

## **XV. Oceanography- Government**

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*Section XV of the Modifications of Activities Planned for 1997-98  
presents final information regarding United States Antarctic Program  
sponsored oceanographic expeditions during the 1997-98 season.*

**Note:** For actual tracks of the Research Vessels NATHANIEL B. PALMER and  
LAURENCE M. GOULD please see Attachment C, Cruise Tracks.

### **R/V NATHANIEL B. PALMER**

The R/ V NATHANIEL B. PALMER made 8 cruises during the period of 30 March  
1997 through 31 March 1998. Cruises are:

**Cruise NBP97-4**

12 May 1997 - 08 June 1997 Transit from Lyttelton, NZ to Valpariso, Chile  
Multibeam Sea Trials

**Cruise NBP97-4A, NBP97-5, NBP97-6, NBP 97-7**

05 July 1997 - 31 October 1997 Weddell Sea and Pacific Ocean (transits from  
Lyttelton to Valpariso and Punta Arenas to Lyttelton)  
S-203 (Muench) DOVETAIL (Leg 1 and Leg 2)

**Cruise NBP97-8**

05 November, 1997 - 16 December 1997  
JGOFS Process Study 4 Ross Sea

**Cruise NBP97-9**

21 December 1997 - 10 January 10, 1998  
S-216 ROAVERRS (Dunbar), S-048 (Eastman) Ross Sea

**Cruise NBP98-1**

15 January 1998 - 20 February 1998

S-083 (J. Anderson) Timing of Retreat of the West Antarctic Ice Sheet Ross Sea

**Cruise NBP98-2**

25 February 1998 - 05 April 1998

S-228 (Anderson) Benthic Process and Mooring Recovery Ross Sea

**Note:** See Appendix III for complete list of scientific personnel for each science event (listed by S-number).

	<b>I.D. No.</b>	<b>Institution</b>
Muench, Robin	S-203	Earth & Space Research
Gordon, Arnold		

**Biology & Medicine**

	<b>I.D. No.</b>	<b>Institution</b>
Smith, Walker (+5)	S-233	University of Tennessee
Eastman, Joseph (+2)	S-048	Ohio University
Honjo, Susumu (+3)	S-228	Woods Hole Oceanographic Inst.

**Ocean & Climate**

	<b>I.D. No.</b>	<b>Institution</b>
Dunbar, Robert (+14)	S-216	Rice University

**Geology & Geophysics**

	<b>I.D. No.</b>	<b>Institution</b>
Anderson, John (+6)	S-083	Rice University

**JGOFs Scientific Personnel**

	<b>I.D. No.</b>	<b>Institution</b>
Codispoti, Louis	S-209	Center for Coastal Physical Oceanography, Old Dominion University
Morrison, John	S-210	Department of Marine, Earth & Atmospheric Science, North Carolina State University
Anderson, Robert	S-211	Lamont-Doherty Earth Observatory, Columbia University
Abbott, Mark	S-212	College of Oceanic and Atmospheric Sciences, Oregon State University
Peltzer, Edward	S-213	Monterey Bay Aquarium Research Institute
Takahashi, Taro	S-214	Lamont-Doherty Earth Observatory, Columbia University
Olson, Robert	S-215	Biology Department, Woods Hole Oceanographic Institution
Sayles, Frederick	S-217	Marine Chemistry and Geochemistry, Woods Hole Oceanographic Institution
Bender, Michael	S-218	Graduate School of Oceanography, University of Rhode Island
Coale, Kenneth	S-219	Moss Landing Marine Laboratory
Dagg, Michael	S-220	Louisiana Universities Marine Consortium
Quay, Paul	S-221	School of Oceanography, University of Washington
Gardner, Wilford	S-222	Oceanography Department, Texas A & M University
Hansell, Dennis	S-223	Bermuda Biological Station for Research
Buesseler, Ken	S-224	Marine Chemistry and Geochemistry, Woods Hole Oceanographic Inst..

	<b>I.D. No.</b>	<b>Institution</b>
Measures, Christopher	S-225	Department of Oceanography, University of Hawaii
Sambrotto, Raymond	S-226	Lamont-Doherty Earth Observatory, Columbia University
Dymond, Jack	S-227	Oceanic & Atmospheric Sciences, Oregon State University
Honjo, Susumu	S-228	Department of Geology & Geophysics, Woods Hole Oceanographic Inst.
Barber, Richard	S-231	Marine Laboratory, Duke University
Marra, John	S-232	Lamont-Doherty Earth Observatory, Columbia University
Smith, Walker	S-233	Department of Ecology and Evolution- ary Biology, University of Tennessee
Brzezinski, Mark	S-234	Marine Science Institute, University of California, Santa Barbara
Nelson, David	S-235	College of Oceanic and Atmospheric Sciences, Oregon State University
Altabet, Mark	S-236	Center for Marine Science and Techno- logy, University of Massachusetts
Francois, Roger	S-237	Marine Chemistry & Geochemistry, Woods Hole Oceanographic Inst.
Bronk, Deborah	S-238	School of Marine Programs, The University of Georgia
Cochlan, William	S-239	Department of Biological Sciences, University of Southern California
Bacon, Michael	S-240	Marine Chemistry & Geochemistry, Woods Hole Oceanographic Inst.
Cochran, J. Kirk	S-241	Marine Sciences Research Center, State University of New York, Stony Brook
Cowles, Timothy	S-242	College of Oceanic & Atmospheric Sciences, Oregon State University
Azam, Farooq	S-243	Scripps Institution of Oceanography, University of California, San Diego

	<b>I.D. No.</b>	<b>Institution</b>
Ducklow, Hugh	S-244	Department of Biological Sciences, Virginia Institute of Marine Sciences
Kirchman, David	S-245	College of Marine Studies, University of Delaware
Hedges, John	S-246	College of Ocean and Fisheries Sciences, University of Washington
Lee, Cindy	S-247	Marine Sciences Research Center, State University of New York at Stony Brook
Wakeham, Stuart	S-248	Skidaway Institute of Oceanography
Landry, Michael	S-249	Department of Oceanography, University of Hawaii - Manoa
Huntley, Mark	S-250	Scripps Institution of Oceanography, University of California, San Diego
Caron, David	S-251	Department of Biology, Woods Hole Oceanographic Institution
Lonsdale, Darcy	S-252	Marine Sciences Research Center, State University of New York, Stony Brook
Millero, Frank	S-253	RSMAS/MAC, University of Miami
Smith, Walker	S-255	Department of Ecology and Evolution- ary Biology, University of Tennessee
Gordon, Louis	S-256	College of Oceanic and Atmospheric Sciences, Oregon State University
Masten, Douglas	S-258	Scripps Institution of Oceanography, University of California, San Diego
Mitchell, B. Greg	S-261	Scripps Institution of Oceanography, University of California, San Diego
Stramski, Dariusz	S-262	Scripps Institution of Oceanography, University of California, San Diego

## **R/V LAURENCE M. GOULD**

The R/V LAURENCE M. GOULD made two science cruises to the Antarctic Peninsula during the period of 30 March 1997 through 31 March 1998. Maiden cruise for the R/V LAURENCE M. GOULD was the transit from Port Forchon (December 25, 1997) to Punta Arenas (January 16, 1998). Science cruises that commenced and terminated in Punta Arenas, Chile were:

### **Cruise LMG98-1**

22 January 1998 - 19 February 1998

S-046 (Karl) Long-Term Ecological Research (LTER) Bellingshausen Sea

### **Cruise LMG98-2**

25 February 1998 - 21 March 1998 S-072 (Domack) Holocene

Paleoenvironmental Change along the Antarctic Peninsula, Lallemand Fjord, Drake Sea

**Note:** See Appendix III for complete list of scientific personnel for each science event (listed by S-number).

## **Biology & Medical Research**

Karl, David (+9)                      S-046              University of Hawaii

## **Geology & Geophysics**

Domack, Eugene (+16)              S-072              Hamilton College

## **R/V POLAR DUKE**

The R/V POLAR DUKE made 3 cruises during the period 30 March 1997 through 30 May 1997. The R/V POLAR DUKE ended her 10+ year charter with the USAP 30 June 1997.

### **Cruise PD97-2,-3,-4**

03 March 1997 - 02 May 1997

S-036 (Sidell), S-037 (Detrich) Fishing in the Dallman Bay

**Note:** See Appendix III for complete list of scientific personnel for each science event (listed by S-number).

## **Biology & Medicine**

	<b>I.D. No.</b>	<b>Institution</b>
Sidell, Bruce	S-036	University of Maine
Detrich, William	S-037	Northeastern University

## **R/V ABEL-J**

The R/V ABEL-J made 4 cruises during the period 30 March 1997 through 30 May 1997. (The R/V ABEL-J was made available to the U.S Antarctic Program by a special contract, necessitated by delays in the availability of the R/V LAURENCE M. GOULD.)

### **Cruise LMGR#1**

21 November 1997 – 04 December 1997

Palmer Station support. Open NOAA field camp at Cape Shirreff, Livingston Island. Transport one scientist to Copacabana Field Camp, King George Island.

### **Cruise LMGR#5**

08 December 1997 – 31 December 1997

S-087 (Taylor), S-097 (Wiens) Tectonic research using GPS and seismic methods at various shore locations along the South Shetland archipelago.

### **Cruise LMGR#7**

03-09 January 1998

Palmer Station support.

Transported S-003 (Day) and S-013 (Fraser) to Palmer Station.

### **Cruise LMGR#8**

11 January 1998 – 01 February 1998

LTER S-028 (Quetin) support.

**Note:** See Appendix III for complete list of scientific personnel for each science event (listed by S- number).

## **Geology & Geophysics**

	<b>I.D. No.</b>	<b>Institution</b>
Taylor, Fredrick	S-087	University of Texas
Wiens, Douglas	S-097	Washington University

## **Biology & Medicine**

	<b>I.D. No.</b>	<b>Institution</b>
Quetin, Langdon	S-028	University of California, SB

## **R/V ROGER REVELLE**

The *R/V Roger Revelle*, operated by the Scripps Institution of Oceanography, conducted four cruises (RR06 through RR09) in Antarctic waters on behalf of the U.S. JGOFS Antarctic Environment and Southern Ocean Process Study (AESOPS). Research was conducted on the physical, chemical, and biological influences affecting the phytoplankton bloom, the temporal variability of blooms, and the apparent paradox of high fluxes of biogenic material to the sea bed in a region of low mean annual primary production. Cruises, for the most part, took place along a section at 170°W, between October, 1997 and March, 1998.

### **RR06: AESOPS Spring Survey-I October 20, 1997 - November 24, 1997**

Timothy J. Cowles, Oregon State University, Chief Scientist

The primary objective of the first cruise was to provide mesoscale resolution of the physical, chemical, and biological properties in and around the Antarctic Polar Front. Stations, moorings, drifters and SeaSoar surveys were combined with concurrent underway surface measurements to collect data on these properties and processes.



## **RR06 Scientific Personnel**

### ***SeaSoar Survey and Physical Oceanography***

	<b>I.D. No.</b>	<b>Institution</b>
Timothy J. Cowles	S-242	Oregon State University
Jack Barth	S-242	Oregon State University
Linda Fayler	S-242	Oregon State University
Robert O'Malley	S-242	Oregon State University
Steven Pierce	S-242	Oregon State University
Marc Willis	S-242	Oregon State University
Christopher Wingard	S-242	Oregon State University

### ***Bio-optical Moorings and Physical Oceanography***

Mark Abbott	S-212	Oregon State University
James Richman	S-212	Oregon State University
Dennis Root	S-212	Oregon State University

### ***Hydrography and Nutrients***

Stacey Morgan	S-258	Scripps Institution of Oceanography
Robert Williams	S-258	Scripps Institution of Oceanography
Calvin Mordy	?	Seattle NOAA-PMEL
Mark Cook	S-210	North Carolina State University

### ***Dissolved Organic Carbon***

Catherine Goyet	S-213	Woods Hole Oceanographic Institution
Thomas Kirchlechner	S-213	University of Otago, Dunedin, N.Z.

### ***Iron Biogeochemistry***

Kenneth Coale	S-219	Moss Landing Marine Laboratory
R. Michael Gordon	S-219	Moss Landing Marine Laboratory
Sara Tanner	S-219	Moss Landing Marine Laboratory

**Export Production using Th-234**

Lary Ball	S-224	Woods Hole Oceanographic Institution
Glenn Crossin	S-224	Woods Hole Oceanographic Institution

**Trace metal geochemistry**

Sue Vink	S-225	University of Hawaii
Kendra McDonough	S-225?	University of Hawaii

**Microzooplankton**

Michael Landry	S-302	University of Hawaii
Susan Brown	S-249	University of Hawaii

**Mesozooplankton**

Alejandro Gonzalez	S-250	Scripps Institution of Oceanography
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**Carbon Dioxide System**

Elizabeth Degler	S-253	University of Miami
Xiaorong Zhu	S-253	University of Miami

**Primary Production**

Scott Polk	S-255	University of Tennessee
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**Silicon biogeochemistry**

Valerie Franck	S-234	University of California, Santa Barbara
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**Nitrogen biogeochemistry & nitrogen stable isotopes**

Sarah Stillman	S-236	University of Massachusetts, Dartmouth
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**RR07: AESOPS Process-Study I  
November 30, 1997 - January 8, 1998**

Richard T. Barber, Duke University, Chief Scientist

The purpose of the Process-I cruise was to characterize the biogeochemical processes between 53°S and the edge of the pack ice, located at roughly 64°40'S. Twelve (12) long stations were completed along the U.S. JGOFS 170°W transect, as well as, an intensive six-station section across a subsurface temperature front at 60°50'S in the polar frontal zone. Station work began at 53°S, 174°W on Dec. 5th and proceeded southward toward the pack ice and arriving at the seventh station at 64°09'S, 169°30'W on Dec. 17th.

**RR07 Scientific Personnel**

***Primary Production***

Richard Barber, Chief Scientist	S-231	Duke University
Jonathan Borden	S-231	Duke University
Lisa Borden	S-231	Duke University
Elaine Barber	S-231	Duke University

***Nutrients and Hydrography***

Louis Codispoti	S-209	Old Dominion University
Steven Guarin	S-209	Old Dominion University
Erik Quiroz	S-209	Texas A&M University
Dennis Guffy	S-209	Texas A&M University
James Postel	S-210	University of Washington
Katherine Kroglund	S-209	University of Washington
Scott Hiller	S-258	Scripps Institution of Oceanography

**Gross photosynthesis**

Mary-Lynn Dickson	S-218	University of Rhode Island
Cara Sucher	S-218	University of Rhode Island

**Mesozooplankton**

Jay Peterson	S-220	Louisiana Universities Marine Consortium
Juanita Urban-Rich	S-220	Louisiana Universities Marine Consortium

**Particles and aggregates**

Ian Walsh	S-222	Texas A&M
Jan Gunderson	S-222	Texas A&M
Sarah Searson	S-222	Texas A&M

**Dissolved organic carbon**

Steve Bell	S-223	Bermuda Biological Station
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**Export production by Th-234**

Alan Fleeer	S-224	Woods Hole Oceanographic Institution
Peter Landry	S-249	Woods Hole Oceanographic Institution

**Trace metal geochemistry**

Christopher Measures	S-225	University of Hawaii
Amy Elliott	?	University of Washington

**Nitrogen biogeochemistry & new production**

Raymond Sambrotto	S-226	Lamont-Doherty Earth Observatory
Bonnie Mace	S-226	Lamont-Doherty Earth Observatory

**Silicon biogeochemistry**

Mark Brzezinski	S-234	Oregon State University
Daniel Sigmon	S-234	Oregon State University

**Bacterial processes**

Helen Quinby	S-244	Virginia Institute of Marine Science
Laura Fandino	S-244	Scripps Institution of Oceanography

**Microzooplankton**

Colleen Allen	S-249?	University of Hawaii
Karen Selph	S-249	University of Hawaii
Albert Fabregat	S-249?	University of Hawaii

**Carbon dioxide system**

Jason Joliff	S-253	University of Miami
Denis Pierrot	S-253	University of Miami

**RR08: AESOPS Survey-II (Summer Survey)  
January 8, 1998 - February 8, 1998**

Kenneth Coale, Moss Landing Marine Lab, Chief Scientist

Research objectives of the Survey-II cruise were much like those of Survey-I, although ice images that arrived Jan. 16th showed the edge of the sea ice at about 69°30'S along 170°W, so the ice would not restrict access to the AESOPS study area as it had during Survey-I. The R/V *Roger Revelle* steamed south from 57°S, towing the Oregon State University (OSU) SeaSoar and constructing real-time vertical cross-sections of temperature, salinity, density, large particle concentrations and a number of fluorescence parameters. In addition, underway surface water measurements of nutrients, the partial pressure of carbon dioxide (pCO<sub>2</sub>), metals, oxygen, salinity, phytoplankton species and abundance, chlorophyll, silicate uptake, dissolved organic carbon, fluorescence, currents and the meteorological parameters complimented the acquisition of SeaSoar data.

## **RR08 Scientific Personnel**

### ***Iron biogeochemistry***

Kenneth Coale, Chief Scientist	S-219	Moss Landing Marine Laboratory
R. Michael Gordon	S-219	Moss Landing Marine Laboratory
Steve Fitzwater	S-219	Moss Landing Marine Laboratory

### ***Nutrients and hydrography***

Jeff Kinder	S-210	North Carolina State University
Douglas Masten	S-258	Scripps Institution of Oceanography
Leonard Lopez	S-258	Scripps Institution of Oceanography
Susan Becker	S-258	Scripps Institution of Oceanography

### ***Bio-optical moorings and physical oceanography***

Ricardo Letelier	S-212	Oregon State University
Claudia Mengelt	S-212	Oregon State University

### ***Dissolved organic carbon***

Greg Eischeid	S-213	Woods Hole Oceanographic Institution
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### ***Carbon dioxide system***

Stephany Rubin	S-214	Lamont-Doherty Earth Observatory
Rebecca Esmay	S-214	Lamont-Doherty Earth Observatory

### ***Export production by Th-234***

Dave Hirschberg	S-241	State University of New York, Stony Brook
Huan Feng	S-241	State University of New York, Stony Brook

**Trace metal biogeochemistry**

Sue Vink	S-225	University of Hawaii
Kendra McDonough	S-225	University of Hawaii

**Silicon biogeochemistry**

Valerie Franck	S-234	University of California, Santa Barbara
William Golden	S-234	University of California, Santa Barbara

**Nitrogen biogeochemistry and nitrogen stable isotopes**

Mark Altabet	S-236	University of Massachusetts, Dartmouth
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**SeaSoar Survey and physical oceanography**

Chris Wingard	S-242	Oregon State University
Andrew Dale	S-242	Oregon State University
Robert Shearman	S-242	Oregon State University
Robert O'Malley	S-242	Oregon State University
Marc Willis	S-242	Oregon State University
Linda Fayler	S-242	Oregon State University

**Microzooplankton**

Michael Landry	S-249	University of Hawaii
Susan Brown	S-249	University of Hawaii

**Mesozooplankton**

Alejandro Gonzalez	S-250	Scripps Institution of Oceanography
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**Dissolved Organic carbon**

Sarah Goldthwaite	S-255	Bermuda Biological Station for Research
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**Ocean optics**

Berzas Bichnevicius	S-261	Scripps Institution of Oceanography
John Wieland	S-261	Scripps Institution of Oceanography

**RR09: AESOPS Process Study-II  
February 13, 1998 - March 19, 1998**

Wilford D. Gardner, Texas A&M University, Chief Scientist

The final AESOPS Antarctic Polar Frontal Zone (APFZ) cruise left Lyttelton, New Zealand, on Feb. 13, 1998. The purposes of the cruise were to characterize fall biogeochemical processes from north to south of the APFZ along the 170°W transect, to determine whether the bloom had continued southward, and to compare pre-bloom, post-bloom and full bloom conditions, if possible.

**RR09 Scientific Personnel**

***Particles and aggregates***

Wilford Gardner, Chief Scientist	S-222	Texas A&M University
Jan Gunderson	S-222	Texas A&M University
Sarah Searson	S-222	Texas A&M University

***Nutrients and Hydrography***

Mark Cook	S-210	North Carolina State University
Dennis Guffy	S-209?	Texas A&M
Scott Hiller	S-258	Scripps Institution of Oceanography
Tammy Koonce	S-258	Scripps Institution of Oceanography
Kathy Kroglund	S-209	University of Washington
Robert Masserini	S-209	University of South Florida
Erik Quiroz	S-209	Texas A&M
Robert Williams	S-258	Scripps Institution of Oceanography

***Carbon Dioxide System***

Heather Anderson	S-214?	Lamont-Doherty Earth Observatory
Stephany Rubin	S-214	Lamont-Doherty Earth Observatory



**Phytoplankton physiology**

Robert Olson	S-215	Woods Hole Oceanographic Institution
Heidi Sosik	S-215	Woods Hole Oceanographic Institution

**Gross Photosynthesis**

Mary-Lynn Dickson	S-218	University of Rhode Island
Joe Orchardo	S-218	University of Rhode Island

**Mesozooplankton**

Jay Peterson	S-220	Louisiana Universities Marine Consortium
Juanita Urban-Rich	S-220	Louisiana Universities Marine Consortium

**Export Production by Th-234**

John Andrews	S-224	Woods Hole Oceanographic Institution
Glenn Crossin	S-224	Woods Hole Oceanographic Institution

**Trace metal biogeochemistry**

Christopher Measures	S-225	University of Hawaii
Paolo Rossini	?	Institute of Marine Geology, Italy

**Nitrogen biogeochemistry & new production**

Lois Breger	S-226?	Lamont-Doherty Earth Observatory
Bonnie Mace	S-226	Lamont-Doherty Earth Observatory

**Primary Production**

Mike Hiscock	S-255	Duke University
John Marra	?	Lamont-Doherty Earth Observatory
Ann-Maree White	S-255	University of Tennessee

**Silicon biogeochemistry**

David Nelson	S-235	Oregon State University
Julie Arrington	S-235	Oregon State University

**Bacterial processes**

Helen Quinby	S-244	Virginia Institute of Marine Sciences
Dawn Castle	S-244	University of Delaware

**Microzooplankton**

Hector Nolla	S-249?	University of Hawaii
Karen Selph	S-249	University of Hawaii

**Ocean Optics**

Rick Reynolds	S-261	Scripps Institution of Oceanography
John Weiland	S-261	Scripps Institution of Oceanography

## R/V YUZHMOREGEOLOGIYA

The R/V *Yuzhmorgeologiya* was chartered by the National Oceanic Atmospheric Administration, National Marine Fisheries Service to support activities of the U.S. Antarctic Marine Living Resources (AMLR) field research program. Shipboard surveys were conducted on three legs in the AMLR study area between early January and early April 1998. A large-area survey was conducted on Leg I and again on Leg II, while Leg III was dedicated to a bottom trawl survey. Two major water zones were observed during the surveys on Legs I and II: "Drake Passage water" dominated the area north of Livingston island, which included new AMLR stations; "Bransfield Strait water" and transitional water were identified on the South Shetland continental slope and shelf.

1997/98 was the first full season of seabird research at Cape Shirreff and thus comparisons with prior years are not possible. However, based on mean breeding success from Admiralty Bay, approximately 140 kilometers (km) northeast on King George Island, the chinstrap penguin population had average and the gentoo penguin

population above average breeding success. Pinniped studies at Cape Shirreff revealed that the total number of Antarctic Fur seal pups born at the Cape and San Telmo Islands during the 1997/98 breeding season was 7,748, which is a 14.1% decrease in pup production from the 1996/97 count of 9,015. At Palmer Station, 4,412 breeding pairs of Adelie penguins were observed at 54 sample colonies during the peak egg-laying period (24-29 November 1997), which was essentially unchanged from the number of breeding pairs (4,445) censused in November 1996. Adelie penguins exhibited a slight increased breeding success in the 1997/98 season, creching 1.58 chicks per pair, or 0.11 chicks more than were creched per pair in the 1996/97 season.

## **AMLR Scientific Personnel**

### ***Cruise Leader***

Roger P. Hewitt	Southwest Fisheries Science Center	Legs I, III
David A. Demer	Southwest Fisheries Science Center	Leg II

### ***Physical Oceanography***

Anthony F. Amos	University of Texas at Austing	Leg I
Charles Rowe	University of Texas at Austing	Legs I, II, III
Andrea Wickham-Rowe	University of Texas at Austing	Leg II

### ***Phytoplankton***

Osmund Holm-Hansen	Scripps Institution of Oceanography	Leg I
Maximo Frangopulos	Institute de Fomento Pesquero, Punta Arenas, Chile	Leg II
Christopher D. Hewes	Scripps Institution of Oceanography	Legs I, II
Jenny Maturana	Universidad Catolica de Valparaiso	Leg I
Milean Ruiz	University de Magallanes, Punta Arenas, Chile	Leg II

### ***Bioacoustic Survey***

Adam Jenkins	Wayward Sailor Maritime	Legs I, II
Jacqueline Popp	University of California, Santa Cruz	Legs, I, II, III

***Krill and Zooplankton Sampling***

Valerie Loeb	Moss Landing Marine Laboratories	Legs I, II
Wesley A. Armstrong	Southwest Fisheries Science Center	Legs I, II
Kimberly Dietrich		Leg II
Michael Force		Legs I, II
Rachel Johnson	California Academy of Sciences	Legs I, II
Elizabeth Linen	University of Washington	Legs I, II
Matthew M. Nelson	San Diego State University	Leg II
Charles F. Phleger	San Diego State University	Leg I
Volker Siegel	Sea Fisheries Research Institute	Leg I

***Bottom Trawl Survey***

Christopher D. Jones	Southwest Fisheries Science Center	Leg III
Kimberly Dietrich		Leg III
Peter Kappes	Biological Resource Division, USGS	Leg III
Karl-Hermann Kock	Sea Fisheries Research Institute	Leg III
Sunhild Wilhelms	Bundesamt fuer Seeschifffahrt und Hydrographie	Leg III

***Cape Shirreff Personnel***

William T. Cobb	Southwest Fisheries Science Center	28 Nov 97 - 27 Jan 98
Terence Carten		28 Nov 97 - 28 Feb 98
Daniel P. Costa	University of California, Santa Cruz	07 Feb 98 - 28 Feb 98

Michael E. Goebel	University of California, Santa Cruz	07 Feb 98 - 28 Feb 98
Rennie S. Holt	Southwest Fisheries Science Center	05 Jan 98 - 27 Jan 98; 07 Feb 98 - 28 Feb 98
Jeremy T. Sterling	University of California, Santa Cruz	28 Nov 97 - 28 Feb 98
Philip H. Thorson	SRS Technologies	21 Dec 97 - 27 Jan 98
Wayne Z. Trivelpiece	Southwest Fisheries Science Center	28 Nov 97 - 28 Feb 98

***Sea Island Personnel***

Rennie S. Holt	Southwest Fisheries Science Center	28 Jan 98 - 06 Feb 98
Wesley A. Armstrong	Southwest Fisheries Science Center	28 Jan 98 - 06 Feb 98
Adam Jenkins	Wayward Sailor Maritime	28 Jan 98 - 06 Feb 98
Jacqueline Popp	University of California, Santa Cruz	28 Jan 98 - 06 Feb 98

***Palmer Station Personnel***

William R. Fraser	Montana State University	15 Dec 97 - 06 Feb 98
Donna L. Patterson	Montana State University	15 Dec 97 - 04 Apr 98
Peter Duley	Montana State University	01 Oct 97 - 28 Feb 98
Matt Irinaga	Montana State University	01 Oct 97 - 28 Feb 98

**Electronics Technician**

Frank Gomes

Pacific Marine Center

Legs I, II

For more information on the U.S. Antarctic Marine Living Resources (AMLR) Program,  
or a copy of the AMLR 1997/98 Field Season Report, please contact:

*U.S. Department of Commerce  
National Oceanic & Atmospheric Administration  
National Marine Fisheries Service  
Southwest Fisheries Science Center  
P.O. Box 271  
La Jolla, California 92038*