UNIVERSITY OF CALIFORNIA, SAN DIEGO SCRIPPS INSTITUTION OF OCEANOGRAPHY

data report

CalCOFI Cruise 1704
1 – 16 August, 2017

CC Reference 18 - 02
1 Apr., 2018

UNIVERSITY OF CALIFORNIA, SAN DIEGO

SCRIPPS INSTITUTION OF OCEANOGRAPHY

LA JOLLA, CALIFORNIA 92093

PHYSICAL, CHEMICAL AND BIOLOGICAL DATA

CalCOFI Cruise 1708
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INTRODUCTION

The data presented in this report were collected during cruise 1708* of the California Cooperative Oceanic Fisheries Investigations (CalCOFI) program aboard the R/V Sally Ride. The CalCOFI program was organized in the late 1940's to study the causes of variations in population size of fishes of importance to the State of California. It is carried out by NOAA's National Marine Fisheries Service Southwest Fisheries Science Center, the California Department of Fish and Wildlife, and the Integrative Oceanography Division (IOD) at Scripps Institution of Oceanography (SIO). IOD contributes to this program by investigations of the physical, chemical and biological structure of the California Current. Data from the cruise were collected and processed by personnel of the Integrative Oceanography Division and the Southwest Fisheries Science Center. CalCOFI data presented in this report and collected on previous cruises can be accessed at http://www.calcofi.org.

STANDARD PROCEDURES

CTD/Rosette Cast Data

A Sea-Bird Electronics, Inc., Conductivity-Temperature-Depth (CTD) instrument (Seabird 911+, Serial number 3161-936) with a rosette was deployed at each station on this cruise. The rosette was equipped with 24 ten-liter plastic (PVC) bottles equipped with epoxy-coated springs and Viton O-rings. Each CTD/rosette cast usually sampled 20 depths to a maximum sampling depth of 515 meters, bottom depth permitting. Many stations have multiple bottles tripped at the same depth to provide more water for ancillary programs. Additional bottle depths also appear in combined hydrographic and primary productivity casts. The sample spacing was designed to sample depth intervals as close as 10 meters around the sharp upper thermocline features such as the chlorophyll, oxygen, nitrite maxima and the shallow salinity minimum. Salinity, oxygen and nutrients were determined at sea for all depths sampled. Chlorophyll-*a* and phaeopigments were determined at sea on samples from the top 200 meters, bottom depth permitting.

Pressures and temperatures assigned to the water sample data were derived from the CTD signals recorded just prior to the bottle trip. Pressures were converted to depths by the Saunders (1981) pressure-to-depth conversion technique. CTD temperatures reported with the bottle data have been rounded to the nearest hundredth of a degree Celsius.

Salinity samples were collected from all rosette bottles and analyzed at sea using a Guildline model 8410 Portasal salinometer. Salinity samples were drawn into 200 ml Kimax high-alumina borosilicate bottles that were rinsed three times with sample prior to filling. The results were compared with the CTD salinity to verify that the rosette bottle did not mis-trip or leak. The salinometer was standardized before and after each group of samples with standardized seawater. Periodic checks on the conductivity of the standardized seawater were made by comparison with IAPSO Standard Seawater batch P157. Salinity values were calculated using the algorithms for the Practical Salinity Scale, 1978 (UNESCO, 1981a) and are reported to three decimal places, provided that accepted standards were met.

Dissolved oxygen analyses were performed with an Ocean Data Facility of Scripps Institution of Oceanography designed automated oxygen titrator using photometric end-point detection based on the absorption of 365nm wavelength ultra-violet light. A computer using PC software controlled the titration of the samples and the data logging. The method used a modified Winkler titration following the technique of Carpenter (1965) with modifications by Culberson (1991), but with higher concentrations of thiosulfate solution (50 g/l). Standard KIO3 solutions prepared ashore were run at the beginning of each run. Reagent and sea water blanks were determined to account for presence of oxidizing or reducing materials.

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* The first two digits represent the year and the last digits the month of the cruise.

Nutrient samples were analyzed at sea using a QuAAtro continuous flow analyzer (SEAL Analytical). Dissolved silicate, nitrate, and nitrite were analyzed using a modification of the method described by Armstrong (1967) and Gordon et al. (1992). Phosphate was measured with a modification of the Murphy and Riley (1962) protocol and ammonium is analyzed using a modified fluorometric method described by Kerouel and Aminot (1997). Samples were collected in 45ml high-density polypropylene screw top tubes which were acid washed and rinsed with sample three times prior to filling. Standardizations and cadmium-reduction coil efficiency determinations were performed at the beginning of every run. Drift and baseline corrections were performed in each run using a high standard and blank respectively inserted before and after sample sets. A sample of reference material for nutrients in seawater (RMNS), produced by KANSO technos (www.kanso.co.jp) was included in every run and those data were monitored throughout the cruise and available to adjust values for nitrate, nitrite, phosphate, and silicate if appropriate. The mean values for NO_2 + NO_3, PO_4, and dissolved reactive silicate species (SIL) for the cruise were calculated and compared to certified manufacturer values (see table below). A separate reference sample was used to monitor ammonium stability throughout the cruise. Samples not analyzed immediately after collection were refrigerated and run the following day.

1708SR	**NO_2+NO_3 (µmol/L)**	**PO_4 (µmol/L)**	**SIL (µmol/L)**
Mean ± SD (n=30)	36.82 ± .13	2.59 ± .02	111.09 ± .99
Certified Value* (Lot CB)	36.65	2.58	111.82

*Converted from µmol/kg using assumed lab temperature of 20°C and salinity 34.374 provided by manufacturer.

Samples for chlorophyll-*a* and phaeopigments were collected in calibrated 138 ml polyethylene bottles and filtered onto Whatman GF/F filters. The pigments were extracted in cold 90% acetone (Venrick and Hayward, 1984) for a minimum of 24 hours. Chlorophyll-*a* and phaeopigment concentrations were determined from fluorescence readings before and after acidification with a Turner Designs Fluorometer Model 10-AU-005-CE (Yentsch and Menzel, 1963; Holm-Hansen *et al*., 1965).

Evaluation of the water sample data involved comparisons with the CTD data, adjacent stations and consideration of the variation of a property as a function of density or depth and the relationships with other properties (Klein, 1973). Precision estimates for routine analyses were made on CalCOFI cruise 9003 and are reported in SIO Ref. 91-4.

Primary Productivity Sampling

Primary productivity samples were taken each day shortly before local apparent noon (LAN). Primary production was estimated from ^{14}C uptake using a simulated *in situ* technique. Light penetration was estimated from the Secchi depth (assuming that the 1% light level is three times the Secchi depth). The depths with ambient light intensities corresponding to light levels simulated by the on-deck incubators were identified and sampled on the rosette up-cast. Occasionally an extra bottle or two were tripped in addition to the usual 20 levels sampled in the combined rosette-productivity cast in order to maintain the normal sampling depth resolution. Triplicate samples (two light and one dark control) were drawn from each productivity sample depth into 250 ml polycarbonate incubation bottles. Samples were inoculated with a cruise average of 6.64 µCi of ^{14}C as $NaHCO_3$ (200µl of stock solution) prepared in a 0.3 g/liter solution of sodium carbonate (Fitzwater *et al*., 1982). Samples were incubated from LAN to civil twilight in seawater-cooled incubators with neutral-density screens which simulate *in situ* light levels. At the end of the incubation, the samples were filtered onto Millipore HA filters and placed in scintillation vials. One half ml of 10% HCl was added to each sample. The sample was then allowed to sit, without a cap, at room temperature for 12 hours (after Lean and Burnison, 1979). Following this, 10 ml of scintillation cocktail were added to each sample and the samples were returned to SIO where the radioactivity was determined with a scintillation counter. Salinity, oxygen, nutrients, chlorophyll-*a* and phaeopigments were determined from all rosette productivity bottles.

Macrozooplankton Net Tows

Macrozooplankton was sampled with a 71 cm mouth diameter paired net (bongo net) equipped with 0.505mm plankton mesh. Bottom depth permitting, the nets were towed obliquely from 210 meters to the surface. The tow time for a standard tow was 21.5 minutes. Volumes filtered were determined from flowmeter readings and the mouth area of the net. Only one sample of each pair was retained and preserved. The biomass, as wet displacement volume, after removal of large (>5 ml) organisms, was determined in the laboratory ashore. These procedures are summarized in greater detail in Kramer *et al*. (1972).

Ancillary Programs

Several ancillary programs produced data on these cruises that are not presented in this report. These programs include:

1) Underway Data: Continuous near surface measurements of temperature, salinity and *in vivo* chlorophyll fluorescence were recorded from seawater pumped through the ship's uncontaminated seawater system. Water was drawn from a depth of approximately 5 meters. The data were logged in one-second increments using a Sea-Bird Electronics, Inc., SBE 45 MicroTSG Thermosalinographs for internal and external measurements, and a WetLabs C-star transmissometer and Wetlabs FLNTU and Eco-triplet fluorometers. The data has been processed to show 10 minute averages.

2) ADCP: Continuously sample profiles of currents using the RDI/Teledyne Acoustic Doppler Current Profiler. This will be dependent on the ability to sync the ADCP's output with the EK60 and ME70. The EK60 and ME70 will hold priority over the ADCP. The ADCP raw data are collected and archived for potential data processing ashore. The National Centers for Environmental Information (NCEI) in collaboration with the E.Firing Acoustic Doppler Current Profiler (ADCP) Laboratory at the University of Hawaii have established the Joint Archive for Shipboard ADCP (JASADCP). The JASADCP is responsible for the acquisition, review, documentation, archival, and distribution of shipboard ADCP data sets, data may be accessed through their website (http://ilikai.soest.hawaii.edu/sadcp/index.html). Shipboard ADCP data is acquired by University of Hawaii Data Acquisition System (UDHAS) and uses Common Ocean Data Access System (CODAS) processing to incrementally build a dataset of averaged, edited ocean velocities for each ADCP and ping type specified. Processed data and plots are served on the shipboard network, and daily status summaries are emailed and available online (http://currents.soest.hawaii.edu/uhdas_fromships.html).

3) Underway Sea Surface pCO2 and pH measurements: Automated shipboard analysis of the partial pressure of CO2 and pH were made from the ship's underway flow-through system. pCO2 measurements were taken with the Shipboard Underway pCO2 Environmental Recorder (SUPER-CO2) sold by Sunburst Sensors designed with a showered equilibrator and a LI-COR 840A CO2/H2O non-dispersive infrared gas analyzer. pH measurements were taken with a Honeywell Durafet based on Ion Selective Field Effect Transistor (ISFET) technology. The Durafet pH sensor was calibrated before and after the cruise. pCO2 was calibrated with standard gases traceable to NIST every 4 hours, along with an atmospheric sample. Temperature and salinity were also sampled using a SeaBird Thermosalinograph (SBE45). Measurements were recorded every 4 seconds. (T. Martz, SIO)

4) California Current Ecosystem Long Term Ecological Research Program: The CCE-LTER program augments standard CalCOFI measurements to further characterize the lower trophic levels as well as the carbon system. Measurements of particulate organic carbon and nitrogen, dissolved organic carbon and nitrogen, taxon-specific phytoplankton pigments, flow-cytometric counts of bacteria and picoautotrophs and the determination of mesozooplankton size structure using a Laser Optical Plankton Counter are sampled for all CalCOFI stations. On CalCOFI lines 90 and 80 measurements also include microscopic counts of heterotrophic and autotrophic phytoplankton for biomass and abundance and mesozooplankton community structure sampled with the Planktonic Rate Processes in Oligotrophic Ocean Systems (PRPOOS) tow net. (M. Ohman, SIO)

5) Advanced Laser Fluorometer Analyzer (ALFA): Continuous underway analysis of phytoplankton pigment groups and variable fluorescence (F_v/F_m). ALFA, developed by A. Chekalyuk at Lamont-Doherty Earth Observatory, uses laser stimulated emission at 405 and 532 nm together with spectral deconvolution analysis to

distinguish fluorescence from three types of phycoerythrin, chlorophyll-*a*, and chromophoric dissolved organic matter (CDOM). The ALFA is useful for differentiating the contribution of cyanobacteria and cryptophytes from other phytoplankton taxa present in natural phytoplankton assemblages, as well as for assessing phytoplankton photophysiological status. (R. Goericke, SIO)

6) Southern California Coastal Ocean Observing System (SCCOOS) Nearshore Observations: The objective of these observations is to extend CalCOFI time series to the nearshore. Nearshore observations consist of 8 stations at the ends and interspersed with current CalCOFI lines on the 20 m isobath with a standard set of CalCOFI hydrographic observations as well as a CalBOBL net tow, particulate organic carbon and nitrogen, dissolved organic carbon and nitrogen and taxon-specific phytoplankton pigments data. (R. Goericke, SIO)

7) Inorganic Carbon System: The CalCOFI group collected samples for the characterization of the inorganic carbon system at selected locations along the cruise track with 14 profile and 8 additional surface water stations. Total inorganic carbon and alkalinity will be measured which will allow the calculation of pH and pCO_2. The objectives of these measurements are first the long-term characterization of the inorganic carbon system and its response to changing ocean climate and second measurements of pH in the coastal zone in order to monitor the impact of 'corrosive' waters on benthic ecosystems in the Southern California Bight. (R. Goericke, SIO)

8) Marine Mammal Observations: During daylight transits, visual line-transect surveys were conducted by marine mammal observers focusing on cetaceans. Acoustic line-transect surveys were performed using a towed hydrophone array which consists of multiple hydrophone elements that sample sounds up to 100 kHz allowing for localization of calling animals. Acoustic monitoring also takes place on individual stations using sonobuoys. (J. Hildebrand, SIO)

9) Microbial Diversity and Gene Expression: Samples suitable for purification of DNA and RNA from bacterial and microbial eukaryotic biomass are collected for molecular diversity assays targeted to various genetic marker loci (16S and 18S rRNA). DNA samples are collected at every station, in parallel with particulate organic matter (POM) samples, on Whatman GF/F filters. RNA samples are collected in parallel with primary productivity samples on 0.2 µM sterivex filters with a maximum filtration time of 30 min. Additional samples from the mixed layer, chlorophyll max, and two depths below the euphotic zone are collected along lines 80 and 90. (A. Allen, SIO and JCVI)

10) CCE2 Mooring: This mooring is co-located with CalCOFI station 080.055 off Point Conception. Sensors on the buoy and in the water column make observations of meteorology, ocean currents, temperature, salinity, pH, nutrient concentration, chlorophyll concentration, dissolved oxygen concentration, acoustic backscatter strength, and partial pressure of oceanic and atmospheric carbon dioxide. CCE stands for "California Current Ecosystem", and this is one of two buoys (the other being at CalCOFI station 080.080). The project is funded by NOAA and lead by principal investigators Uwe Send and Mark Ohman. This was the ninth deployment of the CCE2 buoy. During the previous deployment, the CCE2 buoy had broken loose from its anchor, been adrift, and ultimately recovered. This CalCOFI cruise served as an unscheduled, opportunistic re-deployment cruise to help the CCE project get the buoy back in the water. Further details and live data are available at: http://mooring.ucsd.edu/index.html?CCE

TABULATED DATA

CTD/Rosette Cast Data

The time reported is the Coordinated Universal Time (UTC) of the first rosette bottle trip on the up cast. The rosette bottles tripped on the up cast are reported as cast 2, where cast 1 is considered to be the down CTD profile. The sample number reported is the cast number followed by a two-digit rosette bottle number. Bottom depths, determined acoustically, have been corrected using British Admiralty Tables (Carter, 1980) and are reported in meters. Weather conditions have been coded using WMO code 4501. Secchi depths are reported for most daylight stations.

Data values from discreet sampled CTD rosette were interpolated and are reported for standard depths. Interpolated or extrapolated standard level data are noted by the footnote "ISL" printed after the depth. Multiple bottles tripped at the same depth to provide water for ancillary programs are not used in the calculation of standard depth data. Density-related parameters have been calculated from the International Equation of State of Seawater 1980 (UNESCO, 1981b). Computed values of potential temperature, sigma-theta, specific volume anomaly (SVA), and dynamic height or geopotential anomaly are included with both observed and interpolated standard depth levels.

On stations where primary productivity samples were drawn a footnote appears after each productivity depth sampled. The corresponding primary productivity data are reported in a separate section following the tabulated rosette cast data.

Primary Productivity Data

In addition to the normal hydrographic data that are reported in the rosette cast data section, the tabulated data include: the *in situ* light levels at which the samples were collected, the uptake from each of the replicate light bottles, uptake 1 and uptake 2 (which have been corrected for dark uptake by subtracting the dark value), the mean of the two uptake values and the dark uptake. The uptake values are totals for the incubation period. Also shown are the times of LAN, civil twilight, and the value of the mean uptake integrated from the surface to the deepest sample, assuming the shallowest value continues to the surface and that negative values (when dark uptake exceeds light uptake) are zero. The uptake data are reported to two significant digits (values <1.00) or one decimal (values >1.00). Incubation time, LAN, and civil twilight are given in local Pacific Standard Time (PST); to convert to UTC, add eight hours to the PST time. Incubation light intensities are listed in a footnote at the bottom of each page.

Macrozooplankton Data

Macrozooplankton biomass volumes are tabulated as total biomass volume ($cm^3/1000m^3$ strained) and as the total volume minus the volume of larger organisms under the heading "Small." Tow times are given in local PST (+8) time.

FOOTNOTES

In addition to footnotes, special notations are used without footnotes because the meaning is always the same:

D: CTD salinity value listed in place of normal shipboard salinity analysis.
ISL: After a depth value indicates that this is an interpolated or extrapolated standard level.
U: Uncertain value. Values which are not used in interpolation because they seem to be in error without apparent reason.

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FIGURES

Cruise 1708

1. CalCOFI Cruise 1708 track and station positions.

2. Horizontal distribution of dynamic height anomaly (0 over 500m). In areas shallower than 500 m, the dynamic heights were extrapolated on the basis of the offshore deeper steric height as described in Reid and Mantyla (1976).

3. Horizontal distributions at 10 meters: A) chlorophyll-*a*; B) potential density; C) temperature; and D) salinity.

4. Horizontal distributions at 200 meters: A) dynamic height anomaly (200 over 500 m); B) potential density; C) temperature; and D) salinity.

5. Sections along CalCOFI line 90 (vertical exaggeration, 1000): A) potential density; B) temperature; C) salinity; D) silicate; E) nitrate; F) phosphate; G) chlorophyll-*a*; H) oxygen saturation; I) oxygen; J) nitrite

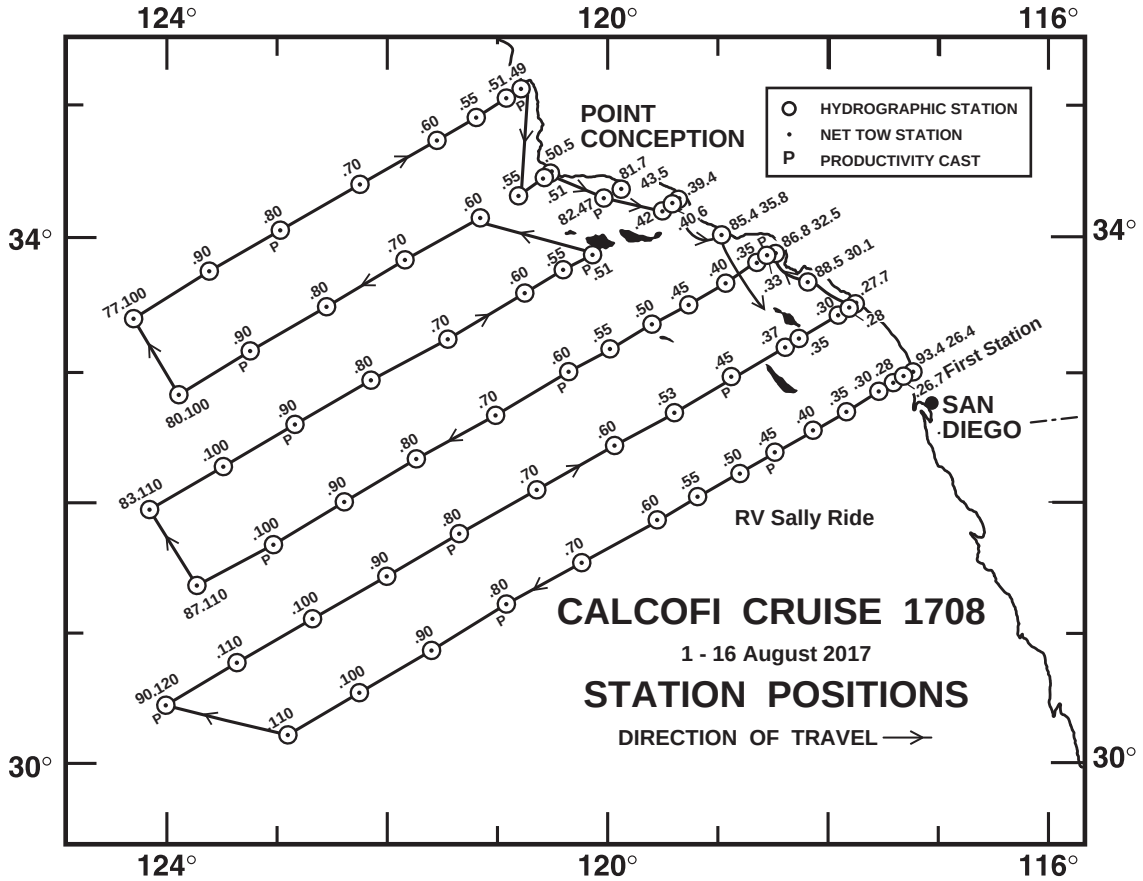
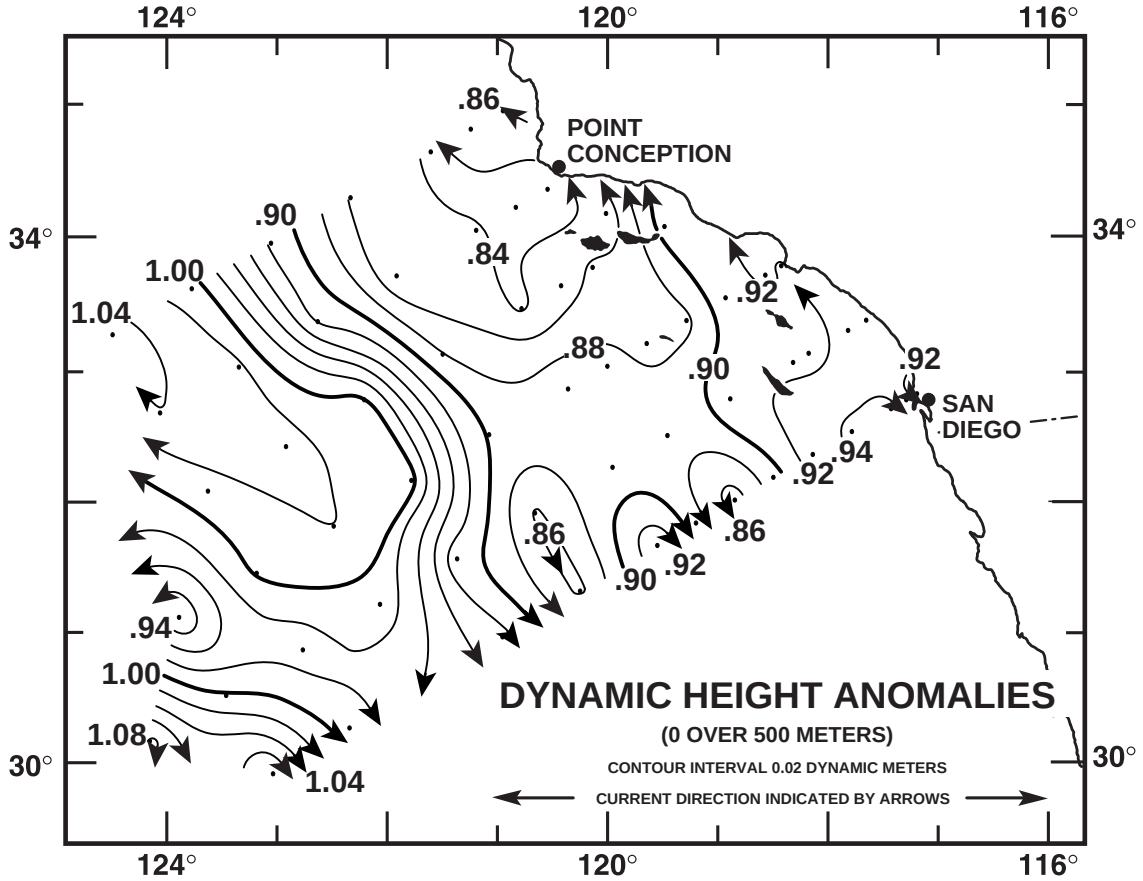


FIGURE 1



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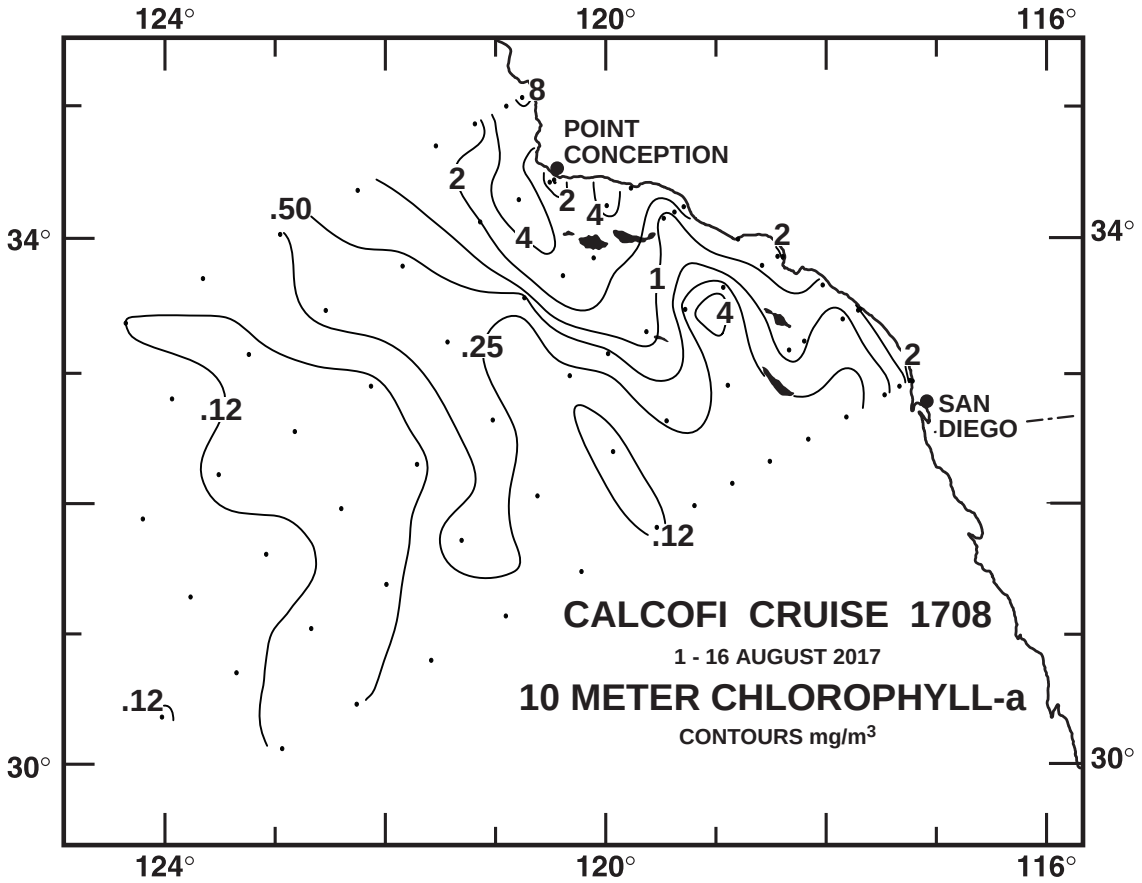

FIGURE 3A

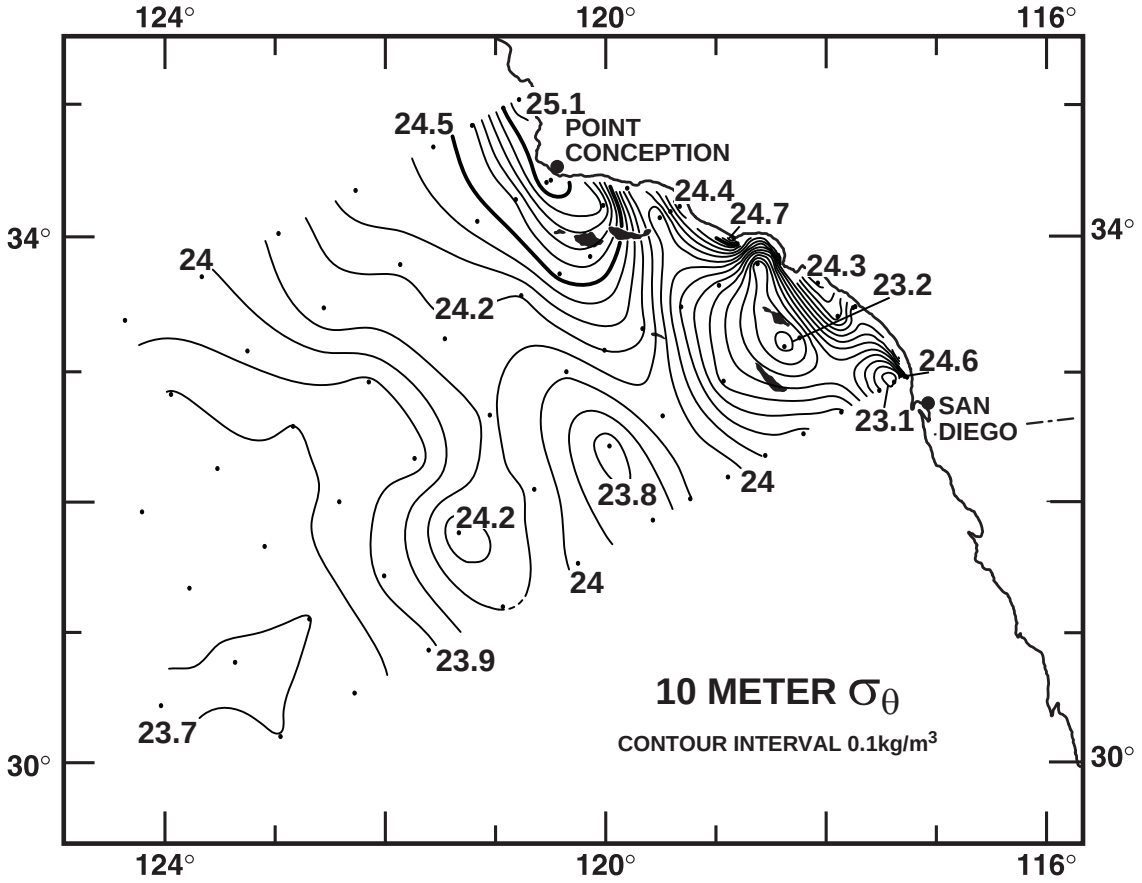

FIGURE 3B

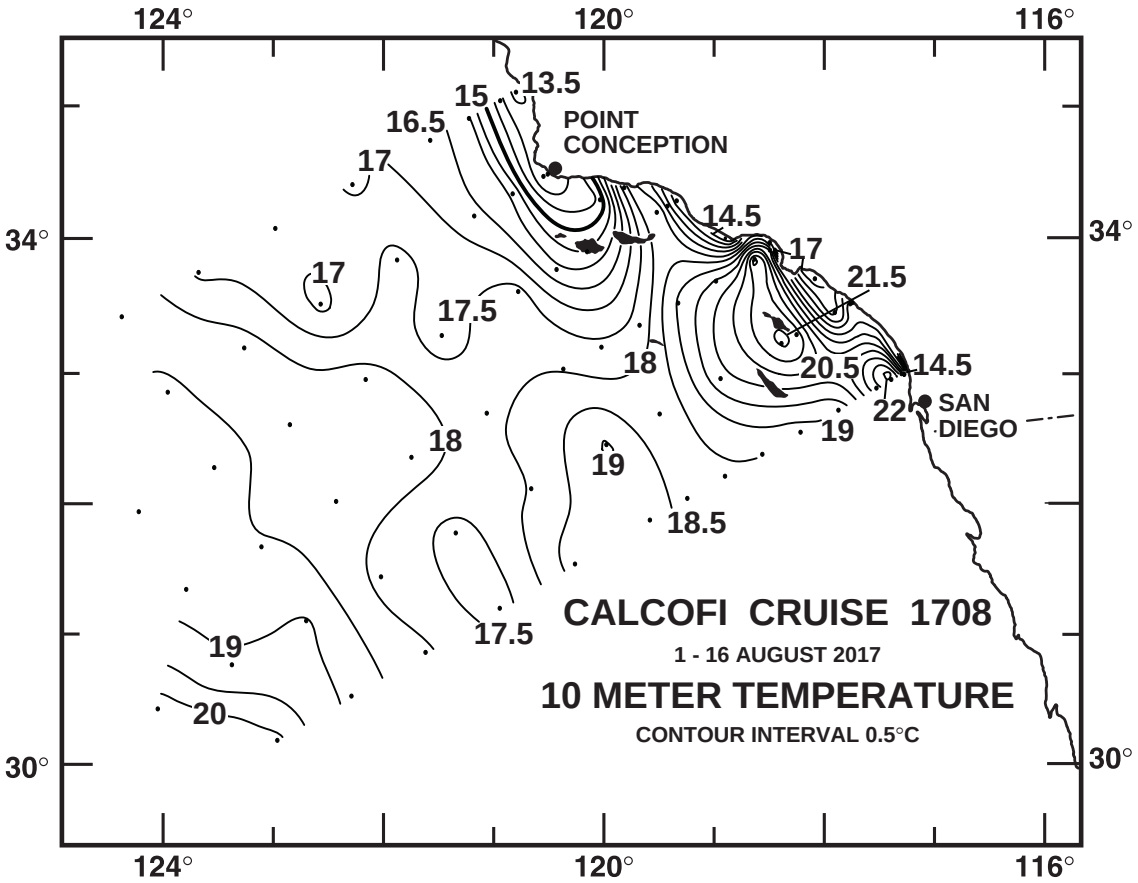

FIGURE 3C

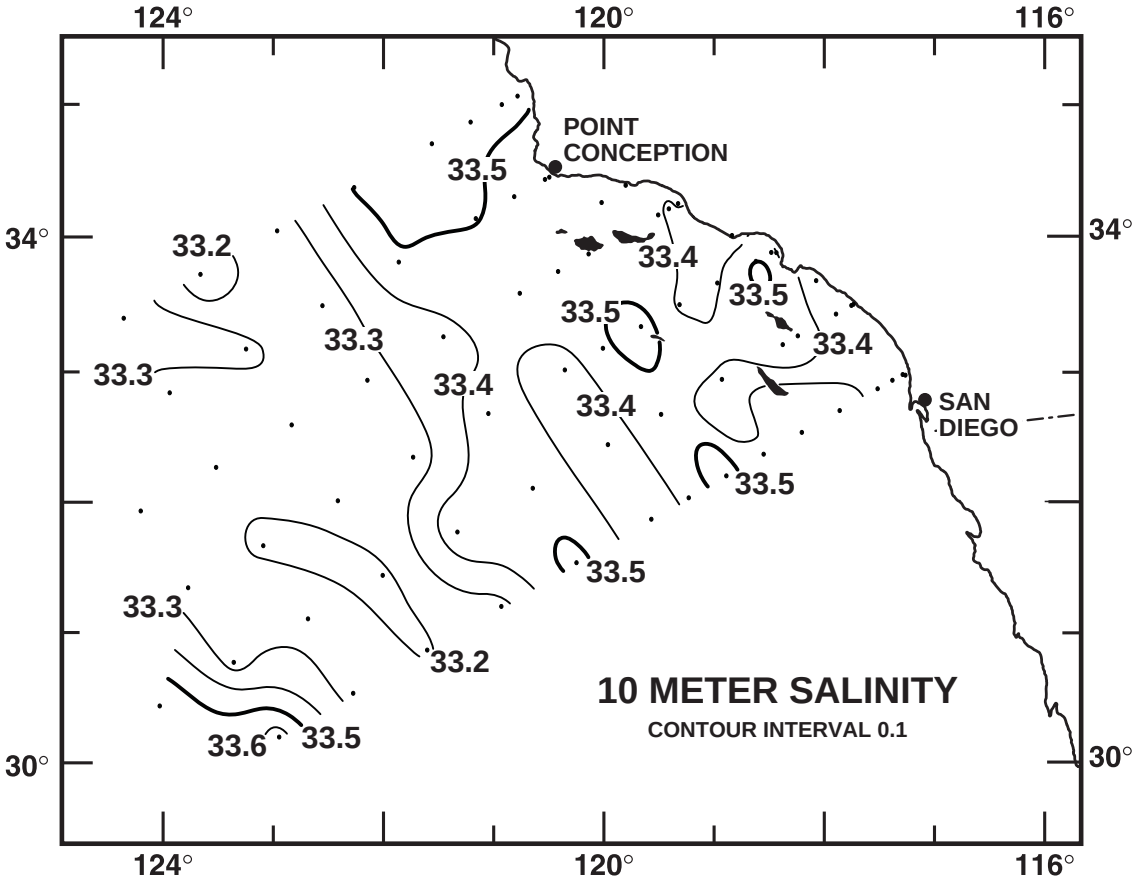

FIGURE 3D

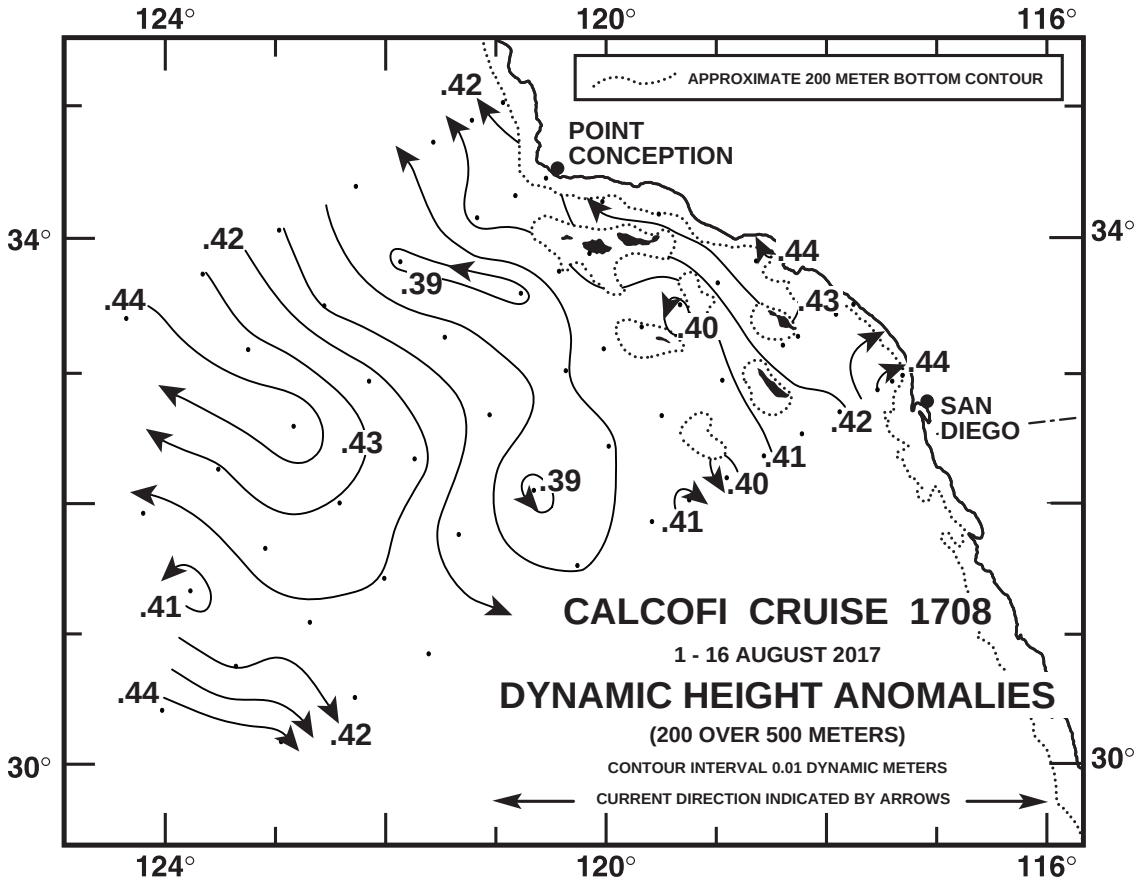

FIGURE 4A

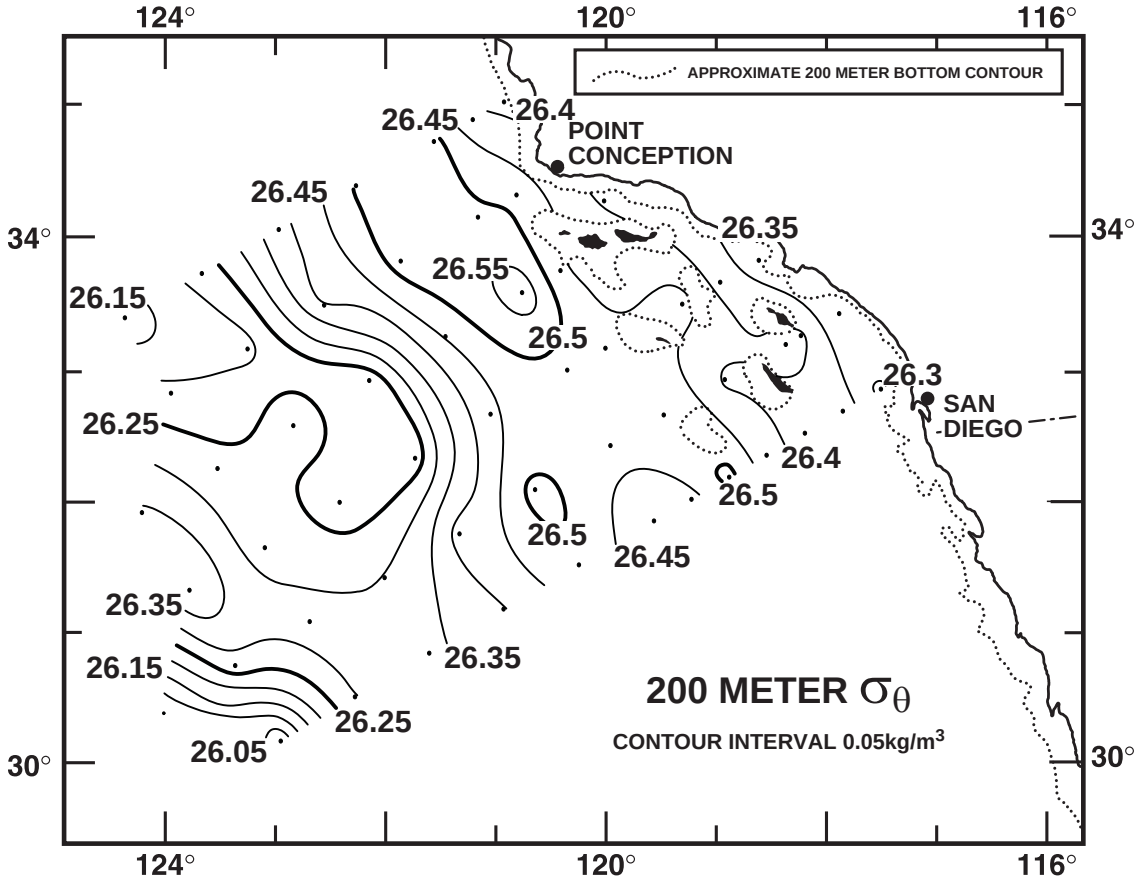

FIGURE 4B

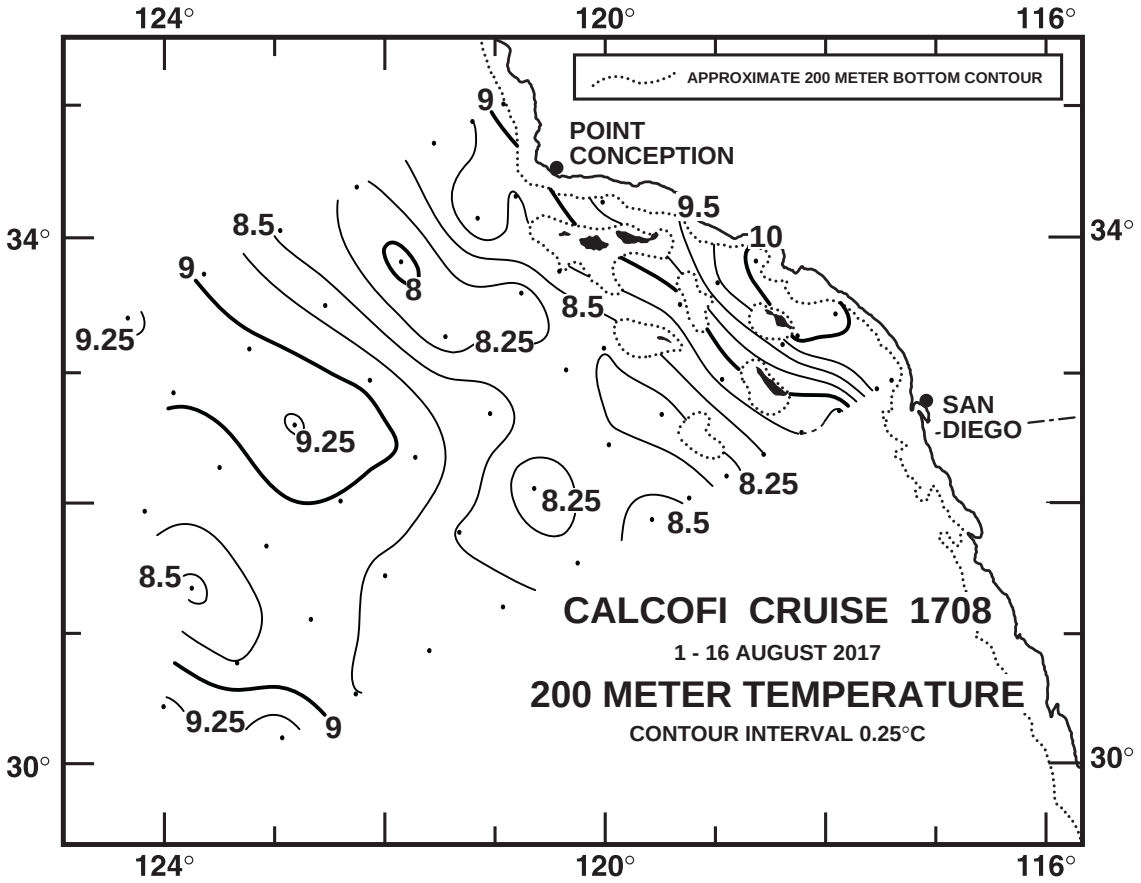

FIGURE 4C

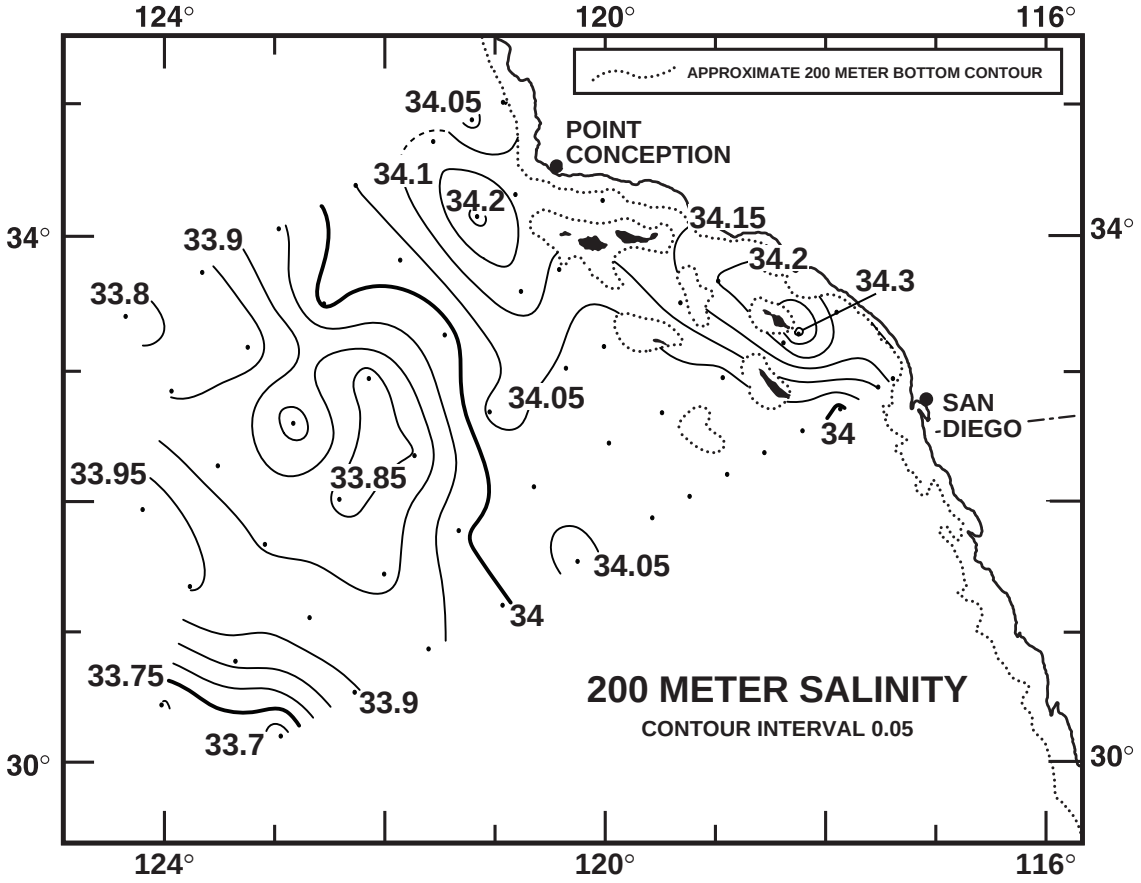

FIGURE 4D

CALCOFI CRUISE 1708

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POTENTIAL DENSITY (σ_θ) ALONG CALCOFI LINE 90

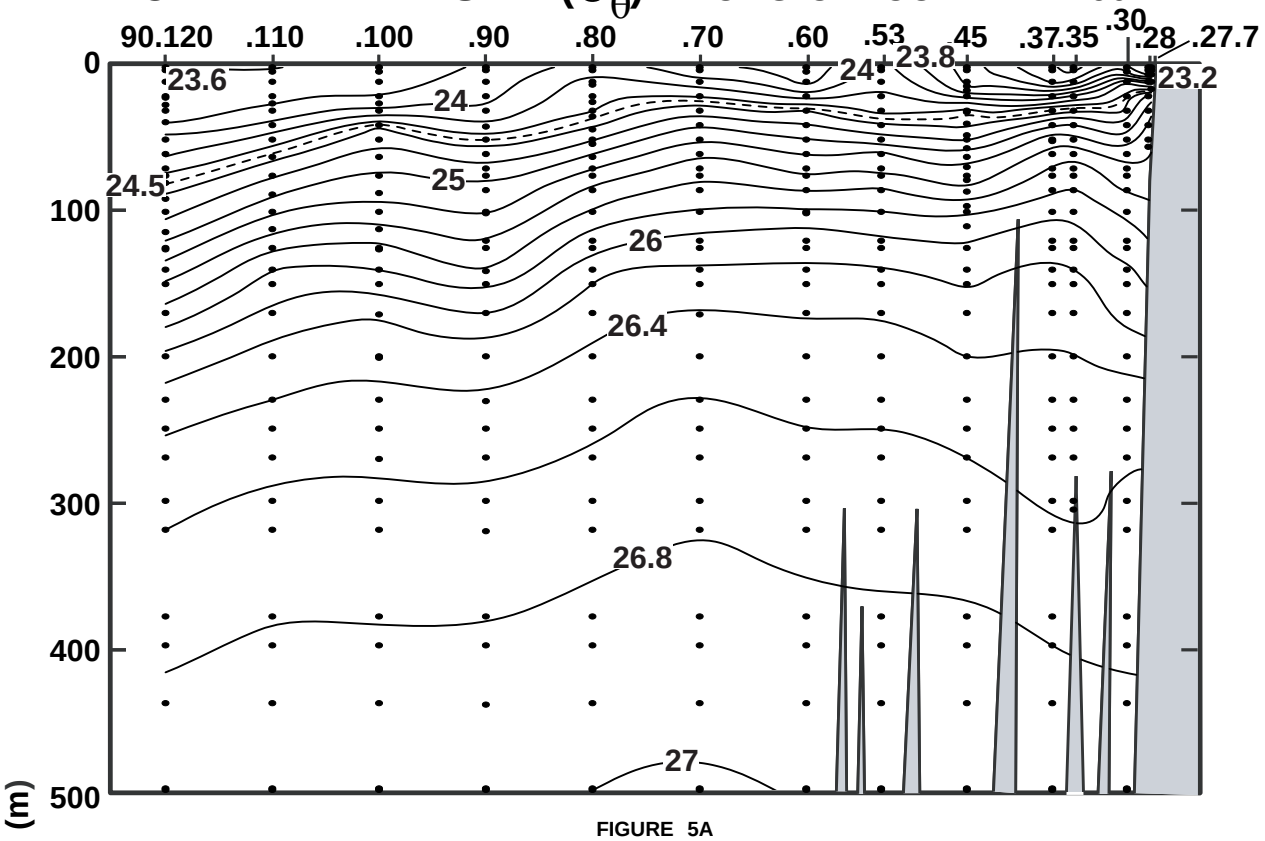

FIGURE 5A

TEMPERATURE (°C) ALONG CALCOFI LINE 90

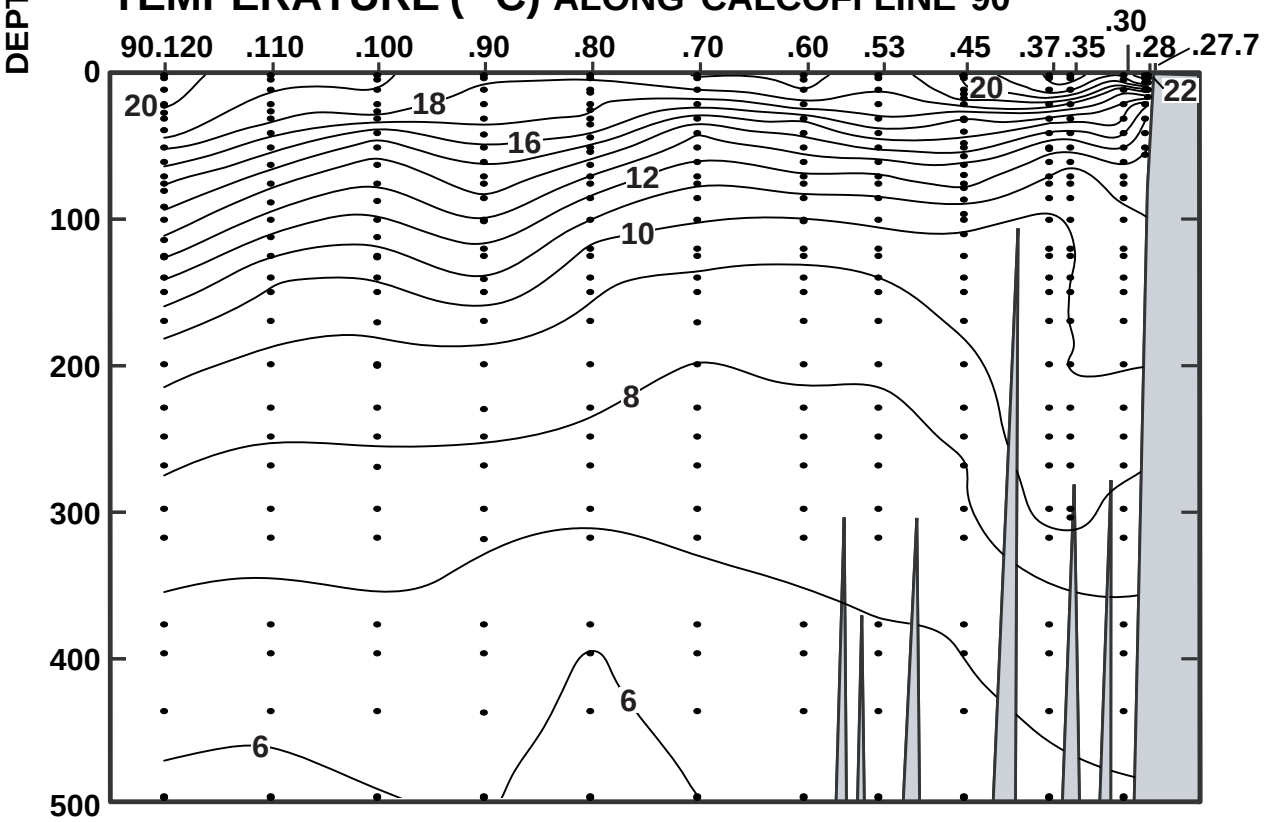

FIGURE 5B

CALCOFI CRUISE 1708

4- 7 August 2017

SALINITY ALONG CALCOFI LINE 90

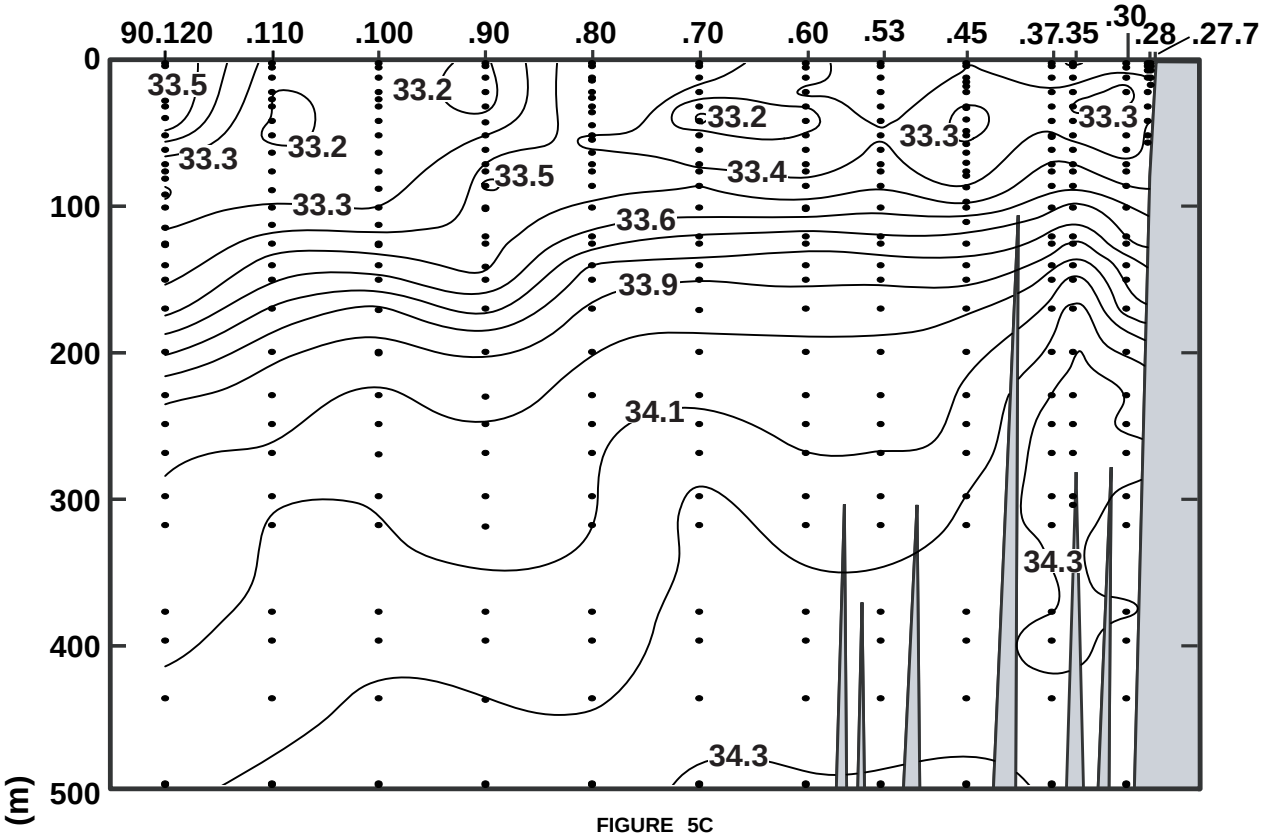

FIGURE 5C

SILICATE (μM/L) ALONG CALCOFI LINE 90

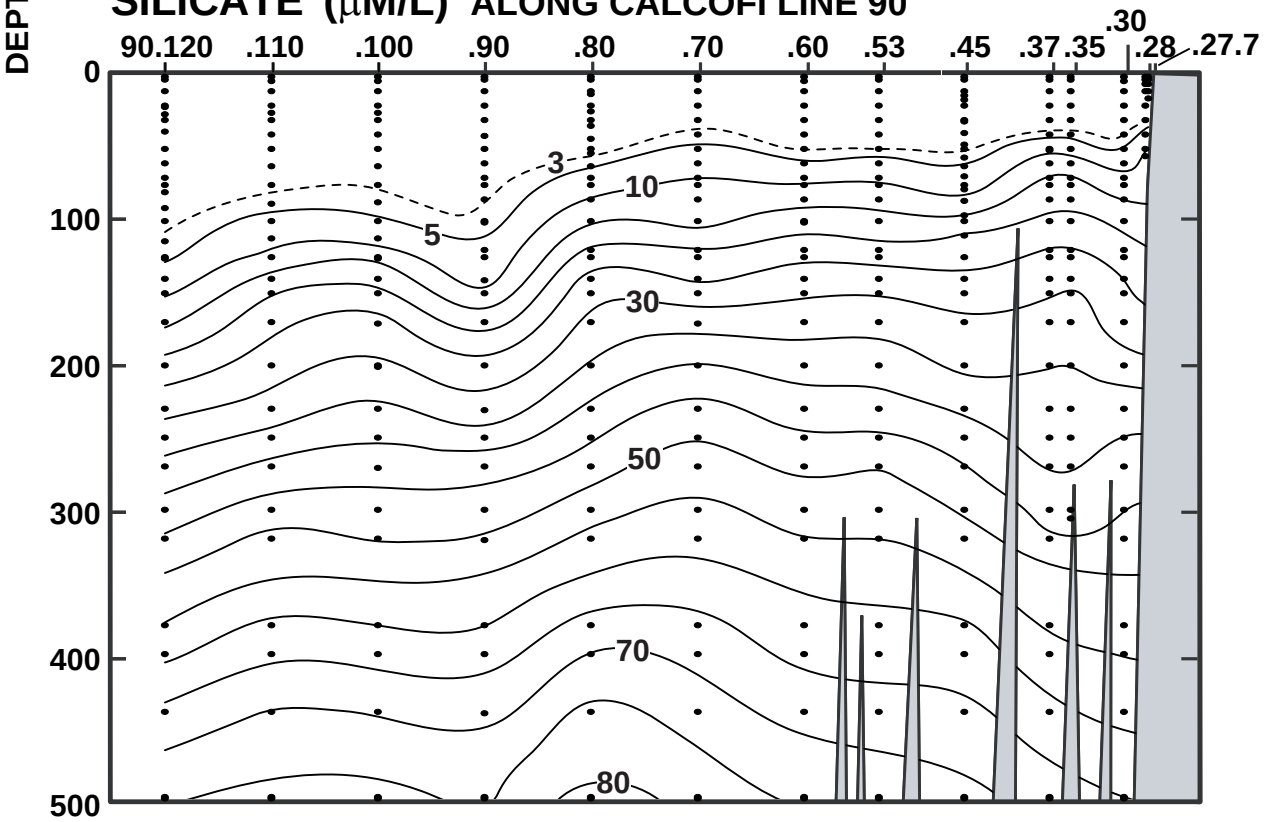

FIGURE 5D

CALCOFI CRUISE 1708

4 - 7 August 2017

NITRATE (μM/L) ALONG CALCOFI LINE 90

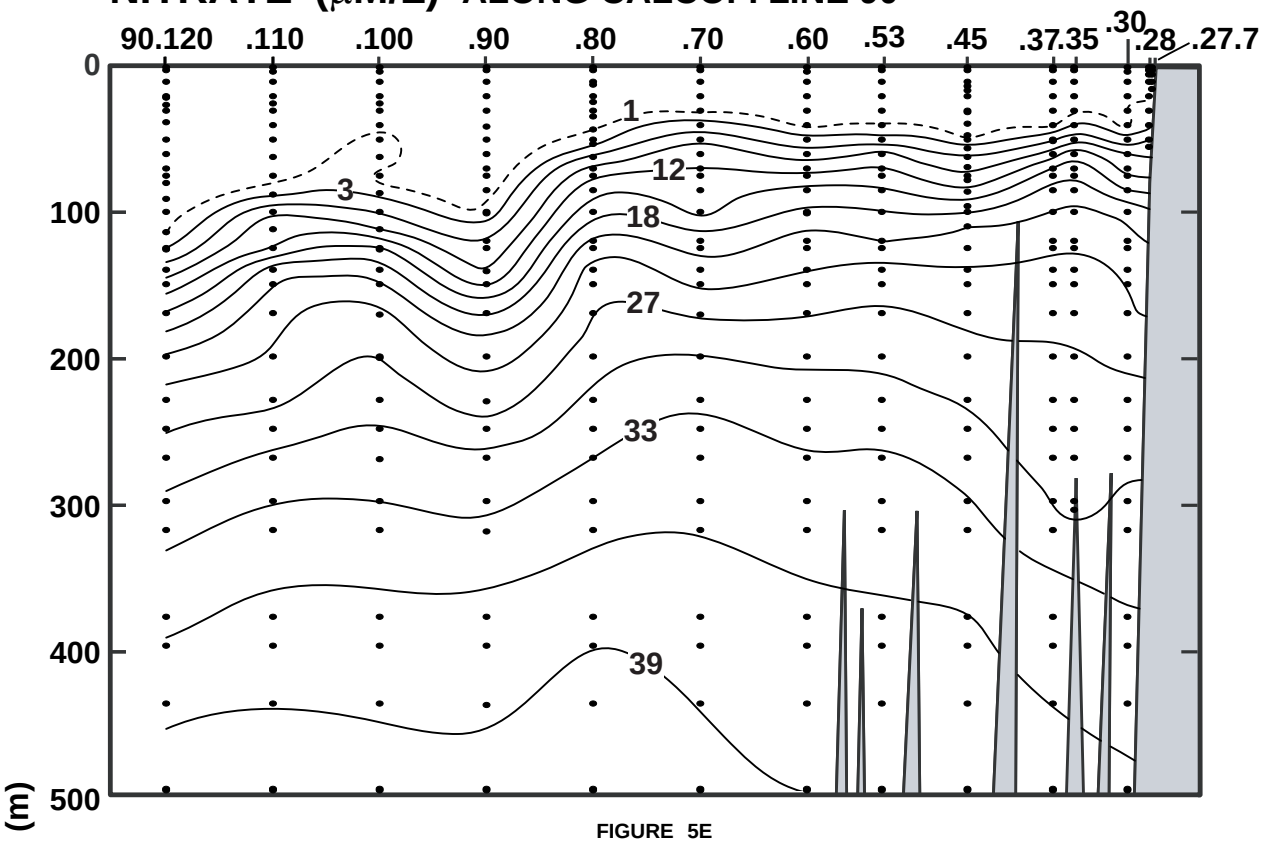

FIGURE 5E

PHOSPHATE (μM/L) ALONG CALCOFI LINE 90

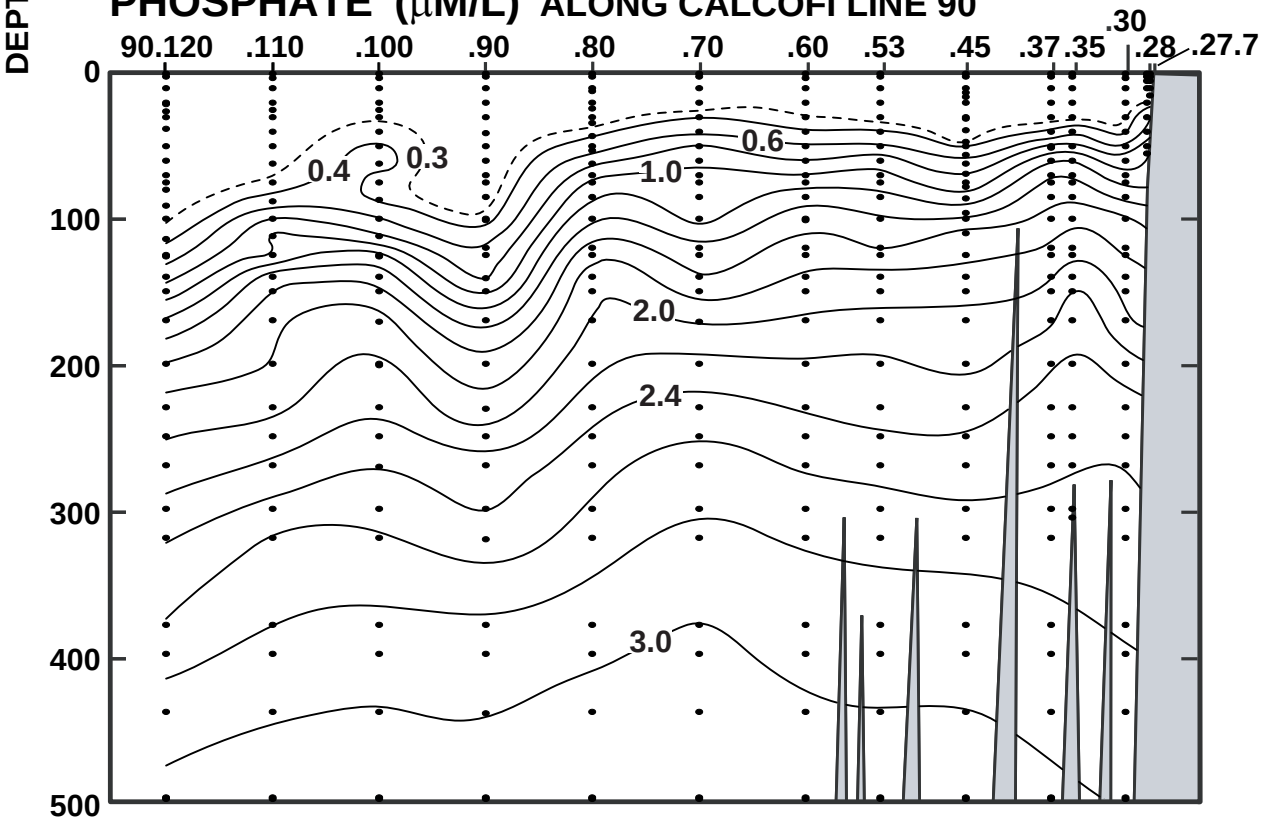

FIGURE 5F

CALCOFI CRUISE 1708

4 - 7 August 2017

CHLOROPHYLL-a (μg/L) ALONG CALCOFI LINE 90

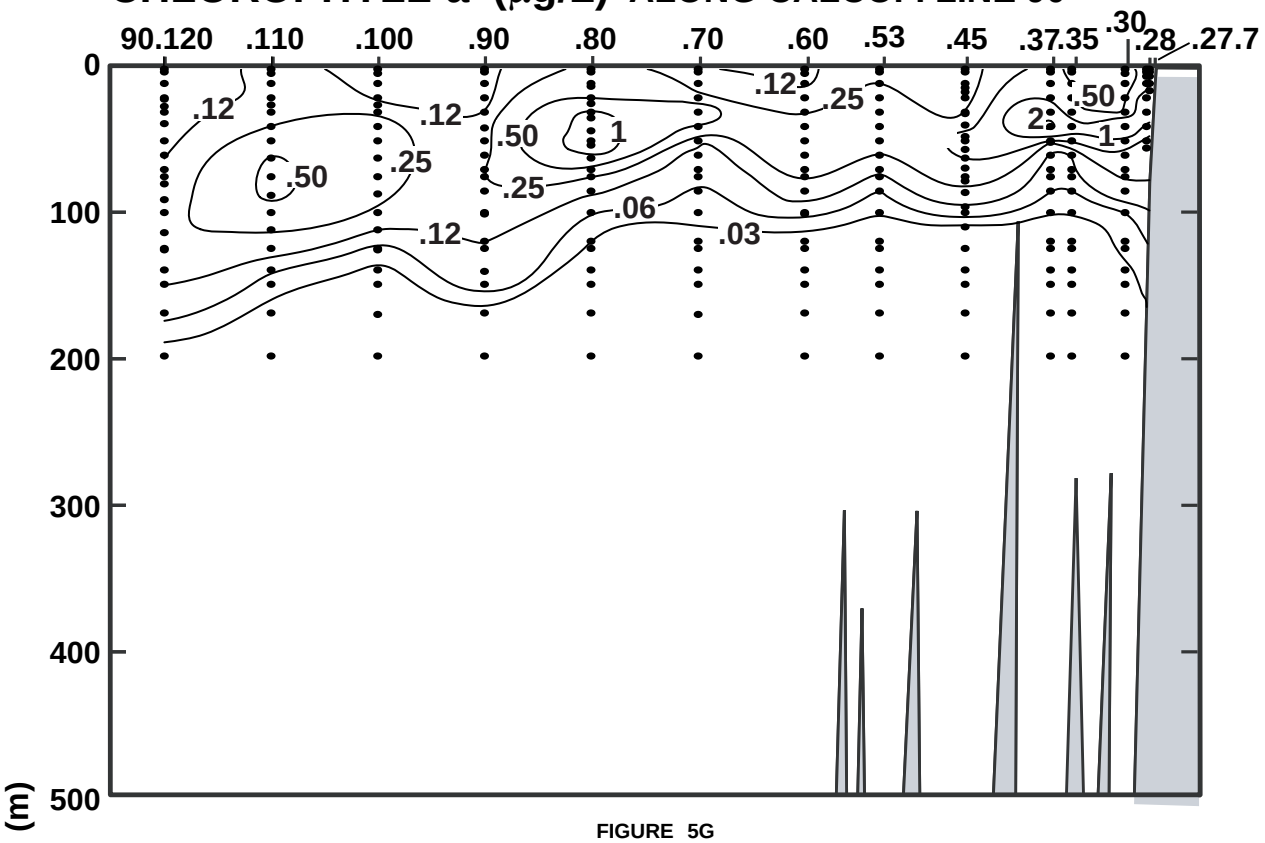

FIGURE 5G

OXYGEN SATURATION (%) ALONG CALCOFI LINE 90

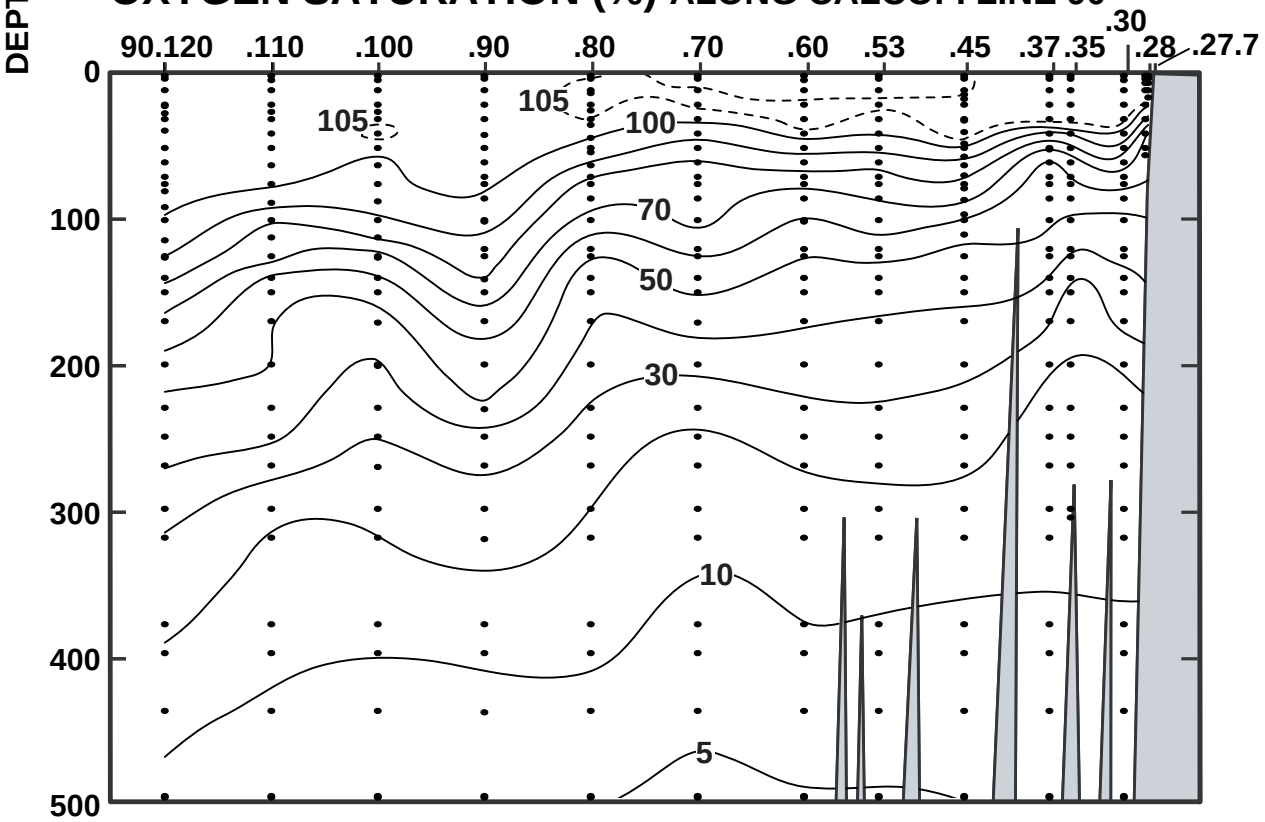

FIGURE 5H

CALCOFI CRUISE 1708

4 - 7 August 2018

OXYGEN (mL/L) ALONG CALCOFI LINE 90

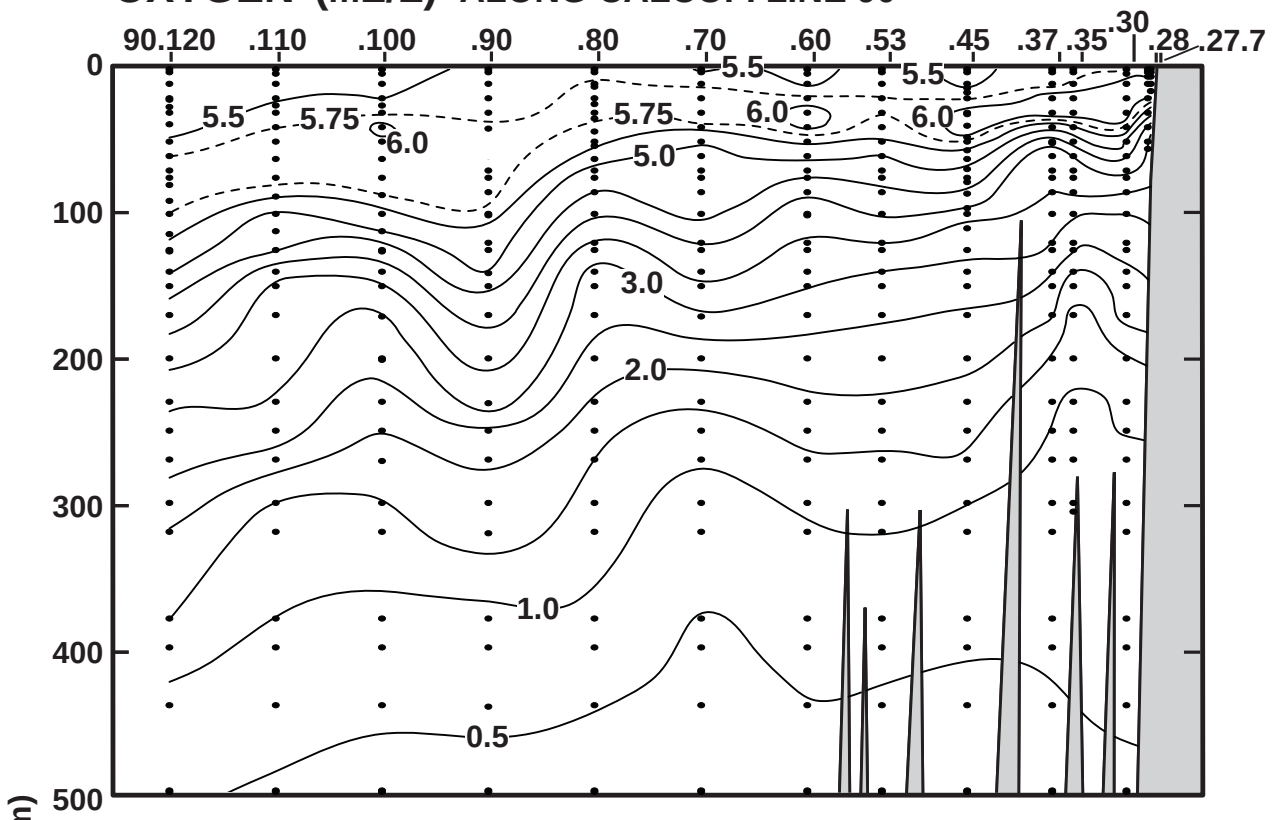

FIGURE 5I

NITRITE (μM/L) ALONG CALCOFI LINE 90

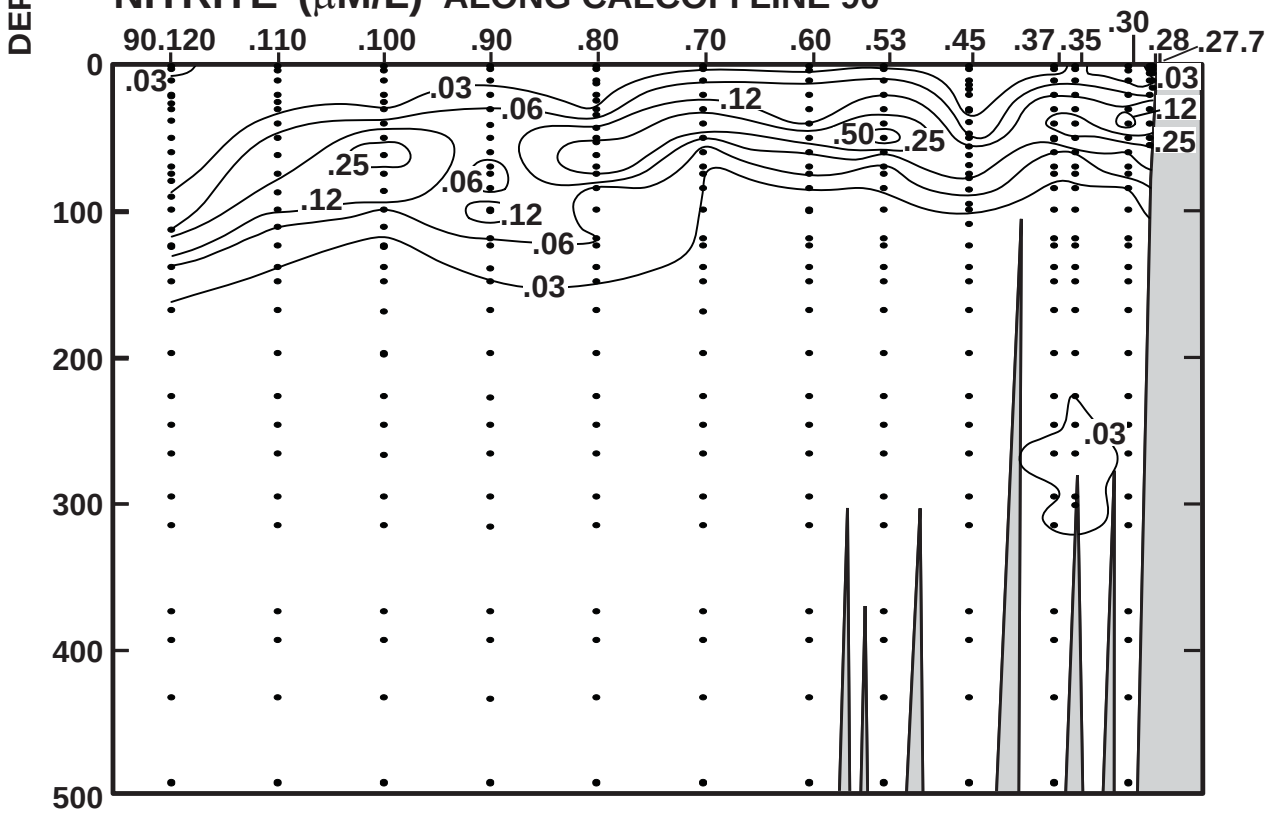

FIGURE 5J

PERSONNEL

CalCOFI Cruise 1708

SHIP'S COMMANDER

Ian Lawrence, R/V *Sally Ride*

PERSONNEL PARTICIPATING IN THE COLLECTION OF DATA

		Participating (Legs)
Rodgers-Wolgast, Jennifer (Chief Scientist)	Staff Research Associate, SIO	1-3
Chua, Paul	Staff Research Associate, SIO	2
Cohen, Rebecca	Staff Research Associate, SIO	1-3
Debich, Amanda	Acoustic Technician, SIO	1-3
Dovel, Shonna	Staff Research Associate, SIO	1-3
Faber, David	Staff Research Associate, SIO	1-3
Farchadi, Nima	Fishery Biologist, NMFS	1-3
Gardner, Emily	Fishery Biologist, NMFS	2
Hays, Amy	Fishery Biologist, NMFS	1-3
Heux, Romain	Staff Research Associate, SIO	2
Hunt, Erin	Scientist, SIO	1-3
Knaak, Mary	Volunteer, SIO	1-3
Mische, Alyssa	Volunteer, SIO; Univ. of Oregon	1-3
Morris, Ethan	Staff Research Associate, SIO	2
Overcash, Bryan	Fishery Biologist, NMFS	1-3
Roadman, Megan	Staff Research Associate, SIO	1-3
Schuller, Daniel	Staff Research Associate, SIO	1-3
Send, Uwe	Professor, SIO	2
Smith, Michael	Marine Mammal Observer, SIO	1-3
Webb, Sophie	Bird Observer, FAIER	1-3
Wilkinson, James	Information Systems Analyst, SIO	1-3

Leg 1: San Diego to Avila, California, 1 August – 14 August, 2017
Leg 2: Avila to Avila (Mooring deployment), California, 14 – 15 August, 2017
Leg 3: Avila to San Diego, California, 15-16 August, 2017

RV SALLY RIDE CALCOFI CRUISE 1708 STATION 76.7 49.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
35 5.3 N	120 46.5 W	14/08/2017	1620	UTC	66 m	100 08 kn	200 03 06	4	1012.4 mb	14.5 C	14.2 C	07 m	8/8	ST	064

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3* µM	PO4* µM	NO3* µM	NO2* µM	NH4* µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0	13.54	13.54	33.517	25.137	281.8	0.000	5.94	259.0	100.4	8.8	0.65	4.4	0.22	0.03	8.14	1.64	0	
2 A	13.54	13.54	33.517	25.137	281.8	0.006	5.94	259.0	100.4	8.8	0.65	4.4	0.22	0.00	8.14	1.64	2	11
4 A	13.53	13.53	33.518	25.140	281.6	0.011	5.93	258.6	100.2	8.7	0.65	4.4	0.21	0.00	7.89	1.69	4	10
5 A	13.49	13.49	33.517	25.147	281.0	0.014	5.90	257.4	99.6	8.7	0.65	4.5	0.21	0.00	8.73	1.88	5	09
10 A	13.22	13.22	33.519	25.203	275.7	0.028	5.46	238.1	91.6	9.3	0.76	6.3	0.25	0.00	8.95	1.26	10	07
10	13.22	13.22	33.519	25.203	275.7	0.029											10	08
18 A	12.27	12.27	33.519	25.389	258.3	0.049	3.87	168.9	63.7	13.2	1.32	14.0	0.33	0.00	1.48	0.67	18	06
20 ISL	12.25 D	12.25	33.516 D	25.391	258.2	0.052	4.08	D177.8 D	67.2	13.9	1.37	14.7	0.27	0.00	1.24	0.62	20	
22 A	11.81	11.81	33.529	25.483	249.4	0.060	3.69	161.2	60.2	14.5	1.41	15.3	0.22	0.00	1.00	0.58	22	05
30	11.56	11.55	33.552	25.549	243.3	0.079	3.50	152.7	56.8	15.8	1.51	16.6	0.13	0.00	0.56	0.49	30	04
40	11.21	11.21	33.575	25.630	235.9	0.103	3.36	146.5	54.1	16.9	1.57	17.7	0.09	0.00	0.36	0.36	40	03
50	10.88	10.87	33.606	25.715	228.1	0.127	3.09	134.7	49.4	20.1	1.71	19.5	0.07	0.00	0.15	0.37	50	02
60	10.80	10.79	33.616	25.736	226.2	0.149	2.98	129.8	47.5	21.4	1.77	19.9	0.09	0.00	0.16	0.38	60	01

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.
D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV SALLY RIDE CALCOFI CRUISE 1708 STATION 76.7 51.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
35 1.4 N	120 55.0 W	14/08/2017	1345	UTC	235 m	060 05 kn	310 03 07	4	1011.6 mb	14.1 C	14.0 C		8/8	ST	063

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3* µM	PO4* µM	NO3* µM	NO2* µM	NH4* µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0	14.41	14.41	33.505	24.947	299.8	0.000	6.04	263.5	103.9	5.8	0.38	2.1	0.12	0.08	8.68	1.38	0	
2	14.41	14.41	33.505	24.947	299.9	0.006	6.04	263.5	103.9	5.8	0.38	2.1	0.12	0.08	8.68	1.38	2	16
10	14.15	14.15	33.505	25.001	295.0	0.030	5.63	245.8	96.5	7.0	0.54	3.8	0.17	0.20	6.69	1.19	10	14
11	13.93	13.93	33.502	25.045	290.8	0.032											11	15
20 ISL	13.74 D	13.74	33.493 D	25.078	287.9	0.056	5.31	D231.5 D	90.2	8.0	0.69	5.5	0.22	0.44	4.09	1.15	20	
21	13.62	13.62	33.493	25.103	285.7	0.062	5.22	227.8	88.4	8.1	0.71	5.6	0.23	0.46	3.83	1.15	21	13
30 ISL	12.68 D	12.68	33.500 D	25.295	267.6	0.084	4.43	D193.0 D	73.6	11.9	1.11	11.0	0.30	0.45	0.90	0.65	30	
31	12.48	12.47	33.496	25.332	264.0	0.089	4.16	181.6	68.8	12.4	1.15	11.6	0.31	0.45	0.57	0.60	31	12
41	11.72	11.72	33.502	25.480	250.2	0.115	3.85	168.0	62.6	14.0	1.30	13.8	0.27	0.08	0.38	0.58	41	11
50	11.29	11.28	33.554	25.600	239.0	0.137	3.49	152.4	56.3	16.3	1.52	17.4	0.13	0.00	0.15	0.31	50	10
60	10.82	10.81	33.621	25.738	226.1	0.160	3.07	133.8	49.0	20.2	1.71	19.9	0.05	0.00	0.11	0.26	60	09
70	10.61	10.60	33.663	25.806	219.9	0.183	2.85	124.3	45.3	22.0	1.80	21.1	0.05	0.00	0.08	0.28	71	08
75 ISL	10.46 D	10.45	33.701 D	25.862	214.6	0.192	2.83	D123.2 D	44.9	22.7	1.83	21.6	0.05	0.00	0.07	0.26	76	
86	10.33	10.32	33.731	25.908	210.5	0.217	2.64	115.0	41.7	24.2	1.91	22.6	0.04	0.00	0.06	0.21	87	07
100	10.05	10.04	33.811	26.019	200.3	0.246	2.41	105.1	37.9	26.5	2.02	24.2	0.03	0.00	0.04	0.19	101	06
121	10.01	9.99	33.830	26.043	198.5	0.288	2.35	102.7	37.0	27.1	2.05	24.5	0.04	0.00	0.03	0.18	122	05
125 ISL	10.00 D	9.99	33.835 D	26.047	198.2	0.294	2.37	D103.1 D	37.2	27.1	2.05	24.5	0.04	0.00	0.03	0.18	126	
140	9.89	9.87	33.841	26.072	196.2	0.325	2.37	103.3	37.1	27.4	2.05	24.8	0.05	0.00	0.03	0.19	141	04
150 ISL	9.80 D	9.78	33.887 D	26.123	191.5	0.344	2.15	D 93.8 D	33.7	29.3	2.13	25.5	0.12	0.00	0.03	0.21	151	
170	9.51	9.49	33.988	26.250	179.8	0.382	1.79	78.1	27.8	33.0	2.29	27.1	0.28	0.00	0.02	0.25	171	03
200	9.19	9.17	34.102	26.391	167.1	0.434	1.40	60.9	21.6	37.9	2.46	28.7	0.36	0.00	0.01	0.26	202	02
226	9.02	9.00	34.141	26.450	162.0	0.477	1.24	54.0	19.1	41.0	2.56	29.3	0.30	0.24			228	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV SALLY RIDE CALCOFI CRUISE 1708 STATION 76.7 55.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
34 53.3 N	121 11.9 W	14/08/2017	1018	UTC	573 m	310 11 kn			1011.8 mb	16.0 C	15.6 C				062

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3* µM	PO4* µM	NO3* µM	NO2* µM	NH4* µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0	16.14	16.14	33.501	24.563	336.4	0.000	5.67	247.3	101.0	1.0	0.30	0.6	0.08	0.35	0.90	0.36	0	
2	16.14	16.14	33.501	24.563	336.4	0.007	5.67	247.3	101.0	1.0	0.30	0.6	0.08	0.35	0.90	0.36	2	21
10	16.11	16.11	33.501	24.571	336.0	0.034	5.65	246.5	100.6	0.9	0.30	0.6	0.07	0.33	0.84	0.40	10	19
10	16.11	16.11	33.501	24.571	336.0	0.035											10	20
20	14.20	14.20	33.428	24.933	301.8	0.066	5.34	233.2	91.5	3.3	0.67	4.1	0.34	1.21	0.53	0.24	20	18
30	13.17	13.17	33.412	25.131	283.2	0.095	5.01	218.8	84.0	5.9	0.89	7.3	0.51	0.95	0.35	0.27	30	17
40	12.05	12.04	33.435	25.368	260.9	0.122	4.40	192.1	72.1	10.1	1.18	12.7	0.36	0.20	0.18	0.16	40	16
50	11.30	11.29	33.488	25.548	244.0	0.147	3.92	171.1	63.2	13.7	1.40	16.4	0.12	0.15	0.10	0.13	50	15
60	11.17	11.17	33.495	25.575	241.6	0.172	3.88	169.2	62.3	14.1	1.42	16.7	0.10	0.08	0.09	0.12	60	14
70	10.23	10.22	33.629	25.846	216.0	0.194	3.41	149.0	53.8	20.0	1.69	21.1	0.05	0.00	0.04	0.10	71	13
75 ISL	10.13 D	10.12	33.667 D	25.893	211.7	0.203	3.27	D142.2 D	51.4	20.9	1.73	21.7	0.05	0.00	0.04	0.10	76	
85	10.02	10.01	33.695	25.932	208.1	0.226	3.02	131.8	47.4	22.5	1.82	22.8	0.06	0.00	0.04	0.12	86	12
100	9.86	9.85	33.744	25.999	202.2	0.257	2.86	124.7	44.7	24.0	1.89	23.6	0.06	0.00	0.07	0.16	101	11
120	9.48	9.47	33.850	26.144	188.7	0.296	2.51	109.6	39.0	28.0	2.05	25.6	0.05	0.00	0.02	0.10	121	10
125 ISL	9.42 D	9.41	33.876 D	26.175	185.9	0.304	2.48	D107.8 D	38.4	28.5	2.07	25.8	0.05	0.00	0.02	0.10	126	
140	9.34	9.32	33.897	26.205	183.4	0.333	2.34	102.1	36.2	29.8	2.11	26.5	0.05	0.00	0.02	0.10	141	09
150 ISL	9.26 D	9.25	33.921 D	26.237	180.5	0.350	2.33	D101.5 D	36.1	30.9	2.15	26.9	0.04	0.00	0.01	0.10	151	
170	9.14	9.12	33.989	26.310	174.0	0.387	2.11	91.9	32.5	33.0	2.22	27.7	0.03	0.00	0.01	0.11	171	08
200	8.73	8.71	34.030	26.408	165.2	0.438	1.96	85.4	29.9	35.9	2.30	29.0	0.04	0.00	0.00	0.08	202	07
230	8.47	8.45	34.112	26.513	155.8	0.486	1.53	66.7	23.2	40.9	2.46	30.8	0.04	0.00			232	06
250 ISL	8.35 D	8.32	34.132 D	26.549	152.7	0.517	1.44	D 62.7 D	21.9	42.8	2.52	31.3	0.04	0.00			252	
271	8.31	8.28	34.174	26.588	149.5	0.549	1.22	53.2	18.5	44.8	2.59	31.9	0.04	0.00			273	05
300 ISL	7.58 D	7.55	34.141 D	26.669	141.9	0.591	1.19	D 51.9 D	17.8	50.1	2.71	33.2	0.03	0.00			302	
320	7.70	7.67	34.220	26.714	138.0	0.618	0.81	35.4	12.1	53.8	2.80	34.0	0.03	0.00			323	04
380	7.34	7.30	34.230	26.776	133.0	0.699	0.69	30.0	10.2	57.8	2.88	35.7	0.00	0.07			383	03
400 ISL	7.21 D	7.18	34.244 D	26.804	130.6	0.728	0.65	D 28.2 D	9.6	60.1	2.92	36.2	0.02	0.00			403	
440	6.88	6.84	34.255	26.860	125.7	0.777	0.52	22.6	7.6	64.6	3.00	37.2	0.00	0.00			444	02
500 ISL	6.29 D	6.24	34.266 D	26.948	117.7	0.853	0.42	D 18.1 D	6.0	74.8	3.12	38.8	0.02	0.00			504	
515	6.15	6.11	34.277	26.974	115.3	0.867	0.37	16.1	5.3	77.3	3.15	39.3	0.03	0.00			519	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV SALLY RIDE CALCOFI CRUISE 1708 STATION 76.7 60.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
34 43.4 N	121 32.8 W	14/08/2017	0620	UTC	930 m	320 15 kn			1012.9 mb	16.9 C	16.5 C				061

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3* µM	PO4* µM	NO3* µM	NO2* µM	NH4* µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0	16.74	16.74	33.536	24.453	346.8	0.000	5.67	247.6	102.3	0.3	0.17	0.1	0.01	0.15	1.73	0.42	0	
4	16.74	16.74	33.536	24.454	346.9	0.014	5.67	247.6	102.3	0.3	0.17	0.1	0.00	0.15	1.73	0.42	4	20
10	16.73	16.73	33.534	24.455	347.1	0.035	5.68	248.1	102.5	0.3	0.17	0.1	0.00	0.15	1.66	0.39	10	19
20	16.67	16.67	33.531	24.467	346.3	0.069	5.69	248.5	102.5	0.4	0.19	0.2	0.00	0.21	1.61	0.40	20	18
30	14.34	14.33	33.461	24.930	302.4	0.102	5.55	242.2	95.3	2.4	0.54	2.8	0.24	1.31	0.38	0.22	30	17
40	13.41	13.41	33.565	25.202	276.8	0.131	4.45	194.1	75.0	9.3	1.10	11.1	0.31	0.63	0.29	0.28	40	16
50	11.77	11.76	33.643	25.582	240.8	0.157	3.72	162.3	60.6	14.7	1.48	16.8	0.30	0.34	0.19	0.23	50	15
60	10.97	10.96	33.682	25.758	224.2	0.180	3.25	141.9	52.1	18.7	1.68	20.4	0.12	0.00	0.13	0.19	60	14
70	10.48	10.47	33.699	25.857	215.0	0.202	3.09	135.0	49.1	20.9	1.77	21.7	0.06	0.00	0.09	0.18	71	13
75 ISL	10.10 D	10.09	33.729 D	25.946	206.6	0.207	3.02	D131.2 D	47.4	22.3	1.83	22.5	0.05	0.00	0.08	0.17	76	
85	9.82	9.81	33.799	26.048	197.1	0.233	2.71	118.2	42.4	25.2	1.95	24.2	0.03	0.00	0.06	0.16	86	12
100	9.55	9.54	33.836	26.122	190.4	0.262	2.56	111.7	39.8	27.4	2.01	25.2	0.00	0.00	0.03	0.10	101	11
120	9.23	9.22	33.916	26.237	179.9	0.299	2.33	101.8	36.0	30.7	2.12	26.9	0.00	0.00	0.02	0.09	121	10
125 ISL	9.26 D	9.25	33.942 D	26.252	178.5	0.303	2.29	D 99.8 D	35.5	31.0	2.14	27.0	0.02	0.00	0.02	0.09	126	
140	9.12	9.10	33.967	26.296	174.6	0.334	2.19	95.6	33.8	32.0	2.18	27.4	0.00	0.00	0.01	0.09	141	09
150 ISL	8.90 D	8.89	34.003 D	26.358	168.9	0.347	2.07	D 89.9 D	31.7	33.5	2.24	27.9	0.02	0.00	0.01	0.09	151	
172	9.03	9.01	34.102	26.417	163.9	0.388	1.66	72.4	25.6	36.7	2.37	29.0	0.00	0.00	0.01	0.08	173	08
200	8.58	8.56	34.138	26.516	154.9	0.433	1.50	65.3	22.8	40.4	2.46	30.4	0.00	0.00	0.01	0.11	202	07
230	8.49	8.46	34.150	26.541	153.1	0.479	1.39	60.7	21.2	42.5	2.52	31.1	0.00	0.00			232	06
250 ISL	8.21 D	8.18	34.147 D	26.581	149.6	0.506	1.43	D 62.0 D	21.5	44.4	2.58	31.6	0.01	0.00			252	
270	8.24	8.21	34.195	26.614	146.9	0.539	1.12	49.0	17.0	46.4	2.64	32.2	0.00	0.08			272	05
300 ISL	8.14 D	8.11	34.224 D	26.652	143.8	0.580	0.96	D 41.6 D	14.4	49.5	2.72	32.8	0.01	0.00			302	
320	7.96	7.93	34.232	26.686	140.8	0.611	0.83	36.4	12.5	51.5	2.77	33.2	0.00	0.00			323	04
380	7.06	7.02	34.231	26.815	129.0	0.692	0.58	25.3	8.6	64.2	2.97	35.6	0.00	0.00			383	03
400 ISL	6.82 D	6.78	34.245 D	26.859	125.0	0.715	0.50	D 21.8 D	7.4	68.2	3.03	36.5	0.01	0.00			403	
440	6.31	6.27	34.281	26.955	116.1	0.765	0.34	14.8	4.9	76.2	3.14	38.3	0.00	0.00			444	02
500 ISL	5.97 D	5.92	34.304 D	27.018	110.6	0.833	0.31	D 13.3 D	4.4	80.5	3.21	39.9	0.01	0.00			504	
516	5.85	5.81	34.314	27.040	108.7	0.851	0.25	11.0	3.6	81.6	3.23	40.3	0.00	0.00			520	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV SALLY RIDE CALCOFI CRUISE 1708 STATION 76.7 70.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
34 23.3 N	122 14.8 W	14/08/2017	0013	UTC	4051 m	330 18 kn	340 04 07	2	1013.7 mb	17.8 C	16.8 C	13 m	8/8	SC	060

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3* µM	PO4* µM	NO3* µM	NO2* µM	NH4* µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0	16.92	16.92	33.508	24.389	352.9	0.000	5.82	254.0	105.3	0.4	0.21	0.1	0.02	0.18	0.91	0.20	0	
2	16.92	16.92	33.508	24.390	353.0	0.007	5.82	254.0	105.3	0.4	0.21	0.1	0.00	0.18	0.91	0.20	2	20
10	16.91	16.90	33.508	24.393	352.9	0.035	5.77	251.9	104.4	0.4	0.20	0.0	0.00	0.00	0.93	0.23	10	19
20 ISL	16.78 D	16.78	33.503 D	24.419	350.8	0.067	5.75	D250.6 D	103.8	0.5	0.22	0.1	0.02	0.00	0.87	0.23	20	
21	16.73	16.72	33.509	24.437	349.2	0.074	5.75	251.0	103.7	0.5	0.22	0.1	0.00	0.14	0.86	0.23	21	18
30	15.91	15.91	33.429	24.562	337.5	0.105	5.80	253.0	102.8	1.3	0.37	1.1	0.11	0.58	0.73	0.24	30	17
40	13.80	13.80	33.348	24.954	300.4	0.137	5.66	247.1	96.1	3.5	0.66	4.1	0.41	1.22	0.42	0.27	40	16
50	13.04	13.03	33.420	25.165	280.6	0.166	5.31	231.7	88.8	5.3	0.91	7.1	0.92	1.63	0.36	0.22	50	15
60	11.91	11.90	33.421	25.384	259.9	0.193	4.82	210.4	78.7	9.2	1.11	12.5	0.26	0.00	0.29	0.15	60	14
70	11.13	11.12	33.381	25.496	249.4	0.218	4.59	200.1	73.6	12.3	1.22	14.4	0.04	0.33	0.18	0.13	71	13
75 ISL	10.86 D	10.85	33.416 D	25.571	242.4	0.229	4.54	D197.7 D	72.5	13.1	1.27	15.2	0.04	0.23	0.16	0.12	76	
84	10.82	10.81	33.478	25.627	237.3	0.252	4.30	187.7	68.6	14.6	1.36	16.7	0.03	0.06	0.12	0.10	85	12
100	10.12	10.11	33.614	25.854	216.0	0.289	3.70	161.5	58.2	19.3	1.62	20.4	0.03	0.00	0.04	0.07	101	11
120	9.42	9.40	33.779	26.100	192.9	0.329	2.97	129.7	46.0	25.9	1.90	24.4	0.03	0.00	0.01	0.06	121	10
125 ISL	9.27 D	9.26	33.814 D	26.150	188.2	0.338	3.18	D138.4 D	49.2	26.1	1.87	24.1	0.03	0.00	0.01	0.06	126	
140	8.86	8.85	33.874	26.263	177.7	0.366	3.50	152.7	53.6	26.8	1.76	23.3	0.03	0.00	0.01	0.06	141	09
150 ISL	8.71 D	8.69	33.913 D	26.318	172.7	0.383	3.12	D135.9 D	47.7	29.3	1.86	24.6	0.03	0.00	0.01	0.05	151	
170	8.31	8.29	33.967	26.422	163.1	0.418	2.77	121.0	42.0	34.5	2.05	27.4	0.00	0.00	0.01	0.04	171	08
200	8.19	8.17	34.051	26.506	155.6	0.465	1.91	83.2	28.8	40.1	2.36	30.5	0.00	0.00	0.01	0.06	202	07
230	7.67	7.64	34.069	26.599	147.2	0.511	1.71	74.7	25.6	46.1	2.47	32.3	0.03	0.00			232	06
250 ISL	7.58 D	7.55	34.097 D	26.633	144.3	0.540	1.52	D 66.2 D	22.7	48.4	2.55	33.0	0.02	0.00			252	
270	7.36	7.34	34.109	26.674	140.6	0.568	1.36	59.5	20.2	50.6	2.62	33.7	0.00	0.00			272	05
300 ISL	7.01 D	6.98	34.117 D	26.730	135.6	0.611	1.16	D 50.2 D	17.0	56.2	2.72	35.3	0.02	0.00			302	
320	6.72	6.69	34.101	26.757	133.2	0.637	1.12	49.0	16.4	59.9	2.79	36.4	0.00	0.00			323	04
380	6.34	6.31	34.157	26.852	124.8	0.714	0.71	30.8	10.2	67.2	2.97	38.2	0.00	0.00			383	03
400 ISL	6.33 D	6.30	34.183 D	26.874	123.1	0.741	0.60	D 26.2 D	8.7	69.8	3.01	38.7	0.01	0.00			403	
439	5.93	5.89	34.199	26.937	117.3	0.786	0.49	21.3	7.0	74.9	3.09	39.7	0.00	0.00			443	02
500 ISL	5.61 D	5.57	34.238 D	27.010	110.9	0.858	0.36	D 15.5 D	5.1	82.3	3.19	40.8	0.01	0.00			504	
515	5.53	5.49	34.257	27.035	108.7	0.872	0.30	13.0	4.2	84.1	3.21	41.1	0.00	0.00			519	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; SECONDARY CRUISE-CORRECTED O2;

RV SALLY RIDE CALCOFI CRUISE 1708 STATION 76.7 80.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
34 3.3 N	122 56.4 W	13/08/2017	1836	UTC	4272 m	330 13 kn	350 04 06	2	1016.2 mb	17.9 C	16.9 C	24 m	8/8	SC	059

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3* µM	PO4* µM	NO3* µM	NO2* µM	NH4* µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0	17.22	17.22	33.233	24.109	379.7	0.000	5.76	251.3	104.6	1.4	0.28	0.0	0.02	0.19	0.21	0.07	0	
2 A	17.22	17.22	33.233	24.109	379.8	0.008	5.76	251.3	104.6	1.4	0.28	0.0	0.00	0.19	0.21	0.07	2	24
10	17.19	17.19	33.236	24.117	379.2	0.038	5.66	246.9	102.7	1.4	0.29	0.0	0.00	0.29	0.21	0.08	10	22
10	17.19	17.19	33.233	24.116	379.4	0.038											10	23
14 A	17.19	17.19	33.233	24.115	379.6	0.053	5.66	247.2	102.9	1.3	0.28	0.0	0.00	0.22	0.21	0.08	14	21
18 A	17.19	17.18	33.232	24.116	379.6	0.068	5.69	248.1	103.2	1.4	0.28	0.0	0.00	0.11	0.22	0.07	18	20
20 ISL	17.18 D	17.17	33.229 D	24.116	379.7	0.073	5.66	D246.9	D102.8	1.4	0.28	0.0	0.02	0.10	0.22	0.07	20	
26	17.16	17.16	33.232	24.122	379.4	0.099	5.66	247.1	102.8	1.4	0.27	0.0	0.00	0.07	0.24	0.08	26	19
30 ISL	17.06 D	17.05	33.227 D	24.144	377.5	0.111	5.75	D250.8	D104.2	1.5	0.30	0.2	0.04	0.14	0.31	0.13	30	
34 A	15.73	15.73	33.192	24.420	351.2	0.129	5.99	261.4	105.7	1.7	0.33	0.5	0.06	0.20	0.38	0.17	34	18
43	14.15	14.14	33.196	24.767	318.3	0.159	6.08	265.3	103.8	2.2	0.41	1.6	0.17	0.24	0.44	0.19	43	17
50 ISL	13.36 D	13.35	33.187 D	24.921	303.8	0.178	6.04	D263.1	D101.5	3.6	0.54	3.4	0.32	0.29	0.49	0.25	50	
52	13.18	13.17	33.203	24.968	299.4	0.186	5.85	255.4	98.0	4.0	0.58	3.9	0.36	0.31	0.50	0.27	52	15
52	13.18	13.17	33.200	24.966	299.5	0.186											52	16
61 A	12.56	12.55	33.233	25.115	285.6	0.213	5.55	242.3	91.8	5.3	0.73	6.1	0.58	0.17	0.44	0.25	61	14
75 A	11.67	11.66	33.360	25.381	260.5	0.251	5.09	222.2	82.7	8.5	0.99	11.0	0.05	0.06	0.19	0.20	76	13
88	10.91	10.90	33.397	25.547	245.0	0.284	4.73	206.4	75.6	12.2	1.18	14.0	0.03	0.00	0.11	0.14	89	12
100	10.39	10.38	33.506	25.723	228.5	0.312	4.16	181.3	65.7	16.9	1.45	18.2	0.03	0.00	0.06	0.12	101	11
120	9.77	9.75	33.615	25.914	210.6	0.356	3.45	150.7	53.9	21.7	1.72	22.1	0.00	0.00	0.01	0.08	121	10
125 ISL	9.75 D	9.74	33.629 D	25.928	209.4	0.366	3.43	D149.4 D	53.6	22.7	1.76	22.6	0.02	0.00	0.01	0.07	126	
140	9.33	9.31	33.723	26.071	196.0	0.397	3.11	135.5	48.0	25.5	1.87	24.3	0.00	0.00	0.01	0.07	141	09
150 ISL	9.15 D	9.13	33.790 D	26.153	188.4	0.415	3.01	D130.8 D	46.3	26.9	1.91	25.0	0.02	0.00	0.01	0.06	151	
170	8.87	8.85	33.853	26.246	180.0	0.453	2.85	124.3	43.6	29.7	1.99	26.4	0.00	0.00	0.01	0.06	171	08
200	8.43	8.41	33.936	26.381	167.6	0.505	2.71	118.1	41.1	33.2	2.07	27.6	0.00	0.00	0.00	0.05	202	07
230	8.10	8.08	33.978	26.464	160.2	0.555	2.55	111.4	38.4	37.1	2.16	28.9	0.00	0.00			232	06
250 ISL	7.83 D	7.81	33.990 D	26.513	155.8	0.587	2.52	D109.7 D	37.7	40.7	2.29	30.3	0.02	0.00			252	
270	7.66	7.63	34.046	26.583	149.5	0.616	1.88	82.2	28.1	44.3	2.42	31.8	0.00	0.00			272	05
300 ISL	7.32 D	7.29	34.058 D	26.641	144.3	0.662	1.75	D 76.0 D	25.9	50.6	2.56	33.7	0.02	0.00			302	
320	6.91	6.88	34.068	26.705	138.2	0.689	1.44	62.8	21.1	54.7	2.65	35.0	0.00	0.00			323	04
380	6.46	6.42	34.128	26.814	128.5	0.769	0.92	40.3	13.4	63.5	2.88	37.5	0.00	0.00			383	03
400 ISL	6.31 D	6.27	34.134 D	26.838	126.5	0.797	0.85	D 37.1 D	12.3	67.2	2.93	38.3	0.01	0.00			403	
440	5.73	5.70	34.130	26.908	119.8	0.843	0.74	32.3	10.6	74.6	3.03	39.8	0.00	0.00			444	02
500 ISL	5.51 D	5.47	34.218 D	27.006	111.2	0.916	0.40	D 17.2 D	5.6	82.5	3.17	41.0	0.01	0.00			504	
516	5.44	5.39	34.223	27.018	110.1	0.931	0.37	15.9	5.2	84.6	3.21	41.4	0.00	0.00			520	01

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.
D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; SECONDARY CRUISE-CORRECTED O2;

RV SALLY RIDE CALCOFI CRUISE 1708 STATION 76.7 90.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
33 43.4 N	123 37.9 W	13/08/2017	1250	UTC	4336 m	330 16 kn			1014.7 mb	16.9 C	15.6 C				058

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3* µM	PO4* µM	NO3* µM	NO2* µM	NH4* µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0	17.41	17.41	33.120	23.976	392.3	0.000	5.59	244.1	101.9	2.0	0.26	0.0	0.03	0.02	0.14	0.04	0	
3	17.41	17.41	33.120	23.976	392.4	0.012	5.59	244.1	101.9	2.0	0.26	0.0	0.03	0.00	0.14	0.04	3	20
10	17.41	17.41	33.120	23.976	392.7	0.039	5.60	244.3	102.0	1.8	0.27	0.0	0.00	0.00	0.13	0.04	10	19
20 ISL	17.41 D	17.41	33.120 D	23.977	393.0	0.073	5.59	D243.9	D101.9	1.9	0.27	0.0	0.02	0.00	0.13	0.04	20	
25	17.41	17.40	33.121	23.980	392.9	0.098	5.59	243.9	101.8	1.9	0.27	0.0	0.00	0.00	0.13	0.04	25	18
30 ISL	17.38 D	17.38	33.118 D	23.983	392.8	0.113	5.66	D246.9	D103.1	1.9	0.27	0.0	0.01	0.00	0.14	0.04	30	
41	17.25	17.24	33.117	24.015	390.2	0.161	5.75	250.9	104.4	1.8	0.26	0.0	0.00	0.00	0.14	0.03	41	17
50	16.36	16.35	33.165	24.260	367.0	0.195	5.90	257.5	105.4	2.0	0.25	0.0	0.00	0.00	0.21	0.05	50	16
62	14.71	14.70	33.380	24.790	316.8	0.236	6.17	D268.7	D106.7	2.1	0.20	0.0	0.00	0.00	0.24	0.10	63	15
75 ISL	14.26 D	14.25	33.410 D	24.909	305.9	0.273	6.18	D269.2	D105.9	2.4	0.21	0.0	0.01	0.00	0.26	0.13	76	
76	14.08	14.07	33.413	24.949	302.1	0.280	6.12	267.0	104.5	2.4	0.21	0.0	0.00	0.00	0.26	0.13	77	14
88	13.15	13.14	33.390	25.122	285.8	0.315	6.13	267.4	102.6	2.4	0.23	0.0	0.00	0.13	0.25	0.15	89	13
100	12.62	12.60	33.366	25.208	277.8	0.349	6.07	264.8	100.5	2.4	0.26	0.0	0.03	0.18	0.20	0.14	101	12
112	12.16	12.14	33.384	25.310	268.4	0.381	5.79	252.6	95.0	3.3	0.38	1.7	0.29	0.00	0.17	0.13	113	11
125 ISL	11.40 D	11.38	33.383 D	25.451	255.2	0.412	5.65	D246.0 D	91.2	4.7	0.56	4.9	0.06	0.00	0.13	0.09	126	
126	11.26	11.24	33.389	25.481	252.3	0.418	5.54	241.8	89.2	4.8	0.57	5.2	0.04	0.00	0.13	0.09	127	10
141	11.03	11.01	33.532	25.634	238.1	0.455	5.20	226.8	83.3	7.9	0.75	8.5	0.03	0.00	0.06	0.07	142	09
150 ISL	11.01 D	10.99	33.629 D	25.714	230.7	0.473	5.09	D221.7 D	81.6	10.4	0.91	10.9	0.03	0.00	0.05	0.05	151	
170	9.78	9.76	33.630	25.925	210.8	0.521	4.49	195.9	70.1	16.0	1.25	16.2	0.00	0.00	0.02	0.03	171	08
200	8.96	8.94	33.831	26.216	183.4	0.580	4.07	177.6	62.4	23.3	1.54	20.8	0.00	0.00	0.00	0.02	202	07
230	8.44	8.41	33.924	26.370	169.2	0.633	3.66	159.8	55.6	29.4	1.76	23.9	0.00	0.00			232	06
250 ISL	8.13 D	8.11	33.951 D	26.438	163.1	0.663	3.44	D149.7 D	51.8	33.7	1.93	26.2	0.02	0.00			252	
270	7.84	7.81	33.978	26.502	157.2	0.698	2.82	122.9	42.2	38.0	2.10	28.5	0.00	0.00			272	05
300 ISL	7.52 D	7.49	34.003 D	26.569	151.2	0.742	2.48	D108.0 D	36.9	43.2	2.21	30.1	0.02	0.00			302	
320	7.07	7.03	33.991	26.623	146.1	0.774	2.48	108.3	36.5	46.6	2.29	31.2	0.00	0.00			323	04
380	6.49	6.45	34.041	26.742	135.4	0.859	1.51	65.7	21.8	58.2	2.67	35.9	0.00	0.00			383	03
400 ISL	6.27 D	6.23	34.039 D	26.768	133.0	0.885	1.48	D 64.3 D	21.3	61.5	2.73	36.7	0.01	0.00			403	
440	5.91	5.87	34.058	26.829	127.4	0.937	1.16	50.4	16.5	68.2	2.85	38.4	0.00	0.00			444	02
500 ISL	5.56 D	5.52	34.137 D	26.935	117.9	1.011	0.68	D 29.8 D	9.7	77.6	3.04	40.4	0.01	0.00			504	
514	5.45	5.41	34.139	26.950	116.5	1.028	0.63	27.4	8.9	79.8	3.08	40.9	0.00	0.00			518	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; SECONDARY CRUISE-CORRECTED O2;

RV SALLY RIDE CALCOFI CRUISE 1708 STATION 76.7 100.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
33 23.2 N	124 19.4 W	13/08/2017	0706	UTC	3629 m	350 15 kn			1016.0 mb	17.9 C	16.9 C				057

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3* µM	PO4* µM	NO3* µM	NO2* µM	NH4* µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0	18.40	18.40	33.397	23.947	395.1	0.000	5.46	238.2	101.6	2.1	0.21	0.0	0.01	0.00	0.08	0.01	0	
3	18.40	18.40	33.397	23.947	395.2	0.012	5.46	238.2	101.6	2.1	0.21	0.0	0.00	0.00	0.08	0.01	3	20
10 ISL	18.41 D	18.40	33.394 D	23.945	395.7	0.034	5.52	D240.7	D102.7	2.0	0.21	0.0	0.00	0.00	0.07	0.01	10	
11	18.41	18.40	33.395	23.946	395.7	0.044	5.45	238.0	101.5	2.0	0.21	0.0	0.00	0.00	0.07	0.01	11	19
20 ISL	18.41 D	18.40	33.394 D	23.945	396.1	0.074	5.52	D240.9	D102.8	2.0	0.21	0.0	0.00	0.00	0.07	0.01	20	
26	18.40	18.40	33.394	23.947	396.1	0.103	5.47	238.8	101.8	2.0	0.21	0.0	0.00	0.00	0.07	0.01	26	18
30 ISL	18.40 D	18.39	33.392 D	23.946	396.4	0.114	5.52	D240.8	D102.7	2.0	0.21	0.0	0.00	0.00	0.07	0.01	30	
41	18.41	18.40	33.394	23.947	396.7	0.162	5.50	240.1	102.4	2.0	0.22	0.0	0.00	0.00	0.07	0.01	41	17
50 ISL	17.78 D	17.77	33.335 D	24.057	386.6	0.193	5.66	D246.6	D103.9	2.1	0.22	0.0	0.00	0.00	0.14	0.03	50	
51	17.24	17.23	33.343	24.192	373.7	0.201	5.64	246.3	102.7	2.1	0.22	0.0	0.00	0.00	0.14	0.03	51	16
62	16.13	16.12	33.456	24.535	341.3	0.241	5.96	259.9	106.1	2.3	0.19	0.0	0.00	0.00	0.15	0.04	63	15
75 ISL	15.93 D	15.91	33.597 D	24.691	326.8	0.280	5.95	D259.5	D105.7	2.4	0.17	0.0	0.00	0.00	0.19	0.05	76	
76	15.83	15.82	33.601	24.717	324.4	0.288	5.89	257.0	104.3	2.4	0.17	0.0	0.00	0.00	0.19	0.05	77	14
88	14.51	14.49	33.449	24.889	308.2	0.326	5.94	259.3	102.4	2.5	0.22	0.0	0.00	0.00	0.24	0.13	89	13
100 ISL	15.11 D	15.10	33.719 D	24.968	301.2	0.359	5.84	D254.4	D102.0	2.6	0.20	0.0		0.00	0.25	0.20	101	
101	15.10	15.08	33.717	24.968	301.2	0.365	5.79	252.4	101.1	2.6	0.20	0.0	0.03	0.00	0.25	0.21	102	12
112	13.97	13.96	33.495	25.037	294.8	0.398	5.81	253.7	99.2						0.23	0.22	113	11
125	13.10	13.08	33.487	25.209	278.6	0.435	5.50	240.0	92.1	4.0	0.44	2.6	0.19	0.00	0.16	0.17	126	10
140	12.32	12.30	33.470	25.348	265.6	0.476	5.28	230.2	86.9	5.4	0.57	5.2	0.05	0.00	0.11	0.14	141	09
150 ISL	11.48 D	11.46	33.449 D	25.489	252.2	0.500	5.13	D223.5	D 83.0	8.1	0.77	8.3		0.00	0.08	0.10	151	
170	10.26	10.24	33.552	25.784	224.3	0.549	4.59	200.2	72.3	13.4	1.16	14.3	0.00	0.00	0.03	0.03	171	08
200 ISL	9.33 D	9.31	33.759 D	26.101	194.5	0.611	4.19	D182.4	D 64.8	20.5	1.48	19.5	0.00	0.00	0.00	0.01	202	
201	9.27	9.24	33.762	26.114	193.3	0.614	4.14	180.5	63.9	20.7	1.49	19.7	0.00	0.00	0.00	0.01	203	07
230	8.71	8.68	33.891	26.303	175.7	0.667	3.58	156.0	54.6	27.5	1.76	23.6	0.00	0.00			232	06
250 ISL	8.46 D	8.43	33.929 D	26.372	169.5	0.702	3.25	D141.4	D 49.3	31.6	1.92	25.7	0.00	0.00			252	
270	8.09	8.06	33.974	26.463	161.1	0.735	2.80	122.3	42.2	35.6	2.08	27.9	0.00	0.00			272	05
300 ISL	7.74 D	7.71	33.997 D	26.533	154.8	0.783	2.60	D113.0	D 38.8	40.5	2.24	30.0	0.00	0.00			302	
320	7.49	7.46	34.020	26.587	149.8	0.813	2.16	94.4	32.1	43.7	2.35	31.4	0.00	0.00			323	04
380	6.77	6.73	34.060	26.720	137.7	0.899	1.44	62.8	21.0	55.0	2.67	35.4	0.00	0.00			383	03
400 ISL	6.57 D	6.54	34.066 D	26.751	134.9	0.928	1.33	D 57.9	D 19.4	58.5	2.75	36.3	0.00	0.00			403	
440	6.20	6.16	34.099	26.825	128.1	0.979	0.96	42.0	13.9	65.3	2.90	38.1	0.00	0.00			444	02
500 ISL	5.75 D	5.71	34.137 D	26.912	120.3	1.056	0.69	D 30.0	D 9.8	73.8	3.04	39.9	0.00	0.00			504	
515	5.68	5.63	34.142	26.926	119.1	1.071	0.62	27.1	8.8	75.9	3.08	40.3	0.00	0.00			519	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV SALLY RIDE CALCOFI CRUISE 1708 STATION 80.0 50.5

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
34 28.0 N	120 29.4 W	15/08/2017	1013	UTC	26 m	340 13 kn			1011.2 mb	15.5 C	14.2 C				067

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3* µM	PO4* µM	NO3* µM	NO2* µM	NH4* µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0	14.43	14.43	33.431	24.886	305.6	0.000	4.99	217.6	85.8	7.5	0.67	4.7	0.30	0.13	1.13	0.31	0	
2	14.43	14.43	33.431	24.886	305.7	0.006	4.99	217.6	85.8	7.5	0.67	4.7	0.30	0.13	1.13	0.31	2	05
5	14.36	14.36	33.428	24.897	304.7	0.015	4.97	216.8	85.4	7.6	0.70	4.9	0.32	0.12	1.02	0.34	5	04
10	13.52	13.52	33.426	25.071	288.4	0.030	4.61	201.1	77.9	9.5	0.88	6.9	0.37	0.10	0.76	0.29	10	02
10	13.52	13.52	33.425	25.071	288.4	0.031											10	03
15	12.86	12.86	33.440	25.214	274.9	0.044	4.33	188.9	72.1	11.6	1.03	9.2	0.36	0.06	0.76	0.31	15	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV SALLY RIDE CALCOFI CRUISE 1708 STATION 80.0 51.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
34 27.0 N	120 31.7 W	15/08/2017	0816	UTC	78 m	310 15 kn			1011.2 mb	16.0 C	15.0 C				066

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3* µM	PO4* µM	NO3* µM	NO2* µM	NH4* µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0	16.40	16.40	33.462	24.474	344.9	0.000	5.58	243.6	100.0	3.9	0.33	0.8	0.08	0.07	2.27	0.41	0	
2	16.40	16.40	33.462	24.474	344.9	0.007	5.58	243.6	100.0	3.9	0.33	0.8	0.08	0.07	2.27	0.41	2	10
5	16.13	16.13	33.498 D	24.564	336.5	0.014	5.57	243.0	99.2	4.1	0.36	1.0	0.09	0.06	2.44	0.44	5	09
10	13.37	13.37	33.436	25.108	284.8	0.033	4.57	199.5	77.0	9.9	0.89	7.3	0.33	0.13	1.19	0.33	10	07
10	13.37	13.37	33.432	25.105	285.1	0.034											10	08
20 ISL	12.99 D	12.98	33.434 D	25.185	277.8	0.058	4.48	D195.3	D 74.9	10.8	0.95	8.3	0.34	0.08	0.88	0.31	20	
21	12.99	12.99	33.441	25.188	277.5	0.064	4.43	193.3	74.0	10.9	0.96	8.4	0.34	0.08	0.85	0.31	21	06
30	11.82	11.81	33.464	25.432	254.5	0.088	3.94	171.7	64.2	13.7	1.23	12.7	0.29	0.00	0.30	0.27	30	05
40	11.23	11.22	33.511	25.578	240.9	0.112	3.66	159.9	59.0	16.0	1.43	16.0	0.15	0.00	0.16	0.23	40	04
50	10.79	10.78	33.562	25.696	229.8	0.136	3.39	147.9	54.1	18.4	1.59	18.3	0.10	0.00	0.11	0.18	50	03
60	10.75	10.74	33.568	25.708	228.9	0.159	3.33	145.1	53.0	18.9	1.61	18.5	0.11	0.00	0.11	0.20	60	02
70	10.72	10.71	33.576	25.719	228.1	0.182	3.32	144.9	52.9	19.1	1.63	18.8	0.10	0.00	0.10	0.18	71	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV SALLY RIDE CALCOFI CRUISE 1708 STATION 80.0 55.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
34 19.1 N	120 48.3 W	15/08/2017	0412 UTC	725 m	320 20 kn			1011.2 mb	16.2 C	15.5 C				065

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3* µM	PO4* µM	NO3* µM	NO2* µM	NH4* µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0	15.98	15.98	33.479	24.584	334.4	0.000	6.00	261.8	106.6	4.1	0.34	0.4	0.03	0.25	6.84	0.08	0	
3	15.98	15.98	33.479	24.584	334.4	0.010	6.00	261.8	106.6	4.1	0.34	0.4	0.03	0.25	6.84	0.08	3	23
10	15.94	15.94	33.482	24.595	333.7	0.033	5.97	260.4	105.9	4.1	0.36	0.4	0.04	0.11	6.95	0.20	10	20
10	15.94	15.94	33.479	24.592	333.9	0.033											10	22
10	15.94	15.94	33.479	24.592	334.0	0.033											10	21
15	15.45	15.44	33.486	24.709	323.0	0.050	5.45	237.8	95.8	5.3	0.54	2.7	0.13	0.36	3.11	0.23	15	19
20	14.87	14.86	33.491	24.840	310.7	0.066	5.00	218.1	86.8	6.5	0.73	5.0	0.22	0.65	1.66	0.50	20	18
30	12.91	12.91	33.509	25.257	271.2	0.095	4.17	181.9	69.5	10.1	1.16	11.0	0.37	0.47	0.59	0.51	30	17
40	12.05	12.05	33.529	25.439	254.1	0.121	3.67	160.2	60.2	13.3	1.44	15.1	0.31	0.00	0.46	0.27	40	16
50	11.47	11.46	33.555	25.569	242.0	0.146	3.45	150.6	55.9	15.5	1.58	17.3	0.14	0.00	0.31	0.32	50	15
60	10.92	10.92	33.577	25.684	231.3	0.170	3.25	141.7	52.0	17.1	1.68	18.8	0.06	0.00	0.23A	0.36A	60	14
70	10.52	10.51	33.675	25.831	217.5	0.192	2.87	125.3	45.6	21.3	1.87	21.6	0.00	0.00	0.12	0.30	71	13
75 ISL	10.32 D	10.31	33.730 D	25.909	210.1	0.199	2.78	D120.9 D	43.9	22.7	1.93	22.3	0.02	0.00	0.11	0.27	76	
85	9.98	9.97	33.811	26.030	198.9	0.223	2.45	106.7	38.4	25.6	2.06	23.9	0.00	0.00	0.07	0.21	86	12
100	9.67	9.66	33.952	26.192	183.8	0.252	2.12	92.5	33.1	29.5	2.21	25.7	0.00	0.00	0.00	0.28	101	11
120	9.63	9.61	34.040	26.270	176.9	0.288	1.80	78.7	28.1	32.1	2.33	26.8	0.00	0.00	0.03	0.21	121	10
125 ISL	9.50 D	9.49	34.068 D	26.313	172.9	0.293	1.74	D 75.7 D	27.1	32.8	2.35	27.1	0.01	0.00	0.03	0.20	126	
141	9.40	9.39	34.113	26.364	168.3	0.324	1.50	65.4	23.3	35.1	2.43	28.0	0.00	0.00	0.05	0.14	142	09
150 ISL	9.28 D	9.26	34.140 D	26.406	164.5	0.336	1.42	D 61.9 D	22.0	35.8	2.44	28.3	0.01	0.00	0.04	0.14	151	
170	9.10	9.08	34.141	26.436	162.1	0.372	1.37	59.7	21.1						0.01	0.12	171	08
200	8.72	8.69	34.138	26.495	157.0	0.420	1.49	64.9	22.8	39.7	2.51	29.8	0.00	0.00	0.04	0.07	202	07
230	8.41	8.39	34.144	26.547	152.5	0.466	1.43	62.3	21.7	42.1	2.55	30.7	0.00	0.00			232	06
250 ISL	8.08 D	8.05	34.112 D	26.572	150.4	0.495	1.53	D 66.4 D	23.0	44.0	2.57	31.5	0.02	0.00			252	
270	7.82	7.79	34.098	26.601	147.8	0.526	1.48	64.7	22.2	45.8	2.58	32.3	0.00	0.00			272	05
300 ISL	7.60 D	7.57	34.122 D	26.652	143.5	0.569	1.32	D 57.3 D	19.6	48.7	2.66	33.2	0.01	0.00			302	
320	7.54	7.51	34.138	26.674	141.7	0.598	1.18	51.3	17.5	50.7	2.72	33.8	0.00	0.00			323	04
380	7.03	7.00	34.159	26.762	134.0	0.681	0.90	39.3	13.2	57.8	2.85	35.6	0.00	0.00			383	03
400 ISL	7.12 D	7.08	34.208 D	26.789	131.9	0.708	0.77	D 33.4 D	11.3	59.8	2.91	36.0	0.01	0.00			403	
440	6.83	6.79	34.231	26.847	126.8	0.760	0.57	24.8	8.3	63.9	3.02	36.8	0.00	0.00			444	02
500 ISL	6.63 D	6.58	34.285 D	26.919	120.9	0.835	0.41	D 17.7 D	6.0	68.7	3.12	37.5	0.01	0.00			504	
515	6.59	6.54	34.288	26.926	120.4	0.853	0.37	16.0	5.4	70.0	3.14	37.7	0.00	0.00			519	01

A) SECOND FLUOROMETER READING NOT RECORDED CHLOROPHYLL AND PHAEOPIGMENT CALCULATED WITH ASSUMED ACID RATIO INTERPOLATED FROM ADJACENT LEVELS
D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV SALLY RIDE CALCOFI CRUISE 1708 STATION 80.0 60.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
34 9.0 N	121 9.0 W	11/08/2017	2344 UTC	2173 m	320 16 kn	300 03 08	2	1011.4 mb	17.0 C	16.5 C	09 m	8/8	SC	052

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3* µM	PO4* µM	NO3* µM	NO2* µM	NH4* µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0	16.57	16.57	33.504	24.469	345.4	0.000	5.67	247.3	101.9	0.9	0.22	0.8	0.05	0.08	1.94	0.21	0	
2	16.57	16.57	33.504	24.469	345.4	0.007	5.67	247.3	101.9	0.9	0.22	0.8	0.05	0.08	1.94	0.21	2	21
10	16.56	16.55	33.502	24.470	345.6	0.035	5.68	248.0	102.1	0.9	0.23	0.8	0.05	0.07	1.81	0.05	10	19
10	16.56	16.55	33.504	24.472	345.4	0.035											10	20
20	16.36	16.36	33.502	24.515	341.7	0.069	5.62	245.2	100.6	0.9	0.26	1.1	0.06	0.18	2.02	0.13	20	18
30	13.45	13.44	33.412	25.075	288.5	0.100	5.01	218.4	84.4	5.9	0.79	7.5	0.25	0.24	1.06	0.27	30	17
40	11.70	11.70	33.439	25.434	254.5	0.128	4.40	192.0	71.5	10.9	1.14	12.8	0.22	0.00	0.58	0.43	40	16
50	11.09	11.09	33.556	25.637	235.5	0.152	3.87	168.8	62.1	15.0	1.41	16.9	0.07	0.00	0.20	0.46	50	15
61	10.63	10.62	33.602	25.756	224.4	0.177	3.60	157.3	57.3	18.0	1.55	19.1	0.05	0.00	0.16	0.12	61	14
71	10.25	10.24	33.655	25.862	214.5	0.199	3.34	145.7	52.7	20.6	1.67	20.9	0.04	0.00	0.11	0.13	72	13
75 ISL	10.13 D	10.12	33.684 D	25.906	210.4	0.206	3.24	D141.1 D	51.0	21.7	1.72	21.5	0.03	0.00	0.09	0.11	76	
86	9.75	9.74	33.753	26.024	199.4	0.230	2.97	129.5	46.3	24.7	1.85	23.3	0.03	0.00	0.05	0.07	87	12
100	9.82	9.80	33.913	26.139	188.9	0.258	2.38	103.8	37.2	27.7	2.04	24.8	0.00	0.00	0.02	0.10	101	11
120	9.70	9.69	34.042	26.259	177.9	0.294	1.95	85.0	30.4	31.4	2.20	26.4	0.00	0.00	0.02	0.09	121	10
125 ISL	9.41 D	9.40	34.016 D	26.286	175.3	0.302	2.07	D 90.2 D	32.2	32.0	2.22	26.7	0.02	0.00	0.02	0.08	126	
140	9.36	9.34	34.073	26.340	170.6	0.329	1.83	79.9	28.4	33.8	2.27	27.6	0.00	0.00	0.02	0.07	141	09
150 ISL	9.29 D	9.27	34.106 D	26.378	167.2	0.345	1.74	D 75.5 D	26.9	34.7	2.31	27.9	0.02	0.00	0.02	0.07	151	
170	9.31	9.29	34.175	26.429	162.8	0.379	1.52	66.4	23.6	36.5	2.39	28.5	0.00	0.00	0.02	0.06	171	08
200	9.05	9.03	34.217	26.504	156.3	0.427	1.26	55.1	19.5	39.5	2.49	29.6	0.00	0.00	0.01	0.06	202	07
230	8.70	8.67	34.199	26.547	152.7	0.473	1.22	53.4	18.7	42.3	2.54	30.7	0.00	0.00			232	06
250 ISL	8.59 D	8.56	34.221 D	26.581	149.8	0.504	1.13	D 48.9 D	17.2	44.2	2.59	31.3	0.02	0.00			252	
270	8.38	8.35	34.216	26.610	147.3	0.533	1.04	45.4	15.8	46.0	2.63	32.0	0.00	0.09			272	05
300 ISL	8.13 D	8.10	34.241 D	26.668	142.4	0.577	0.89	D 38.7 D	13.4	49.0	2.71	32.9	0.02	0.08			302	
320	7.97	7.94	34.251	26.700	139.6	0.605	0.79	34.4	11.9	51.0	2.76	33.5	0.00	0.07			323	04
380	7.47	7.44	34.265	26.784	132.3	0.687	0.61	26.6	9.1	57.0	2.89	34.8	0.00	0.00			383	03
400 ISL	7.33 D	7.29	34.270 D	26.808	130.3	0.715	0.57	D 24.8 D	8.5	59.1	2.92	35.3	0.01	0.00			403	
440	7.06	7.01	34.279	26.855	126.3	0.764	0.50	21.6	7.3	63.4	2.98	36.2	0.00	0.00			444	02
500 ISL	6.62 D	6.57	34.289 D	26.923	120.4	0.841	0.40	D 17.2 D	5.8	69.1	3.09	37.9	0.01	0.00			504	
514	6.53	6.48	34.290	26.935	119.4	0.855	0.37	16.2	5.4	70.4	3.11	38.3	0.00	0.09			518	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV SALLY RIDE CALCOFI CRUISE 1708 STATION 80.0 70.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
33 49.0 N	121 50.7 W	12/08/2017	0553	UTC	3637 m	330 17 kn			1012.0 mb	16.8 C	16.0 C				053

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3* µM	PO4* µM	NO3* µM	NO2* µM	NH4* µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0	17.65	17.65	33.502	24.211	369.9	0.000	5.68	247.7	104.2	0.5	0.23	0.0	0.01	0.15	0.35	0.12	0	
3	17.65	17.65	33.502	24.211	370.0	0.011	5.68	247.7	104.2	0.5	0.23	0.0	0.00	0.15	0.35	0.12	3	22
10	17.65	17.65	33.497	24.207	370.7	0.037	5.66	246.9	103.9	0.4	0.23	0.0	0.00	0.00	0.37	0.12	10	20
10	17.65	17.65	33.496	24.206	370.8	0.036											10	21
20 ISL	17.65 D	17.65	33.495 D	24.206	371.2	0.069	5.68	D247.5	D104.2	0.5	0.23	0.0	0.00	0.00	0.36	0.11	20	
21	17.66	17.65	33.497	24.207	371.1	0.078	5.65	246.4	103.6	0.5	0.23	0.0	0.00	0.00	0.36	0.10	21	19
30 ISL	17.37 D	17.37	33.509 D	24.285	364.0	0.106	5.71	D249.0	D104.2	0.5	0.27	0.1	0.01	0.00	0.44	0.14	30	
31	17.35	17.35	33.503	24.285	364.0	0.115	5.66	247.1	103.3	0.5	0.27	0.1	0.00	0.14	0.45	0.14	31	18
40	14.43	14.43	33.491	24.933	302.4	0.145	5.47	238.5	94.1	3.0	0.69	4.3	0.47	1.45	0.79	0.42	40	16
41	14.25	14.24	33.488	24.970	299.0	0.147											41	17
50 ISL	12.52 D	12.51	33.481 D	25.314	266.4	0.169	4.91	D213.8	D 81.2	7.8	1.08	10.2	0.80	0.91	0.31	0.24	50	
51	12.47	12.47	33.499	25.336	264.2	0.176	4.77	208.0	78.8	8.3	1.12	10.8	0.83	0.86	0.26	0.22	51	15
61	11.12	11.11	33.555	25.632	236.2	0.201	4.09	178.6	65.8	13.2	1.44	17.0	0.05	0.00	0.15	0.14	61	14
71	10.52	10.51	33.590	25.766	223.7	0.224	3.82	166.5	60.5	17.3	1.61	19.6	0.03	0.00	0.07	0.09	72	13
75 ISL	10.31 D	10.30	33.607 D	25.815	219.1	0.229	3.75	D163.4	D 59.3	18.9	1.70	20.7	0.03	0.00	0.06	0.09	76	
85	9.98	9.97	33.718	25.957	205.8	0.254	3.12	136.0	48.9	23.0	1.92	23.6	0.00	0.00	0.03	0.07	86	12
100	9.58	9.56	33.792	26.083	194.1	0.284	2.75	119.8	42.7	26.4	2.02	25.3	0.00	0.09	0.01	0.05	101	11
120	9.05	9.04	33.876	26.234	180.1	0.321	2.66	116.1	40.9	29.4	2.05	26.2	0.00	0.00	0.01	0.07	121	10
125 ISL	9.02 D	9.01	33.913 D	26.268	177.0	0.327	2.59	D112.6	D 39.8	30.2	2.08	26.5	0.01	0.00	0.01	0.07	126	
141	8.81	8.79	33.955	26.335	170.9	0.358	2.38	103.6	36.4	32.6	2.17	27.4	0.00	0.00	0.01	0.08	142	09
150 ISL	8.70 D	8.68	33.969 D	26.364	168.3	0.370	2.56	D111.3	D 39.1	33.5	2.15	27.5	0.01	0.00	0.01	0.07	151	
170	8.15	8.13	33.967	26.446	160.7	0.406	2.76	120.4	41.6	35.6	2.11	27.7	0.00	0.00	0.00	0.04	171	08
200	7.87	7.85	34.018	26.528	153.4	0.453	2.20	96.1	33.0	41.1	2.32	30.2	0.00	0.00	0.00	0.04	202	07
230	7.39	7.37	34.010	26.591	147.7	0.498	2.19	95.4	32.4	45.1	2.38	31.2	0.05	0.00			232	06
250 ISL	7.14 D	7.11	34.016 D	26.631	144.2	0.526	2.07	D 89.8	D 30.4	48.7	2.48	32.4	0.04	0.00			252	
270	6.84	6.82	34.028	26.681	139.6	0.556	1.77	77.3	26.0	52.4	2.58	33.7	0.03	0.00			272	05
300 ISL	6.53 D	6.50	34.041 D	26.734	134.9	0.596	1.59	D 69.0	D 23.1	57.3	2.70	35.2	0.02	0.00			302	
321	6.37	6.34	34.064	26.773	131.3	0.625	1.28	55.7	18.5	60.7	2.79	36.3	0.00	0.00			324	04
380	5.98	5.94	34.108	26.859	123.8	0.700	0.87	37.8	12.4	69.3	2.98	38.5	0.00	0.00			383	03
400 ISL	5.88 D	5.84	34.125 D	26.885	121.6	0.725	0.77	D 33.6	D 11.1	71.6	3.03	38.9	0.01	0.00			403	
440	5.72	5.68	34.163	26.936	117.2	0.773	0.56	24.3	7.9	76.4	3.13	39.7	0.00	0.00			444	02
500 ISL	5.46 D	5.41	34.224 D	27.017	110.1	0.841	0.36	D 15.8	D 5.2	83.1	3.23	40.7	0.01	0.00			504	
516	5.43	5.38	34.236	27.030	109.0	0.858	0.33	14.2	4.6	84.9	3.26	40.9	0.00	0.00			520	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; SECONDARY CRUISE-CORRECTED O2;

RV SALLY RIDE CALCOFI CRUISE 1708 STATION 80.0 80.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
33 29.0 N	122 32.0 W	12/08/2017	1225	UTC	3964 m	330 19 kn			1012.9 mb	16.3 C	15.2 C				054

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3* µM	PO4* µM	NO3* µM	NO2* µM	NH4* µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0	16.83	16.83	33.233	24.199	371.1	0.000	5.76	251.3	103.8	1.3	0.27	0.1	0.03	0.06	0.29	0.10	0	
2	16.83	16.83	33.233	24.199	371.1	0.007	5.76	251.3	103.8	1.3	0.27	0.1	0.03	0.06	0.29	0.10	2	22
10 ISL	16.83 D	16.83	33.233 D	24.200	371.4	0.034	5.80	D252.9	D104.6	1.3	0.28	0.2	0.02	0.12	0.31	0.08	10	
10	16.83	16.83	33.233	24.200	371.4	0.038											10	21
11	16.83	16.83	33.232	24.199	371.4	0.041	5.78	252.4	104.3	1.3	0.28	0.2	0.00	0.13	0.32	0.07	11	20
20	16.83	16.82	33.233	24.202	371.5	0.074	5.75	250.8	103.6	1.3	0.27	0.2	0.00	0.07	0.30	0.08	20	19
30	16.77	16.77	33.234	24.216	370.5	0.111	5.79	252.7	104.3	1.4	0.27	0.2	0.00	0.08	0.31	0.08	30	18
40	15.39	15.38	33.278	24.564	337.7	0.147	6.16	268.7	107.9	1.2	0.33	0.8	0.08	0.26	0.51	0.20	40	16
40	15.39	15.38	33.276	24.563	337.8	0.148											40	17
50	14.61	14.60	33.445	24.862	309.6	0.179	5.94	259.1	102.6	1.7	0.50	2.1	0.17	0.87	0.47	0.35	50	15
60	14.18	14.17	33.465	24.968	299.8	0.210	5.60	244.2	95.8	2.7	0.69	3.6	0.41	2.02	0.32	0.21	60	14
70	13.58	13.57	33.466	25.094	288.0	0.239	5.40	235.5	91.3	3.9	0.81	4.9	0.57	2.33	0.18	0.13	71	13
75 ISL	13.06 D	13.05	33.466 D	25.197	278.3	0.251	5.14	D223.8	D 86.0	6.7	0.98	8.5	0.40	0.00	0.15	0.12	76	
85	11.54	11.53	33.479	25.498	249.6	0.280	4.47	194.9	72.4	12.2	1.31	15.5	0.05	0.00	0.07	0.10	86	12
100	10.71	10.70	33.593	25.735	227.3	0.315	3.76	164.0	59.9	17.9	1.61	20.0	0.04	0.00	0.03	0.08	101	11
120	9.87	9.86	33.699	25.962	206.1	0.359	3.17	138.2	49.6	23.1	1.87	23.6	0.03	0.00	0.01	0.07	121	10
125 ISL	9.81 D	9.79	33.701 D	25.975	205.0	0.368	3.21	D139.7	D 50.2	23.9	1.89	23.9	0.03	0.00	0.01	0.08	126	
140	9.50	9.48	33.770	26.080	195.2	0.399	2.89	125.9	44.8						0.01	0.08	141	09
150 ISL	9.33 D	9.31	33.823 D	26.150	188.8	0.417	2.77	D120.6	D 42.9	27.8	2.00	25.5	0.03	0.00	0.01	0.08	151	
170	8.93	8.91	33.906	26.278	177.0	0.455	2.61	113.9	40.1	30.9	2.08	26.9	0.03	0.00	0.01	0.09	171	08
200	8.66	8.64	34.011	26.404	165.6	0.506	2.15	93.6	32.7	35.7	2.26	28.6	0.03	0.00	0.01	0.07	202	07
230	8.15	8.13	34.052	26.514	155.5	0.554	1.92	83.9	29.0	40.8	2.37	30.4	0.05	0.00			232	06
250 ISL	7.96 D	7.93	34.059 D	26.549	152.4	0.585	1.86	D 80.8	D 27.9	43.4	2.45	31.4	0.04	0.00			252	
270	7.74	7.72	34.089	26.604	147.5	0.615	1.59	69.2	23.7	46.1	2.53	32.4	0.04	0.00			272	05
300 ISL	7.15 D	7.12	34.037 D	26.647	143.5	0.660	1.78	D 77.6	D 26.3	50.7	2.59	33.6	0.03	0.00			302	
320	6.86	6.83	34.056	26.702	138.5	0.686	1.57	68.6	23.0	53.8	2.63	34.4	0.00	0.00			323	04
380	6.45	6.42	34.124	26.811	128.8	0.766	0.90	39.2	13.0	64.9	2.93	37.5	0.00	0.00			383	03
400 ISL	6.45 D	6.42	34.162 D	26.841	126.3	0.795	0.75	D 32.5	D 10.8	67.8	2.98	38.1	0.01	0.00			403	
440	5.96	5.92	34.169	26.911	119.8	0.842	0.61	26.6	8.7	73.6	3.08	39.4	0.00	0.00			444	02
500 ISL	5.56 D	5.51	34.191 D	26.978	113.8	0.915	0.46	D 20.2	D 6.6	81.6	3.19	40.8	0.01	0.00			504	
516	5.45	5.40	34.204	27.003	111.6	0.930	0.43	18.6	6.1	83.8	3.22	41.2	0.00	0.00			520	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV SALLY RIDE CALCOFI CRUISE 1708 STATION 80.0 90.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
33 9.1 N	123 13.3 W	12/08/2017	1838	UTC	4266 m	330 19 kn	330 06 07	2	1015.3 mb	17.3 C	16.8 C	22 m	8/8	SC	055

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3* µM	PO4* µM	NO3* µM	NO2* µM	NH4* µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0	18.28	18.28	33.328	23.924	397.3	0.000	5.48	239.3	101.7	2.0	0.22	0.0	0.01	0.01	0.08	0.01	0	
3 A	18.28	18.28	33.328	23.925	397.3	0.012	5.48	239.3	101.7	2.0	0.22	0.0	0.00	0.00	0.08	0.01	3	24
10 A	18.28	18.28	33.331	23.928	397.3	0.040	5.54	241.7	102.8	2.1	0.21	0.0	0.00	0.00	0.08	0.02	10	22
10	18.28	18.28	33.329	23.926	397.5	0.041											10	23
16 A	18.27	18.27	33.328	23.927	397.6	0.064	5.47	238.5	101.4	2.0	0.22	0.0	0.00	0.00	0.08	0.02	16	21
20 ISL	18.27 D	18.27	33.327 D	23.927	397.8	0.074	5.50	D239.8	D102.0	2.0	0.22	0.0	0.01	0.00	0.08	0.02	20	
30 ISL	18.27 D	18.27	33.328 D	23.928	398.0	0.114	5.49	D239.5	D101.9	2.1	0.22	0.0	0.02	0.00	0.08	0.02	30	
32 A	18.27	18.27	33.330	23.930	398.0	0.127	5.48	239.4	101.8	2.1	0.22	0.0	0.00	0.26	0.08	0.02	32	20
44	18.03	18.02	33.370	24.023	389.6	0.175	5.53	241.2	102.1	2.0	0.20	0.0	0.00	0.00	0.10	0.03	44	19
50 ISL	17.20 D	17.20	33.421 D	24.259	367.2	0.193	5.79	D252.4	D105.3	2.1	0.19	0.0	0.01	0.00	0.11	0.03	50	
57 A	16.34	16.33	33.429	24.467	347.6	0.223	5.88	256.7	105.2	2.2	0.18	0.0	0.00	0.00	0.12	0.04	57	18
69 A	15.54	15.53	33.532	24.726	323.2	0.263	5.90	257.5	103.9	2.4	0.17	0.0	0.00	0.00	0.16	0.05	70	17
75 ISL	15.20 D	15.19	33.524 D	24.796	316.8	0.278	5.98	D260.7	D104.6	2.5	0.19	0.0	0.01	0.00	0.19	0.08	76	
77	14.49	14.48	33.481	24.915	305.3	0.288	6.00	261.7	103.4	2.5	0.19	0.0	0.00	0.00	0.20	0.09	78	16
85	13.97	13.96	33.351	24.924	304.6	0.313	6.00	261.9	102.3	2.5	0.22	0.0	0.00	0.00	0.23	0.13	86	15
95	14.03	14.02	33.512	25.038	294.2	0.342											96	14
97	14.16	14.15	33.497	24.999	298.0	0.348	5.88	256.4	100.6	2.7	0.22	0.0	0.00	0.00	0.31	0.23	98	13
100 ISL	13.87 D	13.86	33.515 D	25.073	291.0	0.354	5.86	D255.2	D 99.7	2.8	0.24	0.2	0.05	0.00	0.29	0.23	101	
105	13.47	13.45	33.438	25.096	288.8	0.372	5.78	252.0	97.4	2.9	0.28	0.5	0.10	0.10	0.26	0.22	106	12
115	12.71	12.70	33.353	25.180	281.0	0.400	5.73	250.2	95.2	3.3	0.35	1.3	0.21	0.00	0.23	0.18	116	11
125	12.47	12.45	33.371	25.241	275.4	0.428	5.64	246.3	93.2	3.6	0.38	2.0	0.22	0.00	0.19	0.18	126	10
140	11.46	11.45	33.434	25.480	252.8	0.468	5.22	227.6	84.4	7.0	0.71	7.6	0.03	0.00	0.09	0.14	141	09
150 ISL	10.82 D	10.80	33.512 D	25.656	236.2	0.490	4.93	D214.7	D 78.7	10.1	0.90	10.6	0.02	0.00	0.07	0.10	151	
165	9.92	9.90	33.602	25.881	214.8	0.526	4.51	196.7	70.6	14.8	1.19	15.0	0.00	0.06	0.02	0.04	166	08
195	9.05	9.02	33.775	26.159	188.8	0.587	3.32	145.0	51.1	25.1	1.78	23.4	0.00	0.00	0.00	0.02	197	07
200 ISL	9.05 D	9.03	33.809 D	26.184	186.5	0.593	3.26	D142.0	D 50.2	26.2	1.82	23.8	0.01	0.00			202	
230	8.56	8.53	33.954	26.376	168.8	0.650	2.68	116.9	40.8	32.7	2.05	26.8	0.00	0.00			232	06
250 ISL	8.22 D	8.20	33.973 D	26.442	162.8	0.681	2.73	D118.7	D 41.2	35.1	2.08	27.5	0.01	0.00			252	
270	7.99	7.96	33.992	26.492	158.3	0.715	2.69	117.3	40.4	37.4	2.11	28.1	0.00	0.00			272	05
300 ISL	7.67 D	7.64	34.034 D	26.571	151.1	0.760	2.06	D 89.8	D 30.8	43.4	2.33	30.7	0.01	0.00			302	
320	7.45	7.42	34.055	26.621	146.6	0.791	1.78	77.4	26.3	47.3	2.47	32.4	0.00	0.00			323	04
381	6.56	6.52	34.085	26.767	133.1	0.876	1.17	50.9	17.0	60.3	2.77	36.7	0.00	0.00			384	03
400 ISL	6.33 D	6.29	34.091 D	26.801	129.9	0.901	1.05	D 45.8	D 15.2	63.2	2.84	37.3	0.01	0.00			403	
440	6.17	6.14	34.150 D	26.869	124.0	0.952	0.71	31.1	10.3	69.1	2.98	38.5	0.00	0.00			444	02
500 ISL	5.81 D	5.76	34.194 D	26.951	116.7	1.025	0.50	D 21.7	D 7.1	76.5	3.10	39.8	0.01	0.00			504	
517	5.83	5.78	34.228	26.976	114.7	1.042	0.42	18.4	6.0	78.5	3.14	40.2	0.00	0.00			521	01

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.
D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; SECONDARY CRUISE-CORRECTED O2;

RV SALLY RIDE CALCOFI CRUISE 1708 STATION 80.0 100.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
32 49.0 N	123 54.5 W	13/08/2017	0032	UTC	4427 m	340 17 kn	350 05 05	2	1015.1 mb	18.4 C	16.6 C	20 m	8/8	SC	056

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3* µM	PO4* µM	NO3* µM	NO2* µM	NH4* µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0	18.58	18.58	33.241	23.783	410.8	0.000	5.49	239.5	102.4	1.8	0.25	0.0	0.01	0.06	0.14	0.02	0	
3	18.58	18.58	33.241	23.783	410.9	0.012	5.49	239.5	102.4	1.8	0.25	0.0	0.00	0.06	0.14	0.02	3	22
10	18.58	18.58	33.242	23.785	411.0	0.041	5.47	238.5	102.0	1.8	0.27	0.0	0.00	0.19	0.15	0.03	10	20
10	18.58	18.58	33.240	23.784	411.1	0.042											10	21
20 ISL	18.58 D	18.57	33.239 D	23.785	411.4	0.077	5.46	238.4	101.9	1.8	0.26	0.0	0.01	0.00	0.14	0.01	20	
25	18.58	18.57	33.241	23.787	411.4	0.103	5.46	238.5	101.9	1.8	0.25	0.0	0.00	0.00	0.14	0.00	25	19
30 ISL	18.57 D	18.56	33.239 D	23.788	411.5	0.118	5.54	D241.5	D103.2	1.8	0.25	0.0	0.01	0.00	0.17	0.01	30	
40	17.67	17.66	33.192	23.973	394.2	0.164	5.66	246.9	103.7	1.8	0.26	0.0	0.00	0.07	0.24	0.01	40	18
50	16.69	16.68	33.217	24.223	370.6	0.202	5.91	258.0	106.3	1.7	0.27	0.0	0.00	0.00	0.28	0.03	50	17
62	15.88	15.87	33.227	24.416	352.5	0.245	6.01	262.1	106.3	1.7	0.29	0.0	0.00	0.00	0.39	0.11	62	16
75	14.91	14.90	33.257	24.654	330.2	0.290	5.97	260.4	103.5	1.9	0.32	0.2	0.05	0.20	0.63	0.14	76	14
75	14.91	14.90	33.249	24.647	330.9	0.288											76	15
87	13.87	13.86	33.252	24.869	309.9	0.328	5.78	252.5	98.3	2.6	0.39	1.2	0.22	0.28	0.53	0.25	88	13
100	13.29	13.27	33.279	25.009	296.9	0.368	5.41	236.3	90.9	3.9	0.60	4.8	0.13	0.00	0.36	0.12	101	12
112	12.74	12.72	33.382	25.198	279.2	0.402	5.02	219.1	83.4	5.3	0.84	8.5	0.03	0.00	0.16	0.08	113	11
124	12.16	12.15	33.391	25.315	268.2	0.435	4.75	207.1	77.9	8.2	0.99	10.9	0.03	0.00	0.10	0.06	125	10
125 ISL	11.78 D	11.76	33.394 D	25.390	261.0	0.435	4.71	205.2	76.7	8.5	1.01	11.2	0.03	0.00	0.09	0.06	126	
140	10.92	10.91	33.488	25.618	239.5	0.475	4.19	183.0	67.0	13.9	1.33	15.9	0.03	0.09	0.03	0.04	141	09
150 ISL	10.36 D	10.35	33.538 D	25.755	226.6	0.496	4.01	D174.6	D 63.4	16.0	1.40	17.3	0.03	0.10	0.03	0.04	151	
170	9.58	9.56	33.657	25.979	205.5	0.542	3.84	167.5	59.7	20.2	1.55	20.0	0.00	0.12	0.01	0.04	171	08
200	9.03	9.01	33.844	26.214	183.7	0.600	2.99	130.3	45.9	27.7	1.90	24.3	0.00	0.00	0.01	0.03	202	07
230	8.58	8.56	33.951	26.369	169.4	0.653	2.68	116.8	40.8	33.1	2.04	26.5	0.00	0.00			232	06
250 ISL	8.31 D	8.28	33.982 D	26.437	163.3	0.685	2.61	D113.4	D 39.5	35.8	2.12	27.5	0.02	0.00			252	
270	8.05	8.02	34.009	26.497	157.8	0.718	2.38	103.9	35.8	38.5	2.20	28.6	0.00	0.00			272	05
300 ISL	7.78 D	7.75	34.028 D	26.551	153.1	0.765	2.18	D 94.8	D 32.6	42.5	2.31	30.0	0.02	0.00			302	
320	7.53	7.50	34.038	26.596	149.1	0.795	1.99	86.8	29.6	45.2	2.39	31.0	0.00	0.00			323	04
380	7.09	7.05	34.112	26.717	138.3	0.881	1.17	50.9	17.2	55.1	2.69	34.4	0.00	0.00			383	03
400 ISL	6.92 D	6.89	34.119 D	26.746	135.8	0.910	1.09	D 47.3	D 16.0	57.7	2.76	35.3	0.02	0.00			403	
440	6.65	6.61	34.163	26.817	129.4	0.962	0.76	33.1	11.1	63.0	2.89	37.2	0.00	0.00			444	02
500 ISL	6.31 D	6.26	34.210 D	26.900	122.2	1.040	0.52	D 22.8	D 7.6	69.9	3.03	37.9	0.02	0.00			504	
515	6.23	6.19	34.218	26.917	120.7	1.055	0.47	20.5	6.8	71.6	3.06	38.1	0.00	0.00			519	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV SALLY RIDE CALCOFI CRUISE 1708 STATION 81.7 43.5

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
34 24.3 N	119 48.1 W	15/08/2017	1904	UTC	17 m	220 08 kn	240 01 06	1	1012.1 mb	17.8 C	17.0 C		3/8	SC	069

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3* µM	PO4* µM	NO3* µM	NO2* µM	NH4* µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0	18.59	18.59	33.453	23.942	395.6	0.000	6.13	267.7	114.6	2.1	0.14	0.0	0.01	0.02	1.75	0.36	0	
2	18.59	18.59	33.453	23.942	395.7	0.008	6.13	267.7	114.6	2.1	0.14	0.0	0.00	0.00	1.75	0.36	2	03
5	18.34	18.34	33.449	24.003	389.9	0.020	6.11	266.5	113.5	2.3	0.15	0.0	0.00	0.00	2.30	0.49	5	02
10	18.10	18.10	33.448	24.060	384.7	0.039	6.06	264.3	112.1	2.8	0.21	0.0	0.00	0.06	3.68	0.49	10	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV SALLY RIDE CALCOFI CRUISE 1708 STATION 81.8 46.9

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
34 16.4 N	120 1.1 W	15/08/2017	1518	UTC	578 m	310 07 kn	270 02 07	4	1011.6 mb	16.8 C	16.0 C	07 m	8/8	ST	068

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3* µM	PO4* µM	NO3* µM	NO2* µM	NH4* µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0	16.10	16.10	33.503	24.575	335.2	0.000	6.36	277.3	113.2	4.7	0.28	0.1	0.03	0.06	6.16	1.43	0	
2 A	16.10	16.10	33.503	24.575	335.3	0.007	6.36	277.3	113.2	4.7	0.28	0.1	0.03	0.06	6.16	1.43	2	24
5 A	15.68	15.67	33.503	24.670	326.3	0.017	6.31	275.5	111.5	5.0	0.33	0.1	0.04	0.06	9.64	1.60	5	23
6 A	15.39	15.39	33.503	24.733	320.4	0.020	6.32	275.9	111.0	5.1	0.31	0.1	0.03	0.00	10.46	1.72	6	22
10 A	14.47	14.47	33.506	24.936	301.2	0.032	5.66	247.1	97.6	8.3	0.66	4.9	0.13	0.10	4.75	1.24	10	21
19 A	13.12	13.11	33.510	25.217	274.7	0.058	4.79	209.0	80.3	10.2	0.99	9.9	0.27	0.15	1.34	0.56	19	20
20 ISL	13.01 D	13.01	33.512 D	25.239	272.6	0.058	4.70	D204.9 D	78.7	10.4	1.02	10.3	0.27	0.14	1.20	0.54	20	
23 A	12.79	12.78	33.515	25.286	268.2	0.069	4.51	196.7	75.0	10.9	1.10	11.4	0.30	0.11	0.79	0.49	23	19
30 ISL	12.04 D	12.03	33.523 D	25.438	254.0	0.085	4.03	D175.3 D	65.9	13.1	1.27	13.7	0.22	0.00	0.41	0.48	30	
31	12.00	12.00	33.524	25.444	253.4	0.090	3.94	172.1	64.6	13.4	1.29	14.0	0.21	0.00	0.35	0.48	31	18
40	11.33	11.32	33.552	25.591	239.6	0.112	3.45	150.6	55.7	16.7	1.48	16.6	0.07	0.00	0.11	0.19	40	17
50 ISL	10.53 D	10.52	33.649 D	25.810	219.0	0.133	3.19	D138.9 D	50.7	20.8	1.73	20.4	0.07	0.00	0.07	0.14	50	
51	10.30	10.30	33.664	25.859	214.3	0.137	3.04	132.5	48.0	21.2	1.75	20.8	0.07	0.00	0.07	0.14	51	16
60	9.93	9.93	33.778	26.012	200.0	0.156	2.68	117.0	42.0	26.2	1.96	23.4	0.08	0.00	0.03	0.16	60	15
70	9.89	9.88	33.794	26.032	198.3	0.176	2.66	116.1	41.7	26.3	1.97	23.7	0.07	0.00	0.03	0.13	71	14
75 ISL	9.85 D	9.84	33.803 D	26.046	197.1	0.184	2.72	D118.2 D	42.5	26.6	1.98	23.9	0.06	0.00	0.02	0.12	76	
100	9.74	9.72	33.894	26.137	189.0	0.234	2.48	108.1	38.7	27.9	2.05	24.8	0.04	0.00	0.02	0.07	101	13
120	9.64	9.63	33.926	26.178	185.6	0.271	2.39	104.0	37.2	28.9	2.08	25.2	0.04	0.00	0.01	0.06	121	12
125 ISL	9.64 D	9.62	33.934 D	26.185	185.0	0.279	2.42	D105.2 D	37.7	29.4	2.12	25.5	0.03	0.00	0.01	0.07	126	
140	9.76	9.74	34.009	26.224	181.7	0.308	1.98	86.5	31.0	30.8	2.22	26.2	0.00	0.00	0.01	0.07	141	11
150 ISL	9.76 D	9.75	34.060 D	26.264	178.2	0.325	1.79	D 77.7 D	27.9	31.8	2.26	26.6	0.02	0.00	0.01	0.08	151	
170	9.62	9.60	34.097	26.318	173.5	0.361	1.61	70.4	25.2	33.8	2.35	27.5	0.00	0.00	0.01	0.08	171	10
200	9.35	9.33	34.137	26.394	166.9	0.412	1.36	59.2	21.0	36.6	2.46	28.9	0.00	0.00	0.01	0.09	202	09
230	9.08	9.05	34.170	26.464	160.7	0.461	1.12	48.7	17.2	40.1	2.56	30.2	0.00	0.00			232	08
250 ISL	8.94 D	8.92	34.184 D	26.497	158.0	0.494	1.06	D 46.2 D	16.3	42.2	2.61	30.7	0.02	0.00			252	
270	8.76	8.73	34.194	26.534	154.8	0.525	0.96	41.8	14.7	44.3	2.66	31.2	0.00	0.00			272	07
300 ISL	8.60 D	8.56	34.198 D	26.564	152.5	0.572	0.90	D 39.0 D	13.7	48.0	2.73	31.8	0.02	0.00			302	
320	8.34	8.31	34.200	26.605	148.9	0.601	0.78	34.1	11.9	50.5	2.77	32.3	0.00	0.00			323	06
379	7.61	7.57	34.210	26.722	138.3	0.685	0.49	21.5	7.4	61.4	2.98	33.8	0.00	0.00			382	05
400 ISL	7.40 D	7.36	34.223 D	26.762	134.7	0.717	0.41	D 18.0 D	6.1	67.2	3.07	33.2	0.02	0.00			403	
440	6.97	6.93	34.232	26.829	128.6	0.767	0.15	6.3	2.1	78.2	3.23	32.2	0.00	0.00			444	04
479	6.79	6.74	34.240	26.861	126.1	0.817	0.07	3.2	1.1	86.6	3.37	29.7	0.00	0.00			483	03
500 ISL	6.70 D	6.66	34.247 D	26.878	124.7	0.846	0.05 D	2.0 D	0.7	96.7	3.55	24.5	0.02	0.00			504	
514	6.69	6.65	34.245	26.878	125.0	0.860	0.02	0.7	0.2	103.4	3.67	21.0	0.03	0.00			518	02
571	6.65	6.59	34.246	26.887	125.0	0.932	0.05	2.0	0.7	110.5	3.85	15.7	0.55	0.00			576	01

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.
B) SANTA BARBARA BASIN STATION.
D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV SALLY RIDE CALCOFI CRUISE 1708 STATION 83.3 39.4

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
34 15.9 N	119 19.8 W	16/08/2017	0134	UTC	20 m	260 09 kn	270 01 05	1	1010.4 mb	20.0 C	18.0 C		1/8	ST	072

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3* µM	PO4* µM	NO3* µM	NO2* µM	NH4* µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0	18.33	18.33	33.460	24.014	388.7	0.000	6.15	268.2	114.3	2.1	0.16	0.1	0.03	0.08	1.57	0.52	0	
2	18.33	18.33	33.460	24.014	388.8	0.008	6.15	268.2	114.3	2.1	0.16	0.1	0.03	0.08	1.57	0.52	2	03
5	17.00	17.00	33.449	24.325	359.2	0.019	6.11	266.7	110.7	2.5	0.17	0.2	0.03	0.00	1.36	0.41	5	02
10	16.17	16.17	33.410	24.488	343.9	0.037	6.03	263.2	107.5	4.6	0.35	0.1	0.07	0.07	2.89	1.11	10	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV SALLY RIDE CALCOFI CRUISE 1708 STATION 83.3 40.6

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
34 13.5 N	119 24.7 W	15/08/2017	2355	UTC	36 m	280 10 kn	270 01 07	1	1010.8 mb	19.0 C	17.5 C	14 m	1/8	ST	071

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3* µM	PO4* µM	NO3* µM	NO2* µM	NH4* µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0	19.31	19.31	33.423	23.738	415.0	0.000	5.66	247.0	107.2	1.6	0.23	0.3	0.01	0.09	0.36	0.09	0	
2	19.31	19.31	33.423	23.738	415.1	0.008	5.66	247.0	107.2	1.6	0.23	0.3	0.00	0.09	0.36	0.09	2	06
5	18.35	18.35	33.421	23.978	392.3	0.020	5.89	D256.9 D	109.5	1.5	0.21	0.1	0.00	0.00	0.38	0.11	5	05
10	17.28	17.27	33.388	24.214	370.0	0.040	5.96	260.0	108.5	2.3	0.26	0.1	0.03	0.00	1.12	0.35	10	03
10	17.28	17.27	33.390	24.216	369.9	0.038											10	04
20	14.99	14.98	33.384	24.731	321.0	0.074	5.78	252.2	100.5	4.4	0.43	1.6	0.14	0.10	1.57	0.53	20	02
30	13.79	13.79	33.372	24.974	298.2	0.105	5.30	231.5	90.1	6.5	0.68	4.4	0.29	0.18	1.04	0.50	30	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV SALLY RIDE CALCOFI CRUISE 1708 STATION 83.3 42.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
34 10.7 N	119 30.5 W	15/08/2017	2125	UTC	141 m	250 10 kn	270 01 05	1	1011.7 mb	19.0 C	18.1 C	14 m	1/8	SC	070

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3* µM	PO4* µM	NO3* µM	NO2* µM	NH4* µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0	18.84	18.84	33.426	23.860	403.4	0.000	5.70	248.9	107.1	1.3	0.18	0.0	0.01	0.22	0.42	0.16	0	
2	18.84	18.84	33.426	23.860	403.5	0.008	5.70	248.9	107.1	1.3	0.18	0.0	0.00	0.22	0.42	0.16	2	14
5	18.69	18.69	33.416	23.891	400.6	0.020	5.71	249.4	106.9	1.4	0.19	0.0	0.00	0.00	0.46	0.16	5	13
10	18.62	18.62	33.411	23.905	399.5	0.040	5.78	252.1	108.0	1.4	0.20	0.0	0.00	0.13	0.49	0.19	10	11
10	18.62	18.62	33.411	23.905	399.5	0.041											10	12
20	17.65	17.64	33.396	24.133	378.1	0.079	5.81	253.4	106.5	1.9	0.25	0.3	0.03	0.11	1.01	0.37	20	10
30	15.24	15.23	33.351	24.653	328.9	0.114	5.78	252.3	101.1	3.1	0.40	1.7	0.09	0.08	1.05	0.39	30	09
40	13.48	13.47	33.356	25.026	293.5	0.146	5.25	229.1	88.6	5.5	0.68	5.6	0.23	0.06	0.63	0.34	40	08
50	12.79	12.78	33.359	25.167	280.4	0.174	5.02	219.0	83.4	6.5	0.80	7.4	0.27	0.00	0.45	0.33	50	07
60	12.23	12.22	33.395	25.303	267.7	0.202	4.63	201.9	76.1	8.8	0.98	10.2	0.16	0.00	0.33	0.29	60	06
70	11.11	11.10	33.507	25.597	239.8	0.227	3.78	164.9	60.7	14.8	1.40	16.3	0.04	0.00	0.13	0.20	71	05
75 ISL	10.81 D	10.80	33.556 D	25.689	231.1	0.237	3.65	D158.8 D	58.2	17.1	1.53	18.1	0.04	0.00	0.10	0.17	76	
85	10.06	10.05	33.676	25.911	210.2	0.261	3.05	133.1	47.9	21.8	1.79	21.8	0.03	0.00	0.03	0.11	86	04
100	9.93	9.92	33.816	26.044	197.9	0.291	2.64	115.2	41.4	25.1	1.94	23.4	0.03	0.00	0.01	0.08	101	03
120	9.83	9.82	33.878	26.109	192.1	0.330	2.50	109.0	39.1	27.0	2.02	24.2	0.03	0.00	0.01	0.08	121	02
125 ISL	9.82 D	9.80	33.891 D	26.122	191.1	0.339	2.52	D109.8 D	39.5	27.2	2.04	24.3	0.03	0.00	0.01	0.08	126	
131	9.81	9.79	33.900	26.131	190.4	0.351	2.45	106.7	38.3	27.5	2.06	24.5	0.04	0.00	0.01	0.09	132	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV SALLY RIDE CALCOFI CRUISE 1708 STATION 83.3 51.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
33 52.7 N	120 8.1 W	11/08/2017	1704	UTC	97 m	290 16 kn	290 01 08	0	1012.0 mb	16.5 C	16.0 C	11 m	0/8		051

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3* µM	PO4* µM	NO3* µM	NO2* µM	NH4* µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0	15.61	15.61	33.453	24.647	328.4	0.000	5.44	237.3	95.8	4.5	0.48	3.3	0.13	0.04	2.15	0.42	0	
2 A	15.61	15.61	33.453	24.647	328.5	0.007	5.44	237.3	95.8	4.5	0.48	3.3	0.13	0.00	2.15	0.42	2	14
6 A	15.57	15.57	33.448	24.652	328.1	0.020	5.44	237.4	95.8	4.7	0.50	3.3	0.14	0.00	2.00	0.44	6	13
8 A	15.53	15.52	33.447	24.661	327.3	0.026	5.45	237.8	95.9	4.4	0.48	3.3	0.12	0.00	2.10	0.49	8	12
10	15.52	15.52	33.439	24.656	327.8	0.033	5.46	238.5	96.1	4.3	0.48	3.2	0.12	0.00	2.20	0.52	10	10
10	15.52	15.52	33.439	24.656	327.8	0.033											10	11
16 A	14.51	14.50	33.428	24.868	307.8	0.052	5.22	227.6	89.9	5.4	0.63	5.6	0.17	0.00	2.02	0.56	16	08
16	14.51	14.50	33.429	24.869	307.8	0.052											16	09
20 ISL	12.99 D	12.99	33.441 D	25.189	277.4	0.061	4.94	D215.1 D	82.5	6.3	0.72	6.8	0.19	0.00	1.75	0.49	20	
28 A	12.73	12.72	33.432	25.234	273.3	0.086	4.69	204.8	77.9	8.1	0.91	9.3	0.22	0.00	1.22	0.37	28	07
30 ISL	12.72 D	12.72	33.429 D	25.233	273.4	0.089	4.73	D205.9 D	78.5	8.3	0.92	9.4	0.22	0.00	1.17	0.38	30	
34 A	12.64	12.63	33.433	25.252	271.7	0.102	4.60	200.9	76.3	8.8	0.94	9.7	0.21	0.00	1.07	0.41	34	06
42	12.60	12.59	33.483	25.299	267.5	0.124	4.37	190.6	72.4	11.0	1.04	10.9	0.19	0.00	0.98	0.37	42	05
50 ISL	12.53 D	12.53	33.522 D	25.343	263.6	0.143	4.25	D185.1 D	70.4	12.9	1.15	12.2	0.17	0.00	0.90	0.37	50	
51	12.42	12.42	33.531	25.370	261.0	0.148	4.08	178.1	67.4	13.1	1.16	12.4	0.17	0.06	0.89	0.37	51	04
60	10.39	10.39	33.732	25.898	210.9	0.169	2.79	121.5	44.1	23.4	1.84	21.9	0.06	0.00	0.08	0.14	60	03
70	10.00	10.00	33.843	26.051	196.5	0.189	2.50	108.8	39.2	26.4	2.00	23.9	0.03	0.00	0.03	0.10	71	02
75 ISL	9.94 D	9.93	33.888 D	26.098	192.2	0.197	2.39	D104.2 D	37.6	27.3	2.04	24.3	0.03	0.00	0.03	0.10	76	
85	9.85	9.84	33.933	26.149	187.6	0.218	2.22	96.6	34.7	29.1	2.12	25.2	0.04	0.00	0.02	0.10	86	01

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.
D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV SALLY RIDE CALCOFI CRUISE 1708 STATION 83.3 55.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
33 44.7 N	120 24.6 W	11/08/2017	1307	UTC	970 m	300 21 kn			1011.6 mb	15.7 C	15.2 C				050

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3* µM	PO4* µM	NO3* µM	NO2* µM	NH4* µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0	16.12	16.12	33.467	24.542	338.4	0.000	5.79	252.5	103.1	0.7	0.26	0.5	0.09	0.07	3.87	0.51	0	
3	16.12	16.12	33.467	24.542	338.5	0.010	5.79	252.5	103.1	0.7	0.26	0.5	0.09	0.07	3.87	0.51	3	21
10 ISL	16.12 D	16.12	33.466 D	24.542	338.7	0.029	5.82	D253.6 D	103.6	0.6	0.24	0.5	0.09	0.06	4.08	0.55	10	
11	16.12	16.12	33.467	24.542	338.7	0.037	5.80	253.0	103.2	0.6	0.24	0.5	0.09	0.06	4.11	0.55	11	19
11	16.12	16.12	33.467	24.543	338.7	0.036											11	20
20 ISL	16.09 D	16.08	33.470 D	24.554	338.0	0.063	5.73	D249.7 D	102.0	0.9	0.30	1.1	0.15	0.09	3.27	0.36	20	
21	16.06	16.05	33.473	24.563	337.1	0.071	5.68	248.0	101.1	0.9	0.31	1.2	0.15	0.09	3.17	0.34	21	18
30 ISL	14.43 D	14.43	33.474 D	24.920	303.3	0.095	5.32	D231.9 D	91.6	3.2	0.66	5.9	0.28	0.07	1.03	0.30	30	
31	13.53	13.53	33.464	25.098	286.3	0.103	5.17	225.4	87.3	3.5	0.70	6.4	0.29	0.07	0.79	0.30	31	17
41	12.54	12.54	33.450	25.284	268.9	0.131	4.73	206.6	78.3	7.4	1.05	12.0	0.08	0.00	0.34	0.21	41	16
50 ISL	11.58 D	11.57	33.469 D	25.481	250.3	0.150	4.54	D197.5 D	73.6	10.8	1.22	14.5	0.05	0.00	0.21	0.15	50	
51	11.61	11.60	33.470	25.478	250.7	0.157	4.51	196.8	73.2	11.1	1.24	14.8	0.05	0.00	0.20	0.14	51	15
61	10.72	10.71	33.541	25.692	230.4	0.181	4.11	179.4	65.5	15.7	1.45	17.9	0.04	0.00	0.08	0.10	61	14
71	10.63	10.62	33.553	25.717	228.3	0.204	4.04	176.4	64.2	16.3	1.48	18.3	0.03	0.00	0.07	0.08	72	13
75 ISL	10.62 D	10.61	33.563 D	25.728	227.4	0.209	4.04	D175.8 D	64.2	17.2	1.53	19.0	0.03	0.00	0.06	0.08	76	
86	10.19	10.18	33.627	25.851	215.9	0.237	3.67	159.9	57.7	19.8	1.67	21.0	0.03	0.00	0.03	0.07	87	12
100 ISL	9.91 D	9.89	33.691 D	25.950	206.8	0.263	3.37	D146.6 D	52.7	22.0	1.75	22.3	0.03	0.00	0.03	0.06	101	
101	9.94	9.93	33.685	25.940	207.8	0.269	3.29	143.6	51.6	22.1	1.76	22.4	0.03	0.00	0.03	0.06	102	11
120	9.39	9.38	33.787	26.110	191.9	0.307	2.91	126.7	45.0	26.4	1.92	24.8	0.03	0.00	0.02	0.07	121	10
125 ISL	9.17 D	9.15	33.852 D	26.197	183.7	0.313	2.71	D117.8 D	41.7	27.4	1.96	25.2	0.03	0.00	0.01	0.07	126	
141	8.99	8.98	33.901	26.264	177.7	0.346	2.46	107.1	37.7	30.9	2.09	26.8	0.00	0.00	0.01	0.06	142	09
150 ISL	8.86 D	8.85	33.940 D	26.315	173.0	0.358	2.42	D105.3 D	37.1	31.7	2.11	27.1	0.02	0.00	0.01	0.06	151	
170	8.73	8.71	33.958	26.351	170.0	0.396	2.35	102.4	35.9	33.5	2.14	27.8	0.03	0.00	0.01	0.05	171	08
200	8.70	8.68	34.085	26.455	160.7	0.446	1.80	78.4	27.5	37.5	2.34	29.1	0.03	0.00	0.01	0.05	202	07
230	8.22	8.19	34.122	26.560	151.2	0.492	1.46	63.9	22.1	43.0	2.49	31.3	0.03	0.00			232	06
250 ISL	8.40 D	8.37	34.234 D	26.621	145.9	0.520	1.02 D	44.5 D	15.5	45.4	2.60	31.9	0.05	0.00			252	
270	8.25	8.22	34.248	26.655	143.0	0.552	0.86	37.4	13.0	47.8	2.71	32.4	0.07	0.00			272	05
300 ISL	7.95 D	7.92	34.257 D	26.706	138.6	0.591	0.77 D	33.7 D	11.6	51.7	2.77	33.6	0.05	0.00			302	
320	7.62	7.58	34.239	26.742	135.3	0.622	0.75	32.7	11.2	54.2	2.81	34.3	0.04	0.00			323	04
380	7.39	7.36	34.264	26.795	131.3	0.702	0.59	25.7	8.8	58.1	2.89	35.2	0.00	0.00			383	03
400 ISL	7.32 D	7.29	34.271 D	26.810	130.1	0.726	0.57 D	24.9 D	8.5	60.0	2.92	35.6	0.02	0.00			403	
440	6.96	6.91	34.275	26.865	125.3	0.779	0.47	20.5	6.9	63.9	2.99	36.6	0.00	0.00			444	02
500 ISL	6.54 D	6.49	34.297 D	26.940	118.7	0.851	0.38 D	16.6 D	5.6	70.0	3.08	37.9	0.01	0.00			504	
516	6.48	6.43	34.297	26.947	118.2	0.871	0.35	15.0	5.0	71.6	3.10	38.3	0.00	0.00			520	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; SECONDARY CRUISE-CORRECTED O2;

RV SALLY RIDE CALCOFI CRUISE 1708 STATION 83.3 60.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
33 34.7 N	120 45.3 W	11/08/2017	0841	UTC	1366 m	310 18 kn			1012.1 mb	17.0 C	16.1 C				049

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3* µM	PO4* µM	NO3* µM	NO2* µM	NH4* µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0	17.66	17.66	33.487	24.197	371.2	0.000	5.58	243.7	102.5	0.4	0.24	0.0	0.00	0.05	0.32	0.10	0	
3	17.66	17.66	33.487	24.198	371.3	0.011	5.58	243.7	102.5	0.4	0.24	0.0	0.00	0.00	0.32	0.10	3	21
10 ISL	17.66 D	17.65	33.486 D	24.198	371.5	0.032	5.59	D243.8	D102.6	0.4	0.23	0.0	0.00	0.00	0.33	0.10	10	
11	17.66	17.65	33.486	24.198	371.5	0.039											10	20
11	17.66	17.66	33.487	24.198	371.6	0.041	5.58	243.3	102.3	0.4	0.23	0.0	0.00	0.00	0.33	0.10	11	19
20 ISL	17.65 D	17.65	33.487 D	24.200	371.7	0.069	5.58	D243.1	D102.3	0.4	0.23	0.0	0.00	0.00	0.32	0.09	20	
21	17.66	17.66	33.488	24.200	371.8	0.078	5.57	243.1	102.3	0.4	0.23	0.0	0.00	0.00	0.32	0.09	21	18
30	17.61	17.60	33.496	24.219	370.3	0.111	5.56	242.8	102.0	0.4	0.24	0.2	0.00	0.06	0.39	0.11	30	17
40	14.53	14.52	33.579	24.981	297.8	0.145	4.85	211.6	83.7	5.0	0.87	7.4	0.23	0.67	0.99	0.47	40	16
50	12.25	12.24	33.452	25.343	263.5	0.173	4.53	197.8	74.5	9.6	1.11	11.8	0.24	0.18	0.38	0.29	50	15
60	11.29	11.28	33.566	25.611	238.3	0.198	3.83	167.2	61.8	14.8	1.45	17.1	0.10	0.00	0.24	0.19	60	14
70	10.41	10.41	33.597	25.789	221.5	0.221	3.84	167.3	60.7	18.1	1.58	19.7	0.00	0.00	0.04	0.06	71	13
75 ISL	10.42 D	10.41	33.600 D	25.790	221.4	0.229	3.84	D167.3	D 60.8	18.8	1.60	20.1	0.01	0.00	0.03	0.06	76	
86	9.84	9.83	33.650	25.928	208.5	0.256	3.67	159.9	57.3	20.5	1.64	21.0	0.00	0.00	0.02	0.06	87	12
100	9.32	9.31	33.735	26.080	194.3	0.284	3.51	153.2	54.3	23.3	1.70	22.3	0.00	0.00	0.01	0.04	101	11
120	8.84	8.82	33.902	26.289	174.8	0.321	2.74	119.4	41.9	30.7	2.02	26.6	0.00	0.00	0.01	0.05	121	10
125 ISL	8.78 D	8.76	33.927 D	26.317	172.2	0.326	2.61	D113.7	D 40.0	31.8	2.06	27.1	0.00	0.00	0.01	0.04	126	
140	8.57	8.56	33.986	26.396	165.0	0.355	2.30	100.2	35.0	35.0	2.18	28.6	0.00	0.00	0.01	0.04	141	09
150 ISL	8.48 D	8.47	34.006 D	26.426	162.4	0.368	2.24	D 97.4	D 34.0	36.8	2.24	29.3	0.00	0.00	0.01	0.04	151	
170	8.14	8.12	34.047	26.510	154.6	0.403	1.94	84.5	29.2	40.3	2.35	30.7	0.00	0.00	0.01	0.04	171	08
200	8.09	8.07	34.137	26.589	147.8	0.448	1.40	60.9	21.1	44.8	2.54	32.0	0.00	0.00	0.01	0.04	202	07
230	8.14	8.11	34.229	26.655	142.2	0.492	0.93	40.7	14.1	48.7	2.72	32.8	0.00	0.00			232	06
250 ISL	7.97 D	7.94	34.246 D	26.695	138.7	0.518	0.82	D 35.5	D 12.3	51.4	2.79	33.6	0.01	0.00			252	
270	7.72	7.69	34.256	26.739	134.7	0.547	0.70	30.6	10.5	54.1	2.85	34.4	0.00	0.00			272	05
300 ISL	7.52 D	7.49	34.264 D	26.775	131.7	0.586	0.65	D 28.4	D 9.7	56.6	2.89	35.0	0.01	0.00			302	
320	7.41	7.38	34.267	26.793	130.3	0.613	0.61	26.5	9.0	58.3	2.91	35.4	0.00	0.00			323	04
380	7.07	7.03	34.278	26.851	125.6	0.690	0.50	21.8	7.4	63.4	3.00	36.5	0.00	0.00			383	03
400 ISL	7.04 D	7.00	34.278 D	26.855	125.6	0.715	0.50	D 21.5	D 7.3	65.5	3.04	36.9	0.01	0.00			403	
440	6.63	6.59	34.287	26.918	119.9	0.764	0.40	17.5	5.8	69.8	3.11	37.6	0.00	0.00			444	02
500 ISL	6.26 D	6.22	34.307 D	26.983	114.3	0.836	0.32	D 14.1	D 4.7	75.2	3.19	39.0	0.01	0.00			504	
516	6.19	6.14	34.310	26.996	113.3	0.853	0.29	12.5	4.1	76.6	3.21	39.3	0.00	0.00			520	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; SECONDARY CRUISE-CORRECTED O2;

RV SALLY RIDE CALCOFI CRUISE 1708 STATION 83.3 70.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
33 14.7 N	121 26.6 W	11/08/2017	0218	UTC	4072 m	320 16 kn	350 05 07	2	1013.2 mb	17.5 C	16.2 C		8/8	SC	048

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3* µM	PO4* µM	NO3* µM	NO2* µM	NH4* µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0	17.25	17.25	33.365	24.201	370.9	0.000	5.77	251.6	104.9	1.0	0.28	0.4	0.03	0.18	0.47	0.02	0	
2	17.25	17.25	33.365	24.201	370.9	0.007	5.77	251.6	104.9	1.0	0.28	0.4	0.03	0.18	0.47	0.02	2	21
10	17.25	17.25	33.356	24.195	371.8	0.037	5.71	249.3	103.9	1.0	0.29	0.4	0.00	0.15	0.32	0.07	10	19
11	17.25	17.25	33.359	24.197	371.7	0.039											10	20
20	17.25	17.24	33.361	24.200	371.7	0.074	5.75	250.9	104.6	0.9	0.28	0.3	0.00	0.15	0.53	0.02	20	18
30	15.28	15.27	33.351	24.643	329.8	0.109	5.98	260.9	104.6	1.4	0.37	1.4	0.12	0.37	0.71A	0.14A	30	17
40	14.23	14.22	33.284	24.817	313.4	0.142	6.09	265.9	104.3	2.0	0.45	2.6	0.16	0.42	0.37	0.15	40	16
50	13.03	13.02	33.189	24.988	297.4	0.172	5.85	255.3	97.6	3.9	0.59	4.1	0.28	0.52	0.49A	0.22A	50	15
60	13.22	13.21	33.492	25.185	278.9	0.201	5.29	230.9	88.9	6.4	0.91	7.6	0.58	1.59	0.24	0.12	60	14
70	12.26	12.25	33.497	25.377	260.8	0.228	4.71	205.4	77.5	10.6	1.15	12.5	0.47	0.49	0.18	0.10	71	13
75 ISL	11.19 D	11.18	33.533 D	25.603	239.3	0.239	4.30	D187.2	D 69.2	13.5	1.33	15.4	0.32	0.00	0.14	0.10	76	
85	10.66	10.65	33.647	25.786	222.2	0.263	3.42	149.3	54.5	19.4	1.68	21.2	0.03	0.00	0.06	0.10	86	12
100	10.03	10.02	33.680	25.920	209.7	0.296	3.37	146.9	52.9	21.7	1.72	22.4	0.00	0.00	0.03	0.06	101	11
120	9.23	9.22	33.723	26.086	194.1	0.336	3.96	172.7	61.1	21.5	1.50	20.3	0.00	0.00	0.02	0.04	121	10
125 ISL	9.19 D	9.17	33.751 D	26.115	191.5	0.345	3.80	D165.2	D 58.5	22.8	1.58	21.3	0.00	0.00	0.02	0.03	126	
140	9.00	8.98	33.817	26.198	183.9	0.374	3.21	140.2	49.4	26.7	1.80	24.2	0.00	0.00	0.01	0.03	141	09
150 ISL	8.97 D	8.96	33.851 D	26.228	181.3	0.392	3.01	D131.2	D 46.3	28.4	1.88	25.1	0.00	0.00	0.01	0.04	151	
170	8.59	8.57	33.939	26.358	169.2	0.427	2.60	113.6	39.6	31.7	2.04	26.9	0.00	0.00	0.01	0.05	171	08
200	8.09	8.07	33.975	26.462	159.8	0.477	2.87	125.4	43.3	36.1	2.02	27.7	0.00	0.00	0.00	0.03	202	07
230	7.69	7.66	34.001	26.542	152.6	0.524	2.50	108.8	37.2	41.3	2.18	29.9	0.00	0.00			232	06
250 ISL	7.44 D	7.41	34.007 D	26.583	148.9	0.554	2.38	D103.5	D 35.3	44.1	2.24	30.5	0.00	0.00			252	
270	7.14	7.11	33.998	26.617	145.8	0.583	2.33	101.7	34.3	47.0	2.29	31.2	0.00	0.00			272	05
300 ISL	6.76 D	6.74	34.002 D	26.672	140.9	0.628	2.05	D 89.1	D 29.9	52.8	2.48	33.6	0.00	0.00			302	
320	6.74	6.71	34.056	26.719	136.8	0.653	1.52	66.1	22.1	56.6	2.60	35.3	0.00	0.00			323	04
380	6.24	6.21	34.100	26.819	127.8	0.733	1.01	43.8	14.5	65.6	2.84	38.0	0.00	0.00			383	03
400 ISL	6.04 D	6.01	34.104 D	26.848	125.2	0.761	0.89	D 38.8	D 12.8	68.8	2.89	38.6	0.00	0.00			403	
440	5.77	5.73	34.143	26.913	119.4	0.807	0.67	29.0	9.5	75.1	2.99	39.8	0.00	0.00			444	02
500 ISL	5.40 D	5.36	34.192 D	26.998	111.8	0.880	0.45	D 19.6	D 6.4	83.5	3.10	41.1	0.00	0.00			504	
514	5.33	5.29	34.202	27.014	110.4	0.892	0.40	17.6	5.7	85.4	3.13	41.4	0.00	0.00			518	01

A) SECOND FLUOROMETER READING NOT RECORDED CHLOROPHYLL AND PHAEOPIGMENT CALCULATED WITH ASSUMED ACID RATIO INTERPOLATED FROM ADJACENT LEVELS
D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV SALLY RIDE CALCOFI CRUISE 1708 STATION 83.3 80.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
32 54.7 N	122 7.7 W	10/08/2017	2039	UTC	4200 m	320 16 kn	340 04 07	2	1015.7 mb	18.1 C	16.9 C	24 m	8/8	SC	047

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3* µM	PO4* µM	NO3* µM	NO2* µM	NH4* µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0	18.32	18.32	33.266	23.868	402.7	0.000	5.47	238.6	101.5	2.0	0.23	0.0	0.00	0.03	0.07	0.01	0	
3	18.32	18.32	33.266	23.868	402.8	0.012	5.47	238.6	101.5	2.0	0.23	0.0	0.00	0.00	0.07	0.01	3	21
10	18.32	18.32	33.268	23.869	402.9	0.040	5.46	238.4	101.4	2.0	0.23	0.0	0.00	0.00	0.07	0.01	10	19
10	18.32	18.32	33.268	23.869	403.0	0.040											10	20
20 ISL	18.31 D	18.31	33.267 D	23.871	403.1	0.075	5.47	238.6	101.5	2.0	0.23	0.0	0.00	0.00	0.07	0.01	20	
25	18.30	18.30	33.267	23.874	403.1	0.101	5.47	238.9	101.6	2.0	0.23	0.0	0.00	0.00	0.07	0.01	25	18
30 ISL	18.30 D	18.29	33.274 D	23.881	402.6	0.116	5.50	239.7	102.0	2.0	0.23	0.0	0.00	0.00	0.09	0.02	30	
40	17.95	17.95	33.271	23.964	395.0	0.161	5.54	241.8	102.1	2.0	0.23	0.0	0.00	0.00	0.12	0.02	40	17
50	16.63	16.62	33.290	24.292	364.0	0.199	5.85	255.3	105.1	2.0	0.23	0.0	0.00	0.00	0.13	0.03	50	16
62	15.78	15.77	33.548	24.686	326.8	0.240	5.92	258.2	104.7	2.2	0.17	0.0	0.00	0.00	0.14	0.03	62	15
75	15.39	15.37	33.574	24.794	317.0	0.282	5.90	257.3	103.5	2.2	0.16	0.0	0.00	0.00	0.18	0.05	76	14
87	14.70	14.69	33.635	24.991	298.5	0.319	5.79	252.7	100.3	2.4	0.19	0.0	0.00	0.14	0.25	0.14	88	13
100	14.09	14.07	33.670	25.148	283.9	0.357	5.57	243.1	95.4	3.0	0.29	0.8	0.11	0.12	0.25	0.21	101	12
112	12.45	12.43	33.453	25.308	268.6	0.390	5.42	236.7	89.6	4.2	0.47	3.3	0.13	0.00	0.22	0.20	113	11
125	11.47	11.45	33.437	25.479	252.5	0.424	5.07	221.2	82.0	6.9	0.73	7.6	0.00	0.00	0.14	0.15	126	10
140	10.37	10.35	33.481	25.710	230.7	0.460	4.61	201.3	72.9	11.8	1.09	13.0	0.00	0.00	0.08	0.08	141	09
150 ISL	10.03 D	10.01	33.584 D	25.849	217.6	0.479	4.36	D189.7 D	68.4	13.9	1.19	14.7	0.01	0.00	0.06	0.06	151	
170	9.49	9.48	33.661	25.997	203.8	0.525	4.19	182.9	65.0	17.9	1.39	18.1	0.00	0.00	0.02	0.03	171	08
200	8.96	8.94	33.821	26.207	184.3	0.584	3.70	161.3	56.7	24.7	1.68	22.3	0.00	0.00	0.00	0.02	202	07
230	8.54	8.51	33.945	26.372	169.2	0.637	2.76	120.2	41.9	32.4	2.03	27.0	0.00	0.00			232	06
250 ISL	8.25 D	8.22	34.004 D	26.463	160.8	0.666	2.38	D103.7 D	36.0	36.9	2.19	29.1	0.00	0.00			252	
269	7.98	7.95	34.047	26.537	154.0	0.700	1.95	84.9	29.2	41.2	2.34	31.0	0.00	0.00			271	05
300 ISL	7.66 D	7.63	34.059 D	26.593	149.0	0.744	1.76	D 76.7 D	26.3	45.7	2.47	32.5	0.00	0.00			302	
320	7.45	7.42	34.089	26.647	144.1	0.776	1.46	63.8	21.7	48.6	2.56	33.5	0.00	0.00			323	04
379	6.88	6.84	34.132	26.761	133.9	0.858	0.97	42.1	14.2	58.6	2.83	36.5	0.00	0.00			382	03
400 ISL	6.65 D	6.61	34.151 D	26.808	129.7	0.884	0.81	D 35.0 D	11.7	61.7	2.90	37.2	0.00	0.00			403	
439	6.34	6.30	34.183	26.873	123.8	0.935	0.60	26.1	8.7	67.4	3.02	38.6	0.00	0.00			443	02
500 ISL	5.96 D	5.92	34.235 D	26.964	115.7	1.008	0.41	D 17.9 D	5.9	75.4	3.12	40.0	0.00	0.00			504	
516	5.86	5.82	34.235	26.977	114.6	1.026	0.38	16.7	5.5	77.5	3.15	40.3	0.00	0.00			520	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV SALLY RIDE CALCOFI CRUISE 1708 STATION 83.3 90.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
32 34.2 N	122 48.6 W	10/08/2017	1551	UTC	4215 m	310 13 kn	340 04 06	2	1016.0 mb	17.8 C	16.6 C	24 m	8/8	SC	046

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3* µM	PO4* µM	NO3* µM	NO2* µM	NH4* µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0	18.48	18.48	33.221	23.794	409.7	0.000	5.46	238.2	101.6	1.9	0.25	0.0	0.01	0.02	0.11	0.02	0	
3 A	18.48	18.48	33.221	23.794	409.8	0.012	5.46	238.2	101.6	1.9	0.25	0.0	0.00	0.00	0.11	0.02	3	24
10 ISL	18.47 D	18.47	33.221 D	23.795	410.0	0.035	5.50	D240.1 D	102.4	1.9	0.25	0.0	0.01	0.00	0.10	0.02	10	
11	18.48	18.48	33.221	23.795	410.1	0.045	5.48	239.2	102.0	1.9	0.25	0.0	0.00	0.00	0.10	0.02	11	22
11	18.48	18.48	33.221	23.795	410.1	0.044											11	23
15 A	18.48	18.48	33.221	23.795	410.2	0.062	5.48	239.2	102.0	1.9	0.25	0.0	0.00	0.00	0.11	0.02	15	21
19 A	18.46	18.46	33.220	23.798	410.1	0.078	5.47	238.9	101.9	1.9	0.25	0.0	0.00	0.00	0.12	0.01	19	20
20 ISL	18.47 D	18.46	33.220 D	23.797	410.2	0.076	5.50	D240.0 D	102.4	1.9	0.25	0.0	0.01	0.00	0.12	0.01	20	
30 ISL	17.99 D	17.99	33.172 D	23.878	402.8	0.117	5.59	D243.9 D	103.1	2.0	0.26	0.0	0.01	0.00	0.13	0.02	30	
34 A	17.70	17.70	33.161	23.940	397.1	0.139	5.61	244.8	102.8	2.1	0.26	0.0	0.00	0.00	0.13	0.03	34	19
44	17.26	17.25	33.147	24.036	388.3	0.178	5.73	249.9	104.1	2.1	0.26	0.0	0.00	0.00	0.15	0.05	44	18
50 ISL	16.57 D	16.56	33.167 D	24.213	371.5	0.196	5.87	D255.8 D	105.2	2.2	0.25	0.0	0.01	0.00	0.20	0.03	50	
52	16.11	16.10	33.180	24.327	360.7	0.208	5.91	257.9	105.0	2.2	0.25	0.0	0.00	0.00	0.21	0.03	52	17
62 A	14.99	14.98	33.316	24.680	327.3	0.242	6.04	263.7	105.1	2.3	0.23	0.0	0.00	0.00	0.24	0.11	62	16
68	14.57	14.56	33.300	24.759	320.0	0.262	6.06	264.3	104.4	2.4	0.25	0.0	0.00	0.00	0.35	0.18	69	15
75 A	14.10	14.09	33.331	24.883	308.3	0.284	6.09	265.9	104.1	2.4	0.26	0.1	0.04	0.00	0.35	0.18	76	14
86	13.33	13.32	33.297	25.014	296.1	0.317	5.90	257.3	99.1	2.9	0.33	0.9	0.18	0.00	0.36	0.16	87	13
96	12.55	12.54	33.264	25.142	284.0	0.346	5.56	242.7	91.9	4.6	0.55	4.3	0.06	0.00	0.18	0.17	97	12
100 ISL	12.36 D	12.35	33.274 D	25.185	279.9	0.354	5.47	D238.3 D	90.1	5.6	0.65	5.9	0.05	0.00	0.15	0.15	101	
112	11.60	11.59	33.381	25.412	258.6	0.390	4.94	215.6	80.1	8.9	0.93	10.5	0.03	0.00	0.09	0.11	113	11
125	10.99	10.97	33.459	25.584	242.4	0.422	4.57	199.6	73.2	12.6	1.18	14.2	0.00	0.00	0.05	0.07	126	10
141	10.30	10.28	33.555	25.778	224.1	0.459	3.81	166.3	60.1	17.5	1.50	18.7	0.00	0.00	0.03	0.07	142	09
150 ISL	10.24 D	10.22	33.638 D	25.855	217.1	0.476	3.33	D144.9 D	52.5	20.2	1.65	20.7	0.02	0.00	0.02	0.06	151	
170	9.68	9.66	33.797	26.073	196.7	0.521	2.59	112.9	40.3	26.2	1.99	25.1	0.00	0.00	0.01	0.04	171	08
200	9.30	9.27	33.987	26.285	177.1	0.577	1.95	84.9	30.1	32.4	2.22	27.9	0.00	0.00	0.00	0.03	202	07
230	9.03	9.01	34.062	26.387	168.0	0.629	1.68	73.1	25.8	35.7	2.34	29.3	0.00	0.00			232	06
250 ISL	8.94 D	8.91	34.094 D	26.428	164.5	0.660	1.59	D 69.1 D	24.4	37.1	2.38	29.7	0.01	0.00			252	
270	8.82	8.79	34.113	26.461	161.7	0.695	1.48	64.5	22.6	38.6	2.42	30.2	0.00	0.00			272	05
300 ISL	8.64 D	8.61	34.147 D	26.517	156.9	0.741	1.38	D 59.9 D	21.0	40.6	2.49	30.8	0.01	0.00			302	
320	8.54	8.51	34.157	26.540	155.1	0.774	1.31	57.1	19.9	42.0	2.53	31.2	0.00	0.00			323	04
340	8.38	8.34	34.175	26.580	151.6	0.805	1.24	54.2	18.9	44.1	2.56	31.9	0.00	0.00			343	03
400 ISL	7.90 D	7.86	34.196 D	26.669	144.0	0.893	0.99	D 42.9 D	14.8	51.8	2.72	34.0	0.01	0.00			403	
440	7.38	7.33	34.212	26.758	135.8	0.949	0.76	33.0	11.2	56.9	2.83	35.4	0.00	0.00			444	02
500 ISL	6.79 D	6.74	34.244 D	26.864	126.1	1.028	0.55	D 23.9 D	8.0	64.0	2.96	37.2	0.01	0.00			504	
517	6.75	6.70	34.246	26.873	125.6	1.049	0.51	22.1	7.4	66.0	3.00	37.8	0.00	0.00			521	01

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.
D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV SALLY RIDE CALCOFI CRUISE 1708 STATION 83.3 100.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
32 14.7 N	123 29.4 W	10/08/2017	0902	UTC	4149 m	360 12 kn			1015.4 mb	17.2 C	16.4 C				045

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3* µM	PO4* µM	NO3* µM	NO2* µM	NH4* µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0	18.57	18.57	33.211	23.762	412.7	0.000	5.47	238.6	102.0	1.9	0.24	0.0	0.00	0.03	0.08	0.01	0	
2	18.57	18.57	33.211	23.762	412.8	0.008	5.47	238.6	102.0	1.9	0.24	0.0	0.00	0.00	0.08	0.01	2	21
10 ISL	18.57 D	18.57	33.211 D	23.763	413.0	0.038	5.51	D240.2	D102.7	1.8	0.24	0.0	0.00	0.00	0.08	0.02	10	
11	18.57	18.57	33.213	23.765	412.9	0.045	5.47	238.6	102.0	1.8	0.24	0.0	0.00	0.00	0.08	0.02	11	19
11	18.57	18.57	33.210	23.763	413.1	0.045											11	20
20 ISL	18.15 D	18.15	33.171 D	23.838	406.3	0.079	5.60	D244.2	D103.5	1.8	0.25	0.0	0.00	0.00	0.10	0.03	20	
26	17.97	17.97	33.165	23.877	402.7	0.106	5.60	244.3	103.1	1.8	0.25	0.0	0.00	0.00	0.12	0.03	26	18
30 ISL	17.73 D	17.72	33.154 D	23.928	398.1	0.119	5.67	D247.3	D104.0	1.8	0.25	0.0	0.00	0.00	0.16	0.04	30	
41	16.60	16.60	33.156	24.196	372.8	0.165	5.83	254.5	104.6	1.8	0.26	0.0	0.00	0.00	0.29	0.07	41	17
50 ISL	15.62 D	15.61	33.197 D	24.452	348.7	0.195	6.06	D264.0	D106.6	1.7	0.27	0.0	0.00	0.00	0.24	0.09	50	
51	15.54	15.53	33.200	24.471	346.9	0.201	6.00	261.8	105.4	1.7	0.27	0.0	0.00	0.00	0.23	0.09	51	16
63	14.64	14.63	33.216	24.679	327.3	0.241	5.97	260.4	103.0	1.8	0.33	0.2	0.04	0.07	0.34	0.20	64	15
75 ISL	14.05 D	14.04	33.282 D	24.854	311.0	0.277	5.90	D256.9	D100.6	2.3	0.31	0.5	0.12	0.14	0.32	0.21	76	
76	14.01	14.00	33.306	24.881	308.5	0.283	5.91	258.1	100.8	2.4	0.31	0.5	0.13	0.15	0.32	0.22	77	14
88	13.61	13.59	33.338	24.989	298.5	0.319	5.92	258.4	100.1	2.6	0.28	0.4	0.10	0.14	0.23	0.19	89	13
100 ISL	13.31 D	13.30	33.361 D	25.067	291.4	0.353	5.87	D255.9	D 98.7	2.9	0.31	0.7	0.13	0.10	0.20	0.16	101	
101	13.22	13.21	33.360	25.085	289.7	0.357	5.84	254.7	97.9	2.9	0.31	0.8	0.13	0.10	0.19	0.16	102	12
112	12.40	12.38	33.333	25.226	276.4	0.388	5.56	242.8	91.7	4.3	0.50	3.8	0.07	0.00	0.13	0.14	113	11
125 ISL	11.75 D	11.73	33.374 D	25.380	261.9	0.423	4.94	D215.2	D 80.4	8.1	0.88	9.7	0.02	0.00	0.07	0.11	126	
126	11.60	11.59	33.380	25.412	259.0	0.426	4.93	215.1	79.9	8.4	0.91	10.1	0.00	0.00	0.06	0.10	127	10
141	10.68	10.66	33.463	25.642	237.2	0.463	4.78	208.7	76.1	10.7	1.01	12.0	0.00	0.00	0.05	0.08	142	09
150 ISL	10.44 D	10.42	33.505 D	25.716	230.3	0.484	4.33	D188.5	D 68.5	14.4	1.23	15.2	0.01	0.00	0.04	0.06	151	
170	9.51	9.49	33.695	26.021	201.6	0.527	3.46	151.0	53.7	22.6	1.71	22.2	0.00	0.00	0.01	0.03	171	08
200	8.84	8.82	33.871	26.266	178.7	0.584	3.10	135.4	47.5	28.6	1.89	25.1	0.00	0.00	0.00	0.02	202	07
230	8.38	8.36	33.980	26.422	164.3	0.636	2.54	110.8	38.5	35.2	2.12	28.3	0.00	0.00			232	06
250 ISL	8.21 D	8.18	34.007 D	26.471	160.0	0.669	2.31	D100.3	D 34.8	38.8	2.24	29.7	0.01	0.00			252	
270	7.87	7.84	34.036	26.544	153.2	0.699	2.04	88.9	30.5	42.3	2.35	31.1	0.00	0.00			272	05
300 ISL	7.56 D	7.53	34.061 D	26.609	147.4	0.746	1.78	D 77.4	D 26.5	47.0	2.46	32.6	0.01	0.00			302	
320	7.29	7.25	34.072	26.657	143.1	0.773	1.59	69.5	23.6	50.1	2.54	33.6	0.00	0.00			323	04
380	6.83	6.80	34.120	26.758	134.2	0.857	1.08	47.1	15.8	58.4	2.77	36.3	0.00	0.00			383	03
400 ISL	6.56 D	6.52	34.109 D	26.786	131.6	0.886	1.03	D 45.0	D 15.0	61.0	2.83	36.9	0.01	0.00			403	
440	6.42	6.38	34.157	26.843	126.7	0.934	0.74	32.4	10.8	66.2	2.94	38.3	0.00	0.00			444	02
500 ISL	6.12 D	6.07	34.207 D	26.923	119.8	1.013	0.51	D 22.4	D 7.4	72.4	3.06	39.4	0.01	0.00			504	
517	6.09	6.05	34.221	26.937	118.7	1.029	0.46	19.9	6.6	74.2	3.09	39.8	0.00	0.00			521	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV SALLY RIDE CALCOFI CRUISE 1708 STATION 83.3 110.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
31 54.7 N	124 10.2 W	10/08/2017	0314	UTC	4252 m	290 15 kn			1015.5 mb	18.8 C	17.0 C				044

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3* µM	PO4* µM	NO3* µM	NO2* µM	NH4* µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0	18.66	18.66	33.198	23.731	415.7	0.000	5.45	237.7	101.8	1.9	0.24	0.0	0.00	0.03	0.12	0.02	0	
3	18.66	18.66	33.198	23.732	415.8	0.013	5.45	237.7	101.8	1.9	0.24	0.0	0.00	0.00	0.12	0.02	3	21
10	18.66	18.66	33.198	23.732	416.0	0.042	5.48	239.1	102.3	1.8	0.24	0.0	0.00	0.00	0.13	0.00	10	19
10	18.66	18.66	33.198	23.732	416.0	0.040											10	20
20 ISL	18.11 D	18.11	33.210 D	23.877	402.6	0.077	5.56	242.4	102.7	1.8	0.25	0.0	0.00	0.00	0.16	0.01	20	
26	18.08	18.08	33.230	23.900	400.6	0.107	5.60	244.6	103.5	1.8	0.25	0.0	0.00	0.00	0.17	0.01	26	18
30 ISL	18.08 D	18.07	33.270 D	23.932	397.7	0.117	5.67	D247.4	D104.8	1.8	0.25	0.0	0.00	0.00	0.19	0.02	30	
40	17.41	17.40	33.320	24.132	379.0	0.162	5.83	254.6	106.5	1.8	0.26	0.0	0.00	0.00	0.24	0.04	40	17
50 ISL	15.90 D	15.89	33.258 D	24.436	350.3	0.193	6.04	D263.2	D106.9	1.7	0.27	0.0	0.00	0.00	0.43	0.08	50	
51	15.52	15.51	33.253	24.516	342.6	0.202	5.99	261.4	105.3	1.7	0.27	0.0	0.00	0.00	0.44	0.08	51	16
62	14.34	14.33	33.204	24.733	322.2	0.238	5.96	260.1	102.3	1.8	0.33	0.2	0.04	0.07	0.89	0.05	62	15
75	13.48	13.47	33.254	24.948	301.9	0.279	5.79	252.5	97.5	2.4	0.31	0.5	0.13	0.15	0.51	0.11	76	14
87	12.68	12.67	33.285	25.132	284.7	0.314	5.38	234.6	89.1	2.6	0.28	0.4	0.10	0.14	0.28	0.14	88	13
100	11.98	11.97	33.320	25.293	269.6	0.350	5.19	226.6	84.8	2.9	0.31	0.8	0.13	0.10	0.20	0.12	101	12
112	11.38	11.37	33.372	25.446	255.3	0.381	5.09	222.2	82.2	4.3	0.50	3.8	0.07	0.00	0.15	0.09	113	11
125	10.86	10.84	33.429	25.583	242.4	0.414	4.68	204.1	74.7	8.4	0.91	10.1	0.00	0.00	0.11	0.08	126	10
140	10.22	10.20	33.530	25.774	224.5	0.449	4.34	189.5	68.4	10.7	1.01	12.0	0.00	0.00	0.05	0.08	141	09
150 ISL	9.60 D	9.58	33.662 D	25.980	205.0	0.467	3.46	D150.7	D 53.8	14.7	1.24	15.4	0.01	0.00	0.04	0.06	151	
170	9.05	9.03	33.809	26.184	185.9	0.510	3.19	139.1	49.0	22.6	1.71	22.2	0.00	0.00	0.01	0.04	171	08
200	8.87	8.85	33.995	26.359	169.9	0.563	2.21	96.3	33.8	28.6	1.89	25.1	0.00	0.00	0.00	0.03	202	07
230	8.59	8.56	34.078	26.468	160.0	0.613	1.73	75.6	26.4	35.2	2.12	28.3	0.00	0.00			232	06
250 ISL	8.31 D	8.29	34.076 D	26.510	156.4	0.642	1.87	D 81.4	D 28.3	38.8	2.24	29.7	0.01	0.00			252	
270	7.74	7.72	34.034	26.561	151.6	0.675	2.07	90.3	30.9	42.3	2.35	31.1	0.00	0.00			272	05
300 ISL	7.82 D	7.79	34.125 D	26.623	146.3	0.718	1.37	D 59.6	D 20.5	47.0	2.46	32.6	0.01	0.00			302	
320	7.57	7.54	34.130	26.662	142.8	0.750	1.25	54.5	18.6	50.1	2.54	33.6	0.00	0.00			323	04
380	6.75	6.72	34.149	26.791	131.0	0.832	0.88	38.2	12.8	58.4	2.77	36.3	0.00	0.00			383	03
400 ISL	6.68 D	6.64	34.162 D	26.812	129.3	0.857	0.77	D 33.6	D 11.3	61.0	2.83	36.9	0.01	0.00			403	
440	6.38	6.34	34.200	26.883	122.9	0.908	0.57	24.9	8.3	66.2	2.94	38.3	0.00	0.00			444	02
500 ISL	6.06 D	6.02	34.249 D	26.962	116.0	0.980	0.40	D 17.2	D 5.7	72.6	3.06	39.5	0.01	0.00			504	
515	5.94	5.90	34.262	26.988	113.7	0.997	0.34	15.0	4.9	74.2	3.09	39.8	0.00	0.00			519	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV SALLY RIDE — CALCOFI CRUISE 1708 — STATION 85.4 35.8

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
34 1.3 N	118 50.6 W	16/08/2017	0449	UTC	20 m	350 01 kn			1011.4 mb	18.0 C	16.8 C				073

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3* µM	PO4* µM	NO3* µM	NO2* µM	NH4* µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0	18.49	18.49	33.419	23.943	395.4	0.000	5.92	258.3	110.3	2.1	0.18	0.0	0.02	0.00	0.57	0.18	0	
2	18.49	18.48	33.419	23.944	395.5	0.008	5.92	258.3	110.3	2.1	0.18	0.0	0.00	0.00	0.57	0.18	2	03
5	17.64	17.64	33.404	24.138	377.0	0.020	5.95	259.4	109.0	2.3	0.22	0.0	0.00	0.00	0.75	0.26	5	02
10	14.32	14.31	33.330	24.832	311.1	0.037	5.91	257.9	101.4	3.7	0.38	0.3	0.09	0.00	1.58	0.67	10	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV SALLY RIDE — CALCOFI CRUISE 1708 — STATION 86.7 33.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
33 53.5 N	118 29.3 W	07/08/2017	1729	UTC	55 m	200 04 kn	280 03 07	2	1013.1 mb	21.0 C	19.5 C	10 m	8/8	ST	032

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3* µM	PO4* µM	NO3* µM	NO2* µM	NH4* µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0	22.14	22.14	33.501	23.040	481.7	0.000	5.92	258.2	118.0	0.9	0.04	0.0	0.01	0.00	1.29	0.17	0	
2 A	22.14	22.14	33.501	23.041	481.7	0.010	5.92	258.2	118.0	0.9	0.04	0.0	0.00	0.00	1.29	0.17	2	10
6 A	21.58	21.58	33.484	23.185	468.1	0.029	6.05	264.0	119.5	1.0	0.06	0.0	0.00	0.00	1.13	0.22	6	09
7 A	21.61	21.61	33.490	23.181	468.5	0.033	5.96	259.9	117.7	1.0	0.06	0.0	0.00	0.00	1.09	0.19	7	08
10	19.82	19.81	33.453	23.632	425.6	0.047	6.35	277.0	121.3	1.1	0.08	0.0	0.00	0.00	1.59	0.32	10	06
10	19.82	19.81	33.453	23.632	425.6	0.048											10	07
15 A	15.48	15.48	33.341	24.590	334.3	0.066	6.45	281.5	113.3	1.9	0.14	0.0	0.00	0.00	1.61	0.46	15	05
20 ISL	15.14 D	15.13	33.339 D	24.664	327.5	0.078	6.08	D265.1	D106.1	2.8	0.26	0.1	0.05	0.00	2.12	0.55	20	
25 A	14.11	14.11	33.341	24.884	306.6	0.098	5.41	235.9	92.4	3.7	0.37	0.2	0.09	0.00	2.64	0.63	25	04
30 A	13.68	13.67	33.349	24.980	297.6	0.113	4.86	212.0	82.3	6.0	0.72	4.0	0.74	1.98	0.78	0.38	30	03
40	12.72	12.72	33.358	25.179	278.9	0.142	4.62	201.5	76.7	7.5	0.90	7.3	0.89	1.94	0.41	0.28	40	02
50	12.49	12.48	33.370	25.232	274.1	0.170	4.49	196.2	74.3	8.3	0.97	9.4	0.82	1.04	0.32	0.29	50	01

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.
D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV SALLY RIDE — CALCOFI CRUISE 1708 — STATION 86.7 35.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
33 49.4 N	118 37.7 W	07/08/2017	1945	UTC	651 m	200 06 kn	270 02 08	1	1013.0 mb	20.0 C	19.0 C	14 m	3/8	ST	033

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3* µM	PO4* µM	NO3* µM	NO2* µM	NH4* µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0	22.41	22.41	33.548	23.002	485.3	0.000	5.86	255.5	117.5	1.5	0.06	0.2	0.03	0.09	0.86	0.06	0	
3	22.41	22.41	33.548	23.002	485.4	0.015	5.86	255.5	117.5	1.5	0.06	0.2	0.03	0.09	0.86	0.06	3	21
10	21.87	21.87	33.513	23.126	473.9	0.048	6.07	264.9	120.5	1.5	0.07	0.2	0.00	0.00	1.06	0.08	10	19
10	21.87	21.87	33.508	23.122	474.3	0.050											10	20
20	15.03	15.02	33.368	24.710	323.0	0.088	5.81	253.6	101.2	2.4	0.21	0.1	0.00	0.00	3.00	0.67	20	18
30	14.00	14.00	33.344	24.910	304.3	0.120	5.12	223.5	87.3	4.3	0.45	0.4	0.16	0.36	1.79	0.14	30	17
40	12.76	12.75	33.305	25.130	283.5	0.149	4.41	192.4	73.3	9.3	1.16	7.5	0.86	9.07	0.46	0.24	40	16
50	12.38	12.37	33.384	25.265	270.9	0.177	4.42	192.9	72.9	8.4	1.00	9.2	0.81	0.75	0.44	0.23	50	15
60	11.76	11.75	33.433	25.421	256.3	0.203	4.04	176.4	65.8	11.4	1.18	12.5	0.29	0.12	0.22	0.26	60	14
70	10.96	10.95	33.515	25.630	236.6	0.228	3.40	148.3	54.4	16.1	1.48	16.6	0.24	0.06	0.13	0.17	71	13
75 ISL	10.97 D	10.96	33.538 D	25.647	235.2	0.234	3.25	D141.4	D 52.0	17.3	1.56	18.0	0.17	0.00	0.10	0.16	76	
85	10.56	10.55	33.631	25.791	221.7	0.262	3.04	132.6	48.3	19.9	1.73	20.8	0.04	0.00	0.05	0.14	86	12
100	10.28	10.27	33.688	25.884	213.1	0.295	2.92	127.4	46.1	21.3	1.80	21.6	0.03	0.00	0.04	0.11	101	11
120	10.03	10.02	33.799	26.014	201.2	0.336	2.61	113.7	41.0	24.5	1.94	23.4	0.03	0.00	0.02	0.09	121	10
125 ISL	10.01 D	9.99	33.820 D	26.035	199.4	0.341	2.52	D109.8	D 39.6	25.2	1.98	23.7	0.03	0.00	0.02	0.08	126	
140	9.97	9.95	33.936	26.132	190.5	0.376	2.26	98.5	35.5	27.3	2.08	24.6	0.04	0.00	0.02	0.07	141	09
150 ISL	10.01 D	9.99	34.010 D	26.184	185.9	0.390	2.01	D 87.6	D 31.7	28.3	2.15	24.9	0.03	0.00	0.01	0.07	151	
170	10.19	10.17	34.127	26.245	180.6	0.431	1.66	72.5	26.3	30.2	2.28	25.7	0.00	0.00	0.01	0.06	171	08
200	10.11	10.09	34.199	26.316	174.6	0.485	1.44	62.6	22.7	32.3	2.36	26.4	0.00	0.00	0.01	0.06	202	07
230	9.62	9.59	34.246	26.436	163.7	0.535	1.35	58.7	21.0	35.3	2.44	27.5	0.00	0.00			232	06
250 ISL	9.42 D	9.39	34.262 D	26.483	159.6	0.564	1.19	D 52.0	D 18.6	37.3	2.50	28.2	0.02	0.00			252	
270	9.27	9.24	34.281	26.522	156.3	0.599	1.07	46.6	16.6	39.3	2.55	28.9	0.03	0.00			272	05
300 ISL	9.20 D	9.16	34.314 D	26.561	153.3	0.643	0.93	D 40.3	D 14.3	40.9	2.61	29.3	0.02	0.00			302	
320	9.00	8.96	34.318	26.595	150.3	0.676	0.86	37.6	13.3	42.0	2.65	29.6	0.00	0.00			323	04
380	8.17	8.13	34.289	26.702	140.8	0.764	0.71	30.9	10.7	50.4	2.79	32.5	0.04	0.00			383	03
400 ISL	7.89 D	7.85	34.281 D	26.738	137.5	0.790	0.67	D 29.1	D 10.1	52.9	2.84	33.2	0.04	0.00			403	
440	7.45	7.40	34.276	26.799	132.1	0.845	0.56	24.5	8.3	57.8	2.93	34.6	0.03	0.00			444	02
500 ISL	6.93 D	6.89	34.291 D	26.882	124.6	0.922	0.45	D 19.6	D 6.6	65.1	3.05	36.4	0.02	0.00			504	
516	6.71	6.67	34.298	26.918	121.3	0.942	0.37	16.3	5.5	67.1	3.08	36.9	0.00	0.00			520	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV SALLY RIDE CALCOFI CRUISE 1708 STATION 86.7 40.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
33 39.4 N	118 58.5 W	07/08/2017	2352	UTC	743 m	280 11 kn	270 03 08	1	1011.3 mb	20.2 C	18.9 C	23 m	7/8	ST	034

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3* µM	PO4* µM	NO3* µM	NO2* µM	NH4* µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0	20.17	20.17	33.397	23.495	438.2	0.000	5.49	239.4	105.5	1.0	0.21	0.0	0.02	0.00	0.12	0.03	0	
2	20.17	20.17	33.397	23.495	438.3	0.009	5.49	239.4	105.5	1.0	0.21	0.0	0.00	0.00	0.12	0.03	2	24
10	19.57	19.57	33.394	23.650	423.8	0.043	5.57	243.2	106.0	1.1	0.22	0.0	0.00	0.00	0.13	0.03	10	22
11	19.62	19.62	33.394	23.639	425.0	0.046											11	23
20	16.26	16.26	33.308	24.389	353.7	0.082	6.01	262.2	107.2	1.4	0.25	0.0	0.00	0.00	0.15	0.03	20	21
30	14.23	14.22	33.311	24.838	311.2	0.116	6.00	261.8	102.8	2.9	0.40	1.5	0.07	0.00	1.27	0.37	30	20
40	14.00	14.00	33.315	24.887	306.8	0.147	5.80	253.1	98.9	3.2	0.45	2.4	0.11	0.00	0.90	0.31	40	19
50	13.19	13.18	33.336	25.070	289.6	0.176	5.31	231.6	89.0	4.9	0.65	5.3	0.24	0.11	0.73	0.39	50	18
60	12.35	12.34	33.375	25.264	271.3	0.204	4.87	212.5	80.2	7.2	0.86	8.6	0.27	0.00	0.55	0.30	60	17
70	11.54	11.53	33.440	25.468	252.1	0.231	4.24	185.2	68.8	11.4	1.17	13.3	0.10	0.00	0.23	0.23	71	16
75 ISL	11.44 D	11.43	33.449 D	25.492	250.0	0.241	4.08	D177.7 D	66.0	12.9	1.27	14.7	0.08	0.00	0.19	0.21	76	
85	10.78	10.77	33.528	25.673	232.9	0.267	3.65	159.3	58.2	16.0	1.46	17.5	0.05	0.00	0.11	0.16	86	15
100	10.07	10.06	33.679	25.912	210.4	0.300	3.07	134.0	48.3	21.3	1.75	21.3	0.00	0.00	0.02	0.07	101	14
120	9.99	9.97	33.810	26.029	199.7	0.341	2.74	119.5	43.0	24.0	1.88	22.7	0.00	0.00	0.01	0.06	121	13
125 ISL	10.08 D	10.07	33.930 D	26.108	192.5	0.349	2.31	D100.5 D	36.4	25.0	1.95	23.1	0.02	0.00	0.01	0.05	126	
140	10.18	10.17	34.011	26.155	188.4	0.380	1.97	86.1	31.1	28.0	2.14	24.6	0.00	0.00	0.01	0.05	141	12
150 ISL	10.05 D	10.03	34.032 D	26.194	184.9	0.397	1.97 D	85.8 D	31.0	28.6	2.14	24.8	0.01	0.00	0.01	0.04	151	
170	9.77	9.75	34.060	26.263	178.7	0.435	2.06	89.8	32.2	29.8	2.15	25.4	0.00	0.00	0.01	0.03	171	11
200	9.74	9.72	34.204	26.382	168.2	0.487	1.55	67.4	24.2	33.5	2.34	26.7	0.00	0.00	0.01	0.04	202	10
230	9.30	9.28	34.247	26.488	158.6	0.536	1.34	58.6	20.8	36.7	2.44	27.8	0.00	0.00			232	09
250 ISL	8.53 D	8.51	34.134 D	26.522	155.4	0.567	1.56 D	68.0 D	23.8	39.0	2.47	29.1	0.02	0.00			252	
270	8.51	8.48	34.169	26.553	152.8	0.598	1.39	60.6	21.1	41.3	2.49	30.3	0.00	0.00			272	08
300 ISL	8.21 D	8.18	34.191 D	26.617	147.2	0.644	1.15 D	50.1 D	17.4	44.8	2.58	31.3	0.03	0.00			302	
320	8.12	8.08	34.215	26.650	144.4	0.672	1.04	45.3	15.7	47.2	2.64	32.0	0.03	0.00			323	07
380	7.73	7.69	34.293	26.770	133.9	0.755	0.62	26.9	9.2	53.9	2.85	33.5	0.00	0.00			383	06
400 ISL	7.60 D	7.56	34.289 D	26.786	132.7	0.784	0.58 D	25.1 D	8.6	56.4	2.89	34.2	0.01	0.00			403	
440	7.17	7.12	34.283	26.843	127.6	0.834	0.50	21.7	7.3	61.3	2.98	35.6	0.00	0.00			444	05
500 ISL	6.74 D	6.69	34.298 D	26.915	121.4	0.912	0.38 D	16.6 D	5.6	67.5	3.05	37.1	0.01	0.00			504	
516	6.61	6.56	34.303	26.935	119.5	0.928	0.35	15.2	5.1	69.1	3.07	37.5	0.00	0.00			520	04
600 ISL	6.21 D	6.16	34.320 D	27.002	114.1	1.031	0.28 D	12.1 D	4.0	77.8	3.18	38.3	0.01	0.00			605	
625	6.01	5.96	34.333	27.038	110.7	1.054	0.23	10.2	3.4	80.4	3.21	38.5	0.00	0.00			630	03
700 ISL	5.68 D	5.62	34.357 D	27.100	105.5	1.141	0.19 D	8.0 D	2.6	91.3	3.31	37.3	0.01	0.00			706	
734	5.45	5.38	34.377	27.144	101.3	1.170	0.11	4.6	1.5	96.3	3.35	36.8	0.00	0.00			741	02
739	5.45	5.38	34.381	27.147	101.1	1.175	0.12	5.3	1.7	97.4	3.37	36.7	0.00	0.00			746	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV SALLY RIDE CALCOFI CRUISE 1708 STATION 86.7 45.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
33 29.5 N	119 19.0 W	08/08/2017	0415	UTC	1635 m	280 13 kn			1011.1 mb	18.0 C	17.5 C				035

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3* µM	PO4* µM	NO3* µM	NO2* µM	NH4* µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0	19.08	19.08	33.393	23.775	411.5	0.000	5.59	243.8	105.3	0.9	0.22	0.0	0.01	0.00	0.14	0.03	0	
9	19.10	19.09	33.399	23.776	411.8	0.039											9	20
10	19.08	19.08	33.393	23.776	411.9	0.041	5.59	243.8	105.3	0.9	0.22	0.0	0.00	0.00	0.14	0.03	10	19
20 ISL	16.35 D	16.35	33.349 D	24.400	352.6	0.061	6.20	D270.2 D	110.8	0.9	0.26	0.0	0.01	0.00	0.26	0.07	20	
21	16.10	16.10	33.353	24.461	346.9	0.083	6.18	269.4	109.9	0.9	0.26	0.0	0.00	0.00	0.27	0.07	21	18
30 ISL	14.93 D	14.93	33.279 D	24.663	327.8	0.095	6.16	D268.5 D	107.0	1.5	0.30	0.0	0.01	0.00	0.43	0.15	30	
31	14.61	14.61	33.283	24.734	321.1	0.116	6.16	268.9	106.3	1.6	0.30	0.0	0.00	0.00	0.44	0.16	31	17
40	13.76	13.75	33.290	24.920	303.7	0.145	5.63	245.8	95.5	3.2	0.50	3.0	0.17	0.00	0.64	0.38	40	16
50	12.78	12.78	33.329	25.144	282.5	0.174	5.14	224.2	85.4	5.8	0.75	7.0	0.24	0.00	0.45	0.33	50	15
60	11.86	11.85	33.418	25.390	259.3	0.201	4.42	193.0	72.1	10.0	1.10	12.5	0.06	0.00	0.23	0.25	60	14
70	11.47	11.46	33.434	25.474	251.5	0.226	4.20	183.5	68.0	12.1	1.20	14.0	0.03	0.00	0.16	0.19	71	13
75 ISL	11.13 D	11.12	33.435 D	25.538	245.5	0.222	4.08	D177.6 D	65.5	13.6	1.29	15.4	0.03	0.00	0.14	0.17	76	
86	10.50	10.49	33.520	25.715	228.8	0.265	3.71	162.0	58.8	17.1	1.48	18.4	0.00	0.00	0.09	0.13	87	12
100	10.15	10.13	33.616	25.851	216.2	0.296	3.28	143.2	51.7	20.5	1.68	21.1	0.00	0.00	0.05	0.08	101	11
120	9.52	9.51	33.761	26.068	195.9	0.337	3.01	131.4	46.8	24.9	1.85	23.7	0.00	0.00	0.01	0.04	121	10
125 ISL	9.52 D	9.50	33.766 D	26.074	195.5	0.331	2.94	D127.8 D	45.6	25.4	1.87	24.0	0.01	0.00	0.01	0.04	126	
140	9.31	9.30	33.841	26.166	187.0	0.376	2.85	124.5	44.1	27.0	1.93	24.7	0.00	0.00	0.01	0.04	141	09
150 ISL	9.28 D	9.27	33.948 D	26.255	178.8	0.379	2.44	D106.3 D	37.8	29.1	2.04	25.5	0.01	0.00	0.01	0.04	151	
170	9.38	9.37	34.130 D	26.382	167.3	0.414	1.87	81.4	29.0	33.4	2.26	27.2	0.00	0.00	0.01	0.04	171	08
200	8.84	8.82	34.135	26.473	159.1	0.479	1.80	78.6	27.6	37.2	2.32	28.8	0.00	0.00	0.01	0.03	202	07
230	8.63	8.61	34.188	26.548	152.6	0.525	1.49	64.8	22.7	40.5	2.45	30.0	0.00	0.00			232	06
250 ISL	8.53 D	8.50	34.238 D	26.604	147.6	0.540	1.10 D	47.8 D	16.7	43.3	2.56	30.8	0.02	0.00			252	
270	8.46	8.43	34.270	26.639	144.7	0.585	0.94	40.8	14.2	46.1	2.66	31.5	0.03	0.00			272	05
300 ISL	8.28 D	8.25	34.289 D	26.683	141.0	0.613	0.77 D	33.5 D	11.7	48.4	2.72	32.3	0.04	0.00			302	
320	8.15	8.11	34.290	26.705	139.3	0.656	0.74	32.3	11.2	50.0	2.76	32.8	0.05	0.00			323	04
380	7.43	7.40	34.255	26.782	132.5	0.737	0.70	30.4	10.3	56.1	2.84	35.0	0.00	0.00			383	03
400 ISL	7.20 D	7.16	34.260 D	26.820	129.1	0.750	0.59 D	25.8 D	8.8	58.2	2.89	35.5	0.01	0.00			403	
440	7.05	7.01	34.298	26.871	124.8	0.814	0.44	19.3	6.5	62.3	2.98	36.6	0.00	0.00			444	02
500 ISL	6.61 D	6.57	34.303 D	26.935	119.3	0.875	0.37 D	16.3 D	5.5	68.5	3.06	38.0	0.01	0.00			504	
515	6.53	6.48	34.310	26.951	117.9	0.905	0.32	14.2	4.7	70.1	3.08	38.3	0.00	0.00			519	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV SALLY RIDE CALCOFI CRUISE 1708 STATION 86.7 50.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
33 19.4 N	119 39.8 W	08/08/2017	0836	UTC	80 m	290 17 kn			1011.6 mb	17.5 C	17.0 C				036

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3* µM	PO4* µM	NO3* µM	NO2* µM	NH4* µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0	17.75	17.75	33.548	24.223	368.8	0.000	5.76	251.2	105.9	0.2	0.18	0.0	0.01	0.04	1.25	0.35	0	
2	17.75	17.74	33.548	24.223	368.8	0.007	5.76	251.2	105.9	0.2	0.18	0.0	0.00	0.00	1.25	0.35	2	10
5	17.71	17.71	33.556	24.238	367.5	0.018	5.75	250.7	105.6	0.3	0.18	0.0	0.00	0.00	1.39	0.20	5	09
10	17.71	17.71	33.546	24.231	368.4	0.037	5.76	251.3	105.9	0.3	0.18	0.0	0.00	0.00	1.31	0.33	10	07
10	17.71	17.71	33.547	24.232	368.3	0.037											10	08
20	17.51	17.51	33.543	24.278	364.3	0.073	5.78	252.1	105.8	0.6	0.18	0.1	0.00	0.00	1.61	0.42	20	06
30	14.53	14.52	33.481	24.905	304.8	0.107	5.51	240.5	95.1	2.8	0.48	3.7	0.20	0.21	2.41	0.67	30	05
40	12.69	12.68	33.476	25.276	269.6	0.136	4.76	207.9	79.1	7.4	0.97	10.7	0.26	0.00	0.66	0.38	40	04
50	11.98	11.97	33.487	25.421	256.1	0.162	4.50	196.4	73.6	9.8	1.14	13.4	0.08	0.00	0.40	0.30	50	03
60	11.27	11.26	33.530	25.586	240.6	0.187	4.08	178.1	65.8	13.8	1.34	16.5	0.03	0.00	0.17	0.14	60	02
70	10.79	10.78	33.598	25.725	227.6	0.210	3.68	160.4	58.7	17.6	1.54	19.2	0.05	0.00	0.07	0.14	71	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV SALLY RIDE CALCOFI CRUISE 1708 STATION 86.7 55.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
33 9.4 N	120 0.3 W	08/08/2017	1220	UTC	1195 m	290 11 kn			1012.0 mb	17.2 C	16.5 C				037

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3* µM	PO4* µM	NO3* µM	NO2* µM	NH4* µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0	17.64	17.64	33.490	24.205	370.5	0.000	5.61	D244.8	D103.0	0.8	0.21	0.2	0.03	0.11	0.33	0.12	0	
2	17.64	17.64	33.490	24.205	370.6	0.007	5.61	D244.8	D103.0	0.8	0.21	0.2	0.03	0.11	0.33	0.12	2	21
10	17.64	17.63	33.490	24.206	370.8	0.037	5.63	245.4	103.2	0.8	0.21	0.1	0.00	0.00	0.35	0.11	10	19
11	17.64	17.64	33.493	24.207	370.7	0.039											11	20
20	17.56	17.56	33.489	24.224	369.5	0.074	5.64	245.9	103.3	0.5	0.21	0.0	0.00	0.00	0.36	0.12	20	18
30	14.37	14.37	33.248	24.758	318.8	0.109	5.99	261.4	102.9	2.1	0.35	0.6	0.14	0.25	0.72	0.33	30	17
40	13.92	13.92	33.318	24.907	304.9	0.140	5.56	242.4	94.6	2.8	0.56	2.8	0.66	1.03	0.51	0.31	40	16
50	13.30	13.29	33.350	25.059	290.6	0.170	5.24	228.7	88.1	4.0	0.73	7.0	0.35	0.00	0.36	0.22	50	15
60	12.83	12.82	33.436	25.220	275.6	0.198	4.87	212.6	81.1	6.0	0.94	10.7	0.05	0.00	0.24	0.19	60	14
70	12.05	12.05	33.428	25.362	262.3	0.225	4.77	208.1	78.1	8.5	1.05	12.3	0.04	0.00	0.17	0.15	71	13
75 ISL	11.86 D	11.85	33.437 D	25.405	258.3	0.236	4.71	D204.9 D	76.8	9.3	1.09	12.9	0.04	0.00	0.15	0.14	76	
85	11.31	11.30	33.451	25.518	247.8	0.263	4.60	200.8	74.2	11.1	1.16	14.0	0.04	0.00	0.10	0.12	86	12
100	10.28	10.27	33.517	25.751	225.8	0.299	4.35	189.8	68.6	14.6	1.25	15.9	0.04	0.00	0.06	0.09	101	11
121	9.56	9.54	33.663	25.986	203.7	0.344	3.76	164.1	58.4	20.5	1.55	20.4	0.03	0.00	0.03	0.05	122	10
125 ISL	9.51 D	9.50	33.714 D	26.034	199.3	0.350	3.58	D155.6 D	55.5	21.1	1.58	20.8	0.03	0.00	0.02	0.05	126	
140	9.35	9.33	33.745	26.085	194.7	0.381	3.47	151.2	53.6	23.6	1.68	22.4	0.00	0.00	0.01	0.04	141	09
150 ISL	9.25 D	9.24	33.777 D	26.126	191.1	0.399	3.23	D140.4 D	49.8	26.1	1.78	23.8	0.02	0.00	0.01	0.04	151	
170	8.71	8.70	33.908	26.314	173.5	0.437	2.82	123.1	43.1	31.2	1.97	26.5	0.00	0.00	0.01	0.04	171	08
200	8.25	8.23	33.997	26.455	160.5	0.487	2.43	105.8	36.7	36.5	2.14	28.8	0.03	0.00	0.01	0.03	202	07
230	7.97	7.95	34.087	26.568	150.2	0.534	1.67	72.7	25.1	43.9	2.42	31.7	0.03	0.00			232	06
250 ISL	8.08 D	8.05	34.140 D	26.595	148.2	0.564	1.35	D 58.6 D	20.3	46.1	2.52	32.3	0.04	0.00			252	
270	7.91	7.88	34.177	26.649	143.3	0.593	1.15	50.1	17.2	48.3	2.62	33.0	0.04	0.00			272	05
300 ISL	7.64 D	7.61	34.180 D	26.691	139.8	0.637	1.02	D 44.4 D	15.2	52.2	2.70	34.1	0.07	0.00			302	
320	7.43	7.40	34.203	26.740	135.4	0.662	0.85	37.0	12.6	54.8	2.76	34.8	0.09	0.00			323	04
380	6.80	6.76	34.210	26.834	127.0	0.741	0.66	28.6	9.6	63.2	2.92	37.0	0.00	0.00			383	03
400 ISL	6.70 D	6.66	34.224 D	26.859	124.9	0.769	0.60	D 26.2 D	8.8	64.8	2.95	37.3	0.01	0.00			403	
441	6.58	6.54	34.251	26.896	121.9	0.817	0.48	21.0	7.0	68.0	3.01	38.0	0.00	0.00			445	02
500 ISL	6.13 D	6.08	34.276 D	26.976	114.8	0.891	0.39	D 16.8 D	5.6	74.8	3.11	39.2	0.01	0.00			504	
517	6.09	6.05	34.297	26.997	113.1	0.906	0.32	13.8	4.6	76.7	3.14	39.6	0.00	0.00			521	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY STA-CORRECTED O2;

RV SALLY RIDE CALCOFI CRUISE 1708 STATION 86.7 60.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
32 59.5 N	120 21.0 W	08/08/2017	1627	UTC	711 m	310 13 kn	220 09 07	2	1014.4 mb	17.9 C	16.8 C	20 m	7/8	AS	038

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3* µM	PO4* µM	NO3* µM	NO2* µM	NH4* µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0	17.97	17.97	33.349	24.016	388.5	0.000	5.55	242.1	102.4	1.1	0.25	0.0	0.02	0.00	0.16	0.05	0	
2 A	17.97	17.97	33.349	24.017	388.5	0.008	5.55	242.1	102.4	1.1	0.25	0.0	0.00	0.00	0.16	0.05	2	24
10 A	17.96	17.96	33.342	24.014	389.1	0.039	5.55	242.0	102.3	1.3	0.25	0.0	0.00	0.00	0.17	0.05	10	21
10	17.96	17.96	33.352	24.022	388.4	0.039											10	23
10	17.96	17.96	33.341	24.013	389.2	0.039											10	22
15 A	17.96	17.96	33.342	24.015	389.2	0.058	5.55	242.3	102.4	1.1	0.25	0.0	0.00	0.00	0.16	0.05	15	20
20 ISL	17.95 D	17.95	33.338 D	24.014	389.5	0.074	5.60	D244.2	D103.3	1.0	0.25	0.0	0.01	0.00	0.17	0.04	20	
22	17.96	17.96	33.338	24.012	389.8	0.086	5.55	242.1	102.3	1.0	0.25	0.0	0.00	0.00	0.17	0.04	22	19
30 A	17.82	17.82	33.346	24.052	386.2	0.117	5.59	243.9	102.8	1.0	0.25	0.0	0.00	0.00	0.18	0.04	30	18
40	15.46	15.45	33.298	24.563	337.7	0.153	6.08	265.5	106.8	1.3	0.28	0.0	0.00	0.00	0.27	0.10	40	17
50 A	14.01	14.00	33.351	24.915	304.5	0.185	5.83	254.4	99.4	2.3	0.48	2.6	0.33	0.00	0.51	0.32	50	15
50	14.01	14.00	33.350	24.914	304.5	0.184											50	16
63 A	12.68	12.67	33.334	25.170	280.4	0.223	5.09	222.0	84.4	5.8	0.77	7.7	0.17	0.00	0.50	0.52	64	14
74	12.09	12.08	33.380	25.318	266.6	0.253	4.76	207.6	78.0	7.7	0.95	10.6	0.05	0.00	0.42	0.45	75	13
75 ISL	12.16 D	12.15	33.383 D	25.308	267.5	0.254	4.70	D204.5 D	77.0	8.1	0.98	11.0	0.05	0.00	0.39	0.42	76	
85	11.03	11.02	33.467	25.581	241.6	0.281	4.27	186.4	68.4	12.9	1.26	15.6	0.03	0.00	0.09	0.10	86	12
100	9.97	9.96	33.608	25.874	214.0	0.315	3.56	155.4	55.8	20.0	1.59	20.6	0.00	0.00	0.02	0.05	101	11
120	9.35	9.34	33.737	26.077	195.0	0.356	3.18	138.8	49.2	24.4	1.78	23.4	0.00	0.00	0.01	0.05	121	10
125 ISL	9.28 D	9.27	33.788 D	26.129	190.2	0.365	3.08	D134.2 D	47.7	25.2	1.81	23.8	0.02	0.00	0.01	0.04	126	
140	9.17	9.16	33.832	26.181	185.5	0.394	2.88	125.5	44.4	27.6	1.91	25.2	0.00	0.00	0.00	0.04	141	09
150 ISL	9.07 D	9.05	33.875 D	26.232	180.9	0.412	2.74	D119.1 D	42.1	29.4	1.97	26.0	0.02	0.00	0.00	0.04	151	
170	8.71	8.69	33.929	26.330	171.9	0.448	2.70	117.7	41.2						0.01	0.04	171	08
200	8.32	8.30	34.043	26.481	158.1	0.498	2.04	88.8	30.8	38.4	2.25	29.9	0.00	0.00	0.00	0.04	202	07
240	7.39	7.36	34.045	26.619	145.3	0.558	1.89	82.4	28.0	46.7	2.41	32.4	0.00	0.00			242	06
250 ISL	7.28 D	7.26	34.036 D	26.627	144.6	0.573	1.89	D 82.2 D	28.0	47.9	2.44	32.8	0.02	0.00			252	
270	7.30	7.27	34.056	26.641	143.7	0.601	1.69	73.6	25.0	50.3	2.50	33.6	0.00	0.00			272	05
300 ISL	7.49 D	7.46	34.141 D	26.683	140.4	0.644	1.17	D 50.7 D	17.3	52.8	2.64	34.5	0.01	0.00			302	
320	7.17	7.13	34.172	26.752	134.0	0.672	0.95	41.6	14.1	54.5	2.73	35.1	0.00	0.00			323	04
380	6.82	6.79	34.216	26.835	126.9	0.750	0.62	26.9	9.0	63.5	2.90	37.2	0.00	0.00			383	03
400 ISL	6.70 D	6.66	34.213 D	26.850	125.8	0.777	0.60	D 26.3 D	8.8	65.6	2.94	37.8	0.01	0.00			403	
440	6.34	6.30	34.217	26.901	121.2	0.825	0.51	22.1	7.3	69.8	3.02	38.8	0.00	0.00			444	02
500 ISL	5.96 D	5.92	34.275 D	26.996	112.7	0.898	0.34	D 14.9 D	4.9	77.5	3.13	40.1	0.01	0.00			504	
516	5.88	5.84	34.284	27.013	111.2	0.913	0.32	14.1	4.6	79.6	3.16	40.4	0.00	0.00			520	01

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.
D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV SALLY RIDE CALCOFI CRUISE 1708 STATION 86.7 70.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
32 39.4 N	121 2.3 W	08/08/2017	2235 UTC	3816 m	320 15 kn	220 05 06	2	1013.8 mb	18.5 C	17.5 C	14 m	7/8	AS	039

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3* µM	PO4* µM	NO3* µM	NO2* µM	NH4* µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0	17.94	17.94	33.451	24.102	380.4	0.000	5.69	248.1	104.9	0.5	0.23	0.0	0.02	0.10	0.36	0.02	0	
2	17.94	17.94	33.451	24.102	380.4	0.008	5.69	248.1	104.9	0.5	0.23	0.0	0.00	0.10	0.36	0.02	2	21
10	17.92	17.92	33.454	24.110	379.9	0.038	5.69	248.2	104.9	0.6	0.24	0.0	0.00	0.23	0.32	0.15	10	19
11	17.91	17.90	33.454	24.114	379.7	0.040											11	20
20	17.79	17.79	33.448	24.138	377.7	0.076	5.78	252.1	106.3	0.8	0.24	0.0	0.00	0.16	0.53	0.03	20	18
30	16.15	16.14	33.433	24.512	342.3	0.112	6.01	262.4	107.1	0.9	0.31	0.4	0.07	0.07	0.92	0.18	30	17
40	14.16	14.15	33.247	24.803	314.8	0.145	6.18	269.7	105.6	2.3	0.23	0.0	0.00	0.00	0.57	0.36	40	16
50	12.98	12.97	33.210	25.014	294.9	0.175	5.93	258.7	98.9	3.5	0.41	2.0	0.20	0.16	0.77	0.16	50	15
60	12.38	12.37	33.291	25.194	278.0	0.204	5.82	254.0	95.9	3.6	0.39	1.8	0.14	0.16	0.57	0.13	60	14
70	12.14	12.13	33.408	25.331	265.2	0.231	5.44	237.2	89.2	5.5	0.57	5.2	0.17	0.00	0.36	0.20	71	13
75 ISL	11.60 D	11.59	33.385 D	25.414	257.4	0.242	5.30	D230.7 D	85.9	6.8	0.69	7.1	0.13	0.00	0.33	0.15	76	
85	10.72	10.71	33.374	25.562	243.4	0.269	4.97	216.8	79.0	9.5	0.92	10.9	0.05	0.00	0.27	0.07	86	12
100	10.17	10.16	33.501	25.756	225.2	0.304	4.44	193.6	69.8	14.3	1.22	15.4	0.05	0.06	0.09	0.09	101	11
121	9.78	9.77	33.710 D	25.986	203.8	0.349	3.68	160.7	57.5	20.6	1.57	20.5	0.04	0.00	0.05	0.05	122	10
125 ISL	9.77 D	9.76	33.757 D	26.024	200.3	0.357	3.09	D134.6 D	48.3	22.3	1.66	21.6	0.04	0.00	0.05	0.05	126	
140	9.31	9.30	33.864	26.184	185.3	0.385	2.47	107.5	38.1	28.9	2.02	26.1	0.04	0.06	0.03	0.07	141	09
150 ISL	9.23 D	9.22	33.905 D	26.229	181.3	0.404	2.37	D103.2 D	36.6	30.1	2.05	26.6	0.03	0.00	0.02	0.07	151	
170	8.84	8.82	33.958	26.333	171.7	0.439	2.33	101.6	35.7	32.5	2.11	27.6	0.03	0.00	0.01	0.06	171	08
200	8.75	8.73	34.063	26.431	163.0	0.489	1.86	81.2	28.5	36.8	2.28	29.1	0.00	0.00	0.01	0.05	202	07
230	8.30	8.28	34.091	26.521	154.9	0.537	1.77	77.3	26.9	40.6	2.35	30.5	0.03	0.00			232	06
250 ISL	7.94 D	7.91	34.076 D	26.565	150.9	0.569	1.74	D 75.6 D	26.1	43.6	2.40	31.5	0.03	0.00			252	
270	7.54	7.52	34.064	26.613	146.5	0.597	1.72	74.8	25.5	46.6	2.45	32.6	0.03	0.00			272	05
300 ISL	7.47 D	7.44	34.119 D	26.667	141.9	0.643	1.28	D 55.5 D	19.0	51.7	2.60	34.1	0.02	0.00			302	
320	7.23	7.20	34.146	26.722	136.9	0.669	1.07	46.6	15.8	55.1	2.70	35.1	0.00	0.00			323	04
380	6.67	6.63	34.170	26.820	128.2	0.748	0.74	32.4	10.8	63.6	2.87	37.4	0.00	0.00			383	03
400 ISL	6.60 D	6.56	34.203 D	26.855	125.1	0.777	0.59	D 25.8 D	8.7	65.8	2.92	37.8	0.01	0.00			403	
440	6.37	6.33	34.225	26.903	121.0	0.823	0.48	21.1	7.0	70.2	3.01	38.6	0.00	0.00			444	02
500 ISL	6.04 D	6.00	34.278 D	26.988	113.6	0.898	0.35	D 15.2 D	5.0	76.8	3.11	39.7	0.01	0.00			504	
517	5.96	5.91	34.292	27.010	111.6	0.912	0.30	13.1	4.3	78.7	3.14	40.0	0.00	0.00			521	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV SALLY RIDE CALCOFI CRUISE 1708 STATION 86.7 80.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
32 19.4 N	121 43.0 W	09/08/2017	0431 UTC	4082 m	320 16 kn			1013.9 mb	18.0 C	16.8 C				040

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3* µM	PO4* µM	NO3* µM	NO2* µM	NH4* µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0	18.36	18.36	33.221	23.824	406.8	0.000	5.49	239.4	101.9	2.1	0.22	0.0	0.01	0.02	0.07	0.01	0	
2	18.36	18.36	33.221	23.824	406.9	0.008	5.49	239.4	101.9	2.1	0.22	0.0	0.00	0.00	0.07	0.01	2	21
10	18.36	18.36	33.222	23.823	407.3	0.041	5.47	238.9	101.7	2.1	0.22	0.0	0.00	0.00	0.07	0.01	10	19
11	18.36	18.36	33.221	23.823	407.4	0.043											10	20
20 ISL	18.36 D	18.36	33.221 D	23.824	407.6	0.078	5.53	D241.1 D	102.6	2.0	0.22	0.0	0.00	0.00	0.07	0.01	20	
26	17.99	17.99	33.209	23.906	400.0	0.106	5.53	241.3	102.0	2.0	0.22	0.0	0.00	0.00	0.07	0.01	26	18
30 ISL	17.94 D	17.94	33.210 D	23.919	398.9	0.118	5.53	241.0	101.8	2.0	0.21	0.0	0.00	0.00	0.08	0.01	30	
40	18.23	18.23	33.382	23.981	393.5	0.161	5.52	240.9	102.4	2.0	0.19	0.0	0.00	0.00	0.08	0.01	40	17
50	16.75	16.74	33.314	24.283	364.9	0.199	5.86	255.5	105.5	2.1	0.20	0.0	0.00	0.00	0.12	0.02	50	16
62	15.61	15.60	33.585	24.752	320.5	0.240	5.94	259.2	104.8	2.3	0.16	0.0	0.00	0.00	0.13	0.04	62	15
75	14.31	14.30	33.408	24.896	307.0	0.281	6.04	263.5	103.7	2.3	0.19	0.0	0.00	0.00	0.18	0.07	76	14
87	14.33	14.32	33.613	25.052	292.7	0.317	5.85	255.4	100.6	2.6	0.19	0.0	0.00	0.00	0.21	0.18	88	13
100	13.78	13.77	33.631	25.181	280.7	0.354	5.63	245.6	95.7	3.0	0.26	0.7	0.14	0.00	0.24	0.21	101	12
112	12.95	12.93	33.521	25.264	273.0	0.387	5.49	239.3	91.6	4.0	0.42	2.9	0.16	0.00	0.19	0.21	113	11
125	12.17	12.16	33.536	25.426	257.7	0.422	5.32	232.1	87.4	5.3	0.54	5.3	0.07	0.00	0.13	0.16	126	10
140	10.91	10.90	33.462	25.600	241.2	0.459	4.98	217.4	79.6	9.1	0.87	10.1	0.03	0.00	0.08	0.13	141	09
150 ISL	10.29 D	10.27	33.535 D	25.766	225.5	0.483	4.61	D200.5 D	72.7	11.6	0.99	12.0	0.00	0.00	0.06	0.09	151	
170	9.46	9.44	33.677	26.016	202.0	0.525	4.04	176.2	62.6						0.02	0.02	171	08
200	8.99	8.97	33.847	26.224	182.7	0.583	3.91	170.5	60.0	23.9	1.57	21.4	0.00	0.00	0.00	0.02	202	07
230	8.41	8.39	33.935	26.384	167.9	0.636	3.54	154.5	53.7	29.7	1.75	24.2	0.00	0.00			232	06
250 ISL	8.09 D	8.06	33.952 D	26.445	162.3	0.670	3.36	D146.1 D	50.5	35.0	1.94	26.8	0.01	0.00			252	
270	7.58	7.56	33.987	26.546	152.8	0.700	2.70	117.6	40.1	40.2	2.13	29.3	0.00	0.00			272	05
300 ISL	7.26 D	7.23	34.003 D	26.607	147.4	0.747	2.34	D101.7 D	34.5	45.7	2.30	31.6	0.01	0.00			302	
320	7.07	7.04	34.024	26.648	143.7	0.774	1.96	85.6	28.9	49.4	2.42	33.1	0.00	0.00			323	04
380	6.35	6.32	34.060	26.773	132.3	0.857	1.30	56.8	18.9	60.7	2.72	36.8	0.00	0.00			383	03
400 ISL	6.18 D	6.15	34.088 D	26.817	128.2	0.886	1.05	D 45.5 D	15.1	64.3	2.81	37.7	0.00	0.00			403	
440	6.03	5.99	34.158	26.893	121.5	0.933	0.67	29.3	9.7	71.5	2.99	39.5	0.00	0.00			444	02
500 ISL	5.78 D	5.73	34.201 D	26.960	115.8	1.008	0.47	D 20.4 D	6.7	77.0	3.09	40.4	0.01	0.00			504	
515	5.74	5.69	34.211	26.973	114.7	1.021	0.46	20.1	6.6	78.4	3.11	40.7	0.00	0.00			519	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV SALLY RIDE CALCOFI CRUISE 1708 STATION 86.7 90.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME UTC	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
31 59.4 N	122 23.7 W	09/08/2017	1005		4080 m	310 15 kn			1014.5 mb	17.9 C	16.3 C				041

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3* µM	PO4* µM	NO3* µM	NO2* µM	NH4* µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0	18.38	18.38	33.218	23.815	407.7	0.000	5.48	239.2	101.8	2.2	0.23	0.0	0.00	0.00	0.09	0.02	0	
2	18.38	18.38	33.218	23.815	407.8	0.008	5.48	239.2	101.8	2.2	0.23	0.0	0.00	0.00	0.09	0.02	2	21
10 ISL	18.40 D	18.39	33.212 D	23.808	408.7	0.037	5.48	D238.9	D101.8	2.2	0.23	0.0	0.00	0.00	0.09	0.02	10	
11	18.39	18.39	33.212	23.809	408.7	0.045	5.47	238.7	101.6	2.2	0.23	0.0	0.00	0.00	0.09	0.02	11	22
11	18.39	18.39	33.214	23.810	408.6	0.045											11	20
20 ISL	18.40 D	18.39	33.215 D	23.811	408.9	0.078	5.48	D239.1	D101.9	2.2	0.25	0.0	0.00	0.00	0.11	0.03	20	
26	17.60	17.60	33.218	24.007	390.4	0.106	5.67	247.4	103.8	2.1	0.26	0.0	0.00	0.00	0.13	0.04	26	18
30 ISL	17.38 D	17.37	33.218 D	24.061	385.4	0.118	5.72	D249.4	D104.2	2.0	0.26	0.0	0.00	0.00	0.15	0.05	30	
41	17.17	17.17	33.251	24.135	378.7	0.163	5.72	249.7	103.9	1.8	0.26	0.0	0.00	0.00	0.21	0.08	41	17
50 ISL	16.53 D	16.52	33.285 D	24.312	362.1	0.194	5.89	D256.7	D105.6	1.9	0.31	0.3	0.02	0.00	0.28	0.10	50	
51	16.33	16.32	33.281	24.354	358.1	0.200	5.86	255.9	104.7	1.9	0.32	0.4	0.00	0.23	0.29	0.11	51	16
63	15.47	15.46	33.406	24.646	330.6	0.242	5.96	259.9	104.7	2.6	0.19	0.0	0.00	0.00	0.25	0.08	64	15
75 ISL	15.03 D	15.01	33.534 D	24.842	312.3	0.277	5.93	D258.6	D103.4	2.9	0.19	0.0	0.00	0.00	0.24	0.11	76	
76	14.93	14.92	33.529	24.859	310.8	0.283	5.89	256.9	102.4	3.0	0.19	0.0	0.00	0.00	0.24	0.11	77	14
88	14.57	14.56	33.575	24.971	300.4	0.320	5.82	253.9	100.5	2.5	0.19	0.0	0.00	0.00	0.26	0.14	89	13
100 ISL	13.73 D	13.71	33.487 D	25.080	290.2	0.353	5.72	D249.1	D 97.0	3.3	0.28	0.7	0.05	0.00	0.24	0.16	101	
101	13.62	13.61	33.487	25.103	288.1	0.358	5.69	248.2	96.3	3.3	0.29	0.8	0.05	0.12	0.24	0.16	102	12
113	12.71	12.70	33.376	25.198	279.2	0.392	5.42	236.4	89.9	4.6	0.47	3.3	0.14	0.07	0.22	0.17	114	11
125 ISL	12.28 D	12.26	33.382 D	25.288	270.9	0.424	5.27	D229.6	D 86.7	5.4	0.59	5.4	0.10	0.00	0.19	0.16	126	
126	12.10	12.08	33.383	25.321	267.7	0.428	5.28	230.5	86.6	5.5	0.60	5.6	0.10	0.00	0.18	0.16	127	10
141	11.12	11.10	33.464	25.564	244.7	0.466	5.01	218.8	80.5	8.1	0.80	9.0	0.03	0.00	0.11	0.12	142	09
150 ISL	10.89 D	10.87	33.491 D	25.627	238.9	0.487	4.93	D214.7	D 78.8	10.6	0.94	11.2	0.02	0.00	0.08	0.09	151	
170	9.90	9.88	33.616	25.895	213.6	0.533	4.43	193.4	69.4	15.9	1.25	16.2	0.00	0.00	0.03	0.03	171	08
200 ISL	8.98 D	8.96	33.832 D	26.213	183.8	0.593	3.90	D169.9	D 59.9	23.8	1.59	21.4	0.00	0.00	0.01	0.03	202	
201	8.99	8.97	33.822	26.204	184.6	0.595	3.88	169.2	59.5	24.0	1.60	21.6	0.00	0.00	0.00	0.03	203	07
230	8.36	8.33	33.922	26.381	168.1	0.646	3.30	144.1	50.0	31.2	1.88	25.5	0.00	0.00			232	06
250 ISL	8.15 D	8.12	33.971 D	26.452	161.7	0.679	2.89	D125.8	D 43.6	35.4	2.04	27.5	0.00	0.00			252	
270	7.84	7.81	34.002	26.522	155.3	0.711	2.49	108.5	37.2	39.6	2.19	29.6	0.00	0.00			272	05
300 ISL	7.54 D	7.51	34.046 D	26.600	148.3	0.757	1.97	D 85.8	D 29.4	45.1	2.33	31.4	0.00	0.00			302	
320	7.16	7.13	34.024	26.636	144.9	0.786	2.02	88.2	29.8	48.7	2.42	32.6	0.00	0.00			323	04
380	7.07	7.04	34.172	26.767	133.6	0.870	0.88	38.3	12.9	58.0	2.83	36.2	0.00	0.00			383	03
400 ISL	6.81 D	6.77	34.186 D	26.814	129.2	0.897	0.74	D 32.0	D 10.8	61.6	2.89	37.1	0.00	0.00			403	
440	6.31	6.27	34.178	26.873	123.7	0.947	0.61	26.4	8.8	68.6	3.01	38.9	0.00	0.00			444	02
500 ISL	6.16 D	6.11	34.261 D	26.960	116.3	1.021	0.40	D 17.4	D 5.8	75.1	3.13	39.9	0.01	0.00			504	
517	5.99	5.94	34.267	26.986	113.9	1.039	0.33	14.2	4.7	76.9	3.16	40.2	0.00	0.00			521	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; SECONDARY STA-CORRECTED O2;

RV SALLY RIDE CALCOFI CRUISE 1708 STATION 86.7 100.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME UTC	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
31 38.7 N	123 4.0 W	09/08/2017	1650		4153 m	320 13 kn	320 04 07	2	1016.1 mb	18.2 C	16.6 C	24 m	8/8	SC	042

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3* µM	PO4* µM	NO3* µM	NO2* µM	NH4* µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0	18.51	18.51	33.194	23.765	412.4	0.000	5.50	239.9	102.3	2.1	0.27	0.0	0.01	0.19	0.13	0.07	0	
2 A	18.51	18.51	33.194	23.766	412.5	0.008	5.50	239.9	102.3	2.1	0.27	0.0	0.00	0.19	0.13	0.07	2	24
10	18.51	18.50	33.192	23.766	412.8	0.041	5.48	239.0	102.0	2.6	0.27	0.1	0.00	0.07	0.13	0.03	10	22
11	18.50	18.50	33.193	23.767	412.8	0.044											11	23
14 A	18.45	18.45	33.199	23.785	411.1	0.058	5.48	239.0	101.9	2.2	0.27	0.0	0.00	0.00	0.13	0.02	14	21
18 A	18.31	18.30	33.291	23.892	401.1	0.074	5.64	246.1	104.7	1.5	0.27	0.0	0.00	0.00	0.16	0.02	18	20
20 ISL	18.03 D	18.03	33.253 D	23.930	397.5	0.078	5.69	D248.1	D105.0	1.5	0.27	0.0	0.02	0.00	0.17	0.03	20	
30 ISL	17.32 D	17.32	33.195 D	24.057	385.8	0.118	5.78	D252.2	D105.3	1.7	0.27	0.0	0.01	0.00	0.23	0.04	30	
34 A	17.05	17.05	33.219	24.139	378.0	0.136	5.83	254.3	105.5	1.7	0.27	0.0	0.00	0.00	0.25	0.05	34	19
44	15.51	15.50	33.211	24.485	345.3	0.172	5.93	259.0	104.2	1.7	0.26	0.0	0.00	0.00	0.30	0.16	44	18
50 ISL	15.08 D	15.07	33.201 D	24.572	337.2	0.190	6.06	D264.2	D105.6	1.8	0.31	0.0	0.05	0.00	0.45	0.23	50	
52	14.82	14.81	33.187	24.617	332.9	0.199	5.92	258.5	102.6	1.9	0.33	0.0	0.06	0.00	0.50	0.26	52	17
62 A	14.37	14.36	33.198	24.721	323.3	0.232	5.80	253.2	99.6	2.4	0.39	0.7	0.23	0.00	0.52	0.32	62	16
68	14.27	14.26	33.227	24.765	319.3	0.252	5.77	251.8	98.8	2.4	0.43	1.4	0.38	0.00	0.50	0.27	69	15
75 ISL	14.04 D	14.03	33.246 D	24.829	313.4	0.272	5.70	D248.3	D 97.1	2.6	0.48	2.2	0.45	0.00	0.46	0.35	76	
76 A	13.91	13.90	33.248	24.857	310.7	0.277	5.65	246.5	96.1	2.6	0.49	2.4	0.46	0.00	0.45	0.36	77	14
85	13.84	13.82	33.286	24.902	306.7	0.305	5.53	241.4	94.0	3.0	0.57	3.8	0.35	0.00	0.34	0.29	86	13
95	13.46	13.45	33.305	24.993	298.3	0.335	5.47	238.6	92.2	3.3	0.58	4.5	0.07	0.00	0.26	0.19	96	12
100 ISL	13.26 D	13.24	33.317 D	25.044	293.6	0.348	5.48	D238.7	D 91.9	3.7	0.60	4.8	0.12	0.00	0.23	0.18	101	
110	12.45	12.44	33.284	25.176	281.1	0.378	5.35	233.7	88.3	4.6	0.64	5.3	0.23	0.00	0.19	0.16	111	11
125	11.65	11.63	33.365	25.391	260.9	0.419	4.70	205.3	76.3	9.8	1.02	11.5	0.04	0.00	0.07	0.10	126	10
140	10.53	10.51	33.497	25.694	232.2	0.456	4.08	177.8	64.6	15.1	1.37	16.9	0.03	0.00	0.02	0.05	141	09
150 ISL	10.10 D	10.08	33.569 D	25.824	219.9	0.478	3.77	D164.1	D 59.2	18.2	1.52	19.0	0.03	0.00	0.02	0.05	151	
170	9.47	9.45	33.739	26.062	197.6	0.520	3.25	141.6	50.3	24.2	1.81	23.2	0.00	0.00	0.01	0.05	171	08
200	8.95	8.93	33.894	26.268	178.6	0.577	2.67	116.5	41.0	29.8	2.03	26.2	0.00	0.00	0.00	0.04	202	07
230	8.70	8.68	33.997	26.388	167.7	0.629	2.27	98.8	34.6	34.5	2.19	28.2	0.00	0.00			232	06
250 ISL	8.55 D	8.52	34.068 D	26.468	160.5	0.663	1.88	D 81.6	D 28.6	38.2	2.33	29.6	0.02	0.00			252	
270	8.26	8.24	34.105	26.540	153.9	0.693	1.60	69.9	24.3	41.9	2.46	31.1	0.00	0.28			272	05
300 ISL	8.08 D	8.05	34.179 D	26.626	146.2	0.740	1.15	D 49.9	D 17.3	46.2	2.59	32.5	0.01	0.00			302	
320	7.84	7.81	34.180	26.663	143.0	0.767	1.07	46.8	16.1	49.1	2.67	33.3	0.00	0.00			323	04
380	6.79	6.76	34.148	26.785	131.6	0.850	0.91	39.6	13.3	60.0	2.84	36.8	0.00	0.00			383	03
400 ISL	6.64 D	6.60	34.157 D	26.814	129.1	0.878	0.79	D 34.4	D 11.5	62.9	2.89	37.5	0.02	0.00			403	
440	6.24	6.20	34.171	26.877	123.3	0.926	0.64	28.0	9.3	68.7	3.00	38.7	0.00	0.00			444	02
500 ISL	5.94 D	5.90	34.204 D	26.942	117.8	1.003	0.49	D 21.3	D 7.0	75.5	3.11	39.9	0.01	0.00			504	
516	5.84	5.80	34.218	26.966	115.6	1.017	0.42	18.2	6.0	77.3	3.14	40.2	0.00	0.00			520	01

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.
D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV SALLY RIDE CALCOFI CRUISE 1708 STATION 86.7 110.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
31 19.4 N	123 44.6 W	09/08/2017	2129	UTC	4049 m	320 12 kn	340 04 06	1	1016.6 mb	19.8 C	18.0 C	25 m	7/8	SC	043

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3* µM	PO4* µM	NO3* µM	NO2* µM	NH4* µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0	19.18	19.18	33.288	23.668	421.8	0.000	5.40	235.6	101.9	1.9	0.27	0.0	0.00	0.15	0.13	0.02	0	
2	19.18	19.18	33.288	23.668	421.8	0.008	5.40	235.6	101.9	1.9	0.27	0.0	0.00	0.15	0.13	0.02	2	21
10	18.79	18.78	33.260	23.748	414.5	0.042	5.47	238.9	102.5	1.7	0.25	0.0	0.00	0.00	0.12	0.03	10	19
10	18.79	18.78	33.254	23.743	414.9	0.041											10	20
20	18.04	18.04	33.354	24.005	390.4	0.082	5.70	248.7	105.3	1.0	0.25	0.0	0.00	0.00	0.18	0.05	20	18
30	15.62	15.62	33.311	24.537	339.9	0.119	6.14	267.8	108.1	1.4	0.29	0.0	0.00	0.17	0.34	0.15	30	17
40	14.35	14.34	33.244	24.761	318.8	0.152	5.99	261.6	102.8	2.1	0.38	1.0	0.14	0.21	0.51	0.37	40	16
50	13.61	13.60	33.256	24.923	303.7	0.183	5.69	248.3	96.2	2.9	0.50	2.4	0.50	0.33	0.44	0.28	50	15
60	12.83	12.83	33.242	25.067	290.1	0.212	5.57	243.1	92.6	3.8	0.57	4.0	0.35	0.07	0.28	0.30	60	14
70	12.58	12.57	33.320	25.177	279.9	0.241	5.09	222.3	84.3	5.9	0.79	7.6	0.03	0.14	0.23	0.35	71	13
75 ISL	12.31 D	12.30	33.347 D	25.251	273.0	0.252	5.05	D219.9 D	83.1	7.2	0.87	9.1	0.03	0.00	0.19	0.28	76	
85	11.54	11.53	33.374	25.416	257.5	0.281	4.59	200.3	74.3	9.7	1.04	12.0	0.00	0.00	0.12	0.15	86	12
100	10.79	10.78	33.441	25.603	239.9	0.319	4.23	184.4	67.4	13.5	1.28	15.4	0.00	0.14	0.06	0.08	101	11
120	9.98	9.97	33.556	25.832	218.4	0.364	3.76	164.0	58.9	18.3	1.54	19.5	0.00	0.00	0.02	0.05	121	10
125 ISL	9.78 D	9.77	33.603 D	25.902	211.8	0.373	3.64	D158.3 D	56.8	20.0	1.61	20.5	0.01	0.00	0.02	0.05	126	
140	9.47	9.45	33.747	26.067	196.4	0.406	3.21	140.1	49.8	24.9	1.81	23.7	0.00	0.00	0.01	0.04	141	09
150 ISL	9.14 D	9.12	33.789 D	26.153	188.4	0.424	3.23	D140.7 D	49.8	26.1	1.85	24.2	0.01	0.00	0.01	0.04	151	
170	8.89	8.87	33.865	26.253	179.3	0.462	3.05	133.2	46.8	28.5	1.92	25.3	0.00	0.00	0.01	0.04	171	08
200	8.40	8.37	33.958	26.402	165.6	0.514	2.66	116.1	40.4	33.7	2.09	27.8	0.00	0.12	0.00	0.03	202	07
230	7.97	7.94	34.017	26.514	155.4	0.562	2.22	96.8	33.3	39.9	2.27	30.2	0.00	0.00			232	06
250 ISL	7.74 D	7.72	34.049 D	26.572	150.1	0.592	1.95	D 85.0 D	29.2	43.6	2.41	31.7	0.01	0.00			252	
270	7.60	7.57	34.083	26.620	145.9	0.622	1.58	68.9	23.6	47.2	2.54	33.2	0.00	0.25			272	05
300 ISL	7.35 D	7.32	34.093 D	26.663	142.1	0.665	1.42	D 61.6 D	21.0	51.3	2.64	34.4	0.01	0.00			302	
320	7.23	7.20	34.118	26.701	138.8	0.693	1.18	51.3	17.4	54.1	2.71	35.2	0.00	0.00			323	04
380	6.61	6.57	34.157	26.817	128.4	0.773	0.76	33.2	11.1	63.9	2.94	38.0	0.00	0.00			383	03
400 ISL	6.42 D	6.38	34.164 D	26.849	125.6	0.800	0.69	D 30.2 D	10.1	67.0	3.00	38.6	0.01	0.00			403	
440	6.10	6.06	34.201	26.919	119.2	0.847	0.48	21.0	6.9	73.3	3.11	39.9	0.00	0.00			444	02
500 ISL	5.83 D	5.79	34.245 D	26.988	113.3	0.919	0.37	D 15.9 D	5.2	78.9	3.19	40.7	0.01	0.00			504	
516	5.78	5.73	34.254	27.002	112.1	0.935	0.32	13.7	4.5	80.4	3.21	40.9	0.00	0.06			520	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV SALLY RIDE CALCOFI CRUISE 1708 STATION 86.8 32.5

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
33 53.4 N	118 26.6 W	07/08/2017	1624	UTC	24 m	200 04 kn	230 03 06	2	1012.3 mb	20.9 C	19.5 C		8/8	ST	031

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3* µM	PO4* µM	NO3* µM	NO2* µM	NH4* µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0	21.16	21.16	33.483	23.299	457.0	0.000	6.24	272.2	122.2	0.9	0.04	0.0	0.01	0.00	2.94	0.29	0	
2	21.16	21.16	33.483	23.299	457.1	0.009	6.24	272.2	122.2	0.9	0.04	0.0	0.00	0.00	2.94	0.29	2	04
5	17.97	17.97	33.406 D	24.060	384.5	0.017	6.65	290.3	122.8	1.1	0.05	0.0	0.00	0.00	2.90	0.31	5	03
10	16.48	16.47	33.384	24.398	352.4	0.040	6.34	276.7	113.7	2.8	0.13	0.0	0.00	0.00	2.44	0.57	10	02
15	15.59	15.59	33.370	24.588	334.5	0.057	5.86	255.7	103.2	3.1	0.22	0.0	0.00	0.00	1.89	0.55	15	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV SALLY RIDE CALCOFI CRUISE 1708 STATION 88.5 30.1

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
33 40.5 N	118 5.1 W	07/08/2017	1250	UTC	20 m	220 02 kn			1011.2 mb	19.5 C	18.9 C				030

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3* µM	PO4* µM	NO3* µM	NO2* µM	NH4* µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0	21.00	21.00	33.424	23.296	457.3	0.000	5.77	251.7	112.7	0.4	0.11	0.0	0.02	0.00	0.58	0.10	0	
2	21.00	21.00	33.424	23.296	457.3	0.009	5.77	251.7	112.7	0.4	0.11	0.0	0.00	0.00	0.58	0.10	2	04
5	19.94	19.94	33.417	23.573	431.0	0.022	5.94	259.1	113.7	0.4	0.11	0.0	0.00	0.00	0.64	0.14	5	03
10	16.68	16.68	33.379	24.347	357.3	0.042	6.25	272.9	112.5	1.1	0.23	0.0	0.00	0.00	0.77	0.25	10	02
15	17.02	17.02	33.386	24.273	364.6	0.060	6.27	273.5	113.5	0.7	0.20	0.0	0.00	0.00	0.77	0.21	15	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV SALLY RIDE CALCOFI CRUISE 1708 STATION 90.0 27.7

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
33 29.6 N	117 44.9 W	07/08/2017	1028	UTC	23 m	270 02 kn			1010.8 mb	20.3 C	19.6 C				029

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3* µM	PO4* µM	NO3* µM	NO2* µM	NH4* µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0	22.39	22.39	33.496	22.967	488.7	0.000	5.81	253.6	116.4	0.0	0.08	0.1	0.04	0.00	0.89	0.23	0	
2	22.39	22.39	33.496	22.967	488.7	0.010	5.81	253.6	116.4	0.0	0.08	0.1	0.04	0.00	0.89	0.23	2	04
5	21.58	21.58	33.468	23.172	469.3	0.024	5.94	259.2	117.3	0.0	0.07	0.1	0.00	0.00	1.03	0.21	5	03
10	18.60	18.60	33.415	23.913	398.7	0.046	6.34	276.6	118.4	0.3	0.12	0.1	0.00	0.00	1.11	0.25	10	02
15	16.75	16.75	33.388	24.337	358.5	0.065	6.31	275.3	113.7	1.2	0.20	0.0	0.00	0.00	1.05	0.38	15	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV SALLY RIDE CALCOFI CRUISE 1708 STATION 90.0 28.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
33 29.1 N	117 46.0 W	07/08/2017	0843	UTC	64 m	310 04 kn			1010.9 mb	20.5 C	19.6 C				028

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3* µM	PO4* µM	NO3* µM	NO2* µM	NH4* µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0	22.65	22.65	33.507	22.903	494.8	0.000	5.95	259.5	119.7	0.0	0.07	0.2	0.04	0.00	0.69	0.14	0	
2	22.65	22.65	33.507	22.903	494.9	0.010	5.95	259.5	119.7	0.0	0.07	0.2	0.04	0.00	0.69	0.14	2	08
5	22.58	22.58	33.499	22.917	493.7	0.025	5.95	259.7	119.6	0.0	0.07	0.1	0.03	0.00	0.70	0.12	5	07
10	18.88	18.88	33.380	23.816	408.0	0.047	6.71	292.8	125.9	0.1	0.13	0.1	0.03	0.00	0.95	0.21	10	06
20	14.04	14.04	33.360	24.914	303.6	0.083	5.99	261.4	102.2	2.1	0.32	0.2	0.03	0.00	1.82	0.39	20	05
30	12.84	12.83	33.346	25.146	281.7	0.112	5.27	230.2	87.8	2.6	0.58	3.1	0.24	0.00	1.73	0.55	30	04
40	12.34	12.33	33.402	25.286	268.7	0.140	4.18	182.5	68.9	7.4	0.69	2.3	0.21	0.00	0.68	0.34	40	03
50	12.06	12.05	33.411	25.347	263.2	0.166	3.85	168.2	63.1	10.1	0.95	6.5	0.28	0.00	0.33	0.30	50	02
55	11.89	11.88	33.420	25.386	259.5	0.179	3.79	165.3	61.8	10.8	1.00	7.2	0.27	0.00	0.27	0.34	55	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV SALLY RIDE CALCOFI CRUISE 1708 STATION 90.0 30.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
33 25.1 N	117 54.4 W	07/08/2017	0541	UTC	621 m	290 07 kn			1011.3 mb	20.5 C	19.5 C				027

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3* µM	PO4* µM	NO3* µM	NO2* µM	NH4* µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0	21.00	21.00	33.471	23.331	453.9	0.000	5.74	250.4	112.1	0.7	0.12	0.0	0.01	0.09	0.40	0.09	0	
3	21.00	21.00	33.471	23.331	454.0	0.014	5.74	250.4	112.1	0.7	0.12	0.0	0.00	0.09	0.40	0.09	3	21
10	17.05	17.04	33.323	24.218	369.6	0.042	6.13	267.6	111.1	0.9	0.22	0.0	0.00	0.00	0.30	0.08	10	19
10	17.05	17.04	33.324	24.219	369.5	0.044											10	20
20	15.83	15.83	33.261	24.451	347.8	0.078	6.10	266.2	107.8	1.5	0.24	0.0	0.00	0.00	0.33	0.10	20	18
30	15.39	15.38	33.298	24.578	336.0	0.113	6.20	270.5	108.6	1.3	0.26	0.0	0.00	0.00	0.36	0.14	30	17
40	14.26	14.26	33.334	24.849	310.4	0.145	5.90	257.7	101.2	2.0	0.33	0.2	0.04	0.00	2.02	0.45	40	16
50	13.22	13.22	33.353	25.076	289.0	0.175	5.14	224.2	86.2	4.7	0.60	3.6	0.31	0.00	0.86	0.35	50	15
60	12.09	12.09	33.366	25.306	267.4	0.203	4.68	204.2	76.6	8.1	0.87	9.2	0.11	0.00	0.41	0.34	60	14
70	11.62	11.61	33.420	25.437	255.0	0.229	4.03	176.0	65.4	11.1	1.06	10.9	0.11	0.00	0.30	0.23	71	13
75 ISL	11.48 D	11.47	33.449 D	25.484	250.7	0.236	3.79	D164.8 D	61.3	12.2	1.15	12.2	0.08	0.00	0.27	0.23	76	
85	11.20	11.19	33.490	25.569	242.9	0.266	3.53	154.1	56.8	14.4	1.32	14.9	0.03	0.00	0.20	0.22	86	12
100	10.70	10.69	33.601	25.744	226.5	0.301	2.99	130.7	47.7	19.0	1.63	20.1	0.00	0.00	0.06	0.12	101	11
120	10.37	10.35	33.696	25.877	214.3	0.345	2.83	123.5	44.8	21.3	1.75	21.6	0.00	0.00	0.04	0.08	121	10
125 ISL	10.37 D	10.36	33.700 D	25.878	214.3	0.352	2.77	D120.5 D	43.8	22.2	1.79	22.1	0.01	0.00	0.04	0.08	126	
140	10.23	10.22	33.864	26.031	200.1	0.387	2.38	103.6	37.5	25.0	1.92	23.6	0.00	0.00	0.02	0.07	141	09
150 ISL	10.23 D	10.22	33.873 D	26.039	199.7	0.403	2.31	D100.6 D	36.5	25.5	1.94	23.8	0.01	0.00	0.02	0.06	151	
170	10.05	10.03	33.935	26.119	192.5	0.446	2.28	99.3	35.8	26.4	1.99	24.2	0.00	0.00	0.02	0.05	171	08
200	10.08	10.05	34.183	26.309	175.2	0.501	1.49	65.0	23.5	31.7	2.25	26.1	0.00	0.00	0.02	0.05	202	07
230	9.32	9.29	34.297	26.525	155.1	0.551	1.11	48.4	17.2	38.6	2.48	28.3	0.00	0.00			232	06
250 ISL	9.04 D	9.01	34.278 D	26.555	152.5	0.578	1.06	D 46.1 D	16.3	40.3	2.54	28.8	0.01	0.00			252	
270	9.15	9.12	34.342	26.588	150.0	0.611	0.78	33.9	12.0	42.0	2.60	29.4	0.00	0.00			272	05
300 ISL	8.46 D	8.43	34.280 D	26.648	144.4	0.654	0.87	D 37.9 D	13.2	45.5	2.62	30.9	0.01	0.00			302	
320	8.33	8.30	34.266	26.657	143.9	0.684	0.87	38.0	13.2	47.9	2.64	31.9	0.00	0.00			323	04
380	7.83	7.79	34.304	26.764	134.6	0.767	0.59	25.6	8.8	53.1	2.78	33.2	0.00	0.00			383	03
400 ISL	7.65 D	7.61	34.280 D	26.772	134.0	0.793	0.62	D 27.0 D	9.3	54.9	2.81	33.7	0.01	0.00			403	
440	7.29	7.25	34.287	26.829	129.1	0.846	0.55	23.9	8.1	58.5	2.87	34.9	0.00	0.00			444	02
500 ISL	6.88 D	6.83	34.293 D	26.892	123.7	0.923	0.44	D 19.0 D	6.4	65.1	2.98	36.5	0.01	0.00			504	
515	6.73	6.68	34.298	26.915	121.6	0.941	0.37	16.1	5.4	66.8	3.01	36.9	0.00	0.00			519	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV SALLY RIDE CALCOFI CRUISE 1708 STATION 90.0 35.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
33 15.1 N	118 15.0 W	07/08/2017	0121	UTC	318 m	270 12 kn	250 02 05	1	1010.0 mb	21.0 C	20.0 C		6/8	ST	026

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3* µM	PO4* µM	NO3* µM	NO2* µM	NH4* µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0	22.55	22.55	33.510	22.933	491.9	0.000	5.67	247.3	113.9	1.3	0.10	0.3	0.04	0.10	0.45	0.10	0	
2	22.55	22.55	33.510	22.933	492.0	0.010	5.67	247.3	113.9	1.3	0.10	0.3	0.04	0.10	0.45	0.10	2	18
10	21.34	21.34	33.456	23.230	464.0	0.048	5.79	252.6	113.8	0.8	0.11	0.0	0.03	0.00	0.52	0.11	10	16
10	21.34	21.34	33.457	23.231	463.9	0.047											10	17
20	17.79	17.79	33.348	24.060	385.1	0.090	6.15	268.3	113.0	0.9	0.19	0.0	0.00	0.00	0.60	0.19	20	15
30	15.28	15.27	33.291	24.597	334.2	0.126	6.23	271.9	109.0	1.4	0.25	0.0	0.00	0.00	0.54	0.22	30	14
40	13.41	13.40	33.348	25.035	292.7	0.158	5.28	230.6	89.0	4.5	0.58	3.6	0.31	0.12	1.24	0.49	40	13
50	12.43	12.42	33.366	25.242	273.1	0.186	4.77	208.4	78.8	7.4	0.85	8.2	0.26	0.00	0.49	0.32	50	12
60	11.20	11.19	33.445	25.533	245.7	0.212	4.03	175.8	64.8	13.2	1.23	14.2	0.06	0.00	0.13	0.20	60	11
70	10.60	10.59	33.490	25.674	232.4	0.236	3.89	169.5	61.7	15.5	1.38	16.8	0.05	0.00	0.11	0.16	71	10
75 ISL	10.34 D	10.33	33.532 D	25.752	225.0	0.244	3.69	D160.5 D	58.2	16.6	1.44	17.6	0.04	0.00	0.09	0.14	76	
85	10.21	10.20	33.576	25.808	220.0	0.270	3.61	157.5	56.9	18.6	1.55	19.4	0.03	0.00	0.06	0.10	86	09
100	10.18	10.16	33.743	25.945	207.3	0.302	3.00	131.0	47.3	22.3	1.78	21.8	0.03	0.00	0.03	0.06	101	08
120	10.02	10.00	33.900	26.095	193.5	0.342	2.56	111.9	40.3	25.5	1.93	23.2	0.00	0.00	0.02	0.04	121	07
125 ISL	9.97 D	9.95	33.917 D	26.118	191.5	0.349	2.47	D107.6 D	38.8	26.4	1.99	23.7	0.02	0.00	0.02	0.04	126	
140	10.06	10.04	34.053	26.208	183.3	0.379	1.95	85.0	30.7	29.3	2.15	25.1	0.00	0.00	0.02	0.04	141	06
150 ISL	10.14 D	10.12	34.146 D	26.267	178.0	0.395	1.60	D 69.7 D	25.3	30.7	2.24	25.7	0.02	0.00	0.02	0.05	151	
170	10.21	10.19	34.271	26.355	170.2	0.432	1.10	48.2	17.5	33.6	2.43	26.9	0.00	0.00	0.01	0.05	171	05
200	10.13	10.10	34.321	26.409	165.8	0.483	0.96	42.0	15.2	35.3	2.49	27.4	0.00	0.00	0.02	0.04	202	04
230	9.95	9.92	34.357	26.468	160.8	0.532	0.84	36.4	13.1	37.2	2.56	27.8	0.03	0.00			232	03
250 ISL	9.75 D	9.72	34.343 D	26.492	159.0	0.563	0.90	D 39.0 D	14.0	38.4	2.58	28.2	0.04	0.00			252	
270	9.61	9.58	34.346	26.518	156.9	0.595	0.83	36.4	13.0	39.6	2.59	28.6	0.05	0.00			272	02
300 ISL	9.48 D	9.45	34.342 D	26.537	155.7	0.642	0.85	D 36.9 D	13.2	40.2	2.62	28.8	0.05	0.00			302	
306	9.46	9.43	34.344	26.541	155.4	0.651	0.84	36.8	13.1	40.3	2.62	28.9	0.05	0.00			308	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV SALLY RIDE CALCOFI CRUISE 1708 STATION 90.0 37.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
33 11.1 N	118 23.2 W	06/08/2017	2206	UTC	1164 m	280 08 kn	280 03 08	1	1012.2 mb	22.0 C	20.0 C	12 m	7/8	ST	025

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3* µM	PO4* µM	NO3* µM	NO2* µM	NH4* µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0	22.07	22.07	33.470	23.037	482.0	0.000	5.67	247.6	113.0	0.0	0.06	0.0	0.02	0.00	0.57	0.06	0	
2	22.07	22.07	33.470	23.037	482.1	0.010	5.67	247.6	113.0	0.0	0.06	0.0	0.00	0.00	0.57	0.06	2	22
10	21.64	21.64	33.467	23.156	471.1	0.048	5.59	243.9	110.5	0.0	0.10	0.0	0.00	0.00	0.63	0.01	10	20
11	21.64	21.64	33.470	23.159	470.8	0.050											10	21
20	18.75	18.75	33.377	23.847	405.4	0.092	6.23	272.0	116.7	0.3	0.14	0.0	0.00	0.00	0.91	0.30	20	19
30	15.59	15.58	33.298	24.534	340.2	0.129	6.24	272.4	109.8	0.9	0.25	0.0	0.00	0.00	1.64	0.07	30	18
40	13.93	13.93	33.383	24.955	300.3	0.161	5.21	227.3	88.7	3.7	0.38	0.2	0.31	0.00	2.36	0.06	40	16
40	13.93	13.93	33.381	24.954	300.4	0.162											40	17
50 ISL	12.23 D	12.23	33.411 D	25.314	266.3	0.186	4.15	D180.6 D	68.2	8.6	0.84	5.6	0.15	0.00	0.44	0.28	50	
51	12.15	12.15	33.417	25.334	264.4	0.192	4.13	180.3	67.8	9.1	0.89	6.1	0.13	0.00	0.24	0.30	51	15
60	11.70	11.69	33.475	25.465	252.2	0.215	3.55	155.0	57.8	13.2	1.18	10.3	0.05	0.00	0.10	0.11	60	14
70	11.04	11.03	33.508	25.610	238.5	0.240	3.51	153.2	56.3	15.3	1.39	15.3	0.04	0.00	0.08	0.11	71	13
75 ISL	10.78 D	10.77	33.519 D	25.665	233.4	0.249	3.56	D154.8 D	56.7	16.2	1.44	16.6	0.03	0.00	0.08	0.11	76	
85	10.43	10.42	33.570	25.766	224.0	0.274	3.46	151.1	54.8	18.1	1.55	19.2	0.03	0.00	0.06	0.11	86	12
100	9.77	9.75	33.656	25.946	207.1	0.307	3.42	149.4	53.4	21.1	1.65	21.0	0.00	0.00	0.03	0.06	101	11
120	9.41	9.40	33.822	26.135	189.6	0.346	3.06	133.5	47.4	25.2	1.82	23.3	0.00	0.00	0.02	0.04	121	10
125 ISL	9.33 D	9.31	33.831 D	26.155	187.8	0.354	2.97	D129.4 D	46.0	25.9	1.86	23.6	0.01	0.00	0.02	0.04	126	
140	9.44	9.43	33.950	26.230	181.0	0.383	2.63	114.7	40.8	27.8	1.96	24.6	0.00	0.00	0.01	0.03	141	09
150 ISL	9.49 D	9.47	34.005 D	26.266	177.9	0.400	2.42	D105.4 D	37.6	29.1	2.02	25.0	0.01	0.00	0.02	0.03	151	
170	9.43	9.41	34.093	26.345	170.8	0.436	2.15	94.0	33.5	31.7	2.14	26.0	0.00	0.00	0.02	0.03	171	08
200	9.60	9.58	34.212	26.411	165.3	0.487	1.54	67.3	24.1	34.7	2.34	27.3	0.00	0.00	0.02	0.03	202	07
230	9.66	9.63	34.296	26.469	160.6	0.536	1.12	48.9	17.5	37.3	2.49	28.0	0.00	0.00			232	06
250 ISL	9.75 D	9.72	34.342 D	26.490	159.1	0.567	0.98	D 42.5 D	15.3	38.3	2.53	28.3	0.02	0.00			252	
270	9.56	9.53	34.344	26.523	156.3	0.599	0.88	38.3	13.7	39.2	2.57	28.5	0.00	0.00			272	05
300 ISL	9.34 D	9.30	34.375 D	26.585	151.1	0.646	0.70	D 30.6 D	10.9	43.5	2.66	30.0	0.02	0.00			302	
320	8.71	8.68	34.328	26.649	145.0	0.676	0.72	31.2	11.0	46.3	2.72	31.0	0.00	0.00			323	04
380	7.82	7.78	34.299	26.762	134.8	0.760	0.61	26.5	9.1	54.2	2.85	33.9	0.00	0.00			383	03
400 ISL	7.71 D	7.67	34.325 D	26.798	131.6	0.787	0.52	D 22.7 D	7.8	56.5	2.88	34.6	0.01	0.00			403	
440	7.22	7.18	34.291	26.841	127.8	0.839	0.48	21.0	7.1	61.1	2.95	35.9	0.00	0.00			444	02
500 ISL	6.85 D	6.80	34.297 D	26.899	122.9	0.916	0.42	D 18.4 D	6.2	67.1	3.04	37.5	0.01	0.00			504	
516	6.67	6.62	34.299	26.924	120.6	0.934	0.36	15.9	5.3	68.7	3.07	37.9	0.00	0.00			520	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV SALLY RIDE CALCOFI CRUISE 1708 STATION 90.0 45.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
32 55.1 N	118 56.1 W	06/08/2017	1657	UTC	1683 m	080 05 kn	230 04 05	2	1012.5 mb	19.0 C	17.7 C	22 m	8/8	ST	024

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3* µM	PO4* µM	NO3* µM	NO2* µM	NH4* µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0	20.04	20.04	33.400	23.533	434.6	0.000	5.41	236.1	103.8	1.1	0.20	0.0	0.02	0.11	0.15	0.05	0	
2 A	20.04	20.04	33.400	23.533	434.7	0.009	5.41	236.1	103.8	1.1	0.20	0.0	0.00	0.11	0.15	0.05	2	24
10	19.90	19.90	33.391	23.563	432.2	0.043	5.44	237.4	104.1	1.0	0.20	0.0	0.00	0.00	0.16	0.05	10	23
13 A	19.83	19.83	33.387	23.579	430.8	0.056	5.44	237.4	104.0	1.0	0.20	0.0	0.00	0.00	0.15	0.04	13	22
16 A	19.47	19.46	33.356	23.649	424.2	0.069	5.61	244.9	106.5	1.1	0.21	0.0	0.00	0.00	0.16	0.05	16	21
20 ISL	18.28 D	18.28	33.375 D	23.961	394.5	0.082	5.71	D249.0 D	106.0	1.2	0.22	0.0	0.01	0.00	0.19	0.06	20	
30 ISL	15.79 D	15.79	33.285 D	24.478	345.5	0.119	6.08	D265.2 D	107.5	1.6	0.25	0.1	0.01	0.00	0.26	0.09	30	
31 A	15.75	15.74	33.284	24.488	344.6	0.126	6.11	266.8	107.9	1.7	0.25	0.1	0.00	0.00	0.26	0.09	31	20
39	15.51	15.50	33.279	24.538	340.1	0.153	6.09	265.8	107.0	1.7	0.25	0.1	0.00	0.00	0.30	0.11	39	19
47	14.74	14.73	33.278	24.705	324.4	0.180	6.02	262.7	104.1	1.6	0.29	0.2	0.03	0.00	0.64	0.31	47	18
50 ISL	14.45 D	14.44	33.288 D	24.773	318.0	0.187	5.82	D253.6 D	100.1	2.3	0.37	1.5	0.06	0.00	0.61	0.33	50	
56 A	13.62	13.61	33.302	24.958	300.5	0.208	5.45	237.9	92.2	3.6	0.53	3.9	0.12	0.07	0.55	0.37	56	17
62	12.70	12.69	33.324	25.158	281.5	0.226	5.15	224.9	85.5	5.4	0.69	6.5	0.16	0.00	0.51	0.39	62	16
69 A	12.42	12.41	33.341	25.225	275.4	0.245	4.94	215.6	81.5	6.7	0.81	8.4	0.16	0.00	0.45	0.38	70	15
75 ISL	12.24 D	12.23	33.357 D	25.273	270.9	0.259	4.75	D207.1 D	78.1	7.6	0.87	9.4	0.14	0.00	0.35	0.33	76	
78	12.00	11.99	33.359	25.320	266.5	0.270	4.73	206.5	77.4	8.1	0.90	9.9	0.12	0.00	0.30	0.31	79	14
86	11.28	11.27	33.401	25.485	250.9	0.290	4.36	190.3	70.2	11.3	1.11	13.1	0.07	0.00	0.21	0.24	87	13
96	10.57	10.56	33.477	25.669	233.5	0.315	4.00	174.6	63.5	14.9	1.32	16.5	0.03	0.00	0.11	0.14	97	12
100 ISL	10.24 D	10.23	33.532 D	25.769	224.0	0.322	3.76	D163.7 D	59.2	16.5	1.42	17.8	0.03	0.00	0.08	0.12	101	
110	9.97	9.96	33.655	25.912	210.7	0.346	3.29	143.4	51.5	20.6	1.66	21.0	0.00	0.00	0.02	0.06	111	11
125	9.73	9.72	33.742	26.020	200.7	0.376	3.09	134.8	48.2	22.6	1.76	22.2	0.00	0.00	0.01	0.05	126	10
140	9.33	9.31	33.850	26.171	186.6	0.405	2.87	125.3	44.4	26.4	1.88	24.3	0.00	0.00	0.01	0.05	141	09
150 ISL	9.33 D	9.31	33.861 D	26.180	186.0	0.422	2.78	D120.9 D	43.0	27.8	1.94	25.0	0.02	0.00	0.01	0.04	151	
170	9.18	9.16	33.995	26.308	174.2	0.460	2.40	104.6	37.0	30.7	2.06	26.3	0.00	0.00	0.00	0.04	171	08
200	8.83	8.81	34.030	26.392	166.8	0.511	2.21	96.5	33.9	33.4	2.13	27.6	0.00	0.00	0.01	0.03	202	07
230	8.46	8.44	34.111	26.513	155.7	0.559	1.76	77.0	26.8	39.2	2.32	29.7	0.00	0.00			232	06
250 ISL	8.31 D	8.29	34.124 D	26.547	152.9	0.590	1.59	D 69.0 D	24.0	42.2	2.40	30.8	0.02	0.00			252	
270	7.90	7.88	34.120	26.605	147.5	0.620	1.49	64.9	22.3	45.2	2.47	32.0	0.00	0.00			272	05
300 ISL	7.86 D	7.83	34.200 D	26.675	141.5	0.664	1.01	D 44.0 D	15.2	49.6	2.62	33.2	0.02	0.00			302	
320	7.67	7.64	34.216	26.716	137.8	0.692	0.89	38.9	13.3	52.5	2.72	34.0	0.00	0.00			323	04
380	7.07	7.03	34.253	26.831	127.5	0.771	0.60	26.2	8.9	60.7	2.90	36.1	0.00	0.00			383	03
400 ISL	7.00 D	6.96	34.265 D	26.851	126.0	0.798	0.53	D 23.0 D	7.8	62.7	2.94	36.5	0.01	0.00			403	
440	6.68	6.64	34.287	26.912	120.5	0.846	0.42	18.4	6.2	66.6	3.01	37.3	0.00	0.00			444	02
500 ISL	6.40 D	6.35	34.310 D	26.968	115.9	0.919	0.34	D 14.9 D	5.0	72.0	3.10	38.6	0.01	0.00			504	
516	6.29	6.24	34.312	26.984	114.5	0.935	0.31	13.4	4.4	73.5	3.12	38.9	0.00	0.00			520	01

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.
D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV SALLY RIDE CALCOFI CRUISE 1708 STATION 90.0 53.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
32 39.1 N	119 28.9 W	06/08/2017	1122	UTC	1309 m	300 08 kn			1011.4 mb	17.9 C	17.0 C				023

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3* µM	PO4* µM	NO3* µM	NO2* µM	NH4* µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0	18.15	18.15	33.494	24.083	382.1	0.000	5.63	245.7	104.3	0.3	0.22	0.0	0.02	0.00	0.23	0.07	0	
2	18.15	18.15	33.494	24.083	382.2	0.008	5.63	245.7	104.3	0.3	0.22	0.0	0.00	0.00	0.23	0.07	2	22
10	18.11	18.11	33.489	24.089	381.9	0.038	5.64	246.2	104.5	0.0	0.21	0.0	0.00	0.00	0.26	0.07	10	20
11	18.11	18.11	33.487	24.088	382.0	0.040											10	21
20	17.29	17.29	33.458	24.265	365.6	0.076	5.77	251.9	105.2	0.2	0.23	0.0	0.00	0.00	0.29	0.09	20	19
30	17.05	17.05	33.457	24.322	360.5	0.112	5.75	251.1	104.3	0.2	0.24	0.0	0.00	0.00	0.43	0.21	30	18
40	15.52	15.51	33.408	24.634	331.0	0.147	5.67	247.2	99.7	1.0	0.42	1.1	0.32	0.74	0.50	0.32	40	16
40	15.52	15.51	33.415	24.640	330.4	0.148											40	17
50	14.31	14.31	33.399	24.889	307.0	0.178	5.47	238.7	93.9	2.4	0.61	3.7	0.77	0.80	0.46	0.32	50	15
60	12.52	12.51	33.411	25.260	271.7	0.207	4.94	215.8	81.8	7.4	0.94	10.4	0.13	0.00	0.23	0.19	60	14
70	11.83	11.82	33.417	25.395	259.0	0.234	4.78	208.7	77.9	9.1	1.04	12.1	0.04	0.00	0.14	0.14	71	13
75 ISL	11.80 D	11.79	33.413 D	25.398	258.9	0.245	4.71	D205.3 D	76.8	10.5	1.11	13.2	0.04	0.00	0.11	0.13	76	
85	10.88	10.87	33.495	25.630	237.0	0.271	4.36	190.4	69.7	13.4	1.26	15.5	0.03	0.00	0.06	0.09	86	12
100	10.23	10.22	33.578	25.806	220.5	0.306	4.09	178.5	64.5	16.7	1.42	18.1	0.00	0.00	0.03	0.05	101	11
120	9.46	9.45	33.696	26.028	199.7	0.348	3.70	161.3	57.3	21.3	1.58	20.9	0.03	0.00	0.01	0.04	121	10
125 ISL	9.34 D	9.33	33.743 D	26.084	194.5	0.356	3.28	D142.6 D	50.7	23.0	1.65	21.9	0.03	0.00	0.01	0.04	126	
140	8.96	8.95	33.844	26.224	181.4	0.386	2.99	130.2	45.8	28.1	1.87	24.9	0.00	0.00	0.01	0.04	141	09
150 ISL	8.85 D	8.83	33.888 D	26.277	176.6	0.403	2.81	D122.4 D	43.1	29.8	1.93	25.8	0.02	0.00	0.01	0.04	151	
170	8.50	8.48	33.953	26.383	166.9	0.438	2.59	113.2	39.4	33.2	2.05	27.4	0.03	0.00	0.01	0.03	171	08
200	8.13	8.11	34.030	26.499	156.3	0.487	2.12	92.6	32.0	38.8	2.24	29.7	0.00	0.00	0.00	0.03	202	07
230	7.79	7.77	34.047	26.564	150.6	0.533	1.98	86.5	29.7	41.9	2.31	30.8	0.03	0.00			232	06
250 ISL	7.69 D	7.66	34.074 D	26.600	147.5	0.563	1.67	D 72.7 D	24.9	45.9	2.43	32.1	0.03	0.00			252	
270	7.48	7.45	34.105	26.654	142.6	0.591	1.38	60.3	20.6	49.9	2.55	33.4	0.00	0.00			272	05
300 ISL	7.32 D	7.29	34.121 D	26.690	139.6	0.634	1.19	D 51.9 D	17.7	53.0	2.66	34.5	0.02	0.00			302	
320	7.20	7.17	34.155	26.734	135.7	0.661	1.02	44.6	15.1	55.1	2.73	35.2	0.00	0.00			323	04
380	6.98	6.94	34.227	26.823	128.2	0.740	0.64	28.0	9.5	61.6	2.90	36.3	0.00	0.00			383	03
400 ISL	6.85 D	6.81	34.237 D	26.849	126.0	0.767	0.58	D 25.1 D	8.4	63.2	2.93	36.7	0.02	0.00			403	
440	6.66	6.62	34.266	26.898	121.8	0.815	0.46	20.3	6.8	66.6	3.00	37.4	0.00	0.00			444	02
500 ISL	6.30 D	6.25	34.307 D	26.979	114.7	0.889	0.33	D 14.1 D	4.7	73.8	3.13	38.9	0.02	0.00			504	
516	6.19	6.15	34.315	26.999	113.0	0.904	0.29	12.6	4.2	75.7	3.16	39.3	0.00	0.00			520	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV SALLY RIDE CALCOFI CRUISE 1708 STATION 90.0 60.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
32 25.1 N	119 57.6 W	06/08/2017	0613	UTC	863 m	300 14 kn			1013.1 mb	18.5 C	17.0 C				022

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3* µM	PO4* µM	NO3* µM	NO2* µM	NH4* µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0	19.20	19.20	33.349	23.710	417.7	0.000	5.41	236.3	102.3	0.8	0.29	0.0	0.02	0.02	0.10	0.02	0	
3	19.20	19.20	33.349	23.710	417.8	0.013	5.41	236.3	102.3	0.8	0.29	0.0	0.00	0.00	0.10	0.02	3	20
10	19.09	19.08	33.338	23.732	416.0	0.042	5.43	236.8	102.3	0.8	0.27	0.0	0.00	0.00	0.10	0.02	10	19
20	18.00	18.00	33.449	24.086	382.6	0.082	5.77	251.6	106.5	0.0	0.25	0.0	0.00	0.00	0.15	0.04	20	18
30	15.08	15.07	33.292	24.641	329.9	0.117	6.21	271.2	108.3	0.9	0.31	0.0	0.00	0.00	0.24	0.09	30	16
40	14.21	14.21	33.257	24.799	315.2	0.150	6.07	264.9	103.9	1.6	0.37	0.4	0.09	0.00	0.31	0.11	40	15
50	13.38	13.37	33.310	25.011	295.2	0.180	5.63	245.6	94.7	2.6	0.65	3.9	0.36	1.09	0.42	0.18	50	14
60	12.59	12.58	33.337	25.188	278.6	0.209	5.11	222.9	84.5	5.2	0.79	7.5	0.11	0.00	0.44	0.23	60	13
70	11.89	11.88	33.364	25.344	263.9	0.236	4.70	205.3	76.7	8.4	1.00	10.9	0.07	0.00	0.31	0.18	71	17
75 ISL	11.65 D	11.64	33.380 D	25.401	258.6	0.244	4.48	D195.1 D	72.7	10.1	1.11	12.6	0.06	0.00	0.27	0.19	76	
85	10.77	10.76	33.426	25.595	240.3	0.274	4.03	175.7	64.1	13.6	1.33	15.8	0.03	0.00	0.18	0.21	86	12
100 ISL	10.04 D	10.02	33.546 D	25.815	219.6	0.304	3.77	D164.1 D	59.2	17.4	1.50	18.5	0.02	0.00	0.07	0.10	101	
101	9.68	9.67	33.542	25.870	214.3	0.311	3.81	166.2	59.3	17.7	1.51	18.7	0.00	0.00	0.07	0.10	102	11
120	9.18	9.16	33.738	26.106	192.2	0.349	3.40	148.4	52.4	23.4	1.73	22.4	0.00	0.00	0.02	0.05	121	10
125 ISL	9.13 D	9.12	33.786 D	26.151	188.1	0.354	3.20	D139.3 D	49.3	24.4	1.75	22.8	0.01	0.00	0.01	0.04	126	
140	8.87	8.85	33.846	26.241	179.8	0.386	3.24	141.3	49.6	27.4	1.82	24.0	0.00	0.00	0.00	0.04	141	09
150 ISL	8.82 D	8.80	33.875 D	26.271	177.1	0.400	3.02	D131.4 D	46.2	29.1	1.89	24.9	0.01	0.00	0.00	0.04	151	
170	8.50	8.48	33.956	26.384	166.7	0.439	2.71	118.2	41.2	32.5	2.03	26.8	0.00	0.00	0.00	0.04	171	08
200	8.26	8.24	34.017	26.470	159.1	0.487	2.24	97.7	33.9	37.7	2.22	29.1	0.00	0.00	0.00	0.03	202	07
230	7.86	7.84	34.046	26.552	151.7	0.534	1.94	84.6	29.1	42.0	2.37	31.1	0.00	0.00			232	06
250 ISL	7.66 D	7.64	34.071 D	26.601	147.3	0.561	1.66	D 72.3 D	24.8	45.3	2.47	32.1	0.00	0.00			252	
270	7.48	7.45	34.096	26.647	143.2	0.593	1.46	63.7	21.7	48.6	2.57	33.1	0.00	0.00			272	05
300 ISL	7.28 D	7.26	34.148 D	26.716	137.1	0.632	1.08	D 46.8 D	15.9	52.5	2.68	34.1	0.01	0.00			302	
320	7.23	7.20	34.167	26.739	135.3	0.663	0.97	42.2	14.3	55.1	2.76	34.8	0.00	0.00			323	04
380	6.88	6.85	34.209	26.822	128.2	0.742	0.69	30.0	10.1	61.4	2.90	36.3	0.00	0.00			383	03
400 ISL	6.77 D	6.73	34.216 D	26.843	126.4	0.765	0.63	D 27.5 D	9.3	63.6	2.94	36.8	0.01	0.00			403	
440	6.48	6.44	34.240	26.900	121.4	0.816	0.50	21.6	7.2	67.9	3.02	37.8	0.00	0.00			444	02
500 ISL	6.21 D	6.17	34.304 D	26.987	113.8	0.886	0.34	D 14.9 D	4.9	74.1	3.14	38.9	0.01	0.00			504	
515	6.13	6.08	34.316	27.007	112.1	0.904	0.30	13.1	4.3	75.7	3.17	39.2	0.00	0.00			519	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV SALLY RIDE CALCOFI CRUISE 1708 STATION 90.0 70.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
32 5.1 N	120 38.3 W	06/08/2017	0010	UTC	3819 m	300 12 kn	300 03 09	1	1013.0 mb	18.8 C	17.8 C	18 m	7/8	ST	021

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3* µM	PO4* µM	NO3* µM	NO2* µM	NH4* µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0	19.06	19.06	33.454	23.825	406.8	0.000	5.47	238.8	103.2	0.6	0.23	0.0	0.02	0.05	0.14	0.04	0	
2	19.06	19.06	33.454	23.825	406.8	0.008	5.47	238.8	103.2	0.6	0.23	0.0	0.00	0.00	0.14	0.04	2	22
10	18.01	18.00	33.458	24.092	381.6	0.040	5.72	249.5	105.6	0.3	0.23	0.0	0.00	0.11	0.19	0.04	10	20
10	18.01	18.00	33.461	24.094	381.5	0.040											10	21
20	16.48	16.48	33.354	24.374	355.1	0.077	5.91	257.8	105.9	1.0	0.23	0.0	0.00	0.00	0.28	0.08	20	19
30	14.51	14.51	33.245	24.726	321.8	0.110	5.93	258.6	102.0	1.9	0.36	0.7	0.14	0.39	0.82	0.26	30	17
30	14.51	14.51	33.248	24.729	321.6	0.110											30	18
40	12.95	12.95	33.158	24.978	298.1	0.141	5.71	249.0	95.1	4.0	0.56	3.6	0.61	0.31	0.46	0.29	40	16
50	12.84	12.83	33.376	25.170	280.1	0.170	5.02	219.2	83.6	5.5	0.84	8.9	0.08	0.00	0.12	0.13	50	15
60	11.79	11.79	33.377	25.371	261.1	0.197	4.88	212.8	79.4	8.3	0.98	11.2	0.04	0.00	0.09	0.10	60	14
70	11.21	11.20	33.373	25.474	251.4	0.223	4.84	211.1	77.8	10.1	1.03	11.9	0.04	0.00	0.10	0.12	71	13
75 ISL	11.06 D	11.05	33.424 D	25.542	245.1	0.233	4.64	D202.2 D	74.4	11.1	1.09	13.0	0.03	0.00	0.08	0.11	76	
85	10.66	10.65	33.507	25.676	232.5	0.259	4.56	198.8	72.4	13.2	1.21	15.0	0.03	0.00	0.05	0.07	86	12
100	10.14	10.13	33.539	25.792	221.9	0.293	4.70	204.9	73.8	13.1	1.10	14.0	0.03	0.00	0.05	0.08	101	11
120	9.26	9.25	33.715	26.075	195.2	0.335	4.04	176.3	62.4	20.3	1.46	19.6	0.03	0.00	0.01	0.03	121	10
125 ISL	9.23 D	9.21	33.751 D	26.109	192.1	0.343	3.90	D169.7 D	60.2	21.3	1.50	20.2	0.03	0.00	0.01	0.03	126	
140	8.93	8.91	33.829	26.217	182.1	0.373	3.81	166.3	58.5	24.3	1.60	21.9	0.03	0.00	0.00	0.03	141	09
150 ISL	8.63 D	8.62	33.903 D	26.322	172.3	0.389	3.34	D145.3 D	50.9	27.1	1.72	23.4	0.02	0.00	0.00	0.03	151	
171	8.29	8.28	33.955	26.415	163.7	0.426	2.98	129.9	45.1	33.2	1.96	26.6	0.00	0.00	0.00	0.03	172	08
200	7.98	7.96	34.029	26.521	154.1	0.472	2.16	94.3	32.5	40.3	2.25	30.0	0.00	0.00	0.00	0.03	202	07
230	7.68	7.66	34.086	26.610	146.2	0.517	1.60	69.6	23.8	46.7	2.48	32.6	0.00	0.07			232	06
250 ISL	7.48 D	7.45	34.129 D	26.673	140.4	0.545	1.20	D 52.1 D	17.8	49.7	2.59	33.5	0.02	0.00			252	
270	7.45	7.42	34.164	26.705	137.7	0.574	1.03	44.9	15.3	52.7	2.70	34.5	0.00	0.00			272	05
300 ISL	7.35 D	7.32	34.211 D	26.757	133.3	0.614	0.76	D 33.2 D	11.3	56.3	2.80	35.3	0.02	0.00			302	
320	7.14	7.11	34.223	26.796	129.8	0.641	0.69	30.0	10.1	58.7	2.86	35.9	0.00	0.00			323	04
380	6.66	6.62	34.259	26.890	121.5	0.716	0.46	20.0	6.7	66.6	3.01	37.6	0.00	0.00			383	03
400 ISL	6.54 D	6.51	34.270 D	26.915	119.4	0.741	0.42	D 18.4 D	6.1	68.5	3.04	38.0	0.01	0.00			403	
440	6.32	6.28	34.291	26.963	115.4	0.787	0.34	14.8	4.9	72.4	3.11	38.8	0.00	0.00			444	02
500 ISL	6.01 D	5.97	34.320 D	27.026	110.0	0.857	0.29	D 12.6 D	4.2	78.0	3.17	39.7	0.01	0.00			504	
514	5.95	5.90	34.326	27.038	108.9	0.870	0.24	10.5	3.5	79.3	3.19	39.9	0.00	0.00			518	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV SALLY RIDE CALCOFI CRUISE 1708 STATION 90.0 80.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
31 45.0 N	121 19.0 W	05/08/2017	1819	UTC	3660 m	340 11 kn	340 02 08	2	1014.9 mb	19.2 C	17.8 C	17 m	8/8	CS	020

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3* µM	PO4* µM	NO3* µM	NO2* µM	NH4* µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0	18.25	18.25	33.494	24.058	384.5	0.000	5.64	246.3	104.8	0.3	0.19	0.0	0.02	0.00	0.30	0.06	0	
2 A	18.25	18.25	33.494	24.059	384.5	0.008	5.64	246.3	104.8	0.3	0.19	0.0	0.00	0.00	0.30	0.06	2	23
10 A	17.26	17.25	33.495	24.301	361.8	0.038	5.82	254.0	106.0	0.0	0.17	0.0	0.00	0.00	0.32	0.05	10	21
10	17.26	17.25	33.502	24.306	361.2	0.038											10	22
12 A	17.14	17.14	33.494	24.328	359.2	0.045	5.85	255.1	106.3	0.2	0.18	0.1	0.00	0.00	0.34	0.11	12	20
20 ISL	17.04 D	17.04	33.501 D	24.357	356.8	0.070	5.80	D253.0 D	105.3	0.2	0.18	0.0	0.02	0.00	0.48	0.15	20	
24 A	17.02	17.02	33.503	24.364	356.3	0.088	5.82	253.8	105.4	0.2	0.18	0.0	0.00	0.00	0.56	0.17	24	19
30 ISL	16.97 D	16.97	33.505 D	24.377	355.2	0.106	5.82	D253.7 D	105.4	0.2	0.22	0.0	0.03	0.00	1.04	0.15	30	
34	16.73	16.73	33.501	24.430	350.3	0.123	5.76	251.1	103.8	0.2	0.25	0.0	0.03	0.08	1.37	0.14	34	17
34	16.73	16.73	33.513	24.439	349.5	0.124											34	18
43 A	15.66	15.65	33.460	24.644	330.2	0.154	5.69	248.3	100.4	0.9	0.40	0.9	0.13	0.86	0.89	0.30	43	16
50 ISL	14.84 D	14.83	33.411 D	24.785	316.9	0.174	5.64	D245.9 D	97.9	2.0	0.49	2.0	0.21	0.97	1.36	0.31	50	
53 A	14.31	14.31	33.379	24.873	308.6	0.186	5.60	244.6	96.2	2.4	0.53	2.5	0.25	1.02	1.56	0.32	53	15
62	13.69	13.68	33.421	25.035	293.4	0.213	5.13	224.0	87.0	4.7	0.78	6.0	0.54	1.00	0.76	0.29	62	14
70	12.89	12.88	33.435	25.208	277.1	0.236	4.82	210.5	80.4	6.7	0.96	10.1	0.35	0.06	0.32	0.19	71	13
75 ISL	12.62 D	12.61	33.450 D	25.272	271.1	0.247	4.68	D203.7 D	77.5	7.9	1.03	11.4	0.25	0.00	0.26	0.16	76	
85	11.79	11.78	33.476	25.450	254.3	0.276	4.52	197.1	73.6	10.4	1.18	14.1	0.05	0.00	0.13	0.11	86	12
100	11.01	10.99	33.509	25.618	238.5	0.313	4.06	177.0	65.0	14.5	1.38	17.2	0.04	0.00	0.06	0.08	101	11
120	9.83	9.82	33.630	25.915	210.5	0.358	3.44	150.2	53.8	20.8	1.68	21.6	0.06	0.00	0.03	0.08	121	10
125 ISL	9.77 D	9.76	33.659 D	25.948	207.5	0.366	3.23	D140.5 D	50.4	22.4	1.74	22.5	0.06	0.00	0.03	0.08	126	
140	9.27	9.25	33.805	26.145	189.0	0.398	2.84	123.8	43.8	27.0	1.93	25.3	0.04	0.00	0.01	0.06	141	09
150 ISL	9.12 D	9.10	33.849 D	26.204	183.6	0.415	2.74	D119.1 D	42.1	28.6	1.97	25.9	0.03	0.00	0.01	0.06	151	
170	8.78	8.76	33.930	26.321	172.8	0.452	2.60	113.6	39.8	31.7	2.04	27.1	0.03	0.00	0.01	0.05	171	08
200	8.46	8.44	33.999	26.425	163.4	0.502	2.27	98.8	34.4	35.6	2.17	28.8	0.03	0.00	0.01	0.05	202	07
230	8.06	8.04	34.053	26.528	154.1	0.550	1.90	82.8	28.6	41.4	2.34	30.9	0.00	0.00			232	06
250 ISL	7.90 D	7.87	34.071 D	26.567	150.7	0.581	1.70	D 74.0 D	25.5	44.5	2.44	31.9	0.02	0.00			252	
270	7.61	7.58	34.099	26.631	144.8	0.610	1.49	64.9	22.2	47.6	2.53	33.0	0.00	0.00			272	05
300 ISL	7.17 D	7.14	34.081 D	26.679	140.6	0.654	1.40	D 61.0 D	20.7	52.8	2.63	34.6	0.02	0.00			302	
320	6.89	6.86	34.100	26.733	135.6	0.680	1.22	53.2	17.9	56.4	2.70	35.6	0.00	0.00			323	04
380	6.08	6.04	34.103	26.842	125.5	0.758	0.95	41.3	13.6	67.1	2.89	38.3	0.00	0.00			383	03
400 ISL	5.97 D	5.94	34.105 D	26.858	124.2	0.786	0.85	D 36.8 D	12.2	70.3	2.96	39.0	0.02	0.00			403	
440	5.80	5.76	34.183	26.941	116.8	0.831	0.52	22.7	7.4	76.5	3.09	40.3	0.00	0.00			444	02
500 ISL	5.65 D	5.61	34.232 D	26.999	112.0	0.904	0.39	D 17.0 D	5.6	82.0	3.18	41.1	0.01	0.00			504	
516	5.57	5.53	34.249	27.023	109.9	0.917	0.31	13.5	4.4	83.5	3.21	41.3	0.00	0.00			520	01

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.
D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV SALLY RIDE CALCOFI CRUISE 1708 STATION 90.0 90.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
31 25.1 N	121 59.4 W	05/08/2017	1207	UTC	3838 m	300 11 kn			1013.8 mb	18.3 C	17.2 C				019

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3* µM	PO4* µM	NO3* µM	NO2* µM	NH4* µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0	18.16	18.16	33.186	23.846	404.7	0.000	5.54	241.9	102.5	2.0	0.24	0.0	0.02	0.04	0.09	0.02	0	
2	18.16	18.16	33.186	23.846	404.8	0.008	5.54	241.9	102.5	2.0	0.24	0.0	0.00	0.00	0.09	0.02	2	22
10	17.80	17.79	33.177	23.928	397.3	0.040	5.56	242.6	102.1	1.9	0.24	0.0	0.00	0.00	0.08	0.02	10	20
11	17.80	17.79	33.177	23.928	397.3	0.042											10	21
20	17.66	17.65	33.175	23.960	394.6	0.080	5.58	243.4	102.2	1.9	0.24	0.0	0.00	0.00	0.12	0.04	20	19
30	17.38	17.38	33.180	24.031	388.2	0.119	5.63	245.9	102.7	1.9	0.23	0.0	0.00	0.00	0.12	0.05	30	18
41	16.60	16.60	33.226	24.249	367.8	0.161	5.82	254.1	104.5	1.8	0.25	0.0	0.00	0.00	0.21	0.07	41	16
41	16.60	16.60	33.224	24.248	367.9	0.159											41	17
50	15.87	15.86	33.332	24.499	344.2	0.193	5.95	259.5	105.3	2.1	0.20	0.0	0.00	0.00	0.19	0.07	50	15
60	15.09	15.08	33.390	24.715	323.9	0.226	5.94	259.3	103.6	2.2	0.19	0.0	0.00	0.00	0.20	0.08	60	14
70	14.50	14.49	33.395	24.847	311.6	0.258	5.96	260.0	102.7	2.8	0.21	0.2	0.03	0.00	0.25	0.15	71	13
75 ISL	14.32 D	14.31	33.437 D	24.918	304.9	0.271	5.90	D256.9	D101.2	2.8	0.21	0.3	0.03	0.00	0.25	0.16	76	
85	13.92	13.91	33.529	25.073	290.5	0.303	5.84	254.8	99.5	2.8	0.22	0.3	0.03	0.00	0.24	0.17	86	12
100 ISL	13.00 D	12.98	33.412 D	25.169	281.6	0.344	5.68	D247.6	D 94.9	3.2	0.33	1.2	0.17	0.00	0.17	0.20	101	
101	12.78	12.77	33.412	25.211	277.6	0.349	5.68	248.0	94.5	3.2	0.34	1.2	0.18	0.00	0.16	0.21	102	11
120	11.86	11.85	33.446	25.415	258.6	0.400	5.26	229.7	85.8	6.1	0.62	6.3	0.05	0.00	0.12	0.13	121	10
125 ISL	11.89 D	11.87	33.474 D	25.431	257.2	0.411	5.23	D227.9	D 85.4	6.6	0.66	6.9	0.05	0.00	0.12	0.13	126	
141	10.88	10.86	33.481	25.621	239.3	0.452	5.03	219.3	80.3	8.0	0.77	8.9	0.03	0.00	0.11	0.11	142	09
150 ISL	10.53 D	10.51	33.524 D	25.716	230.3	0.473	4.73	D206.0	D 75.0	11.0	0.94	11.6	0.03	0.00	0.08	0.08	151	
170	9.52	9.50	33.667	25.997	203.8	0.517	4.33	188.9	67.2	17.5	1.31	17.5	0.00	0.00	0.02	0.03	171	08
200	8.68	8.66	33.885	26.302	175.2	0.573	3.77	164.6	57.5	26.2	1.63	22.5	0.00	0.00	0.00	0.02	202	07
231	8.19	8.17	33.939	26.420	164.4	0.626	3.31	144.5	50.0	31.7	1.84	25.4	0.00	0.00			233	06
250 ISL	8.09 D	8.06	34.006 D	26.488	158.3	0.657	2.39	D103.8	D 35.9	37.2	2.06	28.0	0.01	0.00			252	
270	7.68	7.65	34.020	26.560	151.6	0.688	2.13	93.1	31.8	43.1	2.30	30.8	0.00	0.00			272	05
300 ISL	7.38 D	7.35	34.048 D	26.624	145.9	0.733	1.81	D 78.6	D 26.8	47.3	2.39	32.4	0.01	0.00			302	
321	7.07	7.04	34.032	26.655	143.0	0.763	1.80	78.6	26.5	50.3	2.46	33.4	0.00	0.00			324	04
380	6.80	6.76	34.157	26.792	131.0	0.844	0.85	37.1	12.4	59.7	2.83	36.7	0.00	0.00			383	03
400 ISL	6.63 D	6.59	34.173 D	26.827	127.8	0.871	0.74	D 32.1	D 10.7	62.3	2.88	37.2	0.01	0.00			403	
441	6.38	6.34	34.202	26.884	122.8	0.922	0.58	25.2	8.4	67.7	2.98	38.3	0.00	0.00			445	02
500 ISL	6.08 D	6.04	34.258 D	26.967	115.6	0.993	0.41	D 18.0	D 5.9	74.2	3.08	39.7	0.01	0.00			504	
516	6.00	5.96	34.260	26.979	114.6	1.011	0.37	16.1	5.3	76.0	3.11	40.1	0.00	0.00			520	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV SALLY RIDE CALCOFI CRUISE 1708 STATION 90.0 100.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
31 5.1 N	122 39.8 W	05/08/2017	0548	UTC	4033 m	320 04 kn			1015.1 mb	18.5 C	17.2 C				018

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3* µM	PO4* µM	NO3* µM	NO2* µM	NH4* µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0	19.08	19.08	33.276	23.685	420.1	0.000	5.47	238.9	103.1	1.5	0.26	0.0	0.02	0.16	0.10	0.02	0	
3	19.08	19.08	33.276	23.685	420.2	0.013	5.47	238.9	103.1	1.5	0.26	0.0	0.00	0.16	0.10	0.02	3	20
10	19.05	19.05	33.279	23.696	419.5	0.042	5.44	237.6	102.5	1.8	0.26	0.1	0.00	0.08	0.09	0.02	10	19
20 ISL	18.68 D	18.67	33.274 D	23.786	411.2	0.078	5.49	D239.4	D102.6	1.8	0.27	0.1	0.02	0.23	0.11	0.02	20	
25	18.28	18.28	33.254	23.869	403.5	0.104	5.57	D242.8	D103.3	1.7	0.27	0.1	0.00	0.31	0.13	0.03	25	18
30 ISL	17.83 D	17.82	33.249 D	23.977	393.4	0.118	5.65	D246.3	D103.9	1.7	0.29	0.2	0.03	0.00	0.21	0.06	30	
40	15.31	15.31	33.263	24.568	337.3	0.160	6.09	265.8	106.6	1.8	0.33	0.4	0.06	0.00	0.37	0.11	40	17
50	14.63	14.62	33.297	24.743	320.9	0.193	5.95	259.7	102.7	1.9	0.42	1.4	0.18	0.36	0.41	0.17	50	16
62	13.65	13.64	33.255	24.916	304.7	0.231	5.74	250.6	97.1	2.8	0.48	2.1	0.44	0.39	0.34	0.24	62	15
75	13.12	13.11	33.280	25.042	293.0	0.270	5.93	258.8	99.2	2.9	0.34	0.8	0.16	0.26	0.30	0.28	76	14
87	12.51	12.50	33.274	25.157	282.3	0.304	5.78	252.4	95.5	3.3	0.37	1.6	0.19	0.00	0.26	0.26	88	13
100	11.88	11.87	33.303	25.298	269.1	0.340	5.36	234.0	87.4	5.8	0.63	6.1	0.05	0.00	0.19	0.16	101	12
112	11.35	11.33	33.348	25.433	256.5	0.372	5.11	222.8	82.3	7.5	0.78	8.5	0.04	0.00	0.12	0.16	113	11
125 ISL	10.60 D	10.59	33.468 D	25.658	235.2	0.400	4.11	D178.8	D 65.2	14.0	1.25	15.4	0.02	0.00	0.05	0.08	126	
126	10.58	10.57	33.457	25.653	235.7	0.406	4.16	181.6	66.0	14.5	1.29	16.0	0.00	0.00	0.04	0.07	127	10
140	10.09	10.08	33.550	25.810	221.0	0.438	3.74	163.2	58.7	18.4	1.51	19.5	0.00	0.00	0.03	0.06	141	09
150 ISL	9.76 D	9.74	33.626 D	25.925	210.3	0.457	3.42	D148.8	D 53.3	21.3	1.64	21.3	0.02	0.00	0.02	0.06	151	
171	9.14	9.12	33.830	26.186	185.8	0.501	2.88	125.5	44.3	27.2	1.90	25.1	0.00	0.00	0.00	0.04	172	08
200 ISL	8.80 D	8.78	33.940 D	26.326	173.0	0.550	2.54	D110.7	D 38.9	31.1	2.04	27.0	0.01	0.00	0.00	0.03	202	
201	8.77	8.75	33.938	26.330	172.6	0.555	2.55	111.3	39.0	31.2	2.04	27.1	0.00	0.00	0.00	0.03	203	07
230	8.36	8.34	34.016	26.454	161.3	0.603	2.22	96.7	33.6	36.4	2.19	29.0	0.00	0.00			232	06
250 ISL	8.11 D	8.09	34.039 D	26.510	156.2	0.633	2.00	D 87.2	D 30.2	39.7	2.29	30.3	0.01	0.00			252	
271	7.81	7.78	34.065	26.575	150.3	0.667	1.76	76.7	26.3	43.2	2.40	31.7	0.00	0.00			273	05
300 ISL	7.60 D	7.57	34.095 D	26.630	145.5	0.708	1.45	D 63.0	D 21.6	47.0	2.53	33.0	0.01	0.00			302	
320	7.43	7.40	34.104	26.662	142.7	0.739	1.35	58.7	20.0	49.6	2.62	33.9	0.00	0.00			323	04
380	6.86	6.82	34.166	26.791	131.1	0.821	0.80	35.1	11.8	60.0	2.86	36.9	0.00	0.00			383	03
400 ISL	6.71 D	6.67	34.179 D	26.821	128.4	0.846	0.70	D 30.6	D 10.3	63.3	2.91	37.5	0.01	0.00			403	
440	6.36	6.32	34.211	26.894	121.9	0.897	0.54	23.7	7.9	69.8	3.01	38.7	0.00	0.00			444	02
500 ISL	5.97 D	5.93	34.250 D	26.975	114.7	0.968	0.41	D 17.7	D 5.8	76.6	3.12	40.4	0.01	0.00			504	
515	5.86	5.82	34.255	26.992	113.1	0.985	0.34	15.0	4.9	78.3	3.15	40.8	0.00	0.00			519	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV SALLY RIDE CALCOFI CRUISE 1708 STATION 90.0 110.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME UTC	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
30 45.1 N	123 19.9 W	04/08/2017	2349		4041 m	320 03 kn	330 03 08	2	1014.9 mb	19.8 C	18.8 C	24 m	8/8	ST	017

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3* µM	PO4* µM	NO3* µM	NO2* µM	NH4* µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0	19.38	19.38	33.261	23.596	428.5	0.000	5.42	236.6	102.7	1.6	0.26	0.0	0.01	0.17	0.15	0.04	0	
3	19.38	19.38	33.261	23.597	428.6	0.013	5.42	236.6	102.7	1.6	0.26	0.0	0.00	0.17	0.15	0.04	3	20
10	19.05	19.05	33.253	23.676	421.3	0.043	5.44	237.5	102.4	1.7	0.25	0.0	0.00	0.22	0.13	0.00	10	19
20 ISL	18.51 D	18.51	33.196 D	23.769	412.9	0.078	5.49	D239.5	D102.2	2.0	0.25	0.1	0.02	0.00	0.13	0.06	20	
25	18.47	18.47	33.196	23.778	412.2	0.105	5.50	240.2	102.4	2.1	0.25	0.1	0.00	0.00	0.13	0.09	25	18
30 ISL	18.34 D	18.33	33.196 D	23.812	409.2	0.120	5.51	D240.4	D102.3	2.1	0.25	0.1	0.02	0.00	0.18	0.07	30	
40	17.30	17.29	33.193	24.062	385.6	0.165	5.76	251.2	104.7	2.0	0.26	0.1	0.00	0.00	0.29	0.01	40	17
50	16.16	16.16	33.174	24.310	362.2	0.202	5.90	257.4	104.9	1.9	0.27	0.0	0.00	0.00	0.24	0.03	50	16
62	15.30	15.29	33.224	24.543	340.4	0.245	5.94	259.3	103.9	1.9	0.29	0.0	0.00	0.00	0.53	0.09	62	15
75	14.21	14.20	33.234	24.784	317.8	0.287	5.92	258.4	101.3	2.4	0.31	0.4	0.09	0.18	0.52	0.16	76	14
88	13.38	13.36	33.257	24.973	299.9	0.328	5.58	243.7	93.9	3.6	0.46	2.3	0.18	0.11	0.54	0.03	89	13
100	12.57	12.56	33.314	25.177	280.8	0.362	4.91	214.3	81.2	6.6	0.82	8.3	0.14	0.00	0.43A	0.10A	101	12
112	11.91	11.90	33.361	25.339	265.6	0.395	4.47	195.0	72.9	9.5	1.05	12.1	0.05	0.00	0.24	0.11	113	11
125	11.09	11.07	33.453	25.561	244.6	0.428	4.69	204.7	75.2	10.5	0.97	11.6	0.04	0.00	0.16	0.07	126	10
140	10.11	10.09	33.550	25.807	221.3	0.463	3.64	158.9	57.2	18.1	1.53	19.7	0.00	0.00	0.06	0.06	141	09
150 ISL	9.95 D	9.93	33.585 D	25.862	216.3	0.482	3.42	D148.9	D 53.6	19.9	1.60	20.8	0.02	0.00	0.05	0.05	151	
170	9.41	9.39	33.714	26.051	198.6	0.526	3.25	141.8	50.4	23.5	1.75	23.0	0.00	0.00	0.02	0.03	171	08
200	8.74	8.71	33.873	26.284	177.0	0.583	3.30	143.9	50.4	27.8	1.80	24.3	0.00	0.00	0.01	0.04	202	07
230	8.39	8.36	33.950	26.398	166.6	0.634	2.96	129.3	44.9	31.9	1.94	26.2	0.00	0.00			232	06
250 ISL	8.08 D	8.05	33.980 D	26.469	160.1	0.666	2.78	D120.9	D 41.8	36.6	2.09	28.4	0.02	0.00			252	
270	7.71	7.68	34.008	26.545	153.0	0.698	2.31	100.8	34.5	41.3	2.23	30.6	0.03	0.07			272	05
300 ISL	7.55 D	7.52	34.092 D	26.635	145.0	0.742	1.44	D 62.8	D 21.5	47.4	2.46	32.8	0.02	0.00			302	
320	7.31	7.28	34.105	26.680	140.9	0.772	1.28	56.0	19.0	51.5	2.62	34.4	0.00	0.00			323	04
380	6.57	6.53	34.117	26.791	130.8	0.854	0.99	43.0	14.3	61.2	2.80	37.0	0.00	0.00			383	03
400 ISL	6.56 D	6.52	34.156 D	26.823	128.1	0.879	0.78	D 34.0	D 11.4	64.2	2.86	37.6	0.01	0.00			403	
440	6.09	6.05	34.163	26.890	121.9	0.930	0.64	27.7	9.1	70.3	2.98	38.9	0.00	0.00			444	02
500 ISL	5.82 D	5.78	34.213 D	26.963	115.6	1.002	0.46	D 19.8	D 6.5	76.5	3.10	40.2	0.02	0.00			504	
515	5.77	5.72	34.228	26.982	113.9	1.018	0.38	16.4	5.4	78.1	3.13	40.6	0.00	0.00			519	01

A) SECOND FLUOROMETER READING NOT RECORDED CHLOROPHYLL AND PHAEOPIGMENT CALCULATED WITH ASSUMED ACID RATIO INTERPOLATED FROM ADJACENT LEVELS
D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV SALLY RIDE CALCOFI CRUISE 1708 STATION 90.0 120.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME UTC	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
30 25.1 N	123 59.9 W	04/08/2017	1755		4297 m	350 04 kn	280 03 09	2	1016.3 mb	20.0 C	17.9 C	36 m	7/8	AC	016

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3* µM	PO4* µM	NO3* µM	NO2* µM	NH4* µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0	20.26	20.26	33.603	23.630	425.3	0.000	5.29	231.0	102.1	2.8	0.20	0.5	0.04	0.06	0.07	0.01	0	
2 A	20.26	20.26	33.603	23.630	425.4	0.009	5.29	231.0	102.1	2.8	0.20	0.5	0.04	0.06	0.07	0.01	2	24
10	20.24	20.24	33.604	23.637	425.1	0.043	5.27	D229.8	D101.6	2.1	0.22	0.1	0.00	0.17	0.08	0.01	10	22
10	20.24	20.24	33.600	23.633	425.4	0.042											10	23
20 ISL	20.07 D	20.06	33.591 D	23.674	422.0	0.081	5.29	D230.7	D101.7	2.1	0.20	0.0	0.01	0.00	0.08	0.02	20	
21 A	20.08	20.08	33.595	23.672	422.2	0.089	5.29	230.8	101.7	2.0	0.20	0.0	0.00	0.00	0.08	0.02	21	21
26 A	19.80	19.80	33.567	23.725	417.4	0.110	5.32	232.3	101.8	1.9	0.20	0.0	0.00	0.09	0.07	0.02	26	20
30 ISL	19.79 D	19.79	33.580 D	23.737	416.4	0.124	5.32	D232.3	D101.8	1.9	0.20	0.0	0.01	0.11	0.08	0.02	30	
38	19.79	19.79	33.619	23.768	413.8	0.160	5.32	232.1	101.8	1.9	0.20	0.0	0.00	0.15	0.08	0.02	38	19
50 A	18.01	18.00	33.457	24.093	383.1	0.208	5.55	242.4	102.6	1.9	0.21	0.0	0.00	0.09	0.10	0.02	50	18
60	17.35	17.34	33.332	24.157	377.4	0.246	5.75	250.8	104.7	1.9	0.21	0.0	0.00	0.07	0.11	0.03	60	17
70	16.24	16.23	33.265	24.365	357.7	0.283	5.90	257.5	105.2	1.9	0.21	0.0	0.00	0.00	0.14	0.04	71	16
75 ISL	16.10 D	16.09	33.290 D	24.417	353.0	0.299	5.90	D257.3	D104.9	1.9	0.22	0.0	0.01	0.00	0.15	0.05	76	
80	15.79	15.78	33.290	24.485	346.6	0.318	5.86	255.9	103.6	2.0	0.22	0.0	0.00	0.00	0.16	0.06	81	15
91 A	15.12	15.11	33.310	24.650	331.2	0.355	5.81	253.4	101.3	2.2	0.25	0.0	0.00	0.00	0.19	0.10	92	14
100	14.65	14.63	33.282	24.731	323.7	0.385	5.75	250.9	99.2	2.5	0.28	0.0	0.00	0.11	0.20	0.15	101	13
113	13.92	13.90	33.305	24.902	307.7	0.426											114	12
114 A	13.85	13.83	33.298	24.910	306.9	0.429	5.56	242.5	94.4	3.4	0.36	0.7	0.05	0.00	0.22	0.24	115	11
125 ISL	13.12 D	13.10	33.312 D	25.070	291.8	0.462	5.40	D235.2	D 90.4	4.4	0.50	3.0	0.19	0.00	0.20	0.24	126	
126	12.98	12.96	33.306	25.092	289.7	0.465	5.32	232.3	88.8	4.5	0.51	3.2	0.21	0.06	0.20	0.24	127	10
140	12.09	12.07	33.326	25.279	272.1	0.504	5.04	219.9	82.5	7.1	0.73	7.5	0.04	0.00	0.15	0.19	141	09
150 ISL	11.53 D	11.51	33.385 D	25.430	257.8	0.531	4.70	D204.5	D 76.0	9.4	0.89	10.1	0.04	0.00	0.12	0.16	151	
170	10.52	10.50	33.459	25.668	235.4	0.580	4.30	187.7	68.1	13.9	1.22	15.2	0.00	0.00	0.07	0.10	171	08
200	9.33	9.31	33.683	26.041	200.2	0.645	3.67	159.9	56.7	21.7	1.61	21.3	0.00	0.00	0.01	0.03	202	07
230	8.73	8.71	33.880	26.291	176.9	0.702	3.01	131.2	45.9	28.6	1.90	25.5	0.00	0.00			232	06
250 ISL	8.48 D	8.46	33.940 D	26.377	169.1	0.737	2.96	D128.7	D 44.9	32.5	1.99	26.8	0.01	0.00			252	
270	8.08	8.05	33.983	26.472	160.2	0.770	2.69	117.4	40.5	36.4	2.08	28.1	0.00	0.00			272	05
300 ISL	7.76 D	7.73	34.013 D	26.542	153.9	0.818	2.28	D 99.1	D 34.0	41.9	2.26	30.5	0.01	0.00			302	
320	7.46	7.43	34.031	26.600	148.6	0.847	1.97	86.1	29.3	45.6	2.38	32.1	0.00	0.00			323	04
380	6.75	6.72	34.058	26.719	137.7	0.933	1.51	65.7	22.0	55.2	2.61	35.2	0.00	0.00			383	03
400 ISL	6.53 D	6.49	34.070 D	26.759	134.1	0.962	1.31	D 56.9	D 19.0	58.8	2.71	36.3	0.01	0.00			403	
440	6.27	6.23	34.132	26.842	126.6	1.012	0.82	35.7	11.8	66.0	2.91	38.5	0.00	0.00			444	02
500 ISL	5.83 D	5.79	34.182 D	26.938	118.0	1.089	0.60	D 26.2	D 8.6	74.2	3.05	40.2	0.01	0.00			504	
517	5.75	5.71	34.196	26.960	116.1	1.105	0.50	21.9	7.2	76.5	3.09	40.7	0.00	0.00			521	01

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.
D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; SECONDARY STA-CORRECTED O2;

RV SALLY RIDE CALCOFI CRUISE 1708 STATION 93.3 26.7

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
32 57.4 N	117 18.3 W	01/08/2017	2236	UTC	62 m	250 07 kn	240 03 07	1	1009.3 mb	22.0 C	20.2 C	09 m	4/8	AS	001

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3* µM	PO4* µM	NO3* µM	NO2* µM	NH4* µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0	23.15	23.15	33.505	22.760	508.4	0.000	6.08	265.5	123.6	0.8	0.09	0.0	0.03	0.02	1.01	0.16	0	
2	23.15	23.14	33.505	22.760	508.5	0.010	6.08	265.5	123.6	0.8	0.09	0.0	0.03	0.00	1.01	0.16	2	07
5	22.50	22.50	33.485	22.930	492.4	0.025	6.32	275.8	126.9	0.8	0.14	0.1	0.00	0.11	0.93	0.19	5	06
10	21.09	21.08	33.460	23.302	457.1	0.049	6.37	277.8	124.6	1.1	0.18	0.1	0.00	0.23	0.91	0.19	10	05
20	13.02	13.02	33.378	25.134	282.6	0.086	4.49	195.8	75.0	6.7	0.67	1.7	0.50	0.71	0.34	0.31	20	04
30	12.42	12.41	33.396	25.266	270.3	0.114	4.16	181.4	68.6	8.6	0.87	4.2	0.32	0.15	0.22	0.33	30	03
42	11.93	11.92	33.450	25.402	257.7	0.145	3.69	161.1	60.3	12.5	1.15	9.4	0.30	0.00	0.13	0.33	42	02
50 ISL	11.77 D	11.76	33.451 D	25.432	255.1	0.160	3.59	156.5	58.5	13.7	1.24	11.1	0.32	0.00	0.11	0.28	50	
52	11.79	11.78	33.451	25.429	255.4	0.171	3.57	155.8	58.2	14.0	1.26	11.5	0.33	0.00	0.11	0.27	52	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; SECONDARY STA-CORRECTED O2;

RV SALLY RIDE CALCOFI CRUISE 1708 STATION 93.3 28.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
32 54.7 N	117 23.9 W	02/08/2017	0234	UTC	635 m	320 02 kn	250 03 07	1	1009.4 mb	22.0 C	20.0 C		6/8	AS	003

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3* µM	PO4* µM	NO3* µM	NO2* µM	NH4* µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0	22.38	22.38	33.474	22.955	489.8	0.000	5.85	255.4	117.2	1.1	0.13	0.2	0.03	0.06	0.62	0.12	0	
2	22.38	22.38	33.474	22.955	489.9	0.010	5.85	255.4	117.2	1.1	0.13	0.2	0.03	0.06	0.62	0.12	2	20
10	22.27	22.27	33.482	22.991	486.8	0.049	6.33	276.4	126.7	0.9	0.12	0.3	0.03	0.34	0.74	0.17	10	19
20	15.32	15.32	33.377	24.653	328.5	0.090	6.14	267.9	107.5	1.8	0.22	0.1	0.04	0.55	1.33	0.44	20	18
30	13.87	13.87	33.365	24.953	300.2	0.121	5.42	236.6	92.2	3.1	0.38	0.2	0.16	0.32	0.50	0.27	30	17
40	12.59	12.59	33.369	25.212	275.7	0.150	4.70	205.2	77.9	6.6	0.83	6.8	0.25	0.00	0.40	0.34	40	16
50	12.20	12.20	33.384	25.299	267.7	0.177	4.50	196.5	73.9	8.2	0.94	8.4	0.15	0.00	0.32	0.30	50	15
60	11.69	11.68	33.429	25.431	255.4	0.203	3.99	174.0	64.8	12.2	1.20	12.3	0.08	0.13	0.20	0.25	60	14
70	11.10	11.09	33.491	25.586	240.8	0.228	3.68	160.6	59.1	15.2	1.45	17.2	0.05	0.00	0.11	0.18	71	13
75 ISL	10.91 D	10.90	33.533 D	25.654	234.5	0.237	3.56	D155.1 D	56.9	16.5	1.52	18.2	0.04	0.00	0.10	0.17	76	
85	10.54	10.53	33.592	25.764	224.2	0.263	3.34	145.6	52.9	19.1	1.67	20.3	0.03	0.00	0.08	0.15	86	12
100 ISL	10.63 D	10.62	33.756 D	25.876	214.0	0.293	2.55	D111.2 D	40.7	22.7	1.93	22.8	0.03	0.00	0.06	0.14	101	
101	10.64	10.62	33.760	25.879	213.7	0.298	2.52	110.1	40.2	23.0	1.95	22.9	0.03	0.00	0.05	0.14	102	11
120	10.41	10.40	33.894	26.024	200.4	0.337	2.27	99.2	36.0	25.6	2.04	24.2	0.00	0.00	0.03	0.09	121	10
125 ISL	10.30 D	10.29	33.898 D	26.045	198.5	0.344	2.31	D100.4 D	36.5	26.0	2.05	24.5	0.02	0.00	0.03	0.09	126	
140	10.16	10.14	33.937	26.101	193.5	0.377	2.32	101.0	36.5	27.1	2.07	25.3	0.03	0.42	0.04	0.08	141	09
150 ISL	10.26 D	10.24	34.020 D	26.149	189.2	0.393	2.00	D 87.1 D	31.6	28.1	2.13	25.6	0.03	0.32	0.03	0.08	151	
170	10.21	10.19	34.091	26.214	183.6	0.434	1.81	79.1	28.7	30.1	2.25	26.2	0.03	0.12	0.03	0.07	171	08
200	9.89	9.87	34.178 D	26.337	172.5	0.485	1.57	D 68.1 D	24.6								202	07
230	9.74	9.71	34.237	26.410	166.2	0.538	1.38	60.3	21.6	34.4	2.44	28.0	0.03	0.09			232	06
250 ISL	9.11 D	9.09	34.160 D	26.451	162.4	0.569	1.72	D 75.0 D	26.6	36.0	2.40	28.7	0.02	0.00			252	
270	8.83	8.80	34.148	26.487	159.3	0.602	1.80	78.4	27.5	37.6	2.36	29.5	0.00	0.00			272	05
300 ISL	9.27 D	9.23	34.317 D	26.552	154.2	0.649	0.97	D 42.1 D	15.0	40.8	2.57	30.1	0.02	0.00			302	
320	9.02	8.99	34.364	26.627	147.3	0.680	0.73	31.7	11.2	42.9	2.71	30.6	0.00	0.00			323	04
380	8.32	8.28	34.364	26.738	137.5	0.766	0.49	21.4	7.4	50.7	2.89	33.3	0.00	0.00			383	03
400 ISL	7.97 D	7.93	34.312 D	26.751	136.4	0.795	0.59	D 25.6 D	8.9	53.0	2.91	34.2	0.02	0.00			403	
439	7.52	7.47	34.298	26.806	131.4	0.845	0.53	23.3	8.0	57.4	2.96	35.9	0.00	0.00			443	02
500 ISL	7.14 D	7.09	34.293 D	26.856	127.4	0.927	0.47	D 20.5 D	7.0	62.9	3.03	37.3	0.02	0.00			504	
514	7.05	7.00	34.298	26.873	125.9	0.941	0.43	18.5	6.3	64.2	3.05	37.6	0.00	0.13			518	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV SALLY RIDE CALCOFI CRUISE 1708 STATION 93.3 30.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
32 50.8 N	117 31.9 W	02/08/2017	0559	UTC	839 m	230 02 kn			1010.7 mb	21.5 C	20.5 C				004

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3* µM	PO4* µM	NO3* µM	NO2* µM	NH4* µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0	22.37	22.37	33.482	22.962	489.2	0.000	5.94	259.4	119.1	0.6	0.09	0.0	0.03	0.03	0.37	0.09	0	
2	22.37	22.37	33.482	22.962	489.2	0.010	5.94	259.4	119.1	0.6	0.09	0.0	0.03	0.00	0.37	0.09	2	20
10	21.37	21.37	33.441	23.210	465.9	0.048	6.57	286.8	129.3	0.6	0.10	0.0	0.00	0.00	0.39	0.09	10	19
20	16.63	16.62	33.351	24.339	358.5	0.089	6.45	281.5	115.9	0.7	0.15	0.0	0.00	0.00	0.58	0.20	20	18
30	14.92	14.92	33.249	24.642	329.8	0.124	6.04	263.9	104.9	1.9	0.29	0.0	0.00	0.00	0.46	0.19	30	17
40	13.95	13.95	33.267	24.861	309.2	0.156	5.87	256.3	99.9	2.4	0.40	0.8	0.06	0.22	0.63	0.27	40	16
50	13.08	13.08	33.300	25.063	290.3	0.186	5.42	236.6	90.7	3.4	0.59	4.1	0.18	0.14	0.61	0.31	50	15
60	12.14	12.13	33.372	25.302	267.7	0.214	4.54	198.0	74.4	8.7	1.01	10.5	0.14	0.07	0.68	0.43	60	14
70	11.51	11.50	33.445	25.476	251.3	0.240	3.95	172.4	63.9	13.0	1.29	14.7	0.05	0.09	0.26	0.28	71	13
75 ISL	11.42 D	11.41	33.472 D	25.515	247.8	0.249	3.77	D164.0 D	60.8	14.6	1.39	16.1	0.06	0.09	0.21	0.23	76	
85	10.74	10.73	33.536	25.686	231.6	0.276	3.42	149.0	54.4	17.6	1.58	18.8	0.07	0.09	0.09	0.14	86	12
100	10.57	10.56	33.708	25.850	216.4	0.310	2.75	119.9	43.7	22.0	1.85	21.7	0.03	0.00	0.07	0.12	101	11
120	10.44	10.42	33.838	25.975	205.0	0.352	2.25	98.1	35.7	25.6	2.04	23.5	0.00	0.00	0.03	0.07	121	10
125 ISL	10.36 D	10.35	33.877 D	26.019	200.9	0.359	2.23	D 96.9 D	35.2	26.1	2.07	23.7	0.02	0.00	0.04	0.08	126	
140	10.41	10.40	33.942	26.061	197.4	0.392	2.02	87.9	32.0	27.6	2.14	24.5	0.00	0.00	0.06	0.10	141	09
150 ISL	10.42 D	10.41	33.968 D	26.080	195.8	0.409	1.89	D 82.4 D	30.1	28.1	2.16	24.7	0.02	0.00	0.06	0.09	151	
170	10.26	10.24	34.019	26.149	189.7	0.450	1.86	81.0	29.3	29.1	2.21	25.2	0.00	0.17	0.04	0.07	171	08
200	9.84	9.82	34.098	26.283	177.5	0.505	1.85	80.6	29.0	31.2	2.26	26.2	0.00	0.00	0.03	0.06	202	07
231	9.90	9.88	34.270	26.408	166.6	0.559	1.23	53.8	19.4	35.2	2.49	27.6	0.00	0.00			233	06
250 ISL	10.04 D	10.01	34.370 D	26.465	161.7	0.588	0.86	D 37.3 D	13.5	37.7	2.55	28.2	0.02	0.00			252	
270	9.45	9.42	34.318	26.521	156.5	0.623	1.03	44.8	16.0	40.2	2.61	28.9	0.00	0.00			272	05
300 ISL	9.16 D	9.12	34.311 D	26.565	152.8	0.667	0.99	D 43.1 D	15.3	43.0	2.63	30.0	0.02	0.00			302	
320	8.75	8.72	34.268	26.595	150.1	0.700	1.03	45.0	15.8	44.8	2.65	30.7	0.00	0.00			323	04
380	8.37	8.33	34.327	26.702	140.9	0.787	0.63	27.3	9.5	49.7	2.85	32.3	0.00	0.00			383	03
400 ISL	8.11 D	8.07	34.311 D	26.729	138.6	0.814	0.63	D 27.5 D	9.6	52.5	2.89	33.2	0.02	0.00			403	
439	7.53	7.48	34.284	26.793	132.6	0.868	0.57	24.8	8.5	58.1	2.97	35.0	0.00	0.00			443	02
500 ISL	6.95 D	6.90	34.295 D	26.884	124.5	0.946	0.44	D 19.1 D	6.4	66.6	3.10	37.4	0.01	0.00			504	
515	6.89	6.84	34.305	26.900	123.2	0.965	0.39	16.9	5.7	68.7	3.13	38.0	0.00	0.00			519	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV SALLY RIDE CALCOFI CRUISE 1708 STATION 93.3 35.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
32 40.8 N	117 52.4 W	02/08/2017	1005	UTC	612 m	250 03 kn			1010.3 mb	20.0 C	19.5 C				005

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3* µM	PO4* µM	NO3* µM	NO2* µM	NH4* µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0	19.91	19.91	33.363	23.538	434.2	0.000	5.40	235.9	103.4	2.0	0.23	0.4	0.04	0.12	0.17	0.04	0	
2	19.91	19.91	33.363	23.538	434.2	0.009	5.40	235.9	103.4	2.0	0.23	0.4	0.04	0.12	0.17	0.04	2	20
10	19.03	19.03	33.331	23.740	415.2	0.043	5.49	239.5	103.3	1.4	0.23	0.0	0.00	0.09	0.12	0.03	10	19
20 ISL	17.80 D	17.80	33.282 D	24.008	390.1	0.079	5.62	D245.3	D103.6	1.6	0.24	0.0	0.02	0.00	0.11	0.06	20	
25	17.46	17.46	33.241	24.058	385.5	0.102	5.73	250.3	104.7	1.7	0.24	0.0	0.00	0.00	0.10	0.07	25	18
30 ISL	16.95 D	16.94	33.216 D	24.160	375.8	0.118	5.81	D253.1	D104.9	1.7	0.24	0.0	0.02	0.00	0.11	0.06	30	
40	15.91	15.90	33.200	24.387	354.5	0.158	5.95	259.8	105.4	1.7	0.24	0.0	0.00	0.00	0.12	0.04	40	17
50	14.68	14.67	33.224	24.675	327.4	0.192	5.98	261.2	103.4	2.0	0.28	0.0	0.00	0.00	0.23	0.11	50	16
62	13.42	13.42	33.265	24.968	299.7	0.230	5.67	247.3	95.4	3.5	0.50	2.6	0.17	0.00	0.43	0.28	62	15
75	12.76	12.75	33.317	25.141	283.6	0.268	5.11	223.1	84.9	5.4	0.73	7.0	0.15	0.00	0.43	0.32	76	14
88	11.76	11.75	33.367	25.370	262.0	0.303	4.63	202.1	75.3	9.2	0.97	11.0	0.07	0.00	0.31	0.29	89	13
100 ISL	10.61 D	10.60	33.491 D	25.674	233.1	0.331	3.91	D170.1	D 62.0	15.0	1.35	16.3	0.04	0.00	0.13	0.15	101	
101	10.59	10.58	33.492	25.678	232.8	0.335	3.94	171.9	62.5	15.5	1.38	16.7	0.04	0.00	0.12	0.14	102	12
112	10.20	10.18	33.556	25.796	221.7	0.360	3.71	161.8	58.4	18.4	1.56	19.2	0.03	0.00	0.06	0.09	113	11
125 ISL	9.71 D	9.70	33.661 D	25.959	206.4	0.386	3.39	D147.6	D 52.9	21.3	1.69	21.3	0.03	0.00	0.03	0.07	126	
126	9.66	9.64	33.651	25.960	206.3	0.390	3.44	150.0	53.5	21.5	1.70	21.5	0.03	0.00	0.03	0.06	127	10
141	9.55	9.53	33.716	26.030	200.0	0.421	3.24	141.5	50.4	23.4	1.78	22.6	0.00	0.00	0.02	0.05	142	09
150 ISL	9.40 D	9.38	33.776 D	26.101	193.5	0.437	3.12	D135.9	D 48.4	25.2	1.84	23.4	0.02	0.00	0.01	0.05	151	
171	9.02	9.00	33.902	26.262	178.5	0.477	2.83	123.4	43.5	29.3	1.97	25.4	0.00	0.00	0.00	0.04	172	08
200	8.68	8.66	33.984	26.379	167.9	0.528	2.51	109.5	38.3	33.4	2.11	27.4	0.00	0.00	0.00	0.04	202	07
232	8.25	8.22	34.062	26.508	156.2	0.579	2.04	89.0	30.9	39.2	2.31	29.7	0.00	0.00			234	06
250 ISL	8.03 D	8.00	34.068 D	26.546	152.8	0.607	1.88	D 82.0	D 28.3	42.4	2.41	30.7	0.02	0.00			252	
272	7.88	7.85	34.124	26.612	146.8	0.640	1.51	66.0	22.7	46.3	2.54	32.0	0.00	0.00			274	05
300 ISL	7.79 D	7.76	34.175 D	26.666	142.3	0.681	1.16	D 50.3	D 17.3	49.7	2.65	32.9	0.02	0.00			302	
322	7.69	7.66	34.204	26.703	139.1	0.711	1.00	43.4	14.9	52.3	2.74	33.6	0.00	0.00			325	04
382	7.80	7.77	34.349	26.803	130.9	0.792	0.42	18.2	6.3	56.5	2.99	34.4	0.00	0.00			385	03
400 ISL	7.80 D	7.76	34.368 D	26.819	129.8	0.818	0.38	D 16.4	D 5.7	58.0	3.00	34.8	0.02	0.00			403	
442	7.33	7.29	34.334	26.861	126.2	0.870	0.37	16.1	5.5	61.5	3.03	35.8	0.00	0.00			446	02
500 ISL	6.64 D	6.59	34.306 D	26.934	119.4	0.944	0.37	D 16.3	D 5.5	68.7	3.12	37.6	0.01	0.00			504	
518	6.54	6.49	34.316	26.955	117.6	0.962	0.32	14.1	4.7	71.0	3.15	38.2	0.00	0.00			522	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; SECONDARY CRUISE-CORRECTED O2;

RV SALLY RIDE CALCOFI CRUISE 1708 STATION 93.3 40.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
32 30.8 N	118 12.9 W	02/08/2017	1412	UTC	1650 m	340 03 kn	240 02 05	1	1011.0 mb	19.5 C	18.8 C	30 m	1/8	ST	006

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3* µM	PO4* µM	NO3* µM	NO2* µM	NH4* µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0	19.08	19.08	33.347	23.739	415.0	0.000	5.39	235.3	101.6	1.2	0.25	0.0	0.00	0.16	0.12	0.03	0	
1	19.08	19.08	33.347	23.739	415.0	0.004	5.39	235.3	101.6	1.2	0.25	0.0	0.00	0.16	0.12	0.03	1	21
10 ISL	18.69 D	18.69	33.350 D	23.839	405.8	0.040	5.49	D239.3	D102.6	1.0	0.25	0.0	0.00	0.00	0.13	0.02	10	
11	18.67	18.67	33.355	23.849	404.9	0.045	5.47	238.7	102.3	1.0	0.25	0.0	0.00	0.00	0.13	0.02	11	19
11	18.67	18.67	33.352	23.847	405.1	0.045											11	20
20 ISL	18.17 D	18.17	33.373 D	23.986	392.1	0.080	5.59	D243.8	D103.5	1.1	0.25	0.0	0.00	0.00	0.16	0.04	20	
26	16.80	16.80	33.296	24.256	366.6	0.104	5.80	253.2	104.6	1.1	0.25	0.0	0.00	0.06	0.19	0.05	26	18
30 ISL	16.11 D	16.11	33.254 D	24.383	354.6	0.117	5.96	D259.7	D105.9	1.3	0.26	0.0	0.00	0.00	0.19	0.07	30	
41	15.10	15.09	33.247	24.604	333.9	0.156	6.03	263.1	105.0	1.6	0.28	0.0	0.00	0.00	0.21	0.11	41	17
50 ISL	14.24 D	14.23	33.232 D	24.775	317.7	0.185	5.96	D259.6	D102.0	2.1	0.33	0.2	0.02	0.00	0.37	0.21	50	
51	14.00	13.99	33.242	24.832	312.4	0.189	5.97	260.5	101.7	2.1	0.33	0.2	0.00	0.00	0.39	0.22	51	16
63	13.31	13.30	33.292	25.013	295.4	0.225	5.50	240.3	92.5	3.8	0.57	3.9	0.39	0.00	0.48	0.39	64	15
75 ISL	12.60 D	12.59	33.286 D	25.147	282.9	0.260	5.11	D222.4	D 84.5	5.9	0.73	6.5	0.21	0.00	0.37	0.29	76	
76	12.48	12.47	33.291	25.174	280.4	0.263	5.08	221.9	83.9	6.1	0.74	6.8	0.19	0.00	0.36	0.28	77	14
88	11.67	11.66	33.373	25.392	259.9	0.295	4.76	207.5	77.2	9.0	0.94	10.6	0.03	0.00	0.22	0.18	89	13
100 ISL	10.82 D	10.81	33.456 D	25.610	239.3	0.325	4.20	D182.8	D 67.0	12.8	1.20	14.6	0.01	0.00	0.12	0.12	101	
101	10.80	10.79	33.454	25.612	239.1	0.327	4.27	186.5	68.1	13.2	1.22	14.9	0.00	0.00	0.11	0.11	102	12
113	9.82	9.81	33.551	25.855	216.0	0.355	3.80	166.0	59.4	18.0	1.50	18.9	0.00	0.00	0.04	0.06	114	11
125 ISL	9.65 D	9.63	33.684 D	25.989	203.6	0.380	3.35	D145.6	D 52.1	22.0	1.70	21.6	0.00	0.00	0.02	0.06	126	
126	9.63	9.61	33.691	25.997	202.9	0.382	3.34	145.8	52.0	22.3	1.72	21.8	0.00	0.00	0.02	0.06	127	10
141	9.35	9.33	33.788	26.119	191.5	0.412	3.17	138.3	49.0	24.8	1.81	23.2	0.00	0.00	0.01	0.04	142	09
150 ISL	9.31 D	9.30	33.818 D	26.148	188.9	0.429	3.08	D134.0	D 47.6	25.9	1.84	23.7	0.00	0.00	0.01	0.04	151	
171	9.01	8.99	33.889	26.253	179.4	0.467	2.93	127.9	45.0	28.4	1.91	24.9	0.00	0.00	0.01	0.03	172	08
200	8.76	8.74	34.005	26.384	167.5	0.518	2.32	101.3	35.5	33.6	2.15	27.6	0.00	0.00	0.00	0.07	202	07
231	8.40	8.37	34.080	26.499	157.0	0.568	1.90	83.0	28.9	39.3	2.33	29.9	0.00	0.00			233	06
250 ISL	8.08 D	8.05	34.091 D	26.556	151.9	0.599	1.79	D 77.7	D 26.9	41.8	2.39	30.8	0.01	0.00			252	
271	7.97	7.94	34.094	26.575	150.4	0.629	1.67	72.7	25.0	44.7	2.46	31.8	0.00	0.00			273	05
300 ISL	7.58 D	7.55	34.127 D	26.659	142.8	0.673	1.35	D 58.7	D 20.1	50.0	2.60	33.4	0.01	0.00			302	
320	7.36	7.33	34.157	26.714	137.8	0.700	1.16	50.6	17.2	53.6	2.70	34.4	0.00	0.00			323	04
381	6.82	6.78	34.189	26.814	128.9	0.781	0.78	34.1	11.4	61.1	2.90	36.6	0.00	0.00			384	03
400 ISL	6.70 D	6.66	34.207 D	26.845	126.2	0.808	0.69	D 29.8	D 10.0	63.0	2.93	37.1	0.01	0.00			403	
441	6.51	6.47	34.221	26.883	123.1	0.856	0.59	25.8	8.6	67.2	3.01	38.2	0.00	0.00			445	02
500 ISL	6.19 D	6.14	34.265 D	26.960	116.4	0.931	0.41	D 18.0	D 6.0	73.4	3.12	39.5	0.01	0.00			504	
518	6.10	6.06	34.281	26.983	114.4	0.948	0.35	15.2	5.0	75.2	3.15	39.9	0.00	0.00			522	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV SALLY RIDE CALCOFI CRUISE 1708 STATION 93.3 45.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
32 20.8 N	118 33.5 W	02/08/2017	1844 UTC	1392 m	260 02 kn	230 03 06	1	1012.2 mb	20.0 C	18.6 C	25 m	1/8	ST	007

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3* µM	PO4* µM	NO3* µM	NO2* µM	NH4* µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0	18.69	18.69	33.376	23.858	403.6	0.000	5.52	240.9	103.3	1.2	0.24	0.1	0.03	0.12	0.10	0.03	0	
2 A	18.69	18.69	33.376	23.859	403.6	0.008	5.52	240.9	103.3	1.2	0.24	0.1	0.03	0.12	0.10	0.03	2	24
8	18.57	18.56	33.357	23.877	402.1	0.032	5.51	240.3	102.8	0.9	0.23	0.0	0.00	0.06	0.12	0.03	8	22
8	18.57	18.56	33.357	23.877	402.2	0.031											8	23
10 ISL	18.51 D	18.51	33.357 D	23.891	400.8	0.037	5.53	D241.1	D103.0	0.8	0.23	0.0	0.02	0.00	0.13	0.04	10	
15 A	18.35	18.35	33.367	23.939	396.5	0.060	5.57	242.9	103.5	0.7	0.23	0.0	0.00	0.00	0.16	0.04	15	21
19 A	15.95	15.95	33.278	24.437	349.1	0.075	5.99	261.4	106.2	0.9	0.23	0.0	0.00	0.00	0.15	0.06	19	20
20 ISL	15.81 D	15.81	33.288 D	24.476	345.4	0.075	6.07	D264.7	D107.4	0.9	0.24	0.1	0.02	0.00	0.17	0.07	20	
28	14.76	14.75	33.316	24.729	321.5	0.105	6.09	265.6	105.4	1.0	0.34	0.6	0.12	0.30	0.34	0.14	28	19
30 ISL	14.57 D	14.57	33.323 D	24.773	317.3	0.109	6.05	D263.6	D104.3	1.3	0.38	1.2	0.21	0.31	0.39	0.18	30	
37 A	13.40	13.40	33.318	25.012	294.7	0.133	5.75	250.8	96.8	2.3	0.54	3.3	0.51	0.36	0.57	0.34	37	17
37	13.40	13.40	33.318	25.012	294.7	0.133											37	18
47	12.94	12.93	33.324	25.111	285.6	0.162	5.45	237.7	90.8	3.7	0.65	5.5	0.60	0.00	0.41	0.30	47	16
50 ISL	12.74 D	12.73	33.332 D	25.156	281.4	0.168	5.38	D234.5	D 89.4	4.3	0.69	6.3	0.44	0.00	0.37	0.28	50	
57	12.21	12.21	33.333	25.258	271.8	0.190	5.20	226.8	85.4	5.7	0.78	8.1	0.07	0.00	0.25	0.22	57	15
66 A	11.74	11.73	33.381	25.385	259.9	0.214	4.87	212.6	79.2	8.1	0.95	10.8	0.05	0.00	0.14	0.14	67	14
75 ISL	11.50 D	11.49	33.410 D	25.451	253.9	0.235	4.65	D202.5	D 75.2	10.4	1.11	13.2	0.04	0.00	0.09	0.10	76	
81 A	11.24	11.23	33.466	25.543	245.2	0.252	4.41	192.3	70.9	11.9	1.21	14.8	0.03	0.00	0.06	0.08	82	13
90	10.60	10.58	33.560	25.730	227.6	0.273	3.95	172.1	62.7	15.8	1.47	18.4	0.03	0.00	0.03	0.06	91	12
100	10.28	10.26	33.597	25.814	219.7	0.296	3.71	161.9	58.5	18.0	1.56	20.0	0.00	0.00	0.02	0.06	101	11
120	9.55	9.54	33.683	26.003	202.1	0.338	3.32	144.9	51.6	22.1	1.72	22.4	0.00	0.00	0.01	0.06	121	10
125 ISL	9.54 D	9.53	33.730 D	26.041	198.6	0.346	3.09	D134.6	D 48.1	23.4	1.78	23.1	0.02	0.00	0.01	0.05	126	
140	9.26	9.24	33.851	26.182	185.5	0.377	2.68	116.8	41.4	27.4	1.96	25.4	0.00	0.00	0.01	0.04	141	09
150 ISL	9.12 D	9.10	33.887 D	26.232	180.9	0.393	2.62	D113.9	D 40.3	28.0	1.97	25.6	0.02	0.00	0.01	0.04	151	
170	8.99	8.97	33.904	26.268	178.0	0.431	2.63	114.8	40.4	29.2	2.00	26.1	0.00	0.00	0.00	0.03	171	08
200	8.49	8.47	33.999 D	26.421	163.8	0.481	2.39	D103.9	D 36.3								202	07
230	8.11	8.08	34.063	26.529	154.0	0.530	1.99	86.8	30.0	38.6	2.28	29.8	0.00	0.00			232	06
250 ISL	8.01 D	7.99	34.069 D	26.549	152.5	0.560	1.90	D 82.4	D 28.5	41.2	2.36	30.7	0.02	0.00			252	
270	7.81	7.78	34.100	26.603	147.6	0.590	1.64	71.5	24.6	43.8	2.44	31.6	0.00	0.00			272	05
300 ISL	7.58 D	7.55	34.119 D	26.651	143.5	0.634	1.40	D 61.0	D 20.9	49.1	2.60	33.3	0.02	0.00			302	
320	7.35	7.32	34.152	26.712	138.0	0.662	1.11	48.4	16.4	52.6	2.70	34.4	0.00	0.00			323	04
380	6.89	6.85	34.198 D	26.812	129.2	0.744	0.77	D 33.3	D 11.2								383	03
400 ISL	6.85 D	6.81	34.225 D	26.839	126.9	0.770	0.67	D 29.1	D 9.8	61.5	2.91	36.8	0.01	0.00			403	
441	6.54	6.50	34.251	26.901	121.4	0.820	0.48	21.1	7.0	66.1	3.02	38.0	0.00	0.00			445	02
500 ISL	6.14 D	6.10	34.319 D	27.008	111.8	0.890	0.31	D 13.7	D 4.5	73.8	3.14	39.0	0.01	0.00			504	
516	6.10	6.05	34.329	27.022	110.7	0.906	0.27	11.8	3.9	75.9	3.17	39.3	0.00	0.00			520	01

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.
D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV SALLY RIDE CALCOFI CRUISE 1708 STATION 93.3 50.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
32 10.8 N	118 53.6 W	02/08/2017	2239 UTC	1458 m	270 07 kn	280 03 06	1	1011.0 mb	19.0 C	18.6 C		3/8	SC	008

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3* µM	PO4* µM	NO3* µM	NO2* µM	NH4* µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0	18.74	18.74	33.546	23.978	392.2	0.000	5.57	242.9	104.3	0.4	0.22	0.0	0.02	0.06	0.22	0.03	0	
2	18.74	18.73	33.546	23.978	392.2	0.008	5.57	242.9	104.3	0.4	0.22	0.0	0.00	0.06	0.22	0.03	2	20
10 ISL	18.40 D	18.39	33.560 D	24.074	383.3	0.035	5.61	D244.5	D104.4	0.3	0.22	0.0	0.02	0.00	0.23	0.04	10	
11	18.39	18.38	33.561	24.077	383.1	0.043	5.60	244.5	104.3	0.3	0.22	0.0	0.00	0.00	0.23	0.05	11	19
20	18.23	18.23	33.555	24.111	380.3	0.077	5.63	245.8	104.6	0.3	0.24	0.0	0.00	0.00	0.30	0.08	20	18
30	14.54	14.54	33.386	24.829	312.0	0.112	5.79	252.7	99.9	1.9	0.55	2.9	0.38	0.46	0.61	0.18	30	17
40	13.44	13.43	33.453	25.110	285.5	0.142	5.08	221.9	85.7	5.0	0.89	7.6	0.56	0.73	0.64	0.27	40	16
50	11.88	11.87	33.490	25.443	254.0	0.169	4.44	193.8	72.5	10.5	1.20	13.6	0.25	0.14	0.27	0.20	50	15
60	11.26	11.25	33.521	25.580	241.1	0.193	4.21	183.5	67.8	13.5	1.36	16.4	0.08	0.00	0.13	0.14	60	14
70	11.03	11.02	33.555	25.649	234.8	0.217	3.98	173.5	63.8	15.3	1.46	17.8	0.07	0.00	0.10	0.14	71	13
75 ISL	10.80 D	10.79	33.592 D	25.718	228.3	0.226	3.70	D161.3	D 59.1	17.0	1.54	19.1	0.06	0.00	0.08	0.12	76	
85	10.16	10.15	33.651	25.875	213.6	0.251	3.35	146.0	52.7	20.5	1.71	21.5	0.06	0.00	0.05	0.07	86	12
100	9.62	9.60	33.749	26.043	197.9	0.282	2.93	128.0	45.7	25.1	1.89	24.1	0.05	0.00	0.03	0.07	101	11
120	9.13	9.12	33.816	26.174	185.7	0.320	2.95	128.8	45.5	27.4	1.94	25.3	0.04	0.00	0.01	0.04	121	10
125 ISL	9.11 D	9.09	33.837 D	26.195	183.9	0.327	2.82	D122.7	D 43.4	28.7	2.00	25.8	0.04	0.00	0.01	0.05	126	
140	8.89	8.87	33.933	26.306	173.6	0.356	2.37	103.4	36.3	32.3	2.16	27.2	0.04	0.00	0.01	0.06	141	09
150 ISL	8.83 D	8.82	33.972 D	26.345	170.2	0.372	2.22	D 96.7	D 34.0	33.5	2.19	27.9	0.03	0.00	0.01	0.06	151	
170	8.52	8.50	34.009	26.423	163.0	0.407	2.18	95.2	33.2	36.0	2.26	29.2	0.03	0.00	0.01	0.05	171	08
200 ISL	8.10 D	8.08	34.047 D	26.517	154.6	0.453	2.11	D 91.8	D 31.8	39.0	2.29	29.9	0.02	0.00	0.00	0.04	202	
201	8.08	8.06	34.039	26.513	154.9	0.456	2.19	95.7	33.1	39.1	2.29	30.0	0.00	0.00	0.00	0.04	203	07
220	7.89	7.87	34.061	26.559	150.9	0.485	1.91	83.2	28.6	42.9	2.43	31.5	0.03	0.00			222	05
250 ISL	7.95 D	7.92	34.163 D	26.632	144.6	0.529	1.26	D 54.9	D 19.0	46.6	2.60	32.8	0.02	0.00			252	
272	7.83	7.80	34.185	26.668	141.6	0.562	1.13	49.1	16.9	49.4	2.72	33.7	0.00	0.00			274	06
300 ISL	7.50 D	7.47	34.194 D	26.721	136.8	0.599	0.97	D 42.3	D 14.5	53.2	2.83	34.8	0.02	0.00			302	
320	7.39	7.36	34.220	26.759	133.6	0.627	0.78	34.2	11.6	55.8	2.90	35.6	0.00	0.00			323	04
380	6.98	6.95	34.268	26.854	125.3	0.705	0.51	22.3	7.5	63.7	3.07	37.2	0.00	0.00			383	03
400 ISL	6.81 D	6.77	34.275 D	26.884	122.6	0.730	0.48	D 20.9	D 7.0	65.7	3.11	37.7	0.02	0.00			403	
441	6.53	6.49	34.295	26.938	118.0	0.779	0.38	16.4	5.5	69.8	3.18	38.9	0.00	0.00			445	02
500 ISL	6.36 D	6.32	34.313 D	26.975	115.2	0.849	0.34	D 14.9	D 5.0	73.7	3.25	39.9	0.02	0.00			504	
516	6.26	6.21	34.323	26.996	113.3	0.866	0.28	12.2	4.0	74.8	3.27	40.1	0.00	0.00			520	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV SALLY RIDE CALCOFI CRUISE 1708 STATION 93.3 55.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
32 0.7 N	119 14.0 W	03/08/2017	0226	UTC	1581 m	290 03 kn	270 02 06	1	1011.3 mb	19.0 C	18.0 C		1/8	ST	009

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3* µM	PO4* µM	NO3* µM	NO2* µM	NH4* µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0	18.62	18.62	33.443	23.928	396.9	0.000	5.61	244.6	104.8	0.8	0.25	0.1	0.02	0.00	0.21	0.05	0	
2	18.62	18.62	33.443	23.929	396.9	0.008	5.61	244.6	104.8	0.8	0.25	0.1	0.00	0.00	0.21	0.05	2	21
10	18.32	18.32	33.436	23.999	390.5	0.039	5.61	244.8	104.3	0.5	0.26	0.0	0.00	0.00	0.22	0.05	10	19
10	18.32	18.32	33.440	24.002	390.2	0.038											10	20
20	18.05	18.05	33.446	24.073	383.9	0.078	5.62	245.3	103.9	1.1	0.28	0.3	0.00	0.00	0.23	0.06	20	18
30	14.45	14.44	33.307	24.788	316.0	0.113	5.99	261.6	103.1	1.7	0.37	0.8	0.16	0.00	0.58	0.24	30	17
40	13.10	13.09	33.245	25.018	294.3	0.144	5.77	251.7	96.5	4.0	0.50	3.8	0.49	0.17	0.57	0.31	40	16
50	12.65	12.64	33.322	25.166	280.5	0.172	5.26	229.5	87.2	5.6	0.73	7.4	0.32	0.00	0.46	0.32	50	15
60	12.27	12.26	33.345	25.257	272.0	0.200	5.05	220.6	83.1	6.8	0.84	9.2	0.12	0.00	0.35	0.28	60	14
71	11.35	11.34	33.449	25.508	248.3	0.229	4.54	198.2	73.3	11.2	1.16	14.0	0.04	0.07	0.13	0.13	72	13
75 ISL	10.87 D	10.86	33.527 D	25.655	234.3	0.236	4.10	D178.4 D	65.4	13.0	1.26	15.6	0.04	0.00	0.10	0.11	76	
85	10.47	10.46	33.568	25.758	224.7	0.261	3.83	167.2	60.7	17.5	1.52	19.5	0.03	0.00	0.03	0.06	86	12
100	9.73	9.72	33.653	25.949	206.8	0.294	3.43	149.7	53.5	21.5	1.69	21.9	0.03	0.00	0.01	0.04	101	11
121	9.32	9.31	33.770	26.108	192.1	0.336	3.12	136.3	48.3	25.0	1.85	23.9	0.03	0.00	0.01	0.03	122	10
125 ISL	9.30 D	9.29	33.790 D	26.127	190.4	0.341	3.04	D132.5 D	47.1	25.6	1.87	24.2	0.03	0.00	0.01	0.03	126	
140	9.16	9.14	33.876	26.217	182.1	0.371	2.89	126.0	44.5	27.6	1.95	25.3	0.03	0.00	0.00	0.04	141	09
150 ISL	8.99 D	8.98	33.907 D	26.269	177.4	0.388	2.71	D117.8 D	41.6	29.1	2.00	26.0	0.03	0.00	0.00	0.03	151	
171	8.70	8.69	33.968	26.363	168.9	0.426	2.57	112.2	39.3	32.3	2.10	27.4	0.03	0.12	0.00	0.03	172	08
200	8.47	8.45	34.011	26.433	162.7	0.474	2.33	101.6	35.4	36.1	2.20	28.6	0.03	0.00	0.00	0.02	202	07
230	8.33	8.30	34.093	26.520	155.1	0.521	1.77	77.3	26.9	40.5	2.41	30.7	0.03	0.09			232	06
250 ISL	8.16 D	8.14	34.137 D	26.580	149.7	0.551	1.46	D 63.4 D	22.0	43.5	2.52	31.8	0.03	0.14			252	
270	7.98	7.95	34.162	26.627	145.5	0.581	1.28	55.6	19.2	46.6	2.63	32.8	0.03	0.19			272	05
300 ISL	7.83 D	7.80	34.182 D	26.666	142.3	0.624	1.12	D 48.6 D	16.7	49.9	2.71	33.7	0.02	0.00			302	
320	7.61	7.58	34.195	26.708	138.5	0.653	0.99	43.3	14.8	52.1	2.76	34.2	0.00	0.00			323	04
380	7.26	7.22	34.223	26.782	132.4	0.734	0.75	32.8	11.1	57.5	2.90	35.8	0.00	0.00			383	03
400 ISL	7.11 D	7.07	34.225 D	26.804	130.5	0.761	0.69	D 30.2 D	10.2	59.9	2.93	36.4	0.02	0.00			403	
440	6.75	6.71	34.210	26.842	127.2	0.812	0.66	28.8	9.6	64.5	2.98	37.7	0.00	0.00			444	02
500 ISL	6.50 D	6.46	34.284 D	26.934	119.2	0.887	0.43	D 18.5 D	6.2	70.4	3.12	38.8	0.02	0.00			504	
515	6.38	6.33	34.285	26.951	117.7	0.904	0.36	15.8	5.3	71.8	3.15	39.0	0.00	0.09			519	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV SALLY RIDE CALCOFI CRUISE 1708 STATION 93.3 60.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
31 50.9 N	119 34.2 W	03/08/2017	0633	UTC	1959 m	270 02 kn			1012.9 mb	18.5 C	17.2 C				010

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3* µM	PO4* µM	NO3* µM	NO2* µM	NH4* µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0	19.15	19.15	33.303	23.689	419.8	0.000	5.43	237.1	102.5	1.4	0.24	0.0	0.02	0.08	0.07	0.02	0	
2	19.15	19.15	33.303	23.689	419.8	0.008	5.43	237.1	102.5	1.4	0.24	0.0	0.00	0.08	0.07	0.02	2	20
10 ISL	18.74 D	18.73	33.303 D	23.793	410.2	0.038	5.44	D237.5 D	101.9	1.4	0.25	0.0	0.01	0.12	0.07	0.02	10	
11	18.73	18.73	33.303	23.794	410.2	0.046	5.45	237.9	102.0	1.3	0.25	0.0	0.00	0.12	0.07	0.02	11	19
20 ISL	18.70 D	18.69	33.303 D	23.804	409.5	0.079	5.45	D237.7 D	101.9	1.3	0.24	0.0	0.01	0.00	0.08	0.03	20	
25	18.67	18.66	33.297	23.807	409.5	0.103	5.49	239.4	102.5	1.3	0.24	0.0	0.00	0.00	0.09	0.03	25	18
30 ISL	17.01 D	17.01	33.261 D	24.180	374.0	0.119	5.78	D252.1 D	104.6	1.4	0.25	0.0	0.01	0.00	0.11	0.04	30	
40	15.54	15.53	33.189	24.462	347.4	0.159	6.03	263.1	105.9	1.6	0.27	0.0	0.00	0.00	0.16	0.07	40	17
50	14.92	14.91	33.221	24.622	332.4	0.193	6.04	263.7	104.9	1.5	0.29	0.0	0.00	0.00	0.18	0.08	50	16
62	14.01	14.00	33.273	24.856	310.4	0.231	6.01	262.4	102.5	1.6	0.40	1.1	0.14	0.06	0.37	0.17	62	15
75	12.90	12.89	33.295	25.096	287.9	0.270	5.40	235.6	89.9	4.2	0.62	5.1	0.27	0.00	0.36	0.20	76	14
87	12.04	12.03	33.351	25.306	268.1	0.304	4.99	218.0	81.7	7.0	0.77	8.2	0.08	0.00	0.24	0.17	88	13
100	11.08	11.07	33.406	25.525	247.4	0.337	4.33	188.9	69.4	12.1	1.16	14.0	0.05	0.00	0.17	0.15	101	12
112	10.57	10.56	33.493	25.682	232.7	0.366	4.04	176.4	64.1	15.6	1.36	17.3	0.00	0.00	0.05	0.08	113	11
125	9.83	9.82	33.615	25.904	211.7	0.395	3.54	154.4	55.3	20.4	1.62	21.2	0.00	0.00	0.02	0.04	126	10
140	9.46	9.45	33.750	26.070	196.2	0.426	3.05	133.2	47.4	25.1	1.84	24.3	0.00	0.00	0.01	0.04	141	09
150 ISL	9.22 D	9.20	33.844 D	26.184	185.6	0.443	2.78	D120.8 D	42.9	26.9	1.91	25.2	0.02	0.00	0.01	0.04	151	
170	8.97	8.96	33.901	26.268	177.9	0.481	2.57	112.2	39.5	30.5	2.04	27.1	0.00	0.00	0.00	0.04	171	08
200	8.63	8.61	34.000	26.400	165.9	0.533	2.22	97.0	33.9	35.3	2.19	28.7	0.00	0.00	0.00	0.03	202	07
230	8.36	8.34	34.125	26.540	153.1	0.581	1.42	62.1	21.6	41.9	2.47	31.6	0.00	0.00			232	06
250 ISL	8.20 D	8.18	34.158 D	26.590	148.7	0.609	1.24	D 53.8 D	18.7	44.2	2.55	32.4	0.01	0.00			252	
270	8.03	8.00	34.176	26.631	145.1	0.641	1.11	48.2	16.6	46.5	2.63	33.2	0.00	0.00			272	05
300 ISL	7.80 D	7.77	34.206 D	26.689	140.1	0.682	0.90	D 39.0 D	13.4	50.9	2.73	34.3	0.02	0.00			302	
320	7.58	7.55	34.217	26.729	136.5	0.711	0.78	34.2	11.7	53.8	2.80	35.1	0.00	0.00			323	04
380	7.17	7.13	34.253	26.817	128.9	0.791	0.58	25.2	8.5	60.2	2.93	36.6	0.00	0.00			383	03
400 ISL	7.04 D	7.00	34.264 D	26.844	126.6	0.816	0.53	D 22.9 D	7.8	62.1	2.97	37.2	0.01	0.00			403	
440	6.77	6.73	34.280	26.894	122.3	0.866	0.42	18.2	6.1	65.8	3.06	38.3	0.00	0.00			444	02
500 ISL	6.39 D	6.34	34.313 D	26.972	115.5	0.938	0.34	D 14.6 D	4.9	72.9	3.15	39.3	0.01	0.00			504	
515	6.31	6.26	34.314	26.983	114.6	0.955	0.29	12.4	4.1	74.7	3.17	39.5	0.00	0.00			519	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV SALLY RIDE CALCOFI CRUISE 1708 STATION 93.3 70.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
31 30.9 N	120 14.7 W	03/08/2017	1216	UTC	3957 m	250 03 kn			1012.9 mb	18.0 C	17.0 C				011

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3* µM	PO4* µM	NO3* µM	NO2* µM	NH4* µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0	18.96	18.96	33.545	23.921	397.6	0.000	5.45	238.0	102.7	0.8	0.21	0.2	0.03	0.12	0.14	0.03	0	
2	18.96	18.96	33.545	23.921	397.7	0.008	5.45	238.0	102.7	0.8	0.21	0.2	0.03	0.12	0.14	0.03	2	20
10	18.79	18.78	33.541	23.962	394.1	0.040	5.47	238.8	102.6	0.4	0.22	0.0	0.00	0.13	0.16	0.04	10	19
20	18.73	18.72	33.541	23.979	392.9	0.079	5.49	239.6	102.9	0.3	0.21	0.0	0.00	0.07	0.18	0.05	20	18
30	14.79	14.78	33.519	24.879	307.3	0.114	5.86	255.9	101.7	1.4	0.53	3.2	0.38	0.39	0.48	0.15	30	17
40	13.71	13.71	33.501	25.091	287.3	0.144	5.36	233.7	90.9	3.1	0.78	6.6	0.94	0.33	0.53	0.23	40	16
50	12.53	12.52	33.512	25.336	264.3	0.171	4.65	202.9	76.9	6.7	1.09	12.7	0.15	0.00	0.56	0.31	50	15
60	11.63	11.62	33.523	25.515	247.4	0.197	4.18	182.6	68.0	10.7	1.29	15.6	0.05	0.00	0.25	0.16	60	14
71	10.93	10.93	33.563	25.672	232.7	0.223	3.83	167.3	61.3	14.3	1.45	18.2	0.04	0.00	0.10	0.11	72	13
75 ISL	10.60 D	10.59	33.620 D	25.775	222.9	0.230	3.47	D150.9 D	55.1	16.0	1.51	19.2	0.04	0.00	0.08	0.10	76	
86	9.80	9.79	33.646	25.931	208.2	0.256	3.35	146.4	52.4	20.7	1.68	22.0	0.03	0.00	0.03	0.06	87	12
100	9.41	9.40	33.728	26.060	196.2	0.285	3.22	140.6	49.9	23.6	1.77	23.4	0.03	0.00	0.01	0.04	101	11
120	9.14	9.13	33.853	26.202	183.2	0.323	2.69	117.3	41.4	28.1	1.97	25.9	0.00	0.00	0.01	0.04	121	10
125 ISL	9.03 D	9.01	33.868 D	26.232	180.3	0.330	2.72	D118.2 D	41.7	29.1	2.02	26.5	0.02	0.00	0.01	0.05	126	
140	9.05	9.03	33.963	26.303	173.9	0.358	2.12	92.4	32.6	32.2	2.18	28.3	0.00	0.00	0.01	0.06	141	09
150 ISL	8.87 D	8.86	34.001 D	26.361	168.6	0.374	2.08	D 90.5 D	31.9	33.2	2.19	28.6	0.02	0.00	0.01	0.05	151	
170	8.65	8.63	34.016	26.409	164.4	0.409	2.11	92.1	32.2	35.0	2.22	29.3	0.03	0.00	0.00	0.05	171	08
200 ISL	8.36 D	8.34	34.076 D	26.501	156.3	0.456	1.77	D 77.1 D	26.9	39.4	2.35	30.8	0.02	0.00	0.00	0.04	202	
201	8.35	8.33	34.074	26.500	156.3	0.459	1.79	77.9	27.1	39.5	2.35	30.8	0.00	0.00	0.00	0.04	203	07
230	7.87	7.85	34.068	26.568	150.2	0.503	1.79	77.9	26.8	43.6	2.41	32.0	0.00	0.00			232	06
250 ISL	7.76 D	7.73	34.093 D	26.605	147.1	0.532	1.56	D 67.9 D	23.3	45.9	2.51	32.8	0.02	0.00			252	
270	7.68	7.65	34.139	26.653	142.9	0.562	1.27	55.2	18.9	48.2	2.60	33.7	0.00	0.00			272	05
300 ISL	7.48 D	7.45	34.171 D	26.707	138.2	0.604	1.02	D 44.2 D	15.1	52.1	2.71	34.7	0.02	0.00			302	
320	7.34	7.31	34.185	26.739	135.4	0.631	0.89	38.7	13.1	54.7	2.78	35.4	0.00	0.00			323	04
380	6.86	6.82	34.228	26.840	126.5	0.710	0.62	27.0	9.1	62.4	2.94	37.3	0.00	0.00			383	03
400 ISL	6.77 D	6.73	34.243 D	26.865	124.4	0.736	0.55	D 23.8 D	8.0	64.9	2.98	37.8	0.01	0.00			403	
441	6.31	6.27	34.246	26.927	118.8	0.785	0.47	20.4	6.8	69.9	3.06	39.0	0.00	0.00			445	02
500 ISL	6.05 D	6.00	34.303 D	27.007	111.8	0.855	0.32	D 13.9 D	4.6	76.5	3.17	40.3	0.01	0.00			504	
517	5.95	5.91	34.306	27.022	110.5	0.872	0.27	11.9	3.9	78.4	3.20	40.7	0.00	0.00			521	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV SALLY RIDE CALCOFI CRUISE 1708 STATION 93.3 80.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
31 10.8 N	120 55.3 W	03/08/2017	1807	UTC	3725 m	240 03 kn	290 02 09	2	1015.3 mb	18.7 C	17.1 C	24 m	8/8	SC	012

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3* µM	PO4* µM	NO3* µM	NO2* µM	NH4* µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0	17.54	17.54	33.234	24.033	386.9	0.000	5.61	245.0	102.6	1.7	0.26	0.0	0.01	0.02	0.15	0.03	0	
3 A	17.54	17.54	33.234	24.033	387.0	0.012	5.61	245.0	102.6	1.7	0.26	0.0	0.00	0.00	0.15	0.03	3	24
8	17.46	17.46	33.243	24.058	384.8	0.031	5.63	245.7	102.8	1.6	0.25	0.0	0.00	0.00	0.15	0.04	8	22
8	17.46	17.46	33.242	24.058	384.9	0.032											8	23
10 ISL	17.31 D	17.31	33.258 D	24.105	380.4	0.033	5.64	D246.0 D	102.7	1.6	0.25	0.0	0.00	0.00	0.17	0.04	10	
14 A	17.25	17.25	33.259	24.120	379.1	0.054	5.69	248.2	103.4	1.6	0.25	0.0	0.00	0.00	0.21	0.04	14	21
18 A	17.23	17.23	33.249	24.119	379.4	0.069	5.67	247.4	103.0	1.6	0.25	0.0	0.00	0.00	0.21	0.07	18	20
20 ISL	17.15 D	17.15	33.254 D	24.141	377.3	0.071	5.69	248.3	103.3	1.5	0.26	0.0	0.00	0.00	0.24	0.08	20	
26	17.06	17.05	33.332	24.224	369.7	0.099	5.77	251.8	104.6	1.1	0.27	0.0	0.00	0.16	0.34	0.10	26	19
30 ISL	16.44 D	16.44	33.373 D	24.399	353.1	0.109	5.85	D255.0 D	104.8	1.1	0.29	0.1	0.01	0.15	0.48	0.17	30	
34 A	16.08	16.07	33.373	24.482	345.3	0.128	5.86	255.7	104.2	1.0	0.30	0.2	0.00	0.13	0.62	0.23	34	18
43	14.34	14.34	33.112 D	24.660	328.5	0.153	5.89	257.0	101.0	1.4	0.29	0.1	0.00	0.15	0.51	0.27	43	16
43	14.34	14.34	33.168	24.704	324.4	0.158											43	17
50 ISL	13.73 D	13.72	33.085 D	24.767	318.5	0.176	5.99	D260.8 D	101.3	2.4	0.29	0.0	0.03	0.09	0.49	0.28	50	
53	13.37	13.36	33.082	24.838	311.8	0.190	6.05	264.0	101.6	2.8	0.29	0.0	0.03	0.07	0.48	0.29	53	15
61 A	12.92	12.91	33.122	24.958	300.5	0.214	5.96	260.2	99.3	3.2	0.35	0.7	0.18	0.08	0.32	0.27	61	14
75 A	12.84	12.83	33.308 D	25.119	285.7	0.251	5.81	253.7	96.7	3.6	0.38	1.6	0.17	0.00	0.22	0.20	76	13
88	12.85	12.83	33.461	25.237	274.8	0.292	5.59	244.1	93.2	3.6	0.37	2.0	0.22	0.09	0.16	0.15	89	12
100	10.96	10.95	33.377	25.523	247.6	0.324	5.04	219.9	80.6	8.2	0.80	8.9	0.05	0.00	0.09	0.14	101	11
120	10.17	10.15	33.537	25.787	222.8	0.371	4.28	186.8	67.3	15.5	1.27	16.3	0.00	0.00	0.03	0.05	121	10
125 ISL	10.16 D	10.15	33.567 D	25.811	220.6	0.382	3.80	D165.4 D	59.8	16.7	1.34	17.2	0.01	0.00	0.03	0.05	126	
140	9.48	9.46	33.656	25.994	203.4	0.414	3.83	167.0	59.3	20.3	1.53	20.0	0.00	0.00	0.01	0.03	141	09
150 ISL	9.13 D	9.12	33.803 D	26.165	187.3	0.429	3.46	D150.6 D	53.3	23.9	1.69	22.2	0.01	0.00	0.01	0.04	151	
170	8.91	8.89	33.911	26.286	176.2	0.470	2.66	116.1	40.8	31.2	2.00	26.6	0.00	0.00	0.00	0.05	171	08
200	8.61	8.59	33.993 D	26.397	166.2	0.517	2.33	D101.3 D	35.5								202	07
230	8.28	8.25	34.050	26.494	157.5	0.570	2.02	88.2	30.6	39.7	2.28	30.0	0.00	0.00			232	06
250 ISL	8.20 D	8.18	34.102 D	26.546	152.9	0.597	1.65	D 71.9 D	25.0	43.8	2.42	31.2	0.01	0.00			252	
270	7.95	7.92	34.145	26.618	146.3	0.631	1.31	57.2	19.7	47.9	2.56	32.5	0.00	0.00			272	05
300 ISL	7.81 D	7.78	34.170 D	26.659	142.9	0.671	1.14	D 49.5 D	17.0	51.2	2.64	33.7	0.01	0.00			302	
320	7.52	7.49	34.178	26.707	138.5	0.703	1.01	43.8	15.0	53.4	2.70	34.5	0.00	0.00			323	04
380	6.98	6.95	34.224	26.819	128.6	0.783	0.66	28.6	9.6	62.9	2.91	37.0	0.00	0.00			383	03
400 ISL	6.84 D	6.81	34.228 D	26.843	126.6	0.806	0.61	D 26.6 D	9.0	65.3	2.95	37.5	0.01	0.00			403	
442	6.48	6.44	34.241	26.902	121.3	0.860	0.50	21.8	7.3	70.2	3.02	38.6	0.00	0.00			446	02
500 ISL	6.21 D	6.17	34.298 D	26.982	114.4	0.927	0.35	D 15.1 D	5.0	76.3	3.14	39.7	0.01	0.00			504	
517	6.15	6.11	34.315	27.004	112.5	0.948	0.28	12.3	4.1	78.1	3.17	40.0	0.00	0.00			521	01

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.
D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; SECONDARY CRUISE-CORRECTED O2;

RV SALLY RIDE CALCOFI CRUISE 1708 STATION 93.3 90.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
30 50.8 N	121 35.3 W	03/08/2017	2336	UTC	4116 m	300 04 kn	310 03 04	2	1014.2 mb	19.0 C	17.9 C	22 m	8/8	ST	013

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3* µM	PO4* µM	NO3* µM	NO2* µM	NH4* µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0	18.50	18.50	33.191	23.766	412.4	0.000	5.55	242.5	103.4	2.5	0.29	0.3	0.03	0.16	0.17	0.00	0	
2	18.50	18.50	33.191	23.766	412.5	0.008	5.55	242.5	103.4	2.5	0.29	0.3	0.03	0.16	0.17	0.00	2	20
10	18.10	18.10	33.189	23.862	403.6	0.041	5.56	242.6	102.7	2.0	0.31	0.1	0.00	0.14	0.17	0.00	10	19
20 ISL	17.31 D	17.30	33.212 D	24.072	383.9	0.077	5.72	D249.2	D104.0	1.4	0.28	0.0	0.02	0.11	0.24	0.02	20	
25	17.12	17.11	33.312	24.194	372.4	0.099	5.82	254.0	105.6	1.1	0.27	0.0	0.00	0.09	0.28	0.02	25	18
30 ISL	16.99 D	16.99	33.293 D	24.210	371.1	0.114	5.87	256.1	106.3	1.2	0.28	0.0	0.02	0.08	0.40	0.03	30	
40	15.52	15.52	33.197	24.471	346.5	0.153	5.98	261.2	105.1	1.6	0.29	0.0	0.00	0.06	0.64	0.05	40	17
50	15.07	15.06	33.266	24.625	332.2	0.187	5.93	259.0	103.3	1.2	0.31	0.0	0.03	0.08	0.73	0.18	50	16
62	14.30	14.29	33.262	24.786	317.1	0.226	5.74	250.5	98.4	2.1	0.44	1.3	0.36	0.60	0.61	0.17	62	15
75	13.33	13.32	33.261	24.984	298.5	0.266	5.64	246.2	94.8	3.1	0.47	3.0	0.28	0.00	0.29	0.23	76	14
86	12.54	12.53	33.223	25.111	286.7	0.299	5.71	249.3	94.4	3.6	0.44	2.7	0.17	0.00	0.25	0.06	87	13
100	11.71	11.69	33.296	25.325	266.5	0.337	5.45	237.7	88.5	5.2	0.57	5.3	0.06	0.00	0.16	0.12	101	12
112	11.06	11.05	33.327	25.467	253.2	0.368	5.15	224.7	82.5	7.4	0.78	8.6	0.04	0.00	0.12	0.08	113	11
125	10.39	10.37	33.462	25.691	232.0	0.400	4.68	204.2	74.0	11.8	1.05	13.2	0.03	0.00	0.09	0.07	126	10
140	9.81	9.79	33.615	25.908	211.6	0.433	3.74	163.2	58.4	19.8	1.53	20.1	0.00	0.00	0.03	0.08	141	09
150 ISL	9.58 D	9.56	33.684 D	26.001	203.0	0.453	3.42	D149.0 D	53.2	22.4	1.65	21.8	0.02	0.00	0.02	0.06	151	
170	9.10	9.08	33.816	26.181	186.2	0.493	2.96	129.3	45.6	27.8	1.88	25.1	0.00	0.00	0.01	0.02	171	08
200	8.71	8.69	33.943 D	26.343	171.3	0.546	2.60	D113.1 D	39.7								202	07
230	8.31	8.28	34.031	26.474	159.3	0.596	2.17	94.9	32.9	38.3	2.23	29.5	0.00	0.00			232	06
250 ISL	8.19 D	8.17	34.080 D	26.530	154.3	0.627	1.72	D 74.7 D	25.9	42.1	2.38	30.9	0.02	0.00			252	
270	8.17	8.14	34.155	26.593	148.8	0.658	1.29	56.3	19.5	45.9	2.53	32.3	0.00	0.00			272	05
300 ISL	7.73 D	7.70	34.144 D	26.650	143.7	0.702	1.25	D 54.2 D	18.6	49.9	2.60	33.6	0.01	0.00			302	
320	7.47	7.44	34.157	26.698	139.3	0.730	1.15	50.3	17.1	52.6	2.65	34.4	0.00	0.00			323	04
380	7.05	7.02	34.215	26.803	130.2	0.810	0.69	29.9	10.1	60.8	2.88	36.6	0.00	0.00			383	03
400 ISL	6.92 D	6.88	34.237 D	26.839	127.0	0.838	0.57	D 24.9 D	8.4	63.8	2.93	37.2	0.01	0.00			403	
440	6.56	6.52	34.259	26.906	120.9	0.886	0.44	19.3	6.5	69.7	3.04	38.5	0.00	0.00			444	02
500 ISL	6.15 D	6.10	34.306 D	26.997	112.9	0.959	0.32	D 14.1 D	4.7	76.5	3.14	39.8	0.01	0.00			504	
515	6.11	6.06	34.314	27.009	111.9	0.973	0.28	12.3	4.1	78.2	3.17	40.1	0.00	0.00			519	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV SALLY RIDE CALCOFI CRUISE 1708 STATION 93.3 100.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
30 30.9 N	122 15.4 W	04/08/2017	0509	UTC	4223 m	340 01 kn			1014.7 mb	19.0 C	17.5 C				014

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3* µM	PO4* µM	NO3* µM	NO2* µM	NH4* µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0	18.92	18.92	33.252	23.706	418.1	0.000	5.45	237.8	102.3	1.7	0.24	0.0	0.02	0.09	0.08	0.02	0	
3	18.92	18.92	33.252	23.706	418.2	0.013	5.45	237.8	102.3	1.7	0.24	0.0	0.00	0.09	0.08	0.02	3	20
10	18.89	18.89	33.247	23.711	418.1	0.042	5.44	237.6	102.2	1.6	0.25	0.0	0.00	0.00	0.08	0.01	10	19
20 ISL	18.66 D	18.66	33.244 D	23.767	413.0	0.078	5.47	D238.6	D102.2	1.7	0.25	0.0	0.01	0.00	0.09	0.02	20	
26	18.40	18.39	33.234	23.826	407.7	0.108	5.51	240.4	102.4	1.7	0.25	0.0	0.00	0.00	0.10	0.02	26	18
30 ISL	18.23 D	18.22	33.219 D	23.857	404.9	0.119	5.54	D241.8	D102.7	1.7	0.25	0.0	0.01	0.00	0.11	0.03	30	
40	17.87	17.86	33.200	23.930	398.2	0.164	5.61	245.0	103.2	1.8	0.25	0.0	0.00	0.00	0.13	0.03	40	17
50	16.36	16.35	33.167	24.261	367.0	0.203	5.87	256.0	104.7	1.9	0.26	0.0	0.00	0.00	0.17	0.06	50	16
62	15.54	15.53	33.226	24.491	345.4	0.245	5.99	261.6	105.3	1.6	0.27	0.0	0.00	0.00	0.20	0.10	62	15
75	14.01	14.00	33.239	24.829	313.4	0.288	5.76	251.4	98.2	2.8	0.43	1.1	0.13	0.00	0.42	0.23	76	14
87	13.08	13.07	33.282	25.051	292.5	0.325	5.25	229.3	87.8	5.0	0.67	5.2	0.22	0.00	0.37	0.24	88	13
100	12.42	12.41	33.334	25.221	276.6	0.362	4.92	214.5	81.1	6.7	0.86	9.1	0.05	0.00	0.23	0.19	101	12
112	11.93	11.92	33.348	25.324	267.0	0.394	4.54	198.0	74.1	9.3	1.03	11.8	0.05	0.00	0.15	0.13	113	11
125	11.05	11.03	33.425	25.547	245.9	0.427	4.13	180.3	66.2	13.1	1.28	15.6	0.03	0.00	0.07	0.08	126	10
140	10.37	10.35	33.499	25.724	229.3	0.463	3.90	170.0	61.5	16.4	1.41	18.0	0.00	0.00	0.04	0.06	141	09
150 ISL	9.96 D	9.94	33.577 D	25.854	217.1	0.482	3.68	D160.1 D	57.6	19.0	1.51	19.6	0.03	0.00	0.03	0.05	151	
170	9.23	9.21	33.741	26.103	193.7	0.526	3.46	151.0	53.4	24.0	1.71	22.8	0.03	0.06	0.01	0.03	171	08
200	8.74	8.72	33.894	26.299	175.5	0.582	3.05	132.8	46.5	28.9	1.89	25.5	0.00	0.08	0.00	0.04	202	07
230	8.19	8.16	33.985	26.456	161.0	0.632	2.65	115.6	40.0	35.4	2.08	28.3	0.00	0.00			232	06
250 ISL	7.92 D	7.90	34.014 D	26.519	155.3	0.662	2.30	D100.1 D	34.5	39.3	2.19	29.8	0.01	0.00			252	
270	7.60	7.57	34.019	26.569	150.7	0.695	2.14	93.1	31.8	43.2	2.30	31.3	0.00	0.00			272	05
300 ISL	7.23 D	7.20	34.040 D	26.639	144.3	0.738	1.80	D 78.1 D	26.5	49.3	2.49	33.7	0.01	0.00			302	
320	6.97	6.94	34.066	26.696	139.1	0.767	1.42	61.8	20.8	53.3	2.62	35.2	0.00	0.00			323	04
380	6.59	6.56	34.143	26.808	129.3	0.848	0.82	35.6	11.9	62.4	2.85	37.8	0.00	0.00			383	03
400 ISL	6.47 D	6.43	34.160 D	26.838	126.6	0.873	0.73	D 31.6 D	10.5	65.4	2.90	38.4	0.01	0.00			403	
440	6.04	6.00	34.170	26.902	120.7	0.923	0.61	26.5	8.7	71.3	3.01	39.6	0.00	0.00			444	02
500 ISL	5.68 D	5.64	34.226 D	26.991	112.8	0.994	0.43	D 18.8 D	6.2	79.3	3.11	40.8	0.01	0.00			504	
515	5.65	5.61	34.241	27.007	111.5	1.010	0.36	15.6	5.1	81.2	3.14	41.1	0.00	0.00			519	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV SALLY RIDE — CALCOFI CRUISE 1708 — STATION 76.7 49.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE	ORD
35 5.3 N	120 46.5 W	14/08/2017	1620 UTC	07 m	1205 - 1920 PST	1208 PST	1917 PST	2239.8 mg C/m2	064

DEPTH m	TEMP DEG C	SALINITY	SIGMA THETA	OXYGEN ml/L	OXY PCT	SIO3* µM	PO4* µM	NO3* µM	NO2* µM	NH4* µM	CHL-A µg/L	PHAEO µg/L	LIGHT PCT	UPTAKE (mg C/m3) 1	2	MEAN	DARK
2	13.54	33.517	25.137	5.94	100.4	8.8	0.65	4.4	0.22	0.00	8.14	1.64	64. A	239.5	202.3	220.9	0.93
4	13.53	33.518	25.140	5.93	100.2	8.7	0.65	4.4	0.21	0.00	7.89	1.69	42.	199.4	264.9	232.2	1.3
5	13.49	33.517	25.147	5.90	99.6	8.7	0.65	4.5	0.21	0.00	8.73	1.88	33.	219.1	186.3	202.7	1.1
10	13.22	33.519	25.203	5.46	91.6	9.3	0.76	6.3	0.25	0.00	8.95	1.26	11.	96.3	90.1	93.2	0.93
18	12.27	33.519	25.389	3.87	63.7	13.2	1.32	14.0	0.33	0.00	1.48	0.67	1.9	2.7	2.1	2.4	0.24
22	11.81	33.529	25.483	3.69	60.2	14.5	1.41	15.3	0.22	0.00	1.00	0.58	0.80	0.60	0.25	0.42	0.19

RV SALLY RIDE — CALCOFI CRUISE 1708 — STATION 76.7 80.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE	ORD
34 3.3 N	122 56.4 W	13/08/2017	1836 UTC	24 m	1215 - 1925 PST	1217 PST	1923 PST	325.8 mg C/m2	059

DEPTH m	TEMP DEG C	SALINITY	SIGMA THETA	OXYGEN ml/L	OXY PCT	SIO3* µM	PO4* µM	NO3* µM	NO2* µM	NH4* µM	CHL-A µg/L	PHAEO µg/L	LIGHT PCT	UPTAKE (mg C/m3) 1	2	MEAN	DARK
2	17.22	33.233	24.109	5.76	104.6	1.4	0.28	0.0	0.00	0.19	0.21	0.07	88. A	6.1	8.0	7.1	0.08
10	17.19	33.236	24.117	5.66	102.7	1.4	0.29	0.0	0.00	0.29	0.21	0.08					
14	17.19	33.233	24.115	5.66	102.9	1.3	0.28	0.0	0.00	0.22	0.21	0.08	41.	5.8	6.0	5.9	0.10
18	17.19	33.232	24.116	5.69	103.2	1.4	0.28	0.0	0.00	0.11	0.22	0.07	32.	5.7	6.8	6.3	0.10
26	17.16	33.232	24.122	5.66	102.8	1.4	0.27	0.0	0.00	0.07	0.24	0.08					
34	15.73	33.192	24.420	5.99	105.7	1.7	0.33	0.5	0.06	0.20	0.38	0.17	11.	6.2	6.1	6.1	0.08
43	14.15	33.196	24.767	6.08	103.8	2.2	0.41	1.6	0.17	0.24	0.44	0.19					
52	13.18	33.203	24.968	5.85	98.0	4.0	0.58	3.9	0.36	0.31	0.50	0.27					
61	12.56	33.233	25.115	5.55	91.8	5.3	0.73	6.1	0.58	0.17	0.44	0.25	2.0	1.4	1.1	1.3	0.06
75	11.67	33.360	25.381	5.09	82.7	8.5	0.99	11.0	0.05	0.06	0.19	0.20	0.83	0.25	0.17	0.21	0.03

RV SALLY RIDE — CALCOFI CRUISE 1708 — STATION 80.0 90.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE	ORD
33 9.1 N	123 13.3 W	12/08/2017	1838 UTC	22 m	1210 - 1930 PST	1218 PST	1930 PST	52.9 mg C/m2	055

DEPTH m	TEMP DEG C	SALINITY	SIGMA THETA	OXYGEN ml/L	OXY PCT	SIO3* µM	PO4* µM	NO3* µM	NO2* µM	NH4* µM	CHL-A µg/L	PHAEO µg/L	LIGHT PCT	UPTAKE (mg C/m3) 1	2	MEAN	DARK
3	18.28	33.328	23.925	5.48	101.7	2.0	0.22	0.0	0.00	0.00	0.08	0.01	81. A	1.6	1.8	1.7	0.11
10	18.28	33.331	23.928	5.54	102.8	2.1	0.21	0.0	0.00	0.00	0.08	0.02	50.	1.6	1.6	1.6	0.10
16	18.27	33.328	23.927	5.47	101.4	2.0	0.22	0.0	0.00	0.00	0.08	0.02	33.	1.6	1.5	1.5	0.09
32	18.27	33.330	23.930	5.48	101.8	2.1	0.22	0.0	0.00	0.26	0.08	0.02	11.	0.66	0.60	0.63	0.08
44	18.03	33.370	24.023	5.53	102.1	2.0	0.20	0.0	0.00	0.00	0.10	0.03					
57	16.34	33.429	24.467	5.88	105.2	2.2	0.18	0.0	0.00	0.00	0.12	0.04	1.9	0.08	0.07	0.08	0.07
69	15.54	33.532	24.726	5.90	103.9	2.4	0.17	0.0	0.00	0.00	0.16	0.05	0.81	0.03	0.01	0.02	0.06

RV SALLY RIDE — CALCOFI CRUISE 1708 — STATION 81.8 46.9

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE	ORD
34 16.4 N	120 1.1 W	15/08/2017	1518 UTC	07 m	1205 - 1915 PST	1204 PST	1908 PST	1666.7 mg C/m2	068

DEPTH m	TEMP DEG C	SALINITY	SIGMA THETA	OXYGEN ml/L	OXY PCT	SIO3* µM	PO4* µM	NO3* µM	NO2* µM	NH4* µM	CHL-A µg/L	PHAEO µg/L	LIGHT PCT	UPTAKE (mg C/m3) 1	2	MEAN	DARK
2	16.10	33.503	24.575	6.36	113.2	4.7	0.28	0.1	0.03	0.06	6.16	1.43	64. A	163.7	181.8	172.7	1.1
5	15.68	33.503	24.670	6.31	111.5	5.0	0.33	0.1	0.04	0.06	9.64	1.60	33.	169.3	210.1	189.7	1.2
6	15.39	33.503	24.733	6.32	111.0	5.1	0.31	0.1	0.03	0.00	10.46	1.72	27.	166.8	145.9	156.3	1.2
10	14.47	33.506	24.936	5.66	97.6	8.3	0.66	4.9	0.13	0.10	4.75	1.24	11.	42.8	39.9	41.3	0.64
19	13.12	33.510	25.217	4.79	80.3	10.2	0.99	9.9	0.27	0.15	1.34	0.56	1.6	2.9	3.9	3.4	0.24
23	12.79	33.515	25.286	4.51	75.0	10.9	1.10	11.4	0.30	0.11	0.79	0.49	0.64	0.66	0.60	0.63	0.23

RV SALLY RIDE — CALCOFI CRUISE 1708 — STATION 83.3 51.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE	ORD
33 52.7 N	120 8.1 W	11/08/2017	1704 UTC	11 m	1205 - 1925 PST	1206 PST	1922 PST	822.8 mg C/m2	051

DEPTH m	TEMP DEG C	SALINITY	SIGMA THETA	OXYGEN ml/L	OXY PCT	SIO3* µM	PO4* µM	NO3* µM	NO2* µM	NH4* µM	CHL-A µg/L	PHAEO µg/L	LIGHT PCT	UPTAKE (mg C/m3) 1	2	MEAN	DARK
2	15.61	33.453	24.647	5.44	95.8	4.5	0.48	3.3	0.13	0.00	2.15	0.42	76. A	53.4	54.3	53.8	0.30
6	15.57	33.448	24.652	5.44	95.8	4.7	0.50	3.3	0.14	0.00	2.00	0.44	43.	48.9	48.5	48.7	0.29
8	15.53	33.447	24.661	5.45	95.9	4.4	0.48	3.3	0.12	0.00	2.10	0.49	33.	46.3	46.2	46.2	0.32
10	15.52	33.439	24.656	5.46	96.1	4.3	0.48	3.2	0.12	0.00	2.20	0.52					
16	14.51	33.428	24.868	5.22	89.9	5.4	0.63	5.6	0.17	0.00	2.02	0.56	11.	21.8	20.5	21.1	0.18
28	12.73	33.432	25.234	4.69	77.9	8.1	0.91	9.3	0.22	0.00	1.22	0.37	2.0	2.4	1.5	1.9	0.10
34	12.64	33.433	25.252	4.60	76.3	8.8	0.94	9.7	0.21	0.00	1.07	0.41	0.87	0.76	0.35	0.56	0.11

A) INCUBATION LIGHT INTENSITIES WERE 64.8, 41.4, 32.4, 11.2, 2.04, 0.82 PERCENT RESPECTIVELY

RV SALLY RIDE CALCOFI CRUISE 1708 STATION 83.3 90.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE	ORD
32 34.2 N	122 48.6 W	10/08/2017	1551 UTC	24 m	1215 - 1950 PST	1217 PST	1923 PST	97.6 mg C/m2	046

DEPTH m	TEMP DEG C	SALINITY	SIGMA THETA	OXYGEN ml/L	OXY PCT	SIO3* µM	PO4* µM	NO3* µM	NO2* µM	NH4* µM	CHL-A µg/L	PHAEO µg/L	LIGHT PCT	UPTAKE (mg C/m3) 1	2	MEAN	DARK
3	18.48	33.221	23.794	5.46	101.6	1.9	0.25	0.0	0.00	0.00	0.11	0.02	83. A	2.3	2.4	2.4	0.06
11	18.48	33.221	23.795	5.48	102.0	1.9	0.25	0.0	0.00	0.00	0.10	0.02					
15	18.48	33.221	23.795	5.48	102.0	1.9	0.25	0.0	0.00	0.00	0.11	0.02	38.	2.5	2.5	2.5	0.07
19	18.46	33.220	23.798	5.47	101.9	1.9	0.25	0.0	0.00	0.00	0.12	0.01	30.	2.5	2.5	2.5	0.08
34	17.70	33.161	23.940	5.61	102.8	2.1	0.26	0.0	0.00	0.00	0.13	0.03	11.	1.2	1.0	1.1	0.36
44	17.26	33.147	24.036	5.73	104.1	2.1	0.26	0.0	0.00	0.00	0.15	0.05					
52	16.11	33.180	24.327	5.91	105.0	2.2	0.25	0.0	0.00	0.00	0.21	0.03					
62	14.99	33.316	24.680	6.04	105.1	2.3	0.23	0.0	0.00	0.00	0.24	0.11	1.9	0.39	0.31	0.35	0.05
68	14.57	33.300	24.759	6.06	104.4	2.4	0.25	0.0	0.00	0.00	0.35	0.18					
75	14.10	33.331	24.883	6.09	104.1	2.4	0.26	0.1	0.04	0.00	0.35	0.18	0.83	0.26	0.26	0.26	0.02

RV SALLY RIDE CALCOFI CRUISE 1708 STATION 86.7 33.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE	ORD
33 53.5 N	118 29.3 W	07/08/2017	1729 UTC	10 m	1200 - 1920 PST	1200 PST	1917 PST	727.6 mg C/m2	032

DEPTH m	TEMP DEG C	SALINITY	SIGMA THETA	OXYGEN ml/L	OXY PCT	SIO3* µM	PO4* µM	NO3* µM	NO2* µM	NH4* µM	CHL-A µg/L	PHAEO µg/L	LIGHT PCT	UPTAKE (mg C/m3) 1	2	MEAN	DARK
2	22.14	33.501	23.041	5.92	118.0	0.9	0.04	0.0	0.00	0.00	1.29	0.17	74. A	51.2	50.8	51.0	0.59
6	21.58	33.484	23.185	6.05	119.5	1.0	0.06	0.0	0.00	0.00	1.13	0.22	40.	38.1	40.0	39.1	0.53
7	21.61	33.490	23.181	5.96	117.7	1.0	0.06	0.0	0.00	0.00	1.09	0.19	34.	37.2	34.6	35.9	0.52
10	19.82	33.453	23.632	6.35	121.3	1.1	0.08	0.0	0.00	0.00	1.59	0.32					
15	15.48	33.341	24.590	6.45	113.3	1.9	0.14	0.0	0.00	0.00	1.61	0.46	10.	27.2	24.6	25.9	0.66
25	14.11	33.341	24.884	5.41	92.4	3.7	0.37	0.2	0.09	0.00	2.64	0.63	2.2	4.7	3.3	4.0	0.59
30	13.68	33.349	24.980	4.86	82.3	6.0	0.72	4.0	0.74	1.98	0.78	0.38	1.0	0.66	0.18	0.42	0.27

RV SALLY RIDE CALCOFI CRUISE 1708 STATION 86.7 60.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE	ORD
32 59.5 N	120 21.0 W	08/08/2017	1627 UTC	20 m	1205 - 1920 PST	1207 PST	1924 PST	173.1 mg C/m2	038

DEPTH m	TEMP DEG C	SALINITY	SIGMA THETA	OXYGEN ml/L	OXY PCT	SIO3* µM	PO4* µM	NO3* µM	NO2* µM	NH4* µM	CHL-A µg/L	PHAEO µg/L	LIGHT PCT	UPTAKE (mg C/m3) 1	2	MEAN	DARK
2	17.97	33.349	24.017	5.55	102.4	1.1	0.25	0.0	0.00	0.00	0.16	0.05	86. A	4.7	4.6	4.6	0.17
10	17.96	33.342	24.014	5.55	102.3	1.3	0.25	0.0	0.00	0.00	0.17	0.05	46.	5.1	4.9	5.0	0.15
15	17.96	33.342	24.015	5.55	102.4	1.1	0.25	0.0	0.00	0.00	0.16	0.05	32.	4.9	4.7	4.8	0.16
22	17.96	33.338	24.012	5.55	102.3	1.0	0.25	0.0	0.00	0.00	0.17	0.04					
30	17.82	33.346	24.052	5.59	102.8	1.0	0.25	0.0	0.00	0.00	0.18	0.04	10.	2.6	2.5	2.6	0.27
40	15.46	33.298	24.563	6.08	106.8	1.3	0.28	0.0	0.00	0.00	0.27	0.10					
50	14.01	33.351	24.915	5.83	99.4	2.3	0.48	2.6	0.33	0.00	0.51	0.32	2.2	1.3	0.91	1.1	0.19
63	12.68	33.334	25.170	5.09	84.4	5.8	0.77	7.7	0.17	0.00	0.50	0.52	0.79	0.56	0.11	0.34	0.13

RV SALLY RIDE CALCOFI CRUISE 1708 STATION 86.7 100.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE	ORD
31 38.7 N	123 4.0 W	09/08/2017	1650 UTC	24 m	1215 - 1925 PST	1218 PST	1932 PST	169.0 mg C/m2	042

DEPTH m	TEMP DEG C	SALINITY	SIGMA THETA	OXYGEN ml/L	OXY PCT	SIO3* µM	PO4* µM	NO3* µM	NO2* µM	NH4* µM	CHL-A µg/L	PHAEO µg/L	LIGHT PCT	UPTAKE (mg C/m3) 1	2	MEAN	DARK
2	18.51	33.194	23.766	5.50	102.3	2.1	0.27	0.0	0.00	0.19	0.13	0.07	88. A	3.3	3.3	3.3	0.08
10	18.51	33.192	23.766	5.48	102.0	2.6	0.27	0.1	0.00	0.07	0.13	0.03					
14	18.45	33.199	23.785	5.48	101.9	2.2	0.27	0.0	0.00	0.00	0.13	0.02	41.	3.2	3.5	3.3	0.10
18	18.31	33.291	23.892	5.64	104.7	1.5	0.27	0.0	0.00	0.00	0.16	0.02	32.	3.6	3.3	3.5	0.13
34	17.05	33.219	24.139	5.83	105.5	1.7	0.27	0.0	0.00	0.00	0.25	0.05	11.	2.7	2.6	2.6	0.07
44	15.51	33.211	24.485	5.93	104.2	1.7	0.26	0.0	0.00	0.00	0.30	0.16					
52	14.82	33.187	24.617	5.92	102.6	1.9	0.33	0.0	0.06	0.00	0.50	0.26					
62	14.37	33.198	24.721	5.80	99.6	2.4	0.39	0.7	0.23	0.00	0.52	0.32	1.9	1.2	0.88	1.1	0.02
68	14.27	33.227	24.765	5.77	98.8	2.4	0.43	1.4	0.38	0.00	0.50	0.27					
76	13.91	33.248	24.857	5.65	96.1	2.6	0.49	2.4	0.46	0.00	0.45	0.36	0.77	0.40	0.14	0.27	0.05

RV SALLY RIDE CALCOFI CRUISE 1708 STATION 90.0 45.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE	ORD
32 55.1 N	118 56.1 W	06/08/2017	1657 UTC	22 m	1205 - 1915 PST	1202 PST	1914 PST	264.4 mg C/m2	024

DEPTH m	TEMP DEG C	SALINITY	SIGMA THETA	OXYGEN ml/L	OXY PCT	SIO3* µM	PO4* µM	NO3* µM	NO2* µM	NH4* µM	CHL-A µg/L	PHAEO µg/L	LIGHT PCT	UPTAKE (mg C/m3) 1	2	MEAN	DARK
2	20.04	33.400	23.533	5.41	103.8	1.1	0.20	0.0	0.00	0.11	0.15	0.05	87. A	5.9	5.8	5.9	0.14
10	19.90	33.391	23.563	5.44	104.1	1.0	0.20	0.0	0.00	0.00	0.16	0.05					
13	19.83	33.387	23.579	5.44	104.0	1.0	0.20	0.0	0.00	0.00	0.15	0.04	40.	5.9	6.2	6.1	0.15
16	19.47	33.356	23.649	5.61	106.5	1.1	0.21	0.0	0.00	0.00	0.16	0.05	33.	5.5	5.2	5.3	0.13
31	15.75	33.284	24.488	6.11	107.9	1.7	0.25	0.1	0.00	0.00	0.26	0.09	11.	4.8	4.6	4.7	0.14
39	15.51	33.279	24.538	6.09	107.0	1.7	0.25	0.1	0.00	0.00	0.30	0.11					
47	14.74	33.278	24.705	6.02	104.1	1.6	0.29	0.2	0.03	0.00	0.64	0.31					
56	13.62	33.302	24.958	5.45	92.2	3.6	0.53	3.9	0.12	0.07	0.55	0.37	2.0	2.1	1.4	1.8	0.09
62	12.70	33.324	25.158	5.15	85.5	5.4	0.69	6.5	0.16	0.00	0.51	0.39					
69	12.42	33.341	25.225	4.94	81.5	6.7	0.81	8.4	0.16	0.00	0.45	0.38	0.81	0.48	0.11	0.30	0.06

A) INCUBATION LIGHT INTENSITIES WERE 64.8, 41.4, 32.4, 11.2, 2.04, 0.82 PERCENT RESPECTIVELY

RV SALLY RIDE CALCOFI CRUISE 1708 STATION 90.0 80.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE	ORD
31 45.0 N	121 19.0 W	05/08/2017	1819 UTC	17 m	1210 - 1920 PST	1211 PST	1922 PST	465.7 mg C/m2	020

DEPTH m	TEMP DEG C	SALINITY	SIGMA THETA	OXYGEN ml/L	OXY PCT	SIO3* µM	PO4* µM	NO3* µM	NO2* µM	NH4* µM	CHL-A µg/L	PHAEO µg/L	LIGHT PCT	UPTAKE (mg C/m3) 1	2	MEAN	DARK
2	18.25	33.494	24.059	5.64	104.8	0.3	0.19	0.0	0.00	0.00	0.30	0.06	83. A	12.2	11.9	12.1	0.33
10	17.26	33.495	24.301	5.82	106.0	0.0	0.17	0.0	0.00	0.00	0.32	0.05	41.	11.9	12.0	12.0	0.34
12	17.14	33.494	24.328	5.85	106.3	0.2	0.18	0.1	0.00	0.00	0.34	0.11	34.	12.2	13.2	12.7	0.36
24	17.02	33.503	24.364	5.82	105.4	0.2	0.18	0.0	0.00	0.00	0.56	0.17	11.	12.1	11.8	12.0	0.36
34	16.73	33.501	24.430	5.76	103.8	0.2	0.25	0.0	0.03	0.08	1.37	0.14					
43	15.66	33.460	24.644	5.69	100.4	0.9	0.40	0.9	0.13	0.86	0.89	0.30	2.1	4.0	3.3	3.6	0.16
53	14.31	33.379	24.873	5.60	96.2	2.4	0.53	2.5	0.25	1.02	1.56	0.32	0.83	1.4	1.2	1.3	0.13

RV SALLY RIDE CALCOFI CRUISE 1708 STATION 90.0 120.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE	ORD
30 25.1 N	123 59.9 W	04/08/2017	1755 UTC	36 m	1215 - 1935 PST	1222 PST	1931 PST	129.9 mg C/m2	016

DEPTH m	TEMP DEG C	SALINITY	SIGMA THETA	OXYGEN ml/L	OXY PCT	SIO3* µM	PO4* µM	NO3* µM	NO2* µM	NH4* µM	CHL-A µg/L	PHAEO µg/L	LIGHT PCT	UPTAKE (mg C/m3) 1	2	MEAN	DARK
2	20.26	33.603	23.630	5.29	102.1	2.8	0.20	0.5	0.04	0.06	0.07	0.01	92. A	1.8	2.0	1.9	0.11
10	20.24	33.604	23.637	5.27D	101.6	2.1	0.22	0.1	0.00	0.17	0.08	0.01					
21	20.08	33.595	23.672	5.29	101.7	2.0	0.20	0.0	0.00	0.00	0.08	0.02	41.	1.7	1.9	1.8	0.14
26	19.80	33.567	23.725	5.32	101.8	1.9	0.20	0.0	0.00	0.09	0.07	0.02	33.	1.5	1.8	1.6	0.11
38	19.79	33.619	23.768	5.32	101.8	1.9	0.20	0.0	0.00	0.15	0.08	0.02					
50	18.01	33.457	24.093	5.55	102.6	1.9	0.21	0.0	0.00	0.09	0.10	0.02	12.	1.5	1.4	1.5	0.07
60	17.35	33.332	24.157	5.75	104.7	1.9	0.21	0.0	0.00	0.07	0.11	0.03					
70	16.24	33.265	24.365	5.90	105.2	1.9	0.21	0.0	0.00	0.00	0.14	0.04					
80	15.79	33.290	24.485	5.86	103.6	2.0	0.22	0.0	0.00	0.00	0.16	0.06					
91	15.12	33.310	24.650	5.81	101.3	2.2	0.25	0.0	0.00	0.00	0.19	0.10	2.1	0.46	0.31	0.38	0.02
100	14.65	33.282	24.731	5.75	99.2	2.5	0.28	0.0	0.00	0.11	0.20	0.15					
114	13.85	33.298	24.910	5.56	94.4	3.4	0.36	0.7	0.05	0.00	0.22	0.24	0.77	0.30	0.06	0.18	0.04

RV SALLY RIDE CALCOFI CRUISE 1708 STATION 93.3 45.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE	ORD
32 20.8 N	118 33.5 W	02/08/2017	1844 UTC	25 m	1205 - 2024 PST	1200 PST	1920 PST	355.8 mg C/m2	007

DEPTH m	TEMP DEG C	SALINITY	SIGMA THETA	OXYGEN ml/L	OXY PCT	SIO3* µM	PO4* µM	NO3* µM	NO2* µM	NH4* µM	CHL-A µg/L	PHAEO µg/L	LIGHT PCT	UPTAKE (mg C/m3) 1	2	MEAN	DARK
2	18.69	33.376	23.859	5.52	103.3	1.2	0.24	0.1	0.03	0.12	0.10	0.03	88. A	2.8	3.2	3.0	0.08
8	18.57	33.357	23.877	5.51	102.8	0.9	0.23	0.0	0.00	0.06	0.12	0.03					
15	18.35	33.367	23.939	5.57	103.5	0.7	0.23	0.0	0.00	0.00	0.16	0.04	40.	4.5	5.2	4.9	0.16
19	15.95	33.278	24.437	5.99	106.2	0.9	0.23	0.0	0.00	0.00	0.15	0.06	31.	4.5	4.6	4.6	0.12
28	14.76	33.316	24.729	6.09	105.4	1.0	0.34	0.6	0.12	0.30	0.34	0.14					
37	13.40	33.318	25.012	5.75	96.8	2.3	0.54	3.3	0.51	0.36	0.57	0.34	10.	9.9	9.6	9.7	0.17
47	12.94	33.324	25.111	5.45	90.8	3.7	0.65	5.5	0.60	0.00	0.41	0.30					
57	12.21	33.333	25.258	5.20	85.4	5.7	0.78	8.1	0.07	0.00	0.25	0.22					
66	11.74	33.381	25.385	4.87	79.2	8.1	0.95	10.8	0.05	0.00	0.14	0.14	1.7	0.49	0.39	0.44	0.05
81	11.24	33.466	25.543	4.41	70.9	11.9	1.21	14.8	0.03	0.00	0.06	0.08	0.69	0.09	0.02	0.06	0.05

RV SALLY RIDE CALCOFI CRUISE 1708 STATION 93.3 80.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE	ORD
31 10.8 N	120 55.3 W	03/08/2017	1807 UTC	24 m	1205 - 1930 PST	1210 PST	1927 PST	390.7 mg C/m2	012

DEPTH m	TEMP DEG C	SALINITY	SIGMA THETA	OXYGEN ml/L	OXY PCT	SIO3* µM	PO4* µM	NO3* µM	NO2* µM	NH4* µM	CHL-A µg/L	PHAEO µg/L	LIGHT PCT	UPTAKE (mg C/m3) 1	2	MEAN	DARK
3	17.54	33.234	24.033	5.61	102.6	1.7	0.26	0.0	0.00	0.00	0.15	0.03	83. A	4.7	4.7	4.7	0.17
8	17.46	33.243	24.058	5.63	102.8	1.6	0.25	0.0	0.00	0.00	0.15	0.04					
14	17.25	33.259	24.120	5.69	103.4	1.6	0.25	0.0	0.00	0.00	0.21	0.04	41.	4.8	5.2	5.0	0.10
18	17.23	33.249	24.119	5.67	103.0	1.6	0.25	0.0	0.00	0.00	0.21	0.07	32.	5.1	5.3	5.2	0.12
26	17.06	33.332	24.224	5.77	104.6	1.1	0.27	0.0	0.00	0.16	0.34	0.10					
34	16.08	33.373	24.482	5.86	104.2	1.0	0.30	0.2	0.00	0.13	0.62	0.23	11.	11.4	11.1	11.2	0.15
43	14.34	33.112D	24.660	5.89	101.0	1.4	0.29	0.1	0.00	0.15	0.51	0.27					
53	13.37	33.082	24.838	6.05	101.6	2.8	0.29	0.0	0.03	0.07	0.48	0.29					
61	12.92	33.122	24.958	5.96	99.3	3.2	0.35	0.7	0.18	0.08	0.32	0.27	2.0	0.97	0.80	0.88	0.02
75	12.84	33.236	25.063	5.81	96.7	3.6	0.38	1.6	0.17	0.00	0.22	0.20	0.83	0.27	0.24	0.25	0.02

A) INCUBATION LIGHT INTENSITIES WERE 64.8, 41.4, 32.4, 11.2, 2.04, 0.82 PERCENT RESPECTIVELY

RV SALLY RIDE CALCOFI CRUISE 1708 STATION 93.3 110.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
30 10.8 N	122 55.4 W	04/08/2017	1035	UTC	3860 m	280 01 kn			1014.9 mb	19.0 C	17.5 C				015

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3* µM	PO4* µM	NO3* µM	NO2* µM	NH4* µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0	20.17	20.17	33.656	23.694	419.2	0.000	5.27	230.0	101.6	2.5	0.20	0.3	0.03	0.09	0.08	0.01	0	
3	20.17	20.17	33.656	23.694	419.3	0.013	5.27	230.0	101.6	2.5	0.20	0.3	0.03	0.09	0.08	0.01	3	20
10 ISL	20.17 D	20.17	33.657 D	23.696	419.5	0.036	5.26	D229.3	D101.2	2.2	0.21	0.2	0.02	0.00	0.07	0.02	10	
11	20.17	20.16	33.653	23.693	419.8	0.046	5.27	230.1	101.6	2.2	0.21	0.2	0.00	0.00	0.07	0.02	11	19
20 ISL	20.06 D	20.05	33.637 D	23.711	418.4	0.078	5.26	D229.6	D101.2	2.1	0.20	0.1	0.02	0.00	0.07	0.01	20	
26	19.93	19.92	33.630	23.740	416.0	0.109	5.29	230.9	101.5	2.0	0.19	0.0	0.00	0.00	0.07	0.01	26	18
30 ISL	19.88 D	19.87	33.656 D	23.773	413.0	0.120	5.29	D230.7	D101.3	1.9	0.19	0.0	0.01	0.00	0.07	0.01	30	
40	19.94	19.94	33.721	23.806	410.2	0.167	5.38	234.9	103.3	1.8	0.18	0.0	0.00	0.00	0.07	0.02	40	17
50	18.16	18.15	33.424	24.031	389.1	0.207	5.64	246.2	104.5	1.9	0.21	0.0	0.00	0.00	0.10	0.02	50	16
63	17.79	17.78	33.675	24.314	362.5	0.256	5.77	251.9	106.3	2.0	0.18	0.0	0.00	0.00	0.10	0.02	63	15
75	17.27	17.26	33.742	24.491	346.1	0.298	5.74	250.2	104.6	2.1	0.17	0.0	0.00	0.00	0.14	0.04	76	14
88	16.19	16.18	33.748	24.749	321.9	0.342	5.67	247.5	101.3	2.2	0.17	0.0	0.00	0.00	0.16	0.07	89	13
100 ISL	16.02 D	16.00	33.790 D	24.821	315.4	0.377	5.52	D240.4	D 98.2	2.4	0.19	0.0	0.01	0.00	0.18	0.17	101	
101	15.91	15.89	33.790	24.846	313.0	0.383	5.57	242.9	98.9	2.4	0.19	0.0	0.00	0.00	0.18	0.18	102	12
112	15.23	15.22	33.699	24.926	305.6	0.417	5.47	238.7	95.9	2.9	0.25	0.4	0.07	0.00	0.22	0.25	113	11
125	14.39	14.37	33.658	25.077	291.5	0.456	5.27	230.1	90.8	3.9	0.38	2.2	0.22	0.00	0.20	0.20	126	10
141	12.91	12.89	33.581	25.319	268.6	0.500	5.08	221.7	84.8	5.7	0.55	5.3	0.05	0.00	0.14	0.16	142	09
150 ISL	12.15 D	12.13	33.574 D	25.462	255.0	0.522	4.85	D211.0	D 79.6	7.4	0.68	7.4	0.04	0.00	0.12	0.14	151	
171	10.95	10.93	33.529	25.647	237.6	0.576	4.65	202.8	74.4	11.3	0.99	12.1	0.00	0.00	0.07	0.09	172	08
200	9.48	9.46	33.661	26.000	204.2	0.640	3.89	169.5	60.2	20.2	1.52	20.1	0.00	0.00	0.02	0.02	202	07
230	8.86	8.83	33.836	26.237	182.1	0.698	3.31	144.4	50.7	26.6	1.78	24.1	0.00	0.00			232	06
250 ISL	8.54 D	8.51	33.929 D	26.361	170.6	0.732	2.99	D130.2	D 45.5	30.2	1.89	25.7	0.02	0.00			252	
271	8.21	8.18	33.962	26.436	163.7	0.769	2.83	123.3	42.7	34.1	2.00	27.4	0.00	0.00			273	05
300 ISL	7.80 D	7.77	34.004 D	26.530	155.0	0.814	2.47	D107.2	D 36.9	40.3	2.20	29.9	0.02	0.00			302	
321	7.46	7.42	34.026	26.597	148.9	0.847	2.03	88.7	30.2	44.7	2.34	31.8	0.00	0.00			324	04
381	6.72	6.68	34.075	26.738	135.9	0.932	1.27	55.5	18.6	56.6	2.66	36.0	0.00	0.00			384	03
400 ISL	6.56 D	6.52	34.091 D	26.772	132.9	0.958	1.10	D 47.9	D 16.0	59.5	2.73	36.8	0.01	0.00			403	
441	6.18	6.15	34.117	26.842	126.6	1.011	0.85	37.2	12.3	65.8	2.88	38.4	0.00	0.00			445	02
500 ISL	5.80 D	5.75	34.179 D	26.940	117.7	1.084	0.58	D 25.1	D 8.2	74.9	3.02	40.0	0.01	0.00			504	
517	5.72	5.68	34.182	26.952	116.7	1.104	0.50	21.9	7.2	77.5	3.06	40.4	0.00	0.00			521	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV SALLY RIDE CALCOFI CRUISE 1708 STATION 93.4 26.5

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
32 57.0 N	117 16.9 W	02/08/2017	0058	UTC	20 m	250 02 kn	250 03 07	1	1009.5 mb	22.4 C	20.5 C		4/8	AS	002

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3* µM	PO4* µM	NO3* µM	NO2* µM	NH4* µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0	23.11	23.11	33.559	22.811	503.6	0.000	6.25	272.8	126.9	0.9	0.11	0.1	0.03	0.00	1.36	0.25	0	
2	23.11	23.11	33.559	22.811	503.6	0.010	6.25	272.8	126.9	0.9	0.11	0.1	0.03	0.00	1.36	0.25	2	04
6	21.00	21.00	33.542 D	23.386	448.9	0.024	6.39	279.0	125.1	1.0	0.14	0.1	0.04	0.00	2.19	0.58	6	03
10	14.29	14.29	33.429	24.913	303.3	0.044	5.36	234.1	92.1	4.4	0.41	0.4	0.14	0.11	3.34	0.48	10	02
15	14.22	14.21	33.393	24.902	304.5	0.059	4.72	206.1	80.9	6.2	0.65	1.8	0.37	0.45	0.87	0.36	15	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;