Welcome to the new CalCOFI website! Some content is still under construction. Please email us (mailto:calcofi-team@ucsd.edu) about any feedback or problems you may have, or visit our previous website (https://calcofi.com/).



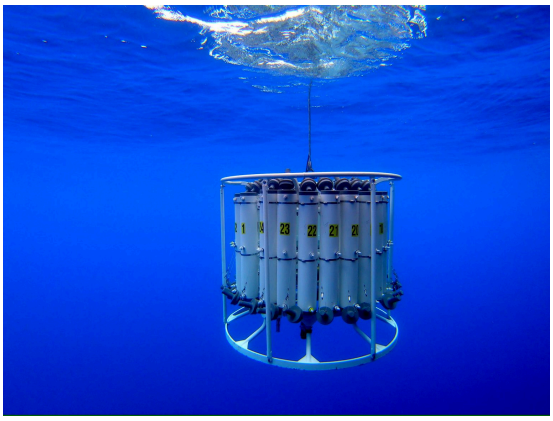
CalCOFI

(https://calcofi.org)

California Cooperative Oceanic Fisheries Investigations

Overview

This database contains oceanographic data measured from seawater samples collected at CalCOFI stations (https://wp.calcofi.org/wp/data/sampling-info/station-positions/). Oceanographic data (i.e. the physical features of seawater) includes parameters such as temperature, salinity, dissolved oxygen, chlorophyll-a, nutrients, and many more. The Bottle Database spans the entire timeseries – from 1949, when CalCOFI was initiated, to the present. The database is available in four different formats and can be downloaded below.



History of CalCOFI Seawater Sample Collection

Prior to 1993, CalCOFI collected seawater samples using Niskin, Nansen (https://en.wikipedia.org/wiki/Nansen_bottle), and "Wally" (in-house design by Walt Bryant & George Anderson) bottles with reversing thermometers. In 1990, CalCOFI began using a CTD-Rosette (pictured here underwater), and starting Aug 1993 (9308NH) CTD-Rosette sampling became the primary method of seawater collection.

(https://wp.calcofi.org/wp/sampling-info/survey-equipment/ctd-rosette/)

(https://wp.calcofi.org/wp/sampling-info/station-operations/bottle-sampling/)

Seawater Collected (https://wp.calcofi.org/wp/sampling-info/survey-equipment/ctd-rosette/)

Seawater is collected from various sampling depths using 10-liter Niskin bottles attached to a 24-place CTD-Rosette frame

Samples Analyzed (https://wp.calcofi.org/wp/sampling-info/station-operations/bottle-sampling/)

Environmental parameters are measured using chemical analyses (i.e. titrations and assays) from the seawater samples

Data Compiled

Data are QC'ed and compiled in the Bottle Database that can be downloaded here in four formats (CSV, MDB, XML, and SQL)

See Below

More Info... (https://wp.calcofi.org/wp/sampling-info/survey-equipment/ctd-rosette/)

More Info... (https://wp.calcofi.org/wp/sampling-info/station-operations/bottle-sampling/)

Database Description

Summary | Cast Table Example | Bottle Table Example | Code Definitions

Sta_Code (Station Codes – found in Cast table)

- “ST” – Standard CalCOFI Station
- “SCO” – SCCOOS nearshore/20m Station
- “NRO” – Not Regularly Occupied Original CalCOFI Station
- “OCO” – Occasionally CalCOFI Occupied
- “IMX” – IMECOCAL Occupied
- “NST” – Non-Standard Station
- “MBR” – MBARI Occupied Station

Data_Type (Data Type – found in Cast table)

- “PR” – Productivity Cast
- “HY” – Hydrographic Cast
- “10” – Ten-meter Cast
- “CT” – Compressed CTD Cast (Low Resolution)
- “MX” – Mixed CTD and Bottle Data

_qual, qua, or q (Quality Code – found in Bottle table; associated with discrete samples; examples: “O_qual”, “Chlqua”, “PO4q”)

- Blank – Data OK
- “4” – Value zeroed due to value below detection limit
- “6” – Data taken from CTD sensor
- “8” – Technician thinks value is suspect
- “9” – Missing Data

RecInd (Record Indicator – found in Bottle table)

- “3” – Observed Data
- “4” – Educated office guess (ghost)
- “5” – Data from STD or CTD sensor
- “6” – Duplicate Depth
- “7” – Interpolated to a standard depth

Download Bottle Database Here:



Preview
(https://calcofi.org/downloads/csv.png)

35 MB Zip



Preview
(https://calcofi.org/downloads/mdb.png)

48 MB Zip



Preview
(https://calcofi.org/downloads/xml.png)

43 MB Zip



Preview
(https://calcofi.org/downloads/sql.png)

37 MB Zip

Key: Cast Table

FIELD NAME	UNITS	DESCRIPTION
Cst_Cnt	n.a.	Cast Count - All CalCOFI casts ever conducted, consecutively numbered
Cruise_ID	n.a.	Cruise identifier [Year]-[Month]-[Day]-C-[Ship Code]
Cruise	n.a.	Cruise Name [Year][Month]
Cruz_Sta	n.a.	Cruise Name and Station [Year][Month][Line][Station]
DbSta_ID	n.a.	Line and Station
Cast_ID	n.a.	Cast Identifier [Century] - [YY][MM][ShipCode] - [CastType][Julian Day] - [CastTime]-[Line][Sta]
Sta_ID	n.a.	Line and Station
Quarter	n.a.	Quarter of the year
Sta_Code	n.a.	Station Designation (See Station_ID and 0-St_Code for codes)
Distance	nautical miles	Nautical miles from coast intercept, calculated from estimated latitude and longitude
Date	time	Date (Month Day Year)
Year	n.a.	Year

FIELD NAME	UNITS	DESCRIPTION
Month	n.a.	Month
Julian_Date	n.a.	OA Date: days since December 30, 1899
Julian_Day	n.a.	Julian Day of the year
Time	time	Time (UTC) CTD reached terminal depth
Lat_Dec	decimal degrees	Observed Latitude in decimal degrees
Lat_Deg	degrees	Observed Latitude in degrees
Lat_Min	minutes	Observed Latitude in minutes
Lat_Hem	n.a.	Observed Latitude Hemisphere
Lon_Dec	decimal degrees	Observed Longitude in decimal degrees
Lon_Deg	degrees	Observed Longitude in degrees
Lon_Min	minutes	Observed Longitude in minutes
Lon_Hem	n.a.	Observed Longitude Hemisphere
Rpt_Line	n.a.	Reported Line Number
St_Line	n.a.	Nearest Standard Line
Ac_Line	n.a.	Calculated actual line from observed latitude and longitude
Rpt_Sta	n.a.	Reported Station Number
St_Station	n.a.	Nearest Standard Station Number
Ac_Sta	n.a.	Calculated actual station from observed lat and long
Bottom_D	meters	Bottom depth in meters
Ship Name	n.a.	Ship's Name
Ship Code	n.a.	Ship's NODC Code
Data_Type	n.a.	Data Type
Order_Occ	n.a.	Order station was occupied (within each cruise)
Event_Num	n.a.	Event number; includes all research opperations within each cruise (e.g. nets, CTD)
Cruz_Leg	n.a.	Leg of cruise, if multiple legs
Orig_Sta_ID	n.a.	IEH Reported Station ID
Data_Or	n.a.	
Cruz_Num	n.a.	Cruise Designation (Year Month)
IntChl	milligrams chl per square meter per half light day	Integrated Chlorophyll per half light day
IntC14	milligrams C per square meter per half light day	Integrated Primary Productivity per half light day
Inc_Str	time	Incubation Start Time (PST)
Inc_End	time	Incubation End Time (PST)
PST_LAN	time	Time of Local Apparent Noon (PST)
Civil_T	time	Time of Civil Twilight (PST)
TimeZone	n.a.	Time Zone
Wave_Dir	deg	Wave Direction reported using an abbreviated 360° azimuth circle with 00 representing True North, 18 represents 180°
Wave_Ht	feet	Wave Height in feet
Wave_Prd	seconds	Wave Period in seconds
Wind_Dir	degrees	Reported using an abbreviated 360° azimuth circle with 0 representing True North, 18 representing 180°
Wind_Spd	knots	Wind Speed in knots
Barometer	millibars	Millibars to the tenths
Dry_T	degrees Celcius	Dry Air Temperature from a Sling Psychrometer in degrees Celcius
Wet_T	degrees Celcius	Wet Air Temperature from a Sling Psychrometer in degrees Celcius
Wea	n.a.	1 Digit Code from The World Meteorlogical Organization, Code source WMO 4501
Cloud_Typ	n.a.	1 Digit Code from The World Meteorlogical Organization, Code source WMO 0500
Cloud_Amt	n.a.	1 Digit Code from The World Meteorlogical Organization, Code source WMO 2700, in oktas
Visibility	n.a.	1 Digit Code from The World Meteorlogical Organization, Code source WMO 4300
Secchi	meters	Secchi disk depth in meters
ForelU	Forel-Ule Scale	Water color; Only used in CalCOFI dataset from 1988-10 through 1998-04

Key: Bottle Table

Download as CSV
(https://calcofi.org/downloads/Bottle%20Field%20Descriptions.csv)

FIELD NAME	UNITS	DESCRIPTION
Cst_Cnt	n.a.	Cast Count - All CalCOFI casts ever conducted, consecutively numbered
Btl_Cnt	n.a.	Bottle Count - All CalCOFI bottles ever sampled, consecutively numbered
Sta_ID	n.a.	Line and Station [Line] [Station]
Depth_ID	n.a.	Uses the Cast_ID prefix ([Century]-[Year][Month][ShipCode]-[CastType][Julian Day]-[CastTime]-[Line][Sta]) but adds three additional variables: [Depth][Bottle]-[Rec_Ind]
Depthm	meters	Bottle depth in meters
T_degC	degrees Celsius	Water temperature in degrees Celsius
Salnty	Practical Salinity Scale	Salinity (Practical Salinity Scale 1978)
O2ml_L	milliliters per liter	Milliliters oxygen per liter of seawater
STheta	kilograms per cubic meter	Potential Density (Sigma Theta), Kg/M³
O2Sat	percent saturation	Oxygen percent saturation
Oxy_µmol/Kg	micromoles per kilogram	Oxygen micromoles per kilogram seawater
BtlNum	n.a.	Niskin bottle sample was collected from
RecInd	n.a.	Record Indicator (quality code that applies to the whole bottle, instead of just to a specific parameter)
T_prec	n.a.	Temperature Precision
T_qual	n.a.	Quality Code
S_prec	n.a.	Salinity Precision
S_qual	n.a.	Quality Code
P_qual	n.a.	Quality Code
O_qual	n.a.	Quality Code
SThtaq	n.a.	Quality Code
O2Satq	n.a.	Quality Code
ChlorA	micrograms per liter	Migrograms Chlorophyll-a per liter seawater, measured fluorometrically
Chlqua	n.a.	Quality Code
Phaeop	micrograms per liter	Micrograms Phaeopigment per liter seawater, measured fluormetrically
Phaqua	n.a.	Quality Code
PO4uM	micromoles per liter	Micromoles Phosphate per liter of seawater
PO4q	n.a.	Quality Code
SiO3uM	micromoles per liter	Micromoles Silicate per liter of seawater
SiO3qu	n.a.	Quality Code
NO2uM	micromoles per liter	Micromoles Nitrite per liter of seawater
NO2q	n.a.	Quality Code
NO3uM	micromoles per liter	Micromoles Nitrate per liter of seawater
NO3q	n.a.	Quality Code
NH3uM	micromoles per liter	Micromoles Ammonia per liter of seawater
NH3q	n.a.	Quality Code
C14As1	milligrams C per cubic meter per half light day	14C Assimilation of Replicate 1 (milligrams carbon per cubic meter of seawater per half light day)
C14A1p	n.a.	Precision of 14C Assimilation of Replicate 1
C14A1q	n.a.	Quality Code
C14As2	milligrams C per cubic meter per half light day	14C Assimilation of Replicate 2 (milligrams carbon per cubic meter of seawater per half light day)
C14A2p	n.a.	Precision of 14C Assimilation of Replicate 2
C14A2q	n.a.	Quality Code
DarkAs	milligrams C per cubic meter per half light day	14C Assimilation of Dark/Control Bottle (milligrams carbon per cubic meter of seawater per half light day)
DarkAp	n.a.	Precision of 14C Assimilationof Dark/Control Bottle
Darkaq	n.a.	Quality Code
MeanAs	milligrams C per cubic meter per half light day	Mean 14C Assimilation of Replicates 1 and 2 (milligrams carbon per cubic meter of seawater per half light day)
MeanAp	n.a.	Precision of Mean 14C Assimilation of Replicates 1 and 2
MeanAq	n.a.	Quality Code
IncTim	time	Elapsed incubation time of the primary productivity experiment

FIELD NAME	UNITS	DESCRIPTION
LightP	percent	Light intensities of the incubation tubes in the primary productivity experiment, expressed as percentages
R_Depth	meters	Reported Depth (from pressure) in meters
R_Temp	degrees Celsius	Reported (Potential) Temperature in degrees Celsius
R_Sal	Practical Salinity Scale	Reported Salinity (from Specific Volume Anomoly, M³/Kg)
R_DYNHT	dynamic meters	Reported Dynamic Height in units of dynamic meters (work per unit mass)
R_Nuts	micromoles per liter	Reported Ammonium concentration
R_Oxy_µmol/Kg	micromoles per kilogram	Reported Oxygen micromoles/kilogram
DIC1	micromoles per kilogram	Dissolved Inorganic Carbon micromoles per kilogram solution
DIC2	micromoles per kilogram	Dissolved Inorganic Carbon micromoles per kilogram solution (on a replicate sample)
TA1	micromoles per kilogram	Total Alkalinity micromoles per kilogram solution
TA2	micromoles per kilogram	Total Alkalinity micromoles per kilogram solution (on a replicate sample)
pH1	pH scale	pH (the degree of acidity/alkalinity of a solution)
pH2	pH scale	pH (the degree of acidity/alkalinity of a solution) on a replicate sample
DIC Quality Comment	n.a.	Quality Comment

Go to CTD Data (https://calcofi.org/data/oceanographic-data/ctd-cast-files/)

Sign up for the CalCOFI Newsletter

Receive updates and find out when new data are added to the website

Sign up here (https://app.e2ma.net/app2/audience/signup/199113

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- Cruise Schedule
- Sampling Info (https://calcofi.org/sampling-info/)
- Conferences (https://calcofi.org/conference/)
- Publications (https://calcofi.org/publications/)

FOR RESEARCHERS

- Data Usage Policy (https://calcofi.org/data/data-usage-policy/)
- Bottle Database (https://calcofi.org/data/oceanographic-data/bottle-database/)
- Fisheries Data (https://calcofi.org/data/marine-ecosystem-data/zooplankton/)
- CTD Cast Files (https://calcofi.org/data/oceanographic-data/ctd-cast-files/)

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