

Chapter 1

**FY 2004 Accomplishments  
by Goal**



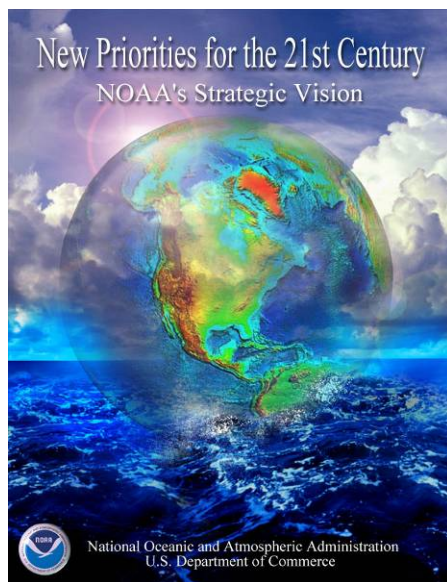
## Fiscal Year 2004 Accomplishments by Goal

Based on stakeholder input and internal assessments of our mandates and mission, NOAA has adopted a Strategic Plan, structured with four Mission Goals and a Mission Support Goal around which all of our work is planned and organized. NOAA's Line and Staff Offices execute activities required to achieve these goals through NOAA programs. These programs may involve the activities of more than one Line or Staff Office.

### NOAA Mission Goals

- Ecosystems: Protect, Restore, and Manage the Use of Coastal and Ocean Resources Through an Ecosystem Approach to Management
- Climate: Understand Climate Variability and Change to Enhance Society's Ability to Plan and Respond
- Weather & Water: Serve Society's Needs for Weather and Water Information
- Commerce & Transportation: Support the Nation's Commerce with Information for Safe, Efficient, and Environmentally Sound Transportation
- Mission Support: Provide Critical Support for NOAA's Mission

The domains of the four Mission Goals are interrelated, sharing common science and technology challenges and stakeholder interest to some degree. For example, an ecosystems approach to management requires information on weather and climate and must take into consideration commerce and transportation interests. Each Mission Goal must consider its relationship with the others in developing and implementing plans and programs. Similarly, the Mission Support Goal provides vital NOAA-wide services in support of all Mission Goals.



***"Matrix management simply means that in addition to the 'islands' there will now be a clear bridge linking team talent, funding and management on given issues."***

- VADM Conrad C. Lautenbacher (USN-ret) Jan. 12, 2003

**NOAA's Strategic Plan 2005-2010**  
<http://www.spo.noaa.gov/>

In support of these Goals, NOAA achieved many desired accomplishments in Fiscal Year (FY) 2004, as described below:

## **Ecosystems**

### **Leadership in Global Earth Observing**

NOAA continued to exercise international leadership in the development of a coordinated, comprehensive and sustained Global Earth Observation System of Systems (GEOSS), including playing a key role in the developing the draft Strategic Plan for the U.S. Integrated Earth Observation System. Nearly 100 nations and international organizations support the development of GEOSS, which will revolutionize the understanding of Earth and how it works. With benefits as broad as the planet itself, the U.S.-led initiative promises to make people and economies around the globe healthier, safer and better equipped to manage basic daily needs. The aim is to make 21st century technology as interrelated as the plane it observes, predicts and protects, providing the science on which sound policy and decision-making must be built.

### **Research, Management Help US Fish Stocks to Rebound**

The *2004 Status of Fisheries of the United States* report (also known as the Status of Stocks) showed considerable progress was made to address excessive fishing rates and rebuild fish stocks to healthy levels. The Status of Stocks reported four fish stocks were fully rebuilt, a record ten species were removed from the list of overfished stocks and overfishing practices were stopped for five species. The report illustrates NOAA fisheries management programs are successfully restoring the nation's marine resources while providing important economic opportunities for fishing industries.



**Fishing Vessel**

### **Better Management Through Fisheries Vessel Monitoring System**

NOAA now provides near-real time fishing vessel tracking of more than 2,250 vessels in 14 different fisheries via a satellite-based vessel monitoring program. This is a 36-percent increase over 2003, and the coverage is planned to increase by five fold (8,308 vessels) by 2009. The program provides near-perfect compliance with open and closed seasons, closed areas, and international boundaries and management areas.

### **Record Amount of Habitat Protected and Restored**

Collaboration with national and regional agencies and alliances with over 500 community groups resulted in restoration of more than 3,700 acres of habitat in 2004. Since 2001, NOAA has restored 11,000 habitat acres and opened 555 stream miles, with goals of 30,000 acres restored and 13,000 miles opened over the next 5 years.

## Mapping, Monitoring and Managing Coral Reef Ecosystems

NOAA, in collaboration with state and territory partners and other Federal agencies has begun to implement a coherent ecosystem approach to management of U.S. coral reefs, through coordinated monitoring, mapping, research, and management efforts. NOAA has mapped and characterized shallow reef ecosystems in over 50% of the U.S. reef jurisdictions since 2000 and will map the remaining areas over the next few years. In addition, expanded monitoring efforts have produced the first comprehensive ecological baseline assessments for remote U.S. Pacific coral reef ecosystems. These mapping and monitoring efforts are critical to designing, implementing, and evaluating effective management and research activities.

## Climate

### Climate Reference Network Fills Key Data Gap

NOAA commissioned the U.S. Climate Reference Network (CRN), which now contains 72 stations across the U.S. The Network, in its first full year of operation, is already providing significant data, reducing scientific uncertainty on long-term temperature and precipitation trends – from 5 percent to 3.5 percent for temperature and from 16 percent to less than 10 percent for precipitation. This verification of climate observations improves the tracking of temperature and precipitation trends, giving NOAA scientists and the nation's decision makers more insight into climate variability and change. A total of 110 stations are planned throughout the nation.



### Critical Climate Forecast System Becomes Operational

In August, NOAA implemented a new global ocean and atmosphere Climate Forecast System (CFS). Under development for a year by a team of NOAA scientists, the CFS is a coupled model approach, representing the interaction between the Earth's oceans and the atmosphere. It complements our other models and gives NOAA increased confidence to more accurately depict the actual physical processes that occur in nature, such as El Niño. Understanding these interactions are critical for determining climate patterns and providing more accurate forecasts and outlooks on seasonal time scales.

### Completion of Model Runs for International Climate Assessment

In October, NOAA completed projections for the upcoming Intergovernmental Panel on Climate Change Scientific Assessment of Climate using a new coupled atmosphere-ocean-land model. The new model was produced by the Geophysical Fluid Dynamics

Laboratory and incorporates finer spatial resolution and better representation of processes affecting climate.

## **Weather & Water**

### **Successful Team Approach to Hurricane Season**

NOAA's National Hurricane Center had unprecedented success dealing with a busy August and September in keeping with the NOAA climate forecast of an above normal hurricane season in 2004. NOAA's collective success was a result of the contributions made by several NOAA entities, from the observations provided by NOAA's satellites, to



**NOAA satellite image of Hurricane Ivan taken at 4:15 pm ET on Sept. 15, 2004, just hours before making landfall on the USA Gulf Coast**

the models produced by Geophysical Fluid Dynamics Laboratory (GFDL) and Atlantic Oceanographic and Meteorological Laboratory (AOML), to the teams flying the P-3 and G-4 hurricane hunter aircraft, and the offices involved in post-storm damage assessments. NOAA's four- and five-day hurricane forecasts are as good now as three-day forecasts were ten years ago – and the Hurricane Frances and Charley forecasts were even better this year.

### **National Integrated Drought Information System**

NOAA supported the Western Governors' Association's (WGA) development of a plan for a National Integrated Drought Information System. It serves as a roadmap and requirements document for the creation, operation, and management of an effective national drought system. With \$6 billion to \$8 billion in estimated losses to the U.S. economy, and impacts widespread throughout society, NOAA recognizes the value and importance of monitoring and forecasting drought.

### **All-Hazards NOAA Weather Radio**

In partnership with the Department of Homeland Security, NOAA converted its Weather Radio program into an all-hazards warning system. This partnership with DHS extends NOAA Weather Radio's capabilities from primarily broadcasting weather forecasts and warnings to include a wider range of alerts and warnings, both man-made and natural disasters, which will make critical information more readily available to the public. Through WARN, the NOAA Weather, Alert and Readiness Network, alerts can be delivered nationally, regionally or locally, giving DHS a strengthened capability to send emergency messages to national and targeted populations with minimum delay.

### **DART Buoys Provide Tsunami Warning**

NOAA's Deep Ocean Assessment and Reporting of Tsunamis (DART) system hit the bull's-eye on November 17, 2003 when it detected a small tsunami generated by an 7.5-magnitude earthquake near Adak, Alaska. This was the first time NOAA was able to capture tsunami data in real-time since the system was transferred from research to operations in October 2003. NOAA advised emergency managers to avert a tsunami warning because real-time DART data showed the tsunami would not be damaging. Canceling this warning avoided an evacuation in Hawaii, saving the state an estimated \$68 million in lost productivity. The earthquake-tsunami event was similar in magnitude to an event from the same region in 1986, which triggered a tsunami warning resulting in the evacuation of Hawaii coastal areas – at an estimated cost of \$40 million.

### **NOAA Leads Largest Air Quality and Climate Study**

NOAA led hundreds of government and university scientists from across the country, Canada, and in western Europe to sample the quality of the air this summer in the largest air quality and climate study to date. The study was undertaken as part of the International Consortium for Atmospheric Research on Transport and Transformation. A special focus of the sampling was a comprehensive effort to characterize air quality in the northeast U.S., called the New England Air Quality Study.

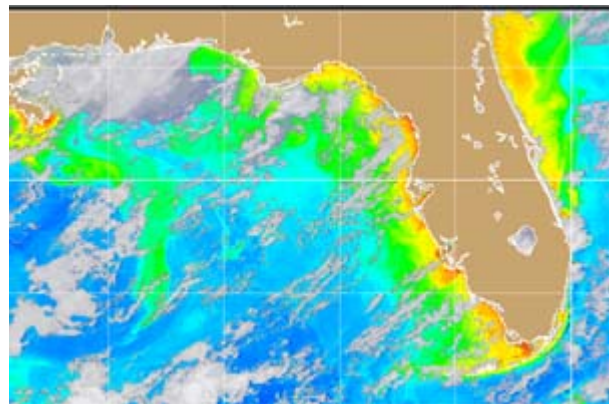
### **Operational New England Air Quality Forecasts**

In June, NOAA began issuing Air Quality Forecasts for the Northeastern United States as part of a joint project with the Environmental Protection Agency. This program will provide critical, high resolution forecasts enabling state and local agencies to issue more accurate and geographically specific air quality warnings to the public. The Air Quality Forecast (AQF) program will provide ozone forecast guidance with enough accuracy and advance notice for people to take action to prevent or limit harmful effects of poor air quality. The program will implement forecasts nationwide beginning this year.

## **Commerce & Transportation**

### **Harmful Algal Bloom Early Warning System**

NOAA announced in September a new ecological forecast system for harmful algal blooms (HABs) in the Gulf of Mexico which became operational on Oct. 1, 2004. The system produces information daily, and forecasts at least twice weekly, which can be used to determine the current and future location and intensity of blooms and the likely impacts to the environment.



NOAA satellite image of chlorophyll concentration in the Gulf of Mexico and Florida coasts taken at 2:31 pm EDT on Sept. 29, 2004

### **Three Million Navigation Charts Served, and Counting**

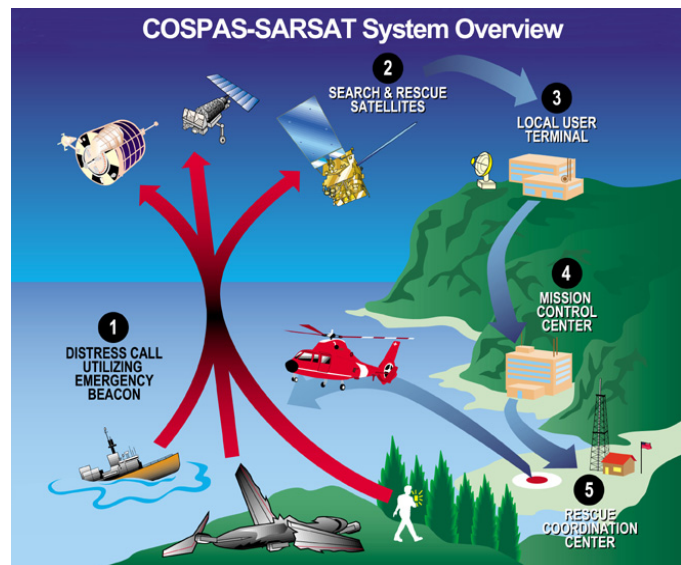
The 3,000,000th Electronic Navigational Chart was downloaded in July 2004. NOAA ENC's are perhaps the most critical component of NOAA's navigation tools – part of a suite of navigation products and services which help ensure the safety of marine transportation, while improving the economic efficiency and competitiveness of American commerce.

### **NOAA Programs Partner to Improve GPS Information**

The Geodesy Program partnered with NOAA's Space Environment Center (SEC) to incorporate Continuously Operating Reference Stations (CORS) data into ionospheric models. The ionosphere distorts Global Positioning System (GPS) signals coming down from space satellites to receivers on the Earth. Because highly accurate models of this phenomenon do not currently exist, NOAA's Geodetic Survey (NGS) is investigating how information about the ionosphere can be derived from CORS, which gather GPS data 24 hours, 7 days a week. With this work, both military and civil users will be able to employ GPS data with greater accuracy in less time.

### **SARSAT Saves 220 Lives**

NOAA's Search And Rescue Satellite Aided Tracking (SARSAT) System aided in rescuing more than 220 lives in U.S. waters and across the country. The system uses NOAA satellites in low-earth and geostationary orbits to detect and locate aviators, mariners, and land-based users in distress. The satellites relay distress signals from emergency beacons to a network of ground stations and ultimately to the U.S. Mission Control Center (USMCC) in Suitland, Maryland. The USMCC processes the distress signal and alerts the appropriate search and rescue authorities to who is in distress and, more importantly, where they are located.



### **Mission Support**

#### **Critical Environmental Satellite Support for the Nation**

For special hurricane support, our satellite operations were reconfigured to provide rapid scan 5-minute imaging for an unprecedented full week, with a 99.9% delivery rate for 584 images during hurricane Frances and a 100% delivery rate for 469 images during hurricane Charlie. Overall, NOAA's Satellites provided 12 months of nearly flawless

operation of three satellite constellations consisting of 17 spacecraft. NOAA had a 99.5% success rate for providing mission critical data satisfying customer requirements.

### **Improving the NOAA Grants Process**

Significant improvements made in the NOAA grants process in FY04 have led to more timely awards and fewer awards at the end of the fiscal year. Development and implementation of Grants Online resulted in NOAA being first agency to receive electronic applications through the Grants.gov portal, and Grants Online was selected as a finalist in the 2004 Excellence.Gov awards. During FY 2004, NOAA made on time grant awards worth almost \$972,000,000 to 1501 recipients.

### **NOAA Fleet Modernization**

Significant progress was made this year on modernization of the fleet ships employed to complete NOAA's environmental and scientific missions, within all mission goals. NOAA ship FAIRWEATHER, a de-activated hydrographic survey ship, was re-activated in 2004 after a major modernization and upgrade. NOAA replaced four aging vessels with younger ships acquired from the United States Navy and converted a former United States Coast Guard vessel (re-commissioned HI'IALAKAI) for



**NOAA Ship FAIRWEATHER**

NOAA research use. The acquisition of these five ships helped reduce the average age of the fleet from 33.6 years to 28.2 years. NOAA initiated construction of several new vessels in FY 2004: a Small Waterplane Area, Twin Hull (SWATH) vessel to support NOAA's mission to promote safe navigation and maritime commerce, and also a new class of state-of-the-art Fishery Survey Vessels (FSV). The first FSV, OSCAR DYSON, was launched on October 17, 2003. A second FSV, the HENRY B. BIGELOW is now under construction, and a third FSV is in the design stage.

### **NOAA Earns Unqualified Audit Opinion for 6<sup>th</sup> Straight Year**

NOAA has been under the scrutiny of an external audit of our financial statements since 1994, and has received an "unqualified opinion" on its statements each year since 1998. An unqualified opinion is an independent auditor's opinion of our financial statements, given without any reservations. This opinion states that the auditor believes NOAA followed all accounting rules appropriately and that the financial reports are an accurate representation of the agency's financial management.