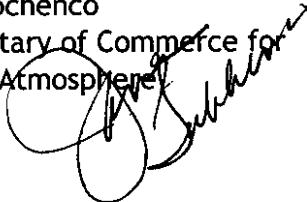




Dr. Jane Lubchenco
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Oceans and Atmosphere



NOAA Annual Guidance Memorandum

August 5, 2009

"Now is the time...for NOAA to spur the creation of new jobs and industries, revive our fisheries and the economies and communities they support, improve weather forecasting and disaster warnings, provide credible information about climate change and ocean acidification to Americans, and protect and restore our coastal waters [and] ecosystems."

Dr. Jane Lubchenco, Message to NOAA staff, March 20, 2009

People are intimately connected with the natural environment, and NOAA is at the center of that relationship. By improving our understanding of and ability to predict changes in the Earth's environment, and by conserving and managing ocean and coastal resources¹, NOAA generates tremendous value for the nation. NOAA's role is all the more important given the profound economic, environmental and societal challenges currently facing the nation. Through its mission responsibilities and strategic choices, NOAA will help define how well the nation responds.

NOAA provides science, services, and stewardship that contribute to sustainable economic growth—through restoring the health of commercial and recreational fisheries, improving the resilience of America's coastal communities, and safeguarding people and physical infrastructure from hazardous weather events. NOAA can make air travel safer and more efficient by improving weather forecasting. NOAA can help

¹ This document follows the convention used NOAA and other government documents where the phrase "ocean and coastal" includes the Great Lakes.

protect and recover bays, beaches, rivers and oceans that inspire and support us all. NOAA can spur the creation of a new climate information enterprise by serving as the science, technology, and service backbone that empowers business and the public sector alike to make better decisions about infrastructure, public health and safety, resource management, and research and development.

NOAA's people are the foundation of the agency's longstanding record of scientific, technical, and organizational excellence. Through their talent, creativity, and commitment, NOAA's people have ensured continuity, reliability, and innovation in the diverse products and services valued by our many customers and stakeholders. As NOAA executes its programs and plans for emerging requirements, it will continue to embody the high standards of science, service, and stewardship that have shaped the agency's activities since its inception. To this end, NOAA will be guided by four overarching principles for sustaining and enhancing the effectiveness of its workforce and programs, and the value they generate for the nation and the world:

Scientific excellence and integrity: NOAA's fundamental responsibility is to ensure that complex policy choices are informed by the best available science. In every dimension of its work, NOAA will exemplify scientific excellence and integrity.

Service to the nation: NOAA's diverse mission functions should be focused on supporting the Administration's efforts to address the nation's greatest economic, environmental, and societal challenges.

Ecosystem thinking: Social and natural systems are inextricably linked. Human health, prosperity, and well-being depend upon the health and resilience of natural ecosystems; human activities modify the coupled human-natural systems. At the broadest level, NOAA must seek to advance more holistic approaches to understand and balance human use, sustainability, and preservation of ecosystem resources and functioning.

Engagement and transparency: NOAA can only achieve its mission objectives and value to society through transparent and positive engagement with stakeholders and partners. Collaboration, consultation, and communication define NOAA's way of doing business.

Collectively, NOAA's people and its infrastructure assets comprise a unique and powerful set of scientific, technical, and organizational competencies that deliver, every day, extraordinary value to the American people. This Annual Guidance Memorandum (AGM) commits NOAA to strengthening its core competencies in the following areas: high impact weather and water forecasts, managing ocean and coastal resources with an ecosystem-based approach, supporting coastal communities and economies, delivering information for safe, efficient, environmentally sound transportation, and operating and expanding the technical infrastructure that supports these missions.

Building on its core competencies and partnerships in environmental science, service, and stewardship, NOAA can amplify its value to society by focusing on five strategic priorities:

1. Enhancing NOAA's climate services and working with OSTP and relevant federal agencies toward the establishment of a National Climate Service, in support of the nation's need for sound, scientifically-backed policies and programs to respond to climate change;
2. Supporting comprehensive marine spatial planning, where NOAA can help the nation reconcile competing demands on ocean and coastal resources;
3. Ensuring the sustainability of marine fisheries, where NOAA can simultaneously strengthen ocean ecosystems and local economies;
4. Strengthening Arctic science and stewardship, where NOAA can help to improve our understanding of changing climate and environmental conditions and better inform policy options and management responses to the unique challenges in the Arctic region; and
5. Sustaining satellite-based earth observations, where NOAA's unique observing systems and partnerships provide irreplaceable, mission-critical environmental data for the nation and the world.

These are the core competencies that NOAA must strengthen and the strategic priorities that NOAA must pursue to fulfill its mission responsibilities and respond effectively to the challenges facing the nation and the world. While NOAA brings unique capabilities to the table, partners at every level of government, in private enterprise, in colleges and universities, in the non-profit sector, and in institutions around the world are integral to the accomplishment of NOAA's mission and the realization of its full value to society.

Challenges Facing the Nation

NOAA's external environment has changed considerably since last year's AGM. The greatest single change has been the severe contraction of economic activity in the United States and abroad, which has generated a resolute focus throughout the country on economic recovery and job creation. Current economic conditions, plus mounting scientific evidence and public concern, have lent a new urgency to several longstanding issues: energy security and sustainability; climate mitigation and adaptation; sustainable use and protection of ocean and coastal resources; and public health, safety and security. Developing solutions to these challenges will require improving our understanding of and ability to predict changes in the Earth's environment, and advancing our capacity to conserve and manage ocean and coastal resources.

Economic Recovery and Job Creation

Since NOAA's last AGM in April 2008, the U.S. and world economies have suffered the most precipitous declines in output, employment, and net wealth since the Great Depression. Driven in large measure by a collapse in the value of real estate assets and the complex fiscal instruments tied to them, the U.S. and other nations have struggled to manage extraordinary fiscal and liquidity challenges, causing a cascade of adverse economic consequences.

Within a year, the Dow Jones Industrial Average dropped from a high of over 13,000 to below 7,000. As of May 2009, the unemployment rate stood at 8.9 percent—the highest it has been in 25 years. Across sectors and industries, the size and pace of employment losses has been so profound that economists are highly uncertain about the future composition of demand and sources of economic growth that will sustain a prolonged recovery.

In response to this crisis, the U.S. government is focused on economic recovery and job creation. Recovery efforts to-date recognize the importance of science and technology to economic growth and job creation, and focus government spending on alternative energy research and development, improving the energy efficiency of American homes, computerizing medical records, modernizing public schools and universities, and expanding access to broadband IT networks, as well as discovery-oriented scientific and technological research.

In this context, NOAA will focus in the near term on requirements put forth in the American Recovery and Reinvestment Act of 2009 (ARRA), including investments in satellite climate sensors, high-performance computing for climate models, improving NOAA's climate data records, and restoring critical habitat. Over the longer term, NOAA as a whole will collaborate with our many partners in other agencies, state and local governments, non-profit organizations, and the private sector to provide the environmental science, services, and stewardship that the nation needs to realize sound and sustainable economic growth.

Energy Security and Sustainability

Over the last year, three forces have combined to elevate the nation's attention to energy security and sustainability: the dramatic rise in energy prices prior to the recession, the continuously mounting and pervasive evidence of dramatic impacts of climate change, and the global recession itself. These forces have led to a growing consensus that energy security and environmental sustainability must inform our nation's energy policy.

The nation is actively engaged in efforts to reduce its reliance on oil and other carbon-based fuels and increase the supply of renewable energy sources. Renewable energy production from wind and solar is well underway and growing

steadily, generating new demands for improved weather and climate forecasts and advanced decision support. Efforts to capture energy from the oceans, while less mature, are expanding rapidly and creating new permitting and siting challenges. As the United States seeks to enhance domestic energy production, both in traditional carbon-based and renewable sources, the environmental implications of specific energy sources must be understood. Decision-makers will need new information to weigh energy development against other desired uses of land and ocean resources. Concurrently, NOAA and its partners must meet mandates for land- and ocean-based environmental stewardship.

The nation's needs for secure and sustainable energy require the best science to understand and predict the ecological, economic, and societal consequences of particular energy choices, as well as the effectiveness of strategies for minimizing environmental impacts and maximizing energy efficiency. NOAA can support these requirements through its unique mandates and expertise for ocean and coastal stewardship, coupled with longstanding research and observational assets, forecasting capabilities, and partnerships across government, academia, and the private sector. For example, offshore renewable energy development requires an integrated, comprehensive approach to evaluating facility siting options; NOAA's scientific and predictive capacity is needed to understand the potential impacts of renewable energy facilities on ocean and coastal ecosystems and resources. Siting decisions for ocean and land-based renewable energy also will require NOAA's historical data and long-term predictions of wind, solar, and ocean energy sources, including how they may vary over time with changing climate conditions.

NOAA's scientific expertise and competencies in forecasting and prediction also will be needed to efficiently operate renewable energy facilities. Whether driven by ocean forces, the sun or the wind, renewable energy relies on sources that are intermittent and difficult to predict. NOAA can contribute by providing forecasts of wind, solar, and ocean conditions at the scales and ranges required by the renewable energy sector. For established utilities, NOAA's environmental forecasts can help inform decisions to switch between conventional and renewable sources to supply electricity—a capability that will pace the integration of renewable sources into the nation's energy grid. As the nation advances toward secure and sustainable energy supplies, NOAA's capabilities can help to optimize site selection, system sizes, performance reliability and efficiency, and overall effectiveness of switching between conventional and renewable sources.

Climate Change Mitigation and Adaptation

Climate change is a defining environmental issue of our time, with overwhelming trends and pervasive impacts on society and the environment from the unequivocal warming of the Earth's surface, the dramatic melting of ice sheets, sea level rise, ecosystem changes, chemical- and temperature-based alterations in ocean

chemistry, and impacts on global and regional water supplies. Regardless of future mitigation efforts, the planet will experience a certain amount of warming and related impacts. The work to document the changes in our global environment and to predict its future evolution, including key contributions from NOAA, has played a critical role in reaching the current state of knowledge and awareness of climate change and its impacts. However, our understanding of climate remains incomplete. For example, the critical role of oceans in the climate system and impacts of climate change on ocean and coastal ecosystems and the services they provide remain understudied and inadequately understood.

All societies share a common interest in improving our understanding and ability to predict and reduce the future magnitude and impacts of global climate change, and to adapt to the unavoidable consequences. Currently, national and international policy discussions center on how to limit emissions and manage the effects of greenhouse gases and aerosols, how to address diverse adaptation challenges, and how to rapidly reduce key climate uncertainties. These efforts must continue to be informed by the best available science of climate variability and climate change and their potential environmental and socioeconomic impacts. NOAA has a critical role to play in ensuring that observational assets, assessment and prediction expertise, resource management expertise, and service delivery capabilities are established and maintained.

As the nation moves forward with efforts to mitigate and adapt to climate change, we will need to draw from the expertise of all federal agencies engaged in climate science to support the development of climate services and decision support. The nation needs an objective, authoritative, and consistent source of consolidated, reliable, and timely climate information to support decision-making at national, regional, state, and local levels.

Sustainable Use and Protection of Ocean and Coastal Resources

At the nexus of land and sea, our nation's coastal states support 81 percent of the U.S. population and generate 83 percent (\$11.4 trillion in 2007) of U.S. gross domestic product (GDP)². As such, our coasts directly support the ecological, economic, and cultural well-being of the United States and provide societal benefits that reach well beyond the shorelines. The health and productivity of coastal communities in turn depend upon the ecosystems in which they are embedded and which generate such benefits as safe and secure seafood supplies, sustainable fisheries, and healthy beaches.

² National Ocean Economics Program, "State of the U.S. Ocean and Coastal Economies", 2009.

Continued population growth, coastal development, watershed runoff, and climate change are increasing the pace and scale of adverse impacts to ocean and coastal ecosystems. At the same time, demands continue to escalate for ocean-based energy, marine aquaculture, commercial and recreational fishery products, and other—often competing—uses of ocean resources. Overfishing is putting seafood supplies at risk, at the very time that global demands and resource pressures are creating long-term challenges for food security. Fragmented ocean governance is generating stakeholder conflicts, inefficient management of limited ocean resources, and gaps in stewardship responsibilities. Uncertainty due to information gaps on climate and ocean environmental change adds complexity to difficult resource management choices.

Confronting these challenges and balancing competing uses requires a more holistic scientific understanding and management of marine ecosystems and their contributions to coastal communities. Sustainable use of ocean and coastal resources requires integrated approaches to marine spatial planning, governance, management and the supporting sciences. This challenge—well recognized in the Pew and U.S. Commission on Ocean Policy reports and numerous related documents—has grown more urgent as escalating pressures from competing uses threaten the long-term productivity and health of the nation's ocean and coastal ecosystems. NOAA's scientific assets, management capabilities, stewardship responsibilities, and partnerships will be essential to addressing this challenge.

Public Safety, Security, and Health—at Home and Abroad

Few governmental functions are more fundamental than ensuring public safety and security. While the nation remains exposed to a wide range of foreign and domestic threats to national security, the basic safety of the public from high-impact weather continues to be a challenge as more and more people move to hurricane-, tsunami- and flood-prone coastal areas, fire-prone wildland-urban boundaries, and to regions with an unreliable water supply. These threats to safety and security do not respect national boundaries, and therefore, our responses must be developed collaboratively on an international basis.

While the floodwaters of hurricane Katrina have long receded, our memory of them is reinforced by the continued economic and societal impacts as well as the regular reminders of the fragility of people and communities in the face of high-impact weather. In 2008, hurricanes Dolly, Gustav and Ike resulted in large loss of life and economic impact: Ike, by far the most devastating, led to 20 deaths in Texas, Louisiana, and Arkansas and insured damages (not including inland flooding or storm surge) of \$9.7 billion. Last year also saw river crests exceeding 500-year levels in some locations, generating massive flooding of the Des Moines, Cedar, and Wisconsin rivers with estimated damages of over \$1.4 billion in lost livestock, crops, personal property, and income. At the other extreme, America faces a looming water crisis

where water shortages have emerged from the multiple demands of human health, ecosystem integrity, river commerce, recreation, tourism and the economic vitality of communities and regions.

A changing climate is likely to increase the intensity and frequency of some high-impact weather and water events, and further complicate our ability to accurately predict these events and their impacts. In addition, the nation's energy, air transportation and telecommunication industries are vulnerable to solar storms that are predicted to increase in intensity. Nearly all sectors of the economy and all communities are exposed to weather-related risks and challenges, reinforcing the importance of sustained advancements in NOAA's ability to protect the public through high-impact weather and water forecasts.

These challenges are magnified at the international level, where changing climate trends and associated weather and water impacts can have profound effects on the health and stability of large populations—particularly in less developed countries. Climate and weather conditions shape the frequency and severity of natural disasters, the presence and spread of disease, the viability of food production and the availability of water. These factors in turn influence social stability, migrations, and associated domestic and international conflicts.

Water resources are central to this dynamic. Increasing global demand for food and energy are causing unprecedented pressures on the quality and quantity of water resources and aquatic ecosystems. When uncertainties associated with climate change are introduced, changes in the energy and agricultural sectors can have huge impacts on our ability to sustain the water resources essential for our domestic use, for conventional energy production, for food production, for public health, and for the protection of aquatic ecosystems. For these and related reasons, national and international security is intrinsically tied to global environmental conditions.

NOAA's Core Competencies and Strategic Priorities

One common thread ties each of these challenges together: the intimate connection between people and the natural environment. NOAA operates at the center of that relationship. Can we secure an economic future that is both prosperous and environmentally sound? Can we transform the generation and use of energy so that U.S. supplies are both secure and sustainable? Can we spare future generations the potential calamities foretold by unchecked greenhouse gas emissions? Can we both use and preserve the ecosystem resources that America's coastal communities and economy depend upon? Can we improve public safety and security of our communities in the face of high-impact weather? NOAA has the scientific and technical expertise, the observing systems, and the partners necessary to help the nation address these complex questions. To this end, NOAA must strengthen its core competencies and direct its

science, service, and stewardship functions to address a focused set of strategic priorities that require innovative policy and programmatic solutions.

CORE COMPETENCIES FOR NOAA TO STRENGTHEN

Improve High Impact Weather and Water Forecasts: The high costs of weather-related disasters drive home the importance of strengthening NOAA's weather and water forecasts, warnings, and preparedness and mitigation strategies. Priorities include continued support for NOAA's Hurricane Forecast Improvement Project, a 10-year plan to improve the hurricane forecasts of track and intensity (focusing in particular on rapid intensity changes); timely and accurate water forecasts; improved fire weather research and services; and improvements in forecasts and preparations for low-frequency, high-impact events such as solar weather events and tsunamis. Across each of these areas, targeted social science research and analysis could be used to create more effective decision support capabilities and to better convey forecast risk and uncertainty.

Manage Ocean and Coastal Resources with an Ecosystem-Based Approach: NOAA's ocean and coastal resource management and stewardship functions will be strengthened over time through advancements in climate services and marine spatial planning, two of NOAA's strategic priorities (see below). Strengthening these mission functions also requires other advancements in NOAA's capacity to support ecosystem-based management, including improvements in ocean observing systems, forecasts of ocean and ocean-influenced processes and phenomena, the ecosystem science that underpins effective management decisions and stewardship practices, and the capability to deliver effective policy advice. In this context, emerging research needs include the effects of climate change on ocean and coastal ecosystems and ocean circulation patterns, the effects of acidification on marine life, and the quantification of coastal and ocean ecosystem functions and services. In turn, scientific advancements in these areas will enable coordinated, ecosystem-based management of diverse ocean uses.

Support Coastal Communities and Economies: In concert with many partners, NOAA can help increase the economic vitality and adaptive capacity of coastal communities and ensure healthy and productive coastal ecosystems and services. America's coastal communities face diverse environmental and economic challenges, ranging from marine renewable energy development to coastal habitat loss and climate change. For managers to successfully balance competing demands on coastal resources, NOAA must provide the science, information, decision support tools and policy guidance they need to understand, predict, and manage changing coastal resources. Their needs have been echoed in the priorities expressed by the nation's regional ocean and coastal alliances: community vulnerability assessment and adaptation planning for coastal hazards and climate change; identification of ecologically significant coastal and ocean habitats and the social, cultural, and

economic services they provide; restoration science, monitoring and assessment; development of ecological forecasts for issues such as hypoxia, harmful algal blooms, and invasive species; watershed monitoring and non-point source pollution control; and mechanisms to engage local decision-makers. As a trusted steward of America's oceans and coasts—and as a long-standing partner to states, tribes, local governments and other countries—NOAA needs to expand its leadership role and focus its science, capacity building, forecasting, education, policy, and management capabilities on these urgent coastal problems.

Deliver Information for Safe, Efficient, and Environmentally Sound

Transportation: National security and the health of the U.S. economy depend on a reliable transportation system, but the nation's existing system is straining under the combined weight of aging infrastructure, environmental changes and sheer volume. Retreating Arctic sea ice is adding a new level of challenge to the system. New regions may become accessible for resource extraction, and a seasonal oceanic trade route may open across the Arctic's Northwest Passage. To meet growing demands on the nation's transportation infrastructure, NOAA must continue to provide comprehensive, high-quality weather, geospatial and environmental information and forecasts for safe, efficient and environmentally sound transportation. NOAA must continue its commitment to the Next Generation Air Transportation System and continue to improve delivery of transportation information, such as up-to-date nautical charts, real-time oceanographic data and warnings, an accurate positioning infrastructure, surface and marine weather, satellite-aided search and rescue coordination, and emergency response services.

Maintain and Expand the Technical Infrastructure that Supports NOAA's

Mission: NOAA's ability to maintain and improve its current mission operations and respond to the many emerging challenges outlined above will require a wide range of earth observing, research and development, data management, modeling, and information technology capabilities. To continue its record of science, service, and stewardship, NOAA must remain at the forefront of these technologies. The nation's evolving needs require reliable, continuous services provided by NOAA's critical infrastructure: satellites, ships, aircraft, and land- and ocean-based observing systems, as well as high-performance computing, environmental modeling systems, enterprise-wide information technology, and associated laboratories and other specialized facilities. Effective investments in these capital assets and corresponding domestic and international partnerships enable NOAA to conduct its mission by improving weather, water, and environmental forecasts, enhancing climate monitoring and research to better inform policy decisions, advancing the understanding and stewardship of oceans, coasts and their watersheds for vibrant coastal communities, and improving navigation and positioning services for safe, efficient, and environmentally sound transportation.

Strengthening the core competencies and associated science, service, and stewardship functions in these areas will better position NOAA to address the following strategic

priorities, each of which requires innovative policy and programmatic solutions involving NOAA and a wide array of strategic partners within and outside the public sector.

STRATEGIC PRIORITIES FOR NOAA

Enhance NOAA's climate services and support the establishment of a National Climate Service: The nation is already facing the impacts of climate change. The demand for relevant, reliable and authoritative climate information to inform decisions continues to grow at all levels, from local to global. These growing demands must be met, and no single agency is capable of providing all of the needed information and services to support decision-making. NOAA has a key role to play in the end-to-end development and delivery of climate science, tools, products, and information that can better prepare our nation for the impacts of climate variability and change, and mitigate the human influence on climate. Beyond climate mitigation and adaptation, climate information plays an essential role in other issues of national relevance, including energy security. Yet the nation's climate-related information resources are starkly inadequate relative to the magnitude of the challenges facing all levels of government, industry, and society at large. NOAA is working with the Office of Science and Technology Policy and other relevant federal agencies toward the establishment a National Climate Service. NOAA can contribute urgently needed services to this effort by integrating and expanding its unique earth observation and monitoring assets, its world-class research and modeling capabilities, and its broad operational information services to support this unified service.

Climate is a pervasive stressor that broadly affects environmental conditions and, by extension, the missions of many agencies, the functions of many sectors, and the health and well-being of the public. NOAA's own oceanic and atmospheric mission functions are heavily affected by changing climate conditions and, as such, form the logical near-term foci of NOAA's climate service enhancements: ocean acidification, water resources, and sea level rise and coastal hazards. While building these service enhancements, NOAA will also collaborate across sectors and organizations to design and implement a truly national strategy for developing the science and services needed for the nation and the world to mitigate and respond to climate change.

Support Comprehensive Marine Spatial Planning: Human uses of ocean resources are accelerating faster than our ability to manage them. Increasing conflicts are unavoidable as demands increase for ocean-based energy (oil and gas, wind and wave), marine aquaculture, commercial and recreational fishery products, shipping and navigation services, and other activities. At risk is the health of ocean ecosystems as well as the benefits they provide to coastal communities and the national economy. The nation's current approach to managing the use of ocean resources is *ad hoc* and fragmented, with no systematic way to evaluate competing

ocean uses and to inform and navigate the often difficult trade-off decisions they require. The nation needs a “comprehensive, integrated, ecosystem-based” framework for coastal and marine spatial planning that “addresses conservation, economic activity, user conflict, and sustainable use of ocean, coastal, and Great Lakes resources”.³

By definition, coastal and marine spatial planning requires a comprehensive, ecosystem-based process through which compatible human uses are objectively and transparently allocated to appropriate ocean areas to sustain critical ecological, economic and cultural services for future generations. NOAA’s existing scientific capacities and ocean management authorities—including ocean observing systems and mapping capabilities, along with management responsibilities for marine sanctuaries, estuarine research reserves, area-based fisheries, protected marine resources and the national MPA system—uniquely position the agency to support a national coastal and marine spatial planning framework. In collaboration with federal, state and local partners, NOAA can and must help the nation create and implement a comprehensive, integrated framework for coastal and marine spatial planning that will enable the sustainable, science-based allocation of critical ocean uses and resources.

Ensure the Sustainability of Marine Fisheries: There are complex challenges associated with restoring our nation’s fisheries. The deadline is looming to end all overfishing in the United States by 2011, as mandated by Magnuson-Stevens Fishery Conservation and Management Reauthorization Act of 2006. While focusing on this pressing need, NOAA also must address the long-term scientific and management challenges associated with ensuring sustainable fisheries. These challenges include rebuilding fish stocks, developing environmentally sustainable aquaculture, supporting fisheries management requirements, and enforcing management measures in U.S. waters. Related challenges extend into international fisheries, as the United States depends heavily on wild-caught and aquaculture imports to meet its growing demand for seafood.

Declining domestic fish catches lead to fewer jobs and lost economic opportunities, while sustainably managed fisheries result not only in strengthened ocean ecosystems but also in strong local economies. Conventional fisheries management approaches often result in economic and ecologic inefficiencies; as regulators impose complicated effort controls, the “race for fish” forces fishermen to compete in unsafe and unsustainable practices.

Evaluating federal fishery management plans for catch shares, a proven fishery management solution combining private accountability and flexibility, can revive our

³ Presidential Memorandum for the Heads of Executive Departments and Agencies, June 12, 2009.

fisheries and the communities and economies they support. Establishing science-based catch shares can improve fisheries productivity and prevent fisheries from collapsing, simultaneously meeting conservation targets while improving profitability. Additionally, the successful implementation of science-based catch shares nationwide could provide a model for improved international fisheries management.

Strengthen Arctic Science and Service: No single region better exemplifies the complex interdependence of communities and changing ecosystem conditions than the Arctic. The Arctic and sub-Arctic regions already are experiencing significant environmental and economic impacts from climate change. Continued warming poses a serious threat not just to the Arctic but to the world, as what happens in the Arctic affects global weather and climate conditions. The breadth and complexity of the cultural, societal, economic, and environmental impacts requires a concerted, systematic and rapid effort with partners from international to local levels. NOAA's scientific capabilities can be deployed to increase our understanding of climate and other key environmental trends, to predict the ecosystem response to those trends, and to offer the technical expertise needed to develop policy options and management strategies for mitigation and adaptation to the environmental challenges in the Arctic region. NOAA's service capabilities—including but not limited to regional observations, mapping, weather and water forecasts, and tools and technical assistance for coastal management—also are needed to support safety and security needs for fishing, marine mammal protection, transportation, energy, infrastructure, and mineral exploration in the unique Arctic environment.

Sustain Satellite-based Earth Observations: NOAA's mission functions depend upon a complex and capital-intensive array of earth observing systems. The greatest single challenge to the continuity and capacity of this system is the effective acquisition of new polar and geostationary satellite capabilities. This challenge is exacerbated by the continually escalating costs of environmental monitoring satellites that provide the foundational data for many of NOAA's missions. In recent years the acquisition of NOAA's next-generation weather and climate satellites has suffered from cost overruns, schedule delays, and capabilities that are much reduced from those initially planned. The Department of Commerce Inspector General found that controlling costs and avoiding additional delays in both programs requires very specific action and vigilant oversight. NOAA has taken decisive steps to address these immediate problems and prevent their occurrence in the future. To this end, NOAA is changing its approach to managing the development and procurement of satellite systems, emphasizing long-term collaboration with key national and international partners.

The Way Ahead

As environmental and socioeconomic conditions change, so too must NOAA routinely evaluate and adapt to external trends and challenges. Each spring NOAA reviews major external trends, fiscal developments, and changes in requirements to identify needed adjustments to NOAA’s long-term strategy. This year—at the outset of the new Administration—NOAA’s AGM represents the agency’s initial effort to take stock of recent external changes, examine its strategic direction, and refine its priorities. It describes NOAA’s commitment to addressing the nation’s greatest challenges, and establishes programmatic priorities and overarching management principles that will shape NOAA’s execution focus in FY 2009 and FY 2010, its program and budget priorities in FY 2011, and its strategic direction for FY 2012-16.

As a single document, the AGM cannot detail all of the efforts NOAA will need to pursue to successfully execute its mission responsibilities. Rather, the priorities identified in this AGM respond to key national challenges that can be addressed only through the concerted efforts of NOAA’s entire organization—along with many partners within and outside the federal government.

This year’s AGM also serves as a bridge to a more comprehensive re-assessment of NOAA’s long-term strategy, resulting in a Next Generation Strategic Plan for NOAA in early 2010. To this end, over the coming year NOAA will consult broadly with staff and stakeholders on the long-term trends and challenges facing the nation and the adequacy of NOAA’s current strategy for addressing them. For more information on strategic planning at NOAA, including how to participate in the Next Generation Strategic Plan, please visit www.ppi.noaa.gov.

