

AK-LTOP CalVET Net Tow counts and biomass collected from multiple cruises from the Northeast Pacific, 1997-2001 (NEP project)

Website: <https://www.bco-dmo.org/dataset/3009>

Data Type: Cruise Results

Version: 1

Version Date: 2009-02-26

Project

» [U.S. GLOBEC Northeast Pacific](#) (NEP)

Program

» [U.S. GLOBal ocean ECosystems dynamics](#) (U.S. GLOBEC)

| Contributors | Affiliation | Role |
|------------------------------------|---|---------------------------|
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Abstract

AK-LTOP CalVET Net Tow counts and biomass collected from multiple cruises from the Northeast Pacific, 1997-2001.

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Coverage

Spatial Extent: N:60.537 E:-144.0538 S:58.095 W:-149.4756

Temporal Extent: 1997-10-10 - 2004-10-07

Dataset Description

CalVET catch data - zooplankton species abundance and biomass, 1997 - 2004

Updated July 2008.

All data are for 149 micron CALVET tows, 25.4 cm ring diameter, vertical hauls.

Resources:

[Marine Ecosystem Monitoring in the Northern Gulf of Alaska](#) web site

[GAK1 Time Series](#) web site

[cruise reports](#) web site

Methods & Sampling

GLOBEC 2000: Gulf of Alaska Long-Term Observation Program

T. Weingartner, L. Haldorson, R. Hopcroft, K. Coyle, T. E. Whittedge (all at University of Alaska, Fairbanks), T. Royer (Old Dominion University)

This project is to conduct the Gulf of Alaska Long-Term Observation Program (GOA-LTOP) as part of Phase II of the Northeast Pacific (NEP) GLOBEC program. The GOA shelf supports a rich ecosystem that includes many commercially important fisheries. The basis for this productivity is enigmatic for the GOA shelf is deep, forced by downwelling-favorable winds, and fed by a massive nutrient-poor coastal freshwater discharge. Both the winds and the freshwater discharge are intimately linked to the strength and position of the Aleutian Low. The GOA ecosystem experiences substantial physical and biological changes on decadal and interannual time scales. Although some of these changes are correlated with various climatic indices a mechanistic understanding of climate change and ecosystem response is unavailable. The generic goal of this LTOP is to understand and quantify temporal (seasonal and interannual) and spatial (cross- and along-shelf) variations in the thermohaline, chemical, and biological properties and relationships of this shelf. Our proposal supports GLOBEC goals that will help: 1) retrospective studies interpret historical data, 2) design a cost-effective long-term monitoring program, 3) provide the seasonal and interannual context for concurrent mesoscale and process studies, and 4) provide boundary conditions and data sets for model evaluation. This 5-year project entails 4 field years and a fifth year for data analyses and synthesis. The field effort involves seven, 9-day interdisciplinary cruises/year in the northern GOA. The study area encompasses the 220-km long, Seward Line (sampled in the 1970s) that extends across the shelf and slope and high resolution sampling of the Alaska Coastal Current (ACC), upstream, downstream, and within Prince William Sound. The ACC is an important shelf habitat for yoy salmon migrating from nursery areas in the sound and into the GOA. The sampling effort (Table A) is year-round and motivated by seasonally significant physical and biological events affecting yoy pink salmon.

Table A. Sampling schedule and rationale for GOA-LTOP. (Key for Winds, Discharge and Stratification: S=strong; M=moderate; W=weak; D=downwelling winds; U=upwelling winds; V=variable; L=low; H=high) Deep water moves onshore during the July-August upwelling period.

| Month | Sampling | | | | Physical Rationale | | | Biological Rationale |
|----------|----------|-----------|-----|------|--------------------|-------|-------|---|
| | CTD | Nutrients | Zoo | Fish | Winds | Disch | Strat | |
| March | X | X | X | | D S | L | W | Zooplankton migrate from depth (at shelfbreak); transported inshore. |
| April | X | X | X | | D M | L-M | W V | Phytoplankton bloom |
| May | X | X | X | | D M- W | M | M V | Maximum oceanic copepod biomass. |
| July | X | X | X | X | D/U W | M-H | S | Maximum zooplankton abundance; YOY salmon enter shelf. |
| August | X | X | X | X | D/U W | M-H | S | Maximum YOY salmon abundance on shelf. |
| October | X | X | X | X | D S | H | H | YOY salmon on shelf. |
| December | X | X | X | | D S | M | M | Fall-winter pre-conditioning for spring nutrients, small zooplankton. |

The sampling protocol followed GLOBEC guidelines and used gear types and techniques similar to those in the Oregon LTOP that was also a part of the NEP-GLOBEC program. Most of the research was conducted from the R/V *Alpha Helix*. Fish sampling was done from a chartered trawler in July, August, and October. Both vessels worked together during these cruises so that the fishing charter could verify fish targets detected on the acoustics array towed from the *Alpha Helix*.

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Data Files

| File |
|--|
| calvet_ak_itop.csv (Comma Separated Values (.csv), 3.92 MB) MD5:4e147a925365856c49bb39f03e21eed1 |
| Primary data file for dataset ID 3009 |

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Parameters

| Parameter | Description | Units |
|--------------|--|----------------------------------|
| cruise_id | cruise identifier, e.g. hx281 is R/V Alpha Helix cruise 281 | dimensionless |
| year | year, e.g. 2004. | dimensionless |
| station_name | GAK, Gulf of Alaska HB,Hogan Bay Line HE,Hinchinbrook Entrance Line KIP, Knight Island Passage MS, Montegue Strait Line PWS, Prince William Sound | dimensionless |
| station | consecutive station number | dimensionless |
| yrday_local | local day and decimal time, as 326.5 for the 326th day of the year, or November 22 at 1200 hours (noon) | dimensionless |
| month_local | numerical month of year, local time | dimensionless |
| day_local | numerical day of month, local time | dimensionless |
| time_local | time of day, local time, using 2400 clock format (HHMM) | dimensionless |
| lat | latitude, in decimal degrees, north is positive | decimal degrees |
| lon | longitude, in decimal degrees, east is positive | decimal degrees |
| depth_w | sonic depth, in meters | meters |
| depth_cast | maximum depth of cast (tow) | |
| species | a binomial that consists of a genus name followed by the species name of an organism | dimensionless |
| stage | organism life history: AF, adult female AM, adult male AN, adult non-specified (??) bracts, of siphonophore C1, copepodite stage 1 C2, copepodite stage 2 C3, copepodite stage 3 C4, copepodite stage 4 C5, copepodite stage 5 | dimensionless |
| abundance | number of the specific taxa/group counted per meter ³ | number per cubic meter |
| biomass_g | wet weight of a specific taxa/group identified | grams wet weight per cubic meter |
| vol_filt | volume of water filtered during the tow. | |
| phylum | phylum, organism taxonomic level | dimensionless |
| subphylum | One of the levels in the taxonomic system of classification | dimensionless |
| class | One of the levels in the taxonomic system of classification | dimensionless |
| subclass | One of the levels in the taxonomic system of classification | dimensionless |
| order | order, organism taxonomic level | dimensionless |
| infraorder | One of the levels in the taxonomic system of classification | dimensionless |
| family | Family. One of the levels in the taxonomic system of classification; typically ends in 'ae'. | dimensionless |

Instruments

| | |
|---|---|
| Dataset-specific Instrument Name | CaVet |
| Generic Instrument Name | CaVet |
| Dataset-specific Description | 149 micron CALVET tows, 25.4 cm ring diameter, vertical haul |
| Generic Instrument Description | The California Cooperative Oceanic Fisheries Investigations (CalCOFI) Vertical Egg Tow device is a type of vertical net tow. Note that mesh sizes may vary. |

Deployments

HX201

| | |
|-------------------|---|
| Website | https://www.bco-dmo.org/deployment/57502 |
| Platform | R/V Alpha Helix |
| Start Date | 1997-10-10 |
| End Date | 1997-10-17 |

HX203

| | |
|--------------------|---|
| Website | https://www.bco-dmo.org/deployment/57503 |
| Platform | R/V Alpha Helix |
| Start Date | 1998-03-08 |
| End Date | 1998-03-15 |
| Description | Cruise information and original data are available from the NSF R2R data catalog. |

HX205

| | |
|--------------------|---|
| Website | https://www.bco-dmo.org/deployment/57504 |
| Platform | R/V Alpha Helix |
| Start Date | 1998-03-31 |
| End Date | 1998-04-07 |
| Description | Cruise information and original data are available from the NSF R2R data catalog. |

HX208

| | |
|--------------------|---|
| Website | https://www.bco-dmo.org/deployment/57505 |
| Platform | R/V Alpha Helix |
| Start Date | 1998-05-07 |
| End Date | 1998-05-14 |
| Description | Cruise information and original data are available from the NSF R2R data catalog. |

HX211

| | |
|--------------------|---|
| Website | https://www.bco-dmo.org/deployment/57506 |
| Platform | R/V Alpha Helix |
| Start Date | 1998-07-10 |
| End Date | 1998-07-17 |
| Description | Cruise information and original data are available from the NSF R2R data catalog. |

HX215

| | |
|--------------------|---|
| Website | https://www.bco-dmo.org/deployment/57507 |
| Platform | R/V Alpha Helix |
| Start Date | 1998-10-02 |
| End Date | 1998-10-09 |
| Description | Cruise information and original data are available from the NSF R2R data catalog. |

HX217

| | |
|--------------------|---|
| Website | https://www.bco-dmo.org/deployment/57509 |
| Platform | R/V Alpha Helix |
| Start Date | 1999-03-14 |
| End Date | 1999-03-21 |
| Description | Cruise information and original data are available from the NSF R2R data catalog. |

HX218

| | |
|-------------------|---|
| Website | https://www.bco-dmo.org/deployment/57510 |
| Platform | R/V Alpha Helix |
| Start Date | 1999-04-12 |
| End Date | 1999-04-19 |

HX219

| | |
|-------------------|---|
| Website | https://www.bco-dmo.org/deployment/57511 |
| Platform | R/V Alpha Helix |
| Start Date | 1999-05-06 |
| End Date | 1999-05-13 |

HX223

| | |
|-------------------|---|
| Website | https://www.bco-dmo.org/deployment/57512 |
| Platform | R/V Alpha Helix |
| Start Date | 1999-08-26 |
| End Date | 1999-09-02 |

HX225

| | |
|-------------------|---|
| Website | https://www.bco-dmo.org/deployment/57513 |
| Platform | R/V Alpha Helix |
| Start Date | 1999-10-05 |
| End Date | 1999-10-12 |

HX228

| | |
|--------------------|---|
| Website | https://www.bco-dmo.org/deployment/57515 |
| Platform | R/V Alpha Helix |
| Start Date | 2000-03-07 |
| End Date | 2000-03-15 |
| Description | Original cruise data are available from the NSF R2R data catalog |

HX230

| | |
|--------------------|---|
| Website | https://www.bco-dmo.org/deployment/57516 |
| Platform | R/V Alpha Helix |
| Start Date | 2000-04-18 |
| End Date | 2000-04-26 |
| Description | Original cruise data are available from the NSF R2R data catalog |

HX231

| | |
|--------------------|---|
| Website | https://www.bco-dmo.org/deployment/57517 |
| Platform | R/V Alpha Helix |
| Start Date | 2000-05-17 |
| End Date | 2000-05-25 |
| Description | Original cruise data are available from the NSF R2R data catalog |

HX234

| | |
|--------------------|---|
| Website | https://www.bco-dmo.org/deployment/57518 |
| Platform | R/V Alpha Helix |
| Start Date | 2000-08-13 |
| End Date | 2000-08-23 |
| Description | Original cruise data are available from the NSF R2R data catalog |

HX237

| | |
|--------------------|---|
| Website | https://www.bco-dmo.org/deployment/57519 |
| Platform | R/V Alpha Helix |
| Start Date | 2000-10-03 |
| End Date | 2000-10-11 |
| Description | Original cruise data are available from the NSF R2R data catalog |

HX239

| | |
|--------------------|---|
| Website | https://www.bco-dmo.org/deployment/57521 |
| Platform | R/V Alpha Helix |
| Report | http://globec.whoi.edu/nep/reports/cgoa_cruises/hx239cr.pdf |
| Start Date | 2001-03-02 |
| End Date | 2001-03-13 |
| Description | Original cruise data are available from the NSF R2R data catalog |

HX241

| | |
|--------------------|---|
| Website | https://www.bco-dmo.org/deployment/57522 |
| Platform | R/V Alpha Helix |
| Report | http://globec.whoi.edu/nep/reports/cgoa_cruises/hx241cr.pdf |
| Start Date | 2001-04-03 |
| End Date | 2001-04-14 |
| Description | Original cruise data are available from the NSF R2R data catalog |

HX243

| | |
|--------------------|---|
| Website | https://www.bco-dmo.org/deployment/57524 |
| Platform | R/V Alpha Helix |
| Report | http://globec.whoi.edu/nep/reports/cgoa_cruises/hx243cr.pdf |
| Start Date | 2001-05-04 |
| End Date | 2001-05-14 |
| Description | Original cruise data are available from the NSF R2R data catalog |

HX246

| | |
|--------------------|---|
| Website | https://www.bco-dmo.org/deployment/57526 |
| Platform | R/V Alpha Helix |
| Report | http://globec.whoi.edu/nep/reports/cgoa_cruises/hx246cr.pdf |
| Start Date | 2001-06-28 |
| End Date | 2001-07-09 |
| Description | Original cruise data are available from the NSF R2R data catalog |

HX248

| | |
|--------------------|---|
| Website | https://www.bco-dmo.org/deployment/57528 |
| Platform | R/V Alpha Helix |
| Report | http://globec.whoi.edu/nep/reports/cgoa_cruises/hx248cr.pdf |
| Start Date | 2001-07-30 |
| End Date | 2001-08-08 |
| Description | Original cruise data are available from the NSF R2R data catalog |

HX252

| | |
|--------------------|---|
| Website | https://www.bco-dmo.org/deployment/57529 |
| Platform | R/V Alpha Helix |
| Report | http://globec.whoi.edu/nep/reports/cgoa_cruises/hx252cr.pdf |
| Start Date | 2001-10-09 |
| End Date | 2001-10-18 |
| Description | Original cruise data are available from the NSF R2R data catalog |

HX254

| | |
|--------------------|---|
| Website | https://www.bco-dmo.org/deployment/57531 |
| Platform | R/V Alpha Helix |
| Report | http://globec.whoi.edu/nep/reports/cgoa_cruises/hx254cr.pdf |
| Start Date | 2002-03-04 |
| End Date | 2002-03-13 |
| Description | Original cruise data are available from the NSF R2R data catalog |

HX257

| | |
|--------------------|---|
| Website | https://www.bco-dmo.org/deployment/57532 |
| Platform | R/V Alpha Helix |
| Report | http://globec.whoi.edu/nep/reports/cgoa_cruises/hx257cr.pdf |
| Start Date | 2002-04-05 |
| End Date | 2002-04-14 |
| Description | Original cruise data are available from the NSF R2R data catalog |

HX258

| | |
|--------------------|---|
| Website | https://www.bco-dmo.org/deployment/57533 |
| Platform | R/V Alpha Helix |
| Report | http://globec.whoi.edu/nep/reports/cgoa_cruises/hx258cr.pdf |
| Start Date | 2002-04-30 |
| End Date | 2002-05-09 |
| Description | Original cruise data are available from the NSF R2R data catalog |

HX262

| | |
|--------------------|---|
| Website | https://www.bco-dmo.org/deployment/57534 |
| Platform | R/V Alpha Helix |
| Report | http://globec.whoi.edu/nep/reports/cgoa_cruises/hx262cr.pdf |
| Start Date | 2002-07-19 |
| End Date | 2002-07-27 |
| Description | Original cruise data are available from the NSF R2R data catalog |

HX263

| | |
|--------------------|---|
| Website | https://www.bco-dmo.org/deployment/57535 |
| Platform | R/V Alpha Helix |
| Report | http://globec.whoi.edu/nep/reports/cgoa_cruises/hx263cr.pdf |
| Start Date | 2002-08-13 |
| End Date | 2002-08-22 |
| Description | Original cruise data are available from the NSF R2R data catalog |

HX267

| | |
|--------------------|---|
| Website | https://www.bco-dmo.org/deployment/57536 |
| Platform | R/V Alpha Helix |
| Report | http://globec.whoi.edu/nep/reports/cgoa_cruises/hx267cr.pdf |
| Start Date | 2002-10-01 |
| End Date | 2002-10-10 |
| Description | Original cruise data are available from the NSF R2R data catalog |

HX269

| | |
|--------------------|---|
| Website | https://www.bco-dmo.org/deployment/57538 |
| Platform | R/V Alpha Helix |
| Report | http://globec.whoi.edu/nep/reports/cgoa_cruises/hx269cr.pdf |
| Start Date | 2003-03-04 |
| End Date | 2003-03-13 |
| Description | Original cruise data are available from the NSF R2R data catalog |

HX270

| | |
|--------------------|---|
| Website | https://www.bco-dmo.org/deployment/57539 |
| Platform | R/V Alpha Helix |
| Report | http://globec.whoi.edu/nep/reports/cgoa_cruises/hx270cr.pdf |
| Start Date | 2003-04-01 |
| End Date | 2003-04-10 |
| Description | Original cruise data are available from the NSF R2R data catalog |

HX272

| | |
|--------------------|---|
| Website | https://www.bco-dmo.org/deployment/57541 |
| Platform | R/V Alpha Helix |
| Report | http://globec.whoi.edu/nep/reports/cgoa_cruises/hx272cr.pdf |
| Start Date | 2003-05-23 |
| End Date | 2003-06-01 |
| Description | Original cruise data are available from the NSF R2R data catalog |

HX276

| | |
|--------------------|---|
| Website | https://www.bco-dmo.org/deployment/57543 |
| Platform | R/V Alpha Helix |
| Report | http://globec.whoi.edu/nep/reports/cgoa_cruises/hx276cr.pdf |
| Start Date | 2003-08-13 |
| End Date | 2003-08-22 |
| Description | Original cruise data are available from the NSF R2R data catalog |

HX279

| | |
|--------------------|---|
| Website | https://www.bco-dmo.org/deployment/57544 |
| Platform | R/V Alpha Helix |
| Report | http://globec.whoi.edu/nep/reports/cgoa_cruises/hx279cr.pdf |
| Start Date | 2003-10-08 |
| End Date | 2003-10-16 |
| Description | Original cruise data are available from the NSF R2R data catalog |

HX281

| | |
|--------------------|---|
| Website | https://www.bco-dmo.org/deployment/57545 |
| Platform | R/V Alpha Helix |
| Report | http://globec.whoi.edu/nep/reports/cgoa_cruises/hx281cr.pdf |
| Start Date | 2004-03-19 |
| End Date | 2004-03-27 |
| Description | Original cruise data are available from the NSF R2R data catalog |

HX283

| | |
|--------------------|---|
| Website | https://www.bco-dmo.org/deployment/57547 |
| Platform | R/V Alpha Helix |
| Report | http://globec.whoi.edu/nep/reports/cgoa_cruises/hx283cr.pdf |
| Start Date | 2004-05-03 |
| End Date | 2004-05-12 |
| Description | Original cruise data are available from the NSF R2R data catalog |

HX286

| | |
|--------------------|---|
| Website | https://www.bco-dmo.org/deployment/57548 |
| Platform | R/V Alpha Helix |
| Report | http://globec.whoi.edu/nep/reports/cgoa_cruises/hx286cr.pdf |
| Start Date | 2004-06-27 |
| End Date | 2004-07-05 |
| Description | Original cruise data are available from the NSF R2R data catalog |

HX292

| | |
|--------------------|---|
| Website | https://www.bco-dmo.org/deployment/57550 |
| Platform | R/V Alpha Helix |
| Report | http://globec.whoi.edu/nep/reports/cgoa_cruises/hx292cr.pdf |
| Start Date | 2004-09-30 |
| End Date | 2004-10-08 |
| Description | Original cruise data are available from the NSF R2R data catalog |

W0307A

| | |
|-------------------|---|
| Website | https://www.bco-dmo.org/deployment/57615 |
| Platform | R/V Wecoma |
| Report | http://globec.whoi.edu/nep/reports/cgoa_cruises/w0307acr.pdf |
| Start Date | 2003-07-05 |
| End Date | 2003-07-14 |

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Project Information

U.S. GLOBEC Northeast Pacific (NEP)

Website: <http://nepglobec.bco-dmo.org>

Coverage: Northeast Pacific Ocean, Gulf of Alaska

Program in a Nutshell

Goal: To understand the effects of climate variability and climate change on the distribution, abundance and production of marine animals (including commercially important living marine resources) in the eastern North Pacific. To embody this understanding in diagnostic and prognostic ecosystem models, capable of capturing the ecosystem response to major climatic fluctuations.

Approach: To study the effects of past and present climate variability on the population ecology and population dynamics of marine biota and living marine resources, and to use this information as a proxy for how the ecosystems of the eastern North Pacific may respond to future global climate change. The strong temporal variability in the physical and biological signals of the NEP will be used to examine the biophysical mechanisms through which zooplankton and salmon populations respond to physical forcing and biological interactions in the coastal regions of the two gyres. Annual and interannual variability will be studied directly through **long-term observations** and detailed **process studies**; variability at longer time scales will be examined through **retrospective analysis** of directly measured and proxy data. Coupled **biophysical models** of the ecosystems of these regions will be developed and tested using the process studies and data collected from the long-term observation programs, then further tested and improved by hindcasting selected retrospective data series.

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Program Information

U.S. GLOBAL ocean ECosystems dynamics (U.S. GLOBEC)

Website: <http://www.usglobec.org/>

Coverage: Global

U.S. GLOBEC (GLOBAL ocean ECosystems dynamics) is a research program organized by oceanographers and fisheries scientists to address the question of how global climate change may affect the abundance and production of animals in the sea.

The U.S. GLOBEC Program currently had major research efforts underway in the Georges Bank / Northwest Atlantic Region, and the Northeast Pacific (with components in the California Current and in the Coastal Gulf of Alaska). U.S. GLOBEC was a major contributor to International GLOBEC efforts in the Southern Ocean and Western Antarctic Peninsula (WAP).

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Funding

| Funding Source | Award |
|--|----------------------------------|
| NSF Division of Ocean Sciences (NSF OCE) | OCE-0109078 |
| National Oceanic and Atmospheric Administration (NOAA) | unknown NEP NOAA |

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