HOT-51: Chief Scientist Report

Chief Scientist: D. HEBEL

HOT 51 Cruise Report
R/V Moana Wave
18-23 Jan. 1994

Personnel List:

Dale Hebel	Chief Scientist	UH
WOCE group:		
Jefrey Snyder	Technician	UH
Rich Muller	Technician	UH
Harald Lutz	Exchange Student	UH
Fernando S-Mandujano	Scientist	UH
JGOFS group:		
Dale Hebel	Scientist	UH
Ursula Magaard	Technician	UH
John Dore	Graduate Student	UH
David Pence	Technician	UH
Ancillary projects:		
Mikel Latasa	Postdoc	UH - B.Bidigare
Julie Kirshtein	Technician	UH- M. Landry
Karen Selph	Technician	UH -M.Landry
Jin Chun Yuan	Graduate Student	UH- C. Measures
Jonathan Sharp	Scientist	UD
Leonor Bennett	Technician	UD
STAG		
Luigi Pozzi	Technician	UH-UMC
Will Hervig	Technician	UH-UMC

Itinerary (approximate local time):

Tuesday, 18 Jan.
  0930 Departed Snug Harbor
  1200 Arrived Kahe Pt. (Sta. 1-1)
  1600 Departed Kahe
  1900 Arrived Kaena Pt. (Sta 1-2)
  2200 Departed Kaena Pt.
Wednesday, 19 Jan.
  0330 Arrived Aloha (Sta. 2) trap deployment site
  0800 Completed sediment trap deployment

0900 Arrived Aloha (center of circle), began CTD time series
1200 Lost M. Landry's plankton net

Thursday, 20 Jan.

0130 Commenced Go-Flo cast
0700 Deployed primary productivity array
1900 Retrieved primary productivity array

Friday, 21 Jan.

0400 ? Completed "burst" sampling
0500 ? Began ancillary work

Saturday, 22 Jan.

0530 Completed Sta. 2 CTD operations
1200 Recovered sediment traps
1600 Arrived station 3
1800 Departed station 3

Sunday, 23 Jan.

0800 Arrived Snug Harbor
0830 Offloaded

Narrative:

HOT 51 was conducted 18-23 Jan. 1994 aboard the R/V Moana Wave (full 5 days at sea) with Capt. Stahl as Master. Although the ship was not totally refitted after its ship yard work it was adequate for our needs and we did not experience any major detrimental impacts. This was fortunate since sea conditions were rough with winds ranging from 20-40 kts and seas 6-12' at station 2. All Core work was completed (with the exception of refrigerated silica splits) in addition to most of the ancillary work. We did, however, lose Mike Landry's new plankton net with data logger and flow meter (estimated value $3500) on the first deployment. Also, due to delays caused by weather and equipment we were unable to continue with the CWS tests and the deployment of Luigi's new CTD.

We departed Snug Harbor 18 Jan. after a slight delay (crew member ?) followed by the routine lifeboat and fire drill. A short science meeting followed to delineate the cruise plan, watches, core work and ancillary projects. At Kahe we conducted a weight cast to 500m followed by a PNF cast and 1000 m CTD cast. After all samples were collected we departed Kahe for Kaena Point. Enroute Jin Chun and Karen Selph deployed the fish to assess its towing characteristics at 10 kts. No sampling tube was attached to the fish during these tests.

It was decided that a temporary station designation would be given to Kaena Point (51-1-2-nisk. #), until a permanent number could be established. Following the cruise the Kaena Point station was assigned the number 6 which will be used on subsequent cruises since Kaena will be occupied on a routine basis on future cruises. The bottom depth was approximately 2500 m at Kaena Pt. and a CTD to near bottom was conducted successfully.

Following the Kaena Point station we steamed to station ALOHA. Enroute the weather deteriorated negating any underway preparatory

activities on the stern. On station we determined the ship drift and steamed in the opposite direction a couple of miles. We could not verify the operation of the lower Argos transmitter and spent approximately 11/2 hrs troubleshooting the units without identifying the problem. The combination of sea conditions and equipment problems prolonged the trap deployment by approximately 2 hrs. However, at the time of the deep cast we were closer to 4 hrs behind schedule due to the above and additional time incurred enroute and at Kaena.

Once on-station CTD operations went smoothly despite rough sea conditions. All sample collection went well with the exception of the loss of M. Landry's net system on the first deployment. The kevlar line snapped in the heavy sea conditions. The 36 hr burst sampling was completed approximately 0400 hrs on 21 Jan. 1994. CTD casts continued with 2 casts for D. Pence, 2 for H. Thierstein (samples lost on first cast) followed by the testing of the WTS system. The cumulative delays necessitated canceling of the CWS tests. A second WOCE deep cast was done on 22 Jan. '94.

We departed station ALOHA approximately 0500 on the 22nd. We picked up the traps enroute to station 3 to allow additional time for processing and a daylight retrieval. Seas were 10-12' and winds approximately 30 kts. At station 3 a 1000 m CTD cast was conducted, however, no time was available to deploy Luigi's CTD. We departed station 3 at 1800 hrs returning to Snug at 0800 hrs 23 Jan. 1994.

Addendum (2/9/94):

It has just come to my attention (indirectly) that there was a problem with the ADCP recording to disk on the return trip losing this segment of data. Apparently, the instrument was programed to record to a new disk during this period. Unfortunately, the disk crashed.

Weather:

The weather was poor throughout the cruise with high trades (20-40 kts), mostly cloudy skies and 2-4 m seas.

Equipment and methods:

In addition to the standard equipment used on HOT 51 we also took a water transfer system (WTS) and continuous water sampler with CTD for tests. In addition, a STAG CTD and associated equipment was also aboard for testing. We experienced one major equipment loss consisting of a 1 m2 plankton net with stainless steel frame and data logger (estimated replacement cost $3500-4000).

Sub component programs:

Investigator:	Project:
Christopher Winn (UH)	DIC, pH, Alk., pCO2
Bob Bidigare (UH)	HPLC pigments
Michael Landry (UH)	Zooplankton dynamics

Ancillary programs:

Investigator:	Project:
Charles Keeling (SIO)	CO2 dynamics and intercalibration
Paul Quay (UW)	DIC and 13C
Hans Thierstein (Zurich)	Calcareous plankton dynamics
George Luther (UD)	Iodine speciation

Students:

Karen Selph for R. Letelier	Tricodesmium studies
Jinchun for C. Holloway	Th-U disequilibria
Jinchun Yuan	Trace metal studies

Others:

Jonathan Sharp and Leonor Bennett (UD)	DOC intercalibration samples
Mikel Latasa (UH)	HPLC methods evaluation
Julie Kirshtein (UH)	Zooplankton sampling and grazing experiments
Karen Selph (UH)	Zooplanton sampling