Concentrations versus depth (m) at Benchmark 17°57.3%, 65°51.5W during May 25 and 26, 1980. Silicate concentrations versus temperature (°C) at Benchmark 17°57.3N, 65°51.5W during May 25 and 26, 1980. Mean silicate concentrations versus depth at Benchmark 17°57.3N, 65°51.5W during May 25 and 26, 1980.

List of Figures (cont.)

Figure 22: Silicate concentrations versus depth (a) in a transect south of Punta Tena on May 27 and 29, 1986.

Figure 22: Vertical distribution of Chlorophyll-a at Benchmark in successive hydrocasts during May 25 and 26, 1980.

Figure 28: Vertical distribution of Chlorophyll-a in a transect south of Punta Tuna on May 27 and 28, 1980.

Introduction

The ability to detect the effects of an OTEC plant on the marine environment is dependent upon the magnitude of its effects relative to the scale and intensity of variability (pattern) within this ecosystem. The scale of pattern examined in this study is approximately 10 km, which has been estimated to be the area whose alteration by the operation of an OTEC plant can be physically measured. In addition, we studied the structure of the ocean in transects extending 50 km south of the site. The purpose of this cruise was to determine the magnitude of variability to various ecosystem components within and between such areas. Small scale and large scale transects were run to determine the presence of environmental gradients, if any, and the magnitude of between station variability. The cruise was conducted on the R/V CRANFORD during May 24 through 29, 1980. This was the fourth cruise in our series of bi-monthly cruises.

Hydrographic Data

Hydrocasts were made with 5 Liter or 12 Liter Miskin bottles usually lowered to depths of 1090 m. Bottles were placed at nominal depths of 0, 10, 25, 50, 75, 100, 150, 200, 250, 300, 400, 500, 650, 800, 1000 m for determinations of temperature, salinity, oxygen, chlorophyll, and nutrients (nitrate-nitrite, phosphate, and silicate).

Temperature was measured with

The paired deep-sea reversing thermometers were recently calibrated at the Physical Chemical Oceanographic Data Facility (PCODF) at Scripps Institution of Oceanography, and measurements were considered accurate to 0.01°C. Unprotected thermometers were placed on bottles sampling at depths of 100 meters or greater. Salinity was determined with a Hytech Induction Salinometer. Readings are considered accurate to 0.002%. Dissolved oxygen was determined by the Winkler

method, as revised by Carpenter (1955) and modified by Anderson (1971). Measurements are accurate to 0.02 ml/L. Nutrients were measured with a Technicon Autoanalyzer using methods described by Strickland and Parsons (1968). Chlorophyll was measured with a Turner Model 121 fluorometer using methods described by Strickland and Parsons (1968). Station depths were obtained through an E.D.O. Depth Recorder permanently installed on the ship or estimated from a chart, NOS 26659. Sonic depths obtained in fathoms were converted to meters but were not corrected for speed of sound variations. Chart depths are indicated by (C) and sonic depths by an (S) beside the number. All depths are in meters. Densities (σt) were calculated from a Handbook of Oceanographic Tables (Siatek, 1966). Station times are given in Greenwich Mean Time (GMT). Plankton tow times are in local time. Puerto Rico is 4 hours behind GMT.

Zooplankton tows were made with a 75 cm opening-closing net equipped with 202 µm mesh. The volume of water filtered was calculated from a flowmeter suspended off-center in the mouth of the net.

Bibliography:

Anderson, G.C. (1971). Marine Technicians Handbook. Sea Grant Pub. No. 1.

Siatek, (1966). Handbook of Oceanographic Tables. Oceanographic Office, Washington, D.C.

Carpenter, (1955). The Chesapeake Bay Institute technique for Winkler dissolved oxygen tests. Limnol. Oceanogr. 200, 141-142.

Strickland, J.D.H. & Parsons, (1968). A Practical Handbook of Seawater Analysis. Fisheries Research Board of Canada, Bulletin.

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like it may be a random mix of numbers, letters, and symbols. Could you please provide a clearer text for me to assist you with?

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100 BB. Depth in meters: 100 (need). Temperature (°C): 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30. State (%): 6, the path (2) comes from May 25 to 29, 1980.

Depth in meters: 35.00, salinity (0/00): 36.00. Figure 9 illustrates salinity (+/,,) versus depth (a) composite from May 25 to 23, 1980.

Dissolved oxygen (ML/L): 0.05, 3, 6.00. Depth in meters: 70, 800, 10, 110. The range is 2.0, 2.2, 2.4, to 2.34, 3.6, 3.8, 4.0, and goes up to 4.24.4, 4.6, 4.8, 5.0. The dissolved oxygen (at/) versus depth (a) composite is from May 28 to 28, 1980.

Phosphate (UGAT PO)-P/L: 2, 4, 6, 8, 10, 12, 16, 18, 20. The measurement was taken from May 25 to 23, 1980.

Phosphate (UGAT POy-P/L): 8, 10, 12, 16, 18, 20. The temperature at Benchmark 1795738, 65°51.5M was recorded during May 25 and 26, 1980. Temperature (°C): 4.

Phosphate (UGAT POy-P/L): 2, 8, 10, 12, 14, 16, 18, 20. Figure 13 shows the mean phosphate concentrations for Benchmark at depths of 200, 300, 700, 800, 900, 1000, and 1100 meters.

Depth in meters versus phosphate (UGAT PO)-P/L: 4, 6, 8, 10, 12, 16, 18, 20. Figure 14 shows phosphate concentrations versus depth (m) in a transect south of Punta Tuna on May 27 and 28, 1980.

Nitrate - Nitrite (UGAT N/L): 2, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30. Figure 15 shows nitrate-nitrite concentrations versus depth (m) at Benchmark 17°57, 65°51.53 during May 25 and 26, 1980.

Temperature versus nitrate/nitrite (UGAT N/L): 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34. Figure 16 illustrates this.

Nitrate - Nitrite (UGAT N/L): 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28.

Nitrate - Nitrite (UGAT N/L): 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32. There are several data points taken offshore at 0.5 mi. (P13), 9.5 mi. (P15), 15.5 mi. (P25), 25.5 mi. (P35), and 90.5 mi. (PR).

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Two (1000-200m), x87 Light profile, Secchi Oblique net tows (0-100, 100-200m) Vertical net tow (1000-200m), xBP Oblique net tow (0-200, 100-200m) Vertical net tow (1000-200m) Hydrocast xr Vertical net tow (100-200m), xBt Oblique net tows (0-100, 100-200m) Vertical net tow (2000-200) Oblique net tows (0-100, 100-200m) Vertical net tow (1000-200m) xr Oblique net tows (0-200, 100-200m) Hydrocast ver Begin small scale pattern study. Steam for station 1. Arrive S-1 17° 52.50 65° 52.90 Hydrocast at station 3-1 (primary productivity) Oblique net tow (0-100m) station S-1, x87 Steam for station S-2 17° 54.20 65° 50.28 Oblique net tow (0-100m), xen Steam for station 5-3 17° 55.88 65° 46.50 59

DAY 2 (cont) course 2005, as Oblique net tow (0-100), x87 1300 Steam for station S-4 17° 56.08 65° 55.58 1345 Oblique net tow (0-100), xBE 1430 Steam for station SS (Benchmark) 17° 57.68 65° 51.98 Oblique net tow (0-100m), xT 1600 Steam for station 5-6 17°59.2N 65° 48.2W 1645 Oblique net tow (0-100), PZ Return to benchmark Hydrocast at benchmark 1930 Begin night series. Steam for S-1 17° 52.28 65° 53.8" 2000 Oblique net tow (0-100), xBT Steam for S-2 17° 54.26 65° 50.28 2200 Oblique net tow (0-100m), Br Steam for S-3 17° 55.0N 65° 46.50 2200 Oblique net tow (0-100m), x67 Hydrocast Steam for S-4 17° 56.08 65° 55.58 2400 Oblique net tow (0-100m), x67 Steam for S-5 (benchmark) 17° 57.6N 65° 51.9W Day 3 2000 Oblique net tow (0-100m), XBT Steam for S-6 17° 59.28 65° 48.28 Oblique net tow (0-100m), xer 0200 Steam to Vieques Begin large scale study. XBT at 30 min. intervals 0320 XBT (underway) Arrive station V-1 28" 04.44 65° 32.64 Hydrocast (2 depths) Shallow net tow Steam for V-2 16° 03.6N 65° 32.69 Shallow net tow Steam for V-3 18° 01.8N 65° 32.68 Hydrocast Oblique net tow (0-100) Steam for V-4 17° 57.7N 65° 22.6W

DAY 3 (cont) 0830 1200 1500 2000 2300 Day 4 0200 0430 0630 0930 CRUISE 2005 Oblique net tow (0-100) Steam for V-5 17° 48.54N 65° 32.6W Oblique net tow (0-100m) Hydrocast.

Steaming for V-6 Hydrocast at 17° 32.5N 65° 32.6W. Conducting oblique net tow (0-100m). Heading for PRG XBT's at 30 min intervals. Arrival at PE 6 at 17° 28.5'N 65° 53'W, performing Hydrocast and oblique net tow (0-100m). Heading for PRS and PI, conducting oblique net tow (0-100m) at 17° 44.248'N 65° 53.48'W. Hydrocast is in progress. Steaming for PM and arriving at PI-C at 17° 52.0N 65° 53'W. Oblique net tow (0-100m) is underway. Heading to PT-3 (benchmark), arriving at PI-3 at 17° 56.0"N 65° 53'W. Hydrocast and oblique net tow (0-100m) are in progress. Heading for PR2, arriving at PI-2 at 17° 58.1N 65° 53'W. Conducting oblique net tow. Heading for PT, arriving at PT1 at 17° 56.2'N 65° 53'W. Shallow hydrocast (2 depths) and shallow net tow are in progress. Heading for G-1, arriving at J01 at 17° 54.8'N 66° 16.8'. Shallow hydrocast (2 depths) and shallow net tow are in progress. Heading for S-2.

Day 5. DAY 4 (cont) Various activities are scheduled at different times. (CRUISE 8005) Arriving at J-2 at 17° 53.7'N 66° 16.0'W and conducting oblique net tow. Heading to J-3, arriving at 17° 51.7'N 66° 16.08'W. Oblique net tow (0-100m) is underway. Heading to J-4, arriving at 17° 47.71'N 66° 16.08'W. Oblique net tow (0-100m) is in process. Heading to J-5, arriving at 17° 39.70'N 66° 16.08'W. Oblique net tow (0-100m) is in progress. Heading to J-6, arriving at 17° 24.50'N 66° 16.08'W. Hydrocast and oblique net tow (0-100m) are underway. Departing for G-6 XBT (underway), arriving at G-6 at 17° 26.5'N 66° 45'W. Oblique net tow (0-100m) and Hydrocast are in progress.

DAY 5 (cont) CRUISE 9005 various activities are scheduled. Shallow hydrocast is being conducted. Departing for G-0, arriving at G-0 at 17° 58'N 66° 45.7'W. Oblique net tow is underway. Departing for Malecón.

List of Participants:

1. José Manuel López
2. Juan González
3. Paul M. Yoshioka
4. Daniel Pesante
5. George Anderson
6. José Ramírez Barbot
7. Jorge Capella
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9. Dennis Corales
10. Carlos Bonasé
11. Jorge García
12. Alfredo Mercado
13. Evelyn Nazario
14. Vaine Gareta
15. Angel Marquez
16. Chief

Scientist Scientist Scientist Scientist Technician Technician Technician Technician Technician Technician Technician Technician Technician Technician Technician
WEATHER CODE:
Clear (no cloud at any level)
Partly cloudy (scattered or broken clouds)
Continuous layer(s) of cloud(s)
Sandstorm, duststorm, or blowing snow
Fog, thick dust, or haze
Drizzle
Rain
Snow, or rain and snow mixed
Shower(s)

Thunderstorm