Climate and Societal Interactions (CSI)
Coastal and Ocean Climate Applications (COCA) Fisheries and Climate Program

Program Mission

The Climate and Societal Interactions (CSI) Division supports projects to address the needs of decision makers planning and preparing for extremes (i.e., droughts, floods, and heat) in the context of their overall social and economic development objectives. The overarching goals of the CSI Program are the following:

1. Support for innovative, applicable and transferable approaches for decision making, especially for risk characterization in the context of a variable and changing climate;
2. Establishment of a network of regionally scoped, long-term efforts to inform climate risk management and decision making; and
3. Promotion of the transfer of climate knowledge, tools, products, and services within NOAA, across the federal government, nationally, and internationally.

CSI serves a unique role within NOAA and the Federal system by resourcing a space for interdisciplinary, applied research and capacity building that helps NOAA and its partners bridge the gap between science and the Nation’s economies and communities. This partnership brings together members of the external research community with NOAA Regional Climate Services Directors (RCSDs), other NOAA service Line Offices, and close external partners such as Regional Climate Centers, State Climatologists, Sea Grant and other U.S. Government agencies to help make weather and climate information and products relevant, accessible and actionable to people across the U.S.

CSI works to ensure alignment with the priorities of a number of Federal agency efforts such as the: National Climate Assessment; National Ocean Council; Global Framework for Climate Services initiative; the Weather Research and Forecasting Act (P.L. 115-25); and the growing local and regionally-focused information needs that influence agency investments in water, security, infrastructure, and economic resilience.

Since 2014, the Office of Oceanic and Atmospheric Research (OAR), Climate Program Office, through CSI’s COCA Fisheries and Climate program, and the National Marine Fisheries Service (NMFS), Office of Science and Technology, have partnered to support research that advances understanding of climate-related impacts on fish or other species that support economically important fisheries and fishing communities. The goal is to inform
sustainable fisheries management and promote resilience of the nation’s fish stocks and fisheries in a changing climate.

This partnership directly addresses priorities identified in the 2015 NMFS Climate Science Strategy (Strategy). The Strategy identifies seven objectives that are designed to meet the climate related research and information requirements needed to fulfill NMFS mandates. NMFS is working in collaboration with its partners and stakeholders to implement the Strategy in each region through Regional Action Plans. Projects funded under this funding opportunity will support actions called for in the Strategy and priorities identified in relevant Regional Action Plans.

Focus for FY20

Understanding Climate Impacts on Fish Stocks and Fisheries to Inform Sustainable Fisheries Management

[Note, there are additional coordinated solicitations through the Climate Variability and Predictability (CVP) Program and the Modeling, Analysis, Predictions and Projections (MAPP) Program. Please see these Programs’ Information Sheets for details.]

Funding for FY20

Pending availability of funds in FY2020, proposals may be up to 3 years with a budget of up to $500,000 per year. A total of three to four projects may be funded in up to four of the identified LMEs (California Current, Gulf of Alaska, Eastern Bering Sea, and Northeast U.S. Continental Shelf). COCA will collaborate with the NMFS Office of Science and Technology to fund projects from this competition.

Competition Information

Overview

Changing climate and oceans are affecting the nation’s valuable living marine resources (LMRs) and the people, businesses and communities that depend on them. From warming oceans and rising seas to droughts and ocean acidification, these impacts are expected to increase with continued changes in the planet’s climate system. There is much at risk. In the U.S.,

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1 Fourth National Climate Assessment, Oceans and Marine Resources chapter
https://nca2018.globalchange.gov/chapter/9/
ocean-related commercial fishing and recreational fishing and the seafood industry annually contribute approximately $212 billion in sales impacts, $100 billion to the gross domestic product (GDP), and support over 1.7 million full- and part-time jobs across the broader economy.² Coastal habitats help defend coastal communities from storms and inundation, and provide the foundation for tourism and recreation-based economies in many coastal communities. Climate-related information is needed to fulfill NOAA Fisheries mandates, and provide decision-makers with the information they need to reduce impacts and increase resilience to changing climate and ocean conditions.³

To meet these needs NOAA needs to strengthen climate-related science as it relates to marine ecosystems regionally and nationally. Climate process-oriented research is needed to better understand how climate impacts LMRs, how to reduce impacts and how to increase resilience of LMRs and LMR-dependent communities.

The Office of Oceanic and Atmospheric Research (OAR) Climate Program Office programs are uniquely positioned to advance climate science needs in support of fisheries and living marine resources, extending and complementing research at OAR Research Laboratories and NMFS Fisheries Science Centers via the engagement of the broader research community. In FY2020, the Climate Variability and Predictability (CVP) program, the Modeling Analysis Predictions and Projections (MAPP) program and the Coastal and Ocean Climate Applications (COCA) program are coordinating for a research initiative to address climate-marine ecosystem/fishery needs with the following three foci: process understanding (CVP), modeling and predictability (MAPP), and applied research to inform fishery management decisions (COCA).

**FY2020**

There is increasing concern about the impacts of climate variability and change on fish stocks, fisheries, and marine ecosystems in the U.S.⁴ Climate variability and change influence many parameters (e.g. extreme events, winds, ocean temperatures, stratification, currents, coastal precipitation, inundation, etc.) that directly and indirectly affect marine ecosystem conditions including the abundance, distribution, and productivity of fish stocks that support economically important fisheries.⁵ Sustainable fisheries management in a changing climate requires an improved understanding of how climate, fishing, and other

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stressors interact to affect fish stocks (including their habitats and prey), fisheries and fishing-dependent communities.\(^6\)

For FY20, COCA, in partnership with the NMFS Office of Science and Technology, is soliciting proposals for multidisciplinary projects to better understand the impacts of climate variability and change on marine ecosystems and implications for fish stocks, fisheries and the communities and economies that depend on them. COCA is specifically looking for projects that integrate climate, ecological, and socio-economic research and modeling efforts to evaluate the performance of fisheries management strategies under different climate and ocean scenarios and inform climate-resilient fisheries management. Project outcomes should promote regional collaboration across the science and management communities to provide information on future conditions, risks, and management strategies for use in fishery stock assessments and fisheries management decisions. [See the CVP and MAPP programs solicitations Information Sheets for related research opportunities]

COCA, in partnership with NMFS Office of Science and Technology, is looking to support projects focused on U.S. managed fisheries in the following **Large Marine Ecosystems (LMEs):** California Current LME, Gulf of Alaska LME, Eastern Bering Sea LME, and Northeast U.S. Continental Shelf LME. Projects that cross LME boundaries (e.g Northeast and Southeast, Gulf of Alaska and Eastern Bering Sea, etc.) are welcome.

Research projects should:

- Build on existing efforts/capabilities to develop a regionally focused, integrated climate, ecological, and socio-economic research and modeling system to evaluate the performance of fisheries management strategies and inform climate-resilient fisheries management.
- Provide climate-related data and information on timescales relevant to fisheries management decisions (e.g. stock assessments, habitat assessments, ecosystem assessments, and/or management plans/practices)
- Improve understanding of how climate variability and change, fishing pressure, and other stressors interact to affect fish stocks and the performance of fishery management strategies under current and future conditions.
- Investigate socio-economic impacts of climate variability and change on fisheries and fishery-dependant communities.
- Collaborate with and/or leverage relevant entities - NOAA Laboratories, Fisheries Science Centers, and Cooperative Institutes; Sea Grant; non-governmental organizations; academic institutions; state, tribal, and local governments; private sector organizations; other federal agencies (e.g. Department of the Interior, National Aeronautics and Space Administration); and non-U.S. government agencies (e.g. Fisheries and Oceans Canada).

Additional Information

Specifics about the Proposal
Proposals that can show that they are building on, but do not replicate, what is already known from the published literature about the proposed topic prove that the principal investigators (PIs) have a comprehension of the topic and that their proposed work will augment existing science and/or applications capacity.

Investigator Teams
Multidisciplinary teams of investigators are often best suited for addressing the complex issues related to climate, society and enhanced adaptation. Research projects should include representatives from relevant sectors of the community that would contribute to, and benefit from, the creation and development of such activities.

The proposal should include an explanation of the roles of the investigators and how the team will interact and integrate the multiple components. Investigators who will not be requesting funds for salaries must also be listed, along with their estimated time of commitment.

Leveraging and Partnerships
We encourage partnerships and collaborations between the researchers and relevant institutions - e.g. NOAA Laboratories, Fisheries Science Centers, and Cooperative Institutes; Sea Grant; non-governmental organizations; academic institutions; state, tribal, and local governments; private sector organizations; other federal agencies (e.g. Department of the Interior, National Aeronautics and Space Administration); and non-U.S. government agencies (e.g. Fisheries and Oceans Canada). Letters of support, or commitment, from partners are encouraged to accompany the proposals.

Matching funds and Cost-sharing
Cost, leveraging, and in-kind sharing of resources is encouraged and should be reported within the proposal.

Interaction with NOAA
Applicants whose proposals are chosen for funding will be expected to undertake an ongoing dialogue with the NOAA Climate Program Office, NMFS Office of Science and Technology, and relevant NOAA partners. Projects will be expected to submit annual reports and respond to periodic data and information requests.

Connecting Research Projects
Investigators of proposals selected via the CVP, MAPP, COCA Programs FY 2020 competitions on marine ecosystems research (as referenced above) will participate in a series of coordination and communication activities in order to share research methods and results, support collaboration and information exchange across proposals, and optimize the outcomes of this
joint initiative. Investigators may only apply to one of the three related CVP, MAPP and COCA competitions as Lead Project Investigators. Investigators may apply to more than one of the aforementioned competitions in secondary roles.
References

Websites:
- Coastal and Ocean Climate Applications Program http://cpo.noaa.gov/coca
- NOAA Next Generation Strategic Plan - http://www.ppi.noaa.gov/ngsp/

Reports and Papers:
**Data Archiving and Computational Resources**

*Responsible NOAA Official*
For questions regarding this guidance and for verifying accessibility of data produced by funding recipients, contact the competition manager: Adrienne Antoine (Adrienne.Antoine@noaa.gov).

**Data Accessibility**
NOAA requires public access to grant-produced data. The use of open-standard formats and methods for data sharing is encouraged. Applicants must describe their approach in the Data/Information Sharing Plan section of their application (see the CPO Federal Funding Opportunity for more information on this requirement). Below are examples of methods to enable public access to grant-produced data:

- Data are submitted to the NOAA National Centers for Environmental Information (NCEI), which will provide public access and permanent archiving.
- Data are to be submitted to one of the following relevant International Science Council (ISC) World Data System facilities: [https://www.icsu-wds.org/community/membership/regular-members](https://www.icsu-wds.org/community/membership/regular-members)
- Data are submitted to another NOAA facility (other than NCEI), which will operate a publicly accessible online data server for these data.
- An existing publicly accessible online data server at the funded institution is to be used to host these data.
- Data are to be submitted to a public data repository appropriate to this scientific domain.
- Funding recipients will establish their own data hosting capability.
- Proposal may request permission not to make data publicly accessible. The application should include a rationale for lack of public access, and if funded, approval will need to be obtained from the Responsible NOAA Official listed above.

*Resources*
Proposals should include the costs of data sharing or archiving in their budgets.