Gulf of Maine NEWS

Regional Association for Research on the Gulf of Maine Fall 1993

NOAA's Coastal Ocean Program Science for Solutions

Isobel C. Sheifer, NOAA Coastal Ocean Office

NOAA's Coastal Ocean Program (COP) provides scientific information to assist decision makers to meet the challenges of managing our Nation's coastal resources. The COP targets critical issues which exist in the Nation's estuaries, coastal waters and Great Lakes. The COP provides a focal point in NOAA through which the agency, together with other organizations with responsibilities for the coastal environment and its resources, can make significant strides toward finding the solutions to coastal problems.

Policy makers need a proactive approach to managing coastal resources and it is increasingly critical that this approach include predictive capabilities. The scientific basis of this predictive information builds upon monitoring, research on impacts and natural variability, and assessment. Such a science-based foundation can support decisions on a broad range and changing suite of coastal ocean issues. It can also provide decision makers with the balanced perspective needed to promote economic growth consistent with a healthy and sustainable environment. The vision of the COP is "to deliver the highest quality science in time for important coastal policy decisions."

In This Issue:

COP Goals and Themes

The program has three major goals:

- Environmental Quality—To help correct and prevent degradation by improving coastal ocean pollution prediction
- Fisheries Productivity—To better conserve and manage living marine resources by improving fish stock predictions
- Coastal Hazards—To protect human life and personal property by improving coastal hazards predictions

Each goal contains one or more theme areas: Environmental Quality is divided into Nutrient Overenrichment (from atmospheric and terrestrial sources), Toxics, and Estuarine Habitats; Fisheries Productivity into Coastal Fisheries Ecosystems; and Coastal Hazards into the Hazards program (including conducting research and development leading to a Coastal Forecast System) and the CoastWatch satellite information program.

Selection of projects to be funded is effected through a combination of actions by the Coastal Ocean Council (one senior science representative from each NOAA line organization) and Management Teams, composed of technical experts, for each theme. Funding for projects generally is divided on an equal basis between NOAA line offices and academic researchers.

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COP Activities in the Gulf of Maine

In the Environmental Quality goal area, Alison Rieser, Marine Law Institute, University of Maine is receiving the final year of funding for her three-year study into "Methodology and Mechanisms for Management of Cumulative Coastal Environmental Impacts". In May 1993, this project brought together for the first time a group of Federal, state, and local resource managers who deal with coastal development for the purpose of discussing the status of the issue of cumulative coastal environmental impacts in the management of the coastal zone. This was an important phase of Rieser's study which the COP will publish when it is completed. As an spinoff of work on the project, the Marine Law Institute is working with the Maine Coastal Program to help strengthen guidelines for local coastal zoning and to identify resources at risk under the State's Comprehensive Planning and Growth Management Act.

Additionally, the COP Estuarine Habitat Program continues to be active in the Gulf of Maine region through its C-CAP component. C-CAP (CoastWatch-Change Analysis Program) undertakes to monitor areal extent, functional status, and change (in location and acreage) of wetlands and adjacent uplands in the coastal region of the U.S. Currently a C-CAP effort is underway in the St. Croix River Estuary. It is a cooperative effort involving the U.S. Fish and Wildlife Service, the Gulf of Maine Program, Environment Canada, and COP. A change detection analysis will be completed using Landsat Thematic Mapper imagery from 1985 and 1992. A major focus for C-CAP has been the development of a standard, nationally accepted mapping protocol. Early development of change detection methodologies was participated in by the University of Maine and the University of New Hampshire.

In addition to its application to wetlands mapping, the CoastWatch program developed by COP has also helped improve the character of coastal ocean scientific research going on in the Gulf of Maine. CoastWatch is designed to support the information needs of coastal managers by providing rapid dissemination of satellite observation data to regional coastal sites in eight regional nodes. The node for the Northeast region, which covers the Gulf of Maine, is located in Narragansett, RI. CoastWatch sea surface temperature imagery has been useful to researchers at Woods Hole Oceanographic Institution studying the prediction of the onset of paralytic shellfish poisoning (PSP) outbreaks in the southeastern Gulf of Maine. A warm summer coastal current (river plume) formed from spring runoff is believed to be the mechanism for the southerly transport of the toxic dinoflagellate responsible. This technique using CoastWatch imagery promises an early warning of the conditions conducive to PSP outbreaks. Other applications of CoastWatch imagery in the Gulf of Maine include its use by the Maine Department of Marine Resources for monitoring fisheries.

In the area of Fisheries Productivity, COP Coastal Fisheries Ecosystems (CFE) program is developing several important activities in the Gulf of Maine region. The COP recently began a projected multiyear study of the depleted groundfish fishery (haddock, cod, flounder) of Georges Bank. The findings of this study have the potential to impact the economy of the Gulf of Maine region which has been seriously undermined by declining groundfish yields. The COP funding of the Georges Bank study is making it possible for scientists from the NMFS Northeast Fisheries Science Center and university scientists to conduct this important study on the role of predator-prey relations and exploitation on the dynamics of fish populations off Georges Bank. Modeling will provide the primary means of synthesizing information and will be used to examine alternative harvesting regimes to define more effective management strategies.

The CFE is also taking part in NOAA's collaboration with the National Science Foundation (NSF) in the U.S. GLOBEC (GLOBal Ocean ECosystems) program. NOAA became a participant in GLOBEC by signing a joint agreement with NSF in April 1992. GLOBEC will begin field activities on Georges Bank (see Gulf of Maine NEWS, Summer 1993). This project will seek to elucidate, in a coordinated manner, the underlying physical and biological processes that control the abundance of copepods and fish larvae in time and space. While GLOBEC emphasizes enhanced understanding of fundamental processes which control the population dynamics of marine animals, the CFE project is aimed at improving the science-based prediction capabilities that support NOAA's stewardship responsibilities for living marine resources. Cooperation and communication between the GLOBEC program and NOAA's research on Georges Bank will enhance the efforts to identify, understand, and manage anthropogenic impacts to marine ecosystems against a background of natural system variability.

The program of the Coastal Hazards goal area of COP is of great significance to the residents of the Gulf of Maine area. COP has supported research which is aimed at providing better forecasting of coastal storms like the Nor'easters that frequently impact the New England coast. COP has supported the development of models of coastal storm surge and those investigating meteorological phenomena that affect storm surge. COP is also playing a major role in the development in NOAA of a Coastal Forecast System. Given the complexity of coastal development, it is no longer sufficient to simply forecast that a large area will experience a bad storm. COP is working with other NOAA components to help develop a more accurate and precise forecast system that will not only protect life and property but will also assist in the planning of sound economic development. The CoastWatch satellite information program is playing an important role in providing

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the real-time and archived imagery to support this development.

Other COP Activities Important to the Gulf of Maine

The COP is also involved in the Gulf of Maine by its role in the Regional Marine Research Program (RMRP). The Director of COP, Don Scavia, is the Chairman of the RMRP Executive Council, and plays a critical role in the approval process for regional research plans. To date, the Gulf of Maine has received two research grants under the program and a third is scheduled for FY 1994.

Over the past three years, COP also has been involved in a promising effort that will affect research in all areas of the Nation. Operating under a mandate from the Federal Coordinating Council on Science, Engineering and Technology through the Committee on Earth and Environmental Sciences, COP has participated in the development and work of the Subcommittee on U.S. Coastal Ocean Science (SUSCOS) of which Don Scavia serves as Vice Chair. A draft a two-part publication entitled *Setting A New Course for U.S. Coastal Ocean Science* has recently been completed which envisions a coordinated U.S. coastal ocean science directed at national priorities. Part I—Inventory of Federal Programs categorizes and summarizes current programs and their funding and develops a goal toward which all parties in scientific research should direct their efforts. Part II—The Strategic Framework lays out a conceptualization of how to begin that coordination. The work of SUSCOS will be carried forward in the Clinton administration and raised to an even higher level of significance under the National Science and Technology Council currently being formed.

In summary, the COP is serving the residents of the Gulf of Maine region in a variety of important ways by focusing science and the information flow to coastal managers on many of their most pressing environmental and economic development concerns.

GLOBEC Scientific Steering Committee Formed

Dian Gifford, University of Rhode Island

A GLOBEC Scientific Steering Committee has been formed for the GLOBEC Georges Bank study;.made up of ten PI s as follows: Bob Beardsley WHOI, SteveBollens WHOI, Ann Bucklin UNH, Cabell Davis WHOI, Ted Durbin URI, Dian Gifford URI, Rapporteur, Greg Lough NMFS Woods Hole, Daniel Lynch Dartmouth, David Mountain NMFS Woods Hole, Peter Wiebe WHOI, Chair. A group email address will forward messages to all ten people:

ggbsc@plankton.whoi.edu

Peter Wiebe will speak about the GLOBEC Georges Bank program at the next RARGOM meeting. The steering committee plans to meet about once per month. The next meeting is December 20th at WHOI.

What is CoOP?

Kenneth H. Brink, Woods Hole Oceanographic Institution

Coastal Ocean Processes (CoOP) is an organization of scientists dedicated to the idea of carrying out a major interdisciplinary research program in and above the coastal ocean. The sub disciplines of Biological, Chemical, Geological and Physical Oceanography are represented as well as Marine Meteorology. Funding for the CoOP planning effort comes primarily from the Office of Naval Research, the National Oceanic and Atmospheric Administration (through the Coastal Ocean Program) and the National Science Foundation. The CoOP steering committee is currently chaired by Dr. Michael Roman for the Horn Point Environmental Laboratory (University of Maryland).

CoOP was founded in early 1990, and its first activity was to develop a plan for an interdisciplinary seagoing pilot program. Thus, a community workshop was held in La Jolla, California, and the steering committee then narrowed down the resulting options to two choices: inner shelf processes and negatively buoyant river outflows. The National Science Foundation then issued an announcement of opportunity that eventually led to the funding of a small group to study larval and sediment dispersal off Duck, North Carolina, in 1994. Among those funded for this effort are Cheryl-Ann Butman and Steven Lentz from the Woods Hole Oceanographic Institution.

The CoOP steering committee has since written a "Science Prospectus" (Brink et al, 1992) laying out the broad structure of the perceived program. The goal of the CoOP effort was stated to be

> *to obtain a new level of quantitative understanding of the processes that dominate the transports, transformations and fates of biologically, chemically and geological important matter on the continental margins*.

A number of more specific objectives serve to make this broad statement more specific. Attention is focused on the region from the shoreline out beyond the continental shelf and slope, including the Great Lakes, but excluding estuaries (they are the subject of the Land Margin Ecosystem Research program). The main elements in addressing the CoOP goal are to be a series of major process-oriented field programs (typically to last about two years in the field), data analysis and modeling. During summer, 1993, an open community meeting was held in Portland, Oregon (chaired by Dr. Robert Smith, Oregon State University) to begin the planning for the first major process study, to be conducted off the west coast of the United States with a focus on wind-driven effects. A report from the meeting is expected to be completed in early 1994.

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Stellwagen Bank Research Program News

Brad Barr, Stellwagen Bank National Marine Sanctuary

Since the dedication of the Sanctuary now over a year ago, the Sanctuary agenda has focused on the selecting staff, constructing and outfitting an office, and insuring that the arrival of FY94 brings with it a reasonable budget.

There was some discussion of hiring a Research Coordinator in FY94, but we have decided instead to delay this action for at least one year. In the interim, we intend to move forward during FY94 with the development and implementation of our research program. The focus of our efforts will be to develop a five-year research agenda which integrates our efforts into the regional context. There are several research programs in the region in various stages of development and implementation. As the mandate of the National Marine Sanctuary program is to supplement and support rather than supplant and reinvent, our efforts to develop a Sanctuary research agenda will focus on finding a niche for our program within the existing regional framework.

The centerpiece of the planning effort will be a Sanctuary Research Symposium, to be held in the first half of 1994. This symposium will focus on establishing research priorities for the Sanctuary. This meeting will be modeled on the NURP workshop (held in Danvers, Massachusetts last May) organized by Peter Auster and Ivar Babb, who have agreed to assist the Sanctuary in putting together this symposium.

Some research initiatives have already begun. We are working with a consortium of the Urban Harbors Institute, the UMASS/Boston Environmental Sciences Department and the Center for Coastal Studies on developing what is known as a "site characterization" for the Sanctuary. This characterization involves collecting and synthesizing all existing information and drafting a site description of the Sanctuary. This project was initiated in FY93 and will be completed by the end of this year.

The USGS is developing a characterization of the sediments of Stellwagen Bank. The information generated by this effort has been and will continue to be very important to the management of the Sanctuary.

Two survey projects will be funded early in 1994 to guide the development of the Sanctuary program. One will generate information about the location of cultural resources within the Sanctuary so that we can assess how they can best be managed, the other will provide data about Sanctuary use so that we can better target our education and outreach efforts, as well as inform the research agenda. Requests for Proposals will be coming out in December for these projects. Contact the Sanctuary office for more information.

Page Valentine at USGS is assisting me with a request for ship time on NOAA vessels for research on or benefiting the Sanctuary. It is our intention to interest NOAA into establishing an annual Sanctuary research cruise. We are still in the initial stages of this effort.

Along these same lines, I am asking NOAA Coast and Geodetic Survey to put Stellwagen on the fast track for getting more detailed bathymetric information collected and made available in digital format. This data will provide a very valuable base mapping product for the Sanctuary, and would presumably be useful to the research community as well. We will ask for access to existing information, which is sometimes considerably more detailed than the data available on the NOAA chart. Once we have had the opportunity to review this information, we will be developing a "needs" list to transmit back to C&GS.

Researchers might also be interested to learn that the National Marine Sanctuary Program recently completed a Memorandum Of Understanding with the National Science Foundation in support of work conducted in Marine Sanctuaries and National Estuarine Research Reserves. While this is a very recent turn of events and I have not yet received a copy of the MOU, I am told that NSF will give some measure of priority to funding proposals which involve research in Sanctuaries and Reserves.

On the practical side, all National Marine Sanctuaries are required to have permit program, which includes research permits. One of the tasks at hand for the Sanctuary is to develop a permit program which will be applicable to researchers working in the Sanctuary who are engaging in research that my be otherwise prohibited by Sanctuary regulation. For example, a dye-tracking study involving a discharge of dye into Sanctuary water, where all discharges are prohibited, would require a Sanctuary research permit. It is my intention to work with the research community to insure that this permit system is reasonable and provides no undue burden on researchers who wish to conduct research in the National Marine Sanctuary. When we begin to more forward on this, I hope to be able to enlist the assistance of RARGOM to help to insure consensus on the details and requirements of this permit process.

On behalf of the Sanctuary and the National Marine Sanctuary Program, I thank RARGOM for accepting our organization as a member. I look forward to becoming more involved with the Association as the Sanctuary gets up and running. Research is clearly an important component of any successful Sanctuary, and we intend to do as much as we can, with the help and participation of groups such a RARGOM, to develop a first-rate research program.

On December 20th, our address will be: NOAA/ Stellwagen Bank National Marine Sanctuary, Brewer's Plymouth Marine Building, 14 Union Street, Plymouth, MA 02360. Our telephone number will be (508) 747-1691, and our fax (508) 747-1949.

For those of you on the Internet, I can be contacted at: brad=barr%nms%norm@banyan.rdc.noaa.gov

Publications Noted

New England Algal Data Bank

LeBaron Colt, Jr., University of Massachusetts Dartmouth

Information about New England algae is now compiled as an electronic data bank which will be accessible via computer links. The Library of the Marine Biological Laboratory was seeking a project to get their new electronic publishing system underway, and Dr. David Stonehill and Cathy Norton were instrumental in the acceptance of my material. The data bank will be available to any interested scientists when the editing has been completed.

The latest count of the included taxa showed 954 algal genera, 4431 species, 23 subspecies, 2044 varieties, 433 forma, and lesser numbers of ecads and subforma. More than 1600 publications (generously defined) list 1097 authors and/or collectors, including a few possibly dual identities because of typographical errors or mis-spellings. The area of coverage includes all of New England plus the associated contiguous waters in part, at least. Only the northern half of Long Island Sound, for example, falls "within" New England, by my definition.

One of the acceptance stipulations by MBL was that it was to be kept as up-to-date as possible, and that I would serve as editor of the work to incorporate additions and changes. I originally ended the "first" draft using the time period 1829-1984 inclusive. Periodic updates will incorporated into the data bank as material is received and as time permits.

Later this year, I expect to have a separate soft cover text which will include the author/collector list, a chronology of the collections by publication date, and a grouping of the publications by county or some similar geographical or political area. The author/collector list is alphabetical, and the locations are by state, county or area (such as Narragansett Bay or the Gulf of Maine, as is customary with vascular floras) will also be alpha listed.

I am now accumulating the algal data for the period 1985-1992. While I already have many reprints and material from period, there are others remaining to be acquired. If you have or are aware of publications, technical reports, these or dissertations and you have available copies, please send them along. It will reduce the search costs and speed up the acquisition process greatly.

Every document now in my New England algal files is being placed in the Rare Book Room at MBL. The cataloging of the present material is well along, and most of the papers should be at MBL this fall. Thus the data bank will have a support collection of publications in a single place and available for reading by any interested party. While originals or copies of some documents could not obtained and are, as a result, not part of the supporting documentation, notes on their location will be included in the support collection.

Gulf of Maine 1993 Bibliography

It is interesting to try to summarize the research activity in the Gulf of Maine. One approach is to look at the publication record. What topics are being investigated? Which results might provide the basis for new research directions? As an end of the year project, we decided to create a master reference of 1993 publications about the Gulf of Maine for researchers. It is enclosed in this newsletter. We were assisted in this effort by Jonathan Brown, a Dartmouth College librarian, who helped us create the strategy for this project and who conducted the searches.

We want to know what you think. Will you use it? Are there missing publications? Other databases? Additional key words? Format suggestions? How frequently should we update this? Send comments, suggestions and updates to Genie Braasch.

Reports received

The following reports have been received at the Association office and are available for distribution by contacting Norman Rubinstein, Chief, Exposure Branch, Environmental Resarch Laboratory, 27 Tarzwell Drive, Narragansett, RI 02882.

Hunsaker, C.T., and D.E. Carpenter, eds., 1990, "Environmental Monitoring and Assessment Program Ecological Indicators" EPA600/3-90/060, U.S. Environmental Protection Agency, Research Triangle Park, NC.

Weisberg, S.B., J.B. Frithsen, A.F. Holland, J.F. Paul, K.J. Scott, J.K. Summers, H.T. Wilson, R. Valente, D.G. Heimbuch, J. Gerritsen, S.C. Schimmel, and R.W. Latimer, 1992, "EMAP-Estuaries Virginian Province 1990 Demonstration Project Report" EPA 600/R-92/100, U.S. Environmental Protection Agency, Environmental Research Laboratory, Narragansett, RI.

(Algal Data continued)

If you have any material to be added - remembering that the sole criterion is that the algal described must have been collected in New England - please send it to me at: Dr. LeBaron C. Colt, Jr.

Att: NEADB, Biology Department
The University of Massachusetts Dartmouth
North Dartmouth, MA 02747

Resources

Coastal Instrumentation at WHOI

Jim Irish, Coastal Research Center,
Woods Hole Oceanographic Institution

The Coastal Research Center (CRC) at the Woods Hole Oceanographic Institution (WHOI) has compiled information from WHOI coastal researchers on the instrumentation which they own and is available for loan to other scientists at WHOI. The WHOI/CRC is acting as a focus for distributing this information, anticipating that it will encourage interaction between investigators, and increase the science that can be done on ever tightening budgets. Researchers outside WHOI may wish to consider collaborating with WHOI investigators with desired equipment. I encourage others working in the Gulf of Maine to list equipment which they have and would use in collaboration with fellow researchers.

At this time, the CRC does not support, repair, guarantee, etc. this equipment. Any arrangements for borrowing equipment must be made directly with the responsible person named in the list below, and any use charges, calibrations, insurance, repair or other arrangements must be made with that person, and not through CRC. Many of these items require additional funding for consumable supplies (core liners, chain bags, reagents, etc.) from the projects requesting their use.

WHOI departments are abbreviated in the list. The acronyms are: AOP&E (Applied Ocean Physics & Engineering), BIO (Biology), G&G (Geology & Geophysics), MC&G (Marine Chemistry & Geochemistry).

Shipboard Instrumentation:

Integrated navigation and data acquisition system - Dave Aubrey / Wayne Spencer, G&G
1,200 kHz shipboard ADCP - Rocky Geyer, AOP&E
100 & 500 kHz SideScan sonar - Wayne Spencer, G&G
Benthic samplers:
1/10 m2 Smith McIntyre Grab - George Hampson, BIO
1/25 m2 Benthic Grab with stand - George Hampson, BIO
220 kHz echo-sounder - Gene Terray, AOP&E
Submersible light meter - Anne Giblin, MBL
Hydrolab Sampler - Anne Giblin, MBL
Hose pumping system - Don Anderson, BIO
GPS receiver (requires mounting & antenna) - Steve O'Malley, G&G
Handheld VHF radios - Steve O'Malley, G&G

Moored Instrumentation:

SeaTech Transmissometers (5) - Sandy Williams, AOP&E
SeaCats (6) - Rocky Geyer, AOP&E
(10) - Steve Lentz, PO
Directional wave gauge - Dave Aubrey, G&G
InterOcean S4 Current Meters
(4) - Rocky Geyer, AOP&E
(2) - Cheryl Ann Butman, AOP&E
EG&G Model 8011/12 Acoustic Release Deck Gear - Jim Irish, AOP&E
CODE-style steel buoys (4) - Jim Irish, AOP&E
3 sensor electro-magnetic current meter - Wayne Spencer, G&G
Pressure/temperature logger - Wayne Spencer, G&G
Endeco WaveTrack buoy with met & telemetry - Gene Terray, AOP&E
BASS current meters arrays (2) - Sandy Williams, AOP&E
Single wire wave staff - Gene Terray, AOP&E
Gyro/accelerometer attitude/motion-sensing package - Gene Terray, AOP&E
Aanderaa thermistor chains (Briscoe's old ones) (7)- Jim Irish, AOP&E

Laboratory Instrumentation:

Laboratory x-y acoustic current meter - Gene Terray, AOP&E
Turner Fluorometer - Don Anderson, BIO
Computers, A/D boards, LoPacs DAQ system, Tattletales, etc. - Gene Terray, AOP&E
CoastWatch remote sensing system - Don Anderson, BIO

In addition to the above list of project owned and maintained equipment, Barrie Walden's shipboard support group has acquired from NSF, shared used equipment which is maintained by the ship support group for use on NSF/UNOLS vessels. The person to contact about the possible load of this equipment is Barrie Walden.

Generally Mounted on Large Ships:

Acoustic Doppler Current Profilers (OCEANUS and KNORR)
Bathymetric Recorders
Hull Mounted Transducers - - 3.5 kHz, 12 kHz
XBT Systems (Deck units, launchers, control computers/data loggers)
Ashtech 3DF GPS
Satellite communications (ATS on KNORR and ATLANTIS II), basic equipment for voice and data transmission.
Ship Parameters data logging and display systems (time, ship speed, heading, meteorological sensors, surface water sensors, and position via transit satellites, OMEGA, Loran-C, GPS)
Long-Baseline Acoustic Navigation Systems
Pingers and Tracking Transponders
Portable Laboratory Vans
Radioisotope Vans
Water Purification/Deionization Systems

More Portable Equipment:

Basic Level 1 CTD systems (Neil Brown, Sea Bird SeaCat)
Water Sampling Equipment :
Rosettes
Niskin bottles
Messengers
Reversing Thermometers and frames)
Sediment Sampling Equipment:
Standard Piston corer
Large diameter gravity corer
Dredges
Box Corers
Refrigerators and freezers
Laboratory Salinometers
Oxygen Titration Equipment
Nutrient Analysis Equipment

(CoOP continued)

Recently, the National Science Foundation has issued an announcement of opportunity for research related to air-sea chemical fluxes in the coastal ocean. (See next column). The CoOP steering committee selected this topic as one that need to be understood in order for future CoOP efforts to come to firm conclusions. The call is for a pilot-level effort, and proposals are due in Washington by January 15, 1994. Dr. Larry Clark of the National Science Foundation can be contacted for further information.

reference:

Brink, K.H., J.M. Bane, T.M. Church, C.W. Fairall, G.L. Geernaert, D.E. Hammond, S.M. Henrichs, C.S. Henrichs, C.S. Martens, C.A. Nittrouer, D.P. Rogers, M.R. Roman, J.D. Roughgarden, R.L. Smith, L.D. Wright, and J.A. Yoder, 1992. Coastal Ocean Processes: a Science Propsectus, Woods Hole Oceanographic Institution technical report WHOI-92-18, Woods Hole, Massachusetts, 103pp.

Grants / Sponsored Research

The National Science Foundation relocated to a new facility in Arlington, Virginia this fall. We list new telephone numbers and fax numbers below. E-mail addresses are unaffected by the relocation.

National Science Foundation
Dr. Michael R. Reeve
Section Head
Division of Ocean Sciences
Room 725
4201 Wilson Blvd.
Arlington, VA 22230
(703) 306-1585
Fax: (703) 306-0390
internet: <first name intial last name>@nsf.gov

Program Officers:
Oceanographic Technology and Interdisciplinary Coordination
Dr. H. Lawrence Clark (703) 306-1584
Biological Oceanography
Dr. Phillip R. Taylor (703) 306-1587
Chemical Oceanography
Dr. Neil R. Andersen (703) 306-1589
Physical Oceanography
Dr. Richard B. Lambert (703) 306-1583
Marine Geology &Geophysics
Dr. Bilal U. Haq (703) 306-1586
Ship Operations
Ms. Emma R. Dieter (703) 306-1577
Oceanographic Instrumentation & Technology
Ms. Lisa L. Rom (703) 306-1578
Oceanographic Facilities
Dr. Richard West (703) 306-1579

Announcement of Opportunity:
Coastal Ocean Processes (CoOP) on Coastal Air-Sea Chemical Fluxes

Purpose: (exerpted from NSF Announcement 93-101)
"Proposals from U.S. scientists are requested to carry out an exploratory study addressing coastal air-sea fluxes. A mutually beneficial opportunity exists to coordinate the NSF/CoOP research effort with an ONR-sponsored Marine Boundary Layer Research Initiative planned for 1995. The ONR effort focuses on air-sea momentum fluxes and will emphasize physical processes, while the NSF/CoOP study may encompass biological and chemical oceanographic processes aimed at developing a mechanistic understanding of air-sea fluxes.

Coastal physics and meteorology affect the mutual structure of the atmospheric and oceanic boundary layer in fundamentally different ways. Better knowledge of how chemicals, especially biogenic gases, are exchanged between the coastal atmosphere and coastal ocean is central to most envisioned CoOP process and long-term investigations. The CoOP Steering Committee has acknowledged that making improvements in our ability to estimate these fluxes is a high research priority. Therefore, a field effort has been initiated to develop a quantitative, mechanistic understanding of how gases and other materials are transported between the coastal atmosphere and ocean. Additionally, efforts are recommended to develop quantitative estimates of parameters such as wind stress, sea state, aerosol concentrations, and precipitation as they affect the net flux of the gases and materials in question. It is particularly important to consider air-sea fluxes in a dynamic and seasonal context because of the non- equilibrium, highly variable conditions that characterize such regions".

Legal Basis: Governmental Agency
Eligibility:
U.S. citizens are eligible. The overall scientific project should be strongly interdisciplinary, with the NSF/CoOP efforts addressing chemical and biological parameters, while the ONR study focuses on physical oceanographic and meteorological parameters.
Financial Data:
Modest FY 1994 start-up support for this opportunity is anticipated in summer 1994. Current CoOP investigations are funded at about $1 million per year. A commensurate amount is anticipated in FY1995 to cover CoOP activities described in this announcement. Number of awards: a team of 6-10 chemical and biological investigators.
Application Information:
Proposals should be identified by entering "CoOP Air-Sea Flux" in the Program Announcement block of the cover page. Questions regarding proposal preparation should be directed to Lawrence Clark.
Deadline is January 15, 1994.

Publications:
"LaJolla CoOP Community Workshop in 1990", Continental Margins Workshop in 1990", "CoOP Science Prospectus", (from Dr. Kenneth Brink, WHOI, Woods Hole, MA 02543);
"ONR Marine Boundary Layer Initiative"
(from Dr. Gary Geernaert, ORN, Code 3222, 800 No. Quincy St., Arlington, VA 22217-5660).

Calendar

December

6-10 — American Geophysical Union Fall meeting
San Francisco, CA
contact: AGU editorial office (202) 462-6900

20 — GLOBEC Georges Bank Scientific Steering Committee, WHOI, Woods Hole, MA
contact: Dian Gifford (401)792-6690

January

10, 10:00 a.m. — **RARGOM meeting**
Clark, Room 5, Quissett Campus
Woods Hole Oceanographic Institution,
Woods Hole, MA
contact: Genie Braasch, Dartmouth College, (603) 646-3480

1:30 p.m. — Seminar with Donald Scavia and Peter Wiebe, speakers
Clark Auditorium, Quissett Campus
Woods Hole Oceanographic Institution,
Woods Hole, MA
contact: Genie Braasch, Dartmouth College, (603) 646-3480

11-12 — GLOBEC Georges Bank Scientific Steering Committee, Field Program Planning, WHOI
contact: Dian Gifford (401)792-6690

13, 10:00 a.m. — EMAP Acadian Province planning meeting
EPA Region 1 office, Boston, MA
contact: Barbara Brown (617) 565-3397

February

21-25 — AGU/ASLO Ocean Sciences Meeting
2 GLOBEC sessions are scheduled: modeling (Jim Eckman), and Georges Bank (David Mountain), San Diego, CA
CoChairs: ASLO: Polly Penhale, NSF (202) 357-894, AGU: Suzette Kimball, Univ. VA (804) 924-1455

March

15-18 — Marine and Estuarine Shallow Water Management in the Mid-Atlantic Region
Holiday Inn on the Boardwalk, Atlantic City, NJ
contact: Mr. Edward Ambrogio, U.S. EPA, (215) 597-3697

17-20 — Marine Benthic Ecology Meeting
Mystic Hilton, Mystic, CT
contact: Joyce Rodriquez, Univ. Conn., (203) 445-3466

25, 10:00 a.m. — **RARGOM meeting**
location to be determined
contact: Genie Braasch, Dartmouth College, (603)646-3480

April

6-9 — Institute on the Social, Economic, Political and Scientific Issues affecting the Gulf of Maine
Environmental Studies Program, Bowdoin College,
contact: Becky Koulouris, (207) 725-3628

12-13 — Habitat Workshop
Maine Dept. of Marine Resources, West Boothbay Harbor, ME
contact: David Stevenson, (207) 633-9530

May

19-20 — A Workshop on Environmental & Economic Evaluation of Coastal and Marine Resources
Wolfneck Conference Center, Freeport, ME
contact: Charlie Colgan, (207) 780-4430

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