



## **Request for Proposals**

February 9, 2010

The Pelagic Fisheries Research Program (PFRP) sponsors research on pelagic fisheries to improve our understanding of pelagic ecosystems, and to provide the Western Pacific Regional Fishery Management Council (WPRFMC) with scientific information to support development of optimal management policies for fisheries for tunas and billfish in Hawaii, American Samoa, Guam, and Commonwealth of the Northern Mariana Islands. The PFRP is soliciting letters of intent to submit proposals to conduct research on pelagic fisheries in this region. The total funds to be awarded in 2010 will be approximately \$1 million.

The general research priorities of the PFRP can be found in the report of the November 2005 PFRP Research Priorities workshop available on the PFRP website<sup>1</sup>. The PFRP is always interested in opportunities to fund research of exceptional quality on all subjects relevant to the management of pelagic fisheries. Furthermore, fishery management must occur in dynamic ocean systems that are experiencing warming and acidification, and in which many fisheries are overexploited and overcapitalized. These should be considered as cross-cutting themes that impact fishery research.

In 2009 the PFRP funded the following projects: movement and behavior of tunas in the Hawaii region; improving ecosystem models by incorporating acoustic surveys of mid-trophic level groups; food-web connections between tunas, billfishes, sharks and their prey; development of a user-friendly front end to stock assessment models, empowering managers to evaluate specific regulatory options; fishery impacts on seamount-associated sharks; and an assessment of traditional and small-scale fisheries of the Western Pacific.

Some specific topics for 2010 include the following.

### **Fishery management**

- Implementation of catch share based management systems. Catch shares require a set of rules, and the assurance that all players will abide by those rules (i.e., rule of law). How can we design and implement systems such that players want to follow the rules? How can we achieve fair allocation? Can we learn from systems analogous to catch shares that are used to manage natural resources other than fish? Are these analogous systems efficient, fair, and sustainable? Projects should address catch share implementation for specific fisheries, and include collaboration with or input from stakeholders.
- Use of marine spatial planning in internationally managed fisheries, where the primary spatial zones are Exclusive Economic Zones (EEZs) and the high seas. A variety of bilateral and multilateral agreements exist providing different levels of access to different players. Can marine spatial planning help to design more effective management systems and create incentives that encourage sustainable fisheries?

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[http://www.soest.hawaii.edu/PFRP/soest\\_jimar\\_rpts/research\\_priorities\\_mtg\\_report.pdf](http://www.soest.hawaii.edu/PFRP/soest_jimar_rpts/research_priorities_mtg_report.pdf)

- Effective decision-making at RFMOs. Present management actions by RFMOs (Regional Fishery Management Organizations) are in many cases failing to meet the fishing mortality levels recommended by RFMO scientists. When a science body recommends a particular reduction in fishing mortality, there immediately arise issues with how such reductions will be apportioned between different countries and fisheries. The difficulty in reaching agreements stems in large part from the conflicting interests of RFMO members, which create an overall incentive to avoid action. There is the risk that management will become reactive, when lawsuits, CITES (Convention of International Trade in Endangered Species) listings or other actions force RFMOs and governments to respond; rather than proactive, in which RFMOs take effective measures to keep fish stocks healthy. RFMOs may derive assistance from the study of dispute resolution and mediation in other fields in which negotiations have reached successful agreements between parties with deeply entrenched, conflicting interests. Such approaches must yield explicit allocations of catch reduction between countries and fisheries that effectively implement the recommendations of science bodies.
- Chartering arrangements between small island developing states/territories and distant water fishing nations under the concept of “responsible fisheries development” offer potential mechanisms to undercut catch limits. Various bilateral or multilateral agreements exist or are under consideration to allow distant water fishing nations to capture bigeye tuna and count this catch under otherwise under-utilized allocations to small island developing states or participating territories. What are the implications of such arrangements, and how should they be managed in order to fulfill the management responsibilities of the Western and Central Pacific Fisheries Commission (WCPFC)?

## Biology

- Integrating electronic tagging data into stock assessment. While much has been learned about the ecology of pelagic fishes through modern tracking technologies, this knowledge has not been well integrated into stock assessment science. Further research is needed to determine how detailed movement and behavior data can be incorporated into population models; and provide guidance on the design of future tagging studies.
- Using ecosystem models to make new and better management decisions. While there is much interest in ecosystem models, catch limits continue to be set based on single species stock assessments, which are unable to assess food web implications. However, ample evidence exists for strong nonlinear effects, cascades, and multiple stable states in ecosystems – and these processes can have profound economic and cultural impacts. Since the large scale removal of top predators likely has strong ecosystem effects, management of each species should consider other key species; and system-wide management measures may be necessary, such as limits on the total catch of all species.
- Important incidental catch species. More information is needed for species that are not the primary targets of fisheries, but are important incidental catches that have economic and cultural value. Examples include age, growth and population status for central and western Pacific ono/wahoo (*Acanthocybium solandri*), walu/escolar (*Lepidocybium flavobrunneum*), monchong/pomfret (*Eumegistus illustris* and *Taractichthys steindachneri*), mahi/dorado (*Coryphaena hippurus*), and marlins (primarily *Makaira mazara* and *Kajikia audax*). In some

cases there are serious concerns that stocks are at risk (striped marlin) whereas in other cases, species have recently become marketable and thus may be experiencing greater exploitation (walu, pomfret).

- Stock assessment of blue marlin in the Pacific. An independent, state-of-the-art, stock assessment is needed, conducted in collaboration with WCPFC, Inter-American Tropical Tuna Commission (I-ATTC), Secretariat of the Pacific Community (SPC), National Oceanic and Atmospheric Administration (USA) and Far Seas Fisheries (Japan). Proposals should consider issues of access to data required for the stock assessment.
- Novel means to study pelagic marine animals. Recently a variety of new technologies have become available for the study of the oceans, such as surface, subsurface or aerial autonomous vehicles, as well as fixed sensor arrays that are either moored or bottom-mounted. Such platforms have the potential to carry existing or novel sensors, reaching parts of the ocean that are poorly sampled. Projects that focus on specific questions of interest to fishery managers are of interest, such as means to estimate abundance of mid-trophic level organisms; and ways to detect presence or abundance of protected species.

## Application Process

- a. Applicants should submit a letter of intent to prepare a proposal by **March 9, 2010**. Include key references in the letter of intent. The fillable PDF is available on the PFRP web site and includes instructions for completing and submitting the form to PFRP. Applicants must use either the *Adobe Acrobat* or *Adobe Reader* software, version 7 or newer. Proposals for projects expected to extend for several years are welcome, but funds can only be allocated on an annual basis. Such projects should be structured to ensure that measurable results are presented on an annual basis.
- b. The PFRP Steering Committee will review the letters of intent for relevance to PFRP and WPRFMC priorities. Certain research projects will be selected and the authors will be invited to prepare full proposals.
- c. Research proposals will then be sent out for peer review.
- d. A special panel will be convened to review the research proposals and peer review comments, and to make funding recommendations to the PFRP Steering Committee.
- e. Final decisions on awards will be taken in **July 2010**.

Applicants must transmit letters of intent electronically using the Pre-Proposal Application form available on the PFRP website. Correspondence should be addressed to the PFRP Program Manager, Dr. Kevin Weng, Joint Institute for Marine and Atmospheric Research, School of Ocean and Earth Science and Technology, University of Hawaii at Manoa, 1000 Pope Road, Honolulu, HI 96822, 808-956-4109, [kevin.weng@hawaii.edu](mailto:kevin.weng@hawaii.edu).