Challenge #N: MBARI Science and Technology for resource managers and policy makers

For several decades, MBARI has been developing innovative technologies that move the state of oceanographic research forward. We have not been as effective at making our advances immediately useful to policy makers or resource managers (PMRMs). It seems clear that policies being developed at the local, state, national and international level to address critically important ,societally relevant issues like climate change, ocean resource management, plastic pollution and others are severely limited by the lack of relevant, synoptic, timely and defensible data. For example, the Pacific Fishery Management Council (https://www.pcouncil.org/) is responsible for making recommendations about fishery management measures in the Federal waters off Washington, Oregon, and California. Clearly, it would be immensely valuable to have MBARI "products" directly involved in their process.

An equally compelling motivation for this challenge comes directly from the David & Lucile Packard Foundation "What We Fund" web page. The aims enunciated in the "Ensuring a Better Future for People and the Ocean" topic are as follows.

Help the United States, Mexico, Chile, Indonesia, China and Japan to ensure that fishing and marine aquaculture are sustainable and to protect places that are vital to maintaining biodiversity and wild fish stocks.

Promote global markets for sustainable seafood.

Eliminate illegal, unreported and unregulated (IUU) fishing—referred to here as illegal fishing—around the world.

Protect seabirds and shorebirds and their habitats.

Understand and proactively address the impacts of greenhouse gas emissions on the ocean.

The first and last items in the list are among the specific targets of this challenge.

Opportunity

Several, and potentially many, MBARI developed technologies can be extended to build a science based foundation for PMRMs. A specific, admittedly biased, example is the Coastal Profiling Float although there are several other obvious examples. One of the science needs we originally used to justify the project was indirectly described in the ScienceDaily report "Unfavorable Ocean Conditions Likely Cause Of Low 2007 Salmon Returns Along West Coast"[1] This paper drew conclusions about the health of the 2007 salmon fishery from very sparse data acquired in 2005. This lack of data directly impacts the ability to make critical and accurate science based decisions about next year's fisheries season. A reasonably sized fleet of CPFs strategically placed in the west coast salmon ecosystem would go a long way to providing the missing data. In an ideal scenario, this fleet would be owned and operated by a relevant and non-MBARI group.

Actions

1. Identify a specific PMRM group that would benefit from a specific MBARI developed technology.
2. Meet with that group to understand their needs.
3. Develop a scoping proposal with the group to begin meeting their needs.
4. Execute the scoping proposal.
5. Develop a full proposal based on lessons learned from the scoping proposal.

Projected Impacts

A clear metric of success and positive impact for this challenge would be a fleet of MBARI developed platforms managed by a PMRM group generating operational data routinely used in their science based policy decisions.

[1]NOAA National Marine Fisheries Service. "Unfavorable Ocean Conditions Likely Cause Of Low 2007 Salmon Returns Along West Coast." ScienceDaily. ScienceDaily, 4 March 2008. <www.sciencedaily.com/releases/2008/03/080303145253.htm>