

Cruise Report, BATS 30

Cruise dates: March 13-14, 16-17, 1991

Personnel: R. Johnson, K. Gundersen, M. Tuel, J. Sorensen, A. Close
R/V *Weatherbird II*

13 March 1991

1550 - Depart BBSR.

1930 - Cast for PIT water, Lat: 32.061 N; Long: 64.482 W

2335 - Deploy PITs, Lat: 31.754 N; Long: 64.168 W.

2345 - Cast 1, 1400 m cast.

Lat: 31.755 N; Long: 64.168 W

Nominal depths: 300, 400, 500, 600, 700, 800, 900, 1000, 1100, 1200, 1300,
1400 m.

Samples taken:

| | |
|--|--------------|
| dissolved O ₂ —duplicates | 12 depths |
| salinity | 12 depths |
| NO ₃ , PO ₄ , SiO ₄ | 12 depths |
| PSi | top 8 depths |
| POC/PON | top 8 depths |

14 March 1991

0115 - 1400 m cast on deck. Lat: 31.756 N; Long: 64.168 W.

0400 - Cast 2, 140 m Go Flo cast. Lat: 31.781 N; Long: 64.205 W

Decide that it's too rough for Primary Production array deployment/recovery.
Nominal depths: 0, 20, 40, 60, 80, 100, 120, 140 m.

Samples taken:

| | |
|--------------------------|----------|
| salinity | 8 depths |
| ³ H-thymidine | 8 depths |
| POC/PON | 7 depths |
| Chlorophyll a/HPLC | 8 depths |

1210 - Cast 3, 300 m cast.

Lat: 31.807 N; Long: 64.241 W

No bottles used—too rough. Decide to head back to BBSR.

1745 - Arrive BBSR.

16 March 1991

1705 - Depart BBSR

2350 - Arrive at OFP. Seas 10-12 feet. Too rough to recover traps.

17 March 1991

1330 - Recover traps, Lat: 31.528 N; Long: 64.383 W.

2100 - Alongside BBSR.

CTD Sensor Corrections to Bottle Data for BATS 30:

Note: For BATS 30, CTD profiles of salinity and dissolved oxygen were performed for a depth range of 0-1400 m. However, discrete wet samples of these parameters were taken from 300-1400 m. In order to determine a single continuous model correction, matched pairs of bottle and CTD data from BATS 30a for 0-250 m were combined with the 300-1400 m values from BATS 30.

Salinity:

$$DS = R_{\phi} + \sum_{i=1}^l A_i \left(\frac{P}{4300}\right)^i + \sum_{i=1}^m B_i \left(\frac{SC}{37}\right)^i$$

$$MS = SC + DS$$

Where:

| | | |
|------------|---|-----------------------------------|
| R_{ϕ} | = | linear offset |
| P | = | pressure (dbar) |
| T | = | temperature (°C) |
| DS | = | model (wet salinity-CTD salinity) |
| SC | = | uncorrected CTD salinity |
| MS | = | modified salinity |
| A_i, B_i | = | regression coefficients |
| l, m | = | 2 |

$$R_{\phi} = 9.4475777e+00$$

$$B_1 = -1.9597000e+01$$

$$A_1 = -6.3755365e-02$$

$$B_2 = 1.0157893e+01$$

$$A_2 = 1.9374740e-01$$

standard deviation of model residuals = 2.1531254e-03 ppt

Oxygen:

$$MO = R_{\phi} + \sum_{i=1}^l A_i \left(\frac{P}{4300}\right)^i + \sum_{i=1}^m B_i \left(\frac{OT}{30}\right)^i + \sum_{i=1}^n C_i OC^i$$

$$Mol = MO \times 300$$

Where:

| | | |
|-------------|---|---|
| P | = | pressure (dbar) |
| T | = | temperature (°C) |
| MO | = | (CTD modeled oxygen)(μmole/kg)/300 |
| Mol | = | modeled oxygen (μmole/kg) |
| OC | = | oxygen sensor current (μamps) |
| $OS(t,p,s)$ | = | oxygen saturation value at measured temperature, salinity and pressure (μmole/kg) |

R_ϕ, A_i, B_i, C_i = regression coefficients
 $l, n.$ = 2
 m = 1

$R_\phi = 4.7515329e-01$ $B_1 = -1.0350604e+00$
 $A_1 = -3.998762e-03$ $C_1 = 2.3727021e+00$
 $A_2 = 1.5611372e-01$ $C_2 = -1.0881021e+00$

standard deviation of model residuals = 1.3469566e+00 $\mu\text{mole/kg}$

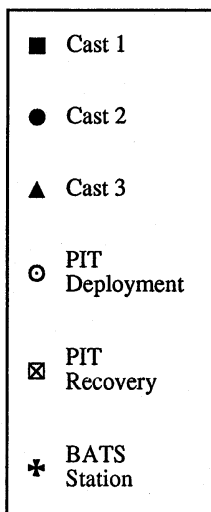
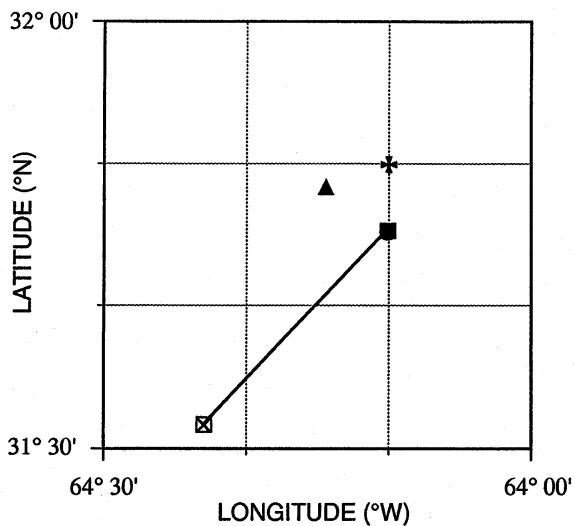
Beam Attenuation Coefficient:

Profiles of the beam attenuation coefficient from BATS 30 did not allow the determination of a specific offset correction. The offset was calculated by linear interpolation from those obtained on BATS 29 and BATS 30b. The offset was 0.006 m^{-1} .

Fluorescence Correction:

The CTD fluorescence profiles and chlorophyll a data from BATS 30 did not allow a specific offset to be determined for this cruise. The offset was made equivalent to that obtained for BATS 30a. The offset value from BATS 30a was calculated from each cast by comparing the minimum raw fluorescence measurement with the extracted chlorophyll concentration of 0.004 $\mu\text{g/kg}$ from 249.3 m. This offset was applied to the entire profile.

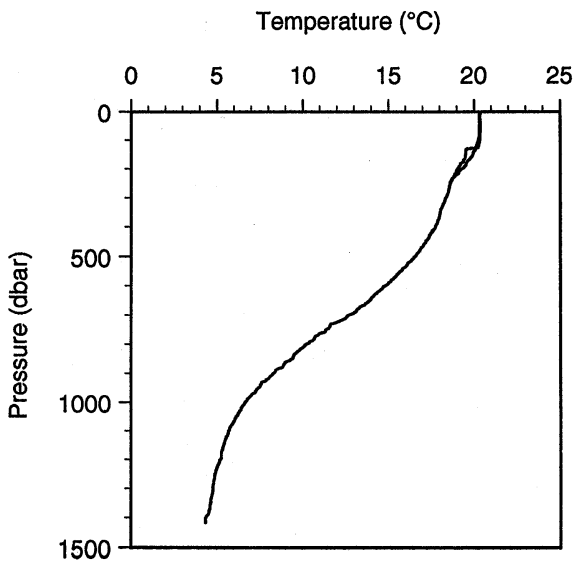
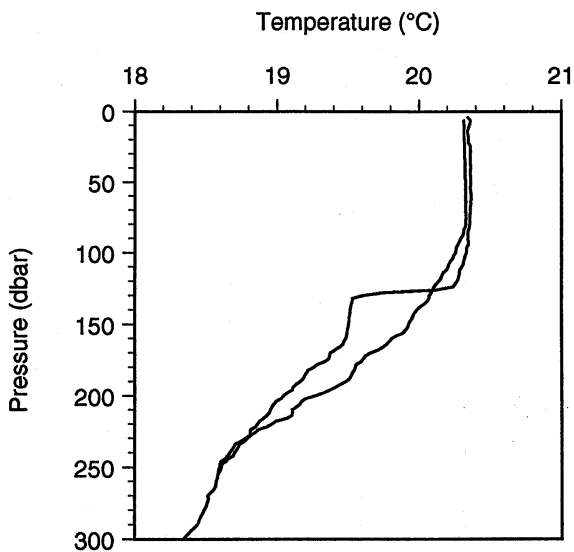
BATS 30—Cast Positions



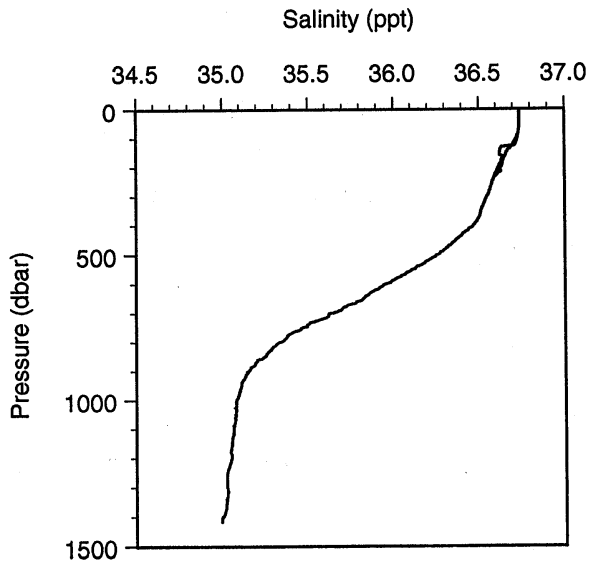
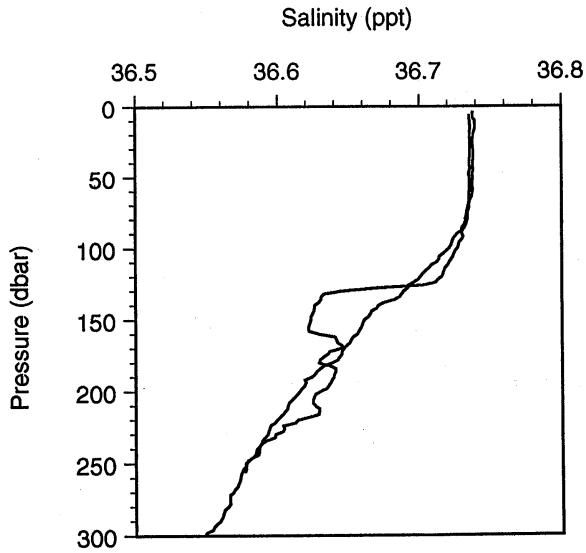
BATS 30, CTD Cast 1
March 13, 1991: Start 23:45; End 01:15
Lat: 31.755 N; Long: 64.168 W

| Depth (m) | Pres (db) | Temp (°C) | Pot.T (°C) | CTD Sal (ppt) | Sigma _θ (kg/m ⁻³) | CTD O ₂ (μmole/kg) | O ₂ Anom (μmole/kg) | BAC (m ⁻¹) |
|--------------|--------------|--------------|---------------|------------------|---|----------------------------------|-----------------------------------|---------------------------|
| 4.0 | 4.0 | 20.341 | 20.340 | 36.738 | 25.998 | 237.94 | 22.34 | 0.435 |
| 10.0 | 10.1 | 20.356 | 20.354 | 36.739 | 25.996 | 238.26 | 22.72 | 0.434 |
| 20.0 | 20.1 | 20.349 | 20.346 | 36.738 | 25.997 | 238.02 | 22.45 | 0.432 |
| 30.0 | 30.2 | 20.361 | 20.355 | 36.738 | 25.994 | 237.76 | 22.23 | 0.434 |
| 40.0 | 40.3 | 20.364 | 20.356 | 36.738 | 25.994 | 237.40 | 21.89 | 0.432 |
| 50.0 | 50.4 | 20.364 | 20.355 | 36.738 | 25.994 | 237.53 | 22.02 | 0.432 |
| 60.0 | 60.4 | 20.368 | 20.357 | 36.737 | 25.994 | 237.28 | 21.78 | 0.432 |
| 70.0 | 70.5 | 20.362 | 20.349 | 36.734 | 25.993 | 237.11 | 21.59 | 0.430 |
| 80.0 | 80.6 | 20.357 | 20.342 | 36.732 | 25.994 | 236.16 | 20.61 | 0.428 |
| 90.0 | 90.6 | 20.346 | 20.329 | 36.730 | 25.996 | 235.06 | 19.47 | 0.425 |
| 100.0 | 100.7 | 20.331 | 20.312 | 36.726 | 25.997 | 235.03 | 19.37 | 0.423 |
| 110.0 | 110.8 | 20.297 | 20.276 | 36.721 | 26.002 | 234.58 | 18.79 | 0.422 |
| 120.0 | 120.9 | 20.264 | 20.241 | 36.714 | 26.007 | 234.16 | 18.22 | 0.419 |
| 130.0 | 131.0 | 19.569 | 19.545 | 36.639 | 26.135 | 231.14 | 12.38 | 0.395 |
| 140.0 | 141.0 | 19.515 | 19.489 | 36.626 | 26.139 | 229.64 | 10.65 | 0.393 |
| 150.0 | 151.1 | 19.503 | 19.476 | 36.623 | 26.140 | 229.25 | 10.20 | 0.390 |
| 160.0 | 161.2 | 19.478 | 19.448 | 36.636 | 26.157 | 228.46 | 9.34 | 0.393 |
| 170.0 | 171.3 | 19.372 | 19.341 | 36.646 | 26.192 | 221.05 | 1.53 | 0.394 |
| 180.0 | 181.3 | 19.231 | 19.198 | 36.634 | 26.221 | 215.17 | -4.94 | 0.392 |
| 190.0 | 191.4 | 19.143 | 19.108 | 36.620 | 26.234 | 215.86 | -4.62 | 0.390 |
| 200.0 | 201.5 | 19.032 | 18.996 | 36.614 | 26.258 | 216.59 | -4.35 | 0.390 |
| 210.0 | 211.6 | 18.949 | 18.911 | 36.607 | 26.274 | 217.21 | -4.08 | 0.389 |
| 220.0 | 221.7 | 18.852 | 18.812 | 36.598 | 26.293 | 214.43 | -7.27 | 0.387 |
| 230.0 | 231.7 | 18.775 | 18.733 | 36.591 | 26.307 | 211.41 | -10.60 | 0.387 |
| 240.0 | 241.8 | 18.695 | 18.651 | 36.584 | 26.323 | 209.33 | -13.02 | 0.387 |
| 250.0 | 251.9 | 18.606 | 18.561 | 36.577 | 26.341 | 208.02 | -14.70 | 0.386 |
| 275.0 | 277.1 | 18.505 | 18.456 | 36.566 | 26.359 | 207.40 | -15.75 | 0.386 |
| 300.0 | 302.3 | 18.327 | 18.274 | 36.546 | 26.390 | 206.49 | -17.43 | 0.385 |
| 325.0 | 327.5 | 18.147 | 18.089 | 36.529 | 26.422 | 207.56 | -17.13 | 0.385 |
| 350.0 | 352.7 | 18.017 | 17.955 | 36.511 | 26.443 | 207.95 | -17.31 | 0.385 |
| 375.0 | 378.0 | 17.883 | 17.817 | 36.496 | 26.465 | 208.40 | -17.45 | 0.384 |
| 400.0 | 403.2 | 17.721 | 17.651 | 36.466 | 26.483 | 206.32 | -20.27 | 0.384 |
| 425.0 | 428.4 | 17.396 | 17.322 | 36.406 | 26.517 | 200.10 | -27.97 | 0.384 |
| 450.0 | 453.6 | 17.134 | 17.056 | 36.360 | 26.546 | 194.70 | -34.57 | 0.384 |
| 475.0 | 478.9 | 16.829 | 16.748 | 36.307 | 26.579 | 190.94 | -39.75 | 0.384 |
| 500.0 | 504.1 | 16.485 | 16.401 | 36.248 | 26.616 | 189.12 | -43.19 | 0.385 |
| 550.0 | 554.6 | 15.611 | 15.522 | 36.100 | 26.704 | 180.22 | -56.30 | 0.385 |
| 600.0 | 605.1 | 14.671 | 14.577 | 35.936 | 26.788 | 171.14 | -70.07 | 0.385 |
| 650.0 | 655.6 | 13.770 | 13.671 | 35.808 | 26.882 | 172.54 | -73.29 | 0.383 |
| 700.0 | 706.1 | 12.550 | 12.450 | 35.620 | 26.984 | 156.88 | -95.48 | 0.383 |
| 750.0 | 756.6 | 11.268 | 11.166 | 35.450 | 27.096 | 159.44 | -100.10 | 0.383 |
| 800.0 | 807.2 | 10.057 | 9.956 | 35.314 | 27.205 | 159.07 | -107.54 | 0.383 |
| 850.0 | 857.7 | 9.066 | 8.964 | 35.214 | 27.292 | 160.38 | -112.27 | 0.384 |
| 900.0 | 908.3 | 8.127 | 8.024 | 35.141 | 27.381 | 168.20 | -110.38 | 0.384 |
| 950.0 | 958.9 | 7.272 | 7.169 | 35.105 | 27.478 | 183.40 | -100.69 | 0.383 |
| 1000.0 | 1009.4 | 6.554 | 6.450 | 35.079 | 27.556 | 198.50 | -90.38 | 0.383 |
| 1050.0 | 1060.0 | 6.044 | 5.938 | 35.073 | 27.619 | 211.71 | -80.63 | 0.381 |
| 1100.0 | 1110.7 | 5.643 | 5.534 | 35.063 | 27.662 | 223.77 | -71.37 | 0.381 |
| 1150.0 | 1161.3 | 5.340 | 5.228 | 35.050 | 27.688 | 232.05 | -65.24 | 0.381 |
| 1200.0 | 1211.9 | 5.127 | 5.010 | 35.046 | 27.711 | 238.21 | -60.60 | 0.381 |
| 1300.0 | 1313.2 | 4.757 | 4.633 | 35.029 | 27.741 | 250.05 | -51.45 | 0.379 |
| 1400.0 | 1414.6 | 4.348 | 4.216 | 34.994 | 27.759 | 257.61 | -46.97 | 0.379 |

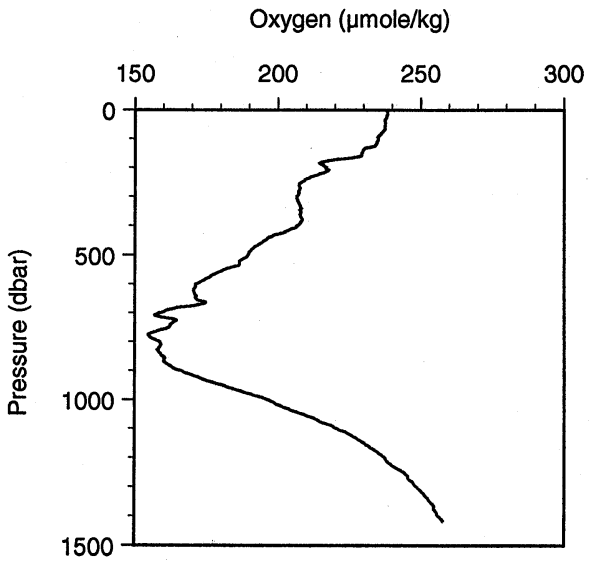
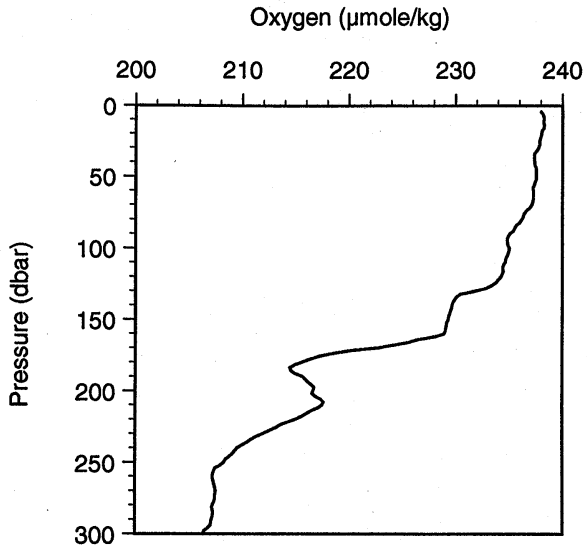
BATS 30—CTD Temperature Profiles



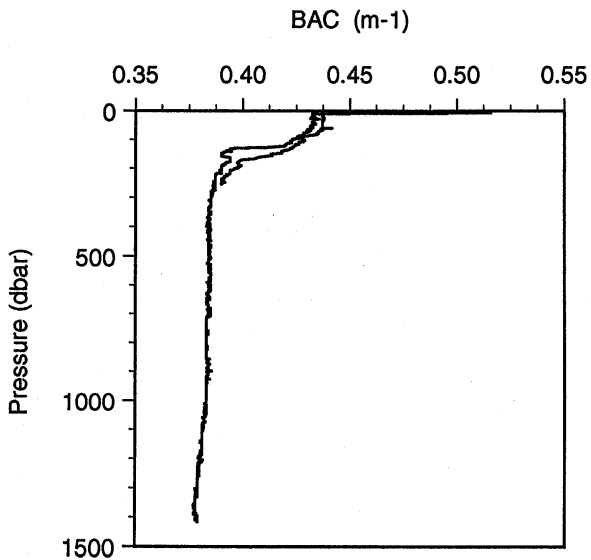
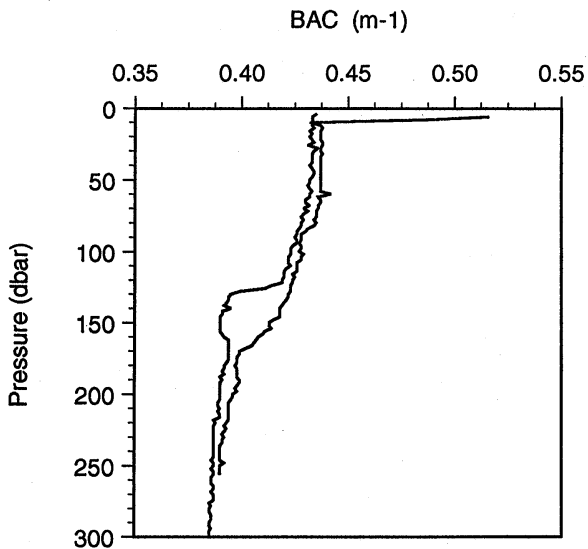
BATS 30—CTD Salinity Profiles



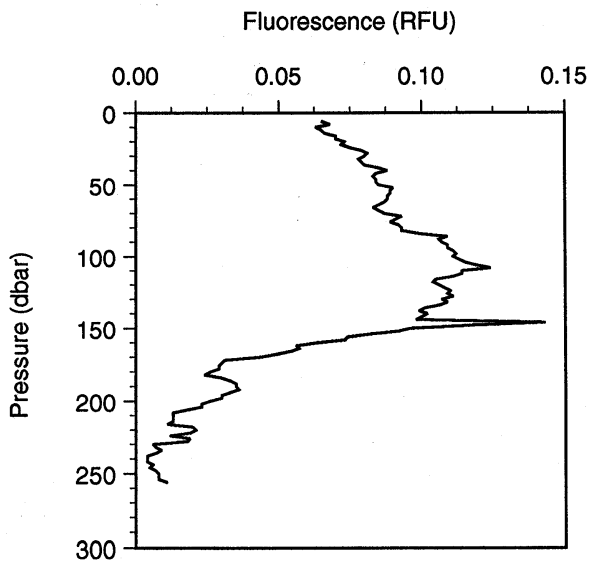
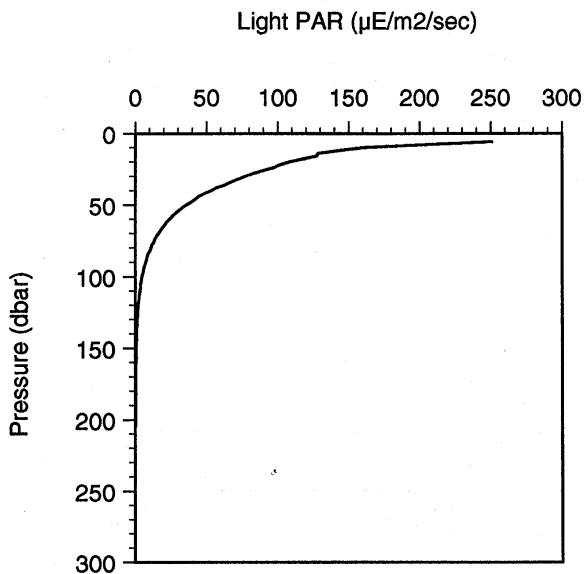
BATS 30—CTD Oxygen Profiles



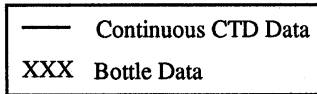
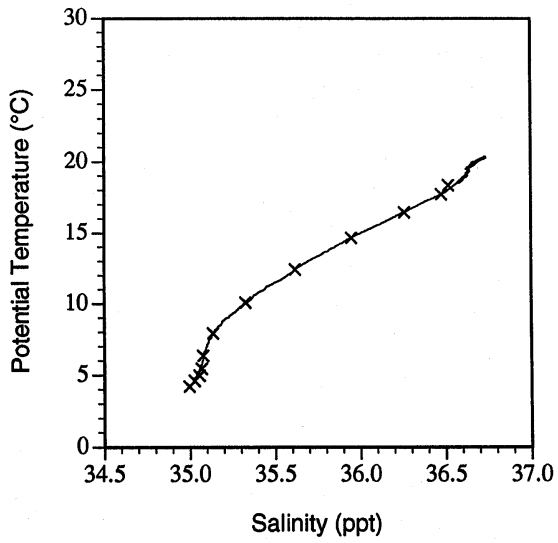
BATS 30—CTD BAC Profiles



BATS 30—CTD PAR and Fluorescence Profiles



BATS 30—T-S Diagram



BATS 30—Bottle Data
March 13-17, 1991
Physical Parameters

| Bottle ID | Depth (m) | Pressure (db) | Temp (°C) | Pot. Temp (°C) | Salinity-1 (ppt) | Salinity-2 (ppt) | Sigma _θ (kg/m ³) |
|-----------|--------------|------------------|--------------|-------------------|---------------------|---------------------|--|
| G3001N12 | 300.4 | 302.7 | 18.379 | 18.325 | 36.518 | | 26.355 |
| G3001N11 | 399.1 | 402.3 | 17.769 | 17.698 | 36.476 | | 26.479 |
| G3001N10 | 499.1 | 503.2 | 16.533 | 16.449 | 36.259 | | 26.613 |
| G3001N09 | 598.4 | 603.4 | 14.736 | 14.642 | 35.948 | | 26.783 |
| G3001N08 | 700.7 | 706.8 | 12.500 | 12.400 | 35.619 | | 26.993 |
| G3001N07 | 798.8 | 805.9 | 10.169 | 10.067 | 35.328 | | 27.197 |
| G3001N06 | 899.4 | 907.6 | 7.989 | 7.887 | 35.134 | | 27.396 |
| G3001N05 | 998.7 | 1008.1 | 6.454 | 6.350 | 35.076 | | 27.567 |
| G3001N04 | 1101.8 | 1112.4 | 5.558 | 5.449 | 35.068 | | 27.676 |
| G3001N03 | 1199.8 | 1211.7 | 5.095 | 4.979 | 35.056 | | 27.722 |
| G3001N02 | 1299.0 | 1312.1 | 4.727 | 4.602 | 35.027 | | 27.742 |
| G3001N01 | 1402.6 | 1417.2 | 4.346 | 4.214 | 34.995 | | 27.760 |
| | | | | | | | |
| G3002G08 | 1.0 | | | | 36.739 | | |
| G3002G07 | 20.0 | | | | 36.757 | | |
| G3002G06 | 40.0 | | | | 36.740 | | |
| G3002G05 | 60.0 | | | | 36.738 | | |
| G3002G04 | 80.0 | | | | 36.739 | | |
| G3002G03 | 100.0 | | | | 36.739 | | |
| G3002G02 | 120.0 | | | | 36.663 | | |
| G3002G01 | 140.0 | | | | 36.725 | | |

BATS 30—Bottle Data
March 13-17, 1991
Gases

| Bottle ID | Depth (m) | O ₂ (1) (μmole/kg) | O ₂ (2) (μmole/kg) | O ₂ (1) anomaly (μmole/kg) | O ₂ (2) anomaly (μmole/kg) | TCO ₂ (1) (2) (μmole/kg) |
|-----------|--------------|----------------------------------|----------------------------------|---|---|---|
| G3001N12 | 300.4 | 205.28 | 204.09 | -18.52 | -19.71 | |
| G3001N11 | 399.1 | 204.89 | 204.46 | -21.07 | -21.50 | |
| G3001N10 | 499.1 | | 189.97 | | -40.62 | |
| G3001N09 | 598.4 | 173.93 | 172.75 | -63.11 | -64.29 | |
| G3001N08 | 700.7 | | 155.10 | | -89.67 | |
| G3001N07 | 798.8 | 159.94 | 160.36 | -93.20 | -92.79 | |
| G3001N06 | 899.4 | 168.42 | 168.55 | -93.57 | -93.44 | |
| G3001N05 | 998.7 | 200.22 | 199.79 | -68.99 | -69.41 | |
| G3001N04 | 1101.8 | 225.33 | 225.03 | -48.56 | -48.87 | |
| G3001N03 | 1199.8 | 239.53 | 238.51 | -36.92 | -37.94 | |
| G3001N02 | 1299.0 | 248.65 | 248.77 | -29.96 | -29.84 | |
| G3001N01 | 1402.6 | 258.82 | 258.75 | -22.14 | -22.21 | |

BATS 30—Bottle Data
March 13-17, 1991
Nutrients

| Bottle ID | Depth (m) | Nitrate (μmole/kg) | Nitrite (μmole/kg) | Phosphate (μmole/kg) | Silicate (μmole/kg) |
|-----------|-----------|--------------------|--------------------|----------------------|---------------------|
| G3001N12 | 300.4 | | | | 1.84 |
| G3001N11 | 399.1 | 4.63 | 0.00 | 0.19 | 1.84 |
| G3001N10 | 499.1 | 8.20 | 0.00 | 0.43 | 3.11 |
| G3001N09 | 598.4 | 12.32 | 0.00 | 0.80 | 5.30 |
| G3001N08 | 700.7 | 17.65 | 0.00 | 1.23 | 8.99 |
| G3001N07 | 798.8 | 20.43 | 0.00 | 1.49 | 12.01 |
| G3001N06 | 899.4 | 22.06 | 0.00 | 1.67 | 14.69 |
| G3001N05 | 998.7 | 20.72 | 0.00 | 1.57 | 14.50 |
| G3001N04 | 1101.8 | 19.30 | 0.00 | 1.48 | 13.57 |
| G3001N03 | 1199.8 | 18.60 | 0.00 | 1.41 | 13.08 |
| G3001N02 | 1299.0 | 17.91 | 0.00 | 1.37 | 12.81 |
| G3001N01 | 1402.6 | 17.66 | 0.00 | 1.36 | 12.62 |

BATS 30—Bottle Data
March 13-17, 1991
Particulates

| Bottle ID | Depth (m) | Chl <i>a</i> (μg/kg) | Phaeo (μg/kg) | POC (μg/kg) | PON (μg/kg) | Bacteria (#x10 ⁶ /kg) |
|-----------|-----------|----------------------|---------------|-------------|-------------|----------------------------------|
| G3001N12 | 300.4 | | | 6.31 | 1.47 | |
| G3001N11 | 399.1 | | | 6.31 | 1.46 | |
| G3001N10 | 499.1 | | | 6.00 | 1.22 | |
| G3001N09 | 598.4 | | | 6.84 | 1.34 | |
| G3001N08 | 700.7 | | | 6.29 | 1.29 | |
| G3001N07 | 798.8 | | | 5.55 | 1.22 | |
| G3001N06 | 899.4 | | | 4.90 | 1.03 | |
| G3001N05 | 998.7 | | | 5.23 | 1.09 | |
| G3001N04 | 1101.8 | | | | | |
| G3001N03 | 1199.8 | | | | | |
| G3001N02 | 1299.0 | | | | | |
| G3001N01 | 1402.6 | | | | | |
| <hr/> | | | | | | |
| G3002G08 | 1.0 | 0.134 | 0.050 | 42.70 | 3.96 | |
| G3002G07 | 20.0 | 0.105 | 0.043 | 43.28 | 4.21 | |
| G3002G06 | 40.0 | 0.137 | 0.047 | 43.83 | 5.09 | |
| G3002G05 | 60.0 | 0.137 | 0.042 | 47.08 | 6.61 | |
| G3002G04 | 80.0 | 0.155 | 0.047 | | | |
| G3002G03 | 100.0 | 0.082 | 0.049 | 46.32 | 9.52 | |
| G3002G02 | 120.0 | 0.120 | 0.058 | 33.08 | 6.74 | |
| G3002G01 | 140.0 | 0.085 | 0.054 | 40.65 | 9.65 | |

BATS 30—Bottle Data**March 13-17, 1991****HPLC Pigments**

Concentrations in ng/kg

Chl c = Chlorophyll c_1+c_2
 But = 19'-Butanoyloxyfucoxanthin
 Fuco = Fucoxanthin
 Hex = 19'-Hexanoyloxyfucoxanthin

Zea = Zeaxanthin
 Chl b = Chlorophyll *b*
 Chl a = Chlorophyll *a*
 Car = Total Carotene

| Bottle ID | Depth | Chlc | But | Fuco | Hex | Zea | Chlb | Chla | Car |
|-----------|-------|------|-----|------|-----|-----|------|------|-----|
| G3002G08 | 1.0 | 0 | 7 | 3 | 26 | 22 | 18 | 74 | 0 |
| G3002G07 | 20.0 | 0 | 6 | 3 | 17 | 7 | 0 | 70 | 0 |
| G3002G06 | 40.0 | 0 | 14 | 7 | 31 | 23 | 11 | 100 | 1 |
| G3002G05 | 60.0 | 0 | 11 | 0 | 25 | 24 | 17 | 107 | 4 |
| G3002G04 | 80.0 | 0 | 9 | 0 | 29 | 31 | 21 | 115 | 4 |
| G3002G03 | 100.0 | 0 | 6 | 0 | 13 | 14 | 5 | 66 | 0 |
| G3002G02 | 120.0 | 0 | 8 | 0 | 28 | 22 | 13 | 103 | 0 |
| G3002G01 | 140.0 | 0 | 5 | 0 | 14 | 12 | 12 | 57 | 0 |

Concentrations in ng/kg

C3 = Chlorophyll c_3
 Clid = Chlorophyllide *a*
 Per = Peridinin
 Pras = Prasinoxanthin

Diad = Diadinoxanthin
 Allo = Alloxanthin
 Diat = Diatoxanthin

| Bottle ID | Depth | C3 | Clid | Per | Pras | Diad | Allo | Diat |
|-----------|-------|----|------|-----|------|------|------|------|
| G3002G08 | 1.0 | 7 | 0 | 0 | 0 | 2 | 0 | 0 |
| G3002G07 | 20.0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| G3002G06 | 40.0 | 3 | 0 | 0 | 0 | 6 | 0 | 0 |
| G3002G05 | 60.0 | 7 | 0 | 0 | 0 | 5 | 0 | 0 |
| G3002G04 | 80.0 | 6 | 0 | 0 | 0 | 3 | 0 | 0 |
| G3002G03 | 100.0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| G3002G02 | 120.0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 |
| G3002G01 | 140.0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

BATS 30**Bacterial Growth**

| Depth (m) | ³ H-Thymidine Uptake (pmole/l/hour) |
|--------------|---|
| 1 | 0.316 |
| 1 | 0.250 |
| 1 | 0.255 |
| 20 | 0.335 |
| 20 | 0.311 |
| 20 | 0.376 |
| 40 | 0.312 |
| 40 | 0.295 |
| 60 | 0.362 |
| 60 | 0.431 |
| 60 | 0.367 |
| 80 | 0.295 |
| 80 | 0.239 |
| 80 | 0.294 |
| 100 | 0.312 |
| 100 | 0.330 |
| 100 | 0.260 |
| 120 | 0.174 |
| 120 | 0.274 |
| 120 | 0.343 |
| 140 | 0.301 |
| 140 | 0.232 |
| 140 | 0.114 |

Note: Isotope used for ³H-thymidine uptake—ICN Radiochemicals.

Sediment Trap Estimated Particle Fluxes

| Depth (m) | Sample # | Mass (mg/m ² /d) | Total Carbon (mg C/m ² /d) | Organic Carbon (mg C/m ² /d) | Nitrogen (mg N/m ² /d) |
|--------------|----------|--------------------------------|--|--|--------------------------------------|
| 150 | 1 | 83.80 | | 15.74 | 3.11 |
| 150 | 2 | 88.10 | | 21.63 | 4.87 |
| 150 | 3 | 79.50 | | 13.36 | 2.41 |
| 200 | 4 | 58.73 | | 10.84 | 1.68 |
| 200 | 5 | 88.81 | | 12.09 | 2.16 |
| 200 | 6 | 128.92 | | 18.46 | 3.21 |
| 300 | 7 | 100.27 | | 14.33 | 1.74 |
| 300 | 8 | 63.74 | | 13.62 | 2.83 |
| 300 | 9 | 159.00 | | 10.52 | 1.64 |