Priorities for the 21st Century

NOAA Fisheries' Strategic Plan for FY 2003 – FY 2008

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Marine Fisheries Service

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FOREWORD

From the Assistant Administrator for Fisheries

Our citizens depend on our Nation's living marine resources for food, jobs, recreation, tourism, medicine and a myriad of industrial and commercial products. Generations of Americans also now 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 result in the sustainability of these resources for future generations. However, our Nation is at a crossroad in the care and use of its living marine resources. At no point in history has greater economic, political and public pressure been put on NOAA's National Marine Fisheries Service (NOAA Fisheries) to provide optimal stewardship of these resources.

This plan looks into the future to determine the science, management and institutional requirements needed to obtain the tremendous potential value from these resources that our citizens expect and deserve. This look into the future points us to a path of rebuilding and sustaining fishery and protected species stocks to their long-term potential, and results in a delicate balance of achieving multiple objectives that produce the greatest benefits to the Nation.

NOAA Fisheries presents this Strategic Plan outlining our steps toward achieving effective and efficient ecosystem-based conservation and management of living marine resources in collaboration with our NOAA, Federal, tribal, state and local partners.

The Plan will sustain current natural resource values and guide us through rebuilding and recovery to significantly increase the value of our Nation's living marine resources. The average dockside landings of commercial fisheries have averaged 4.3 million metric tons valued at $3.4 billion over the last 5 years, supporting employment for 250,000 harvesters and processors. U.S. recreational fisheries provide a source of recreation and food to approximately 17 million Americans, who expend $20 billion a year on recreational angling. There are also significant non-market economic benefits associated with the existence of healthy fish, turtle and marine mammal stocks. However, the recent average commercial and recreational yield of all U.S. fisheries resources is still only slightly more than 60 percent of our best estimate of the long-term potential yield. The gross commercial value of the change in yield if all stocks were rebuilt to their long-term potential would yield an additional $1.3 billion to the U.S. economy at the point of first sale.

This strategic plan identifies specific improvements in existing programs, processes and strategies that, when accomplished, over the next 5 years will move us towards achieving NOAA Fisheries stewardship goals of maintaining living marine resources and their habitats as functioning components of marine ecosystems, supporting sustainable recreational and commercial fisheries, other marine wildlife values and the needs of our coastal communities.

To meet the objectives of recovering and sustaining fisheries and protected species, we must also strive to incorporate substantive economic data and analyses into an integrated bioeconomic policy framework which can forecast trends and outcomes of policy options into the future. This includes evaluating the trade-offs between different policy objectives such as competing land and water use for power and agriculture that may negatively impact the sustainability of fish

populations. It is also necessary to evaluate the cost of recovery of living marine resources, the non-market economic value of non-commercial species, and the distribution of economic impacts among different sectors of the economy.

We have identified six factors essential to achieving our Vision:

1) Improving the Information Base for Stewardship;
2) Determining Abundance and Yield;
3) Reducing Bycatch;
4) Eliminating Overcapacity and Overfishing;
5) Conservation and Recovery; and
6) Protecting and Restoring Living Marine Resources.

These factors are incorporated in the Strategic Plan and are integral to implementing NOAA's Mission Goals.

To meet our mandates and expectations in the future, we will also have to construct a safe, efficient and secure infrastructure to complement the high caliber science and management programs proposed for NOAA Fisheries. New investments in information technology, facilities, research technologies and human capital improvements are needed. The agency will take maximum advantage of technologies to streamline execution of our mission and provide efficient services to the American public. Also, NOAA Fisheries' workforce requires new skills and abilities to meet the organization’s needs and increasing responsibilities, including a greater emphasis on public education, communication and stakeholder participation in the governance process.

This Plan is a dynamic document that will be reviewed on an annual basis so completed items can be removed and new ideas and mandates can be incorporated. I encourage you to become familiar with the Plan and become an active participant in its implementation.

William T. Hogarth, Ph.D.

VISION

The American people enjoy the riches and benefits of healthy and diverse marine ecosystems

As a steward, NOAA Fisheries has an obligation to conserve, protect, and manage living marine resources in a way that ensures their continuation as functioning components of marine ecosystems, affords economic opportunities, and enhances the quality of life for the American public.

MISSION

Stewardship of living marine resources through science-based conservation and management and the promotion of healthy ecosystems

NOAA Fisheries is responsible for the management, conservation and protection of living marine resources within the United States Exclusive Economic Zone. NOAA Fisheries also plays a supportive and advisory role in the management of living marine resources in coastal areas under state jurisdiction, provides scientific and policy leadership in the international arena and implements international conservation and management measures as appropriate.

Under this mission, the goal is to optimize the benefits of living marine resources to the Nation through sound science and management. This requires a balancing of multiple public needs and interests in the sustainable benefits and use of living marine resources, without compromising the long-term biological integrity of coastal and marine ecosystems.

Many factors, both natural and human-related, affect the status of fish stocks, protected species and ecosystems. Although these factors cannot all be controlled, available scientific and management tools enable the agency to have a strong influence on many of them. Maintaining and improving the health and productivity of these species is the heart of our stewardship mission. These activities will maintain and enhance current and future opportunities for the sustainable use of living marine resources as well as the health and biodiversity of their ecosystems.

NOAA Mission Goal 1: PROTECT, RESTORE, AND MANAGE THE USE OF COASTAL AND OCEANIC RESOURCES THROUGH ECOSYSTEM-BASED MANAGEMENT

Objectives under NOAA Mission Goal 1:

NOAA's Strategic Plan has chosen three objectives to further describe what it plans to accomplish under its mission of protecting, restoring and managing the use of coastal and oceanic resources:

A. Protect and restore ocean, coastal, and Great Lakes resources;
B. Recover protected species; and
C. Rebuild and maintain sustainable fisheries.

Outcome Measures:

The attainment of these three strategic objectives will have significant overlapping impacts. However, the following six outcome measures describe the cumulative impact of these efforts:

- Increased number of coastal and marine ecosystems maintained at a healthy and sustainable level;
- Increased social and economic value of the marine environment and resources (e.g., seafood, recreation, and tourism);
- Increased number of acres and stream-miles restored for coastal and ocean species;
- Increased number of protected species in a stable condition or an upward trend;
- Increased number of managed species that are at optimum levels; and
- Improved ecological conditions in coastal and ocean protected areas.

These outcome measures and their associated performance measures and metrics are contained in Appendix I.

Integrated Ecological Approaches to Mission Goal 1:

Over the next 5 years NOAA Fisheries will strive to better understand the multiple components and risks that comprise sustainable ecosystems, including fisheries resources, threatened and endangered species, marine mammals, biodiversity, and important habitats that support living marine resources. We will use this information to better manage human behavior, and predict and monitor the impacts of these management decisions on the economy and communities. To manage effectively will require an improved scientific understanding of the pressures, both natural and human-induced, that change and restructure ecosystems.

This improved understanding will require increased resource monitoring. This would include: collecting information on seasonal movements of marine species; their response to oceanographic factors; trophic interactions; habitat use; life history information; demographics; and contaminant monitoring. With additional information regarding the functional relationships

governing the spatial and temporal distribution of marine species, ecosystem-based considerations can be incorporated into management decisions.

Some program integration is already underway. For example, our applied fisheries oceanography program has begun to develop models to predict regime shifts, examining linkages between large-scale changes in the ocean, atmosphere and environment and their subsequent effects on living marine resources. We plan to incorporate substantive social and economic data and analyses into ecosystem-based management decisions to fully capture the elements of human behavior in our models. Implementing data collection needs identified in stock assessment improvement plans for marine species is also underway to increase the comprehensiveness of data where management needs are most important. Resultant ecological assessments will lead to living marine resource management policies that are more comprehensive, have more predictable outcomes (or have at least accounted for risk), are subject to fewer judicial challenges, and be more likely to achieve the intended biological and social objectives of stewardship.

Since it is impossible to manage ecosystems directly, NOAA Fisheries proposes to invest in improved identification and understanding of regional ecosystems; develop ecosystem health indicators; and implement new methods of governance to establish the necessary knowledge, tools and capabilities for living marine resource management through ecosystem principles. Even as we adopt ecosystem-based management approaches, implementation of management on a species- and site-specific basis will still be necessary. However, incremental advances can be made through more holistic planning and programmatic approaches, *e.g.*, an Atlantic-wide strategy for addressing sea turtle and fisheries interactions as opposed to a fishery-by-fishery approach. Integration of future improvements in our science, management and regulatory processes are the key to implementing a more comprehensive ecosystem approach.

In the short-term, NOAA Fisheries will apply this new focus by giving increased priority to: habitat protection and restoration for all species; interactions of target species management decisions with non-target species and ecosystem effects; and partnerships with international organizations, foreign governments, Federal agencies, tribes, state and local governments, academia, private companies and associations, and nongovernmental organizations.

Measuring the Performance of Ecosystem Strategies

The goal-wide performance measures for these Ecosystem strategies include:

- Increased number of regional ecosystems identified and monitored with agreed to indicators of ecosystem health;
- Increased number of ecosystems where ecological functions and linkage to human activities and impacts are adequately understood for management purposes;
- Increased number of models linking climate/weather/atmosphere with ecosystem/hydrology made operational to assess and predict natural and human-induced changes in the ocean and coastal environment; and
- Increased number of coastal, ocean and Great Lakes areas (including coastal watersheds) with Federal, tribal, state, and local government or nongovernmental management plans using ecosystem best management practices and approaches.

NOAA Fisheries' and partnering NOAA Line Offices' performance under an ecosystem approach will be evaluated against a set of specific performance measures and metrics. These performance measures and their associated metrics are contained in Appendix I.

Goal 1 Strategies

Monitor and Observe

NOAA Fisheries has the most extensive program in NOAA to monitor and observe living marine resources and associated communities to provide information on biota, their habitats, and the human activities and actions that may impact coastal and ocean ecosystems. Data underpin scientific advice, which provides information to management to support their decision making. A more consistent flow of high quality, credible information is required to improve our decision making. To collect the quantity and quality of data necessary, we will improve our capacity to conduct surveys, conduct research and studies for better understanding of ecosystems, and to monitor the results of management decisions. These efforts will rely on extensive collaboration with fisheries participants and other stakeholders in the living marine resource decision process. The following sections describe key elements of the monitor and observe strategy.

<u>Fisheries Information System</u>

To ensure that decision makers have ready access to high quality, integrated information about the health of fish species and impacts of fishing or other activities, implementation of the Fishery Information System (FIS) is planned over the next 5 years. As outlined in a 1998 Report to Congress, the FIS is to be a nationwide, web-enabled, state-federal data collection program and relational data management system for improving the quantity, quality, integration, access to and dissemination of data necessary for fisheries stewardship. The FIS will satisfy major unmet needs by implementing state-of-the-art electronic reporting methods and harmonizing biological, social, economic, traditional fisheries knowledge, observer, permit and registration data bases in a common state-federal on-line data warehouse. It will also provide the institutional coordination and organizational process to fill major data gaps, adopt nationwide quality standards and best practices for collecting and managing fisheries statistics and facilitate integration and linking of historical time-series data currently held by independent state and federal programs. As opportunities arise, linkages to fishery-independent data base systems and other ocean and environmental observing systems will be made to support other critical NOAA missions.

<u>Observers</u>

Increasing our observer data coverage and sample size is essential to reliably estimating catch and bycatch, and helping to implement programs to reduce bycatch. Additional benefits of enhanced observer programs are near real-time monitoring of biological and environmental conditions and sampling opportunities not available from dockside sampling. This includes information on marine mammals, turtles and seabirds, information on abundance, contaminants, habitat, life history and basic biological information.

Observing Platforms/Advanced Technology

Replacing NOAA's aged fleet of fishery survey research vessels and aircraft, as well as increasing the number of chartered survey vessel days at sea, is a key step in meeting data gathering needs. Maintenance of the construction schedule of the four acoustically-quiet replacement FSVs is imperative to the success of this strategy.

Improvements in the sampling range and efficiency of at-sea and coastal data acquisition are essential if NOAA Fisheries is to significantly expand its assessment and ecosystem evaluation capabilities in a cost-effective manner for marine and anadromous species management. Through the development of low-cost, modular, self-contained sensor packages, new sensors will be deployed in various environments. This will range from anadromous fish run sensors; moored ocean buoys; remotely-operated vehicles; sensors in marine managed areas to augment law enforcement efforts, and the expanded use of Vessel Monitoring Systems. Many of the components of these systems are already in use or expected to become available within a short time period. Other components will require substantial research and development. Systems will be deployed on appropriate platforms, including fishing vessels, research vessels, customized autonomous underwater vehicle, other remotely-operated small craft and buoys, aircraft and observation satellites. Devices also need to be designed for attachment or insertion into species themselves.

In the future, assessments will use advanced acoustic and optical technologies to identify, size and count species of interest. The addition of passive acoustic detection methods for marine mammal surveys will increase the precision of traditional visually-based surveys and allow wider detection ranges, including data collection during nighttime and inclement weather. The development of correction factors for deep and long-diving species (e.g., sperm and beaked whales) that are difficult to detect with visual methods alone will be enhanced. The ability to collect timely data on total mortality of target and non-target species, including seabirds, will also be enhanced.

Habitat Assessments/Restoration Monitoring

The continuing loss and degradation of ocean, coastal and riverine habitats is a significant, but perhaps the least understood factor influencing living marine resources under NOAA Fisheries stewardship. It is also one of the greatest long-term threats to the viability of commercial and recreational fisheries. In partnership with NOAA's National Ocean Service, a GIS-based baseline inventory and mapping of significant habitat types, spatial extent and function will be developed for the entire U.S. Exclusive Economic Zone and other areas that support NOAA trust resources. In addition, NOAA Fisheries will work with state partners to obtain information for vital coastal and riverine systems. Initially, near shore seagrass and kelp habitats will be surveyed; later efforts will expand offshore to characterize important habitat, including recreational and commercial fishing grounds and habitat of protected species. In addition, NOAA Fisheries will monitor the benefits of restoration projects carried out by the agency.

Social Science

Unlike biological and environmental data, there are very few continuous NOAA time-series of social and economic data, making it virtually impossible to fully incorporate social science

analysis into the decision-making process. Expansion of economic and social science data collection programs will occur that include commercial harvesting and processing costs and earnings, recreational valuation and economic expenditure data, fishing community demographics and social and economic dependency data. Non-market values of protected resources and habitat will be researched. Additional data will enable the calculation of commercial and recreational fishery benefit-cost analyses of regulatory options, provide a measure of the distribution of these impacts among various sectors, and to serve as a return on investment measure of agency performance.

Industry Partnerships

NOAA Fisheries gains tremendously by partnering with the fishing industry to conduct cooperative research. Over the next 5 years collaboration and inclusiveness of the industry in our science program will be expanded. Our research vessels cannot be in all places at all times and local knowledge and fisheries expertise can be gained only in cooperation with our constituents. Use of commercial and recreational vessels to "fill in the gaps" in our surveys (both in time and geographic location) is required to help to meet the shortfalls. Industry vessels can be used: for fine-scale surveys; to survey closer inshore than our larger vessels; to test fishing gear that minimizes bycatch; at multiple locations simultaneously for tag/recapture studies; and serve as an early warning system for significant biological and oceanographic events as part of a long-term study fleet. Fishing vessels are also appropriate platforms for standardized stock assessment surveys that use gears less sensitive to changes in vessel type, such as traps, pots and longlines. Industry participants also possess a wealth of knowledge on resource distribution of individual species and stocks that we can use to fine tune and interpret our broader-scale multi-species surveys.

Understand and Describe

NOAA Fisheries will utilize this wealth of new data by expanding its research capabilities to answer questions on the link between species, habitat and ecosystem viability and sustainability. The following sections describe key areas where new raw observations will be transformed into management information.

Habitat

The loss or degradation of reproducing, nursery, juvenile, feeding and spawning habitats can significantly reduce the population size and sustainability of our trust resources. The lack of basic information on habitats and the impact of fishing activities to habitats has resulted in growing controversy and litigation. Uncertainty can result in management decisions that inadequately protect habitats, or are potentially overly restrictive in the identification of habitats to be protected. Habitat assessment and research on habitat-ecosystem health linkages will be conducted cooperatively with the Regional Councils, Interstate Commissions and states to understand the role of habitat in fish productivity, and subsequently take steps to adequately protect and restore the key habitats of our fishery resources.

Marine Noise

Marine noise from commercial shipping and fishing vessels, recreational fishing vessels, boats, jet skis and military and industrial activities is a cause for concern. The ultimate effects of this

noise on marine mammals and turtles are subject to regulation by Federal law. A comprehensive research program is proposed that uses new instruments and approaches to: describe normal hearing in these animals; determine the effects of noise on hearing structure and function; and measure behavioral responses to noise to determine the impacts on the population itself. This program complements NOAA's Office of Oceanic and Atmospheric Research's measurement of the worldwide rise in ocean noise, U.S. Navy and Minerals Management Service studies on the effects of noise on marine animals, and a multi-agency effort to reduce ocean noise from commercial shipping.

Assess and Predict

Assessment of the status of living marine resources is the basis of the scientific advice used to develop management measures that ensure fisheries are sustainable, robust and productive without adversely impacting protected and endangered species or their habitats. Enhanced social and economic analyses are also essential components to predict and monitor the human impacts of our stewardship decisions. Additional economic data and analyses will improve our ability to measure impacts on communities and the cost and benefits of recovery. Within the next 5 years, NOAA Fisheries will develop research and modeling protocols that result in predictive assessment models that incorporate multiple environmental, ecological and economic risk factors. Major elements of this strategy are described in the following sections.

Stock Assessment Improvement Plans

NOAA Fisheries has management responsibility for over 1,050 stocks of fish, invertebrates and marine mammals. There is a critical need to improve the quality, frequency and timeliness of assessments for many if not all of the 119 high volume, high value, or high profile stocks that are routinely assessed. However, lack of data, outdated technology and limited understanding of the ecology and habitat needs of these species have hindered our ability to conduct assessments sufficient to evaluate stock status relative to their role in ecosystem viability.

Recovery of protected species also depends upon reliable, precise estimates of their abundance, information on distribution, life history, basic biological parameters, habitat needs/use and health and disease. Currently the status of over 200 protected and at-risk marine species is unknown. This lack of data can increase the risk of depletion and extinction for protected species, or conversely, increase the probability that species will be mis-classified under the Endangered Species Act or Marine Mammal Protection Act, both of which can result in potentially significant losses to the nation.

NOAA Fisheries' stock assessment improvement plans for fisheries and protected resource stocks guide the collection of scientific information and provide benchmarks for conducting quality assessments. Implementation of these plans will allow NOAA Fisheries to attain improved analytical rigor and the application of consistent standards and methods. The expansion of the scale and scope of factors influencing populations and their inclusion in assessment models will result in attainment of long-term targets for stock assessment excellence that will strengthen subsequent fisheries and protected resources management decisions.

Ecosystem Modeling

These marine ecosystem-based approach to assessing resources will give managers better tools for managing marine ecosystems that are stable and balanced. This approach will provide the types of information necessary for the regulated community (such as the Navy, oil and gas industry and fishing industry) to plan and manage their activities in a way that will avoid unintended impacts to marine mammals, sea turtles, seabirds and their habitats. This approach will also determine which factors may cause ecosystems to destabilize, allowing predictions and management decisions to be taken to avert crises.

Knowledge of decadal and ecosystem-scale environmental variability and its impacts on living marine resources productivity is essential to effective management. One means to researching ecosystem-scale environmental variability is through NOAA Fisheries' applied fisheries oceanography program. Expansion of this effort to develop models to predict regime shifts by examining linkages between climate and the subsequent effects on living marine resources is planned. In addition, the marine mammal tissue bank has established a baseline for contaminants, and the marine mammal health and stranding program is also already providing valuable indices of ecosystem health. Creation of additional indicators of ecosystem health, and triggers to changes in health, will be provided to managers in models and indices that forecast potential changes in marine ecosystems, and evaluate the resulting impacts on the living marine resources which we manage.

Engage, Advise and Inform

As part of NOAA Fisheries' efforts to ensure that decision makers and the public are well informed about the condition of and adverse effects of human interactions with living marine resources, NOAA Fisheries is working to provide state-of-the-art tools and techniques needed for effective resource management. NOAA Fisheries is providing opportunities for early consultation with other Federal agencies, tribes, states and the public to facilitate information flow, assure coordination and cooperation and provide assistance in the use, evaluation and application of information provided both by NOAA Fisheries and its constituents. Early consultation also assists in identifying potential impacts to living marine resources and developing options to avoid or minimize those impacts.

NOAA Fisheries provides advice to and consults with our Federal partners through programs such as those set up under the Fish and Wildlife Coordination Act, the Clean Water Act, NEPA and the Magnuson-Stevens Fishery Conservation and Management Act. Under these authorities, NOAA Fisheries provides management and scientific research recommendations to Federal agencies on how to avoid and minimize impacts to living marine resources and their habitat. We also advise on appropriate compensation measures needed to mitigate unavoidable impacts.

NOAA Fisheries will seek opportunities to work collaboratively with other Federal agencies, tribes, states and universities so their environmental information can be included in our decision making process, thereby enhancing our ecosystem-based approach.

In the future NOAA Fisheries will expand the use of technology to streamline the consultation process, improve the efficiency of information exchange, and reduce the process time for consultations.

In addition, NOAA Fisheries will maximize agency responsiveness and outreach to stakeholders and constituents and implement consistent procedures across the agency resulting in open, informed and transparent decision making. By targeting improvements in the environmental literacy of the nation through education and outreach programs, we intend to increase the awareness of environmental stewardship practices and behaviors that all citizens can contribute to as individual stewards of the nation's living marine resources. More directed strategies for improved communications and education will focus on community oriented policing practices of our enforcement programs. Feedback and customer satisfaction about our programs and effort will be sought through a variety of means to help evaluate our performance.

Manage

The culmination of the preceding four strategies is an improved scientific foundation for the creation of public policy on the sustainable use of the nation's living marine resources. NOAA Fisheries success in future management is dependent on using these outputs to create a stewardship approach that integrates biological, social, economic and environmental factors into a policy framework that considers current decisions on living marine resources in the context of their role and value in the ecosystem. Improvements in the regulatory process itself are also targeted to streamline the rule making process, integrate multiple objectives and cumulative impacts into decision making, and increase the participation of the affected regulated sectors in a transparent and open decision process. By implementing the following components of this Manage strategy, NOAA Fisheries will address critical policy issues of food security, optimal value of alternative uses of the nation's resources, and resolve unique fisheries challenges of bycatch and overcapacity.

<u>Regulatory Streamlining</u>
The NOAA Fisheries' Regulatory Streamlining Project identified the analytical requirements of the National Environmental Policy Act (NEPA) as the foundation of its regulatory process, providing the framework to ensure compliance with all of the agency's mandates and requirements. The NEPA process will begin at the early stages of rule making development to incorporate living marine resources, protected species and habitat issues. With the support of better science to improve the content of policy, improvements in the stewardship process also require changes. This includes seeking efficiencies through improved collaboration and technology adoption such as web-based regulatory guidelines and templates and electronic rule making. The goal is to provide better analyses and regulatory documents in a more timely and transparent manner. The public will benefit from the adoption of management measures, that can be adjusted quickly to respond to changing circumstances. NOAA Fisheries should have significantly fewer litigation losses on process issues, better relationships and service to our constituents, and more effective conservation and management of the Nation's living marine resources overall.

In addition to the regulatory streamlining process, bycatch and overcapacity reduction, aquaculture and modernized enforcement are major management policy and program improvements that have been identified as priorities.

Bycatch Reduction

Bycatch is the incidental catch and resultant injury or mortality of non-target fish, protected marine species and seabirds in fisheries. Bycatch can have substantial economic and biological consequences not only on the species caught incidentally, but on other predator and prey species in the ecosystem. Regulation of a fishery to control the impact can affect the economic viability of the fishery and the communities they support.

The reduction of bycatch is a management priority for the agency. Within the next 5 years, NOAA Fisheries will attack bycatch impacts through an aggressive bycatch reduction program that includes: a collaborative conservation engineering program with industry to research and develop new gear technologies and fishing practices that minimize adverse bycatch; an extensive education and outreach element to transfer these technologies and techniques to domestic and foreign industries; developing comprehensive monitoring capabilities to evaluate the effects of bycatch reduction policies.

Capacity Reduction

Fishing capacity reduction is the cornerstone of an improved NOAA Fisheries management program. Overcapacity (too many vessels and/or fishermen for the allowable levels of catch) exists in more than 55 percent of all federally managed fisheries, which results in economic waste and biological over-harvesting. Reduction of overcapacity will be accomplished in two ways: 1) through market forces that result from implementation of transferrable "share based" management systems that allocate rights to harvest shares of the resource; and 2) through buyback of overcapacity, vessels and/or fishing permits, in combination with other policy measures to control latent permits and limit entry. Buyback of overcapacity will use either appropriated funds or industry funds (the latter supported by government loans) depending on the circumstances of the particular fishery.

Aquaculture

NOAA Fisheries has identified aquaculture as a research priority for potential stock enhancement. It has the potential to conserve and rebuild fisheries and protected species stocks through enhancement, provide employment and income in the coastal regions of the United States, and offset fishing pressure on wild resources. This priority is part of a long-term cross-cutting aquaculture agenda that also includes the development and implementation of a regulatory infrastructure for marine aquaculture. The intent is to integrate marine aquaculture into ecosystem-based management of living marine resources by creating environmental standards and appropriate monitoring and evaluation protocols to ensure compliance with a new commercial Code of Conduct for aquaculture.

To fully develop the U.S. potential, NOAA Fisheries will create a regulatory framework for development of economically sustainable aquaculture in the Exclusive Economic Zone (EEZ)

through creation of a new national offshore Aquaculture Act. Provisions would include a streamlined leasing process for aquaculture in the EEZ, developing a one-stop permitting process in the EEZ, and identification of pre-permitted aquaculture zones. NOAA Fisheries will also expand its research and development capacity for expanding U.S. aquaculture production by developing sustainable husbandry systems for production of species to replenish commercial and recreational fisheries, develop aquaculture technology for commercial culture of indigenous species of fish and shellfish in the open water of the U.S. EEZ and develop a marine re-use culture system.

Modernization of Enforcement

The market demand for seafood, the pressures for recreational use of marine ecosystems and ever-increasing demands for water resources results in greater challenges for NOAA Fisheries' efforts to protect living marine resources and their habitats. NOAA Fisheries Enforcement is charged with gaining compliance with measures designed to conserve living marine resources. These responsibilities span inland rivers and streams, the U.S. EEZ and, through the provisions of over 29 international treaties and conventions, the world's oceans. Current enforcement management efforts concentrate on significant offenders, obtaining voluntary compliance through public outreach and education, monitoring a wide variety of regulatory schemes to ensure compliance, and operating programs and systems to improve the efficiency and effectiveness of enforcement efforts. NOAA Fisheries needs to: substantially increase investigative resources and supporting infrastructure; implement new information management technology; modernize and expand the electronic vessel monitoring systems; and institutionalize funding to support State enforcement of Federal fisheries regulations.

NOAA Mission Goal 2. UNDERSTAND CLIMATE VARIABILITY AND CHANGE TO ENHANCE SOCIETY'S ABILITY TO PLAN AND RESPOND

Society exists in a highly variable climate system, with conditions changing over the span of seasons, years, decades and longer. The structure and boundaries of marine ecosystem fluctuate in response to global climate variations. Fisheries and protected resources must be managed from an ecosystem perspective that incorporates future natural and anthropogenic climate change, since even perfect control of fishing mortality and bycatch cannot guarantee long term population health if climate affects natural morality rates. Coastal and marine ecosystems are particularly vulnerable to the effects of climate variability, and such variability can lead to severe social and economic dislocations of the fishing industry and the communities it supports, threats to marine mammals and protected species and susceptibility to harmful coastal conditions.

To enable society to better respond to changing climate conditions, NOAA Fisheries contribution will be to assess and understand the impacts of climate variability and change on marine ecosystems. This requires improved information on climate factor effects on living marine resource health, and implementing these assessments into resource management policy. The climate data products provided by NOAA will be interpreted to determine the likely consequences of climate change to coastal and marine ecosystems. A data product and information delivery system will be maintained and continuously updated with key physical and ecological indicators of the current and future climate state, linked to fisheries resources and

tailored to a spectrum of users that includes scientists, managers, policymakers, commercial and recreational fishers and the public. This information will allow an optimal utilization management strategy to be developed that interprets short and long term climate factors into assessment models.

NOAA Mission Goal 3. SERVE SOCIETY'S NEEDS FOR WEATHER AND WATER INFORMATION

NOAA Fisheries role in this mission is to identify and deliver user requirements for weather and water information, both for the line office and its constituents. This includes linking customers with the NOAA products and services they need for safety-related decisions, operating efficiencies, better management of coastal resources and improved transportation system management and planning. NOAA Fisheries in coordination with other Line Offices will capture data product requests from commercial and recreational fishers to better understand and define their needs for weather information critical to their operations.

NOAA Mission Goal 4. SUPPORT THE NATION'S COMMERCE WITH INFORMATION FOR SAFE, EFFICIENT AND ENVIRONMENTALLY SOUND TRANSPORTATION

NOAA Fisheries will support NOS to develop one-stop shopping for port development and construction projects to ensure that the environmental consequences of port development and operations are minimized. This contribution will incorporate the assessment of the risks of operation and development on port communities for impacts on coastal resources, coastal erosion and coastal flooding. NOAA Fisheries will also assist the other line offices to increase the number of ports with plans, procedures, policies and practices that minimize the environmental consequences of port operations and development. NOAA Fisheries will also work with other line offices to address the problem of exotic species introduction into U.S. waters, particularly developing viable mitigation strategies for ballast water.

NOAA's CROSS-CUTTING PRIORITIES:

When NOAA met with stakeholders and employees to identify strategic directions for the next decade, both groups recognized that NOAA needs to improve the core capabilities that support the agency's four mission goals. As a result, NOAA has identified six essential areas of improvement for the future. These cross-cutting priorities are the programmatic and managerial underpinnings that facilitate NOAA's delivery of services and enable effective operations.

(1) INTEGRATED GLOBAL ENVIRONMENTAL OBSERVATION AND DATA MANAGEMENT SYSTEM

NOAA Fisheries will collaborate with local, regional, national and international partners to provide local-to- global environmental observations. This information will enhance NOAA's ability to promote healthy ecosystems, as well as, protect lives and property, expand economic opportunities and understand climate variability. NOAA Fisheries has systems in place and will

be refining and designing new systems that will be able to contribute to the system. We have information from observers, fish counts, river flows, water diversions, etc. that will be key elements in the NOAA data management system. NOAA Fisheries will use its International Program to promote international cooperation and participation in developing this system.

(2) ENVIRONMENTAL LITERACY, OUTREACH AND EDUCATION

NOAA Fisheries will work with NOAA and the other Line Offices to establish an environmental literacy program for educating present and future generations about the changing Earth and its processes. This program will improve the public's knowledge of NOAA Fisheries responsibilities and will assist state and local natural resource managers by ensuring that decision makers have access to the information they need to appropriately reduce human impact on the environment and to respond to storm warning and environmental change.

NOAA Fisheries will improve public awareness of its mission goals and accomplishments, as well as basic knowledge of the environment and human interactions with the environment. We will assist in creating a NOAA-wide mechanism for creating, distributing and using educational materials and for measuring the effectiveness of outreach efforts.

NOAA Fisheries will actively encourage and promote careers in ocean, climate, atmospheric and social sciences at all educational levels, particularly through Minority Serving Institutions. Using the Living Marine Resources Cooperative Science Center established under the Minority Serving Institutions Initiative and other Minority Serving Institutions, NOAA Fisheries will increase the number and diversity of college students graduating each year with undergraduate and graduate degrees in NOAA related sciences.

(3) SOUND, STATE-OF-THE-ART RESEARCH

NOAA Fisheries will support high-quality research underpinning its environmental analysis, prediction and ecosystem-based management missions. The agency will develop and implement the new products, services and approaches to ecosystem-based management needed by a Nation facing urgent environmental, economic and public safety challenges. This includes investments in short- and long-term research and in development of advanced technology to understand, describe and predict changes in the natural environment. Our execution of the NOAA Fisheries Science Quality Assurance Plan will be recognized by researchers and decision makers for its utility, objectivity, integrity and peer review.

NOAA Fisheries will accelerate the transfer of knowledge and technology into operational use and ecosystem-based management. We will increase interactions among NOAA researchers, operations and resource managers as well as users to identify operational and policy needs.

NOAA Fisheries will increase use of models and assessments among physical, biological, social and economic scientists, operations researchers and ecosystem managers inside and outside NOAA. We will also facilitate the transfer of NOAA models, forecasts, products and services from research into operations and ecosystem management.

(4) INTERNATIONAL COOPERATION AND COLLABORATION

NOAA Fisheries will support and promote international policies and interests in ecosystem-based management, climate change, Earth observation and weather forecasting. NOAA Fisheries' role will include improving collection and analysis of status and trends information, and developing consensus on scientific advice supporting the sustainable management of fish stocks and protected species with its international partners.

NOAA Fisheries will participate in and host international fora on aquaculture cooperation and seek international guidelines and strategies for responsible and sustainable aquaculture.

NOAA Fisheries will support NOAA's adoption of United Nations Specialized Agency agreements, as well as bilateral relationships with individual countries, to maximize the development and use of NOAA's research, environmental science services and environmental management for the mutual benefit of all parties.

NOAA Fisheries will strive to maintain and enhance existing international relationships, in addition to encouraging increasing the number of new international agreements covering NOAA technical assistance and capacity-building transfers. We will also promote international consensus and cooperation in support of our mission and U.S. foreign policy through multilateral and bilateral conferences and relationships.

(5) HOMELAND SECURITY

NOAA's core missions of environmental prediction and management are manifested in more than eighty capabilities that support America's efforts to prepare for and, if necessary, respond to terrorist attacks. NOAA Fisheries will support homeland security through its core capabilities including seafood inspection, research laboratories and law enforcement. This includes coordinating delivery of its products, services and capabilities to Federal, state and local emergency managers and responders and strengthening its own infrastructure to protect agency personnel, facilities and information services. For example, we will increase the number of ships with vessel monitoring systems so that vessel traffic could be monitored closely when a need arises.

(6) ORGANIZATIONAL EXCELLENCE: Leadership, Human Capital, Facilities, Information Technology and Administrative Products and Services

The conduct of high quality science and management programs at NOAA Fisheries requires a safe, efficient and secure infrastructure. New investments in information technology, facilities and human capital improvements are needed.

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 data bases and geo-spatial data warehouses.

NOAA Fisheries will improve its IT security with full implementation of authentication systems including Public Key Infrastructure (PKI), biometrics and smartcards. PKI will provide authentication for constituents interested in purchasing permits online, initiating digital signatures and numerous e-commerce applications under current development. Biometrics and smartcards are proposed technology solutions devoted to controlling access to internal resources.

NOAA Fisheries research employees need to actively collaborate with management staff as part of the regulatory improvement process. This requires a technological solution such as the deployment of video teleconferencing over a digital network (Video over IP) based systems, in conjunction with a modernized WAN. To meet the need to reduce telecommunication costs while increasing collaboration, NOAA Fisheries will deploy a Voice over IP based system among its Headquarters, Regional Offices and Science Centers.

A safe environment for the workforce is a priority for the physical and environmental safety of employees. NOAA Fisheries facilities on average are more than 30 years old and require substantial maintenance. Investments in facility modernization, repair and maintenance prolongs the life of existing facilities and reduces the need for major expenditures to prematurely construct replacement facilities. Employee safety training is also a priority. NOAA Fisheries will continue to provide mandatory training for managers and training opportunities for all staff.

Recent studies have pointed out that NOAA Fisheries workforce is becoming less able to meet the organization's needs due to retirements and to new skill requirements. Efforts to attract new staff, particularly people with quantitative stock assessment, economic and social-science skills must be increased and succession planning is imperative.

Appendix A Table 1 - Performance Measures

Goal 1: Protect, restore, and manage the use of coastal and ocean resources through ecosystem-based management

Objective A. Protect and restore ocean, coastal, and Great Lakes resources

Strategy: Monitor & Observe

NOAA Performance Measure	Line Office Metric	Baseline	Target
Increased area covered and number of ecological conditions monitored by state-of-the-art observation systems and platforms that provide necessary information for NOAA's stewardship responsbilities	Need to Develop a Metric - NMFS is Supporting LO		

Strategy: Understand & Describe

NOAA Performance Measure	Line Office Metric	Baseline	Target
Increased ocean, coastal, and Great Lakes areas explored, mapped, characterized, and inventoried	Number of EEZ mapping surveys	0 in FY2002	1 in FY2008
Increased number of impacted human communities where sufficient data exist to analyze and understand the economic and social benefits, costs, and impacts of management decisions	Number of FMPs with complete economic data (variable cost, annual operating cost and revenue) collected for commercial harvesters	2 FMPs in FY2002	14 FMPs by FY2008
Increased number of impacted human communities where sufficient data exist to analyze and understand the economic and social benefits, costs, and impacts of management decisions	Number of coastal states with sufficient economic and social data	0 States in FY02	27 States in FY08
Increased number of impacted human communities where sufficient data exist to analyze and understand the economic and social benefits, costs, and impacts of management decisions	Number of coastal states with social and economic data analyzed for their fisheries/fishing communities	0 states in FY2002	28 states by FY2008
Increased number of impacted human communities where sufficient data exist to analyze and understand the economic and social benefits, costs, and impacts of management decisions	Number of Fishery Management Plans (FMPs) for which net benefits and economic impacts can be assessed	7 FMPs in FY2002	20 FMPs by FY2008
Increased number of impacted human communities where sufficient data exist to analyze and understand the economic and social benefits, costs, and impacts of management decisions	Number of protected species valuations conducted	0 in FY2002	24 by FY2008
Increased number of techniques and tools that can be used to restore and protect ocean, coastal, and Great Lakes resources	Number of completed restorations evaluated for success		
Increased number of techniques and tools that can be used to restore and protect ocean, coastal, and Great Lakes resources	Number of fisheries with new gear to reduce impacts to seafloor habitat (cumulative)	0 in FY2002	13 by FY2008
Increased number of marine resources potentially available for commercial use (e.g., pharmaceuticals, aquaculture species for human uses)	To be developed- NMFS supporting		

Strategy: Assess & Predict

NOAA Performance Measure	Line Office Metric	Baseline	Target
Increased number and accuracy of models to understand and predict the interactions of species and their environment	To be Developed		

Strategy: Engage, Advise & Inform

NOAA Performance Measure	Line Office Metric	Baseline	Target
Increased percentage of resource consultations that result in "no net negative impact	Number of federal actions undertaken that incorporate NMFS' recommendation to avoid or minimize adverse effects to living marine resources and their habitats.		
Increased percentage of coastal communities and coastal inhabitants aware of, and acting appropriately to minimize, their impacts on ocean, coastal, and Great Lakes resources	Number of volunteer or community participation hours devoted to habitat restoration projects	40,000 hours in FY2001	500,000 hours by FY2008
Increased percentage of coastal communities and coastal inhabitants aware of, and acting appropriately to minimize, their impacts on ocean, coastal, and Great Lakes resources	Number of partnerships formed to restore fishery habitat through a collaborative approach		
Increased percentage of coastal communities and coastal inhabitants aware of, and acting appropriately to minimize, their impacts on ocean, coastal, and Great Lakes resources	Number of public information meetings to ensure full understanding of the basis for and purpose(s) of resource conservation and management actions		
Increased percentage of coastal communities and coastal inhabitants aware of, and acting appropriately to minimize, their impacts on ocean, coastal, and Great Lakes resources	Number of cooperative state-federal activities to survey communities for determining the effectiveness of outreach communications		

Strategy: Manage

NOAA Performance Measure	Line Office Metric	Baseline	Target
Increased percentage of ocean, coastal, and Great Lakes areas for which management, restoration, and response plans have been successfully developed and implemented in conjunction with NOAA's international, Federal, state, local, and tribal partners	Increased number of rulemakings developed electronically	2 in FY2002	75 in FY2008
Increased percentage of ocean, coastal, and Great Lakes areas for which management, restoration, and response plans have been successfully developed and implemented in conjunction with NOAA's international, Federal, state, local, and tribal partners	% of permits applied for, reviewed, and issued online	0 in FY2002	100 in FY2008
Increased percentage of ocean, coastal, and Great Lakes areas for which management, restoration, and response plans have been successfully developed and implemented in conjunction with NOAA's international, Federal, state, local, and tribal partners	Number of enforcement investigations conducted	2,714 in FY2002	4,108 in FY2008
Increased percentage of ocean, coastal, and Great Lakes areas for which management, restoration, and response plans have been successfully developed and implemented in conjunction with NOAA's international, Federal, state, local, and tribal partners	Develop and deliver basic and advanced NEPA, MSA, and ESA analysis training programs to senior managers and executives (cumulative)	0 in FY2002	10 by FY2008

Increased percentage of ocean, coastal, and Great Lakes areas for which management, restoration, and response plans have been successfully developed and implemented in conjunction with NOAA's international, Federal, state, local, and tribal partners	Develop and deliver basic and advanced NEPA, MSA, and ESA analysis training programs to staff (cumulative)	3 in FY2002	25 by FY2008
Increased number of invasive species under control	Need to Develop a Metric - NMFS is Supporting LO		
Increased number of acres and stream-miles of habitat restored for ocean, coastal, and Great Lakes resources	Number of habitat acres restored	1,070 acres in FY2001	15,000 acres by FY2008
Increased number of acres and stream-miles of habitat restored for ocean, coastal, and Great Lakes resources	Number of stream miles made accessible to fish, opened		
Increased ocean fisheries production through environmentally sound aquaculture technology	Establishment of Legislative authority for aquaculture permitting and leasing within the EEZ		
Increased ocean fisheries production through environmentally sound aquaculture technology	Number of husbandry systems developed for commercial or replenishment application		

Goal 1: Protect, restore, and manage the use of coastal and ocean resources through ecosystem-based management

Objective B: Recover Protected Species

Strategy: Monitor & Observe

NOAA Performance Measure	Line Office Metric	Baseline	Target
Increased number of protected species with adequate information to access their condition	Number of protected species with adequate data on population or stock structure	FY2002 63 marine mammals 12 sea turtles 8 salmon 3 other species	FY2008 63 marine mammals 12 sea turtles 17 salmon 3 other species
Increased number of protected species with adequate information to access their condition	Number of protected species/ populations for which recent unbiased, precise abundance surveys/ index of abundance information is available	FY2002 73 marine mammals 2 sea turtles 5 salmon 2 other species	FY2008 77 marine mammals 2 sea turtles 15 salmon 2 other species
Increased number of protected species with adequate information to identify human or other interactions that affect their condition	Number of protected species/ populations with programs to monitor mortality/ serious injury	FY2002 83 marine mammals 7 sea turtles 0 salmon 0 other species	FY2008 83 marine mammals 7 sea turtles 0 salmon 0 other species

Strategy: Understand & Describe

NOAA Performance Measure	Line Office Metric	Baseline	Target
Increased number of protected species with adequate information to identify human or other interactions that affect their condition	Number of protected species/stocks with adequate population assessments that incorporate life history information		
Increased number of protected species whose habitat or other environmental conditions are adequately understood for management	Number of ESA-listed species with critical habitat defined		

Increased number and adequacy of techniques and tools that can be used to restore and conserve protected species	Number of existing/new techniques and/or tools used to assess protected species populations and habitats more efficiently or with greater accuracy/ precision	FY2002 2 marine mammals 2 sea turtles 3 salmon 2 other species	FY2008 10 marine mammals 5 sea turtles 6 salmon 4 other species
Increased number and adequacy of techniques and tools that can be used to restore and conserve protected species	Number of fisheries with gear modifications available or being developed for reducing bycatch of protected species in commercial fisheries	FY2002 6 marine mammals 5 sea turtles 0 salmon 0 other species	FY2008 8 marine mammals 7 sea turtles 0 salmon 0 other species
Increased number and adequacy of techniques and tools that can be used to restore and conserve protected species	Number of fisheries with new gear to reduce bycatch (cumulative)	0 in FY2002	8 by FY2008

Strategy: Assess & Predict

NOAA Performance Measure	Line Office Metric	Baseline	Target
Increased number of protected species with adequate population assessments including estimates of human-caused mortality and injury through interactions with commercial fishing operations	Number of protected species/ populations with adequate quality of assessment/ status review for management decisions	FY2002 82 marine mammals 0 sea turtles 17 salmon 0 other species	FY2008 87 marine mammals 0 sea turtles 7 salmon 0 other species
Increased number of protected species with adequate population assessments including estimates of human-caused mortality and injury through interactions with commercial fishing operations	Number of protected species/ populations with an interval of less than 5 years between assessments/ status reviews	FY2002 83 marine mammals 3 sea turtles 21 salmon 3 other species	FY2008 88 marine mammals 3 sea turtles 26 salmon 2 other species
Increased number of protected species with adequate population assessments including estimates of human-caused mortality and injury through interactions with commercial fishing operations	Number of protected species where risk of extinction has been assessed	0 in FY2002	7 cumulative by FY2008

Strategy: Engage, Advise & Inform

NOAA Performance Measure	Line Office Metric	Baseline	Target
Increased early coordination with applicants on protected species consultation issues, such that conservation measures can be incorporated into the activity, resulting in fewer adverse conclusions of Biological Opinions	% increase in implementation of web-based application and tracking of ESA Section 7 consultations	5% in FY2002	50% by FY2008
Increased early coordination with applicants on protected species consultation issues, such that conservation measures can be incorporated into the activity, resulting in fewer adverse conclusions of Biological Opinions	Number of actions completed using web-based templates for Endangered Species Act and Marine Mammal Protection Act submissions of permit applications and ESA section 7 consultation requests.	FY2002 0 marine mammals 0 sea turtles 215 salmon 0 other species	FY2008 30 marine mammals 20 sea turtles 315 salmon 15 other species
Increased early coordination with applicants on protected species consultation issues, such that conservation measures can be incorporated into the activity, resulting in fewer adverse conclusions of Biological Opinions	Number of NOAA - Federal agency working groups devoted to ESA section 7 consultations	0 in FY2002	10 in FY2008
Increased early coordination with applicants on protected species consultation issues, such that conservation measures can be incorporated into the activity, resulting in fewer adverse conclusions of Biological Opinions	Number of activities to inform the councils and states of interactions between protected species and fisheries	0 in FY2002	35 in FY2008

Increased percentage of coastal inhabitants aware of, and acting appropriately to minimize, their impacts on protected resource	Number of activities working with federal, state, local and tribal partners and constituencies to survey the knowledge and attitudes of communities regarding their impacts on marine and anadromous protected resources.		
Increased percentage of coastal inhabitants aware of, and acting appropriately to minimize, their impacts on protected resource	Number of public campaigns for each region developed and implemented through joint efforts of federal, state, local and tribal partners and constituencies to make citizens aware of their impacts on coastal resources, and how they can reduce those impacts		
Increased percentage of coastal inhabitants aware of, and acting appropriately to minimize, their impacts on protected resource	Number of regions and programs working with federal, state, local and tribal partners, to survey the knowledge and attitudes of communities to determine the effectiveness (changes in knowledge, attitudes and behavior) of different outreach strategies.		

Strategy: Manage

NOAA Performance Measure	Line Office Metric	Baseline	Target
Increased number of protected species for which management, restoration, and take-reduction plans have been successfully implemented	Number of management, recovery and take-reduction plans catalogued in a tracking system where the specific measures called for in each are identified and updated.		
Increased number of protected species for which management, restoration, and take-reduction plans have been successfully implemented	Number of priority (regulatory) actions in each plan implemented annually until full implementation	30 in FY2002	80 by FY2008
Increased number of acres and stream-miles of habitat that have been restored for protected species	Number of riparian acres protected through Habitat Conservation Plans (HCP's), aquisition, fencing and easements		
Increased number of protected species being recovered or maintained at optimum population levels	Number of protected species stocks with increasing populations	FY2002 28 marine mammals 2 sea turtles 0 salmon 0 other species	FY2008 33 marine mammals 4 sea turtles 0 salmon 0 other species
Improved management of protected resources toward recovery and sustainability through updated recovery plans and technology development and transfer	Number of additional recovery plans developed per year for the 28 listed species other than salmon or steelhead, with x existing recovery plans.	1 in FY2002	9 in FY2008
Improved management of protected resources toward recovery and sustainability through updated recovery plans and technology development and transfer	Number of watershed plans developed each year for 26 listed salmon and steelhead populations, covering approximately 1000 watersheds.		
Improved management of protected resources toward recovery and sustainability through updated recovery plans and technology development and transfer	Number of additional conservation or take reduction plans for x strategic stocks of marine mammals, with y number of existing conservation plans (take reduction plans).		
Improved management of protected resources toward recovery and sustainability through updated recovery plans and technology development and transfer	% of updated recovery plans	16% in FY2002	88% in FY2008
Improved management of protected resources toward recovery and sustainability through updated recovery plans and technology development and transfer	Number of implemented gear modifications for reducing bycatch of protected species in commercial fisheries		
Improved management of protected resources toward recovery and sustainability through updated recovery plans and technology development and transfer	Number of international forums and inter agency efforts being used to transfer technology and management techniques		

Goal 1: Protect, restore, and manage the use of coastal and ocean resources through ecosystem-based management

Objective C: Rebuild and Maintain Sustainable Fisheries

Strategy: Monitor & Observe

NOAA Performance Measure	Line Office Metric	Baseline	Target
Increased number of fish species with adequate information to assess their condition	Number of marine fish stocks for which the interval between reassessments has been decreased by one or more years (SAIP)	23 cumulative by FY2002	8 in FY2008
Increased number of fish species with adequate information to assess their condition	Number of fisheries with adequate levels of observer coverage to estimate total catch	13 fisheries in FY2002	20 fisheries in FY2008
Increased number of fish species with adequate information to assess their condition	Number of stocks with improved or extended time series data for stock assessments (SAIP)	257 cumulative by FY2002	80 in FY2008

Strategy: Understand & Describe

NOAA Performance Measure	Line Office Metric	Baseline	Target
Increased number of fish species where the biological and ecological factors related to population abundance are adequately understood for management purposes	Number of stocks with an upgraded level of stock assessment input data (I.e., catch, abundance or life history) (SAIP)	43 cumulative by FY2002	8 in FY2008
Increased number of fish species where the biological and ecological factors related to population abundance are adequately understood for management purposes	Number of species for which there is sufficient distribution and life history information for EFH mandate		
Increased number or adequacy of techniques (including stock enhancement) and tools that can be used to restore and conserve fish species	Number of habitat restoration/enhancement techniques/tools developed/improved.		

Strategy: Assess & Predict

NOAA Performance Measure	Line Office Metric	Baseline	Target
Increased number of fish species with adequate population assessments, including adequate estimates of fishing or other sources	Number of marine fish stocks for which the quality of stock assessments has been upgraded by at least one level (SAIP)	36 cumulative by FY2002	5 in FY2008
Increased number of fish species with adequate population assessments, including adequate estimates of fishing or other sources	Number of Regions with fully automated dealer reporting processes	0 regions in FY2002	3 regions in FY2008
Increased number of fish species with adequate population assessments, including adequate estimates of fishing or other sources	Number of Regions with fully integrated and documented logbook and landings data	0 regions in FY2002	4 Regions in FY2008
Increased number of species whose essential fish habitat is adequately mapped and understood	Number (out of xx managed species) for which 5-year review of EFH has been completed		

Increased use of physical-biological models for forecasting stock abundance	Number of stocks for which FATE-derived ecological indicators are used in assessments or management advice (increment)	3 in FY2002	12 by FY2008

Strategy: Engage, Advise & Inform

NOAA Performance Measure	Line Office Metric	Baseline	Target
Increased percentage of essential fish habitat consultations that result in "no net negative impact"	Number of consultations completed involving EFH		
Increased percentage of coastal inhabitants aware of ways to reduce adverse human impacts on fish and acting appropriately to conserve fish species	Number of fishery management plans updated with an integrated description of habitat and the ecological factors contributing to fish population abundance		
Increased percentage of coastal inhabitants aware of ways to reduce adverse human impacts on fish and acting appropriately to conserve fish species	Number of students and teachers that participated in marine and environmental education activities		
Increased number of NOAA technologies and techniques that have been transferred for appropriate resource use and managed species conservation to state and local managers, as well as to the public	Number (out of XX FMP managed species) having essential habitats mapped in GIS format.		
Increased number of NOAA technologies and techniques that have been transferred for appropriate resource use and managed species conservation to state and local managers, as well as to the public	% increase in implementation of web-based application and tracking of MSA - EFH consultations	0% in FY2002	40% by FY2008
Increased number of NOAA technologies and techniques that have been transferred for appropriate resource use and managed species conservation to state and local managers, as well as to the public	Number (out of XX FMPs) with web-based access to the public for GIS mapping capabilities for essential fish habitat.		
Increased number of NOAA technologies and techniques that have been transferred for appropriate resource use and managed species conservation to state and local managers, as well as to the public	Number of exempted fishing permits approved for designing or testing gear		

Strategy: Manage

NOAA Performance Measure	Line Office Metric	Baseline	Target
Increased number of overfished species with rebuilding plans that are in conformance with rebuilding schedules	Reduced time to prepare NEPA documents	0 in FY2002	20 in FY2008
Increased number of overfished species with rebuilding plans that are in conformance with rebuilding schedules	Number of overfished species with rebuilding plans in conformance with rebuilding schedules		
Increased number of overfished species with rebuilding plans that are in conformance with rebuilding schedules	Number of overfished fisheries for which approved rebuilding plans are in place.	64 in FY2002	1 (84 cumulative) by FY08
Increased number of overfished species with rebuilding plans that are in conformance with rebuilding schedules	Number of overfished fisheries with habitat plans identifying habitat restoration, enhancement, and protection needs		
Increased number of overfished species with rebuilding plans that are in conformance with rebuilding schedules	Number of stocks determined to have achieved rebuilt status	1 stock in FY2002	
Increased number of overfished species with rebuilding plans that are in conformance with rebuilding schedules	Number of Highly Migratory or Shared stocks for which NOAA Fisheries obtains international cooperation to rebuild an overfished stock		
Increased number of overfished species with rebuilding plans that are in conformance with rebuilding schedules	Number of stocks for which "overfishing" is occurring	66 in FY2002	
Increased number of overfished species with rebuilding plans that are in conformance with rebuilding schedules	Number of fisheries in which rebuilding plans result in improving stock status		
Increased number of acres and stream-miles of essential fish habitat that have been restored	Number of essential fish habitat acres restored	1,070 acres in FY2001	15,000 acres by FY2008

Increased number of acres and stream-miles of essential fish habitat that have been restored	Number of essential fish habitat stream miles accessible	210 stream miles in FY2001	2,000 stream miles by FY2008
Increased number of fisheries where the harvest capacity is consistent with sustainable fish populations	Number of Regions with fully automated permitting systems	0 in FY2002	6 Regions by FY2008
Increased number of fisheries where the harvest capacity is consistent with sustainable fish populations	Number of fisheries for which excess capacity has been assessed.	73 (qualitative) in FY2002	
Increased number of fisheries where the harvest capacity is consistent with sustainable fish populations	Number of overcapacity fisheries for which strategies have been identified by the appropriate management authority for rationalizing capacity.		
Increased number of fisheries where the harvest capacity is consistent with sustainable fish populations	Number of international fisheries in which NOAA has supported and/or achieved agreement on management of fleet capacity		

Goal 2. UNDERSTAND CLIMATE VARIABILITY AND CHANGE TO ENHANCE SOCIETY'S ABILITY TO PLAN AND RESPOND

Strategy: Assess & Predict

NOAA Performance Measure	Line Office Metric	Baseline	Target
Increased number of new indicators of climate impacts on marine ecosystems	Number of indicators of climate variability on fish stocks and protected resource populations		
Increased number of port communities where the risks of operations and development have been assessed for impacts on coastal resources, coastal erosion, and coastal flooding	Need to Develop a Metric - NMFS is Supporting LO		

Strategy: Engage, Advise & Inform

NOAA Performance Measure	Line Office Metric	Baseline	Target
Increased number of new instances where NOAA information is integrated into decision-support and management systems, including fishery management plans	Need to Develop a Metric - NMFS is Supporting LO		
Increased user satisfaction, determined through surveys	Need to Develop a Metric - NMFS is Supporting LO		

Goal 4. SUPPORT THE NATION'S COMMERCE WITH INFORMATION FOR SAFE, EFFICIENT, AND ENVIRONMENTALLY SOUND TRANSPORTATION

Strategy: Understand & Describe

NOAA Performance Measure	Line Office Metric	Baseline	Target
Development of viable alternatives to ballast water exchange to prevent the introduction of exotic species to U.S. coastal wate	Need to Develop a Metric - NMFS is Supporting LO		

Strategy: Assess & Predict

NOAA Performance Measure	Line Office Metric	Baseline	Target
Increased number of port communities where the risks of operations and development have been assessed for impacts on coastal re	Need to Develop a Metric - NMFS is Supporting LO		

Strategy: Engage, Advise & Inform

NOAA Performance Measure	Line Office Metric	Baseline	Target
Increased number of ports with plans, procedures, policies, and best management practices that minimize the environmental conse	Need to Develop a Metric - NMFS is Supporting LO		

Appendix A Table 2 - Cross Cutting Priority Performance Measures

	SOUND, STATE-OF-THE-ART RESEARCH			
	NOAA Performance Measure	**Line Office Measure**	**Baseline**	**Target**
	Increased use of models and assessments among scientists, economists, social scientists, operations, and ecosystem managers ins	To be developed		
	HOMELAND SECURITY			
	NOAA Performance Measure	**Line Office Measure**	**Baseline**	**Target**
	Increased number of ships with vessel monitoring systems	Number of ships with vessel monitoring systems with two-way messaging capability		
	Increased number of ships with vessel monitoring systems	Number of Vessel Monitoring System operations monitored	1,133 in FY2002	12,847 by FY2008

GLOSSARY

Biodiversity—The Biodiversity Convention defines biodiversity as "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."

Bycatch—The Magnuson-Stevens Fishery Conservation and Management Act defines *bycatch* as "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."

Commercial fishing—The Magnuson-Stevens Fishery Conservation and Management Act defines *commercial fishing* as "fishing in which the fish harvested, either in whole or in part, are intended to enter commerce through sale, barter or trade."

Endangered Species Act (ESA) —The ESA is a statute which was 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.

Essential Fish Habitat (EFH) —The Magnuson-Stevens Fishery Conservation and Management Act defines *essential fish habitat* as "those waters and substrate necessary to fish for spawning, breeding, feeding or growth to maturity."

Exclusive Economic Zone (EEZ) —The EEZ comprises 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—The Magnuson-Stevens Fishery Conservation and Management Act defines *fishery* as "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."

Fishing Community—The Magnuson-Stevens Fishery Conservation and Management Act defines *fishing community* as "a community which is substantially dependent on or substantially engaged in the harvest or processing of fishery resources to meet social and economic needs, and includes fishing vessel owners, operators, and crew and United States fish processors that are based in such community."

Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA) – The MSFCMA is a statute which was 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)—The MMPA is a statute which was enacted in 1972 to protect marine mammals and their habitat. These species include whales, dolphins, seals, sea lions, walruses, and many others.

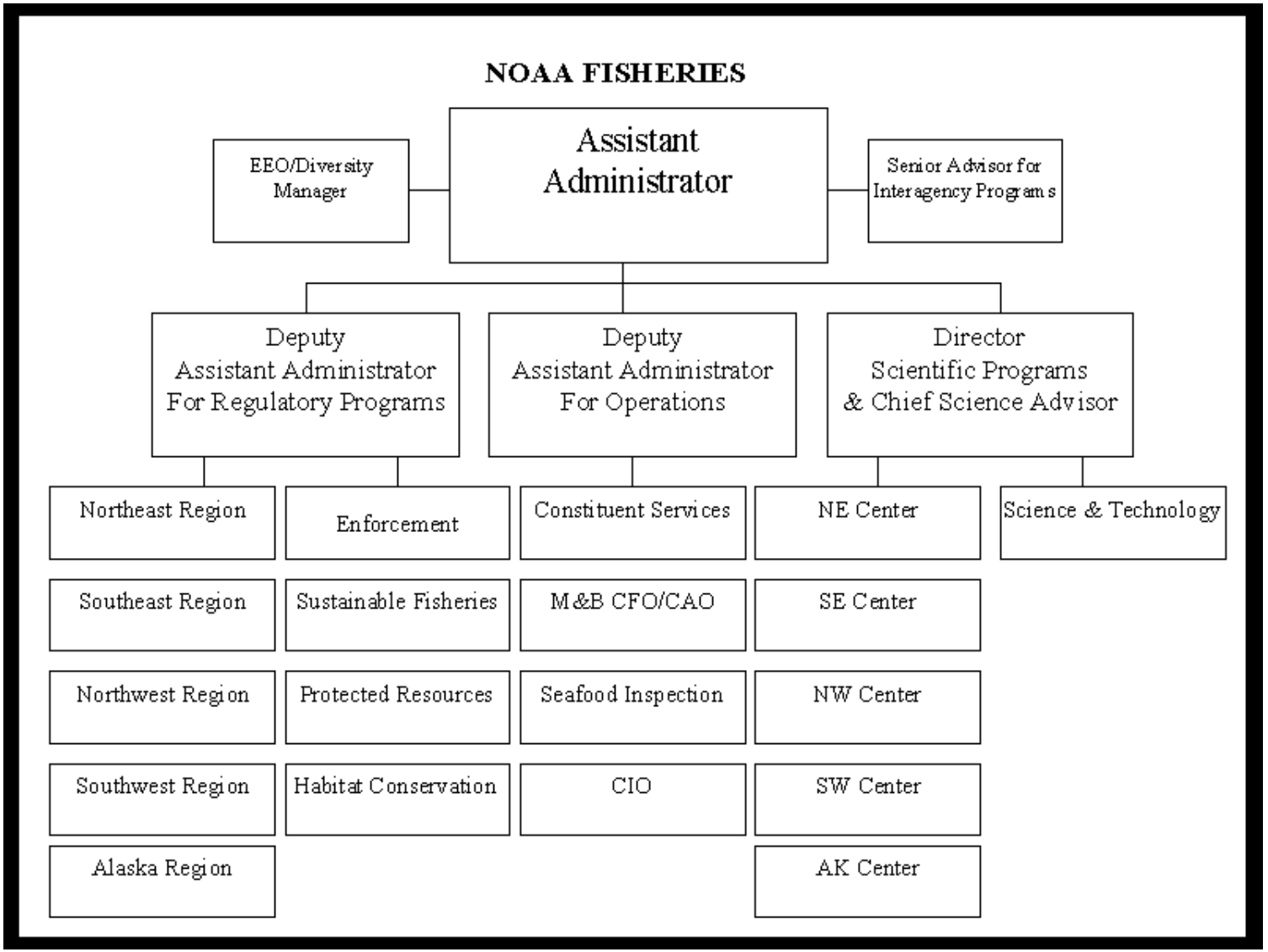
Overfishing—The Magnuson-Stevens Fishery Conservation and Management Act defines *overfishing* as "a rate or level of fishing mortality that jeopardizes the capacity of a fishery to produce the maximum sustainable yield on a continuing basis."

Protected Species—As used in this document, *protected species* refers to any species which is protected by either the ESA or the MMPA, and which is under the jurisdiction of NOAA Fisheries. This includes all threatened, endangered, and candidate species, as well as all cetaceans and pinnipeds excluding walruses. This term also includes seabirds which NOAA Fisheries has a responsibility to protect.

Recreational Fishing—The Magnuson-Stevens Fishery Conservation and Management Act defines recreational fishing as "fishing for sport or pleasure."

Stock (of fish)—The Magnuson-Stevens Fishery Conservation and Management Act defines *stock* as "a species, subspecies, geographical grouping, or other category of fish capable of management as a unit."

ORGANIZATIONAL CHART



Appendix C