

# AK-LTOP MOCNESS tow zooplankton abundance and biomass from R/V Alpha Helix, R/V Wecoma multiple cruises in the Northeast Pacific from 1997-2004 (NEP project)

**Website:** <https://www.bco-dmo.org/dataset/3111>

**Data Type:** Cruise Results

**Version:** 1

**Version Date:** 2009-04-29

## Project

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

## Program

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

| Contributors                     | Affiliation   | Role                   |
|----------------------------------|---|------------------------|
| <a href="#">Coyle, Kenneth O</a> | University of Alaska Fairbanks (UAF)                | Principal Investigator |
| <a href="#">Copley, Nancy</a>    | Woods Hole Oceanographic Institution (WHOI BCO-DMO) | BCO-DMO Data Manager   |

## Abstract

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## Coverage

**Spatial Extent:** N:60.7973 E:-144.1596 S:58.046 W:-149.4913

**Temporal Extent:** 1997-10-13 - 2004-10-08

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## Dataset Description

### **MOCNESS catch data - zooplankton species abundance and biomass, 1997 - 2004**

All data are for 1 meter-square nets, 5 mm mesh, oblique hauls.

## Acquisition Description

### **GLOBEC 2000: Gulf of Alaska Long-Term Observation Program**

*T. Weingartner, L. Halderson, R. Hopcroft, K. Coyle, T. E. Whitley (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*.

*This information was last updated on September 22, 2000.*

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## Parameters

| Parameter   | Description  | Units                         |
|-------------|--|-------------------------------|
| year        | year, reported as YYYY, e.g. 1995  | YYYY                          |
| cruise_id   | cruise designation; name   | text                          |
| tow         | Tow number.  | dimensionless                 |
| sta_id      | Station identification.  | dimensionless                 |
| net         | Net number.  | dimensionless                 |
| lat         | latitude, in decimal degrees, North is positive, negative denotes South                                  | decimal degrees               |
| lon         | longitude, in decimal degrees, East is positive, negative denotes West                                   | decimal degrees               |
| depth_min   | minimum depth of net sampling  | meters                        |
| depth_max   | maximum depth during net sampling  | meters                        |
| month_local | Month of year, local time.   | mm (01 to 12)                 |
| day_local   | Day, local time.   | dd (0 to 31)                  |
| 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                 |
| date_local  | Local month, day and year.   | mm/dd/yyyy                    |
| time_local  | Time of day, local time, using 2400 clock format.  | HHMM                          |
| vol_filt    | volume of water filtered   | meters <sup>3</sup>           |
| species     | A binomial that consists of a genus name followed by the species name of an organism.                    | text                          |
| stage       | Organism life history stage.   | text                          |
| NODC_code   | Taxonomic group or entity code, a ten digit number based on the NODC Taxonomic List.                     | dimensionless                 |
| abundance   | number of the specific taxa/group counted  | number per meter <sup>3</sup> |
| biomass     | wet weight of a specific taxa/group identified   | grams/meter <sup>3</sup>      |

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## Instruments

|   |  |
|---|--|
| <b>Dataset-specific Instrument Name</b> | MOCNESS1   |
| <b>Generic Instrument Name</b>          | MOCNESS1   |
| <b>Dataset-specific Description</b>     | 5 mm mesh  |
| <b>Generic Instrument Description</b>   | The Multiple Opening/Closing Net and Environmental Sensing System or MOCNESS is a family of net systems based on the Tucker Trawl principle. The MOCNESS-1 carries nine 1-m <sup>2</sup> nets usually of 335 micrometer mesh and is intended for use with the macrozooplankton. All nets are black to reduce contrast with the background. A motor/toggle release assembly is mounted on the top portion of the frame and stainless steel cables with swaged fittings are used to attach the net bar to the toggle release. A stepping motor in a pressure compensated case filled with oil turns the escapement crankshaft of the toggle release which sequentially releases the nets to an open then closed position on command from the surface. -- from the MOCNESS Operations Manual (1999 + 2003). |

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## Deployments

### HX201

|                   |   |
|-------------------|---|
| <b>Website</b>    | <a href="https://www.bco-dmo.org/deployment/57502">https://www.bco-dmo.org/deployment/57502</a> |
| <b>Platform</b>   | R/V Alpha Helix   |
| <b>Start Date</b> | 1997-10-10  |
| <b>End Date</b>   | 1997-10-17  |

### HX203

|                |   |
|----------------|---|
| <b>Website</b> | <a href="https://www.bco-dmo.org/deployment/57503">https://www.bco-dmo.org/deployment/57503</a> |
|----------------|---|

|                    |  |
|--------------------|--|
| <b>Platform</b>    | R/V Alpha Helix  |
| <b>Start Date</b>  | 1998-03-08   |
| <b>End Date</b>    | 1998-03-15   |
| <b>Description</b> | <p>Cruise information and original data are available from the NSF R2R data catalog.</p> <p><b>Acquisition Description</b></p> <p>Dataset description MOCNESS catch data - zooplankton species abundance and biomass, 1997 - 2004 all data are for 1 meter-square nets, 5 mm mesh, oblique hauls. Acquisition description GLOBEC 2000: Gulf of Alaska Long-Term Observation Program T. Weingartner, L. Halderson, R. Hopcroft, K. Coyle, T. E. Whitledge (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</p> |

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## HX205

|                   |   |
|-------------------|---|
| <b>Website</b>    | <a href="https://www.bco-dmo.org/deployment/57504">https://www.bco-dmo.org/deployment/57504</a>   |
| <b>Platform</b>   | R/V Alpha Helix   |
| <b>Start Date</b> | 1998-03-31  |
| <b>End Date</b>   | 1998-04-07  |
|                   | <p>Cruise information and original data are available from the NSF R2R data catalog.</p> <p><b>Acquisition Description</b></p> <p>Dataset description MOCNESS catch data - zooplankton species abundance and biomass, 1997 - 2004 all data are for 1 meter-square nets, 5 mm mesh, oblique hauls. Acquisition description GLOBEC 2000: Gulf of Alaska Long-Term Observation Program T. Weingartner, L. Halderson, R. Hopcroft, K.</p> |

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## HX208

|                   |  |
|-------------------|--|
| <b>Website</b>    | <a href="https://www.bco-dmo.org/deployment/57505">https://www.bco-dmo.org/deployment/57505</a>  |
| <b>Platform</b>   | R/V Alpha Helix  |
| <b>Start Date</b> | 1998-05-07   |
| <b>End Date</b>   | 1998-05-14   |
|                   | <p>Cruise information and original data are available from the NSF R2R data catalog.</p> <p><b>Acquisition Description</b></p> <p>Dataset description MOCNESS catch data - zooplankton species abundance and biomass, 1997 - 2004 all data are for 1 meter-square nets, 5 mm mesh, oblique hauls. Acquisition description GLOBEC 2000: Gulf of Alaska Long-Term Observation Program T. Weingartner, L. Halderson, R. Hopcroft, K. Coyle, T. E. Whitledge (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</p> |

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HX211

|                    |  |
|--------------------|--|
| <b>Website</b>     | <a href="https://www.bco-dmo.org/deployment/57506">https://www.bco-dmo.org/deployment/57506</a>  |
| <b>Platform</b>    | R/V Alpha Helix  |
| <b>Start Date</b>  | 1998-07-10   |
| <b>End Date</b>    | 1998-07-17   |
| <b>Description</b> | <p>Cruise information and original data are available from the NSF R2R data catalog.</p> <p><b>Acquisition Description</b></p> <p>Dataset description MOCNESS catch data - zooplankton species abundance and biomass, 1997 - 2004 all data are for 1 meter-square nets, 5 mm mesh, oblique hauls. Acquisition description GLOBEC 2000: Gulf of Alaska Long-Term Observation Program T. Weingartner, L. Halderson, R. Hopcroft, K. Coyle, T. E. Whitledge (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</p> |

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## HX215

|                   |  |
|-------------------|--|
| <b>Website</b>    | <a href="https://www.bco-dmo.org/deployment/57507">https://www.bco-dmo.org/deployment/57507</a>  |
| <b>Platform</b>   | R/V Alpha Helix  |
| <b>Start Date</b> | 1998-10-02   |
| <b>End Date</b>   | 1998-10-09   |
|                   | <p>Cruise information and original data are available from the NSF R2R data catalog.</p> <p><b>Acquisition Description</b></p> <p>Dataset description MOCNESS catch data - zooplankton species abundance</p> |

|                           |  |
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| <p><b>Description</b></p> | <p>and biomass, 1997 - 2004 all data are for 1 meter-square nets, 5 mm mesh, oblique hauls. Acquisition description GLOBEC 2000: Gulf of Alaska Long-Term Observation Program T. Weingartner, L. Halderson, R. Hopcroft, K. Coyle, T. E. Whitledge (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</p> |
|---------------------------|--|

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 follows GLOBEC guidelines and uses gear types and techniques similar to those in the Oregon LTOP that is also a part of the NEP-GLOBEC program. Most of the research will be conducted from the R/V Alpha Helix. Fish sampling will be done from a chartered trawler in July, August, and October. Both vessels will work together during these cruises so that the fishing charter can verify fish targets detected on the acoustics array towed from the Alpha Helix. This information was last updated on September 22, 2000. Maintained by: Hal Batchelder  
[hbatchelder@coas.oregonstate.edu](mailto:hbatchelder@coas.oregonstate.edu) College of Oceanic & Atmospheric Sciences Oregon State University Corvallis, OR 97331-5503 phone: 541-737-4500; FAX 541-737-2064

## HX217

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| <b>Website</b>    | <a href="https://www.bco-dmo.org/deployment/57509">https://www.bco-dmo.org/deployment/57509</a>  |
| <b>Platform</b>   | R/V Alpha Helix  |
| <b>Start Date</b> | 1999-03-14   |
| <b>End Date</b>   | 1999-03-21   |
|                   | <p>Cruise information and original data are available from the NSF R2R data catalog.</p> <p><b>Acquisition Description</b></p> <p>Dataset description MOCNESS catch data - zooplankton species abundance and biomass, 1997 - 2004 all data are for 1 meter-square nets, 5 mm mesh, oblique hauls. Acquisition description GLOBEC 2000: Gulf of Alaska Long-Term Observation Program T. Weingartner, L. Halderson, R. Hopcroft, K. Coyle, T. E. Whitledge (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</p> |



## Description

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 follows GLOBEC guidelines and uses gear types and techniques similar to those in the Oregon LTOP that is also a part of the NEP-GLOBEC program. Most of the research will be conducted from the R/V Alpha Helix. Fish sampling will be done from a chartered trawler in July, August, and October. Both vessels will work together during these cruises so that the fishing charter can verify fish targets detected on the acoustics array towed from the Alpha Helix. This information was last updated on September 22, 2000. Maintained by: Hal Batchelder [hbatchelder@coas.oregonstate.edu](mailto:hbatchelder@coas.oregonstate.edu) College of Oceanic & Atmospheric

## HX218

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| <b>Website</b>     | <a href="https://www.bco-dmo.org/deployment/57510">https://www.bco-dmo.org/deployment/57510</a>  |
| <b>Platform</b>    | R/V Alpha Helix  |
| <b>Start Date</b>  | 1999-04-12   |
| <b>End Date</b>    | 1999-04-19   |
| <b>Description</b> | <p><b>Acquisition Description</b></p> <p>Dataset description MOCNESS catch data - zooplankton species abundance and biomass, 1997 - 2004 all data are for 1 meter-square nets, 5 mm mesh, oblique hauls. Acquisition description GLOBEC 2000: Gulf of Alaska Long-Term Observation Program T. Weingartner, L. Halderson, R. Hopcroft, K. Coyle, T. E. Whitledge (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</p> |



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 follows GLOBEC guidelines and uses gear types and techniques similar to those in the Oregon LTOP that is also a part of the NEP-GLOBEC program. Most of the research will be conducted from the R/V Alpha Helix. Fish sampling will be done from a chartered trawler in July, August, and October. Both vessels will work together during these cruises so that the fishing charter can verify fish targets detected on the acoustics array towed from the Alpha Helix. This information was last updated on September 22, 2000. Maintained by: Hal Batchelder [\[hbatchelder@coas.oregonstate.edu\]](mailto:hbatchelder@coas.oregonstate.edu) College of Oceanic & Atmospheric Sciences Oregon State University Corvallis, OR 97331-5503 phone: 541-737-4500; FAX 541-737-2064

## HX219

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| <b>Website</b>    | <a href="https://www.bco-dmo.org/deployment/57511">https://www.bco-dmo.org/deployment/57511</a>   |
| <b>Platform</b>   | R/V Alpha Helix   |
| <b>Start Date</b> | 1999-05-06  |
| <b>End Date</b>   | 1999-05-13  |
|                   | <b>Acquisition Description</b><br>Dataset description MOCNESS catch data - zooplankton species abundance and biomass, 1997 - 2004 all data are for 1 meter-square nets, 5 mm mesh, oblique hauls. Acquisition description GLOBEC 2000: Gulf of Alaska Long- |

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| Description | <p>Term Observation Program T. Weingartner, L. Haldorson, R. Hopcroft, K. Coyle, T. E. Whitledge (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.</p> |
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December X X X D S M M Fall-winter pre-conditioning for spring nutrients, small zooplankton. The sampling protocol follows GLOBEC guidelines and uses gear types and techniques similar to those in the Oregon LTOP that is also a part of the NEP-GLOBEC program. Most of the research will be conducted from the R/V Alpha Helix. Fish sampling will be done from a chartered trawler in July, August, and October. Both vessels will work together during these cruises so that the fishing charter can verify fish targets detected on the acoustics array towed from the Alpha Helix. This information was last updated on September 22, 2000. Maintained by: Hal Batchelder  
[\[hbatchelder@coas.oregonstate.edu\]](mailto:hbatchelder@coas.oregonstate.edu) College of Oceanic & Atmospheric Sciences Oregon State University Corvallis, OR 97331-5503 phone: 541-737-4500; FAX 541-737-2064

## HX223

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| <b>Website</b>    | <a href="https://www.bco-dmo.org/deployment/57512">https://www.bco-dmo.org/deployment/57512</a>   |
| <b>Platform</b>   | R/V Alpha Helix   |
| <b>Start Date</b> | 1999-08-26  |
| <b>End Date</b>   | 1999-09-02  |
|                   | <p><b>Acquisition Description</b></p> <p>Dataset description MOCNESS catch data - zooplankton species abundance and biomass, 1997 - 2004 all data are for 1 meter-square nets, 5 mm mesh, oblique hauls. Acquisition description GLOBEC 2000: Gulf of Alaska Long-Term Observation Program T. Weingartner, L. Halderson, R. Hopcroft, K. Coyle, T. E. Whitledge (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)</p> |

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| Description | <p>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 follows GLOBEC guidelines and uses gear types and techniques similar to those in the Oregon LTOP that is also a part of the NEP-GLOBEC program. Most of the research will be conducted from the R/V Alpha Helix. Fish sampling will be done from a chartered trawler in July, August, and October. Both vessels will work together during these cruises so that the fishing charter can verify fish targets detected on the acoustics array towed from the Alpha Helix. This information was last updated on September 22, 2000. Maintained by: Hal Batchelder <a href="mailto:hbatchelder@coas.oregonstate.edu">hbatchelder@coas.oregonstate.edu</a> College of Oceanic &amp; Atmospheric Sciences Oregon State University Corvallis, OR 97331-5503 phone: 541-737-4500; FAX 541-737-2064</p> |
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| <b>Website</b>     | <a href="https://www.bco-dmo.org/deployment/57513">https://www.bco-dmo.org/deployment/57513</a>  |
| <b>Platform</b>    | R/V Alpha Helix  |
| <b>Start Date</b>  | 1999-10-05   |
| <b>End Date</b>    | 1999-10-12   |
| <b>Description</b> | <p><b>Acquisition Description</b></p> <p>Dataset description MOCNESS catch data - zooplankton species abundance and biomass, 1997 - 2004 all data are for 1 meter-square nets, 5 mm mesh, oblique hauls. Acquisition description GLOBEC 2000: Gulf of Alaska Long-Term Observation Program T. Weingartner, L. Halderson, R. Hopcroft, K. Coyle, T. E. Whitledge (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</p> |

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 follows GLOBEC guidelines and uses gear types and techniques similar to those in the Oregon LTOP that is also a part of the NEP-GLOBEC program. Most of the research will be conducted from the R/V Alpha Helix. Fish sampling will be done from a chartered trawler in July, August, and October. Both vessels will work together during these cruises so that the fishing charter can verify fish targets detected on the acoustics array towed from the Alpha Helix. This information was last updated on September 22, 2000. Maintained by: Hal Batchelder  
[hbatchelder@coas.oregonstate.edu](mailto:hbatchelder@coas.oregonstate.edu) College of Oceanic & Atmospheric Sciences Oregon State University Corvallis, OR 97331-5503 phone: 541-737-4500; FAX 541-737-2064

## HX228

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| <b>Website</b>    | <a href="https://www.bco-dmo.org/deployment/57515">https://www.bco-dmo.org/deployment/57515</a>   |
| <b>Platform</b>   | R/V Alpha Helix   |
| <b>Start Date</b> | 2000-03-07  |
| <b>End Date</b>   | 2000-03-15  |
|                   | Original cruise data are available from the NSF R2R data catalog<br><br><b>Acquisition Description</b><br>Dataset description MOCNESS catch data - zooplankton species abundance and biomass, 1997 - 2004 all data are for 1 meter-square nets, 5 mm mesh, oblique hauls. Acquisition description GLOBEC 2000: Gulf of Alaska Long-Term Observation Program T. Weingartner, L. Halderson, R. Hopcroft, K. Coyle, T. E. Whitledge (all at University of Alaska, Fairbanks), T. Royer (Old Dominion University) This project is to conduct the Gulf of Alaska Long-Term |

## Description

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 follows GLOBEC guidelines and uses gear types and techniques similar to those in the Oregon LTOP that is



also a part of the NEP-GLOBEC program. Most of the research will be conducted from the R/V Alpha Helix. Fish sampling will be done from a chartered trawler in July, August, and October. Both vessels will work together during these cruises so that the fishing charter can verify fish targets detected on the acoustics array towed from the Alpha Helix. This information was last updated on September 22, 2000. Maintained by: Hal Batchelder  
[hbatchelder@coas.oregonstate.edu](mailto:hbatchelder@coas.oregonstate.edu) College of Oceanic & Atmospheric Sciences Oregon State University Corvallis, OR 97331-5503 phone: 541-737-4500; FAX 541-737-2064

## HX230

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| <b>Website</b>    | <a href="https://www.bco-dmo.org/deployment/57516">https://www.bco-dmo.org/deployment/57516</a>   |
| <b>Platform</b>   | R/V Alpha Helix   |
| <b>Start Date</b> | 2000-04-18  |
| <b>End Date</b>   | 2000-04-26  |
|                   | <p>Original cruise data are available from the NSF R2R data catalog</p> <p><b>Acquisition Description</b></p> <p>Dataset description MOCNESS catch data - zooplankton species abundance and biomass, 1997 - 2004 all data are for 1 meter-square nets, 5 mm mesh, oblique hauls. Acquisition description GLOBEC 2000: Gulf of Alaska Long-Term Observation Program T. Weingartner, L. Halderson, R. Hopcroft, K. Coyle, T. E. Whitledge (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</p> |



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| <b>Description</b> | <p>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 follows GLOBEC guidelines and uses gear types and techniques similar to those in the Oregon LTOP that is also a part of the NEP-GLOBEC program. Most of the research will be conducted from the R/V Alpha Helix. Fish sampling will be done from a chartered trawler in July, August, and October. Both vessels will work together during these cruises so that the fishing charter can verify fish targets detected on the acoustics array towed from the Alpha Helix. This information was last updated on September 22, 2000. Maintained by: Hal Batchelder <a href="mailto:hbatchelder@coas.oregonstate.edu">hbatchelder@coas.oregonstate.edu</a> College of Oceanic &amp; Atmospheric Sciences Oregon State University Corvallis, OR 97331-5503 phone: 541-737-4500; FAX 541-737-2064</p> |
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HX231

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| <b>Website</b> | <a href="https://www.bco-dmo.org/deployment/57517">https://www.bco-dmo.org/deployment/57517</a> |
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| <b>Platform</b>    | R/V Alpha Helix  |
| <b>Start Date</b>  | 2000-05-17   |
| <b>End Date</b>    | 2000-05-25   |
| <b>Description</b> | <p>Original cruise data are available from the NSF R2R data catalog</p> <p><b>Acquisition Description</b></p> <p>Dataset description MOCNESS catch data - zooplankton species abundance and biomass, 1997 - 2004 all data are for 1 meter-square nets, 5 mm mesh, oblique hauls. Acquisition description GLOBEC 2000: Gulf of Alaska Long-Term Observation Program T. Weingartner, L. Halderson, R. Hopcroft, K. Coyle, T. E. Whitledge (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</p> |

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[hbatchelder@coas.oregonstate.edu](mailto:hbatchelder@coas.oregonstate.edu) College of Oceanic & Atmospheric Sciences Oregon State University Corvallis, OR 97331-5503 phone: 541-737-4500; FAX 541-737-2064

## HX234

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| <b>Website</b>    | <a href="https://www.bco-dmo.org/deployment/57518">https://www.bco-dmo.org/deployment/57518</a>  |
| <b>Platform</b>   | R/V Alpha Helix  |
| <b>Start Date</b> | 2000-08-13   |
| <b>End Date</b>   | 2000-08-23   |
|                   | <p>Original cruise data are available from the NSF R2R data catalog</p> <p><b>Acquisition Description</b></p> <p>Dataset description MOCNESS catch data - zooplankton species abundance and biomass, 1997 - 2004 all data are for 1 meter-square nets, 5 mm mesh, oblique hauls. Acquisition description GLOBEC 2000: Gulf of Alaska Long-Term Observation Program T. Weingartner, L. Halderson, R. Hopcroft, K. Coyle, T. E. Whitledge (all at University of Alaska, Fairbanks), T. Royer (Old Dominion University) This project is to conduct the Gulf of Alaska Long-Term</p> |

**Description**

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 follows GLOBEC guidelines and uses gear types and techniques similar to those in the Oregon LTOP that is

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[hbatchelder@coas.oregonstate.edu](mailto:hbatchelder@coas.oregonstate.edu) College of Oceanic & Atmospheric Sciences Oregon State University Corvallis, OR 97331-5503 phone: 541-737-4500; FAX 541-737-2064

## HX237

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| <b>Website</b>    | <a href="https://www.bco-dmo.org/deployment/57519">https://www.bco-dmo.org/deployment/57519</a>   |
| <b>Platform</b>   | R/V Alpha Helix   |
| <b>Start Date</b> | 2000-10-03  |
| <b>End Date</b>   | 2000-10-11  |
|                   | <p>Original cruise data are available from the NSF R2R data catalog</p> <p><b>Acquisition Description</b></p> <p>Dataset description MOCNESS catch data - zooplankton species abundance and biomass, 1997 - 2004 all data are for 1 meter-square nets, 5 mm mesh, oblique hauls. Acquisition description GLOBEC 2000: Gulf of Alaska Long-Term Observation Program T. Weingartner, L. Haldorson, R. Hopcroft, K. Coyle, T. E. Whitledge (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</p> |

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| <b>Description</b> | <p>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 follows GLOBEC guidelines and uses gear types and techniques similar to those in the Oregon LTOP that is also a part of the NEP-GLOBEC program. Most of the research will be conducted from the R/V Alpha Helix. Fish sampling will be done from a chartered trawler in July, August, and October. Both vessels will work together during these cruises so that the fishing charter can verify fish targets detected on the acoustics array towed from the Alpha Helix. This information was last updated on September 22, 2000. Maintained by: Hal Batchelder <a href="mailto:hbatchelder@coas.oregonstate.edu">hbatchelder@coas.oregonstate.edu</a> College of Oceanic &amp; Atmospheric Sciences Oregon State University Corvallis, OR 97331-5503 phone: 541-737-4500; FAX 541-737-2064</p> |
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HX239

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| <b>Website</b> | <a href="https://www.bco-dmo.org/deployment/57521">https://www.bco-dmo.org/deployment/57521</a> |
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| <b>Platform</b>    | R/V Alpha Helix  |
| <b>Report</b>      | <a href="http://globec.whoi.edu/nep/reports/cgoa_cruises/hx239cr.pdf">http://globec.whoi.edu/nep/reports/cgoa_cruises/hx239cr.pdf</a>  |
| <b>Start Date</b>  | 2001-03-02   |
| <b>End Date</b>    | 2001-03-13   |
| <b>Description</b> | <p>Original cruise data are available from the NSF R2R data catalog</p> <p><b>Acquisition Description</b></p> <p>Dataset description MOCNESS catch data - zooplankton species abundance and biomass, 1997 - 2004 all data are for 1 meter-square nets, 5 mm mesh, oblique hauls. Acquisition description GLOBEC 2000: Gulf of Alaska Long-Term Observation Program T. Weingartner, L. Halderson, R. Hopcroft, K. Coyle, T. E. Whitledge (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</p> |



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## HX241

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| <b>Website</b>    | <a href="https://www.bco-dmo.org/deployment/57522">https://www.bco-dmo.org/deployment/57522</a>  |
| <b>Platform</b>   | R/V Alpha Helix  |
| <b>Report</b>     | <a href="http://globec.who.edu/nep/reports/cgoa_cruises/hx241cr.pdf">http://globec.who.edu/nep/reports/cgoa_cruises/hx241cr.pdf</a>  |
| <b>Start Date</b> | 2001-04-03   |
| <b>End Date</b>   | 2001-04-14   |
|                   | Original cruise data are available from the NSF R2R data catalog   |
|                   | <p><b>Acquisition Description</b></p> <p>Dataset description MOCNESS catch data - zooplankton species abundance and biomass, 1997 - 2004 all data are for 1 meter-square nets, 5 mm mesh, oblique hauls. Acquisition description GLOBEC 2000: Gulf of Alaska Long-</p> |



## Description

Term Observation Program T. Weingartner, L. Haldorson, R. Hopcroft, K. Coyle, T. E. Whitledge (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.

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[hbatchelder@coas.oregonstate.edu](mailto:hbatchelder@coas.oregonstate.edu) College of Oceanic & Atmospheric Sciences Oregon State University Corvallis, OR 97331-5503 phone: 541-737-4500; FAX 541-737-2064

## HX243

|                   |   |
|-------------------|---|
| <b>Website</b>    | <a href="https://www.bco-dmo.org/deployment/57524">https://www.bco-dmo.org/deployment/57524</a>   |
| <b>Platform</b>   | R/V Alpha Helix   |
| <b>Report</b>     | <a href="http://globec.whoi.edu/nep/reports/cgoa_cruises/hx243cr.pdf">http://globec.whoi.edu/nep/reports/cgoa_cruises/hx243cr.pdf</a>   |
| <b>Start Date</b> | 2001-05-04  |
| <b>End Date</b>   | 2001-05-14  |
|                   | <p>Original cruise data are available from the NSF R2R data catalog</p> <p><b>Acquisition Description</b></p> <p>Dataset description MOCNESS catch data - zooplankton species abundance and biomass, 1997 - 2004 all data are for 1 meter-square nets, 5 mm mesh, oblique hauls. Acquisition description GLOBEC 2000: Gulf of Alaska Long-Term Observation Program T. Weingartner, L. Halderson, R. Hopcroft, K. Coyle, T. E. Whitledge (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</p> |

## Description

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**HX246**

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| <b>Website</b>     | <a href="https://www.bco-dmo.org/deployment/57526">https://www.bco-dmo.org/deployment/57526</a>  |
| <b>Platform</b>    | R/V Alpha Helix  |
| <b>Report</b>      | <a href="http://globec.whoi.edu/nep/reports/cgoa_cruises/hx246cr.pdf">http://globec.whoi.edu/nep/reports/cgoa_cruises/hx246cr.pdf</a>  |
| <b>Start Date</b>  | 2001-06-28   |
| <b>End Date</b>    | 2001-07-09   |
| <b>Description</b> | <p>Original cruise data are available from the NSF R2R data catalog</p> <p><b>Acquisition Description</b></p> <p>Dataset description MOCNESS catch data - zooplankton species abundance and biomass, 1997 - 2004 all data are for 1 meter-square nets, 5 mm mesh, oblique hauls. Acquisition description GLOBEC 2000: Gulf of Alaska Long-Term Observation Program T. Weingartner, L. Halderson, R. Hopcroft, K. Coyle, T. E. Whitledge (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</p> |

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## HX248

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

Acquisition Description

Dataset description MOCNESS catch data - zooplankton species abundance and biomass, 1997 - 2004 all data are for 1 meter-square nets, 5 mm mesh, oblique hauls. Acquisition description GLOBEC 2000: Gulf of Alaska Long-Term Observation Program T. Weingartner, L. Halderson, R. Hopcroft, K. Coyle, T. E. Whitledge (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

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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 follows GLOBEC guidelines and uses gear types and techniques similar to those in the Oregon LTOP that is also a part of the NEP-GLOBEC program. Most of the research will be conducted from the R/V Alpha Helix. Fish sampling will be done from a chartered trawler in July, August, and October. Both vessels will work together during these cruises so that the fishing charter can verify fish targets detected on the acoustics array towed from the Alpha Helix. This information was last updated on September 22, 2000. Maintained by: Hal Batchelder  
[hbatchelder@coas.oregonstate.edu](mailto:hbatchelder@coas.oregonstate.edu) College of Oceanic & Atmospheric Sciences Oregon State University Corvallis, OR 97331-5503 phone: 541-737-4500; FAX 541-737-2064

## HX252

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|-------------------|--|
| <b>Website</b>    | <a href="https://www.bco-dmo.org/deployment/57529">https://www.bco-dmo.org/deployment/57529</a>  |
| <b>Platform</b>   | R/V Alpha Helix  |
| <b>Report</b>     | <a href="http://globec.whoi.edu/nep/reports/cgoa_cruises/hx252cr.pdf">http://globec.whoi.edu/nep/reports/cgoa_cruises/hx252cr.pdf</a>  |
| <b>Start Date</b> | 2001-10-09   |
| <b>End Date</b>   | 2001-10-18   |
|                   | <p>Original cruise data are available from the NSF R2R data catalog</p> <p><b>Acquisition Description</b></p> <p>Dataset description MOCNESS catch data - zooplankton species abundance and biomass, 1997 - 2004 all data are for 1 meter-square nets, 5 mm mesh, oblique hauls. Acquisition description GLOBEC 2000: Gulf of Alaska Long-Term Observation Program T. Weingartner, L. Halderson, R. Hopcroft, K. Coyle, T. E. Whitledge (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</p> |



## Description

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updated on September 22, 2000. Maintained by: Hal Batchelder  
[\[hbatchelder@coas.oregonstate.edu\]](mailto:hbatchelder@coas.oregonstate.edu) College of Oceanic & Atmospheric  
Sciences Oregon State University Corvallis, OR 97331-5503 phone: 541-737-  
4500; FAX 541-737-2064

## HX254

|                   |  |
|-------------------|--|
| <b>Website</b>    | <a href="https://www.bco-dmo.org/deployment/57531">https://www.bco-dmo.org/deployment/57531</a>  |
| <b>Platform</b>   | R/V Alpha Helix  |
| <b>Report</b>     | <a href="http://globec.whoi.edu/nep/reports/cgoa_cruises/hx254cr.pdf">http://globec.whoi.edu/nep/reports/cgoa_cruises/hx254cr.pdf</a>  |
| <b>Start Date</b> | 2002-03-04   |
| <b>End Date</b>   | 2002-03-13   |
|                   | <p>Original cruise data are available from the NSF R2R data catalog</p> <p><b>Acquisition Description</b></p> <p>Dataset description MOCNESS catch data - zooplankton species abundance and biomass, 1997 - 2004 all data are for 1 meter-square nets, 5 mm mesh, oblique hauls. Acquisition description GLOBEC 2000: Gulf of Alaska Long-Term Observation Program T. Weingartner, L. Halderson, R. Hopcroft, K. Coyle, T. E. Whitledge (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</p> |

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| <b>Description</b> | <p>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 follows GLOBEC guidelines and uses gear types and techniques similar to those in the Oregon LTOP that is also a part of the NEP-GLOBEC program. Most of the research will be conducted from the R/V Alpha Helix. Fish sampling will be done from a chartered trawler in July, August, and October. Both vessels will work together during these cruises so that the fishing charter can verify fish targets detected on the acoustics array towed from the Alpha Helix. This information was last updated on September 22, 2000. Maintained by: Hal Batchelder <a href="mailto:hbatchelder@coas.oregonstate.edu">hbatchelder@coas.oregonstate.edu</a> College of Oceanic &amp; Atmospheric Sciences Oregon State University Corvallis, OR 97331-5503 phone: 541-737-4500; FAX 541-737-2064</p> |
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## HX257

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| <b>Website</b>  | <a href="https://www.bco-dmo.org/deployment/57532">https://www.bco-dmo.org/deployment/57532</a>                                       |
| <b>Platform</b> | R/V Alpha Helix   |
| <b>Report</b>   | <a href="http://globec.whoi.edu/nep/reports/cgoa_cruises/hx257cr.pdf">http://globec.whoi.edu/nep/reports/cgoa_cruises/hx257cr.pdf</a> |

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| <b>Start Date</b>  | 2002-04-05   |
| <b>End Date</b>    | 2002-04-14   |
| <b>Description</b> | <p>Original cruise data are available from the NSF R2R data catalog</p> <p><b>Acquisition Description</b></p> <p>Dataset description MOCNESS catch data - zooplankton species abundance and biomass, 1997 - 2004 all data are for 1 meter-square nets, 5 mm mesh, oblique hauls. Acquisition description GLOBEC 2000: Gulf of Alaska Long-Term Observation Program T. Weingartner, L. Haldorson, R. Hopcroft, K. Coyle, T. E. Whitledge (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;</p> |

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 follows GLOBEC guidelines and uses gear types and techniques similar to those in the Oregon LTOP that is also a part of the NEP-GLOBEC program. Most of the research will be conducted from the R/V Alpha Helix. Fish sampling will be done from a chartered trawler in July, August, and October. Both vessels will work together during these cruises so that the fishing charter can verify fish targets detected on the acoustics array towed from the Alpha Helix. This information was last updated on September 22, 2000. Maintained by: Hal Batchelder [hbatchelder@coas.oregonstate.edu](mailto:hbatchelder@coas.oregonstate.edu) College of Oceanic & Atmospheric Sciences Oregon State University Corvallis, OR 97331-5503 phone: 541-737-4500; FAX 541-737-2064

## HX258

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|-------------------|--|
| <b>Website</b>    | <a href="https://www.bco-dmo.org/deployment/57533">https://www.bco-dmo.org/deployment/57533</a>  |
| <b>Platform</b>   | R/V Alpha Helix  |
| <b>Report</b>     | <a href="http://globec.whoi.edu/nep/reports/cgoa_cruises/hx258cr.pdf">http://globec.whoi.edu/nep/reports/cgoa_cruises/hx258cr.pdf</a>  |
| <b>Start Date</b> | 2002-04-30   |
| <b>End Date</b>   | 2002-05-09   |
|                   | <p>Original cruise data are available from the NSF R2R data catalog</p> <p><b>Acquisition Description</b></p> <p>Dataset description MOCNESS catch data - zooplankton species abundance and biomass, 1997 - 2004 all data are for 1 meter-square nets, 5 mm mesh, oblique hauls. Acquisition description GLOBEC 2000: Gulf of Alaska Long-Term Observation Program T. Weingartner, L. Halderson, R. Hopcroft, K. Coyle, T. E. Whitledge (all at University of Alaska, Fairbanks), T. Royer (Old Dominion University) This project is to conduct the Gulf of Alaska Long-Term</p> |

## Description

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 follows GLOBEC guidelines and uses gear types and techniques similar to those in the Oregon LTOP that is

also a part of the NEP-GLOBEC program. Most of the research will be conducted from the R/V Alpha Helix. Fish sampling will be done from a chartered trawler in July, August, and October. Both vessels will work together during these cruises so that the fishing charter can verify fish targets detected on the acoustics array towed from the Alpha Helix. This information was last updated on September 22, 2000. Maintained by: Hal Batchelder  
[hbatchelder@coas.oregonstate.edu](mailto:hbatchelder@coas.oregonstate.edu) College of Oceanic & Atmospheric Sciences Oregon State University Corvallis, OR 97331-5503 phone: 541-737-4500; FAX 541-737-2064

## HX262

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| <b>Website</b>    | <a href="https://www.bco-dmo.org/deployment/57534">https://www.bco-dmo.org/deployment/57534</a>   |
| <b>Platform</b>   | R/V Alpha Helix   |
| <b>Report</b>     | <a href="http://globec.whoi.edu/nep/reports/cgoa_cruises/hx262cr.pdf">http://globec.whoi.edu/nep/reports/cgoa_cruises/hx262cr.pdf</a>   |
| <b>Start Date</b> | 2002-07-19  |
| <b>End Date</b>   | 2002-07-27  |
|                   | <p>Original cruise data are available from the NSF R2R data catalog</p> <p><b>Acquisition Description</b></p> <p>Dataset description MOCNESS catch data - zooplankton species abundance and biomass, 1997 - 2004 all data are for 1 meter-square nets, 5 mm mesh, oblique hauls. Acquisition description GLOBEC 2000: Gulf of Alaska Long-Term Observation Program T. Weingartner, L. Halderson, R. Hopcroft, K. Coyle, T. E. Whitledge (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)</p> |

|             |   |
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| Description | <p>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 follows GLOBEC guidelines and uses gear types and techniques similar to those in the Oregon LTOP that is also a part of the NEP-GLOBEC program. Most of the research will be conducted from the R/V Alpha Helix. Fish sampling will be done from a chartered trawler in July, August, and October. Both vessels will work together during these cruises so that the fishing charter can verify fish targets detected on the acoustics array towed from the Alpha Helix. This information was last updated on September 22, 2000. Maintained by: Hal Batchelder <a href="mailto:hbatchelder@coas.oregonstate.edu">hbatchelder@coas.oregonstate.edu</a> College of Oceanic &amp; Atmospheric Sciences Oregon State University Corvallis, OR 97331-5503 phone: 541-737-4500; FAX 541-737-2064</p> |
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| <b>Website</b>     | <a href="https://www.bco-dmo.org/deployment/57535">https://www.bco-dmo.org/deployment/57535</a>   |
| <b>Platform</b>    | R/V Alpha Helix   |
| <b>Report</b>      | <a href="http://globec.whoi.edu/nep/reports/cgoa_cruises/hx263cr.pdf">http://globec.whoi.edu/nep/reports/cgoa_cruises/hx263cr.pdf</a>   |
| <b>Start Date</b>  | 2002-08-13  |
| <b>End Date</b>    | 2002-08-22  |
| <b>Description</b> | <p>Original cruise data are available from the NSF R2R data catalog</p> <p><b>Acquisition Description</b></p> <p>Dataset description MOCNESS catch data - zooplankton species abundance and biomass, 1997 - 2004 all data are for 1 meter-square nets, 5 mm mesh, oblique hauls. Acquisition description GLOBEC 2000: Gulf of Alaska Long-Term Observation Program T. Weingartner, L. Halderson, R. Hopcroft, K. Coyle, T. E. Whitledge (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</p> |

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 follows GLOBEC guidelines and uses gear types and techniques similar to those in the Oregon LTOP that is also a part of the NEP-GLOBEC program. Most of the research will be conducted from the R/V Alpha Helix. Fish sampling will be done from a chartered trawler in July, August, and October. Both vessels will work together during these cruises so that the fishing charter can verify fish targets detected on the acoustics array towed from the Alpha Helix. This information was last updated on September 22, 2000. Maintained by: Hal Batchelder [hbatchelder@coas.oregonstate.edu](mailto:hbatchelder@coas.oregonstate.edu) College of Oceanic & Atmospheric Sciences Oregon State University Corvallis, OR 97331-5503 phone: 541-737-4500; FAX 541-737-2064

## HX267

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| <b>Website</b>    | <a href="https://www.bco-dmo.org/deployment/57536">https://www.bco-dmo.org/deployment/57536</a>                                       |
| <b>Platform</b>   | R/V Alpha Helix   |
| <b>Report</b>     | <a href="http://globec.whoi.edu/nep/reports/cgoa_cruises/hx267cr.pdf">http://globec.whoi.edu/nep/reports/cgoa_cruises/hx267cr.pdf</a> |
| <b>Start Date</b> | 2002-10-01  |
| <b>End Date</b>   | 2002-10-10  |
|                   | Original cruise data are available from the NSF R2R data catalog  |
|                   | <b>Acquisition Description</b><br>Dataset description MOCNESS catch data - zooplankton species abundance                              |

**Description**

and biomass, 1997 - 2004 all data are for 1 meter-square nets, 5 mm mesh, oblique hauls. Acquisition description GLOBEC 2000: Gulf of Alaska Long-Term Observation Program T. Weingartner, L. Halderson, R. Hopcroft, K. Coyle, T. E. Whitledge (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

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[hbatchelder@coas.oregonstate.edu](mailto:hbatchelder@coas.oregonstate.edu) College of Oceanic & Atmospheric Sciences Oregon State University Corvallis, OR 97331-5503 phone: 541-737-4500; FAX 541-737-2064

## HX269

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| <b>Website</b>    | <a href="https://www.bco-dmo.org/deployment/57538">https://www.bco-dmo.org/deployment/57538</a>   |
| <b>Platform</b>   | R/V Alpha Helix   |
| <b>Report</b>     | <a href="http://globec.whoi.edu/nep/reports/cgoa_cruises/hx269cr.pdf">http://globec.whoi.edu/nep/reports/cgoa_cruises/hx269cr.pdf</a>   |
| <b>Start Date</b> | 2003-03-04  |
| <b>End Date</b>   | 2003-03-13  |
|                   | <p>Original cruise data are available from the NSF R2R data catalog</p> <p><b>Acquisition Description</b></p> <p>Dataset description MOCNESS catch data - zooplankton species abundance and biomass, 1997 - 2004 all data are for 1 meter-square nets, 5 mm mesh, oblique hauls. Acquisition description GLOBEC 2000: Gulf of Alaska Long-Term Observation Program T. Weingartner, L. Halderson, R. Hopcroft, K. Coyle, T. E. Whitledge (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</p> |

## Description

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## HX270

|                   |   |
|-------------------|---|
| <b>Website</b>    | <a href="https://www.bco-dmo.org/deployment/57539">https://www.bco-dmo.org/deployment/57539</a>   |
| <b>Platform</b>   | R/V Alpha Helix   |
| <b>Report</b>     | <a href="http://globec.who.edu/nep/reports/cgoa_cruises/hx270cr.pdf">http://globec.who.edu/nep/reports/cgoa_cruises/hx270cr.pdf</a>   |
| <b>Start Date</b> | 2003-04-01  |
| <b>End Date</b>   | 2003-04-10  |
|                   | <p>Original cruise data are available from the NSF R2R data catalog</p> <p><b>Acquisition Description</b></p> <p>Dataset description MOCNESS catch data - zooplankton species abundance and biomass, 1997 - 2004 all data are for 1 meter-square nets, 5 mm mesh, oblique hauls. Acquisition description GLOBEC 2000: Gulf of Alaska Long-Term Observation Program T. Weingartner, L. Halderson, R. Hopcroft, K. Coyle, T. E. Whitledge (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</p> |



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| <b>Description</b> | <p>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 follows GLOBEC guidelines and uses gear types and techniques similar to those in the Oregon LTOP that is also a part of the NEP-GLOBEC program. Most of the research will be conducted from the R/V Alpha Helix. Fish sampling will be done from a chartered trawler in July, August, and October. Both vessels will work together during these cruises so that the fishing charter can verify fish targets detected on the acoustics array towed from the Alpha Helix. This information was last updated on September 22, 2000. Maintained by: Hal Batchelder <a href="mailto:hbatchelder@coas.oregonstate.edu">hbatchelder@coas.oregonstate.edu</a> College of Oceanic &amp; Atmospheric Sciences Oregon State University Corvallis, OR 97331-5503 phone: 541-737-4500; FAX 541-737-2064</p> |
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## HX272

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| <b>Website</b>    | <a href="https://www.bco-dmo.org/deployment/57541">https://www.bco-dmo.org/deployment/57541</a>                                       |
| <b>Platform</b>   | R/V Alpha Helix   |
| <b>Report</b>     | <a href="http://globec.whoi.edu/nep/reports/cgoa_cruises/hx272cr.pdf">http://globec.whoi.edu/nep/reports/cgoa_cruises/hx272cr.pdf</a> |
| <b>Start Date</b> | 2003-05-23  |
| <b>End Date</b>   | 2003-06-01  |



Original cruise data are available from the NSF R2R data catalog

### Acquisition Description

Dataset description MOCNESS catch data - zooplankton species abundance and biomass, 1997 - 2004 all data are for 1 meter-square nets, 5 mm mesh, oblique hauls. Acquisition description GLOBEC 2000: Gulf of Alaska Long-Term Observation Program T. Weingartner, L. Haldorson, R. Hopcroft, K. Coyle, T. E. Whitledge (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

### Description

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 follows GLOBEC guidelines and uses gear types and techniques similar to those in the Oregon LTOP that is also a part of the NEP-GLOBEC program. Most of the research will be conducted from the R/V Alpha Helix. Fish sampling will be done from a chartered trawler in July, August, and October. Both vessels will work together during these cruises so that the fishing charter can verify fish targets detected on the acoustics array towed from the Alpha Helix. This information was last updated on September 22, 2000. Maintained by: Hal Batchelder  
[\[hbatchelder@coas.oregonstate.edu\]](mailto:hbatchelder@coas.oregonstate.edu) College of Oceanic & Atmospheric Sciences Oregon State University Corvallis, OR 97331-5503 phone: 541-737-4500; FAX 541-737-2064

## HX276

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| <b>Website</b>    | <a href="https://www.bco-dmo.org/deployment/57543">https://www.bco-dmo.org/deployment/57543</a>   |
| <b>Platform</b>   | R/V Alpha Helix   |
| <b>Report</b>     | <a href="http://globec.whoi.edu/nep/reports/cgoa_cruises/hx276cr.pdf">http://globec.whoi.edu/nep/reports/cgoa_cruises/hx276cr.pdf</a>   |
| <b>Start Date</b> | 2003-08-13  |
| <b>End Date</b>   | 2003-08-22  |
|                   | <p>Original cruise data are available from the NSF R2R data catalog</p> <p><b>Acquisition Description</b></p> <p>Dataset description MOCNESS catch data - zooplankton species abundance and biomass, 1997 - 2004 all data are for 1 meter-square nets, 5 mm mesh, oblique hauls. Acquisition description GLOBEC 2000: Gulf of Alaska Long-Term Observation Program T. Weingartner, L. Halderson, R. Hopcroft, K. Coyle, T. E. Whitledge (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</p> |

## Description

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during these cruises so that the fishing charter can verify fish targets detected on the acoustics array towed from the Alpha Helix. This information was last updated on September 22, 2000. Maintained by: Hal Batchelder  
[\[hbatchelder@coas.oregonstate.edu\]](mailto:hbatchelder@coas.oregonstate.edu) College of Oceanic & Atmospheric Sciences Oregon State University Corvallis, OR 97331-5503 phone: 541-737-4500; FAX 541-737-2064

## HX279

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| <b>Website</b>    | <a href="https://www.bco-dmo.org/deployment/57544">https://www.bco-dmo.org/deployment/57544</a>  |
| <b>Platform</b>   | R/V Alpha Helix  |
| <b>Report</b>     | <a href="http://globec.whoi.edu/nep/reports/cgoa_cruises/hx279cr.pdf">http://globec.whoi.edu/nep/reports/cgoa_cruises/hx279cr.pdf</a>  |
| <b>Start Date</b> | 2003-10-08   |
| <b>End Date</b>   | 2003-10-16   |
|                   | <p>Original cruise data are available from the NSF R2R data catalog</p> <p><b>Acquisition Description</b></p> <p>Dataset description MOCNESS catch data - zooplankton species abundance and biomass, 1997 - 2004 all data are for 1 meter-square nets, 5 mm mesh, oblique hauls. Acquisition description GLOBEC 2000: Gulf of Alaska Long-Term Observation Program T. Weingartner, L. Halderson, R. Hopcroft, K. Coyle, T. E. Whitledge (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-</p> |

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| Description | <p>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 follows GLOBEC guidelines and uses gear types and techniques similar to those in the Oregon LTOP that is also a part of the NEP-GLOBEC program. Most of the research will be conducted from the R/V Alpha Helix. Fish sampling will be done from a chartered trawler in July, August, and October. Both vessels will work together during these cruises so that the fishing charter can verify fish targets detected on the acoustics array towed from the Alpha Helix. This information was last updated on September 22, 2000. Maintained by: Hal Batchelder <a href="mailto:hbatchelder@coas.oregonstate.edu">[hbatchelder@coas.oregonstate.edu]</a> College of Oceanic &amp; Atmospheric Sciences Oregon State University Corvallis, OR 97331-5503 phone: 541-737-4500; FAX 541-737-2064</p> |
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## HX281

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| Website  | <a href="https://www.bco-dmo.org/deployment/57545">https://www.bco-dmo.org/deployment/57545</a> |
| Platform | R/V Alpha Helix   |

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| <b>Report</b>      | <a href="http://globec.who.edu/nep/reports/cgoa_cruises/hx281cr.pdf">http://globec.who.edu/nep/reports/cgoa_cruises/hx281cr.pdf</a>   |
| <b>Start Date</b>  | 2004-03-19  |
| <b>End Date</b>    | 2004-03-27  |
| <b>Description</b> | <p>Original cruise data are available from the NSF R2R data catalog</p> <p><b>Acquisition Description</b></p> <p>Dataset description MOCNESS catch data - zooplankton species abundance and biomass, 1997 - 2004 all data are for 1 meter-square nets, 5 mm mesh, oblique hauls. Acquisition description GLOBEC 2000: Gulf of Alaska Long-Term Observation Program T. Weingartner, L. Halderson, R. Hopcroft, K. Coyle, T. E. Whitledge (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</p> |

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## HX283

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| <b>Website</b>    | <a href="https://www.bco-dmo.org/deployment/57547">https://www.bco-dmo.org/deployment/57547</a>  |
| <b>Platform</b>   | R/V Alpha Helix  |
| <b>Report</b>     | <a href="http://globec.whoi.edu/nep/reports/cgoa_cruises/hx283cr.pdf">http://globec.whoi.edu/nep/reports/cgoa_cruises/hx283cr.pdf</a>  |
| <b>Start Date</b> | 2004-05-03   |
| <b>End Date</b>   | 2004-05-12   |
|                   | <p>Original cruise data are available from the NSF R2R data catalog</p> <p><b>Acquisition Description</b></p> <p>Dataset description MOCNESS catch data - zooplankton species abundance and biomass, 1997 - 2004 all data are for 1 meter-square nets, 5 mm mesh, oblique hauls. Acquisition description GLOBEC 2000: Gulf of Alaska Long-Term Observation Program T. Weingartner, L. Halderson, R. Hopcroft, K.</p> |



## Description

Coyle, T. E. Whitledge (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 follows GLOBEC guidelines and uses gear types and techniques similar to those in the Oregon LTOP that is also a part of the NEP-GLOBEC program. Most of the research will be conducted from the R/V Alpha Helix. Fish sampling will be done from a chartered trawler in July, August, and October. Both vessels will work together during these cruises so that the fishing charter can verify fish targets detected on the acoustics array towed from the Alpha Helix. This information was last updated on September 22, 2000. Maintained by: Hal Batchelder  
[hbatchelder@coas.oregonstate.edu](mailto:hbatchelder@coas.oregonstate.edu) College of Oceanic & Atmospheric Sciences Oregon State University Corvallis, OR 97331-5503 phone: 541-737-4500; FAX 541-737-2064

## HX286

|                   |   |
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| <b>Website</b>    | <a href="https://www.bco-dmo.org/deployment/57548">https://www.bco-dmo.org/deployment/57548</a>   |
| <b>Platform</b>   | R/V Alpha Helix   |
| <b>Report</b>     | <a href="http://globec.whoi.edu/nep/reports/cgoa_cruises/hx286cr.pdf">http://globec.whoi.edu/nep/reports/cgoa_cruises/hx286cr.pdf</a>   |
| <b>Start Date</b> | 2004-06-27  |
| <b>End Date</b>   | 2004-07-05  |
|                   | <p>Original cruise data are available from the NSF R2R data catalog</p> <p><b>Acquisition Description</b></p> <p>Dataset description MOCNESS catch data - zooplankton species abundance and biomass, 1997 - 2004 all data are for 1 meter-square nets, 5 mm mesh, oblique hauls. Acquisition description GLOBEC 2000: Gulf of Alaska Long-Term Observation Program T. Weingartner, L. Halderson, R. Hopcroft, K. Coyle, T. E. Whitledge (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</p> |

## Description

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## HX292

|                    |   |
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| <b>Website</b>     | <a href="https://www.bco-dmo.org/deployment/57550">https://www.bco-dmo.org/deployment/57550</a>   |
| <b>Platform</b>    | R/V Alpha Helix   |
| <b>Report</b>      | <a href="http://globec.whoi.edu/nep/reports/cgoa_cruises/hx292cr.pdf">http://globec.whoi.edu/nep/reports/cgoa_cruises/hx292cr.pdf</a>   |
| <b>Start Date</b>  | 2004-09-30  |
| <b>End Date</b>    | 2004-10-08  |
| <b>Description</b> | <p>Original cruise data are available from the NSF R2R data catalog</p> <p><b>Acquisition Description</b></p> <p>Dataset description MOCNESS catch data - zooplankton species abundance and biomass, 1997 - 2004 all data are for 1 meter-square nets, 5 mm mesh, oblique hauls. Acquisition description GLOBEC 2000: Gulf of Alaska Long-Term Observation Program T. Weingartner, L. Halderson, R. Hopcroft, K. Coyle, T. E. Whitledge (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</p> |

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 follows GLOBEC guidelines and uses gear types and techniques similar to those in the Oregon LTOP that is also a part of the NEP-GLOBEC program. Most of the research will be conducted from the R/V Alpha Helix. Fish sampling will be done from a chartered trawler in July, August, and October. Both vessels will work together during these cruises so that the fishing charter can verify fish targets detected on the acoustics array towed from the Alpha Helix. This information was last updated on September 22, 2000. Maintained by: Hal Batchelder [hbatchelder@coas.oregonstate.edu](mailto:hbatchelder@coas.oregonstate.edu) College of Oceanic & Atmospheric Sciences Oregon State University Corvallis, OR 97331-5503 phone: 541-737-4500; FAX 541-737-2064

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| <b>Website</b>    | <a href="https://www.bco-dmo.org/deployment/57615">https://www.bco-dmo.org/deployment/57615</a>   |
| <b>Platform</b>   | R/V Wecoma  |
| <b>Report</b>     | <a href="http://globec.whoi.edu/nep/reports/cgoa_cruises/w0307acr.pdf">http://globec.whoi.edu/nep/reports/cgoa_cruises/w0307acr.pdf</a>   |
| <b>Start Date</b> | 2003-07-05  |
| <b>End Date</b>   | 2003-07-14  |
|                   | <b>Acquisition Description</b><br>Dataset description MOCNESS catch data - zooplankton species abundance and biomass, 1997 - 2004 all data are for 1 meter-square nets, 5 mm mesh, oblique hauls. Acquisition description GLOBEC 2000: Gulf of Alaska Long- |

|                           |   |
|---------------------------|---|
| <p><b>Description</b></p> | <p>Term Observation Program T. Weingartner, L. Haldorson, R. Hopcroft, K. Coyle, T. E. Whitledge (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.</p> |
|---------------------------|---|

December X X X D S M M Fall-winter pre-conditioning for spring nutrients, small zooplankton. The sampling protocol follows GLOBEC guidelines and uses gear types and techniques similar to those in the Oregon LTOP that is also a part of the NEP-GLOBEC program. Most of the research will be conducted from the R/V Alpha Helix. Fish sampling will be done from a chartered trawler in July, August, and October. Both vessels will work together during these cruises so that the fishing charter can verify fish targets detected on the acoustics array towed from the Alpha Helix. This information was last updated on September 22, 2000. Maintained by: Hal Batchelder  
[\[hbatchelder@coas.oregonstate.edu\]](mailto:hbatchelder@coas.oregonstate.edu) College of Oceanic & Atmospheric Sciences Oregon State University Corvallis, OR 97331-5503 phone: 541-737-4500; FAX 541-737-2064

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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                            |
|--|----------------------------------|
| <a href="#">NSF Division of Ocean Sciences (NSF OCE)</a> | <a href="#">OCE-0109078</a>      |
| National Oceanic and Atmospheric Administration (NOAA)   | <a href="#">unknown NEP NOAA</a> |

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