Northwest Fisheries Science Center

2011 Annual Priorities

NOAA FISHERIES SERVICE

A Note from the Acting Science Director:

In 2011, the NWFSC (the Center) is placing priority on the initiatives presented here supporting science needs at the local, regional, national, and international scales. These activities are areas of emerging or critical research needs and support NOAA Fisheries management objectives. We will also continue to provide exceptional ongoing science services in other important areas, as we have for 80 years. Our annual priorities are presented below and organized by the themes used in our strategic research plan.

SCIENCE AND RESEARCH PRIORITIES

Theme 1: Ecosystem Approach to Management of the California Current

Integrated Ecosystem Assessment for the California Current

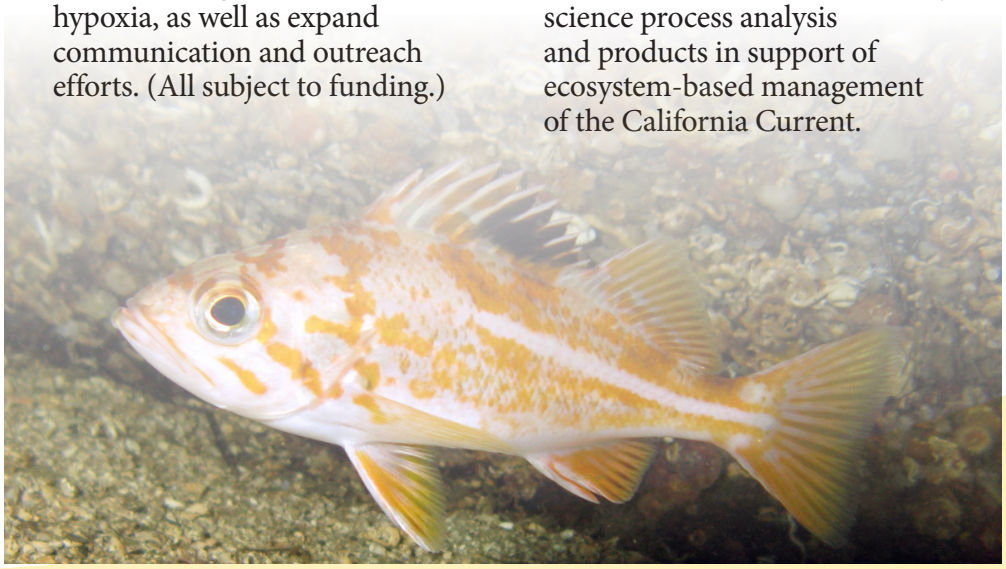
Integrated Ecosystem Assessment (IEA) is a product, a tool, and a process that uses integrated analysis and ecological modeling to synthesize social, economic, and natural science data and information for managers and stakeholders who rely on scientific support for policy decision-making. In 2011 Center scientists will:

- Work with the NOAA IEA team to build on the 2010 California Current IEA by adding additional data and indicators to the analysis, developing new analytical methods, and enhancing the risk assessments.
- Add a new component to address socioeconomic attributes, conduct scoping meetings with coastal communities to identify ecosystem level management objectives, expand the IEA to include marine mammals, seabirds, forage fish, and hypoxia, as well as expand communication and outreach efforts. (All subject to funding.)

Science in Support of Regional Ocean Governance

An Executive Order established the National Ocean Policy in 2010 addressing the fundamental tenet that healthy oceans matter and highlighting the importance of an ecosystem approach for managing the nation's coastal and marine resources. The West Coast Governors' Agreement on Ocean Health (WCGA), a key coast-wide partnership to address ocean health, is furthering elements of the National Ocean Policy for the California Current. NOAA is committed to supporting regional ocean governance partnerships and mobilizing its existing scientific expertise and capabilities for ecosystem-based management.

- While specific actions are being developed by the agency in 2011, the Center will continue its work with IEAs (above) and partner with the WCGA to support their efforts on regional IEAs, which will be used to provide necessary science process analysis and products in support of ecosystem-based management of the California Current.



Theme 2: Habitats to Support Sustainable Fisheries and Recovered Populations

Review of Groundfish Essential Fish Habitat

Essential fish habitat (EFH) must be identified for species managed in fishery management plans under the Magnuson-Stevens Fishery Conservation and Management Act. EFH is the habitat necessary for fish to complete their life cycle while contributing to the sustainability of the fishery. In 2011 the NWFSC will:

- Review EFH designations for Pacific groundfish in partnership with the Southwest Fisheries Science Center, west coast NMFS regional offices, and the Pacific Fisheries Management Council. A report identifying and evaluating new information since the last review will be drafted, including published scientific literature, unpublished scientific reports, and previously unavailable or inaccessible data. Review of, and potential refinements to, these EFH provisions will facilitate EFH consultations and provide greater accuracy in EFH conservation recommendations.

Ocean Acidification

Many species of economic importance, such as oysters and crabs, as well as primary producers such as phytoplankton, are likely to experience direct effects from ocean acidification. In 2010 NMFS completed an ocean acidification implementation plan that addresses key research needs, including monitoring, data synthesis and management, modeling, and socio-economic analysis. In 2011 NWFSC researchers will:

- Use the state-of-the-art ocean acidification experimental system perfected in 2010 to test a variety of ocean chemistry conditions on bivalves, rockfish larvae, and crustaceans, among other organisms, and integrate this information into ecosystem and socio-economic models.

Theme 3: Recovery, Rebuilding, and Sustainability of Marine and Anadromous Species

Federal Columbia River Power System (FCRPS) Biological Opinion

The Center has provided scientific advice informing the FCRPS Biological Opinion, covering 13 listed anadromous fish runs in the Columbia River for over 15 years. In 2011 the Center's research effort will:

- Focus on addressing scientific uncertainties through updating and expanding existing modeling efforts, evaluating the potential for reintroductions of extinct runs, and incorporating climate change information through a comprehensive literature review.

Rebuilding West Coast Groundfish

Eight of over 90 species in the Pacific groundfish fishery have been declared overfished and are currently undergoing rebuilding. The Center runs science programs to gather data informing rebuilding actions, including stock status, recruitment success, and total mortality. This information is used by the PFMC to set rebuilding harvest and management guidelines. In 2011 the groundfish team will:

- Conduct full assessments of the overfished Petrale sole and Pacific ocean perch species, and update the assessments of darkblotched, yelloweye, and canary rockfish.
- Support implementation of the new catch share program for the groundfish trawl fishery by placing observers on all vessels and further refine and support a data base for real-time monitoring of catch. The catch share program will also increase our knowledge of total mortality, reduce uncertainty in rebuilding calculations, and improve monitoring of catch to insure annual catch limits are not exceeded.

Science in Support of Species Recovery

Estimating likely levels of risk currently faced by listed populations, as well as their response to planned human activities, is an important component of recovering these species.

- For Endangered Species Act-listed salmonids, scientists will evaluate current population status, freshwater habitat conditions, and continue to use life-cycle models to estimate the effects of changes in hydropower management, hatchery activities, habitat improvements, and harvest regimes on the long-term persistence of these species.
- For ESA-listed Southern Resident killer whales, the marine mammal ecology team will continue to refine understanding of dietary requirements and effects of noise on predation ability, initiate satellite tagging studies to evaluate coastal habitat use, and continue to provide technical support to the Regional Office.

Sustainable Aquaculture

The NWFSC is one of two NMFS science centers conducting dedicated research to advance sustainable aquaculture in marine species. In 2011 the Center will:

- Continue to evaluate alternatives to fish-based feeds, reducing pressure on wild fisheries stocks, while maintaining heart-healthy omega-3 fatty acid content in cultured fish.
- Develop husbandry techniques for large-scale commercial culturing of sablefish, also known as black cod, a high-value, high-demand species.
- Evaluate the environmental impacts of aquaculture including understanding genetic impacts of multi-generational aquaculture broodstocks, understanding possible ecological impacts of escapes from aquaculture facilities, and improving risk assessments for aquaculture facility permitting decisions.

Theme 4: Oceans and Human Well-being (One Health)

Oceans and Human Health Initiative

The Northwest Fisheries Science Center serves as NOAA's West Coast Center of Excellence for Oceans and Human Health. Oceans and Human Health research focuses on how pathogens, toxins from harmful algal blooms, and chemical contaminants pose significant risks to humans and wildlife. In 2011 the Center will:

- Investigate technologies to improve seafood safety and quality.
- Develop rapid detection and improved prediction methods to identify pathogens, biotoxins, toxics, and the resulting health and socio-economic effects.

Natural Resource Damage Assessment Response to Deepwater Horizon MC-252

In 2011 the Center's response to the *Deepwater Horizon* oil spill will shift from an emphasis on ensuring the safety of seafood to natural resource assessment and restoration activities. The results of this work will inform the legal process to assess natural resource damages as a result of the spill. Center scientists will:

- Conduct targeted research to assess the impacts of oil and dispersants on fish at different life stages to the Federal Natural Resource Damage Assessment process.
- Monitor and assess toxic threats to marine mammals and other protected species.

Climate

Uncertainty about how a **changing climate** will affect **protected and managed species** throughout the Pacific Northwest underlies all research conducted at the **Northwest Fisheries Science Center.** Scientists in all divisions are incorporating climate considerations in their work by **applying refined climate projections** into calculations and models, and conducting special studies to understand likely **impacts to species and habitats of concern.**

Learn More & Come See us in Action

Sharing our work with other scientists, with policymakers, and with the public is important to us. To learn more about what we do, please visit our website at www.nwfsc.noaa.gov.

For additional information, please call 206-860-3200.

CENTER SUPPORT AND INFRASTRUCTURE

Data Policy Implementation

In July 2010, NMFS released an agency-wide policy requiring metadata for new data collections be published and made available within one year and within two years for legacy data holdings. This policy is a significant shift from previous treatment of data and will require a change in data handling procedures at the Center. The Center will work with headquarters staff to ensure compliance with this new policy by submitting associated metadata to designated public databases.

Facilities

Many of the Center's facilities throughout the Pacific Northwest need updates or replacement and currently cannot fully support the mission needs of the Center. A focus of 2011 will be to build on the Strategic Facilities Plan, completed in 2010, by pursuing facility improvement opportunities in both the near- and long-term. Additionally, SR520, the highway adjacent to the Center's main campus at Montlake, is slated for replacement. Center staff will work to ensure this construction project does not impact functions at the Montlake facility.

Leadership Transition

After 16 years as Science Center Director, Dr. Usha Varanasi retired at the end of 2010. A Division Director position is also vacant and it is a top priority to fill this position quickly. In 2011 Center staff will work to ensure a smooth transition of these important leadership positions.

Human Capital Investment Plan

In the past year, the Center's Human Resources Management Team (HRMT) developed a plan to invest in the Center's human capital, the employees. Approved by the Director in September 2010, this plan targets simple, high-return activities for internal communications, supervision, performance management, and Center services achievable within a one-year period. The Center will complete this plan to improve the work environment for all staff.