

EARTH SYSTEM MONITOR

A guide to NOAA's data and information services

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Putting the Pieces Together

Laura Furgione, Assistant Administrator, Program Planning and Integration

As one of NOAA's six line offices, the Office of Program Planning and Integration (PPI) is responsible for corporate management and coordination of this \$5 billion agency dedicated to understanding and predicting changes in the Earth's environment and conserving and managing coastal and marine resources. PPI is responsible for both annual and long term strategic planning, performance evaluation, and program and policy integration, including compliance with the National Environmental Policy Act. Efforts are directed at ensuring NOAA's investments and actions are guided by a strategic plan; are based on sound social and economic analysis; adhere to executive and legislative science, technology, and environmental policy; and integrate the full breadth of NOAA's resources to meet its stated mission goal.

PPI serves as the organizational focal point for NOAA's eight Regional Collaboration teams.

Regional Collaboration at NOAA integrates programs and activities to address NOAA's priorities at both the national and regional scale. The effort promotes:

- Services that benefit NOAA customers,
- The value and productivity of partnerships,
- Stakeholder relations and support,
- Internal communications and efficiency across line offices and programs, and
- The visibility and value of NOAA.

Regional Collaboration adds value to NOAA's products and services by incorporating regional perspectives, engaging local communities and partners, and linking regional data and needs with NOAA capabilities.

Regional Solutions for Regional Challenges

A NOAA-wide geographic framework engages stakeholders and partners while integrating



Laura Furgione

NOAA across regional networks. Each region faces distinct geographical and environmental challenges that Regional Teams address within region-specific social and economic contexts. Examples of these solutions include:

- In the Alaska Region, the Regional Team with Alaska partners pursued strategies for climate mitigation and adaptation;
- In the North Atlantic Region, the Regional Team engaged partners and stakeholders to balance competing demands in coastal communities;
- In the Pacific Region, the Regional Team partnered in the Pacific Islands to deliver decision support tools for storm surges and other hazards;
- In the Southeast & Caribbean Region, the Regional Team advanced regional best practices for Hurricane Preparedness and Recovery.

What is NEPA?

The National Environmental Policy Act (NEPA), signed into law on January 1, 1970 (42 U.S.C. 4321 et seq.), establishes national environmental policy and goals for the protection, maintenance, and enhancement of the environment and a process for implementing these goals within Federal agencies.

NEPA at NOAA

Regulations issued by the Council on Environmental Quality (40 CFR 1500-1508) help

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**U.S. Department
of Commerce**
National Oceanic
and Atmospheric
Administration

From the NODC Director



Margarita Conkright Gregg, Ph.D.

The National Oceanographic Data Center (NODC) mission—to *provide scientific stewardship of marine data and information*—can only be accomplished through partnerships. We depend on our international, national, and regional colleagues to meet our mission goals.

Our Ocean Climate Laboratory relies on our international and national partners for the data and quality control that result in the generation of key products such as World Ocean Database and World Ocean Atlas. These products provide the foundation for understanding the impact of climate on our ocean, such as those in our ocean's heat content. A key reason for the success of these projects is our partnership with the international community in rescuing data that may be lost due to deteriorating media or retiring scientists. The Global Oceanographic Data and Archeology Rescue Project (GODAR), is carried out under the auspices of the Intergovernmental Oceanographic Commission (IOC).

Our Marine Data Stewardship Division also relies on our international partners through the Global Temperature and Salinity Profile Program, and the Global Argo Data Repository. These international programs are the largest source of modern ocean *in situ* data and clearly illustrate the benefits of leveraging capabilities internationally for real time distribution of

data and delayed mode scientific quality control data. The Satellite Oceanography Team is charged with generating climate data records for Sea Surface Temperature (SST). This is accomplished through active collaboration with the international Group for High Resolution SST, which delivers the highest spatial resolution of blended SST to the operational oceanographic, meteorological, and climate research communities.

Our colleagues at the National Coastal Data Development Center in Stennis Space Center, MS., take full advantage of being co-located with various NOAA offices and agencies outside of NOAA, as well. Through their active participation in the Gulf of Mexico Coastal Ocean Observing System and the Gulf of Mexico Alliance, they foster collaborations through joint projects across the Gulf. Through their expertise in data discovery and GIS mapping, they are providing some of the baseline information and tools needed for our national efforts in Coastal Marine Spatial Planning.

Our NOAA Central Library, headquartered in Silver Spring, MD, manages regional libraries in Miami, FL., Seattle, WA., and Camp Springs, MD. In addition, they network with 30 other NOAA libraries across the United States to ensure our scientists have the information services they require to carry out NOAA's mission. Some of this support is garnered through the generation of topical Virtual Libraries such as the Aquaculture Virtual Library, Coral Reef Information System (CoRIS) Library, Marine Protected Areas Virtual Library, and the NOAA Restoration Portal.

This issue of *ESM* focuses on how regional collaboration is critical to NOAA's success in understanding and predicting changes in the Earth's environment, and conserving and managing coastal and marine resources. As clearly described in the article by Assistant Administrator Laura Furgione, regional collaboration adds value to NOAA products and services. ■

Margarita

EARTH SYSTEM MONITOR

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(Putting the Pieces Together continued from page 1)

Federal agencies implement NEPA during the planning phases of any Federal undertaking. NOAA has tailored policy and procedures relative to its specific mission and activities that fully integrate NEPA into the agency's planning and decision making. Compliance with NEPA is established in the NOAA Administrative Order 216-6 (NAO). The NAO provides:

- NOAA's NEPA policy and procedures,
- NOAA's NEPA Coordinator responsibilities, and
- The roles and responsibilities of NOAA staff.

The NEPA Process

The NEPA process consists of an evaluation of the environmental effects of any Federal undertaking, including its alternatives. For each proposed action, one of three levels of analysis is conducted depending on whether or not the action could significantly affect the environment. These include:

- Categorical exclusion determination (CE),
- Preparation of an environmental assessment (EA), which may result in a finding of no significant impact (FONSI), or
- Preparation of an Environmental Impact Statement (EIS).

At the first level, an action may qualify for a CE if it meets certain criteria that the agency has previously determined as having no significant environmental impact. At the second level, the NOAA NEPA team prepares an EA to determine whether or not a proposed action or its alternatives would significantly affect the environment. If the answer is no, NOAA issues a FONSI. The FONSI may address measures NOAA will take to reduce or mitigate potentially significant impacts.

If the EA determines environmental consequences of a proposed action may be significant, NOAA prepares an EIS. An EIS is a more detailed evaluation of the proposed action and alternatives. The public and other Federal agencies may provide input into the preparation of an EIS and then comment on the draft EIS when it is complete. After a final EIS is prepared and at the time of decision, NOAA will prepare a public record of its decision addressing how the findings of the EIS, including consideration of alter-

natives, were incorporated into the agency's decision making process.

Roles and Responsibilities

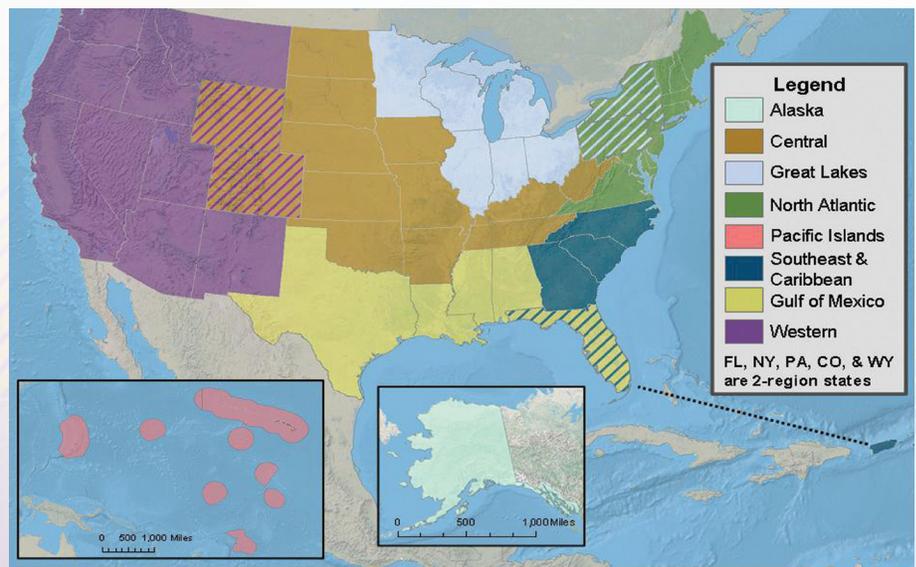
PPI - NEPA compliance and coordination is a core function of NOAA's PPI. PPI integrates NEPA policy into NOAA's programs through:

- Review and clearance of NEPA documents and signs transmittal letters,
- Coordination of review and comment on other agencies' EISs,
- Development of NOAA's NEPA policy and procedures, agency guidance, templates, and tools,
- Conducting NEPA trainings for NOAA staff, and
- Providing liaison with the Department of Commerce, Council on Environmental Quality and Environmental Protection Agency.

NOAA Staff – The line offices of NOAA appoint Responsible Program Managers who conduct the NEPA process.

Cooperating Agencies – In cases where NOAA is the designated lead agency in the preparation of environmental analysis, cooperating agencies assist NOAA in complying with NEPA requirements.

The Public – The public can participate in the NEPA process by attending NEPA-related hearings or public meetings and by submitting comments directly to NOAA. ■



Regional Collaboration Teams, consisting of Line Office leaders, focus on stakeholder engagement and the priority areas specific to their region.

NOAA's Next Generation Strategic Plan

Marla Trollan, Communications Director, NOAA PPI

The Next Generation Strategic Plan (NGSP) positions NOAA to meet the demands of the Nation and world in the coming decades. The plan conveys NOAA's mission and vision of the future, long term goals, and actions that NOAA must take to address national and global challenges. NOAA Director of Strategic Planning and DAA for NOAA Program Planning and Integration (PPI), Paul Doremus has been leading the development of this long-term plan through a transparent, inclusive, and lengthy engagement process.

The plan is emerging from extensive consultations across the Nation with NOAA's staff and stakeholders, including partners and collaborators in the public, private, and academic sectors that contribute to NOAA's mission. In conducting over 20 regional stakeholder forums, a national forum in Washington, DC, as well as hosting Web-based surveys and idea generation, NOAA PPI has gathered valuable contributions that represent an assessment of the greatest challenges facing the nation and the highest priority needs for NOAA.

NOAA PPI is working with the other NOAA Line Offices to develop a strategic plan that serves as a tool to make the activities of NOAA and its partners cohesive, purposeful, and responsible for its outcomes. The design of the strategic plan

aligns objectives for the near term with strategic goals over the long term. This alignment ensures that decisions are made with respect to a shared understanding of the future we hope to achieve and a shared understanding of the capabilities we have, or must build, to get there.

NOAA's mission statement summarizes the agency's fundamental mission responsibilities and embodies its organizational identity and shared sense of purpose. A new vision of ecosystem resilience will guide NOAA and its partners in its collective effort to reduce the vulnerability of communities and ecological systems in the short term, while helping society avoid or adapt to potential long-term environmental, social, and economic changes. Achieving this vision will require understanding the current conditions of the social-ecological systems, projecting future changes, and helping people make informed decisions to reduce their exposure to, and cope with, hazards and stresses that emerge over time.

Through the plan, NOAA will direct its mission capabilities toward four mutually supportive long-term goals, achieved by five-year objectives. These strategic goals are defined by future challenges: the availability and quality of fresh water, the exposure of people and communities to high impact weather, stresses of urbanization of the coasts, the multiple uses of ocean and coastal resources, and above all the pervasive effects of climate change on society and the environment. We must face these challenges if we are to improve human welfare and sustain the ecosystems upon which we depend. ■



NOAA invites comments on its: (1) mission statement (2) vision of the future; (3) long-term goals; (4) five-year objectives; and (5) strategy for execution and evaluation. The comment period will begin in June. Submit comments online via the NGSP Web site at: www.noaa.gov/ngsp.

"Through the concerted efforts of NOAA and many other organizations, we can navigate our way through these challenges toward a future where people, communities, and ecosystems prosper and are resilient in the face of change."

-Dr. Jane Lubchenco, NOAA Administrator

Coastal Marine Spatial Planning

Marla Trollan, Communications Director, NOAA Program Planning and Integration

Human uses of the ocean are expanding faster than our ability to manage them. Major marine sectors such as energy, fishing, recreation, aquaculture, and the military are increasingly demanding access to specific ocean areas, sometimes to the exclusion of other uses. The intensifying competition for space poses profound challenges for ocean management in the United States and internationally.

The current suite of ocean management authorities, jurisdictions, programs, science and strategies in the United States is often ill equipped to comprehensively address this growing spectrum of ocean uses. Although considerable progress has been made in regional ocean governance, major challenges persist. Many stem from the difficulty in transcending traditional, single-sector management to a multi-sectoral approach that cuts across jurisdictions and considers the cumulative impacts on broader ecosystem services and other users.

Left unaddressed, these user conflicts, (and the disputes, delays, and impacts they often generate), will continue to impede effective ocean management and degrade the integrity and services provided by marine ecosystems. Avoiding these conflicts requires a new, science-based, and comprehensive approach for recommending ocean uses in appropriate areas by increasing benefits, reducing environmental impacts, and ultimately ensuring the long-term maintenance of healthy, functioning ecosystems and the services they provide.

Coastal and Marine Spatial Planning (CMSP) is a comprehensive, adaptive, integrated, ecosystem-based planning process—based on sound science—intended for analyzing current and anticipated uses of ocean, coastal, and Great Lakes areas. It identifies areas most suitable for various types of activities in order to reduce conflicts among uses, reduce environmental impacts, facilitate compatible uses, and preserve critical ecosystem services to meet a variety of objectives. In practical terms, CMSP provides a public policy process for society to better determine how the ocean, coasts, and Great Lakes are sustainably used and protected, now and for future generations.

Real World Example: Stellwagen Bank National Marine Sanctuary

Comprehensive planning enabled NOAA, the United States Coast Guard, and several other government agencies and stakeholders to examine shipping needs, proposed deepwater liquefied natural gas port locations, and endangered whale distribution in a successful effort to reconfigure the Boston Traffic Separation Scheme (TSS) to reduce the risk of whale mortality due to collisions with ships in the Stellwagen Bank National Marine Sanctuary. The reconfigured TSS reduced risk of collision by an estimated 81% for all baleen whales and 58% for endangered right whales. Industry TSS transit times increased by only 9 – 22 minutes (depending on speed), and conflict with deepwater ports was eliminated. In addition, the new route decreased the overlap between ships using the TSS, commercial fishing vessels, and whale watch vessels, thereby increasing maritime safety. CMSP has the significant potential of applying this integrated, multi-objective, multi-sector approach on a broader scale.

CMSP can provide a wealth of benefits to both ocean and coastal ecosystems and those who use them. The process can help identify the cumulative effects of multiple uses in an area, and consider those effects while planning for the distribution of uses within appropriate areas. CMSP will also improve opportunities for meaningful and sustained community and citizen participation by utilizing an open planning process.

By design, CMSP embodies the same values that underpin every aspect of the Obama Administration: it is outcome-oriented; its development has been responsive and adaptive; and its execution is inclusive, transparent, and accountable. In essence, it provides collaborative stewardship of critical coastal and ocean ecosystems now, and for future generations.

By conserving and managing ocean and coastal resources, NOAA generates tremendous value for the Nation and the world. The implementation of CMSP, both at the national and regional scale, will help ensure we are able to enjoy these resources for generations to come. ■

www.msp.noaa.gov

NEWS BRIEFS

Expanded World Ocean Database

The National Oceanographic Data Center has released the largest, most comprehensive collection of scientific data and information about the oceans, with records dating as far back as 1773. The product, known as World Ocean Database (WOD) 2009, contains more than 9 million temperature profiles and more than 3.5 million salinity profiles. The 2009 database is an update to the 2005 version and captures 29 categories of scientific data from the oceans, including oxygen levels and chemical tracers. It also includes information on gases and isotopes that can be used to trace the movement of ocean currents.

The WOD datasets are used to construct global climatological fields of *in situ* temperature, salinity, dissolved oxygen, and various nutrients at standard depth levels for annual, seasonal,

and monthly periods. This product is known as the World Ocean Atlas (WOA).

Climate scientists use the data products to track changing ocean conditions, which contribute to the international science community's understanding of global climate change. The data are also used for quality control of real-time oceanographic observations, and many other studies.

New NOAA Fisheries Report Released

NOAA Fisheries released the sixth edition in a series of reports called *Our Living Oceans* (OLO). The reports are neither mandated nor intended to fulfill any legal requirement. Instead, the purpose of OLO is to provide a report card to the American public on the biological health of U.S. living marine resources.

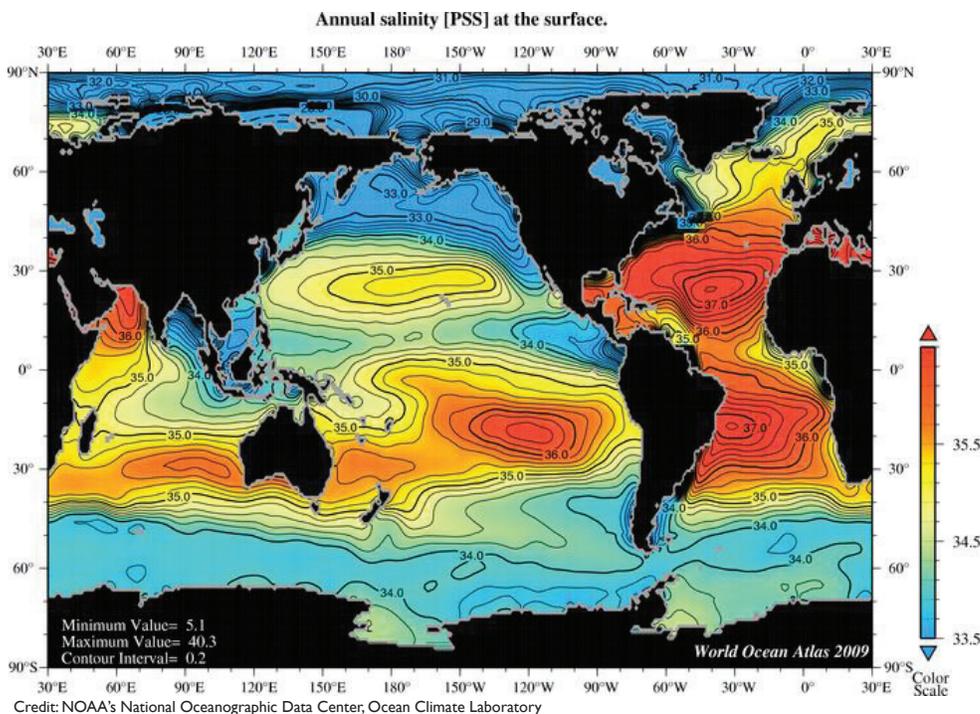
The latest report shows that the last decade has been a period of progress in rebuilding depleted fish stocks, sustaining many fisheries populations, and gaining a better understanding of the complex relationships between marine species and their habitats.

The report cites the Alaskan groundfish fisheries—walleye pollock, Pacific cod, rockfishes, and Atka mackerel—as a prime example of how managers and fishermen are working together to keep fish harvest rates at sustainable levels while reducing risks to other species in the ecosystem, including marine mammals, juvenile fish, and other fish species not being targeted.

The report describes how closed areas and other management of fishing areas—called place-based management—are helping to restore ecosystems. By closing several areas in the Northeast off New England, depleted groundfish stocks are being rebuilt while allowing some sustainable fishing for rebuilt populations of sea scallops. The West Coast is in the forefront of using place-based management through a network of marine conservation areas that were established to protect habitat and assist in the rebuilding of depleted groundfish populations.

The report also describes the increasing use of catch share programs to manage fisheries supporting coastal communities, and outlines the status of many marine mammals and sea turtles as well.

While the report details much progress, it also outlines significant challenges, including ending overfishing



for about 20 percent of U.S. stocks, where overfishing still persists. The Northeast continues to have the largest number of overfished stocks.

This sixth edition of *Our Living Oceans*, is now available online at www.st.nmfs.noaa.gov/LivingOceans.html, and will be available in printed copies soon from the NOAA's Fisheries Service - Office of Science and Technology.

OneNOAA Science Discussion Seminar Series

NODC is hosting the "OneNOAA Science and Discussion Seminar Series," a joint effort by several NOAA seminar partners at various Line or Program Offices across the country. The seminar listing was designed to provide a one-stop catalog of seminars of common interest, and to help share science, climate, and management information while promoting constructive dialogue among scientists, educators, and resource managers. Speakers provide presentations on a variety of topics. Most of the seminar presentations can be viewed by anyone remotely, via a combination of Web meeting software and phone. Effective May 1, 2010, NODC has instituted a list serve procedure to distribute the weekly emails with seminar notices to interested parties. Anyone within or outside of NOAA is welcomed to subscribe (or unsubscribe) to this list at any time.

To learn more about the One NOAA Science Discussion Seminar Series, please visit: www.nodc.noaa.gov/General/NODC-About/Outreach/

To subscribe to the OneNOAA Science Seminars email list: (1) visit <https://list.woc.noaa.gov/cgi-bin/mailman/listinfo/oneoaaascienceseminars> and fill in your

email address, (2) send an email to OneNOAAascienceseminars-request@list.woc.noaa.gov with the word 'subscribe' in the subject or body (don't include the quotes); or (3) send a request to join the list to Hernan.Garcia@noaa.gov.

New NOAA Weather Satellite

GOES-15, the final spacecraft in the latest series of NOAA geostationary satellites, took its first infrared image of Earth on April 26, 2010.

Since the first GOES launch in 1974, these satellites have supplied the data critical for fast, accurate weather forecasts and warnings, detecting solar storm activity, and relaying distress signals from emergency beacons.

Infrared imagery is critical for accurate weather forecasts, revealing a range of information, from the swirling motion of clouds and sea surface temperatures to moisture profiles of the atmosphere, and the movement of smoke plumes from wildfires.

GOES-15 was launched as GOES-P on March 4, 2010 from Cape Canaveral, FL, and is renamed when in orbit. After approximately five months of tests, NASA will officially "hand over" the satellite to NOAA, which will place it in orbital storage mode. GOES-15 will be ready for activation if any of NOAA's other four geostationary spacecraft experiences trouble.

Earth image: The first full disk infrared image taken from GOES-15, on April 26, 2010.

Launch image: A United Launch Alliance Delta IV rocket lifts off with the NASA/NOAA GOES-P from Space Launch Complex-37 on March 4, 2010, at 6:57 p.m. EST.



OFFICIAL BUSINESS

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NOAA Library Celebrates TIROS 50th Anniversary

Anna Fiolek, NOAA Central Library & Kelly Logan, National Oceanographic Data Center

The NOAA Library has developed a Web site depicting the 50th anniversary of the first weather satellite, entitled: “Resources on TIROS and Satellite Meteorology.” The site supports NOAA’s celebration of TIROS I, which was launched on April 1, 1960. The TIROS launch marked the first day it became possible to observe the Earth’s weather conditions on a regular basis from a vantage point of outer space. It was also the first satellite to test sun angle and horizon sensor systems for spacecraft orientation. The spacecraft was 42 inches in diameter, 19 inches high, and weighed 283 pounds. By comparison, the latest generation NOAA-15 satellite is 74 inches in diameter, 165 inches high in its “folded” launch configuration, and weighed 4,920 pounds at liftoff. TIROS I was operational for 78 days and proved that satellites could be a useful tool for surveying global weather conditions from space.

The online collection displays the NOAA Library’s unique resources on TIROS satellites and research in satellite meteorology, including over 284 full-text documents in PDF format, over 530 photos, and a selection of related videos in MOV and MP4 formats. The collection also includes selected library holdings from the 1950s to the present, and offers full-text access to unique meteorological satellite related documents. Over 200 of the listed documents are linked to previously scanned historically significant publications. The video commemorating the historic launch of TIROS-I on April 1, 1960 was converted in the NOAA Library from the original VHS tape. ■

To learn more about the TIROS satellite, please visit: www.lib.noaa.gov/collections/TIROS/tiros.html

