ13C, Chl	BP,EEA,Pico,R

ALL. 1 TAB 2 VECSES 1 CRUISE LEG 1								
				OGS-OGA	ISMAR VE	ISMAR BO	ICRAM	IAMC ME
SESAME station code	VECTOR station code	Niskin bottle number effectively closed	Sampling CTD depth [m]	CTD, ADCP;Meteo				
		9, 10, 11, 12	16		BF, CHL		DOC, CDOM, POC,PN, TPP, δ13C, Chl	
		13, 14, 15, 16	10				DOC, CDOM, POC,PN, TPP, δ13C, Chl	BP,EEA,Pico,R
		17, 18, 19, 20	5		BF, CHL		DOC, CDOM, POC,PN, TPP, δ13C, Chl	BP,EEA,Pico,R
		21, 22, 23, 24	2		BF, CHL, RF		DOC, CDOM, POC,PN, TPP, δ13C, Chl	
	V13	1, 2, 3, 4, 5	13		BF, CHL		DOC, CDOM, POC, PN, TPP, δ13C	BP,EEA,Pico,R
		6, 7, 8, 9, 10	8		BF, CHL		DOC, CDOM, POC, PN, TPP, δ13C	BP,EEA,Pico,R
		11, 12, 13, 14, 15, 16, 17	3		BF, CHL, RF		DOC, CDOM, POC, PN, TPP, δ13C	BP,EEA,Pico,R
	V15	1, 2	34					
		3, 4	21					
		5, 6	11					
		7, 8	6					
		9, 10, 11, 12	3		BF, CHL, RF			
SIT1A03	v17	1, 2, 3, 4	39		BF, CHL, PP	U/Th, TSM, POC	DOC, POC, PN, TPP, δ13C, Chl-a, HPLC pigments	BP,EEA,Pico,R
		5, 6, 7, 8	30				DOC, POC, PN, TPP, δ13C, Chl-a, HPLC pigments	BP,EEA,Pico,R
		9, 10, 11, 12	20		BF, CHL, PP	U/Th, TSM, POC	DOC, POC, PN, TPP, δ13C, Chl-a, HPLC pigments	
		13, 14, 15, 16	10		BF, CHL, PP, RESP	U/Th, TSM, POC	DOC, POC, PN, TPP, δ13C, Chl-a, HPLC pigments	BP,EEA,Pico,R

ALL. 1 TAB 2 VECSES 1 CRUISE LEG 1								
				OGS-OGA	ISMAR VE	ISMAR BO	ICRAM	IAMC ME
SESAME station code	VECTOR station code	Niskin bottle number effectively closed	Sampling CTD depth [m]	CTD, ADCP;Meteo				
		17, 18, 19, 20	5		BF, CHL, PP		DOC, POC, PN, TPP, δ13C, Chl-a, HPLC pigments	BP,EEA,Pico,R
		21, 22, 23, 24	3		BF, CHL, PP, RF, RESP	U/Th, TSM, POC	DOC, POC, PN, TPP, δ13C, Chl-a, HPLC pigments	
SIT1A03bis	v17bis	1, 2	38					
		3, 4	21					
		5, 6	11					
		7, 8, 9, 10, 11, 12	3	sal				
	v18	1, 2	45					
		3, 4	40					
		5, 6	31					
		7, 8	20					
		9, 10	11					
		11, 12	5					
		13, 14, 15	2					
	v19	1, 2, 3, 4	42		BF, CHL		DOC, CDOM, POC, PN, TPP, δ13C	BP,EEA,Pico,R
		5, 6, 7, 8	30				DOC, CDOM, POC, PN, TPP, δ13C	BP,EEA,Pico,R
		9, 10, 11, 12	20		BF, CHL		DOC, CDOM, POC, PN, TPP, δ13C	
		13, 14, 15, 16	10				DOC, CDOM, POC, PN, TPP, δ13C	BP,EEA,Pico,R
		17, 18, 19, 20	7		BF, CHL		DOC, CDOM, POC, PN, TPP, δ13C	BP,EEA,Pico,R
		21, 22, 23, 24	2		BF, CHL, RF		DOC, CDOM, POC, PN, TPP, δ13C	BP,EEA,Pico,R
SIT1A04	v23	1,2, 3, 4	57		BF, CHL		DOC, POC, PN, TPP, Chl	BP,EEA,Pico,R
		5, 6, 7, 8	50				DOC, POC, PN, TPP, Chl	BP,EEA,Pico,R
		9, 10, 11, 12	20		BF, CHL		DOC, POC, PN, TPP, Chl	BP,EEA,Pico,R

ALL. 1 TAB 2 VECSES 1 CRUISE LEG 1								
				OGS-OGA	ISMAR VE	ISMAR BO	ICRAM	IAMC ME
SESAME station code	VECTOR station code	Niskin bottle number effectively closed	Sampling CTD depth [m]	CTD, ADCP;Meteo				
		13, 14, 16, 16	10				DOC, POC, PN, TPP, Chl	BP,EEA,Pico,R
		18, 19, 20	5				DOC, POC, PN, TPP, Chl	BP,EEA,Pico,R
		21, 22, 23, 24	2		BF, CHL, RF		DOC, POC, PN, TPP, Chl	
	v22	1, 2	43					
		3, 4	29					
		5, 6	15					
		7, 8	9					
		9, 10	5					
			2					
	v21	1, 2, 3, 4, 5	15			U/Th, TSM, POC	DOC, POC, PN, TPP	
		6, 7, 8, 9, 10	11				DOC, POC, PN, TPP	
		11, 12, 13, 14, 15	6				DOC, POC, PN, TPP	
		16, 17, 18, 19, 20	2	sal		U/Th, TSM, POC	DOC, POC, PN, TPP	
	v21bis	1,2,3,4,5	15		BF, CHL, PP			BP,EEA,Pico,R
		6, 7, 8 ,9 10	8		BF, CHL, PP, RESP			BP,EEA,Pico,R
		12, 13, 14, 15	5		BF, CHL, PP			BP,EEA,Pico,R
		16, 17, 18, 19, 20, 21 22, 23, 24	2		BF, CHL, PP, RF, RESP			BP,EEA,Pico,R
	v24	1, 2	64					
		3, 4	51					
		5, 6	38					
		7, 8	21	sal				
		9,10	10					
		11, 12	6					
		13, 14	2					
	v25	1, 2, 3, 4	65		BF, CHL		DOC, POC, PN, TPP	BP,EEA,Pico,R

ALL. 1 TAB 2 VECSES 1 CRUISE LEG 1								
				OGS-OGA	ISMAR VE	ISMAR BO	ICRAM	IAMC ME
SESAME station code	VECTOR station code	Niskin bottle number effectively closed	Sampling CTD depth [m]	CTD, ADCP;Meteo				
		5, 6	51				DOC, POC, PN, TPP	
		7, 8	31				DOC, POC, PN, TPP	BP,EEA,Pico,R
		9, 10, 11, 12	23		BF, CHL		DOC, POC, PN, TPP	
		13, 14, 15, 16	11		BF, CHL		DOC, POC, PN, TPP	BP,EEA,Pico,R
		17, 18, 19, 20	6				DOC, POC, PN, TPP	
		21, 22, 23, 24	2		BF, CHL, RF		DOC, POC, PN, TPP	BP,EEA,Pico,R
	v26	1, 2	59					
		3, 4	41					
		5, 6	20					
		7, 8	10					
		9, 10	5					
		11, 12	2					
	v31	1, 2, 3, 4	72		BF, CHL		DOC, POC, PN, TPP, , δ13C	BP,EEA,Pico,R
		5, 6, 7, 8	50		BF, CHL		DOC, POC, PN, TPP, , δ13C	BP,EEA,Pico,R
		9, 10, 11, 12	20		BF, CHL		DOC, POC, PN, TPP, , δ13C	BP,EEA,Pico,R
		13, 14, 15, 16	10				DOC, POC, PN, TPP, , δ13C	BP,EEA,Pico,R
		17, 18, 19, 20	5				DOC, POC, PN, TPP, , δ13C	
		21, 22, 23, 24	2		BF, CHL, RF		DOC, POC, PN, TPP, , δ13C	BP,EEA,Pico,R
	v30	1, 2	67					
		3, 4	46					
		5, 6	20					
		7, 8	10					
		9, 10	5					
		11, 12	2					

ALL. 1 TAB 2 VECSES 1 CRUISE LEG 1								
				OGS-OGA	ISMAR VE	ISMAR BO	ICRAM	IAMC ME
SESAME station code	VECTOR station code	Niskin bottle number effectively closed	Sampling CTD depth [m]	CTD, ADCP;Meteo				
	v28	1, 2, 3, 4, 5	17		BF, CHL, PP		DOC, POC, PN, TPP, , δ13C	BP,EEA,Pico,R
		6, 7, 8, 9, 10	12		BF, CHL, PP	U/Th, TSM, POC	DOC, POC, PN, TPP, , δ13C	BP,EEA,Pico,R
		11, 12, 13,14, 15	8		BF, CHL, PP, RESP		DOC, POC, PN, TPP, , δ13C	BP,EEA,Pico,R
		16, 18, 19	4				DOC, POC, PN, TPP, , δ13C	
		20, 21, 22, 23, 24	2		BF, CHL, PP, RF, RESP	U/Th, TSM, POC	DOC, POC, PN, TPP, , δ13C	BP,EEA,Pico,R
	v32	1, 2	67					
		3, 4	50					
		5, 6	20					BP
		7, 8	10					
		9, 10	5					
		11, 12, 13	2					
	v33	1, 2, 3, 4	68		BF, CHL		DOC, POC, PN, TPP, , δ13C	BP,EEA,Pico,R
		5, 6, 7	51				DOC, POC, PN, TPP, , δ13C	BP,EEA,Pico,R
		8, 9, 10, 11	26		BF, CHL		DOC, POC, PN, TPP, , δ13C	BP,EEA,Pico,R
		12, 13, 14, 15	11		BF, CHL		DOC, POC, PN, TPP, , δ13C	BP,EEA,Pico,R
		16, 17, 18, 19	6				DOC, POC, PN, TPP, , δ13C	
		20, 21, 22, 23, 24	2		BF, CHL, RF		DOC, POC, PN, TPP, , δ13C	BP,EEA,Pico,R
SIT1A05	v35	1, 2, 3, 4	30		BF, CHL		DOC, POC, PN, TPP	
		5, 6, 7, 8	20		BF, CHL		DOC, POC, PN, TPP	
		9, 10, 11, 12	10		BF, CHL		DOC, POC, PN, TPP	
		13, 14, 15, 16	5				DOC, POC, PN, TPP	

ALL. 1 TAB 2 VECSES 1 CRUISE LEG 1								
				OGS-OGA	ISMAR VE	ISMAR BO	ICRAM	IAMC ME
SESAME station code	**VECTOR station code**	**Niskin bottle number effectively closed**	**Sampling CTD depth [m]**	**CTD, ADCP;Meteo**				
		17, 18, 19, 20, 21, 22, 23, 24	2		BF, CHL, RF		DOC, POC, PN, TPP	
SIT1A06	v36	1, 2, 3	62				DOC, POC, PN, TPP, Chl	
		4, 5, 6	50				DOC, POC, PN, TPP, Chl	
		7, 8, 9	21				DOC, POC, PN, TPP, Chl	
		10, 11, 12	10				DOC, POC, PN, TPP, Chl	
		13, 14, 15	5				DOC, POC, PN, TPP, Chl	
		16, 18	2				DOC, POC, PN, TPP, Chl	
SITA07	v37	1, 2, 3, 4	51		BF, CHL, PP		DOC, POC, PN, TPP, Chl, HPLC	
		5, 6, 7, 8	41		BF, CHL, PP	U/Th, TSM, POC	DOC, POC, PN, TPP, Chl, HPLC	
		9, 10, 11, 12	21		BF, CHL, PP		DOC, POC, PN, TPP, Chl, HPLC	
		13, 14, 15, 16	11		BF, CHL, PP	U/Th, TSM, POC	DOC, POC, PN, TPP, Chl, HPLC	
		18, 19	6				DOC, POC, PN, TPP, Chl, HPLC	
		20, 21, 22, 23, 24	2		BF, CHL, RF, PP	U/Th, TSM, POC	DOC, POC, PN, TPP, Chl, HPLC	
SITA07bis	v37bis	1, 2, 3, 4 5, 6, 7	82	sal		U/Th, TSM, POC	DOC, POC, TPP, Chl, HPLC	
		8, 9, 13, 14, 15, 16	2					
SITA08	v38	1, 2, 3	80				DOC, POC, PN, TPP, Chl	
		4, 5, 6	51				DOC, POC, PN, TPP, Chl	
		7, 8, 9	31				DOC, POC, PN, TPP, Chl	

ALL. 1 TAB 2 VECSES 1 CRUISE LEG 1								
				OGS-OGA	ISMAR VE	ISMAR BO	ICRAM	IAMC ME
SESAME station code	**VECTOR station code**	**Niskin bottle number effectively closed**	**Sampling CTD depth [m]**	**CTD, ADCP;Meteo**				
		10, 11, 12	21				DOC, POC, PN, TPP, Chl	
		13, 14, 15	11				DOC, POC, PN, TPP, Chl	
		16, 17, 18	6				DOC, POC, PN, TPP, Chl	
		19, 20, 21, 22, 23, 24	2				DOC, POC, PN, TPP, Chl	
SITA09	v39	1, 2, 3, 4	76		BF, CHL		DOC, POC, PN, TPP, Chl	
		5	66				DOC, POC, PN, TPP, Chl	
		6, 7, 8	51				DOC, POC, PN, TPP, Chl	
		9, 10, 11	20		BF, CHL		DOC, POC, PN, TPP, Chl	
		12, 13, 14, 15	10		BF, CHL		DOC, POC, PN, TPP, Chl	
		16, 17	6				DOC, POC, PN, TPP, Chl	
		18, 19, 20, 21	2		BF, CHL		DOC, POC, PN, TPP, Chl	

ALL. 1 TAB 3 VECSES 1 CRUISE LEG 1							
				CONISMA TS	**OGS- BiO**	**ISMAR TS**	**SZN**
SESAME station code	**VECTOR station code**	**Niskin bottle number effectively closed**	**Sampling CTD depth [m]**				
	V1	1, 2, 3, 4	23	MicroZoo	Nano	DO, Nut., TDN-TDP, pH, Alk	FCM,
		5, 6, 7, 8	20			DO, Nut., TDN-TDP, pH, Alk	FCM,
		10, 11, 12	10	MicroZoo	Nano	DO, Nut., TDN-TDP, pH, Alk	FCM,
		13, 14, 15, 16	5			DO, Nut., TDN-TDP, pH, Alk	FCM,
		18, 19, 20, 21, 22, 23, 24	2	MicroZoo	Nano, *Mesozoo*	DO, Nut., TDN-TDP, pH, Alk	FCM, LR
SIT1A01	V4	1, 2, 3, 4	24	MicroZoo	Pico Nano Microzoo BC. BCP	DO, Nut., TDN-TDP, pH, Alk	FCM,
		5, 6, 7, 8	20			DO, Nut., TDN-TDP, pH, Alk	FCM,
		10, 11, 12	10	MicroZoo	Pico Nano BC BCP	DO, Nut., TDN-TDP, pH, Alk	FCM,
		13, 14, 15, 16	5	MicroZoo	Pico Nano BC, BCP	DO, Nut., TDN-TDP, pH, Alk	FCM,
		17, 18, 19, 20, 21, 22, 23, 24	2	MicroZoo	Pico Nano Microzoo BC BCP *Mesozoo*	DO, Nut., TDN-TDP, pH, Alk	FCM, FCM,LR, CH
	V3	1, 2, 3, 4	20			DO, Nut., TDN-TDP	FCM,
		5, 6, 7, 8	13			DO, Nut., TDN-TDP	FCM,
		9, 10, 11, 12	6			DO, Nut., TDN-TDP	FCM,
		13, 14, 15, 16	2			DO, Nut., TDN-TDP	FCM,
	V5	1, 2	26			DO, Nut., TDN-TDP	FCM,
		3, 4	20			DO, Nut., TDN-TDP	FCM,
		5, 6	10			DO, Nut., TDN-TDP	FCM,
		7, 8	5			DO, Nut., TDN-TDP	FCM,
			3			-	FCM,
	V6	1, 2, 3, 4	27	MicroZoo	Nano	DO, Nut., TDN-TDP, pH, Alk	FCM,
		5, 6, 7, 8	18	MicroZoo	Nano	DO, Nut., TDN-TDP, pH, Alk	FCM,
		10, 11, 12, 13	13			DO, Nut., TDN-TDP, pH, Alk	FCM,
		14, 15, 16, 17	7			DO, Nut., TDN-TDP, pH, Alk	FCM,
		18, 19, 20, 21, 22	3	MicroZoo	Nano	DO, Nut., TDN-TDP, pH, Alk	FCM,
	V7	1, 2, 3, 4	26	MicroZoo	Nano	DO, Nut., TDN-TDP, pH, Alk	FCM,
		5, 6, 7, 8	20			DO, Nut., TDN-TDP, pH, Alk	FCM,
		9, 10, 11, 12, 13	15	MicroZoo	Nano	DO, Nut., TDN-TDP, pH, Alk	FCM,
		14, 15, 16, 17	11			DO, Nut., TDN-TDP, pH, Alk	FCM,
		18, 19, 20, 21, 22, 23, 24	5	MicroZoo	Nano *Mesozoo*	DO, Nut., TDN-TDP, pH, Alk	FCM, GR,LR,CH; STR

ALL. 1 TAB 3 VECSES 1 CRUISE LEG 1							
				CONISMA TS	**OGS- BiO**	**ISMAR TS**	**SZN**
SESAME station code	**VECTOR station code**	**Niskin bottle number effectively closed**	**Sampling CTD depth [m]**				
	V8	1, 2, 3, 4	28			DO, Nut., TDN-TDP	FCM,
		5, 6, 7, 8	20			DO, Nut., TDN-TDP	FCM,
		9, 10, 11, 12, 13	16			DO, Nut., TDN-TDP	FCM,
		14, 15, 16, 17	11			DO, Nut., TDN-TDP	FCM,
		18, 19, 20, 21	5			DO, Nut., TDN-TDP	FCM,
		22, 23, 24	2			DO, Nut., TDN-TDP	FCM, LR, C
SIT1A02	V9	1, 2, 3, 4	32	Microzoo	Pico Nano PHY Microzoo BC BCP	DO, Nut., TDN-TDP, pH, Alk, *pCO2*	FCM,
		5, 6, 7, 8	21		Pico	DO, Nut., TDN-TDP, pH, Alk	FCM,
		9, 10, 11, 12	15	Microzoo	Pico Nano PHY Microzoo BC BCP	DO, Nut., TDN-TDP, pH, Alk	FCM,
		13, 14, 15, 16	10		Pico	DO, Nut., TDN-TDP, pH, Alk	FCM,
		17, 18, 19, 20	6	Microzoo	Pico Nano PHY Microzoo BC BCP	DO, Nut., TDN-TDP, pH, Alk	FCM,
		21, 22, 23, 24	2	Microzoo	Pico Nano PHY Microzoo BC BCP *Mesozoo*	DO, Nut., TDN-TDP, pH, Alk	FCM,
	V9bis	1, 2	32			-	FCM,
		3, 4	20			-	FCM,
		5, 6	14			-	FCM,
		7, 8	6			-	FCM,
		9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24	2			-	FCM, GR,LR, CH
	V10	1, 2	34			DO, Nut., TDN-TDP	FCM,
		3, 4	28			DO, Nut., TDN-TDP	FCM,
		5, 6	18			DO, Nut., TDN-TDP	FCM,
		7, 8	10			DO, Nut., TDN-TDP	FCM,
		9, 10	5			DO, Nut., TDN-TDP	FCM,
		11, 12	2			DO, Nut., TDN-TDP	FCM,
	V11	1, 2	37			DO, Nut., TDN-TDP	FCM,
		3, 4	30			DO, Nut., TDN-TDP	FCM,
		5, 6	20			DO, Nut., TDN-TDP	FCM,

ALL. 1 TAB 3 VECSES 1 CRUISE LEG 1							
				CONISMA TS	**OGS- BiO**	**ISMAR TS**	**SZN**
SESAME station code	**VECTOR station code**	**Niskin bottle number effectively closed**	**Sampling CTD depth [m]**				
		7, 8	11			DO, Nut., TDN-TDP	FCM,
		9, 10	5			DO, Nut., TDN-TDP	FCM,
		11, 12	2			DO, Nut., TDN-TDP	FCM, LR, CH, STR
	v12	1, 2, 3, 4	37	Microzoo	Nano	DO, Nut., TDN-TDP, pH, Alk	FCM,
		5, 6, 7, 8	26			DO, Nut., TDN-TDP, pH, Alk	FCM,
		9, 10, 11, 12	16	Microzoo	Nano	DO, Nut., TDN-TDP, pH, Alk	FCM,
		13, 14, 15, 16	10			DO, Nut., TDN-TDP, pH, Alk	FCM,
		17, 18, 19, 20	5	Microzoo	Nano	DO, Nut., TDN-TDP, pH, Alk	FCM,
		21, 22, 23, 24	2	Microzoo	Nano *Mesozoo*	DO, Nut., TDN-TDP, pH, Alk	FCM,
	V13	1, 2, 3, 4, 5	13	Microzoo	Nano	DO, Nut., TDN-TDP, pH, Alk	FCM, LR, CH, STR
		6, 7, 8, 9, 10	8	Microzoo	Nano	DO, Nut., TDN-TDP, pH, Alk	FCM, CH
		11, 12, 13, 14, 15, 16, 17	3	Microzoo	Nano *Mesozoo*	DO, Nut., TDN-TDP, pH, Alk	FCM,
	V15	1, 2	34			DO, Nut., TDN-TDP	FCM, GR, LR, CH, STR
		3, 4	21			DO, Nut., TDN-TDP	FCM,
		5, 6	11			DO, Nut., TDN-TDP	FCM,
		7, 8	6			DO, Nut., TDN-TDP	FCM,
		9, 10, 11, 12	3			DO, Nut., TDN-TDP	FCM, LR, CH, STR
SIT1A03	v17	1, 2, 3, 4	39	Microzoo	Pico Nano PHY Microzoo BC BCP	DO, Nut., TDN-TDP, pH, Alk, *pCO2*	FCM,
		5, 6, 7, 8	30		Pico	DO, Nut., TDN-TDP, pH, Alk	FCM,
		9, 10, 11, 12	20	Microzoo	Pico Nano PHY Microzoo BC BCP	DO, Nut., TDN-TDP, pH, Alk	FCM,
		13, 14, 15, 16	10	Microzoo	Pico Nano PHY Microzoo BC BCP	DO, Nut., TDN-TDP, pH, Alk	FCM,
		17, 18, 19, 20	5		Pico	DO, Nut., TDN-TDP, pH, Alk	FCM,
		21, 22, 23, 24	3	Microzoo	Pico Nano PHY Microzoo BC BCP *Mesozoo*	DO, Nut., TDN-TDP, pH, Alk	FCM, GR, LR, CH, STR
SIT1A03bis	v17bis	1, 2	38			-	FCM,
		3, 4	21			-	FCM,
		5, 6	11			-	FCM,
		7, 8, 9, 10, 11, 12	3			-	FCM,
	v18	1, 2	45			DO, Nut., TDN-TDP	FCM,

ALL. 1 TAB 3 VECSES 1 CRUISE LEG 1							
				CONISMA TS	**OGS- BiO**	**ISMAR TS**	**SZN**
SESAME station code	**VECTOR station code**	**Niskin bottle number effectively closed**	**Sampling CTD depth [m]**				
		3, 4	40			DO, Nut., TDN-TDP	FCM,
		5, 6	31			DO, Nut., TDN-TDP	FCM,
		7, 8	20			DO, Nut., TDN-TDP	FCM,
		9, 10	11			DO, Nut., TDN-TDP	FCM,
		11, 12	5			DO, Nut., TDN-TDP	FCM,
		13, 14, 15	2			DO, Nut., TDN-TDP	FCM,
	v19	1, 2, 3, 4	42	Microzoo	Nano	DO, Nut., TDN-TDP, pH, Alk	FCM,
		5, 6, 7, 8	30			DO, Nut., TDN-TDP, pH, Alk	FCM,
		9, 10, 11, 12	20	Microzoo	Nano	DO, Nut., TDN-TDP, pH, Alk	FCM,
		13, 14, 15, 16	10			DO, Nut., TDN-TDP, pH, Alk	FCM,
		17, 18, 19, 20	7	MicroZoo	Nano	DO, Nut., TDN-TDP, pH, Alk	FCM,
		21, 22, 23, 24	2	Microzoo	Nano *Mesozoo*	DO, Nut., TDN-TDP, pH, Alk	FCM,
SIT1A04	v23	1,2, 3, 4	57	Microzoo	Pico Nano BC BCP	DO, Nut., TDN-TDP, pH, Alk	FCM,
		5, 6, 7, 8	50		Pico	DO, Nut., TDN-TDP, pH, Alk	FCM,
		9, 10, 11, 12	20	Microzoo	Pico Nano BC BCP	DO, Nut., TDN-TDP, pH, Alk	FCM,
		13, 14, 16, 16	10	Microzoo	Pico Nano	DO, Nut., TDN-TDP, pH, Alk	FCM,
		18, 19, 20	5			DO, Nut., TDN-TDP, pH, Alk	FCM,
		21, 22, 23, 24	2	Microzoo	Pico Nano BC BCP *Mesozoo*	DO, Nut., TDN-TDP, pH, Alk	FCM, LR
	v22	1, 2	43			DO, Nut., TDN-TDP	FCM,
		3, 4	29			DO, Nut., TDN-TDP	FCM,
		5, 6	15			DO, Nut., TDN-TDP	FCM,
		7, 8	9			DO, Nut., TDN-TDP	FCM,
		9, 10	5			DO, Nut., TDN-TDP	FCM,
			2			-	FCM,
	v21	1, 2, 3, 4, 5	15	Microzoo	Pico Nano BC BCP	-	FCM, CH
		6, 7, 8, 9, 10	11	Microzoo	Pico Nano BC BCP	-	FCM,
		11, 12, 13, 14, 15	6	Microzoo		-	FCM,
		16, 17, 18, 19, 20	2	Microzoo	Pico Nano BC BCP *Mesozoo*	-	FCM, LR, GR, CH, STR
	v21bis	1,2,3,4,5	15			DO, Nut., TDN-TDP, pH, Alk, *pCO2*	FCM,
		6, 7, 8 ,9 10	8			DO, Nut., TDN-TDP, pH, Alk	FCM,
		12, 13, 14, 15	5			DO, Nut., TDN-TDP, pH, Alk	FCM,

ALL. 1 TAB 3 VECSES 1 CRUISE LEG 1							
				CONISMA TS	**OGS- BiO**	**ISMAR TS**	**SZN**
SESAME station code	**VECTOR station code**	**Niskin bottle number effectively closed**	**Sampling CTD depth [m]**				
		16, 17, 18, 19, 20, 21 22, 23, 24	2			DO, Nut., TDN-TDP, pH, Alk	FCM,
	v24	1, 2	64			DO, Nut., TDN-TDP, *pCO2*	FCM,
		3, 4	51			DO, Nut., TDN-TDP	FCM,
		5, 6	38			DO, Nut., TDN-TDP	FCM,
		7, 8	21			DO, Nut., TDN-TDP	FCM,
		9,10	10			DO, Nut., TDN-TDP	FCM,
		11, 12	6			DO, Nut., TDN-TDP	FCM,
		13, 14	2			DO, Nut., TDN-TDP	FCM,
	v25	1, 2, 3, 4	65			DO, Nut., TDN-TDP, pH, Alk	FCM,
		5, 6	51			DO, Nut., TDN-TDP, pH, Alk	FCM,
		7, 8	31			DO, Nut., TDN-TDP, pH, Alk	FCM,
		9, 10, 11, 12	23			DO, Nut., TDN-TDP, pH, Alk	FCM,
		13, 14, 15, 16	11			DO, Nut., TDN-TDP, pH, Alk	FCM,
		17, 18, 19, 20	6			DO, Nut., TDN-TDP, pH, Alk	FCM,
		21, 22, 23, 24	2			DO, Nut., TDN-TDP, pH, Alk	FCM,
	v26	1, 2	59	Microzoo	Nano	DO, Nut., TDN-TDP, *pCO2*	FCM,
		3, 4	41			DO, Nut., TDN-TDP	FCM,
		5, 6	20	Microzoo	Nano	DO, Nut., TDN-TDP	FCM,
		7, 8	10	Microzoo	Nano	DO, Nut., TDN-TDP	FCM,
		9, 10	5			DO, Nut., TDN-TDP	FCM,
		11, 12	2	Microzoo	Nano	DO, Nut., TDN-TDP	FCM,
	V31	1, 2, 3, 4	72	Microzoo	Nano	DO, Nut., TDN-TDP, pH, Alk	FCM,
		5, 6, 7, 8	50	Microzoo	Nano	DO, Nut., TDN-TDP, pH, Alk	FCM,
		9, 10, 11, 12	20	Microzoo	Nano	DO, Nut., TDN-TDP, pH, Alk	FCM,
		13, 14, 15, 16	10		Nano	DO, Nut., TDN-TDP, pH, Alk	FCM,
		17, 18, 19, 20	5		Nano	DO, Nut., TDN-TDP, pH, Alk	FCM,
		21, 22, 23, 24	2	Microzoo	Nano *Mesozoo*	DO, Nut., TDN-TDP, pH, Alk	FCM,
	V30	1, 2	67			DO, Nut., TDN-TDP	FCM,
		3, 4	46			DO, Nut., TDN-TDP	FCM,
		5, 6	20			DO, Nut., TDN-TDP	FCM,
		7, 8	10			DO, Nut., TDN-TDP	FCM,
		9, 10	5			DO, Nut., TDN-TDP	FCM,
		11, 12	2			DO, Nut., TDN-TDP	FCM,

ALL. 1 TAB 3 VECSES 1 CRUISE LEG 1							
				CONISMA TS	**OGS- BiO**	**ISMAR TS**	**SZN**
SESAME station code	**VECTOR station code**	**Niskin bottle number effectively closed**	**Sampling CTD depth [m]**				
	V28	1, 2, 3, 4, 5	17	Microzoo	Pico Nano BC BCP	DO, Nut., TDN-TDP, pH, Alk, *pCO2*	FCM, CH
		6, 7, 8, 9, 10	12	Microzoo	Pico Nano	DO, Nut., TDN-TDP, pH, Alk	FCM,
		11, 12, 13,14, 15	8	Microzoo	Pico Nano BC BCP	DO, Nut., TDN-TDP, pH, Alk	FCM,
		16, 18, 19	4			DO, Nut., TDN-TDP, pH, Alk	FCM,
		20, 21, 22, 23, 24	2	Microzoo	Pico Nano BC BCP *Mesozoo*	DO, Nut., TDN-TDP, pH, Alk	FCM, LR, GR, CH, STR
	V32	1, 2	67			DO, Nut., TDN-TDP	FCM
		3, 4	50			DO, Nut., TDN-TDP	FCM
		5, 6	20			DO, Nut., TDN-TDP	FCM
		7, 8	10			DO, Nut., TDN-TDP	FCM
		9, 10	5			DO, Nut., TDN-TDP	FCM
		11, 12, 13	2			DO, Nut., TDN-TDP	FCM, CH, LR
	V33	1, 2, 3, 4	68	Microzoo	Nano	DO, Nut., TDN-TDP, pH, Alk, *pCO2*	FCM
		5, 6, 7	51			DO, Nut., TDN-TDP, pH, Alk	FCM
		8, 9, 10, 11	26	Microzoo	Nano	DO, Nut., TDN-TDP, pH, Alk	FCM
		12, 13, 14, 15	11	Microzoo	Nano	DO, Nut., TDN-TDP, pH, Alk	FCM
		16, 17, 18, 19	6			DO, Nut., TDN-TDP, pH, Alk	FCM
		20, 21, 22, 23, 24	2	Microzoo	Nano	DO, Nut., TDN-TDP, pH, Alk	FCM, CH
SIT1A05	V35	1, 2, 3, 4	30	Microzoo	Pico Nano PHY Microzoo	DO, Nut., TDN-TDP, pH, Alk	FCM
		5, 6, 7, 8	20	Microzoo	Pico Nano PHY Microzoo	DO, Nut., TDN-TDP, pH, Alk	FCM
		9, 10, 11, 12	10	Microzoo	Pico Nano PHY Microzoo	DO, Nut., TDN-TDP, pH, Alk	FCM
		13, 14, 15, 16	5			DO, Nut., TDN-TDP, pH, Alk	FCM
		17, 18, 19, 20, 21, 22, 23, 24	2	Microzoo	Pico Nano PHY Microzoo *Mesozoo*	DO, Nut., TDN-TDP, pH, Alk	FCM, CH, LR
SIT1A06	V36	1, 2, 3	62			DO, Nut., TDN-TDP	FCM,
		4, 5, 6	50			DO, Nut., TDN-TDP	FCM,
		7, 8, 9	21			DO, Nut., TDN-TDP	FCM,
		10, 11, 12	10			DO, Nut., TDN-TDP	FCM,
		13, 14, 15	5			DO, Nut., TDN-TDP	FCM,
		16, 18	2			DO, Nut., TDN-TDP	FCM,
SITA07	V37	1, 2, 3, 4	51	Microzoo	Pico	DO, Nut., TDN-TDP, pH, Alk	FCM, CH
		5, 6, 7, 8	41		Pico	DO, Nut., TDN-TDP, pH, Alk	FCM,
		9, 10, 11, 12	21		Pico Nano PHY Microzoo BCP BC	DO, Nut., TDN-TDP, pH, Alk	FCM,

ALL. 1 TAB 3 VECSES 1 CRUISE LEG 1							
				CONISMA TS	**OGS- BiO**	**ISMAR TS**	**SZN**
SESAME station code	**VECTOR station code**	**Niskin bottle number effectively closed**	**Sampling CTD depth [m]**				
		13, 14, 15, 16	11	Microzoo		DO, Nut., TDN-TDP, pH, Alk	FCM,
		18, 19	6			DO, Nut., TDN-TDP, pH, Alk	FCM,
		20, 21, 22, 23, 24	2	Microzoo	Pico Nano Microfito PHY BCP BC *Mesozoo*	DO, Nut., TDN-TDP, pH, Alk	FCM, LR, CH
SITA07bis	V37bis	1, 2, 3, 4 5, 6, 7	82	Microzoo	Pico Nano PHY Microzoo BCP BC	DO, Nut., TDN-TDP, pH, Alk	FCM,
		8, 9, 13, 14, 15, 16	2			-	FCM,
SITA08	V38	1, 2, 3	80			DO, Nut., TDN-TDP, pH, Alk	FCM,
		4, 5, 6	51			DO, Nut., TDN-TDP, pH, Alk	FCM,
		7, 8, 9	31			DO, Nut., TDN-TDP, pH, Alk	FCM,
		10, 11, 12	21			DO, Nut., TDN-TDP, pH, Alk	FCM,
		13, 14, 15	11			DO, Nut., TDN-TDP, pH, Alk	FCM,
		16, 17, 18	6			DO, Nut., TDN-TDP, pH, Alk	FCM,
		19, 20, 21, 22, 23, 24	2			DO, Nut., TDN-TDP, pH, Alk	FCM,
SITA09	V39	1, 2, 3, 4	76	Microzoo	Pico Nano PHY	DO, Nut., TDN-TDP, pH, Alk	FCM,
		5	66			DO, Nut., TDN-TDP, pH, Alk	FCM,
		6, 7, 8	51		Pico Nano PHY	DO, Nut., TDN-TDP, pH, Alk	FCM,
		9, 10, 11	20	Microzoo	Pico Nano PHY	DO, Nut., TDN-TDP, pH, Alk	FCM,
		12, 13, 14, 15	10	Microzoo	Pico Nano PHY	DO, Nut., TDN-TDP, pH, Alk	FCM,
		16, 17	6			DO, Nut., TDN-TDP, pH, Alk	FCM,
		18, 19, 20, 21	2	Microzoo	Pico Nano PHY *Mesozoo*	DO, Nut., TDN-TDP, pH, Alk	FCM,

ALL. 2 TAB 1 VECSES 1 CRUISE LEG2

Seq. Number	SESAME station code	VECTOR station code	Lat [°N] deg mm.mmm	Long [°E] deg mm.mmm	Date mmm dd yyyy	Time [UTC]	Bott. Depth [m]	Niskin bottle number effectively closed	Sampling CTD depth [m]	Comments
1	**SIT1 A9 bis**	V35b	43 23.855	013 55.287	Feb 21 2008	17:38:00	32	1, 2	23	
2	**SIT1 A10**		42 02.48	015 10.0	Feb 22 2008	05:27:18	251	1, 2, 3 4, 5, 6 7, 8, 9 10, 11, 12 13, 14, 15 16, 17, 18 19, 20, 21 22, 23, 24	248 221 201 100 49 21 10 2	thermometer did'nt turn
3	**SIT1 A11**		42° 36.01	016° 00.71	Feb 22 2008	13:18:57	168	1, 2, 3, 4 5, 6 7, 8 9, 10 11, 12 13, 14 15, 16	163 151 101 51 30 10 3	
4	**SIT1 A12**		45 22.67	016 36.96	Feb 22 2008	17:44:53	185	1, 2, 3 4, 5 6, 7, 8 9, 10, 11 12, 13, 14 15, 16, 17 18, 19, 20	178 130 101 51 21 11 2	
5	**SIT1 A13**		41 59.82	017 11.94	Feb 23 2008	22:03:28	884	1, 2 3, 4 5, 6 7, 8 9, 10 11, 12 13, 14 15, 16 17, 18	879 750 501 300 200 101 50 20 10	

ALL. 2 TAB 1 VECSES 1 CRUISE LEG2

Seq. Number	SESAME station code	VECTOR station code	Lat [°N] deg mm.mmm	Long [°E] deg mm.mmm	Date mmm dd yyyy	Time [UTC]	Bott. Depth [m]	Niskin bottle number effectively closed	Sampling CTD depth [m]	Comments
								19, 20	2	
6	**SIT1 A14**		41 16.70	017 06.26	Feb 23 2008	06:06:38	154	1, 2, 3, 4 5, 6, 7, 8 9, 10, 11, 12 13, 14, 15, 16 17, 18, 19, 20, 21, 22, 23, 24	151 101 51 20 10 2	
7	**SIT1 A15**		41 32.81	017 24.48	Feb 23 2008	09:37:35	994	1, 2, 3, 4 5, 6, 7, 8 9, 10, 11, 12 13, 14, 15, 16 17, 18, 19, 20, 21, 22, 23, 24	983 842 684 500 300 201	
8	**SIT1 A15bis**		41 32.78	017 24.45	Feb 23 2008	11:50:38	983	1, 2, 3, 4, 5 6, 7, 8, 9, 10 11, 12, 13, 14, 15 16, 17, 18, 19 20, 21, 22, 23, 24	100 51 20 10 2	
9	**SIT1 A16**		41 49.21	017 42.49	Feb 23 2008	14:50:20	1191	1, 2, 3, 4 5, 6, 7, 8 9, 10, 11, 12 13, 14, 15, 16 17, 18, 19, 20, 21, 22, 23, 24	200 101 51 21 11 2	
10	**SIT1 A16bis**		41 49.23	017 42.47	Feb 23 2008	16:28:36	1191	1, 2, 3, 4, 5 6, 7, 8, 9, 10 11, 12, 13, 14 15, 16, 17, 18, 19 20, 21, 22, 23, 24	1185 1000 750 500 300	
11	**SIT1 A17**		42 01.56	017 56.68	Feb 24 2008	09:18:42	1219	1, 2, 3, 4, 5 6, 7, 8, 9, 10 11, 12, 13, 14 15, 16, 17, 18, 19	1214 1000 733 500	

ALL. 2 TAB 1 VECSES 1 CRUISE LEG2

Seq. Number	SESAME station code	VECTOR station code	Lat [°N] deg mm.mmm	Long [°E] deg mm.mmm	Date mmm dd yyyy	Time [UTC]	Bott. Depth [m]	Niskin bottle number effectively closed	Sampling CTD depth [m]	Comments
								20, 21, 22, 23, 24	300	
12	**SIT1 A17bis**		42 01.47	017 57.03	Feb 24 2008	11:46:28	1219	1, 2, 3, 4 5, 6, 7, 8 9, 10, 11, 12 13, 14, 15, 16 17, 18, 19, 20, 21, 22, 23, 24	201 101 50 20 10 3	
13	**SIT1 A18**		42 12.05	018 09.84	Feb 24 2008	13:42:11	1051	1, 2, 3, 4 5, 6, 7, 8 9, 10, 11, 12 13, 14, 15, 16 17, 18, 19, 20, 21, 22, 23, 24	201 100 50 20 10 3	shallow
14	**SIT1 A18bis**		42 12.09	018 09.84	Feb 24 2008	15:12:08	1051	1, 2, 3, 4, 5 6, 7, 8, 9 10, 11, 12, 13, 14 15, 16, 17, 18, 19 20, 21, 22, 23, 24	1040 600 461 301 270	
15	**SIT1 A19**		41 11.92	018 21.00	Feb 25 2008	05:53:59	1046	1, 2 3, 4 5, 6 7, 8 9, 10 11, 12 13, 14 15, 16 17, 18 19, 20 21, 22 23, 24	1043 1001 801 660 600 500 200 100 51 20 10 2	
16	**SIT1 A20**		40 45.05	018 45.04	Feb 25 2008	10:54:34	851	1, 2. 3, 4 5	845 731 604	

ALL. 2 TAB 1 VECSES 1 CRUISE LEG2

Seq. Number	SESAME station code	VECTOR station code	Lat [°N] deg mm.mmm	Long [°E] deg mm.mmm	Date mmm dd yyyy	Time [UTC]	Bott. Depth [m]	Niskin bottle number effectively closed	Sampling CTD depth [m]	Comments
								6, 7 8, 9 10, 11 12 13, 14 15, 16 17, 18 19, 20 21, 22 23, 24	501 299 200 128 100 75 50 21 10 3	
17	**SIT1 A25**		40 17.770	18 54.235	Feb 25 2008	15:28:00	882	ONLY CTD		
18	**SIT1 A24**		39 49.81	019 12.01	Feb 25 2008	19:29:33	1069	1, 2, 3, 4, 5 6, 7, 8, 9 10, 11, 12, 13,14 15, 16, 17, 18, 19 20, 21, 22, 23, 24	1044 1001 751 500 301	
19	**SIT1A24bis**		44 25.42	012 59.42	Feb 25 2008	21:06:00	1054	1, 2, 3, 4 5, 6, 7, 8 9, 10, 11, 12 13, 14,15, 16 17, 18, 19, 20 21, 22, 23, 24	200 101 51 21 11 2	
20	**SIT1 A26**		39 49.779	19 04.772	Feb 25 2008	22:47:00	983	ONLY CTD		
21	**SIT1 A23**		39 49.69	018 58.33	Feb 26 2008	05:02:48	891	1, 2, 3, 4, 5 6, 7, 8, 9 10, 11, 12, 13,14 15, 16, 17, 18, 19 20, 21, 22, 23, 24	887 701 501 375 301	
22	**SIT1 A23bis**		39 49.70	018 58.31	Feb 26 2008	06:39:15	891	1, 2, 3, 4 5 6, 7, 8, 9 10, 11, 12, 13, 14, 15, 16	201 130 100 50 21	

ALL. 2 TAB 1 VECSES 1 CRUISE LEG2

Seq. Number	SESAME station code	VECTOR station code	Lat [°N] deg mm.mmm	Long [°E] deg mm.mmm	Date mmm dd yyyy	Time [UTC]	Bott. Depth [m]	Niskin bottle number effectively closed	Sampling CTD depth [m]	Comments
								17, 18, 19, 20 21, 22, 23, 24	10 2	
23	**SIT1 A27**		39 49.816	18 51.377	Feb 26 2008	08:42:00	729	CTD only		
24	**SIT1A22**		39 49.89	018 44.91	Feb 26 2008	09:55:48	369	1, 2, 3, 4, 5 6, 7, 8, 9, 10 11, 12, 13,14, 15 16, 17, 18, 19, 20	361 300 270 230	
25	**SIT1A22bis**		39 49.85	018 44.89	Feb 26 2008	11:24:52	367	1, 2, 3, 4 5, 6, 7, 8 9, 10, 11, 12 13, 14,15, 16 17, 18, 19, 20 21, 22, 23, 24	200 101 51 20 11 3	
26	**SIT1 A28**		39 49.816	18 37.557	Feb 26 2008	13:05:00	122	CTD only		
27	**SIT1 A21**		39 49.84	018 30.94	Feb 26 2008	13:48:50	124	1, 2, 3, 4 5, 6, 7, 8 9, 10, 11, 12 13, 14,15, 16 17, 18, 19, 20 21, 22, 23, 24	121 100 50 20 10 3	

ALL.2 TAB 2 VECSES 1 CRUISE LEG2									
					OGS-OGA	OGS-BIO	ICRAM	ISMAR TS	UNI Tuscia
Seq. Number	SESAME station code	VECTOR station code	Niskin bottle number effectively closed	Sampling CTD depth [m]	CTD, ADCP;Meteo				
1	**SIT1 A9bis**	V35b	1, 2	23					
2	**SIT1 A10**		1, 2, 3	248	Term	Pico, Nano, Microzoo, BC, BCP	DOC, POC, PN, TPP, δ13C, CDOM, HPLC pigments	DO, Nut, TDN-TDP, pH, Alk	M, NH4
			4, 5, 6	221		Pico	DOC, POC, PN, TPP, δ13C, CDOM, HPLC pigments	DO, Nut, TDN-TDP, pH, Alk	M, NH4
			7, 8, 9	201		Pico, Mesozoo	DOC, POC, PN, TPP, δ13C, CDOM, HPLC pigments	DO, Nut, TDN-TDP, pH, Alk	M, NH4
			10, 11, 12	100		Pico, Nano, Microzoo, PHY, Mesozoo, RF	DOC, POC, PN, TPP, δ13C, CDOM, HPLC pigments	DO, Nut, TDN-TDP, pH, Alk	
			13, 14, 15	49		Pico, Nano, Microzoo, PHY, Mesozoo	DOC, POC, PN, TPP, δ13C, CDOM, HPLC pigments	DO, Nut, TDN-TDP, pH, Alk	M, NH4
			16, 17, 18	21		Pico, Nano, Microzoo, PHY, BC, BCP	DOC, POC, PN, TPP, δ13C, CDOM, HPLC pigments	DO, Nut, TDN-TDP, pH, Alk	
			19, 20, 21	10		Pico	DOC, POC, PN, TPP, δ13C, CDOM, HPLC pigments	DO, Nut, TDN-TDP, pH, Alk	
			22, 23, 24	2		Pico, Nano, Microzoo, PHY, BC, BCP	DOC, POC, PN, TPP, δ13C, CDOM, HPLC pigments	DO, Nut, TDN-TDP, pH, Alk, *pCO2*	M, NH4
3	**SIT1 A11**		1, 2, 3, 4	163	Term,sal	Pico, Nano, Microzoo, BC, BCP, Mesozoo		DO, Nut, TDN-TDP	M, NH4
			5, 6	151		Pico		DO, Nut, TDN-TDP	M, NH4
			7, 8	101		Pico, Nano, Microzoo, PHY		DO, Nut, TDN-TDP	M, NH4
			9, 10	51		Pico, Nano, Microzoo, PHY, Mesozoo		DO, Nut, TDN-TDP	M, NH4
			11, 12	30		Pico		DO, Nut, TDN-TDP	M, NH4

ALL.2 TAB 2 VECSES 1 CRUISE LEG2									
					OGS-OGA	OGS-BIO	ICRAM	ISMAR TS	UNI Tuscia
Seq. Number	SESAME station code	VECTOR station code	Niskin bottle number effectively closed	Sampling CTD depth [m]	CTD, ADCP;Meteo				
			13, 14	10		Pico		DO, Nut, TDN-TDP	
			15, 16	3		Pico, Nano, Microzoo, PHY, BC, BCP		DO, Nut, TDN-TDP	M, NH4
4	**SIT1 A12**		1, 2, 3	178	Term,sal	Pico, BC, BCP		DO, Nut, TDN-TDP	M, NH4
			4, 5	130		Pico		DO, Nut, TDN-TDP	M, NH4
			6, 7, 8	101		Pico		DO, Nut, TDN-TDP	M, NH4
			9, 10, 11	51		Pico		DO, Nut, TDN-TDP	M, NH4
			12, 13, 14	21		Pico		DO, Nut, TDN-TDP	
			15, 16, 17	11		Pico		DO, Nut, TDN-TDP	
			18, 19, 20	2		Pico, BC, BCP		DO, Nut, TDN-TDP, *pCO2*	M, NH4
5	**SIT1 A13**		1, 2	879	Term	Pico, BC, BCP		DO, Nut, TDN-TDP	M, NH4
			3, 4	750		Pico		DO, Nut, TDN-TDP	M, NH4
			5, 6	501		Pico		DO, Nut, TDN-TDP	
			7, 8	300		Pico		DO, Nut, TDN-TDP	M, NH4
			9, 10	200		Pico		DO, Nut, TDN-TDP	
			11, 12	101		Pico		DO, Nut, TDN-TDP	M, NH4
			13, 14	50		Pico		DO, Nut, TDN-TDP	
			15, 16	20		Pico		DO, Nut, TDN-TDP	
			17, 18	10		Pico		DO, Nut, TDN-TDP	

ALL.2 TAB 2 VECSES 1 CRUISE LEG2									
					OGS-OGA	OGS-BIO	ICRAM	ISMAR TS	UNI Tuscia
Seq. Number	SESAME station code	VECTOR station code	Niskin bottle number effectively closed	Sampling CTD depth [m]	CTD, ADCP;Meteo				
			19, 20	2		Pico, BC, BCP		DO, Nut, TDN-TDP	M, NH4
6	**SIT1 A14**		1, 2, 3, 4	151	Term,sal	Pico, Nano, Microzoo, BC, BCP, Mesozoo	DOC, POC, PN, TPP, δ13C, CDOM, Chl	DO, Nut, TDN-TDP, pH, Alk	M, NH4
			5, 6, 7, 8	101		Pico, PHY, Mesozoo	DOC, POC, PN, TPP, δ13C, CDOM, Chl	DO, Nut, TDN-TDP, pH, Alk	M, NH4
			9, 10, 11, 12	51		Pico, Nano, Microzoo, PHY, Mesozoo	DOC, POC, PN, TPP, δ13C, CDOM, Chl	DO, Nut, TDN-TDP, pH, Alk	M, NH4
			13, 14, 15, 16	20		Pico, Nano, Microzoo, PHY	DOC, POC, PN, TPP, δ13C, CDOM, Chl	DO, Nut, TDN-TDP, pH, Alk	
			17, 18, 19, 20,	10		Pico	DOC, POC, PN, TPP, δ13C, CDOM, Chl	DO, Nut, TDN-TDP, pH, Alk	
			21, 22, 23, 24	2		Pico, Nano, Microzoo, PHY, BC, BCP	DOC, POC, PN, TPP, δ13C, CDOM, Chl	DO, Nut, TDN-TDP, pH, Alk	M, NH4
7	**SIT1 A15**		1, 2, 3, 4	983	Term	Pico, Nano, Microzoo, BC, BCP	DOC, POC, PN, TPP, CDOM	DO, Nut, TDN-TDP, pH, Alk	M, NH4
			5, 6, 7, 8	842		Pico	DOC, POC, PN, TPP, CDOM	DO, Nut, TDN-TDP, pH, Alk	M, NH4
			9, 10, 11, 12	684		Pico	DOC, POC, PN, TPP, CDOM	DO, Nut, TDN-TDP, pH, Alk	M, NH4
			13, 14, 15, 16	500		Pico	DOC, POC, PN, TPP, CDOM	DO, Nut, TDN-TDP, pH, Alk	
			17, 18, 19, 20,	300		Pico	DOC, POC, PN, TPP, CDOM	DO, Nut, TDN-TDP, pH, Alk	M, NH4
			21, 22, 23, 24	201		Pico, Nano, Microzoo, PHY, Mesozoo	DOC, POC, PN, TPP, CDOM, Chl	DO, Nut, TDN-TDP, pH, Alk	
8	**SIT1 A15bis**		1, 2, 3, 4, 5	100	Term	Pico, PHY, Mesozoo	DOC, POC, PN, TPP, CDOM, Chl	DO, Nut, TDN-TDP, pH, Alk	M, NH4
			6, 7, 8, 9, 10	51		Pico, Nano, Microzoo, PHY, Mesozoo	DOC, POC, PN, TPP, CDOM, Chl	DO, Nut, TDN-TDP, pH, Alk	
			11, 12, 13, 14, 15	20		Pico	DOC, POC, PN, TPP, CDOM, Chl	DO, Nut, TDN-TDP, pH, Alk	
			16, 17, 18, 19	10		Pico	DOC, POC, PN, TPP, CDOM, Chl	DO, Nut, TDN-TDP, pH, Alk	

ALL.2 TAB 2 VECSES 1 CRUISE LEG2									
					OGS-OGA	OGS-BIO	ICRAM	ISMAR TS	UNI Tuscia
Seq. Number	SESAME station code	VECTOR station code	Niskin bottle number effectively closed	Sampling CTD depth [m]	CTD, ADCP;Meteo				
			20, 21, 22, 23, 24	2		Pico, Nano, Microzoo, BC, BCP	DOC, POC, PN, TPP, CDOM, Chl	DO, Nut, TDN-TDP, pH, Alk	M, NH4
9	**SIT1 A16**		1, 2, 3, 4	200	Term,sal	Pico, Mesozoo	DOC, POC, PN, TPP, δ13C, CDOM, Chl, HPLC pigments	DO, Nut, TDN-TDP, pH, Alk	M, NH4
			5, 6, 7, 8	101		Pico, Nano, Microzoo, PHY, Mesozoo	DOC, POC, PN, TPP, δ13C, CDOM, Chl, HPLC pigments	DO, Nut, TDN-TDP, pH, Alk	M, NH4
			9, 10, 11, 12	51		Pico, Nano, Microzoo, PHY, Mesozoo	DOC, POC, PN, TPP, δ13C, CDOM, Chl, HPLC pigments	DO, Nut, TDN-TDP, pH, Alk	M, NH4
			13, 14, 15, 16	21		Pico, PHY	DOC, POC, PN, TPP, δ13C, CDOM, Chl, HPLC pigments	DO, Nut, TDN-TDP, pH, Alk	
			17, 18, 19, 20,	11		Pico	DOC, POC, PN, TPP, δ13C, CDOM, Chl, HPLC pigments	DO, Nut, TDN-TDP, pH, Alk	
			21, 22, 23, 24	2		Pico, Nano, Microzoo, BC, BCP	DOC, POC, PN, TPP, δ13C, CDOM, Chl, HPLC pigments	DO, Nut, TDN-TDP, pH, Alk, *pCO2*	M, NH4
10	**SIT1 A16bis**		1, 2, 3, 4, 5	1185	Term,sal	Pico, Nano, Microzoo, BC, BCP	DOC, POC, PN, TPP, δ13C, CDOM	DO, Nut, TDN-TDP, pH, Alk	M, NH4
			6, 7, 8, 9, 10	1000		Pico	DOC, POC, PN, TPP, δ13C, CDOM	DO, Nut, TDN-TDP, pH, Alk	M, NH4
			11, 12, 13, 14	750		Pico	DOC, POC, PN, TPP, δ13C, CDOM	DO, Nut, TDN-TDP, pH, Alk	M, NH4
			15, 16, 17, 18, 19	500		Pico, Nano, Microzoo	DOC, POC, PN, TPP, δ13C, CDOM	DO, Nut, TDN-TDP, pH, Alk	M, NH4
			20, 21, 22, 23, 24	300		Pico	DOC, POC, PN, TPP, δ13C, CDOM	DO, Nut, TDN-TDP, pH, Alk	M, NH4
11	**SIT1 A17**		1, 2, 3, 4, 5	1214	Term	Pico, Nano, Microzoo, BC, BCP	DOC, POC, PN, TPP	DO, Nut, TDN-TDP, pH, Alk	M, NH4
			6, 7, 8, 9, 10	1000		Pico	DOC, POC, PN, TPP	DO, Nut, TDN-TDP, pH, Alk	M, NH4

ALL.2 TAB 2 VECSES 1 CRUISE LEG2									
					OGS-OGA	OGS-BIO	ICRAM	ISMAR TS	UNI Tuscia
Seq. Number	SESAME station code	VECTOR station code	Niskin bottle number effectively closed	Sampling CTD depth [m]	CTD, ADCP;Meteo				
			11, 12, 13, 14	733		Pico	DOC, POC, PN, TPP	DO, Nut, TDN-TDP, pH, Alk	M, NH4
			15, 16, 17, 18, 19	500		Pico, Nano, Microzoo	DOC, POC, PN, TPP	DO, Nut, TDN-TDP, pH, Alk	M
			20, 21, 22, 23, 24	300		Pico	DOC, POC, PN, TPP	DO, Nut, TDN-TDP, pH, Alk	M, NH4
12	SIT1 A17bis		1, 2, 3, 4	201	Term	Pico, Nano, Microzoo, PHY, Mesozoo	DOC, POC, PN, TPP, Chl	DO, Nut, TDN-TDP, pH, Alk	M, NH4
			5, 6, 7, 8	101		Pico, PHY, Mesozoo	DOC, POC, PN, TPP, Chl	DO, Nut, TDN-TDP, pH, Alk	M, NH4
			9, 10, 11, 12	50		Pico, Nano, Microzoo, PHY, Mesozoo	DOC, POC, PN, TPP, Chl	DO, Nut, TDN-TDP, pH, Alk	
			13, 14, 15, 16	20		Pico	DOC, POC, PN, TPP, Chl	DO, Nut, TDN-TDP, pH, Alk	M
			17, 18, 19, 20,	10		Pico	DOC, POC, PN, TPP, Chl	DO, Nut, TDN-TDP, pH, Alk	
			21, 22, 23, 24	3		Pico, Nano, Microzoo, PHY, BC, BCP	DOC, POC, PN, TPP, Chl	DO, Nut, TDN-TDP, pH, Alk	M, NH4
13	SIT1 A18		1, 2, 3, 4	201	Term	Pico, Nano, Microzoo, Mesozoo	DOC, POC, PN, TPP, δ13C, Chl	DO, Nut, TDN-TDP, pH	M, NH4
			5, 6, 7, 8	100		Pico, PHY, Mesozoo	DOC, POC, PN, TPP, δ13C, Chl	DO, Nut, TDN-TDP, pH	
			9, 10, 11, 12	50		Pico, Nano, Microzoo, PHY, Mesozoo	DOC, POC, PN, TPP, δ13C, Chl	DO, Nut, TDN-TDP, pH	
			13, 14, 15, 16	20		Pico, PHY	DOC, POC, PN, TPP, δ13C, Chl	DO, Nut, TDN-TDP, pH	
			17, 18, 19, 20,	10		Pico	DOC, POC, PN, TPP, δ13C, Chl	DO, Nut, TDN-TDP, pH	
			21, 22, 23, 24	3		Pico, Nano, Microzoo, BC, BCP	DOC, POC, PN, TPP, δ13C, Chl	DO, Nut, TDN-TDP, pH	M, NH4
14	SIT1 A18bis		1, 2, 3, 4, 5	1040	Term	Pico, Nano, Microzoo, PHY, BC, BCP	DOC, POC, PN, TPP, δ13C	DO, Nut, TDN-TDP, pH	M, NH4
			6, 7, 8, 9	600		Pico	DOC, POC, PN, TPP, δ13C	DO, Nut, TDN-TDP, pH	M, NH4

ALL.2 TAB 2 VECSES 1 CRUISE LEG2									
					OGS-OGA	OGS-BIO	ICRAM	ISMAR TS	UNI Tuscia
Seq. Number	SESAME station code	VECTOR station code	Niskin bottle number effectively closed	Sampling CTD depth [m]	CTD, ADCP;Meteo				
			10, 11, 12, 13, 14	461		Pico	DOC, POC, PN, TPP, δ13C	DO, Nut, TDN-TDP, pH	
			15, 16, 17, 18, 19	301		Pico	DOC, POC, PN, TPP, δ13C	DO, Nut, TDN-TDP, pH	
			20, 21, 22, 23, 24	270		Pico	DOC, POC, PN, TPP, δ13C	DO, Nut, TDN-TDP, pH	M, NH4
15	**SIT1 A19**		1, 2	1043	Term	Pico, Nano, Microzoo, BC, BCP	DOC	DO, Nut, TDN-TDP	M, NH4
			3, 4	1001		Pico	DOC	DO, Nut, TDN-TDP	M, NH4
			5, 6	801		Pico	DOC	DO, Nut, TDN-TDP	M
			7, 8	660		Pico	DOC	DO, Nut, TDN-TDP	M
			9, 10	600		Pico	DOC	DO, Nut, TDN-TDP	M, NH4
			11, 12	500		Pico	DOC	DO, Nut, TDN-TDP	
			13, 14	200		Pico, Nano, Microzoo, PHY, Mesozoo	DOC	DO, Nut, TDN-TDP	M
			15, 16	100		Pico, PHY	DOC	DO, Nut, TDN-TDP	M, NH4
			17, 18	51		Pico, Nano, Microzoo	DOC	DO, Nut, TDN-TDP	
			19, 20	20		Pico, PHY	DOC	DO, Nut, TDN-TDP	M
			21, 22	10		Pico	DOC	DO, Nut, TDN-TDP	
			23, 24	2		Pico, Nano, Microzoo, PHY, BC, BCP	DOC	DO, Nut, TDN-TDP	M, NH4
16	**SIT1 A20**		1, 2.	845	Term,sal	Pico, Nano, Microzoo, BC, BCP	DOC	DO, Nut, TDN-TDP, pH	M, NH4
			3, 4	731		Pico	DOC	DO, Nut, TDN-TDP, pH	M, NH4
			5	604		Pico	DOC	DO, Nut, TDN-TDP, pH	

ALL.2 TAB 2 VECSES 1 CRUISE LEG2									
					OGS-OGA	OGS-BIO	ICRAM	ISMAR TS	UNI Tuscia
Seq. Number	SESAME station code	VECTOR station code	Niskin bottle number effectively closed	Sampling CTD depth [m]	CTD, ADCP;Meteo				
			6, 7	501		Pico	DOC	DO, Nut, TDN-TDP, pH	
			8, 9	299		Pico	DOC	DO, Nut, TDN-TDP, pH	
			10, 11	200		Pico, Nano, Microzoo, Mesozoo	DOC, Chl	DO, Nut, TDN-TDP, pH	M, NH4
			12	128		Pico	DOC, Chl	DO, Nut, TDN-TDP, pH	
			13, 14	100		Pico, PHY	DOC, Chl	DO, Nut, TDN-TDP, pH	
			15, 16	75		Pico, RF	DOC, Chl	DO, Nut, TDN-TDP, pH	
			17, 18	50		Pico, Nano, Microzoo, PHY	DOC, Chl	DO, Nut, TDN-TDP, pH	M, NH4
			19, 20	21		Pico, PHY	DOC, Chl	DO, Nut, TDN-TDP, pH	
			21, 22	10		Pico	DOC, Chl	DO, Nut, TDN-TDP, pH	
			23, 24	3		Pico, Nano, Microzoo, PHY, BC, BCP	DOC, Chl	DO, Nut, TDN-TDP, pH	M, NH4
17	**SIT1 A25**		ONLY CTD						
18	**SIT1 A24**		1, 2, 3, 4, 5	1044	Term	Pico, Nano, Microzoo, BC	DOC, POC, PN, TPP	DO, Nut, TDN-TDP, pH, Alk	M, NH4
			6, 7, 8, 9	1001		Pico	DOC, POC, PN, TPP	DO, Nut, TDN-TDP, pH, Alk	M, NH4
			10, 11, 12, 13,14	751		Pico	DOC, POC, PN, TPP	DO, Nut, TDN-TDP, pH, Alk	
			15, 16, 17, 18, 19	500		Pico	DOC, POC, PN, TPP	DO, Nut, TDN-TDP, pH, Alk	
			20, 21, 22, 23, 24	301		Pico	DOC, POC, PN, TPP	DO, Nut, TDN-TDP, pH, Alk	M, NH4
19	**SIT1A24bis**		1, 2, 3, 4	200	Term	Pico, Nano, Microzoo, Mesozoo	DOC, POC, PN, TPP, δ13C, Chl	DO, Nut, TDN-TDP, pH, Alk	
			5, 6, 7, 8	101		Pico, PHY	DOC, POC, PN, TPP, δ13C, Chl	DO, Nut, TDN-TDP, pH, Alk	M, NH4

ALL.2 TAB 2 VECSES 1 CRUISE LEG2									
					OGS-OGA	OGS-BIO	ICRAM	ISMAR TS	UNI Tuscia
Seq. Number	SESAME station code	VECTOR station code	Niskin bottle number effectively closed	Sampling CTD depth [m]	CTD, ADCP;Meteo				
			9, 10, 11, 12	51		Pico, Nano, Microzoo, PHY	DOC, POC, PN, TPP, δ13C, Chl	DO, Nut, TDN-TDP, pH, Alk	
			13, 14,15, 16	21		Pico,	DOC, POC, PN, TPP, δ13C, Chl	DO, Nut, TDN-TDP, pH, Alk	
			17, 18, 19, 20	11		Pico	DOC, POC, PN, TPP, δ13C, Chl	DO, Nut, TDN-TDP, pH, Alk	
			21, 22, 23, 24	2		Pico, Nano, Microzoo, PHY, BC	DOC, POC, PN, TPP, δ13C, Chl	DO, Nut, TDN-TDP, pH, Alk	M, NH4
20	**SIT1 A26**		ONLY CTD						
21	**SIT1 A23**		1, 2, 3, 4, 5	887		Pico, Nano, Microzoo, BC, BCP	DOC, POC, PN, TPP	DO, Nut, TDN-TDP, pH, Alk	M, NH4
			6, 7, 8, 9	701		Pico	DOC, POC, PN, TPP	DO, Nut, TDN-TDP, pH, Alk	M, NH4
			10, 11, 12, 13,14	501		Pico	DOC, POC, PN, TPP	DO, Nut, TDN-TDP, pH, Alk	
			15, 16, 17, 18, 19	375		Pico	DOC, POC, PN, TPP	DO, Nut, TDN-TDP, pH, Alk	M, NH4
			20, 21, 22, 23, 24	301		Pico	DOC, POC, PN, TPP	DO, Nut, TDN-TDP, pH, Alk	
22	**SIT1 A23bis**		1, 2, 3, 4	201		Pico, Nano, Microzoo, Mesozoo	DOC, POC, PN, TPP, Chl	DO, Nut, TDN-TDP, pH, Alk	M, NH4
			5	130		Pico	DOC, POC, PN, TPP, Chl	DO, Nut, TDN-TDP, pH	
			6, 7, 8, 9	100		Pico, PHY, Mesozoo	DOC, POC, PN, TPP, Chl	DO, Nut, TDN-TDP, pH, Alk	
			10, 11, 12,	50		Pico, Nano, Microzoo, PHY, Mesozoo	DOC, POC, PN, TPP, Chl	DO, Nut, TDN-TDP, pH, Alk	
			13, 14, 15, 16	21		Pico	DOC, POC, PN, TPP, Chl	DO, Nut, TDN-TDP, pH, Alk	
			17, 18, 19, 20	10		Pico	DOC, POC, PN, TPP, Chl	DO, Nut, TDN-TDP, pH, Alk	
			21, 22, 23, 24	2		Pico, Nano, Microzoo, PHY, BC, BCP	DOC, POC, PN, TPP, Chl	DO, Nut, TDN-TDP, pH, Alk, *pCO2*	M, NH4
23	**SIT1 A27**		CTD only						

ALL.2 TAB 2 VECSES 1 CRUISE LEG2									
					OGS-OGA	OGS-BIO	ICRAM	ISMAR TS	UNI Tuscia
Seq. Number	SESAME station code	VECTOR station code	Niskin bottle number effectively closed	Sampling CTD depth [m]	CTD, ADCP;Meteo				
24	**SIT1A22**		1, 2, 3, 4, 5	361	Term	Pico, Nano, Microzoo, BC, BCP	DOC, POC, PN, TPP, δ13C	DO, Nut, TDN-TDP, pH, Alk	M, NH4
			6, 7, 8, 9, 10	300		Pico	DOC, POC, PN, TPP, δ13C	DO, Nut, TDN-TDP, pH, Alk	M
			11, 12, 13,14, 15	270		Pico	DOC, POC, PN, TPP, δ13C	DO, Nut, TDN-TDP, pH, Alk	
			16, 17, 18, 19, 20	230		Pico	DOC, POC, PN, TPP, δ13C	DO, Nut, TDN-TDP, pH, Alk	M, NH4
25	**SIT1A22bis**		1, 2, 3, 4	200	Term	Pico, Microzoo, Mesozoo	DOC, POC, PN, TPP, δ13C, Chl	DO, Nut, TDN-TDP, pH, Alk, *pCO2*	
			5, 6, 7, 8	101		Pico, Nano, PHY, Mesozoo	DOC, POC, PN, TPP, δ13C, Chl	DO, Nut, TDN-TDP, pH, Alk	M, NH4
			9, 10, 11, 12	51		Pico, Microzoo, PHY, Mesozoo	DOC, POC, PN, TPP, δ13C, Chl	DO, Nut, TDN-TDP, pH, Alk	
			13, 14,15, 16	20		Pico	DOC, POC, PN, TPP, δ13C, Chl	DO, Nut, TDN-TDP, pH, Alk	
			17, 18, 19, 20	11		Pico	DOC, POC, PN, TPP, δ13C, Chl	DO, Nut, TDN-TDP, pH, Alk	
			21, 22, 23, 24	3		Pico, Nano, Microzoo, PHY, BC, BCP	DOC, POC, PN, TPP, δ13C, Chl	DO, Nut, TDN-TDP, pH, Alk	M, NH4
26	**SIT1 A28**		CTD only						
27	**SIT1 A21**		1, 2, 3, 4	121		Pico, Microzoo, BC, Mesozoo	DOC, POC, PN, TPP, δ13C, Chl	DO, Nut, TDN-TDP, pH, Alk	M, NH4
			5, 6, 7, 8	100		Pico, Microzoo	DOC, POC, PN, TPP, δ13C, Chl	DO, Nut, TDN-TDP, pH, Alk	M, NH4
			9, 10, 11, 12	50		Pico, Microzoo, Mesozoo	DOC, POC, PN, TPP, δ13C, Chl	DO, Nut, TDN-TDP, pH, Alk	M
			13, 14,15, 16	20		Pico	DOC, POC, PN, TPP, δ13C, Chl	DO, Nut, TDN-TDP, pH, Alk	M, NH4
			17, 18, 19, 20	10		Pico	DOC, POC, PN, TPP, δ13C, Chl	DO, Nut, TDN-TDP, pH, Alk	
			21, 22, 23, 24	3		Pico, Microzoo, BC	DOC, POC, PN, TPP, δ13C, Chl	DO, Nut, TDN-TDP, pH, Alk	M, NH4

ALLEGATO 3 Sediment sampling report

Station number	**Position at the bottom**		**Date**	**Time (UTC)**		**Bottom depth (m)**	**Remarks**
	Latitude (°N)	**Longitude (°E)**		bottom	On deck		
V35-A05	43°23.855’	13° 55.276	02/21/08	16:59	17:05	32.4	OK
A10	43°02.504’	15° 09.993’	02/22/08	07:47	8:00	251	OK
A10	43°02.506’	15° 09.990’	02/22/08	08:16	8:30	251	OK
A16	41°49.243’	17°42.463’	02/23/08	18:16	18:46	1190	OK
A16	41°49.247’	17°42.462’	02/24/08	06:16	06:41	1190	OK

Sediment sampling at Station **SIT1-A05**

Cast n. 1

Core replicas	Core length (cm)	Parameter	Storing	Expected analyses
2	15	O_2 microprofiles, resistivity	On-board measuring	
1	20	forams	-20°C	
1	33	x-ray, magnetic susceptibility, archive	+5°C	
1	20	pH and Eh profiles	On-board measuring	
1	26.5	solid phase	-20°C +5°C	OC content and stable isotopes, humic acids ^{210}Pb, grain size

Details of core subsampling

Level (cm)	OC	$\delta^{13}C$	^{210}Pb	Grain-size	Humic acids
0-1	X	X	X	X	X
1-2	X	X	X	X	X
2-3	X	X	X	X	X
3-4	X	X	X	X	X
4-5	X	X	X	X	X
5-6	X	X	X	X	X
6-7	X	X	X	X	X
7-8	X	X	X	X	
8-10	X	X	X	X	X
10-12	X	X	X	X	
12-14	X	X	X	X	
14-16	X	X	X	X	X
16-18	X	X	X	X	
18-20	X	X	X	X	X
20-22	X	X	X	X	
22-24	X	X	X	X	
24-26	X	X	X	X	

Sediment sampling at Station **SIT1-A10**

Cast n. 1

Core replicas	Core length (cm)	Parameter	Storing	Expected analyses
1	27	forams	-20°C	
1	46	x-ray, magnetic susceptibility, archive	+5°C	

Cast n. 2

Core replicas	Core length (cm)	Parameter	Storing	Expected analyses
1	15	O_2 microprofiles, resistivity	On-board measuring	
1	20	pH and Eh profiles	On-board measuring	
1	26.5	solid phase	-20°C +5°C	OC content and stable isotopes, humic acids ^{210}Pb, grain size

Details of core subsampling

Level (cm)	OC	$\delta^{13}C$	^{210}Pb	Grain-size	Humic acids
0-1	X	X	X	X	X
1-2	X	X	X	X	X
2-3	X	X	X	X	X
3-4	X	X	X	X	X
4-5	X	X	X	X	X
5-6	X	X	X	X	X
6-7	X	X	X	X	X
7-8	X	X	X	X	X
8-10	X	X	X	X	X
10-12	X	X	X	X	
12-14	X	X	X	X	
14-16	X	X	X	X	X
16-18	X	X	X	X	
18-20	X	X	X	X	X
20-22	X	X	X	X	
22-24	X	X	X	X	
24-26	X	X	X	X	X

Sediment sampling at Station **SIT1-A16**

Cast n. 1

Core replicas	Core length (cm)	Parameter	Storing	Expected analyses
1	17	forams	-20°C	
2	20	Pore Water extraction	On board	Alkalinity, Nutrients, DOC

Cast n. 2

Core replicas	Core length (cm)	Parameter	Storing	Expected analyses
2	15	O_2 microprofiles, resistivity	On-board measuring	
1	20	pH and Eh profiles	On-board measuring	
1	37	solid phase	-20°C +5°C	OC content and stable isotopes, humic acids ^{210}Pb, grain size
1	40	x-ray, magnetic susceptibility, archive	+5°C	

Details of core subsampling

Level (cm)	OC	$\delta^{13}C$	^{210}Pb	Grain-size	Humic acids	PW DOC	PW Alk	PW Nutrients
0-1	X	X	X	X	X	X	X	X
1-2	X	X	X	X	X	X	X	X
2-3	X	X	X	X	X	X	X	X
3-4	X	X	X	X	X	X	X	X
4-5	X	X	X	X	X	X	X	X
5-6	X	X	X	X	X	X	X	X
6-7	X	X	X	X	X			
7-8	X	X	X	X	X	X (6-8)	X (6-8)	X (6-8)
8-10	X	X	X	X	X	X	X	X
10-12	X	X	X	X		X	X	X
12-14	X	X	X	X	X	X	X	X
14-16	X	X	X	X		X	X	X
16-18	X	X	X	X	X	Bottom water	Bottom water	Bottom water
18-20	X	X	X	X	X			
20-22	X	X	X	X	X			
22-24	X	X	X	X				
24-26	X	X	X	X	X			
26-28	X	X	X	X	X			
28-30	X	X	X	X	X			
30-32	X	X	X	X				
32-34	X	X	X	X	X			
34-36	X	X	X	X				