

# New Priorities for the 21st Century

## National Marine Fisheries Service Strategic Plan

Updated for

# FY 2005 – FY 2010

U.S. DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration

## **Message from the Assistant Administrator for Fisheries**

Americans depend on our Nation's living marine resources for food, jobs, recreation, tourism, medicine, and a myriad of industrial and commercial products. More and more they recognize the importance and value of healthy marine ecosystems to our environment and quality of life. We all have high expectations that public policies will ensure the health and longevity of these resources. However, we are at a crossroads in the care and use of our living marine resources. At no point in history has greater economic, political, and public interest been focused on the use and protection of these resources.

The National Oceanic and Atmospheric Administration (NOAA) has recognized the importance of these circumstances in its Strategic Plan by setting a goal to "protect, restore, and manage the use of coastal and ocean resources through an ecosystem approach to management." The National Marine Fisheries Service (NMFS) has stepped up to this challenge by providing in its Strategic Plan an integrated ecosystem approach to the stewardship of these resources.

The NMFS Strategic Plan provides a look into a future of ecosystem approaches to management, rebuilding and sustaining fishery and protected species stocks to their long-term potential. This will help ensure future performance, productivity, and biological diversity of marine ecosystems for the greatest benefit to the Nation.

The NMFS Strategic Plan is an important link between budget and performance. It is a critical tool to steer us in the direction of ecosystem approaches to management and to help us design and create programs, allocate resources, and perform with better accountability for results.

Over the next five years, NMFS will lead through NOAA's Ecosystem Goal Team the design and development of new programs and approaches to address longstanding barriers to reducing overcapacity and rebuilding overfished fisheries. We will simultaneously improve the quality, scope, and effectiveness of our stewardship activities for protected species and habitat conservation. We propose changes to our management programs to accomplish these objectives in a scientifically credible and integrated manner, taking account of all uses of our living marine resources.

No successful, societal response to environmental or ecological stress, however, has ever been accomplished by a single agency or organization. Success requires the interaction, cooperation, and feedback that come only when all parties involved work together to achieve these goals. The delicate balance of achieving multiple objectives to produce the greatest benefits requires extensive collaboration with our NOAA, Federal, international, state, local, tribal, and non-governmental organization partners, as well as the public. In addition, we will need to develop new partners and relationships as we move toward ecosystem approaches to management.

I am committed to an open and transparent NMFS that will continue to expand existing partnerships and collaboration as well as to welcome our new partners in this endeavor.

William T. Hogarth, Ph.D.  
Assistant Administrator for Fisheries  
National Oceanic and Atmospheric Administration  
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## **VISION**

American people enjoying the riches and benefits of healthy and diverse marine ecosystems

## **MISSION**

Stewardship of living marine resources through science-based conservation and management, and the protection and restoration of healthy ecosystems

## **RESPONSIBILITIES**

NOAA's National Marine Fisheries Service (NMFS) is responsible for stewardship of the Nation's living marine resources and their habitats within the United States Exclusive Economic Zone. We work to conserve, protect, and manage these resources to ensure their continuation as functioning components of ecosystems, while also affording economic opportunities and enhancing the quality of life for the American public. Our mandates and authorities are derived from numerous statutes, most significantly the Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA), the Endangered Species Act (ESA), and the Marine Mammal Protection Act (MMPA). All these activities are encompassed by NOAA's mission "to understand and predict changes in Earth's environment and conserve and manage coastal and marine resources to meet our Nation's economic, social, and environmental needs."

Most of NMFS's programmatic activities support achieving NOAA's strategic goal to "protect, restore, and manage the use of coastal and ocean resources through an ecosystem approach to management." NMFS activities also support NOAA's goal to "understand climate variability and change to enhance society's ability to plan and respond." Finally, NMFS provides agency-wide services to "provide critical support mission for NOAA's mission." NMFS does not participate in any programs under NOAA's other goals to "service society's needs for weather and water information" or to "support the nation's commerce with information for safe, efficient, and environmentally sound transportation."

NMFS employs more than 2,500 people across the country in our six regional offices and science centers as well as in our headquarters in Silver Spring, Maryland. In implementing our stewardship activities, we work closely with our partners in state and other Federal agencies, local and tribal governments, industry, academia, and non-governmental organizations (NGOs). We also work closely with the other NOAA line offices. Of the nine NOAA programs in which we participate, seven involve at least one other line office. We work with the National Ocean Service (NOS) on habitat protection and restoration and coral reef conservation, as well as other activities. We work with Oceanic and Atmospheric Research (OAR) on ecosystem research, coral reef conservation, and understanding climate effects on ecosystems, among other efforts. We also work with the National Environmental Satellite Data Information Service (NESDIS) to provide GIS maps of habitat for trust species and with the National Weather Service (NWS) on using NOAA Weather Radio to publicize fishery closures.

NOAA's Strategic Plan identifies goals and high-level outcomes, strategies, and performance objectives and measures to achieve NOAA's vision of "an informed society that uses a comprehensive understanding of the role of the oceans, coasts, and atmosphere in the global ecosystem to make the best social and economic decisions." This NMFS Strategic Plan describes the programs executed wholly or in part by NMFS as they relate and contribute to NOAA mission goals, outcomes, and strategies. The specific contributions of NMFS activities to the NOAA programs in the ecosystem, climate, and mission support goals are described in the following sections.

## **NOAA Mission Goal: Protect, Restore, and Manage the Use of Coastal and Ocean Resources Through an Ecosystem Approach to Management**

NMFS is the lead federal agency in protecting, restoring, and managing living marine resources and their ecosystems. To balance economic, social, and environmental needs, we take an ecosystem approach to management. This approach strives to integrate all concerns, priorities, and expertise in the management of coastal and marine resources.

<b>NOAA Outcomes</b>	<b>NOAA Strategies</b>	<b>NOAA Programs Executed Wholly or in Part by NMFS</b>
<p>Healthy and productive coastal and marine ecosystems that benefit society</p> <p>A well-informed public that acts as a steward of coastal and marine ecosystems</p>	Engage and collaborate with our partners to achieve regional objectives by delineating regional ecosystems, promoting partnerships at the ecosystem level, and implementing cooperative strategies to improve regional ecosystem health.	<i>Ecosystem Observations</i>
	Manage uses of ecosystems by applying scientifically sound observations, assessments, and research findings to ensure the sustainable use of resources and to balance competing uses of coastal and marine ecosystems.	<i>Ecosystem Research</i>
	Improve resource management by advancing our understanding of ecosystems through better simulation and predictive models. Build and advance the capabilities of an ecological component of the NOAA global environmental observing system to monitor, assess, and predict national and regional ecosystem health, as well as to gather information consistent with established social and economic indicators.	Fisheries Management  Protected Species
	Develop coordinated regional and national outreach and education efforts to improve public understanding and involvement in stewardship of coastal and marine ecosystems.	<i>Enforcement</i>  <i>Habitat</i>
	Engage in technological and scientific exchange with our domestic and international partners to protect, restore, and manage marine resources within and beyond the Nation's borders.	<i>Coral Reef Conservation</i>  <i>Aquaculture</i>

***Italics represent programs in which other NOAA line offices participate.***

NMFS's stewardship activities under this goal support NOAA performance objectives to

- Increase number of fish stocks managed at sustainable levels
- Increase number of protected species that reach stable or increasing population levels
- Increase number of regional coastal and marine ecosystems delineated with approved indicators of ecological health and socio-economic benefits that are monitored and understood
- Increase number of habitat acres conserved or restored
- Increase portion of population that is knowledgeable of and acting as stewards for coastal and marine ecosystem issues.

Nearly all NMFS activities fall under the Ecosystem Goal and provide over half the resources devoted to it. NMFS's contributions to these programs are described in the following sections.

## Ecosystem Observations

Ecosystem Observations (EOP) is a matrix program led by NMFS in partnership with OAR and NOS that collects, manages, stores, and disseminates data on the status of living marine resources and their environment to provide managers with information to make informed decisions. The EOP is an “end-to-end” coastal and oceanic ecological observing system that is a component of the Integrated Ocean Observing System (IOOS). EOP’s activities include routine living marine resource surveys and monitoring, assessments and forecasts (including economic and sociocultural aspects), and research to improve the technical capability of the observation system. The EOP has collaborative linkages within NOAA as well as with non-NOAA stakeholders, including the fishing industry and academic and NGO communities.

Over 95% of EOP budget and activities reside within NMFS. NMFS’s observations provide routine, timely, and scientifically valid information on NOAA’s trust species. There are eight major components:

- Living marine resource surveys
- Ecosystem surveys
- Protected resource surveys
- Observer programs
- Habitat assessments
- Commercial fisheries statistics
- Marine recreational fisheries statistics
- Economic and sociocultural surveys.

We also perform corresponding data management, analysis, education, and outreach.

Over the next five years we will:

- Deliver comprehensive and timely catch information from web-enabled databases
- Provide abundance and biological data for all managed stocks
- Improve major stock assessment precision and minor stock baseline assessments
- Improve and extend model forecasts with environmental and ecosystem data
- Deliver comprehensive and timely stock assessments for all protected species
- Increase survey and assessment efforts for high-priority protected species, such as those with known high levels of interactions with commercial fisheries or those that are endangered and need close monitoring
- Improve monitoring and assessments of ecosystems to provide routine forecasts on the effects of human activities, changes in the physical and chemical environment (e.g., seasonal short-term and long-term climate change), and interactions among biological resource communities and their habitats
- Conduct mandated economic and sociocultural monitoring, assessment, and analysis
- Increase our ability to conduct community profiles, evaluate protected species, and analyze the impacts of marine protected areas.

To attain this full capability, we will invest in advanced technologies and research to elucidate environmental and ecosystem factors that most influence managed stocks. Our data stewardship capabilities will respond to improvements in fishery, protected resource, ecosystem, economic, and sociocultural monitoring and assessments to provide scientifically reliable and timely information to managers, the public, and other NOAA constituents.

## Ecosystem Research

Ecosystem Research (ERP) is a matrix program led by OAR and including NOS that provides research results and tools for ecosystem management to NOAA and coastal stakeholders. ERP develops the models, tools, and techniques for ecosystem assessments and forecasts and conducts research to improve understanding of natural and anthropogenic factors that affect ecosystems. ERP is organized into five program components:

- Evaluation and understanding of the state of coastal ecosystems
- Development of ecosystem management support tools
- Technology development for coastal and ocean resources
- Ocean exploration
- Capacity building and effective knowledge transfer.

Approximately 25% of ERP budget and activities reside within NMFS, and all of the NMFS funds within ERP are devoted to protected species research. Currently this research focuses primarily on Steller Sea Lion and Pacific Salmon recovery. However, in the next five years research efforts will be expanded to further develop the next generation of stock assessments for protected species, known in our Stock Assessment Improvement Plan as “Tier III.”

Tier III research will improve capabilities for ecosystem-based assessments, including research, expanded monitoring, and development of new models to better predict spatial and temporal changes in populations and the impact of human activities on protected species. Tier III assessments will incorporate information on

- Behavior and physiology
- Multispecies interactions
- Linkages to oceanographic processes
- Food-web dynamics
- Population effects of sub-lethal natural and human impacts
- Market and non-market valuation
- Economic and sociocultural systems
- Biotoxins, pollutants, disease, and pathogens to address health of protected species and marine mammals as indicator species of environmental and human health.

Tier III assessments will ensure management decisions are based on the best available information, increasing the likelihood of achieving conservation mandates while reducing conflict and litigation and minimizing economic impacts. Their primary focus at this early stage will be on expanding knowledge of marine animal health and the effects of noise on marine mammals. However, they will also include partnering with other agencies and academia to integrate ecosystem considerations into existing research programs, develop future plans and priorities for research, and mine existing data sources to conduct ecosystem-level research.

## **Fisheries Management**

Management of Federal fishery resources is entrusted to NMFS under numerous laws, treaties, and other mandates. We work to ensure that fisheries are maintained at productive levels to support sustainable fisheries and the ecosystems of which they are a part.

We work with the eight Regional Fishery Management Councils to end overfishing, reduce bycatch, conserve essential fish habitat, and rebuild depleted stocks through the development of fishery management plans and associated regulations. The Councils recommend management plans and amendments and we approve these management programs and implement and enforce needed regulations. Toward this end, we:

- Develop analytical documents to support rulemaking in concert with the Councils
- In coordination with the Councils, set new policies and revise existing policy on fishery management and economic and sociocultural issues
- Work with the Councils to set policy regarding the operation and administration of the Councils and appointment of Council members
- Seek improvements in fishing fleet and shoreside processing operations and, with the Councils, reductions in overcapacity in fisheries
- Manage a voluntary seafood inspection service to ensure compliance with all applicable food regulations
- Participate in negotiations of international agreements
- Support U.S. participation in regional fisheries management organizations and bilateral consultations
- Work to secure equitable fishing and trade opportunities for U.S. fishermen
- Manage foreign fishing permitting programs.

To ensure effective management of stocks throughout their range, we maintain cooperative partnerships with three Interstate Marine Fisheries Commissions, all coastal states, and five island territories and/or commonwealths. We also maintain liaisons with other nations on fisheries matters.

To meet our future goals, we will implement a number of strategies in the coming years. Our short- and mid-term strategies to ensure productive fisheries in the future are to

- Implement fully a regulatory quality improvement program
- Strengthen coordination of marine fisheries management and conservation between state and federal levels
- Increase opportunities for industry to improve economic performance
- Following input from the Councils and other stakeholders, issue guidance for ecosystem approaches to management
- Increase public understanding of our stewardship role
- Coordinate with the Councils and other stakeholders to recover all overfished stocks under effective rebuilding plans
- Implement the forthcoming Recreational Fisheries Strategic Plan.

Over the long term, we will seek to ensure that ecosystem approaches to management are applied in the conservation and management of federal, state, and international fisheries; that the public promotes stewardship of marine fisheries; and that fish stocks are maintained at productive levels to support sustainable fisheries and ecosystems.

## Protected Species

The Protected Species Program (PSP) protects and recovers species through planning, regulation, partnerships, direct action, and outreach and education both domestically and internationally. NMFS is the lead federal agency for protecting and recovering marine and anadromous species under the Endangered Species Act (ESA) and the Marine Mammal Protection Act (MMPA). As such, the PSP falls entirely under our jurisdiction. Activities include

- Developing conservation actions for species approaching threatened or depleted status
- Listing species in need of protection under the ESA and categorizing stocks of marine mammals for levels of protection that will provide for future recovery
- Developing and implementing recovery and conservation activities
- Responding to stranding events and conducting a marine animal health program
- Developing publications and presentations and interacting in public forums for the purpose of outreach and education
- Preparing U.S. positions on issues and initiatives for international meetings
- Funding international conservation actions
- Transferring technology to international partners.

Over the next five years, our highest priority focus will be to stabilize or increase protected species populations and put ESA-listed species and depleted marine mammal populations on the road to recovery. This effort will require us to

- Complete required recovery, conservation, and take reduction plans
- Carry out recovery and conservation actions through partnerships
- Reduce the interactions of fisheries with protected species
- Achieve efficiencies in ESA section 7 consultations and ESA and MMPA permitting
- Implement proactive conservation efforts before species need to be listed under the ESA
- Improve education efforts.

While the main focus will be on issues that can be addressed domestically, we will expand international efforts to achieve recovery of species that spend a significant portion of their life cycle in international waters.

Over 60% of current funding is directed at funding partnership conservation, recovery, and co-management actions with coastal states, American Indian tribes, Alaska Natives, NGOs, universities, and various private entities. These partnership efforts will continue to leverage additional resources for conservation and are critical to achieving recovery of species.

We will strengthen partnerships internally through

- Development of joint conservation programs with the Coastal and Marine Resource Management program (National Marine Sanctuaries)
- Improvement of protected species data collection through the EOP
- Improvement of protected species research through the ERP.

The data collected, analyzed, and synthesized through the EOP and the research conducted through the ERP provide scientific information necessary for the implementation of sound and successful management strategies. Better information leads to management that is consistent with the nature of the problem and allows us to reach conservation goals while also reducing the risk of costly economic and sociocultural impacts.



## Enforcement

Enforcement is a matrix program led by NMFS in partnership with NOS that provides services to ensure compliance with measures enacted to protect, restore, and manage coastal and marine resources. These services are delivered through the NMFS Office for Law Enforcement (OLE), a professional, accredited law enforcement agency. The Enforcement mission includes the provision of services through strategies that include investigations, patrol and inspections, and outreach and education.

Investigations are conducted by over 140 special agents stationed throughout the coastal region of the U.S. states and territories. Agents investigate both civil and criminal violations and may be responsible for up to 30 investigations each annually, depending on the scope, complexity, and disposition of the case. The duration and scope of cases may range from only a few hours to several years.

NMFS also uses extensive patrol and inspection systems. We employ only 17 uniformed enforcement officers, most of whom are assigned to monitor the Individual Fishing Quota (IFQ) system in Alaska. However, we hold cooperative enforcement agreements to provide thousands of hours in patrol and inspections services in nearly every U.S. coastal state and several territories. We now hold such agreements with 21 coastal states and three U.S. territories; they place over 2,000 state resource officers at our potential disposal. In addition to patrol services, automated surveillance is provided through the use of vessel monitoring systems, which currently monitor over 2,200 vessels. These services and systems also contribute to homeland security. Through OLE, NMFS participates in a broad array of homeland security initiatives, including the FBI's Joint Terrorism Task Forces.

We also use outreach and education to elicit voluntary compliance with resource protection measures. We have had great success with voluntary compliance: Most citizens who are familiar with such measures and who understand the potential harm from violating them respect the resources and comply. Outreach and education through classroom sessions, literature distribution, sign placement, discussions with industry, and the facilitation of partnerships with volunteer, governmental, and non-governmental groups are an investment in the future as people learn the importance of conservation.

Over the next five years, we will use the strategies described below to provide the enforcement services that support the expanding level of fisheries management plans, listed and protected species, import/export controls, international conventions and treaties, observer programs, and other responsibilities within our mission.

- Investigations – We will pursue an enhancement of investigative services through the advancement and implementation of computer and financial forensics, the application of advanced computer analysis, and the facilitation of international cooperation.
- Patrol, Monitoring and Inspections – We will pursue the advancement and expansion of strategies that serve as force multipliers in the areas of partnerships and use of technology through our “flagship” programs of State Cooperative Enforcement and Vessel Monitoring.
- Outreach and Education – We will pursue and implement expanded strategies that include non-traditional enforcement measures that facilitate cooperation, problem resolution, and compliance through use of the media, volunteer organizations, schools, industry, and the public.

## Habitat

Habitat is a matrix program comprising activities from OAR, NOS, and NMFS that protects and restores coastal, marine, and Great Lakes habitats. The program plans, funds, and implements habitat protection and restoration projects; advances habitat science; provides technical information and conservation recommendations; and involves coastal communities, NGOs, and states in partnerships to protect and restore habitats and encourage stewardship of NOAA trust resources.

NMFS's habitat protection activities seek to avoid and minimize adverse impacts to living marine resource habitats. Many of these activities are implemented in close cooperation with NOS (dredging, natural resource damage claims, energy development implications), OAR (research initiatives), and NESDIS (environmental data layers, GIS products, IT support). They include:

- Reviewing and responding to proposals to develop or otherwise alter key habitats
- Improving diadromous fish access to historic habitats through dam removal and fish passage
- Developing and analyzing measures to reduce adverse fishing effects on essential fish habitat
- Working with stakeholders to develop ecosystem management plans
- Developing policies that improve regulation and management of habitat impacts.

NMFS participates in regional and national habitat restoration programs. We direct restoration planning, implementation, and monitoring for the Community-based Restoration Program, which undertook over 800 projects between 1996 and 2004. We serve as the Commerce Department representative to the Coastal Wetlands Planning, Protection and Restoration Act Task Force, which undertakes large-scale habitat restoration and protection in coastal Louisiana. We also serve as the primary source of restoration expertise for the Damage Assessment and Restoration Program. With NOS and the General Counsel's Office, we address the effects of oil spills, releases of toxic compounds, and ship groundings.

Over the next five years, we aim to expand our capabilities to implement large-scale protection and restoration initiatives through a place-based approach with a specific focus on urban estuaries. We will seek a leadership role among stakeholders and industry sectors, leverage protection and restoration efforts, and provide technical guidance (e.g., economics, bioeconomic modeling, and GIS technologies) to improve decision-making based on a foundation of science.

We will strive to

- Improve the general understanding of habitat functions and threats by assessing and conducting habitat analyses
- Develop models that enhance forecasting capabilities
- Establish priorities for habitat protection and restoration
- Monitor and evaluate restoration techniques
- Develop tools and methods to track success.

NMFS will expand efforts to infuse the best available information into policies, guidelines, models, and decisions that affect trust resources. We will pursue research partnerships to fill priority gaps in management plans and ecosystem approaches. We will implement an ecosystem approach to management that involves partners and stakeholders to protect and restore habitats that contribute to sustaining populations of fishery resources, and that reduces anthropogenic impacts on our Nation's coastal and marine resources.

## Coral Reef Conservation

Coral reefs are the most diverse components of marine ecosystems—and among the most threatened. The NOAA Coral Reef Conservation Matrix Program, led by NOS, supports science and management to preserve, sustain, and restore coral reefs. NOAA has management responsibility for coral reefs in Federal waters and National Marine Sanctuaries. Activities include

- Implementing the Coral Reef Conservation Act and leading and coordinating U.S. coral reef conservation efforts, working closely with other Federal agencies, state and territory governments, and NGO partners
- Leading a comprehensive program to map and monitor U.S. coral reefs
- Increasing understanding of the ecological and oceanographic processes that govern the structure and function of coral reef ecosystems and their response to environmental stressors such as overfishing, pollution, climate change, and disease.
- Designing, evaluating, and adapting specific management decisions that sustain and restore coral reef ecosystems
- Conducting outreach and education to increase community knowledge and support for conservation and management actions.

NMFS implements nearly 40% of the NOAA Coral Reef Conservation Program budget and activities, mostly in Hawaii and the U.S. Pacific, and in Florida and the U.S. Caribbean. Coordinated planning and implementation across NOAA has allowed us to build on our strengths—the science capabilities of the Southeast and Pacific Islands Fisheries Science Centers and the management expertise and responsibilities of its Regional Offices—to support national efforts to conserve coral reef ecosystems.

With our partners, we conduct mapping, habitat characterization, and monitoring of coral reefs and associated ecosystems as well as targeted research to provide managers with scientific information and tools. We support a variety of efforts to develop and implement management solutions to address threats to coral reef ecosystems, especially overfishing, in partnership with Regional Fishery Management Councils, state and territory managers, and NGOs.

Over the next five years, our highest priority will be to support an integrated ecosystem management approach to the conservation of coral reef resources. To this end we will

- Support the national capability to monitor coral reefs that is needed to implement an ecosystem approach to management. In particular, NMFS and its partners will conduct coral reef ecosystem monitoring in National Marine Sanctuaries and remote island locations to complement existing state and territory monitoring programs.
- Reduce overfishing of coral reef resources in partnership with states, territories, and Fishery Management Councils
- Complete removal of major accumulations of marine debris in the Northwestern Hawaiian Islands
- Address deficiencies in our mapping, understanding, and protection of deeper tropical reefs and cold-water coral communities.

We will continue to be a key partner in developing an informed public and supporting targeted research and local initiatives to improve coral reef conservation.

## Aquaculture

NMFS is the lead for NOAA's Aquaculture Matrix Program, which also includes OAR, NOS, and NESDIS. The program works to advance two long-term outcomes:

- Well-managed and productive marine aquaculture operations in the United States
- Worldwide adoption of environmentally sound marine aquaculture standards.

Achievement of these outcomes will increase seafood production and possibly support the replenishment of depleted stocks in a way that is both environmentally and economically responsible, both in the United States and internationally.

NMFS carries out the legislative and management aspects of the program as well as much of the research. In its execution, we use our legal/administrative capabilities (including rulemaking, permitting, and coordination); our scientific capabilities (including development of aquaculture systems for food production and stock enhancement, engineering of systems for high-energy offshore environment, and development of ecosystem and human health requirements and protocols for marine aquaculture); our education and outreach capabilities; and our capability to transfer technologies for commercial production, enhancement, and recovery of endangered species to the public and private sector (including pilot and demonstration projects).

In addition to working with other NOAA line offices and programs (including Enforcement and General Counsel) through the Aquaculture Matrix to achieve program goals and objectives, we also work with other related Department of Commerce programs and the Joint Subcommittee on Aquaculture.

Over the next five years we will:

- Develop a comprehensive understanding of marine aquaculture economics and environmental issues associated with aquaculture to provide reliable information and analyses for use in decision-making
- Continue to develop new offshore aquaculture legislation for the Exclusive Economic Zone that will establish a fully operational regulatory infrastructure for offshore aquaculture that includes a streamlined permitting process, siting criteria, and pre-approved zones for offshore aquaculture
- Develop and improve marine species culturing systems for commercial and enhancement purposes
- Contribute to a public understanding of NOAA's aquaculture program by providing access to information on aquaculture research and industry issues.

## **NOAA Mission Goal: Understand Climate Variability and Change to Enhance Society’s Ability to Plan and Respond**

Climate shapes the environment, natural resources, economy, and social systems that people depend upon worldwide. Major climatic events can have substantial impacts on marine ecosystems, leading to serious economic, social, and ecological consequences for living marine resources and society. To properly manage its trust resources, NMFS must measure, understand, and predict the impacts of climate variability and change on marine ecosystems. Our efforts and actions are guided toward delivering trusted, timely climate information to those who need and use it.

<b>NOAA Outcomes</b>	<b>NOAA Strategies</b>	<b>NOAA Programs Executed Wholly or in Part by NMFS</b>
A predictive understanding of the global climate system with quantified uncertainties sufficient for making informed and reasoned decisions on time scales of weeks to decades	Improve the quality and quantity of climate observations, analyses, interpretation, and archiving by maintaining a consistent climate record and by improving our ability to determine why changes are taking place.	<i>Climate and Ecosystems</i>
	Develop the ability to predict the consequences of climate change on ecosystems by monitoring changes in coastal and marine ecosystems, conducting research on climate-ecosystem linkages, and incorporating climate information into physical-biological models.	

*Italics represent programs in which other NOAA line offices participate.*

Our activities under this goal support the following NOAA performance objectives:

- Understand and predict the consequences of climate variability and change on marine ecosystems
- Increase number and use of climate products and services to enhance public and private sector decision-making.

We participate in only one program under this goal.

## Climate and Ecosystems

The Climate and Ecosystems Program—a matrix program led by NMFS in partnership with NOS, OAR, and NESDIS—is just now being established. When implemented, it will provide resource managers the knowledge and tools to adapt to the consequences of climate change to marine and coastal ecosystems. Local- and regional-scale place-based demonstration projects will be conducted to link NOAA climate information with NOAA resource management information to predict the status of marine and coastal living resources in future climates.

Currently, all funding for the Climate and Ecosystems Program resides within NMFS, although we anticipate that other line offices ultimately will participate as well. We will

- Focus studies to understand and predict climate-induced changes on marine ecosystems with critically important fishery stocks that are sensitive to climate variability
- Take an ecosystem approach by investigating the physical and biological controls on a system and how these are affected by climate variability and change
- Develop biophysical indicators and models that meet the needs of managers to adapt to predicted climate-induced changes in living marine resources.

To aid in the development and verification of these indicators and models, we will continuously monitor changes in marine ecosystems through a network of in-situ and remote observing systems. We coordinate the planning of the Climate and Ecosystems Program with NOS and NESDIS, the other line offices involved in the program. NMFS studies will be conducted in partnership with OAR scientists and will leverage other NOAA studies.

Over the next five years we will

- Determine variables and indices that characterize climate impacts on ecosystems
- Develop models to forecast ecosystem responses to climate variability
- Provide information to managers and stakeholders to allow them to adapt to climate-induced changes in marine ecosystems
- Expand the Climate and Ecosystems Program to other geographic regions.

## **Provide Critical Support for NOAA's Mission**

Strong, efficient, and effective leadership and support services within NMFS are essential to supporting NOAA's goals and programs. These qualities must also be able to adapt to evolving needs while improving our capability to support mission goals.

We are committed to organizational excellence through executive leadership, resource planning and management, administrative support, information technology, and specialized project support. We will also continue to improve our international affairs coordination and support, education/outreach/public affairs support, and research and technology applications to ensure effective management and communication.

Over the next five years we will

- Improve our annual budget estimate submission and associated documentation
- Continue oversight and management of NMFS Programs
- Work toward error-free annual financial audits
- Make new investments to improve our IT information sharing and storing capabilities
- Improve our IT security
- Continue to invest in maintaining our facilities to ensure a safe environment for our staff
- Implement a comprehensive agency-wide training program.

We must continue to have the scientific, technical, and administrative expertise necessary to maintain our leadership. We will continue our efforts to develop and sustain a high-performing, diverse, and flexible workforce aligned with our requirements in the face of the anticipated retirement of many of our most knowledgeable employees. We will implement approaches to address the knowledge, skills, and competencies that may be lost soon, especially in the areas of stock assessment, economics, and sociocultural research and analysis. Potential approaches include teaming junior staff members with senior ones, developing career paths for entry-level administrative positions, expanding e-learning to all employees, and increasing the recruitment of students interested in future positions with NMFS. We will continue to educate the workforce about diversity while creating an environment that ensures opportunity for all employees. We will also strengthen partnerships with Minority Serving Institutions.

New investments in technology are needed to take advantage of high-speed telecommunications, web-based technologies, and collaborative analysis techniques to streamline implementation of our mission and provide efficient services to the American public. This will enable rapid data analysis, creation of mobile wireless networks for use in the field, high-speed wide-area network accessibility for Internet-based collaboration tools and conferencing on highly secure networks, and upgrades for our six Regional Data Centers to support distributed relational databases and geo-spatial data warehouses. NMFS will also improve its IT security with full implementation of authentication systems.

New ships are needed to replace outdated ships that are costly to run, have limited capabilities, and break down frequently. New vessels are larger, have state-of-the-art technical capabilities, and are engineered to be quieter to improve stock assessments and behavior work. Increased capacity will allow multiple missions during a single cruise. Finally, they will be more reliable, needing little down time for repairs. The ships' expanded capabilities, efficiencies, and reliability will increase survey days at sea by at least 10% over existing capacity. We also support improvements to aviation operations that enhance their involvement in natural resource surveys.

## Implementation and Evaluation

In accordance with the Government Performance and Results Act (GPRA), the Performance Assessment Review Tool (PART), and the directives of the President's Management Agenda (PMA), NMFS reports its results annually based on a set of outcome performance measures that reflect the NOAA performance objectives. We believe it is important to evaluate the success of our stewardship activities according to the positive effects they have on the condition of the resources we manage. However, our performance is influenced by many factors that are partially or wholly beyond our control. Examples of such factors include

- Extreme weather and climate events like hurricanes or El Niño events
- Climate change
- Oil and chemical spills and other environmental catastrophes
- Agriculture practices
- National and global economic trends
- Land development
- Fishing practices of other nations.

Of course, our extensive assessment and prediction activities and capabilities, as well as our planning activities, minimize the effects of these factors on meeting our performance objectives. But the ultimate success of our stewardship is determined in large part by the natural environment and human behavior, neither of which can be controlled absolutely.

Nevertheless, we are optimistic about the future, and we believe that, despite the challenges, Americans do and will continue to enjoy the benefits of diverse and healthy marine ecosystems. When we truly have an informed public using an understanding of coasts and oceans to make social and economic decisions, that vision will be fully realized.



**NMFS FY 2006 GPRA Performance Measures in the Context of NOAA Outcomes and Performance Objectives**

<b>NOAA Outcomes</b>	<b>NOAA Performance Objectives</b>	<b>NMFS FY2006 GPRA Measures<sup>1</sup></b>	<b>FY 2003 Baseline</b>	<b>FY 2010 Estimated Target</b>
Healthy and productive coastal and marine ecosystems that benefit society	Increase number of fish stocks managed at sustainable levels	Number of overfished major stocks of fish	44	To be discontinued in FY07
		Number of major stocks with an "unknown" stock status	94	To be discontinued in FY07
	Increase number of protected species that reach stable or increasing population levels	Number of protected species designated as threatened, endangered or depleted with stable or increasing population levels (proposed)	18	38
		Number of stocks of protected species with adequate population assessments (proposed)	52	110
A well informed public that acts as a steward of coastal and marine ecosystems	Increase number of regional coastal and marine ecosystems delineated with approved indicators of ecological health and socio-economic benefits that are monitored and understood	[See footnote <sup>2</sup> ]		
	Increase number of habitat acres conserved or restored	Number of habitat acres restored (annual/cumulative)	5,200/ 11,020	4,300/ 40,704
	Increase portion of population that is knowledgeable of and acting as stewards for coastal and marine ecosystem issues	[See footnote <sup>2</sup> ]		

<sup>1</sup> The current GPRA Measures were submitted with the NOAA FY 2006 budget to the Department of Commerce. We are refining these measures with the goal of creating fewer, higher-level GPRA measures for FY 2007. We have a body of Corporate Performance Measures that includes both the GPRA measures and the performance measures that support GPRA measures.

<sup>2</sup> These are new objectives therefore performance measures will be developed or selected to represent these objectives. They will not necessarily be GPRA measures.

## GLOSSARY

**Biodiversity**—The variability among living organisms from all sources including, *inter alia*, terrestrial, marine, and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species, and of ecosystems (from the Biodiversity Convention)

**Bycatch**—Fish which are harvested in a fishery but which are not sold or kept for personal use, and includes economic discards and regulatory discards, but not fish released alive under a recreational catch and release fishery management program (from the MSFCMA)

**Capability**—The ability to do something with the capacity you have; the capacity to be used, treated, or developed for a specific purpose.

**Ecosystem**—A geographically specified system of organisms, the environment, and the processes that control its dynamics. Humans are an integral part of an ecosystem.

**Ecosystem Approach to Management**—Management that is adaptive, is specified geographically, takes into account ecosystem knowledge and uncertainties, considers multiple external influences, and strives to balance diverse social objectives

**Endangered Species Act (ESA)** —A statute enacted in 1973 to conserve species and the ecosystems on which they depend. Species at risk of extinction are listed as “threatened” or “endangered,” or as “candidates” for listings. Recovery plans are prepared to identify threats to species and the actions necessary to remove the threats.

**Environment**—The biological, chemical, physical, and social conditions that surround organisms.

**Essential Fish Habitat (EFH)** —Those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity (from the MSFCMA)

**Exclusive Economic Zone (EEZ)** —An area which extends from the seaward boundaries of the coastal states (3 nautical miles, in most cases) to 200 miles off the coast of the United States. Within this area, the United States claims and exercises sovereign rights and exclusive fishery management authority over all fish and all Continental Shelf fishery resources.

**Fishery**—One or more stocks of fish which can be treated as a unit for purposes of conservation and management and which are identified on the basis of geographical, scientific, technical, recreational, and economic characteristics; and any fishing for such stocks (from the MSFCMA)

**Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA)** —A statute enacted in 1976 primarily to establish an Exclusive Economic Zone (see definition above) in which foreign fishing could be controlled, and to set up a conservation and management structure for U.S. fisheries. Senator Ted Stevens’ name was appended to the title in 1996.

**Marine Mammal Protection Act (MMPA)**—A statute enacted in 1972 to protect marine mammals and their habitat. These include whales, dolphins, seals, sea lions, walruses, and many others.

**Mission Goal** —An elaboration of the mission statement, developing with greater specificity how an agency will focus its mission. The NOAA Strategic Plan states NOAA’s four Mission Goals.

**Outcome** —An end result, both expected and unexpected, of the customer’s use or application of the organization’s outputs.

**Overfishing**—A rate or level of fishing mortality that jeopardizes the capacity of a fishery to produce the maximum sustainable yield on a continuing basis (from the MSFCMA)

**Performance Measure** —A structured statement that describes the means by which actual outcomes and outputs are measured against planned outcomes and outputs. Performance measures consist of four parts: indicator, unit of measure, baseline, and target.

**Performance Objective**—A further elaboration of an outcome, with greater specificity as to the expected result. Similar to a performance measure but without any indicator, unit of measure, or quantification.

**Program**—A planned, coordinated set of activities designed to achieve a desired outcome. The defined effort with the purpose of meeting existing requirements or providing a new or improved capability to meet stated requirements. These are officially established by the NOAA Executive Council.

**Protected Species**—Any species protected by either the ESA or the MMPA, and which is under the jurisdiction of NMFS. This includes all threatened, endangered, and candidate species, as well as all cetaceans and pinnipeds excluding walruses. This term also includes seabirds, which NMFS has a responsibility to protect.

**Stock (of fish)**—A species, subspecies, geographical grouping, or other category of fish capable of management as a unit (from the MSFCMA)

# NMFS Organization Chart

