

# PIFSC Priorities and Annual Planning Guidance for FY2016

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## Purpose

The purpose of this Pacific Islands Fisheries Science Center (PIFSC or Center) Annual Guidance Memorandum (AGM) is to focus the Center's attention on several specific programmatic priorities in the coming year. The AGM attempts to balance the work that PIFSC programs conduct on NOAA mandates and stakeholder priorities with potential FY2016 budget scenarios. This AGM also will help position the Center for out-year (i.e., two to five year) challenges and opportunities.

## 2014 and 2015 Accomplishments

PIFSC had a broad range of accomplishments in 2014 and the beginning of 2015, as shown by the milestone reports for these two years<sup>1</sup>. Milestones continue to be a cornerstone of planning and prioritization at the Center. Every program has at least one milestone. Milestones reflect a subset of activities in the given year that the Divisions and Directors' Office believe should be identified for meeting the overall mission of the Center.

A major milestone for PIFSC in 2015 was the transition from longtime Science Director Dr. Sam Pooley to new Science Director Dr. Michael Seki. During the recruitment period, Dr. Ned Cyr, Director of the Office of Science and Technology served as the interim Science Director. In addition, the Center completed an organizational realignment that brought better consistency with the organizational structure of the other NOAA Fisheries offices and reflects the future direction of the Center.

Other highlights from 2014 and 2015 include: conducted a Pacific Reef Assessment and Monitoring program (Pacific RAMP) research survey to American Samoa and the Pacific Remote Island Areas; conducted research surveys of the Main Hawaiian Islands reef fish populations; conducted seafloor habitat mapping around Maui and Hawaii Islands; conducted a cetacean research survey and a fisheries resource survey cruise in the Mariana Archipelago; conducted an oceanographic survey to the North Pacific Transition Zone Chlorophyll Front; deployment of field research staff to the Northwestern Hawaiian Islands to study Hawaiian monk seals and green sea turtles; convening a bottomfish science workshop at the NOAA Inouye Regional Center with local partners and interested stakeholders; completed a stock assessment update for bottomfish in the U.S. territories; completed stock assessments for the Western and Central North Pacific Ocean (WCNFPO) and Eastern Pacific Ocean (EPO) swordfish stocks; developed a novel economic visualization tool that showed market demand for ahi tuna in Hawaii over time; advanced the development of a centralized Oracle purse seine database; developed the Deep Sea Coral Research and Technology three-year Field Research Science Plan for the Pacific Islands; and convened a fisheries science prioritization workshop in American Samoa.

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<sup>1</sup> [http://intra.pifsc.gov/do/do\\_milestones](http://intra.pifsc.gov/do/do_milestones)

## **NOAA Fisheries Priorities**

For FY2016 NOAA Fisheries focus remains on the two core mandates:

- Ensure the productivity and sustainability of fisheries and fishing communities through science-based decision-making and compliance with regulations.
- Recover and conserve protected resources through the use of sound natural and social sciences.

The FY2016 NOAA Fisheries Priorities document outlines anticipated results that all activities should be mapped to. Please refer to this document in the attached communication.

## **PIFSC Science Plan Priorities**

In March 2013, PIFSC completed its first Science Plan since the joint Pacific Islands Region strategic plan at the inception of the Science Center.<sup>2</sup> The 2013 Science Plan's priorities address both the legislative and regulatory mandates, as well as ways to increase the Center's effectiveness. The 2013 Science Plan contains three themes that address these priorities:

- Theme 1: Monitor and Assess: Monitor and assess the diversity, abundance, and distribution of fish and coral reef species, marine mammal and sea turtle populations, and the associated human communities that interact with these resources in the central and western Pacific.
- Theme 2: Environment and Ecosystems: Describe and understand environmental and ecosystem linkages, oceanography, habitat, climate change, and social effects on marine ecosystems. Develop ecosystem tools in supporting the conservation and management of marine resources.
- Theme 3: Maximizing Effectiveness: Maximize the efficiency, effectiveness, transparency, and public accessibility of our research by strengthening partnerships and providing useful scientific information products, services, and advice to resource managers, policy makers, stakeholders, and the public.

Within these themes are a variety of topics that present greater specificity about the activities contemplated within each theme. These themes and topics represent the universe of activities from which we select specific foci, described in this AGM, for the coming year.

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<sup>2</sup> [http://www.pifsc.noaa.gov/media/news/20130409\\_science\\_plan.php](http://www.pifsc.noaa.gov/media/news/20130409_science_plan.php);  
[http://www.pifsc.noaa.gov/do/dir\\_pir\\_strategic\\_plan\\_final.pdf](http://www.pifsc.noaa.gov/do/dir_pir_strategic_plan_final.pdf);

## **PIFSC External Program Reviews**

In 2014 PIFSC took part in a national cycle of external program reviews<sup>3</sup> on our fishery stock assessment program, and in 2015 in an external program review of our protected resource science program. These reviews<sup>4</sup> provided important insights into the Center's successes and recommendations for improvements of our fisheries and protected species programs, and as a result, this year's AGM will focus particular attention on responses to those reviews.

In 2016 PIFSC will be part of a national external program review of our ecosystem sciences, and that review will be an important milestone for the Center.

## **PIFSC Prioritization and Implementation Plan**

In June 2015, PIFSC leadership assembled to discuss prioritization of PIFSC activities over the next five years. The leadership ranked these activities in the context of funding lines and sources, and with this input, the Center directorate has drafted a Center Implementation Plan that provides additional guidance necessary to execute the science mission. Attached to the end of this document is a list of the top ranked activities identified to address PIFSC FY16 priority research areas.

## **Overall Challenges**

PIFSC continues to face the challenges of meeting both the NOAA and NMFS science missions over a vast geography with diverse cultures. This challenge is magnified with limited ship days-at-sea availability and days lost due to mechanical breakdowns that accompany aging research ships. Maintaining scientific integrity, the appropriate relationship between science and management decision-making, transparency, and outreach to our broader community continue to be priorities. Monitoring and assessing living marine resources, their habitat and environment, and their broader ecosystems, including relationships with communities, industries, and the broader society are the basis for the PIFSC operations.

Of special challenge and opportunity in the current period have been:

- The refinement of annual catch limits (ACLs) and the associated need to provide more and improved data on catch, effort, and stock status as part of our efforts to monitor fisheries.
- Reducing fisheries interactions with protected resources. This topic is once again a high priority with stakeholders seeking enhanced data on false killer whale stocks to refine

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<sup>3</sup> <http://www.st.nmfs.noaa.gov/science-program-review/>

<sup>4</sup> [http://www.pifsc.noaa.gov/do/peer\\_reviews/program\\_review\\_of\\_fisheries\\_stock\\_assessments\\_2014.php](http://www.pifsc.noaa.gov/do/peer_reviews/program_review_of_fisheries_stock_assessments_2014.php); <link to protected resource science review>

take reduction plans in the longline fishery, mitigation strategies for reducing interactions, and regulators looking to better understand monk seal interactions with inshore fisheries and other shoreline activities.

- Transitioning fishery independent surveys from development to operation. Incorporating advanced technologies into population assessments continues to be a NOAA and NMFS priority, particularly where data limited situations constrain the quality of the assessments.
- On-going petitions to list (or delist) species under the Endangered Species Act. Response to these petitions places increasing pressure on the Center to provide information on proposed and candidate species.

## **FY2016 Budget Scenarios**

As in recent years, the Center budget for the forthcoming year remains uncertain as the fiscal year begins. The current budget projection plans offer the prospect of a flat fiscal forecast for FY2016 and beyond. Base budgets will focus on the highest agency priorities in FY2016 and future years. Funding for lower priorities may need to be adjusted downward in order to realize additional gains for our core program activities as well as new priorities that emerge. While an uncertain budget environment has become commonplace, implementing our mission in this context remains difficult. Even with uncertain budgets, the Center will need to balance these budget realities with mission priorities and funding line item integrity. Line item integrity refers to ensuring that funds are spent consistent with Congressional intent (e.g., fish funds for fishery research and monitoring, protected species funds for protected species research and monitoring). For planning purposes, the Center will approach the scenario of an FY2016 equivalent to the FY2015 enacted budget. In FY2015, PIFSC received approximately \$28.5 million, of which approximately 20% was temporary funds.

## **FY2016 Priorities**

Given the FY2016 backdrop presented above, the following five top priorities for Center activities in FY2016 are:

- Implement refinements to the Center's fishery stock assessment and fishery data systems in response to the Center's FY2014 and FY2013 external program reviews<sup>5</sup>, as well as, review the FY2015 assessments

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<sup>5</sup> [http://www.pifsc.noaa.gov/media/news/peer\\_review\\_of\\_data\\_management\\_2013.php](http://www.pifsc.noaa.gov/media/news/peer_review_of_data_management_2013.php);  
[http://www.pifsc.noaa.gov/do/peer\\_reviews/program\\_review\\_of\\_fisheries\\_stock\\_assessments\\_2014.php](http://www.pifsc.noaa.gov/do/peer_reviews/program_review_of_fisheries_stock_assessments_2014.php)

- Continue development of fishery independent surveys and advanced sampling technologies, including operationalizing the new MOUSS stereo-video camera system
- Evaluate incorporation of fishery independent surveys and environmental data into fishery stock assessments
- Continue implementation of the Territorial Science Initiative to improve data collection and biological sampling that support stock assessments of fishery resources in American Samoa, Guam, and the Northern Mariana Islands
- Using the prioritization processes for stock assessments in the region, complete the assessments identified as high priorities
- Implement refinements to the Center's protected species research programs in response to the Center's FY2015 external program review
  - Conduct surveys and assess the status and dynamics of cetaceans, Hawaiian monk seals, sea turtles, and corals across the Pacific Islands Region
  - Conduct scientific studies to address protected species management questions and improve planning processes to better link research activities to management needs
- Improve the integration of both environmental data and ecosystem models into fishery and protected species research programs
  - Conduct a program review for ecosystem science at PIFSC
  - Use the socioeconomic program's quantitative capabilities to assist in modeling approaches for conservation strategies and coastal resilience
  - Evaluate the Ecopath with Ecosim and Atlantis modeling approaches currently used in the Kona IEA and the greater Hawaiian Islands for application in other parts of the Pacific Islands Region
  - Complete the Pacific Islands Region Regional Action Plan (RAP) to assist with the implementation of the NOAA Fisheries Climate Science Strategy (NCSS)
- Expand partnerships to further develop scientific capacity in the region
  - Support the NOAA Fisheries partnership with OAR for the CAPSTONE Deep Sea Coral and Sponge research onboard the NOAA Ship Okeanos Explorer in the Central and Western Pacific Ocean

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- Provide opportunities to scientific partners for shared use of PIFSC laboratory and sea water capabilities at the IRC
- Expand Center involvement in the new UH Marine Biology graduate program and the NOAA Fisheries QUEST program
- Continue PIFSC leadership of mentoring local students and the PYSO college-level internship program
- Collaborate with local resource agencies in the region on ecosystem research and monitoring projects
- Continue to improve the organizational excellence of PIFSC
  - Support the NOAA plan for Public Access to Research Results (PARR) and ensure the Center's data inventory meets accessibility and readability standards
  - Respond to the feedback received from the FY15 Federal Employee Viewpoint Survey

**Top ranked activities identified to address FY16 research priorities**

<b>Stock Assessments and ACLs</b>	
1	Stock Assessments of Insular Species: Bottomfish
2	Stock assessments of pelagic fisheries species (e.g., through international collaborations)
3	Analyze and improve inputs from fishery monitoring data, conduct sensitivity analyses, and improve stock assessment models
4	Stock Assessments of Insular Species: Reef Fish
5	Conduct reviews of data used for assessment, and facilitate Western Pacific Stock Assessment Reviews (WPSAR) with the Council and PIRO
6	Conduct educational outreach and feedback meetings with fishers and other constituents to guide future work
7	Integrate ecosystem influences, including habitat, weather, climate, and movement into stock assessments
<b>Develop Operational Fishery-Independent Surveys</b>	
1	MHI bottomfish fishery-independent
2	Improve sampling efficiency and analytical methods to improve coverage
3	Territorial reef fish fishery-independent (RAMP supplement)
4	Incorporate ecosystem variables, fishery data on seasonality, and life history into fishery-independent survey design
5	Territorial deep slope fishery-independent (incl. deep reef)
6	MHI reef fishery-independent
<b>Fishery-Dependent Monitoring</b>	
1	Manage data from the US purse seine fishery
2	Develop new reliable Hawaii non-commercial landings and IUU estimates
3	Implement fast-tracking or other e-reporting and monitoring
4	Create standardized, routine, documented, accurate, non-confidential summaries with more detail for all monitoring data, and make these more widely available
5	Integrate WPacFIN creel and dealer surveys with commercial biosampling
6	Develop new reliable non-commercial landings and IUU estimates in Territories
7	Enhance existing WPacFIN surveys (e.g., Tinian) using recent statistical analyses
<b>Life History Program and Biosampling</b>	
1	Process, curate, and analyze life history specimens that have already been collected
1	Provide life history analyses and data (including size-frequency data) for high priority stock assessments
3	Collect new specimens from harvested fish species to quantify and validate life history parameters
4	Conduct research to develop new approaches for estimating life history parameters
5	Investigate distribution dynamics through tagging experiments, genetic analyses, and advanced technologies
6	Conduct life history experiments with captive fish

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<b>Cooperative Research</b>	
1	Continue PIFG relationship related to Hawaii bottomfish research
2	Conduct cooperative research on Council/Territorial identified projects that could be useful to stock assessments
3	Expand cooperative research to territorial bottomfish
4	Conduct cooperative research on Council/Territorial identified projects that could be useful to bycatch mitigation
<b>Bycatch Reduction Research</b>	
1	Conduct fishery bycatch reduction research <u>domestic fisheries</u>
2	Estimate bycatch and mortality rates through analysis of domestic fishery-dependent data
3	Conduct field research on animal behavior and interactions in recreational and other small-scale fisheries
3	Conduct fishery bycatch reduction technology research in a <u>laboratory setting</u>
3	Prepare integrated oceanographic forecasts for bycatch mitigation
6	Conduct fishery bycatch reduction research <u>foreign fisheries</u>
6	Conduct barbless circle hook outreach
<b>International Fisheries Research</b>	
1	Participate in tuna RMFO science bodies
1	Coordinate HMS data management activities with SWFSC and tuna RMFOs
3	Participate in ISC
4	Increase participation in SPC tuna assessments
5	Co-lead U.S. involvement in ISC
6	Participate in PICES working groups
7	Participate in NP and SP RFMO science bodies
<b>Cetaceans</b>	
1	Conduct surveys of cetacean populations in the Hawaii EEZ
2	Assess the status and dynamics of False Killer Whale populations in Hawaii
3	Conduct marine mammal stock structure research (identifying linkages, units within the basis of the model)
4	Conduct surveys of cetacean populations in the American Samoa EEZ
5	Conduct surveys of cetacean populations in the Mariana Archipelago EEZ
6	Conduct surveys of cetacean populations in the PRIA EEZ
7	Conduct surveys of cetacean population outside of the US EEZ and adjacent to Hawaii
<b>Hawaiian Monk Seals</b>	
1	Assessment of the status and dynamics of the monk seal population across the archipelago
2	Conduct annual survey and implement recovery activities for Hawaiian monk seals in the NWHI
3	MHI Fisheries Interactions Research: Collaborate with State and Feds on reports of seal-fisheries interactions, conduct diet (fatty acids) and foraging behavior studies (Critttercam), consider mitigation strategies.
4	Conduct annual survey of Hawaiian monk seals in the MHI



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4	Conduct research to better understand environmental drivers on monk seal foraging success and survival in NWHI and climate change vulnerability.
6	Advance Vaccination Program: update vaccination plan, conduction vaccination drill, assess implementation
6	Develop temporary translocation plan for NWHI ->MHI -> NWHI
<b>Sea Turtle Activities</b>	
1	Assessment of the status and dynamics of sea turtle populations in the central Pacific
2	Conduct sea turtle nesting and in-water research in American Samoa
3	Complete analysis of sea turtle population impacts of proposed Hawaii longline management fishery actions
4	Conduct sea turtle nesting and in-water research in the Hawaiian Archipelago
5	Conduct sea turtle nesting and in-water research in the Mariana Archipelago
5	Conduct life history and climate change vulnerability research for Pacific sea turtle populations
6	Continue Hawaiian sea turtle stranding network response and research
<b>Ecosystem Studies</b>	
1	Project climate impacts on ecosystems
2	Develop ecosystem indicators for federal and state resource managers
3	Conduct Integrated Ecosystem Assessments (IEA)
4	Develop ecosystem models for key ecosystems
5	Monitor and document historical ecosystem changes
6	Foraging ecology surveys and research
6	Develop methods to investigate ecological connectivity across and between archipelagos
<b>Coral Reef Activities</b>	
1	Conduct reef assessment and monitoring surveys
2	Identify, characterize, and rank priority areas for protection within each jurisdiction, including (but not limited to): i. spawning sites, nursery habitats, or other areas critical to particular life-history stages; ii. Biodiversity hotspots; iii. Areas with greatest resilience or potential for restoring resilience; iv. Areas facing the greatest threats. [CRCP3]
3	Increase effort and observations (such as life history information) useful for providing science support to NMFS management responsibilities related to reef fisheries, to coral reef monitoring in the Pacific. [CRCP1]
4	Conduct climate change vulnerability assessments (CCVAs) for each of the archipelagic reef ecosystems, then, in future years, to conduct vulnerability assessments for the most vulnerable trust resources and habitats identified in the CCVA for ecosystems. [CRCP2]
5	Support NMFS PR through: (1) development of ESA-listed coral habitat maps; (2) species identification morphology & genetics; and (3) regional distribution.
6	Quantify anthropogenic stressors on coral reef ecosystems from terrestrial sources

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7	Improve spatial and temporal resolution of near-shore, mesophotic, and deep coral reef ecosystem demographics including bathymetry
7	Develop capacity in and provide technical support for implementing ecosystem-based approaches to fisheries management (EAFM)
<b>Socioeconomic Activities</b>	
1	Conduct cost-earnings studies, trip-cost, and other data collections related to fishery regulation in order to build socioeconomic indicators
2	Collaborate on integrated ecosystem models to support ecosystem-based management and decision support tools
3	Build socioeconomic models (AgentBasedModels, Input-Output, FishSET, FEAT, fishery dynamics) to investigate relationship of economic and social factors on conservation and management of marine species
4	Estimate benefits, costs, and externalities of fishery regulations
5	Conduct socioeconomic surveys of charter and recreational fishing
6	Investigate human behavior in relationship to protected species interactions
6	Develop data visualization tools and web-based applications for improved dissemination of research results
<b>Monuments and Territorial Science Activities</b>	
1	Develop ecosystem monitoring and assessment baseline surveys
2	Maintain observational platforms to collect biological and physical data (e.g., innovative sampling technologies)
3	Help build scientific capacity in the resource agencies through technical assistance, staffing, and training. Facilitate student education in the territories through mentoring, internships, and training
4	Determine sustainable use levels for traditional fisheries and other allowed uses
5	Develop geospatial tools, capacity and data sharing capabilities
6	Assess any future potential degradations to the Monument
7	Assess the socioeconomic conditions associated with the Monument