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DATA REPORT

OMER ? OTEC CRUISE,

Jan, 27 ~ Feb, 1, 1980.

CENTER FOR ENERGY AND ENVIRONMENT RESEARCH

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DATA REPORT

(OMER ~ OTEC crut

, Jan. 27 = Feb. 1, 1980

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STATION PLAN

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HYDROCAST DATA ~ 1,5, 09, CHLOROPHYLL, NOTRIEITS, 0,

?TEMPERATURE *C/SALINITY*/,, PLOTS.

ZOOPLANKTON DATA

APPENDIX,

(CRUISE PLAN

SCIENTIFIC PERSOWMEL

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?The ability to detect the effects of an OTEC plant on the marine environment is dependent upon the magnitude of ite effects relative to the scale and intensity of variability (pattern) within this ecosystem. ?The scale of pattern examined in this study 1s approximately 10 ka? which has boon estimated to be the area whose alteration by the operation

of an OTEC plant can be physically m

sured. The purpose of this cruise

was to determine the magnitude of variability of various ecosystem com

ponents within and between such areas, Small scale and large scale tran-

sects were run to determine the presence of environmental gradients, if

?any, and the magnitude of between station variability.

?wo current meters (InterOcean Model 135) were also moored at depths

of 50 and 150 meters at the benchmark buoy during the period of the cruise.

Hydrographic oata

Hyérocasts were made with 5 liter Niskin bottles usually lowered to

depths of 100m, Bottles were placed at nominal depths of 0, 10, 25, 50,

75, 100, 150, 20, 250, 300, 400, $00, 650, 800, 1000 m for determina~

?tions of temperature, salinity, oxygen, chlorophyll, phaeopigments and

nutrients (nttrate-nitrite, phosphate, amonia, silicate) .

?Tomperature ws

peasured with paired deep sea reversing thermo-

meters, the thernoneters were recently calibrated at the Physical che-

nical Oceanographic Data Facility (PCODP) at Scripps Institution of

Oceanography and measurements were considered accurate to 0.01°C. Une

Protected thermometers were placed on bottles sampling at depths of 100

---Page Break---

motors or greater.

Salinity was determined with o Wytech induction salinometer. Read

ings are considered accurate to 0.003*/,

Dissolved oxygen was deterained by the Winkler method as revised by

Carpenter (1965) and modified by Anderson (1971). Measurements are accu-

Fate £0 0.02 mi/t, Nutrionts were measured with a Technicon Autoanalyzer

using methods described by Strickland and Parsons (1968). Chlorophy1}

was measured with a Turner Model 111 fluorometer using methods described

by Stricktand and Parsons.

Station depths were obtained thru an B.D.0. depth Recorder perma

ently installed in the ship or estimated from a chart, NOS 26659. Sonic depths obtained in Fathoms were converted to meters but were not corrected for sewed of sound variations. Chart depths are indicated by (c) and sonic depths by an (5) besides the number. ALL depths are in meters.

Densities (0,) were calculated from a handbook of Oceanographic Tables (Biatek, 1966),

Station times are given in Greenwich Mean Time (GY), Plankton ?Tow Tinos are in local time. Puerto Rico is 4 houre behind GMT. A weather code is given in the Appendix.

Net tows

Zooplankton tows were made with a 75 cm opening-closing net equipped

with 202 um mesh. Volume of water filtered vas calcilated from a flow-

eter suspended off center in the mouth of the net.

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STO Ref, No. 71-10, Sea Grant Pub. No. 11.

Bialek, E.t. (compiler), 1966. Handbook of Oceanographic Tables. U.S. Naval Oceanographic Office, Washington, D.C. Special Publication.

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Strickland, J... and 7.8, Parsons. 1968, A practical handbook of Seawater analysis. Fish. Res. Soard of canada, Bull. NO. 167: app.

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vertical net tow (1000-200m)

Vight profile, secchi

obTique net tows (0-100, 100-200n)

vertical net tow (1000-200m)

oblique net tow (0-100, 100-200n)

vertical net tow (1009-200m)

hydrocast.

fluorometer profile

vertical net tow (1000-200m)

oblique net tows (0-100, 190-200)

vertical net tow (1000-290m)

oblique net tows (0-100, 109-200m)

vertical net tow (1000-200n)

oblique net tows (0-11, 109-200)

hydrocast

fluorometer profile

Begin small scale pattern study

steam for station S-1

hydrocast at station S-1 (primary productivity)

fluorometer profile, station S-1

oblique net tow (0-100n) station S-1

steam for S-2

---Page Break---

DAF 2 (cont)

pay 3

1000

1085,

1130

11s

1300

1345,

1430

1515

1600

1545,

1730

1930

2000

2100

2200

2400

0000

0100

0200

fluorometer profile, stattons-2

oblique net tow (0-100m)

steam for $-3

fluorometer profile, station $-3

?oblique net tow (0-100 m)

steam for $-#

fluorometer profile, station $-4

oblique net tow (0-100m)

steam for $-5

fluorometer profile, station $-5 (Benchmark)

oblique net tow

steam for 5-6

fluorometer profile, station $-6

oblique net tow

return to benchmark

hydrocast

Begin might series

steam for S-1

oblique net tow (0-100n)

steam for S-2

oblique net tow (0-100n)

steam for S-3

oblique net tow (0-100m)

hydrocast

steam for $-4

oblique net tow (0-100m)

steam for S-5 (benchmark)

obtique net tow (0-100m)

steam for S-6

oblique net tow (0-100n)

steam to Vieques

Begin large scale study

---Page Break---

Day 3

pay 4

fc0n

0700

0900

1030

1400

1600

1930

0130

0530

0800

3000

arrive station V1

hydrocast (2 depths)

shallow net tow

Muoroneter profile

Steam for V-2

Shallow net tow

fluorometer profite

steam for V-3

hydrocast (primary productivity), light profile

Fuorometer profile

oblique net tow (0-100m)

steam for V-4

obi ique net tow (0-100)

fluorometer profile

steam for Y-5

?oblique net tow (0-100m)

fluoremeter profile

steam for V-6

hydrocast

?oblique net tow (0-100m)

fluorometer profile

Steam for PT-6

arrive PT-6

hydrocast, net tow

fluorometer profile, oblique net tow (0-100m)

steam for PT-5

oblique net tow (0-100m)

fluorometer profite

steam for PT-8

fluorometer profile

oblique net tow (0-100m)

steam for PT-3 (benchmark)

hydrocast (primary praductivi ty)

obliue net tow (0-100n)

fuoroneter profile

Light profile

---Page Break---

ay & cont.)

pay 5

1400

1600

2030

2300

0830

0700

1000

2200

steam for PT-2

?uoroneter profile

oblique ret tow

Steam for PT=1

shallow hydrocast (2 depths)

shallow net tow

fuoroneter profile

steam for Je1

shallow hydrocast (2 depths)

shatlow net tow

fluorometer profile

steam for J-2

Fluoroneter profile

oblique net tow

steam for J-3

hydrocast

fluororeter profile

oblique net tow (0-100n)

steam for 3-4

?oblique net tow (0-100m)

?uoroneter profile

steam for J-5

fluorometer profile

?oblique net tow (0-100m)

stean for J-6

hydrocast (primary productivity), light profile

oblique net tow (0-100m)

fluoroneter profile

steam for Malecon

Arrive Malecon

---Page Break---

NAL VLNAd

AGNLS 31V9S TivWS

---Page Break---

? ' , , » , , , ' - .

LARGE SCALE PATTERN STUDY

zj mV

xv-2

rv

ST oT xvod

x02 oT?

xo3 00 keT3 V5

deh x PTA

xa x PTS V6

x96 x PTB

sles

jon 11/2, 3 1/2, 71/2, 15 1/2, 32 mi, from shore.

---Page Break---

Paul #. Yoshioka

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086 ¢. Maldonado

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Amaury E. Torres

Joan G. Gonzéiez

vance P. Vicente

Dennis , Corales

Jorge 8. carefa

Jorge capella

José A. Panfrez

Angel wazario

Danie? Pesante

Joss ¥. sipez

George ©. Anderson

LIST OF SCIENTIFIC PERSOMEL

?Tech.

student

tab. Tech.

Stodent

Sclantise

Senior Associate

Lab, Tech.

Mos. Student

tab. Tech.

Lab. Tech.

?tech.

Senior Associate

Scientist 12

corr

com

UPR High School

ceER

univ. of PAR.

EER

ceer

g

R & CER

aoag

saga Enterpris

---Page Break---

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

Pos, thick dust, or 1a

brisele

rain

Snow, OF rain and anow mixed

Shower (s)

?Thunderstorm (2)

---Page Break---