

**DEPARTMENT OF COMMERCE****National Oceanic and Atmospheric Administration****National Science Foundation**

[Docket No. 981211301-8301-01; I.D. No. 122398A]

RIN 0648-ZA53

**Request for Proposals for the Global Ocean Ecosystems Dynamics Project**

**AGENCIES:** Coastal Ocean Program, National Oceanic and Atmospheric Administration, Commerce and the National Science Foundation.

**ACTION:** Supplemental Notification for financial assistance for project grants.

**SUMMARY:** The purpose of this notice is to advise the public that the NOAA Coastal Ocean Program (COP) and the National Science Foundation (NSF) are soliciting 5-year proposals for the Global Ocean Ecosystems Dynamics (GLOBEC) Project. This program is a federal research partnership with NSF - Directorate for Geosciences, Division of Ocean Sciences.

**DATES:** The deadline for proposals is April 15, 1999 by 3:00 pm, local time.

**ADDRESSES:** Submit the original and two copies of your proposal to Coastal Ocean Program Office (GLOBEC 99), SSMC#3, 9th Floor, Station 9700, 1315 East-West Highway, Silver Spring, MD 20910. NOAA Standard Form Applications with instructions are accessible on the following COP Internet Site: <http://www.cop.noaa.gov/cop-home.html>.

Specific information about the NEP Study, including descriptions and points of contact of presently funded GLOBEC NEP projects, can be obtained from the following address or homepage: U.S. GLOBEC Northeast Pacific Coordinating Office, Department of Integrative Biology, University of California, Berkeley, CA 94720-3140; Phone: 510-642-7452; Fax: 510-643-1142; Internet: [halbatch@socrates.berkeley.edu](mailto:halbatch@socrates.berkeley.edu) or <http://www.usglobec.berkeley.edu/nep/index.html>

**FOR FURTHER INFORMATION CONTACT:**  
Technical Information:

Dr. Elizabeth Turner, GLOBEC Program Manager, COP Office, 301-713-3338/ext 135, Internet: [Elizabeth.Turner@noaa.gov](mailto:Elizabeth.Turner@noaa.gov); or Dr. Phillip Taylor, NSF Division of Ocean Sciences, 703-306-1584, Internet: [prtaylor@nsf.gov](mailto:prtaylor@nsf.gov).

Business Management Information: contact Leslie McDonald, COP Grants Office, (301) 713-3338/ext 137, Internet: [Leslie.McDonald@noaa.gov](mailto:Leslie.McDonald@noaa.gov).

**SUPPLEMENTARY INFORMATION:****Background**

Research activities in the coastal Northeast Pacific (NEP) Ocean are supported by a number of organizations including the Division of Ocean Sciences (OCE), and the National Oceanic and Atmospheric Administration's (NOAA) Coastal Ocean Program (COP). NSF/OCE generally supports research projects focused on basic oceanographic and ecological processes and the study of natural systems. A component of NOAA's COP focus is directed toward developing tools and capabilities to improve ecosystem management. Environmental and resource management decisions are most appropriately based on knowledge gained from both basic and applied research.

Global Ocean Ecosystems Dynamics (U.S. GLOBEC) is a component of the U.S. Global Change Research Program, with the goals of understanding and ultimately predicting how populations of marine animal species (holozooplankton, fish and benthic invertebrates) respond to natural and anthropogenic changes in global climate. U.S. GLOBEC is also the U.S. component of the GLOBEC International program, a core project of the International Geosphere-Biosphere Program with co-sponsorship from the Scientific Committee on Oceanic Research and the Intergovernmental Oceanographic Commission.

This notice is under the auspices of the U.S. GLOBEC program within NSF/OCE and the regional ecosystem studies and U.S. GLOBEC initiatives of NOAA's COP. U.S. GLOBEC has identified ecosystem studies in the California Current System (CCS) and Coastal Gulf of Alaska (CGOA) as priorities for the next decade.

For complete Program Description and Other Requirements criteria, see COP's General Grant Administration Terms and Conditions initial notice in the Federal Register—63 FR 44237, August 18, 1998, and also at <http://www.cop.noaa.gov/cop-home.html>.

This notice requests proposals for:

- (1) process-oriented field studies in the CCS;
- (2) mesoscale surveys in the CCS;
- (3) long-term observation projects in the CCS;
- (4) modeling studies in the CCS and the CGOA; and
- (5) retrospective studies in the CCS and the CGOA.

It is anticipated that a similar announcement will be issued approximately 1 year from now requesting research proposals for NEP

studies in the CGOA, with field years in 2001 and 2003. In the event of a delay in the CCS program, the CGOA activities would be similarly delayed. Research Proposals For Field Work (Long-Term Observations, Mesoscale Surveys, Process-Studies) solely in the CGOA should not respond to this present notice.

To provide for long-term coordinated strategic planning of the NEP program in the CCS, proposals are being solicited now for all future U.S. GLOBEC research activities in the CCS. This includes process-study research in the two field phases of the CCS program. At this time, the major field process years are anticipated to occur in 2000 and 2002, contingent on the availability of funding. In the event that funding is insufficient to support a full field program in 2000, the field years will be delayed a year, occurring in 2001 and 2003, respectively.

In addition to soliciting research proposals for field work the U.S. GLOBEC CCS program in the NEP, this Notice is requesting proposals for modeling and retrospective analysis that augments or complements existing U.S. GLOBEC NEP efforts in these components. Modeling and retrospective proposals submitted in response to this Notice need not be CCS-specific, but those that are peripheral to the core activities in the CCS will have lower priority than those focusing on the CCS.

U.S. GLOBEC emphasizes studies on the biology/ecology of juvenile salmon, the euphausiids *Euphausia pacifica* and *Thysanoessa spinifera*, several large copepoda, and forage fishes (salmon prey) in coastal regions of the North Pacific and how these populations are controlled by climatically variable physical forcing, especially at large to meso-scales. Several other national and international programs will examine similar ecosystems and processes, and proposers should be aware of these ongoing and planned efforts.

The Pacific component of Canada GLOBEC is conducting similar ecosystem studies on La Perouse Bank off the western coast of Vancouver Island; the NOAA-sponsored Pacific Northwest Coastal Ecosystems Regional Study program is carrying out studies on near shore and estuarine processes related to the estuarine phase of salmon life history in the U.S. Pacific Northwest (1998-2001); the California Cooperative Oceanic Fisheries Investigations (CalCOFI) Program is in its fifth decade of study on fish and zooplankton populations off the coast of southern California. The North Pacific Marine Science Organization Climate Change

and Carrying Capacity (CCCC) Program emphasizes comparative studies of ecosystems along the continental margins of the north Pacific, examining all trophic levels, but with special emphasis on salmon. U.S. GLOBEC's studies in the Northeast Pacific region are an integral part of the pan-North Pacific CCCC effort.

In addition to these ongoing studies, the Coastal Ocean Processes (CoOP) program plans studies for 2000 and 2001 in a strongly, wind-driven region of the CCS, at a specific site still to be determined. These national and international investigations and others (such as the recently begun, salmon-sampling program in the Columbia River plume and adjacent waters, funded by the Bonneville Power Authority [BPA]) complement the studies being done and the research planned by U.S. GLOBEC in the NEP. They provide a unique opportunity for both regional and inter-regional comparisons and the evaluation of large-scale climatic influences (e.g., the El Nino and Southern Oscillation) on several pan-North Pacific species (e.g., salmon and *Euphausia pacifica*).

The U.S. GLOBEC Northeast Pacific Implementation Plan (U.S. GLOBEC, Report No. 17) was developed following several community-wide meetings at which U.S. scientists from the oceanographic and fisheries communities identified key scientific issues and research prospectuses for the NEP. The overall objectives of the U.S. GLOBEC program are described in the U.S. GLOBEC Initial Science Plan (Report No. 1). Background information pertinent to the Northeast Pacific is found in U.S. GLOBEC, Report Nos. 7, 11, 15 and 16. This GLOBEC report provides the most up-to-date guidance about the NEP program and supplements and, to a limited extent, supplants all earlier documents.

Investigators who plan to submit proposals in response to this announcement should refer first to this GLOBEC notice, and secondarily to the Northeast Pacific Implementation Plan (U.S. GLOBEC, Report No. 17). Copies of these documents are available from the following address or homepage:

U.S. GLOBEC Coordinating Office, Center for Environmental and Estuarine Studies, the University of Maryland System, Chesapeake Biological Laboratory, P.O. BOX 38, Solomons, MD 20688; Phone: 410-326-7289; Fax: 410-326-7318; Internet:

fogarty@cbl.cees.edu, or <http://cbl.umces.edu/fogarty/usglobec/>

The recommendations contained in the U.S. GLOBEC, Report No. 17 present the rationale for a coordinated study in

the Northeast Pacific in two regions: the CGOA and the CCS, ranging from Washington to Central California. Critical to that rationale is the observation that the salmon production domains, both in the CGOA and CCS co-vary, but are out of phase. Field programs will alternate between the CCS and CGOA in successive years.

U.S. GLOBEC proposes to investigate this coupling and the biophysical mechanisms through which zooplankton and salmon populations respond to physical forcing and biological interactions in the coastal regions of the two gyres. This will be accomplished through a combination of modeling, retrospective data analysis, long-term observations (LTOP), mesoscale surveys, and focused field programs. This document solicits proposals for all components of the NEP program, with the exception of LTOP's, mesoscale surveys and process oriented field studies focused exclusively on CGOA. A future notice will request applications to support research on the CGOA activities outlined in previous paragraphs.

Proposals are currently requested for mesoscale surveys and process oriented field studies, and

- (1) to execute CCS field programs, including LTOPs, and
- (2) for retrospective data analysis and modeling in the NEP (both CCS and CGOA). Contingent on the availability of funds, mesoscale surveys and process oriented field studies will occur in the CCS in 2000 and in 2002.

Process oriented field studies in 2000 will focus on the effects of upwelling and cross-shelf exchange on the population dynamics of the target organisms north and south of Cape Blanco, OR. When feasible (when timing and geography overlap), parts of the field program may be carried out in close coordination with nearshore interdisciplinary studies of the effects of wind-driven transport conducted by the NSF-funded CoOP program slated to take place in 2000 and 2001.

Process-oriented studies in 2002 will focus on the effects of upwelling and three-dimensional mesoscale circulation on the population dynamics of the target species north and south of Cape Blanco. Biotic processes and interactions, including factors affecting primary production and predation processes, will be studied in both 2000 and 2002.

In the event that funding levels cannot support simultaneous studies north and south of Cape Blanco, it may be necessary to conduct studies north of the cape in 2000 and south of the cape in 2002. Proposals should consider

contingency plans to accommodate such changes.

The NEP CCS study is not restricted to the continental margin and shelf, but encompasses also the processes and phenomena of the larger oceanic boundary region that affect the CCS. U.S. GLOBEC began funding activities in the NEP in 1997. The initial phases of this inter-agency research program have supported integrated, multi-investigator, inter-disciplinary programs of modeling, retrospective analysis, and pilot-scale monitoring (henceforth referred to as LTOP. Proposers are advised to refer to the preliminary results from these programs (see <http://www.usglobec.berkeley.edu/nep/index.html>) prior to preparation of new proposals.

Ultimately, the U.S. GLOBEC effort in the NEP has an overall goal of improving predictability and management of living marine resources of the region through improved understanding of ecosystem interactions and the coupling between the physical environment and the living resources.

#### Program Goals

The overall goals of the GLOBEC Northeast Pacific program are: (1) To determine how biological processes and characteristics of zooplanktonic populations are affected by mesoscale features and dynamics in the Northeast Pacific; and

- (2) To quantify the biological and physical processes that determine growth and survival of juvenile salmon in the coastal zone.

Within these overall goals, the NEP/CCS process-oriented field program has four general goals:

- (1) To determine how changing climate, especially its impacts on local wind forcing and basin-scale currents, affect

spatial and temporal variability in mesoscale circulation and vertical stratification.

- (2) To quantify how physical features in the CCS impact zooplankton biomass, production, distribution, and the retention and loss of zooplankton from coastal regions, with particular emphasis on the euphausiids *Euphausia pacifica* and *Thysanoessa spinifera* and *calanoid copepods*, and how these, in turn, influence the distributions of higher trophic levels.

- (3) To quantify the impacts of, first, primary and secondary production, second, intensity and effectiveness of upwelling, third, cross-shelf transport associated with wind-driven upwelling, and fourth, variability in the timing of the spring transition, on controlling

juvenile salmon growth and survival in the coastal zone of the CCS.

(4) To determine the extent to which high and variable predation mortality on juvenile coho and chinook salmon in the coastal region of the California Current is responsible for large interannual variation in adult salmon populations, and the factors responsible for the variable predation intensity.

Toward these ends, the Northeast Pacific field program has been structured to 2 years of intensive study (2000 and 2002) in the CCS. The geographic domain of the study extends from approximately Newport, OR, to approximately Eureka, CA, and encompasses two different physically forced regimes as described in previous U.S. GLOBEC reports (Report Nos. 11 and 17).

Three dimensional mesoscale surveys (through ship, drifter, mooring and satellite observations) and process oriented field studies will be conducted over a 7-month period (around March through September) in each of the two intensive, process-study years. LTOP observations will continue during the "off" years 1999, 2001, and 2003.

During field years, the LTOP program will include mesoscale surveys of physical conditions and biological distributions in spring and fall. The surveys will provide the short-term spatial context for the process oriented field studies and will provide three-dimensional data to supplement the predominantly two-dimensional LTOP data.

U.S. GLOBEC process-oriented field research will focus on target species chosen to represent key elements of the marine ecosystem in the northern part of the CCS. These are the euphausiids *Euphausia pacifica* and *Thysanoessa spinifera*, calanoid copepods, and juvenile coho and chinook salmon. A broader suite of species may be the focus of modeling and retrospective studies as described in Table 4 of the U.S. GLOBEC, Report No. 17, page 26.

The primary focus of process oriented field studies will be on:

(1) Physical (e.g., stratification intensity; timing of the spring transition; intensity of upwelling) and biological (e.g., prey and predator abundance and distributions) factors influencing the population dynamics and vital rates of juvenile salmon and other target taxa (euphausiids, copepods) in the coastal region;

(2) Retention and loss of populations of target species, as impacted by mesoscale circulation and cross-shelf transport into

the coastal jet off Oregon/No. Calif. (loss) or maintenance in the coastal upwelling zone (retention); and

(3) Comparison of these processes (1,2) north and south of Cape Blanco, Oregon.

### Structure of the CCS Research Program

The NEP Study will comprise of five major components:

- (1) Long-term observation programs (LTOP),
- (2) Mesoscale surveys,
- (3) Process-oriented field studies,
- (4) Modeling investigations, and
- (5) Retrospective/comparative analysis.

The large range of spatial and temporal scales of important forcing processes and responses in the NEP requires a nested sampling approach (and some associated tradeoffs), which is reflected in the descriptions of the long-term observation programs, mesoscale surveys, and process-studies listed here.

### Long-Term Observation Programs

LTOP have already been established by U.S. GLOBEC at two NEP sites: the first along the Gulf of Alaska (GAK) transect extending offshore from Seward, AK, and, the second, along several offshore extending transects off Newport and Coos Bay, OR. In both regions, the programs are sampling ocean physics, nutrients, and biology at approximately bimonthly intervals (both projects are described on the NEP web site).

GLOBEC is an ecosystem program that focuses on zooplankton and juvenile salmon in the NEP, but we encourage sampling of phytoplankton and nutrients as well. The LTOPs provide the fundamental seasonal description of the physical, chemical and biological environment that is required to complement the mesoscale surveys and process oriented field studies.

Moreover, U.S. GLOBEC LTOPs, in conjunction with observations at other sites by other programs (Canada GLOBEC, CalCOFI, Ocean Carrying Capacity) will document the low-frequency, large amplitude signals (e.g., regime shifts, El Ninos) that occur at the largest spatial scales in the Pacific. LTOPs are primarily two-dimensional (2-D) cross-shelf descriptions, which may miss important spatial features and processes of the marine ecosystem.

Mesoscale surveys (described here) conducted twice (spring and fall) during process-study years will provide the spatially resolved three-dimensional data required to evaluate how well local LTOP data generalize to a broader region. Data from the mesoscale surveys

will be used to bridge the gap between the low spatial, but annual and long-term coverage of the LTOPs, and the intensive, but spatially limited process studies.

LTOP projects may make use of multi-disciplinary moorings, long-term drifter deployments, and analysis of satellite data, in addition to seasonal ship observations. There is a continuing need for long-term mooring-based and drifter-based observations and interpretation of regional satellite data, that provide the broadest temporal (moorings, drifters) and spatial (satellites) resolution and coverage. This notice solicits proposals to conduct core LTOP observations in regions both north and south of Cape Blanco. Projects proposing to conduct LTOP observations north of Cape Blanco should consider existing LTOP programs in place.

There is presently no LTOP program for the region between Cape Blanco and Eureka, CA. We seek proposals to undertake core LTOP studies at two or more transects between Cape Blanco and Eureka, CA.

Present and prospective U.S. GLOBEC LTOP programs should consider (1) how they meet future U.S. GLOBEC needs, particularly for process oriented field studies, and (2) how they mesh into the larger framework of a coastwide network of programs undertaking repeated observations of ocean physics and biology at all trophic levels.

Moreover, potential LTOP projects should contact the principals of existing LTOP projects to ensure that methodologies are comparable (see the NEP web site) among all of the LTOP sites.

### Three-Dimensional Mesoscale Surveys

Ship surveys are needed to determine the distribution and abundance of the target species in relation to their physical environment during the period of euphausiid recruitment and juvenile salmon entry into the ocean (March to September). This period encompasses the spring-transition in the CCS, the initiation of upwelling and its ramifications for production, and the period of ocean entry by juvenile salmon and their first summer of growth.

Spatially, the ship-based mesoscale sampling should encompass both the nearshore upwelling region and the coastal jet that ultimately carries a large portion of the flow of the CCS. High priority will be given to proposals that would survey a region extending from approximately Newport, OR, to Eureka, CA, i.e., about 500 km along shore, and extending from nearshore to 100 km (perhaps more south of Cape Blanco,

where the jet meanders further from shore).

The fundamental objective of the mesoscale studies is to provide the basis for comparisons of population processes and their coupling to the physical structure and variability of the environment and to examine these processes in the two regimes separated by Cape Blanco, OR. The mesoscale studies will provide a regional context for the *in situ*, process oriented field studies (described here) and provide further data to evaluate the environment for juvenile salmon. Mesoscale studies will complement and be complemented by LTOP characterizations and descriptions of the physical and biological conditions of the nearshore and offshore ocean environment. Surveys will provide data required to evaluate coupled circulation-ecosystem models being developed for the NEP study sites and for assimilation of data into these models.

Presently, the Oregon LTOP effort samples Coos Bay and Newport lines 5 times per year. It is anticipated that the mesoscale surveys will be conducted at a given site only in years of process-studies and that only two mesoscale surveys per year focused on critical periods in the life history of the target species (spring and fall) will be done. Mesoscale surveys in spring and fall will augment, and must coordinate with, spring and fall LTOP observations.

#### *Salmon Sampling*

Sampling of juvenile salmon (trawling) in the region extending from Newport, OR, to Eureka, CA, is a critical addition to the CCS component of the NEP program since salmon are a target species of the program. Salmon sampling in this region will complement existing efforts to describe salmon abundance, distribution, and condition in the vicinity of the Columbia River plume by the Bonneville Power Authority (BPA), in British Columbia (Canadian GLOBEC) and by NMFS programs further south (Gulf of Farallones) and north (SE Alaska, Auke Bay, and off Prince William Sound).

Proposals are requested that will provide spatial descriptions of juvenile coho and chinook salmon and their forage prey in this region at the time of ocean entry (approximately April through May) and at the end of the first summer in the ocean (approx. September).

These collections would also be useful for examining:

(1) Trophic relationships in the nearshore ecosystem, and (2) Genetic structure/stock identity of the

salmonids. Highest priority will be given to salmon sampling in the field during process-study years, but, contingent on the availability of funding and perceived program needs, salmon sampling in "off" years might be supported as well. Investigators proposing to sample juvenile salmon in Oregon and Northern California should coordinate sampling plans/gear with both the CGOA salmon sampling effort and other juvenile salmon trawling efforts on the west coast (e.g., NMFS research).

#### *Process oriented field studies*

Earlier U.S. GLOBEC reports (Reports Nos. 7, 11) provide the rationale for conducting ecosystem studies in coastal regions both north and south of Cape Blanco—primarily because of regional differences in seasonality and intensity of the physical forcing. For example, mesoscale activity is much more pronounced south of Cape Blanco than further north. Mesoscale features are important to biological processes in many regions (e.g., Arabian Sea from recent Joint Global Ocean Flux Study (JGOFS) results and are likely to be very important in the CCS. Detailed investigations of mechanisms linking biological response to physical forcing at the mesoscale and other scales will be accomplished in process-study cruises.

Specifically, the physical and biological processes that control the population dynamics of the target species will be examined in process oriented field studies. The northern CCS region has, as its main features, a nearshore zone of moderate coastal upwelling, which is strongest in spring and summer, and offshore, a relatively narrow jet that, south of Cape Blanco, represents a substantial proportion of the southward transport of the CCS. Biological populations entrained in this highly advective jet, with surface velocities exceeding 40 cm/sec, are transported rapidly southward. As wind-driven upwelling intensifies early in the year, the upwelling region expands and the jet tends to move further offshore.

The three-dimensional, time-dependent circulation is understood conceptually but not in detail. The exchange of physical and biological properties across the frontal zones associated with both the nearshore upwelling and offshore jet regions can influence the supply of nutrients for primary production, the retention (loss) of the target species and their prey in (from) the coastal zone, and interactions between the target species, their prey, and their predators.

Cross-frontal exchange is influenced by physical processes that determine the location, deformation, and movement of the front, including tides, winds, seasonal heating/cooling, and offshore forcing, and by biological characteristics and behavior that may enhance or minimize exchange. Fronts often are regions of aggregation for marine plankton, both because of such physical processes as divergence or convergence and of such biological responses as enhanced production or behavior (i.e., depth-keeping swimming).

Such aggregations of plankton may provide an enhanced food source for predators, including juvenile salmon. Fine-scale description of the physical and biological fields comprising fronts may reveal aggregations of phytoplankton and zooplankton associated with specific physical (e.g., density, temperature) structures. Determination of the population structure of target organisms within the study area is further identified as an area of critical research.

It is recognized that, because of the movement and migratory patterns of juvenile salmon and consideration of their current low abundance, process oriented field studies of chinook and coho salmon may require work outside the region from Newport, OR, to Eureka, CA, to ensure success. Proposals that focus in geographical locations outside the principal study area should closely consider the availability of complementary sampling programs (e.g. BPA funded monitoring in the Columbia River plume) to provide a broader geographical context for their studies. Proposers seeking additional contact information concerning related NEP programs should contact the U.S. GLOBEC Northeast Pacific Coordinating Office at the address earlier in this document.

Questions to be addressed by process oriented field studies in the CCS include:

(1) What is the time-dependent three-dimensional circulation associated with the nearshore upwelling zone, the offshore jet, and the fronts associated with these features in the CCS?

(2) How do mesoscale transport processes affect the recruitment, vital rates, and other measures of population dynamics of the target species?

(3) What are the exchange rates, due to frontal processes, of water properties and the target species between the upwelling zone and the offshore jet? What are the consequences for individual and population growth rates of these exchanges?

(4) How do biological and physical processes interact to control cross-shelf exchange of target organisms?

(5) Does frontal movement (e.g., seasonal expansion of the nearshore upwelling region) influence the exchange of water and organisms across fronts?

(6) How does distribution, growth and survival of juvenile coho and chinook salmon depend on the timing and intensity of coastal upwelling, availability and distribution of their prey, and alternative prey for juvenile salmon predators?

(7) How are salmon distributed in relation to mesoscale physical features, and what are the mechanisms responsible for the observed patterns?

(8) What are the dominant predators, and what are their feeding rates and impacts on juvenile salmon during the period they sit the coastal zone of the CCS?

#### Modeling

The research conducted during the CCS study will result in a significant archive of data concerning abundance and distribution of the target species, source regions, vital rates, and trophic interrelationships. Also expected are specific estimates of population dynamics parameters arrived at by inverse modeling. These archives and tools will provide significant opportunities for hypothesis testing concerning biophysical processes.

The program is expected to progress toward a data-assimilative capability, wherein LTOP and mesoscale survey data are incorporated into coupled biophysical models. In addition, process-oriented model studies are encouraged.

Finally, the forthcoming U.S. GLOBEC studies of euphausiids, copepods, and salmon in the CGOA, provide an opportunity for larger (basin) scale modeling of coupled biological/physical dynamics. Studies of *Calanus* across the North Atlantic and of *Euphausia superba* in the Southern Ocean provide opportunities for broader, global-scale comparisons of biophysical/population dynamics among congeners.

This document solicits additional modeling proposals that complement existing projects (described on the GLOBEC NEP web site), that provide additional breadth to the program by examining responses at additional trophic levels, and that explore processes in other targeted regions of the northeast Pacific.

Proposals responding to this request for additional modeling activities in the NEP may deal with the CGOA, the CCS,

or both. Priority will be given to projects that complement or significantly augment ongoing modeling efforts—for example, evaluating the impact of other prey (e.g., forage fish) on salmon survival and distribution.

#### Retrospective/Comparative Analysis

The first notification for NEP studies in the U.S. GLOBEC program resulted in the funding of eight retrospective projects. Abstracts of these projects are available in U.S. GLOBEC News, No. 12 and on the NEP web site. Projects proposing retrospective analysis should document or address population variability of key species (see U.S. GLOBEC, Report No. 17) in NEP ecosystems on several different time and space scales. These studies should also examine linkages between physical and biological processes on these different scales. Previous U.S. GLOBEC reports (see especially U.S. GLOBEC Report, Nos. 11 and 15) review some of the kinds of data sets and research approaches suitable for examining links between climate variability, ocean physics and marine animal populations in the NEP.

Retrospective analysis may include:

(1) Examination of historical records (e.g., fish scales or other hard parts in marine sediments) of population abundances of fishes and other species to document effects of oceanic variability on population abundance,

(2) Documentation of decadal, interannual and perhaps geographical variability in individual growth of juvenile salmon and prey species as recorded in fish scale circuli and otoliths, and

(3) Molecular analysis of archival collections of key species to estimate historical patterns of spatial and temporal genetic variability.

NEP retrospective analysis should attempt to test the core GLOBEC NEP hypotheses relating to the linkage between climate and ocean variability and population variability. Other research approaches and examinations of other existing data sets may be appropriate for retrospective examination provided that they address the critical NEP GLOBEC mandates emphasized in this document.

U.S. GLOBEC's phase III research in the Northwest Atlantic (1999 process studies) also focuses on cross-frontal exchange and provides opportunities for comparative investigations of cross-frontal exchange between the two systems (CCS and Georges Bank). Moreover, the CCS ecosystem is one of many eastern boundary current ecosystems (Benguela, North Africa, Humboldt) with which comparisons

could be made. Similarly, the predominantly downwelling, buoyancy-driven coastal ecosystem of the CGOA could be compared with similar ecosystems across the globe.

#### Part I: Schedule and Proposal Submission

The guidelines for proposal preparation provided here are mandatory. Proposals received after the published deadline or proposals that deviate from the prescribed format will be returned to the sender without further consideration. This announcement and additional background information will be made available on the COP home page on the World Wide Web at <http://www.cop.noaa.gov/cop-home.html>.

This opportunity is open to all interested, qualified, non-federal, and Federal researchers. Non-NOAA federal applicants will be required to submit certifications or documentation which clearly show that they can receive funds from the Department of Commerce (DOC) for this research. Foreign researchers must subcontract with U.S. proposers. Non-federal researchers should comply with their institutional requirements for proposal submission. DOC requirements will prevail if there is a conflict between DOC requirements and institutional requirements. Non-federal researchers affiliated with NOAA-University Joint Institutes should comply with joint institutional requirements. Proposals deemed acceptable from Federal researchers will be funded through NOAA via a mechanism other than a grant or cooperative agreement; non-federal awardees will be funded through their joint institutes, as appropriate, or through a grant from NOAA or NSF. Proposals selected for NSF funding will be required to submit additional forms and paperwork for grants processing directly to NSF.

#### Full Proposals

Proposals submitted to this announcement must include the original and two unbound copies of the proposal. Investigators are not required to submit more than three copies of the proposal; however, the normal review process requires twenty copies. Investigators are encouraged to submit sufficient proposal copies for the full review process if they wish all reviewers to receive color or high-resolution graphics, unusual-sized materials (not 8.5 x 11"), or otherwise unusual materials submitted as part of the proposal. Facsimile transmissions and electronic mail submission of full proposals will not be accepted.

### Required Elements

All recipients are to closely follow the instructions and guidelines in the preparation of the standard NOAA Application Forms and Kit requirements listed in paragraph under Part II: Further Supplementary Information. Each proposal must also include the following eight elements:

(1) Signed Summary title page—The title page should be signed by the Principal Investigator (PI) and the institutional representative. The Summary Title page identifies the project's title starting with the acronym GLOBEC, a short title less than 50 characters), and the lead PI's name and affiliation, complete address, phone, FAX, and E-mail information.

(2) One-page abstract/project summary—An abstract must be included and should contain an introduction of the problem, rationale, scientific objectives and/or hypotheses to be tested, and a brief summary of work to be completed. The abstract should appear on a separate page, headed with the proposal title, institution(s), investigator(s), total proposed cost, and budget period.

(3) Statement of work/project description—The first section of the Project Description must be a Statement of Work for Year One, followed by a section of Relevant Results from Prior Support (not to exceed five pages). The remainder of the Project Description is as follows: The proposed project must be completely described, including identification of the problem, scientific objectives, proposed methodology, relevance to the overall goals of the GLOBEC NEP program, and its scientific priorities.

Project management should be clearly identified with a description of the functions of each principal investigator within a team. It is important to provide a full scientific justification for the research; do not simply reiterate justifications presented in this notice. The project description section (including Relevant Results from Prior Support,) should not exceed 15 pages.

Both page limits are inclusive of figures and other visual materials, but exclusive of references and milestone chart. This section should also include:

(a) the objective for the period of proposed work and its expected significance;

(b) the relation to the present state of knowledge in the field and relation to previous work and work in progress by the proposing principal investigator(s);

(c) a discussion of how the proposed project lends value to the overall GLOBEC NEP program goals, and

(d) potential coordination with other investigators.

(e) References cited—Reference information is required. Each reference must include the name(s) of all authors in the same sequence in which they appear in the publications, the article title, volume number, year of publications, and page numbers. While there is no established page limitation, this section should include bibliographic citations only and should not be used to provide further annotated information outside the 15-page project description.

(4) Milestone chart—Time lines of major tasks covering the duration of the proposed project up to 60 months.

(5) Budget—Applicants must submit the Facesheet, Standard Form 424 (Rev 7-97), "Application for Federal Assistance", to indicate the total amount of funding proposed for the whole project period. Proposals must also include annual budgets which correspond with the descriptions provided in the statement of work. Therefore, applicants are also required to submit the Standard Form 424A (Rev 7-97), "Budget Information - Non-Construction Programs" in order to provide a detailed budget for fiscal year increments (1999, 2000, . . . 2003).

Include a budget narrative/justification to support all proposed budget object class categories. Note that for multi-year project periods, the out-year budget estimates are to be included in Section E, page 2, on the Standard Form 424A. These forms are included on the COP website listed under Part II, section (10) Application Forms and Kit. The program office shall review the proposed budgets to determine the necessity and adequacy of proposed costs for accomplishing the objectives of the proposed grant.

NSF requires information on ship requirements in order to schedule time on University-National Oceanographic Laboratory System (UNOLS) vessels. Ship requirements and costs do not need to be included on the budget forms SF 424 or SF 424A, but must be separately identified to NSF by submitting a NSF-UNOLS Ship Time Request Form (available from UNOLS Office, University of Rhode Island, P.O. Box 392, Saunderstown, RI 02874, Telephone:

(401) 874-6825, Fax: (401) 874-6486, and email address: unols@gsosun1.gso.uri.edu.

The form is included as Appendix A of "Instructions for Preparation of Proposals Requesting Support for Oceanographic

Facilities", NSF 94-124. The form is also available via the UNOLS web site

at <http://www.gso.uri.edu/unols/ship/shiptime.html>. Paper copies may be requested from UNOLS, but the electronic version is strongly preferred for ease of information exchange and processing. If no ship time is required, submit the UNOLS form and indicate that no shiptime is required.

(6) Biographical sketch—Abbreviated curriculum vitae, two pages per investigator, are sought with each proposal. Include a list of up to five publications most closely related to the proposed project and up to five other significant publications. A list of all persons (including their organizational affiliation), who have collaborated on a project, book, article, or paper within the last 48 months should be included in alphabetical order. If there are no collaborators, this should be so indicated. Students, post-doctoral associates, and graduate and postgraduate advisors of the PI should also be disclosed. This information is used to help identify potential conflicts of interest or bias in the selection of reviewers.

(7) Current and pending support—NSF requires information on current and pending support of all proposers. Describe all current and pending support for all PIs, including subsequent funding in the case of continuing grants. A model format is available on NSF Form 1239, available at <http://www.nsf.gov/cgi-bin/getpub?99form1239>. This form is part of the NSF Grant Proposal Guide and Proposal Forms Kit. Use of this form is optional; however, the categories of information included on the NSF Form 1239 must be provided.

All current support from whatever source (e.g., Federal, state or local government agencies, private foundations, industrial or other commercial organizations) must be listed. The proposed project and all other projects or activities requiring a portion of time of the PI and other senior personnel should be included, even if they receive no salary support from the project(s). The total award amount for the entire award period covered (including indirect costs) should be shown as well as the number of person-months per year to be devoted to the project, regardless of source of support.

(8) Proposal format and assembly—Clamp the proposal in the upper left-hand corner, but leave it unbound. Use one inch (2.5 cm) margins at the top, bottom, left and right of each page. Use a clear and easily legible type face in standard 12 points size. Print on one side of the page only.

## Part II: Further Supplementary Information

(1) Program Authorities: 33 U.S.C. 1121; 33 U.S.C. 883a *et seq.* 33 U.S.C. 1442; 16 U.S.C. 1456c; and the National Science Foundation Act of 1950, as amended (42 U.S.C. 1861-75)

(2) Catalog of Federal Domestic Assistance Numbers: 11.478 for the Coastal Ocean Program; and 47.050 for the National Science Foundation.

(3) Program Description: See initial COP General Notice—63 FR 44237, August 18, 1998.

(4) Funding Availability: Funding is contingent upon receipt of fiscal years 1999 - 2003 federal appropriations. The anticipated maximum annual funding for NEP GLOBEC activities is approximately \$6 to \$8 million, which may not occur until 2001; until then the program expects increments from its current level of approximately \$2.5 million per year. Of the annual total, approximately half will be devoted to CCS activities, and half to CGOA research.

If an application is selected for funding, NSF and NOAA have no obligation to provide any additional prospective funding in connection with that award in subsequent years. Renewal of an award to increase funding or extend the period of performance is at the total discretion of the funding agencies. Not all proposals selected will receive funding for the entire duration of the CCS program. Moreover, start dates for some proposals may be delayed, or proposals may be funded for the second of the two field years only. Proposals selected for funding by NSF must comply with NSF grants administration requirements for any additional budget forms required by that agency. Publication of this announcement does not obligate any agency to any specific award or to obligate any part of the entire amount of funds available.

(5) Matching Requirements: None.

(6) Type of Funding Instrument: Project grants

(7) Eligibility Criteria: Opportunity is extended to universities, colleges, junior colleges, technical schools, institutions, laboratories, and non-profit organizations. Non-federal researchers should comply with their institutional requirements for proposal submission. Federal researchers in successful multi-investigator proposals will be funded through NOAA as NSF does not normally support research or education activities by scientists, engineers, or educators employed by Federal agencies or Federally Funded Research and Development Centers (FFRDCs).

(8) Award Period: Full Proposals can cover a project period from 1 to 5 years, i.e. from date of award for up to 60 consecutive months. Multi-year project period funding may be funded incrementally on an annual basis. For NOAA awards, each annual award shall require a Statement of Work that can be easily separated into annual increments of meaningful work which represents solid accomplishments if prospective funding is not made available, or is discontinued.

(9) Indirect Costs: If indirect costs are proposed, the following statement applies: The total dollar amount of the indirect costs proposed in an application must not exceed the indirect cost rate negotiated and approved by a cognizant Federal agency prior to the proposed effective date of the award.

(10) Application Forms and Kit: When applying for financial assistance under this announcement, applicants will be able to obtain a copy of the Federal Register announcement and a standard NOAA Application Kit from the COP home page at the following World Wide Web address: <http://www.cop.noaa.gov/cop-home.html>. If you are unable to access this information, you may also call COP at (301) 713-3338, extension 116 to leave a mail request.

The Standard Forms 424 (Rev July 1997) Application for Federal Assistance; 424A (Rev July 1997); Budget Information - Non-Construction Programs; and 424B (Rev July 1997) Assurances - Non Construction Programs, shall be used in applying for financial assistance. In addition, Forms CD-511, Certifications Regarding Debarment, Suspension and Other Responsibility Matters; Drug-Free Workplace Requirements and Lobbying; CD-512, Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transactions and Lobbying (this certification is to remain with the recipient and is not forwarded to the Grants Officer); and SF-LLL, Disclosure of Lobbying Activities, if applicable.

(11) Project Funding Priorities: Priority consideration will be given to a set of proposals that provide balanced coverage of the overall goals of the GLOBEC Northeast Pacific program and avoid substantial duplication of completed or ongoing work.

(12) Evaluation Criteria: Consideration for financial assistance will be given to those proposals that address one or more of the overall GLOBEC NEP program goals listed above and meet the following evaluation criteria:

(a) Scientific Merit (20 percent): Intrinsic scientific value of the subject and the study proposed.

(b) Relevance (20 percent): Importance and relevance to the overall goals of the GLOBEC NEP program and to the process oriented field program goals listed above.

(c) Methodology (20 percent): Focused scientific objective and strategy, including measurement strategies and data management considerations; project milestones; and final products.

(d) Readiness (20 percent): Nature of the problem; relevant history and status of existing work; level of planning, including existence of supporting documents; strength of proposed scientific and management team; past performance record of proposers.

(e) Linkages (10 percent): Connections to existing or planned national and international programs; and partnerships with other GLOBEC participants, when appropriate.

(f) Costs (10 percent): Adequacy of proposed resources; appropriate share of total available resources; prospects for joint funding; identification of long-term commitments. (Matching funding is encouraged, but is not required.)

(13) Selection Procedures: All proposals will be evaluated and ranked individually in accordance with the assigned weights of the above evaluation criteria by (a) independent peer mail review and by (b) independent peer panel review. Both NOAA and non-NOAA experts in the field may be used in this process. The peer mail reviewers will be several individuals with expertise in the subjects addressed by particular proposals. Each mail reviewer will see only certain individual proposals within their area of expertise, and rank them individually on a scale of one to five, where scores represent respectively; excellent, very good, good, fair, poor.

The peer panel will be comprised of 4 - 8 individuals, with each individual having expertise in a separate area, so that the panel as a whole covers a range of scientific expertise. The panel will have access to the mail reviews of all proposals, and will use the mail reviews in discussion and evaluation of the entire slate of proposals. Each panel member will rank proposals on the scale of one to five, as above.

The program officer(s) will not vote as part of the independent peer panel. Those proposals receiving an average panel rank of fair or poor will not be given further consideration and will be notified of non-selection. For the proposals rated by the panel as either Excellent, Very Good, or Good, the NOAA GLOBEC Program Manager and



the NSF Biological Oceanography Program Director will first apply the project funding priorities listed in section 11; second, select the proposals to be recommended for funding; third, determine the total duration of funding for each proposal; and fourth, determine the amount of funds available for each proposal. Awards may not necessarily be made to the proposals scored highest by individual panel and/or mail reviews.

The NOAA GLOBEC Program Manager or the NSF Biological Oceanography Program Director or staff will notify lead proposers for those projects recommended for support, and negotiate revisions in the proposed work and budget. Final awards will be issued by the agency responsible for a specific project after receipt and processing of any specific materials required by the agency.

When a decision has been made (whether an award or declination), verbatim copies of reviews, excluding the names of the reviewers, and summaries of review panel deliberations, if any, are available to the proposer. No information directly identifying reviewers or other pending or declined proposals will be released.

(14) Other Requirements: See initial COP Notice—63 FR 44237, August 18, 1998, at the COP Internet Site: <http://www.cop.noaa.gov/cop-home.html>.

(15) This notification involves collections of information subject to the requirements of the Paperwork Reduction Act. The standard NOAA forms have been approved by the Office of Management and Budget (OMB) under control numbers 0348-0043, 0348-0044, 0348-0040 and 0348-0046. The NSF-UNOLS Ship Time Request Form and the NSF Form for Current and Pending Support have been approved by OMB as follows:

Proposals to NSF must include a one-page NSF-UNOLS Ship Time Request Form. The investigator is responsible for sending copies to the UNOLS office and ship operators. The form is included in Appendix A of "Instructions for Preparation of Proposals Requesting Support for Oceanographic Facilities" NSF 94-124. The form, also titled NSF Form 831 (Rev July 1992) has OMB clearance through September 1999 under control number OMB #3145-0058.

The form is also available via the UNOLS web site at <http://www.gso.uri.edu/unols/ship/shiptime.html>. Paper copies also may be requested from UNOLS, but the electronic version is strongly preferred for ease of information exchange and processing. The form has been available electronically since 1994. The NSF guidelines and ship time form were

included in the then-existing e-mail based Internet electronic dissemination system operated by NSF - Science and Technology Information System). The NSF Form 1239 (Oct 1998) for Current and Pending Support is cleared as part of the NSF Grant Proposal Guide and Proposal Forms Kit under OMB# 3145-0058 with an expiration date of September 1999.

Notwithstanding any other provision of law, no person is required to respond to, nor shall any person be subject to a penalty for failure to comply with a collection of information subject to the requirements of the Paperwork Reduction Act, unless that collection displays a current valid OMB control number.

Dated: March 4, 1999.

**Captain Ted I. Lillestolen,**

*Deputy Assistant Administrator for Ocean Service and Coastal Zone Management.*

Dated: March 2, 1999.

**G. Michael Purdy,**

*Director, Division of Ocean Sciences, National Science Foundation.*

[FR Doc. 99-5956 Filed 3-9-99; 8:45 am]

BILLING CODE 3510-22-F

## DEPARTMENT OF COMMERCE

### National Oceanic and Atmospheric Administration

[I.D. 030499A]

#### New England Fishery Management Council; Public Meetings

**AGENCY:** National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

**ACTION:** Notice of a public meeting.

**SUMMARY:** The New England Fishery Management Council (Council) is scheduling a public meeting of its oversight committee in March, 1999 to consider actions affecting New England fisheries in the exclusive economic zone (EEZ). Recommendations from this group will be brought to the full Council for formal consideration and action, if appropriate.

**DATES:** The meeting will be held on March 24, 1999.

**ADDRESSES:** The meeting will be held at the King's Grant Inn, Trask Road, Route 128, Exit 21N, Danvers, MA 01923; telephone: (978) 774-6800.

**FOR FURTHER INFORMATION CONTACT:** Paul J. Howard, Executive Director, New England Fishery Management Council (781) 231-0422.

*Council address:* New England Fishery Management Council, 5

Broadway, Saugus, MA 01906-1036; telephone: (781) 231-0422.

#### SUPPLEMENTARY INFORMATION:

##### Meeting Date and Agenda

*Wednesday, March 24, 1999, 10:00 a.m.*—Interspecies Committee Meeting

The committee will discuss the establishment of their priorities, preparation of draft Council comments on the Vessel Capacity Reduction Proposed Rule (vessel buyback regulations), initial committee discussion on managing fishing capacity and latent effort in New England fisheries, design of Council process to comply with the List of Fisheries Rule (64 FR 4030), initial discussion of possible changes to the fishing year for various fishery management plans.

Although other issues not contained in this agenda may come before this group for discussion, in accordance with the Magnuson-Stevens Fishery Conservation and Management Act, those issues may not be the subject of formal action during this meeting. Action will be restricted to those issues specifically listed in this notice.

##### Special Accommodations

This meeting is physically accessible to people with disabilities. Requests for sign language interpretation or other auxiliary aids should be directed to Paul J. Howard (see ADDRESSES) at least 5 days prior to the meeting dates.

Dated: March 4, 1999.

**Gary C. Matlock,**

*Director, Office of Sustainable Fisheries, National Marine Fisheries Service.*

[FR Doc. 99-5955 Filed 3-9-99; 8:45 am]

BILLING CODE 3510-22-F

## COMMISSION OF FINE ARTS

### Notice of Meeting

In a departure from our regular third-Thursday-of-the-month meetings, the next meeting of the Commission of Fine Arts is scheduled for Tuesday, 23 March 1999 at 10:00 AM in the Commission's offices at the National Building Museum (Pension Building), Suite 312, Judiciary Square, 441 F Street, N.W., Washington, D.C., 20001. Items of discussion will include designs for projects affecting the appearance of Washington, D.C., including buildings and parks.

Inquiries regarding the agenda and requests to submit written or oral statements should be addressed to Charles H. Atherton, Secretary, Commission of Fine Arts, at the above address or call 202-504-2200. Copies of the meeting's draft agenda are usually