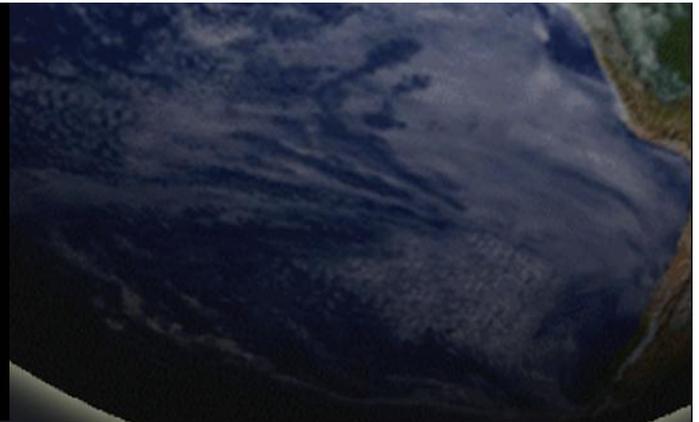


NOAA Climate Service and Climate Smart Sanctuaries





NOAA Climate Service

www.noaa.gov/climate

- Announced by Dept. of Commerce Secretary Locke and NOAA Administrator Dr. Jane Lubchenco on February 8, 2010.
- It is a reorganization of existing assets to coordinate and integrate NOAA's existing climate capabilities for greater effectiveness.
- The Department is awaiting formal approval from the Office of Management and Budget and from Congress.
- Early FY 2011 establishment expected



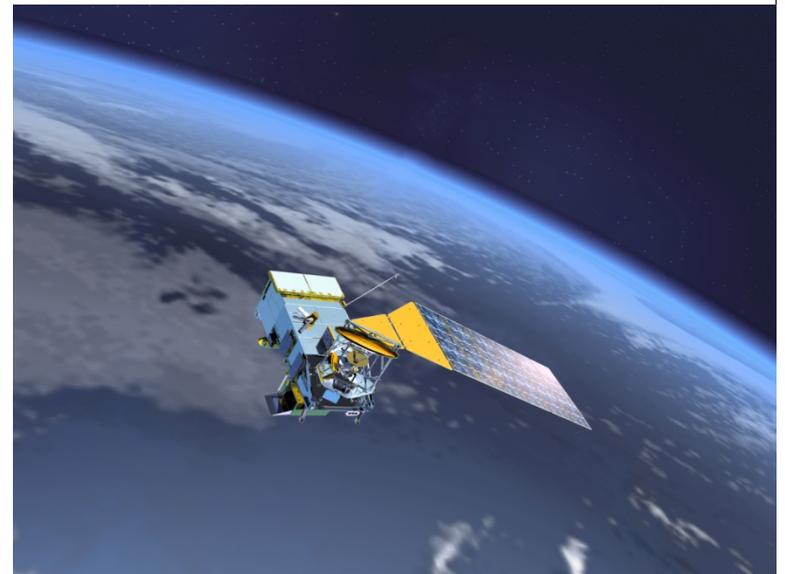


NOAA Climate Service

www.noaa.gov/climate

- **The NOAA Climate Service will be a comprehensive and integrated office responsible for NOAA's climate science, data, information and services.**
- **The NOAA Climate Service will bring together many of the agency's existing climate assets including research labs, climate observing systems, modeling facilities, integrated monitoring systems and extensive on the ground service delivery infrastructure.**
- **Tom Karl, the Director of the National Climatic Data Center, will lead the effort as the Transitional Director for the NOAA Climate Service.**

For more info, go to www.noaa.gov/climate





NOAA Climate Service

www.noaa.gov/climate

A Regional Approach

- NOAA will establish **six regional climate offices**. They will be co-located with the Nation Weather Service regions and will be responsible for climate activities across all of NOAA.

Focus Areas

- Leadership in the development of an integrated NOAA program of **climate services on a regional scale** that responds to the needs of stakeholders and draws upon agency-wide assets and capabilities.
- Management of the development and execution of a **Regional Climate Services Strategic Plan** that combines the unique assets and special capabilities of NOAA programs **working with regional partners** in other Federal agencies, state, local and tribal governments, universities, the private sector and NGOs.

For more info, go to www.noaa.gov/climate





NOAA Climate Services Portal

<http://www.climate.gov>

NOAA HOME WEATHER OCEANS FISHERIES CHARTING SATELLITES CLIMATE RESEARCH COASTS CAREERS



NOAA CLIMATE SERVICES

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

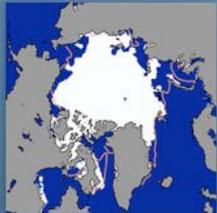
Explore: [ClimateWatch Magazine](#)

[Data & Services](#)

[Understanding Climate](#)

[Education](#)

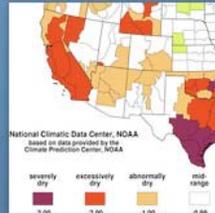
Past & Present Climate ▶



Climate at a Glance

Read and explore summaries and digests of recent climate-related phenomena from NOAA's distributed climate service community.

Outlooks ▶



Looking Ahead

Discover explorations short-term evaluations of how climate phenomena are likely to unfold in coming days, weeks, and months.

US & Global Regions ▶



Explore NOAA by Region

Explore the climate services and products NOAA experts prepare for specific regions of our nation and the world.

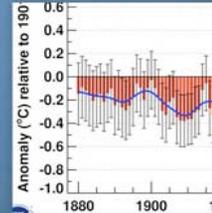
Serving Society ▶



Utilizing Climate Data

Climate information is essential for business and community planning. These resources focus on needs of specific sectors of society.

Data Library ▶



Visualizing & Explore

NOAA is a leading provider of access to data from research projects, stations, and satellites to the nation and the world.

Offers one well-integrated, online presentation of NOAA's climate data & services.

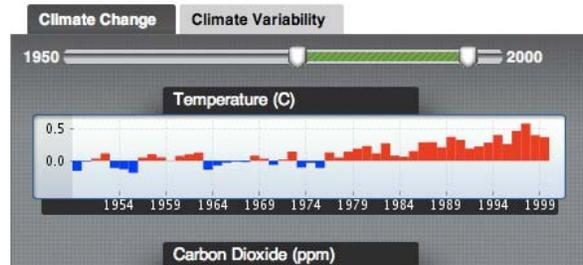
The prototype features four audience-focused sections:

- **ClimateWatch** for the public
- **Data & Services** for scientists and data users
- **Understanding Climate** for policy leaders
- **Education** for educators & students

The **Dashboard** is a data-driven synoptic overview of the state of the global climate system.

Past Weather allows users to easily retrieve weather data for any given location & date.

Global Climate Dashboard



Past Weather

News

[NOAA: September Temperature Above-Average for the U.S.](#)

The average September temperature of 66.4 degrees F was 1.0 degree F above the 20th Century average. Precipitation across the contiguous United States in September averaged 2.48 inches, exactly the 1901-2000 average.

Thu, 08 Oct 2009





NOAA Climate: Coastal Communities

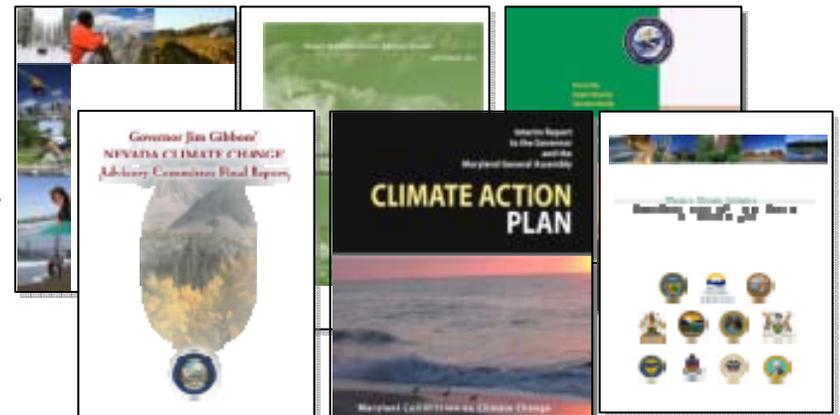


Improving Analytic Capacity: *Integrated Ocean & Coastal Mapping/Digital Coast*

- ✔ Provides a coordinated approach to mapping/GIS & visualization tools to help users understand impacts of changing climate conditions
- ✔ Example (Left) – data simulation of inundation on Charleston, SC

Implementing Adaptation Actions: *NOAA's Coastal Strategy*

- ✔ To increase the resilience of coastal environments and communities by protecting and restoring coastal ecosystems and their services and ensuring sustainable coastal communities.

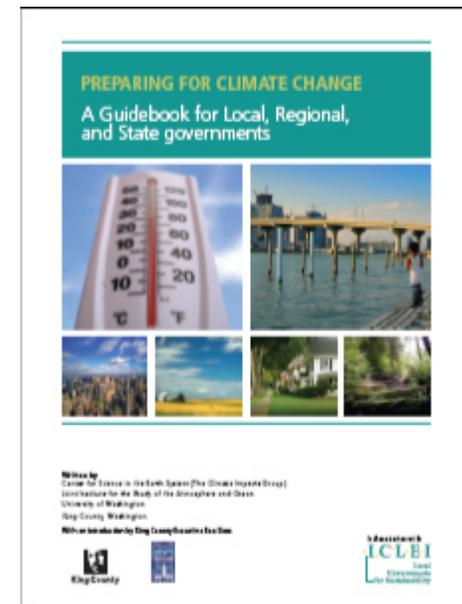
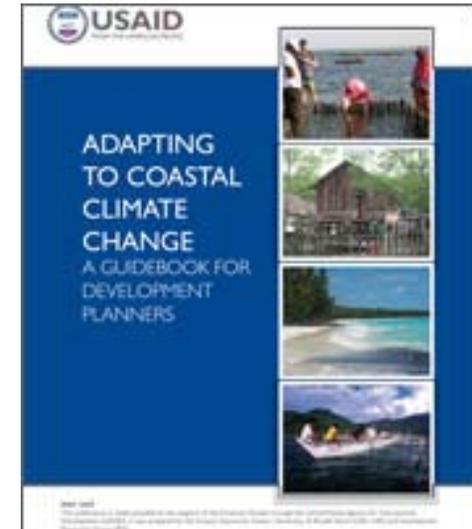




NOAA Climate: Coastal Communities

Decision Support for Resilience

- Assessments and Planning Guidance
 - *Adapting to Coastal Climate Change: A Guidebook for Development Planners* (international)
 - Local, regional, and state government guidebooks (domestic)
- Social Science to Improve Products and Services
 - Understanding and improving how science is used in decision-making



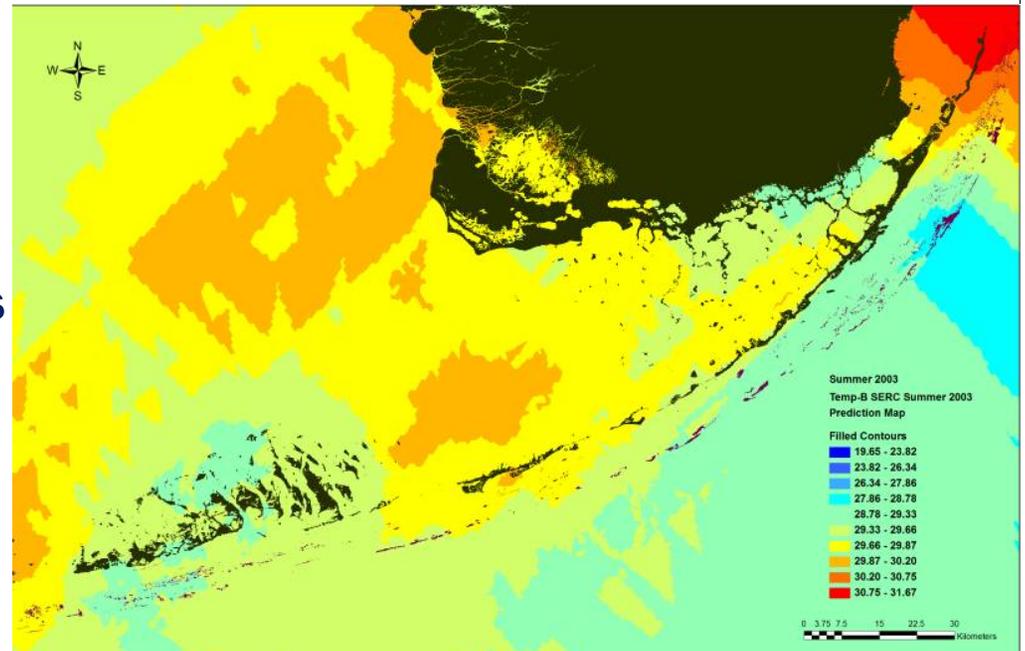


NOAA Climate: Regional Decision Support

SECTORAL APPLICATIONS RESEARCH PROJECT (SARP): COASTAL
supports grants-based applied research and outreach activities
that seek to address climate-related issues in the coastal zone.

CLIMATE CHANGE L.E.A.D.S. (Linking Environmental Analysis to Decision Support)

The World Wildlife Fund and partners recently completed a project which focused on informing adaptive management of south Florida's coral ecosystem and providing communication and outreach tools.



Coral Reef Management Mapping Tool

<http://www.worldwildlife.org/climate/florida/mapping/floridamapping.html>





RESPONDING TO CLIMATE CHANGE: WE'RE ALL IN THIS TOGETHER



Climate Services

Observations & Monitoring

Research, Modeling & Assessments

Resource Risk Management

Adaptation & Mitigation





RESPONDING TO CLIMATE CHANGE: WE'RE ALL IN THIS TOGETHER



MPAs and Climate Interagency Working Group

Purpose: Informally bring together all of the federal MPA programs to share how we are approaching climate change impacts in our sites, discuss coordination and pilot project possibilities (e.g., Sentinel Sites), and lay out next steps.

Initial meeting August 2009 – sixth meeting will be held April 12.



South Florida Climatology Project



Integrated Marine Protected Area Climate Tool

Pilot study in the Florida Keys to develop climate decision-support tools for MPA managers



In the last decade, progress has been made in refining global climate models; however uncertainty remains about climate changes at finer geographic scales. Entrusted with the stewardship of many of the most ecologically, economically and socially important marine resources in U.S. waters, managers at NOAA's Sanctuaries need accurate and timely decision-making tools to take proactive steps in facing the threat climate change poses to the resources.

Basic climate information must be readily available to inform managers of current and expected climatic conditions in their specific region. Like their Marine Protected Area (MPA) colleagues at the local, state and regional level, sanctuary managers are generally ill-equipped to analyze raw climate data on their own. Rather, sanctuary managers require tailored products at scales appropriate to informing them of the status and trends of resources and the changes they should expect both locally and regionally as a result of a changing climate.

DESCRIPTION:

Building upon existing partnerships, NOAA will develop a comprehensive set of climate products, including climatologies, for MPAs through a pilot project at the Florida Keys National Marine Sanctuary (NMS).

This multi-year pilot project will involve:

- 1) creating long-term climatologies (current climate conditions, historical averages and extremes, ranges of possible changes) for the Florida Keys NMS;
- 2) assessing expected ecological responses of marine resources resulting directly or indirectly from climate change; and
- 3) evaluating the usefulness of the product in the field.

Through this exercise, the NOAA partnership hopes to



Development of IMPACT

ONMS and NCDC are leading a pilot project to develop a climatology and ecological forecasts for South Florida. The first planning meeting was held in Miami in January and a work plan is under development.



Climate-Smart Sanctuaries: Helping National Marine Sanctuaries Plan, Adapt, Manage, and Mitigate for Climate Change



Our National Marine Sanctuaries



● National Marine Sanctuary

★ Marine National Monument

What is the Climate-Smart Sanctuary Process?

- Planning, management, and certification process designed to help a national marine sanctuary specifically adapt to and mitigate for climate change impacts on its **site resources, infrastructure and community**

Why Climate-Smart Sanctuaries?

- Meet NMSA requirements to protect sanctuary resources
- Demonstrate to our communities and partners that action can be taken
- Share experiences with partners for mutual benefit

Climate-Smart Sanctuary Benefits

- Helps NMSS meet its mandates
- Builds on proven management planning process
- Integrates with and sustains momentum for related projects (e.g., South Florida Climatology)
- Designed to be rigorous, practical and focused
- Can be exported and adapted for other MPAs

Climate-Smart Sanctuary Components

- Training for Site Managers and Staff
- Sanctuary Climate Site Scenario
- Sanctuary Climate Action Plan
- Green Operations
- Climate-Smart Certification Standards and Process

Sanctuary Climate Site Scenario

- Intended to provide likely scenario(s) for long-term climate impacts (30-50 years)
- Use of best available expertise and technical experts
- Subject to peer review to Data Quality Act standards
- Includes public input/review component
- Used for research, management, and outreach

Sanctuary Climate Action Plan

- Concise document listing specific strategies and activities to address priority climate
- Guidelines include examples of adaptation and mitigation measures
- Includes detailed strategies with leads, timelines, costs, and performance measures
- Includes public input/review component
- Designed to be integrated with existing or new sanctuary management plans

Green Operations Plan

- Designed to decrease carbon footprint of sanctuary operations and consider the potential climate change impacts on infrastructure
- Includes all facets of sanctuary operations including administrative and office ops, transportation, water use, energy use, and landscaping, etc.
- Standards are adaptable to specific sites, with core set of requirements and optional steps

Certification Standards and Process

- Set of standards for management, research, outreach, advisory councils, and green operations
- Based on and integrated with ongoing sanctuary projects, including condition reports and management plan reviews
- Involves external local review team
- Certifying authority still under development but may be an internal leadership body for now and external authority at a later date

Current Status

- Gulf of Farallones –site scenario in peer review; have working outline of action plan
- Fagatele Bay –initiating process in conjunction with management plan review
- Monitor – will undertake in FY11
- Florida Keys – will undertake after completion of climatology project
- Other sites will begin process as resources allow

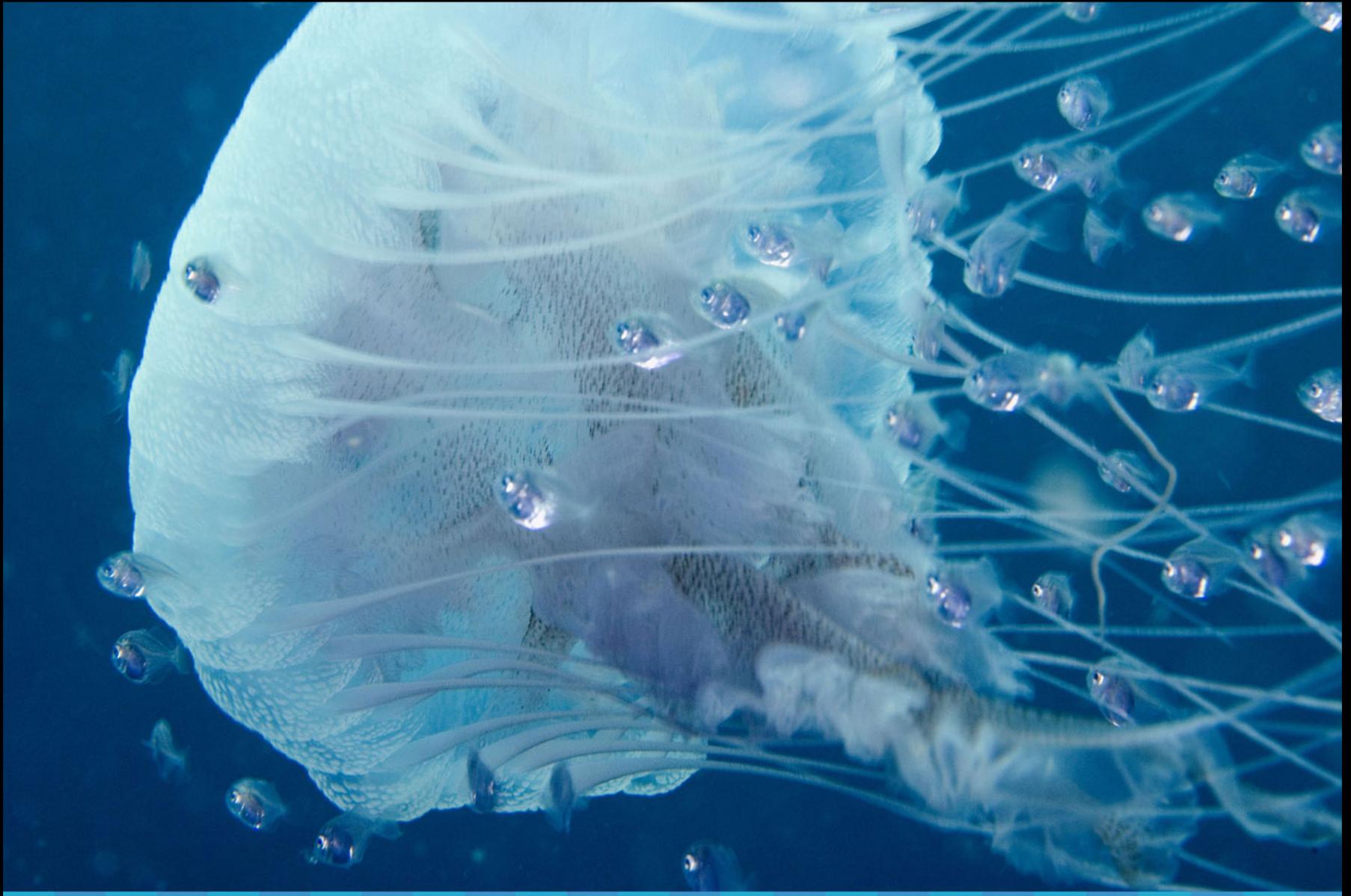


PHOTO: GREG MCFALL
SANCTUARIES.NOAA.GOV

JELLY AND LARVAL FISH
GRAY'S REEF NATIONAL MARINE SANCTUARY



NOAA Climate Service

www.noaa.gov/climate

Back up Slides



NOAA Climate Service

www.noaa.gov/climate

Proposed Makeup of the NOAA Climate Service

- **Climate Program Office**
- **National Climatic Data Center**
- **National Oceanographic Data Center**
- **National Geophysical Data Center**
- **Much of the Earth System Research Lab**
- **Geophysical Fluid Dynamics Lab**
- **Aspects of the Climate Observing Network**



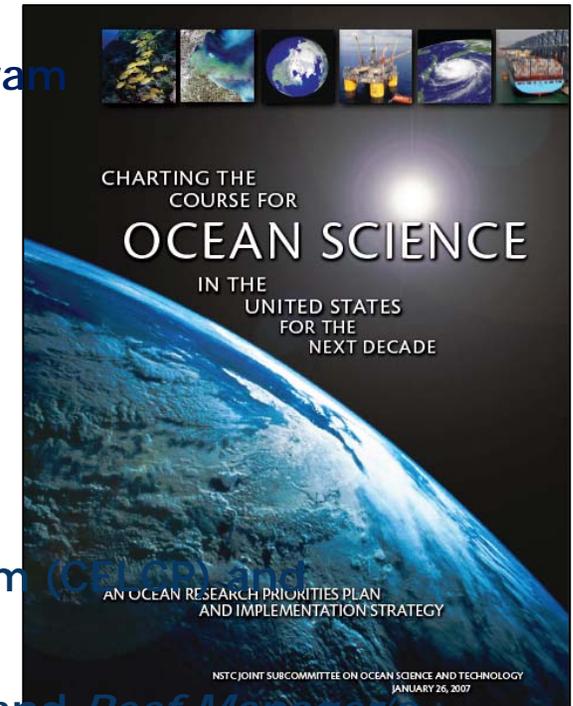
Addressing the Impacts of a Changing Climate:

Improving Analytic Capacity

- Ecological Effects of Sea Level Rise (EESLR) Program
- NOAA-USGS coastal climate partnership
- NOAA-HUD visualization partnership
- Integrated Ecosystem Assessments

Implementing Adaptation Actions

- Community and Regional Resilience Initiative (CARRI)
- Coastal and Estuarine Land Conservation Program (CELCP) and Community Based Restoration Program
- Satellite-based coral bleaching warning system and *Reef Manager's Guide*



Generalized Climate-Smart Process

