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THE NATION'S EYE ON THE ENVIRONMENT

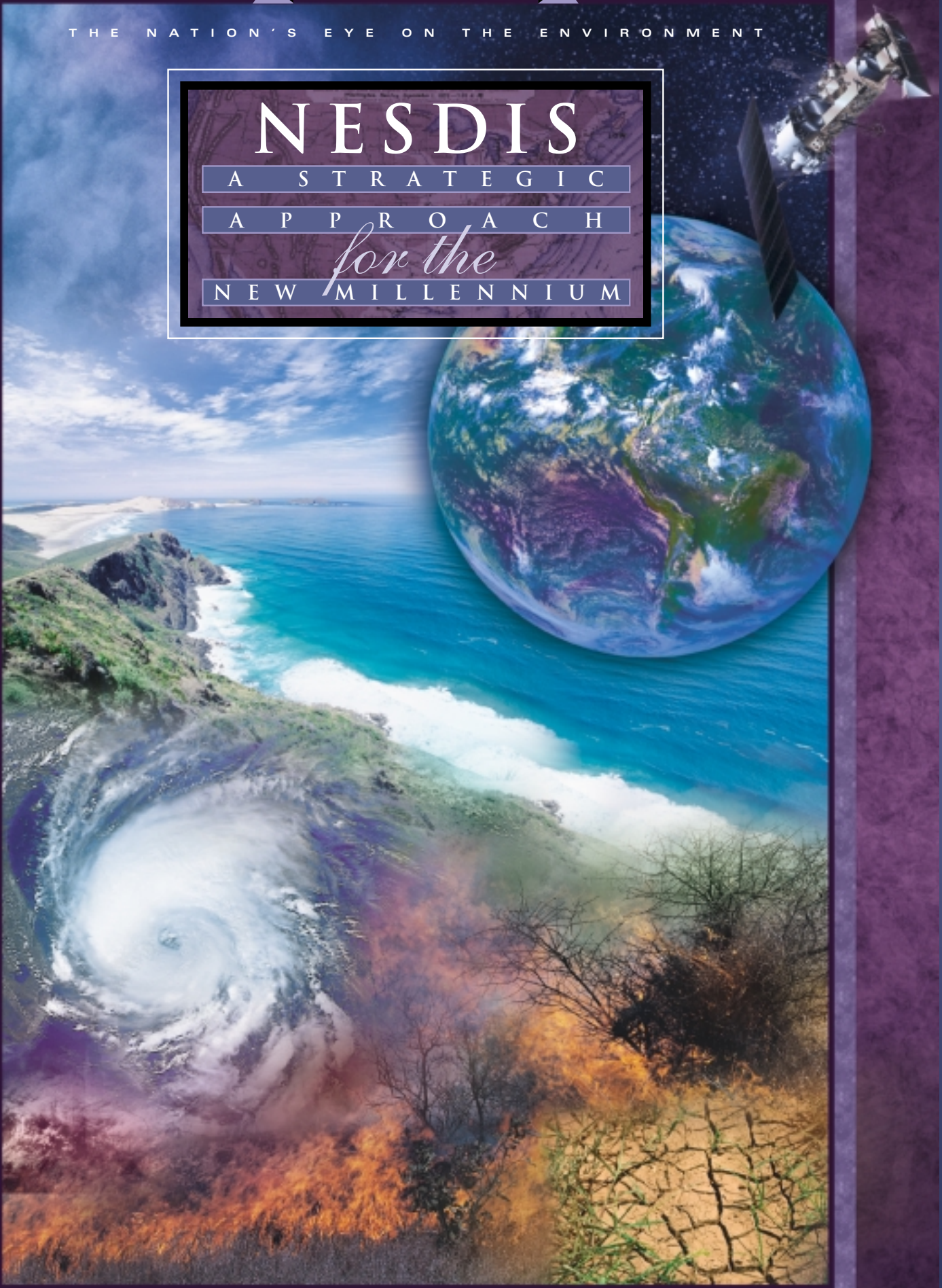
# NESDIS

A S T R A T E G I C

A P P R O A C H

*for the*

N E W M I L L E N N I U M



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# THE STRATEGIC PLAN

ASSISTS US IN  
TRANSITIONING FROM  
WORDS TO WORK, FROM  
INTERNAL IDEAS TO  
GLOBAL INFLUENCE,  
FROM SCIENTIFIC VISION  
TO SCIENTIFIC FACT.

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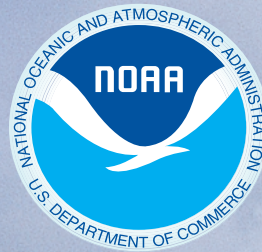
N E S D I S



*National Environmental Satellite, Data, and Information Service*

# A STRATEGIC PLAN FOR NOAA'S NATIONAL ENVIRONMENTAL SATELLITE, DATA, AND INFORMATION SERVICE (NESDIS)

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**U.S. DEPARTMENT OF COMMERCE**  
National Oceanic and Atmospheric Administration  
National Environmental Satellite, Data, and Information Service

[www.nesdis.noaa.gov](http://www.nesdis.noaa.gov)



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## F O R E W O R D

I have the pleasure to lead one of the most talented and dedicated organizations in the Federal Government. The National Environmental Satellite, Data, and Information Service (NESDIS), the world's largest civil operational, environmental space organization, operates the United States' geostationary and polar-orbiting environmental satellites. It also manages the largest collection of atmospheric, geophysical, and oceanographic data in the world. We have been entrusted with an important and challenging mission in service to the American people. Our fundamental mission is to ensure timely access to global environmental data and to provide information services including Earth system monitoring and assessments of the environment, in order to promote, protect, and enhance the Nation's economy, security, environment, and quality of life. The mission is critical for improving the understanding of our complex global environment in the new century. Never in our history have we been so keenly aware of the effects of the environment on our daily lives.

The core of the strategy envisioned in this plan is to provide continuity and better use of satellite and environmental data, with an expert work force, while further developing coastal, ocean, weather, climate, and disaster support services and applications. We will achieve our vision through strategic partnerships with other Government agencies, international partners, industry, and academia. We have placed these goals and themes in the context of how we support our parent organizations, NOAA and the Department of Commerce. We will hold ourselves accountable by incorporating these strategic goals into performance-based management, budget, and planning structures.

This document also serves as the framework to challenge NESDIS to be the best organization we can be, to do the most with what we have, to be efficient, energetic, and innovative. Finally, I want to emphasize our commitment to customer service and outreach.

Whether you use our products and services to plan your daily routine, to make critical business decisions, or to conduct environmental research, you have our promise that this organization will respond to your needs by providing appropriate data, products, and services.



*Gregory W. Withee  
Assistant Administrator for  
Satellite & Information Services*

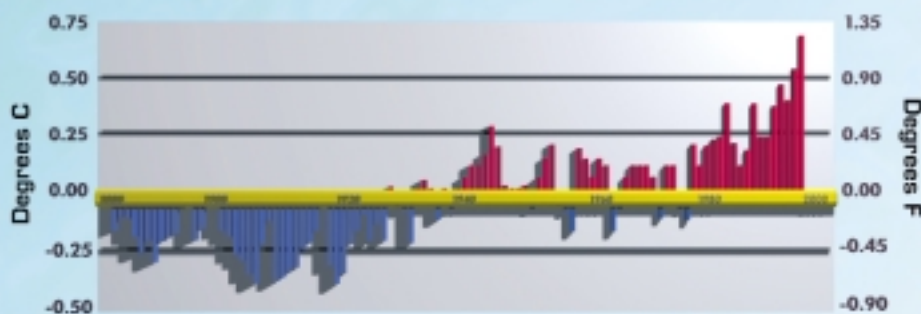
## MISSION

To provide and ensure timely access to global environmental data and information services from satellites and other sources to promote, protect, and enhance the Nation's economy, security, environment, and quality of life.

**TO FULFILL ITS RESPONSIBILITIES, NESDIS:**

- Acquires and operates the Nation's operational environmental satellites.
- Operates the NOAA National Data Centers.
- Provides data and information services including Earth system monitoring.
- Performs assessments of the environment.
- Conducts related research.

Annual Global Surface Mean Temperature Anomalies











## VISION



**T**o be the source for the world's most comprehensive and easily accessible satellite products, environmental information, and assessments of the environment.

**TO ACHIEVE THE VISION, NESDIS WILL:**

-  Operate and evolve the world's premier environmental satellite system, and the Nation's National Environmental Data Centers, fulfilling customer requirements for quality and timeliness of data.
-  Continue to lead the effort with other agencies and countries in establishing a global observing system to meet the world's information needs for weather, climate, ocean services, and hazards support.
-  Collaborate with other agencies and organizations to describe changes to our climate and the implications of those changes.
-  Strengthen and expand collaboration with other NOAA offices to implement NOAA's environmental prediction and stewardship responsibilities.
-  Foster the increased understanding of the value of our information to stakeholders and partners in the media and private sector to stimulate new economic opportunities.
-  Partner with industry, academia, research, and other Government agencies to bring new techniques and technologies into our operations.
-  Deliver state-of-the-art products and services based on cutting edge operations, science, and applications.
-  Continue to develop and maintain a skilled, energetic, diverse, and dedicated work force through training, motivation, and teamwork.



## OUR PROGRAM GOALS AND THEMES

In this document, NESDIS has identified a strategy composed of ten interrelated program goals and themes.

The first two Goals (Enhancing Operational Satellite Sensing Systems, Promoting Environmental Data and Information Services) support NESDIS' fundamental observing and data and information responsibilities. The last three Goals (Ensuring a World-class Work Force,

Executing Sound and Strategic Resource Management, Improving Understanding Through Outreach) support NESDIS' values.

Harnessing the assets and resources organized according to our five Goals, NESDIS has further selected five strategic program Themes to better focus our work to ensure that we support the NOAA mission and produce economic and environmental benefits for the Nation.

### GOALS

Enhancing Operational Satellite Sensing Systems

Promoting Environmental Data and Information Services

Ensuring a World-class Work Force

Executing Sound and Strategic Resource Management

Improving Understanding Through Outreach

### PROGRAM THEMES

Improving Weather Products and Services

Extending Climate Services

Improving Coastal Services

Providing Operational Ocean Services

Saving Lives and Property Through Hazards Support





## NESDIS VALUES

### CUSTOMER SERVICE

Our actions are responsive to the customer's needs.

### EMPLOYEES VALUED

We value the needs of our diverse employees, their experience, and innovative ideas.

### CREATIVITY

We are committed to a flexible environment where efficiency, resourcefulness, and effectiveness are recognized and rewarded.

### COMMITMENT TO EXCELLENCE

Quality and continuous improvement are essential to our success.

### TEAMWORK

We encourage and value teamwork and participation to achieve organizational goals.

### WORK LIFE

We recognize our leadership role and responsibility to improve the quality of work life.

### LEADERSHIP, EMPOWERMENT, AND ACCOUNTABILITY

We are visionary and our actions are results-oriented in our everyday activities.

### ETHICAL BEHAVIOR

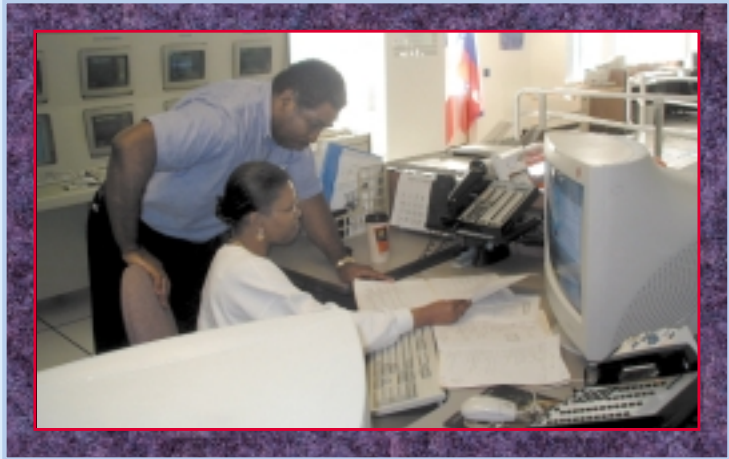
We maintain a personal commitment to professionalism and integrity.

Magnificent  
Voyagers

## OUR CRITICAL ROLE FOR THE NATION

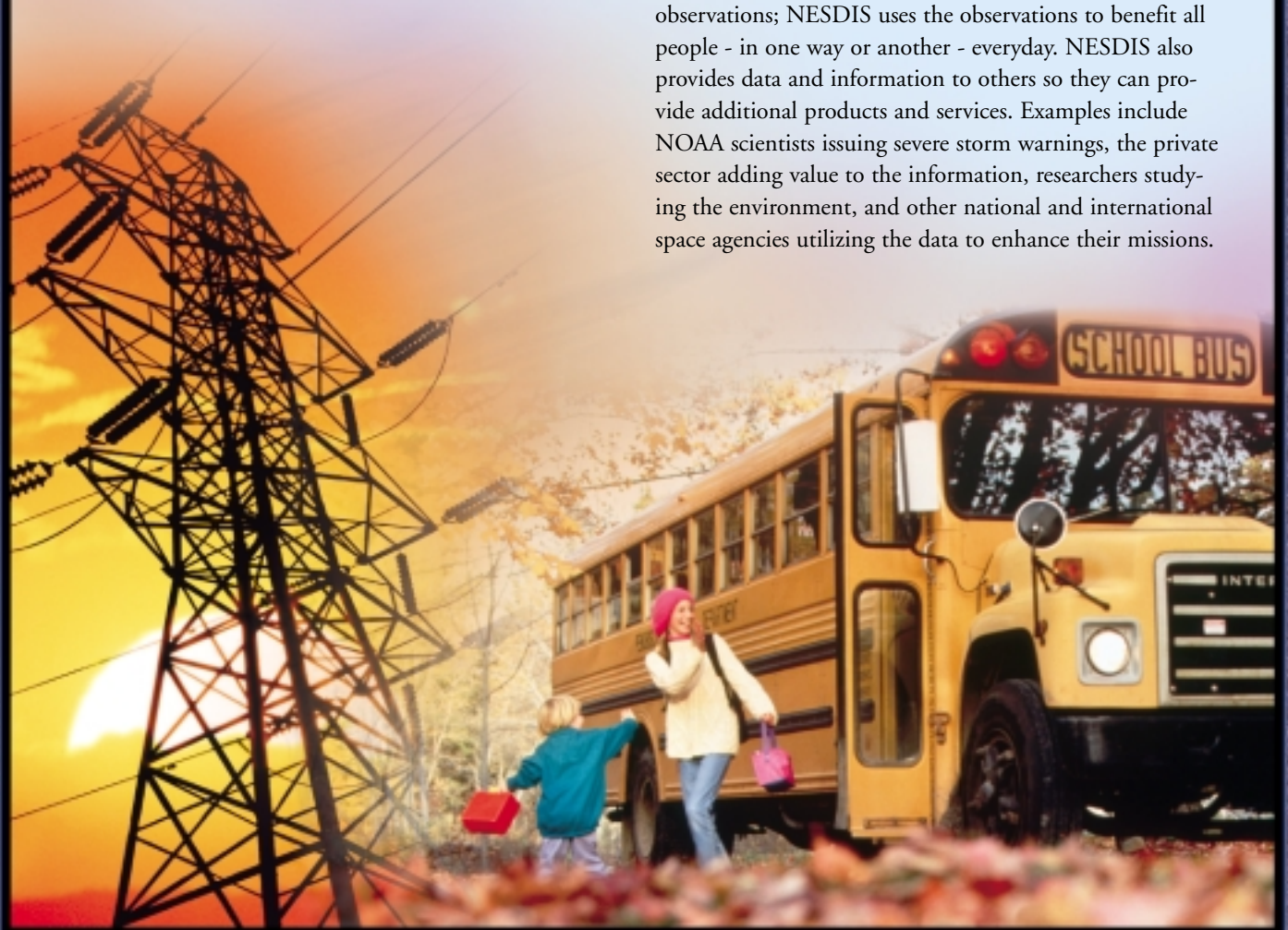
The National Environmental Satellite, Data, and Information Service (NESDIS) was created in 1982, when the National Oceanic and Atmospheric Administration (NOAA) merged its satellite and data services.

NESDIS operates NOAA's operational, environmental satellite system, composed of the Geostationary Operational Environmental Satellites (GOES) and the Polar-orbiting Operational Environmental Satellites (POES), providing the U.S. space-based component of a global environmental monitoring system. NESDIS also manages the largest collection of atmospheric, geophysical, and oceanographic data in the world. Additionally, on behalf of the U.S. Department of Commerce, NESDIS licenses the operation of private remote-sensing space systems.



### AFFECTING EVERYONE, EVERYDAY

The people at NESDIS observe our Earth, our oceans, and our atmosphere everyday. The work does not stop with observations; NESDIS uses the observations to benefit all people - in one way or another - everyday. NESDIS also provides data and information to others so they can provide additional products and services. Examples include NOAA scientists issuing severe storm warnings, the private sector adding value to the information, researchers studying the environment, and other national and international space agencies utilizing the data to enhance their missions.



Nearly all sectors of society are touched in some way by NESDIS. NESDIS contributes to the national economy by providing environmental data for energy distribution, the development of global food supplies, and management of natural resources. Our environmental satellite observations are an important contribution to U.S. national security by providing military users real-time and near real-time information for aircraft, ships, and facilities around the world.

International events and technological progress have reshaped the global context in which NESDIS operates. Our national security, the economy, and the environment have become inextricably linked. In this new century, NESDIS' challenge is to continue to demonstrate its broad contributions to society and its role in helping solve global problems.

#### **BUILDING COOPERATION AND PARTNERSHIPS**

To accomplish its mission, NESDIS relies on partnerships and leveraged cooperation with other national and international space-based Earth observation and environmental monitoring organizations. NESDIS has leadership responsibility for national consolidation of U.S. civil and military polar-orbiting, environmental satellite programs. NESDIS is also working toward a joint polar system with Europe, as well as satellite cooperation with other space-faring Nations.

With a global leadership role in collaboration with other international partners and coordination mechanisms, NESDIS contributes toward geostationary and polar satellite components of an integrated global Earth observing system. Counterpart agencies in Europe,

"The public-private partnership that exists in the United States for the provision of satellite and environmental data services is unique in all the world. And I think it results in the citizens of the United States receiving the best weather information than in any other country on the planet."

*Raymond Ban,  
Executive Vice President  
The Weather Channel*

Canada, Japan, China, Russia, and India are also likely to contribute. NESDIS provides its data on a full and open basis to global users via direct downlink, data center distribution and the World Wide Web. On behalf of U.S. Government operational users, NESDIS leverages access to key satellite data and other observations from international partners and commercial systems.

## BENEFITS TO THE NATION AND THE ECONOMY



**NESDIS** is benefiting the Nation and the economy in the following ways:

**G**eostationary satellites detect and track severe weather enabling forecasters to issue timely and accurate warnings and predictions, thus reducing losses of life and property.

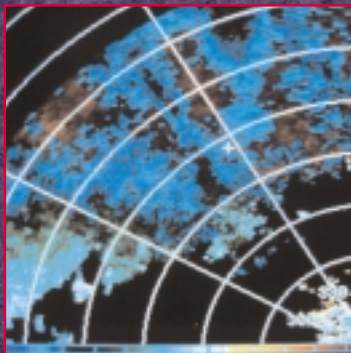
**P**olar satellite observations of global ocean temperatures make possible seasonal to interannual climate forecasts, with potentially far-reaching economic implications to agriculture, energy, water resources, and fishing industries.

**NESDIS** provides satellite-based support to national and international hazard monitoring activities. These include an automated notification system for volcanic ash, and advisory messages and experimental fire analysis support to the National Weather Service. NESDIS also provides Operational Significant Event Imagery (OSEI) products for fire, hurricane, and volcanic ash events to disaster managers and the public.

**T**he U.S. military frequently uses climatic data for national security. The National Climatic Data Center supplies radar data to the U.S. Air Force for developing severe storm algorithms and supplies the U.S. Navy with marine weather observations to study the design of ship hulls.

**I**n the marine industry, use of NESDIS data creates fuel savings by changing ship routes to account for ocean current patterns. It also identifies areas favorable to fishing, previews hazardous storm conditions so that advisories can be issued, indicates a window for favorable winter operations before ice closes down shipping lanes, and helps ensure the safety of recreational boating.

**T**he agricultural industry uses NESDIS data to generate crop freeze warnings and recommendations for planting and weed and pest control. The data are also used to evaluate vegetative stress due to drought conditions.





In support of hydroelectric dam projects, satellite data are used to minimize flood damage by warning of major storms and allowing time to lower basin levels.

Information gathered from satellites about space weather and solar flares assists in warning industry and consumers about potential power and communications outages.

The U.S. branch of the Cospas-Sarsat (Search and Rescue Satellite-Aided Tracking System), an international humanitarian program, is operated by NESDIS. Cospas-Sarsat operates 24 hours a day, 365 days a year, detecting and locating transmissions from emergency beacons carried by ships, aircraft, and individuals. Since its inception in 1982, the program has saved around 12,000 lives worldwide.

Commercial and general aviation are heavily dependent on satellite and ground-based environmental data to assess weather risks, make scheduling decisions, and establish safe and cost-efficient routes. Information on severe weather events such as hurricanes or on natural disasters such as volcanic eruptions are examples of contributions NESDIS makes to aviation scheduling and routing decisions.

**NESDIS** issues licenses for private remote sensing space systems. Our regulatory and advocacy roles support the emerging remote-sensing industry and enhance U.S. competitiveness in this exciting new sector of the space and information community. New commercial sources of geospatial information will contribute to wide-ranging civil, commercial, and military applications.

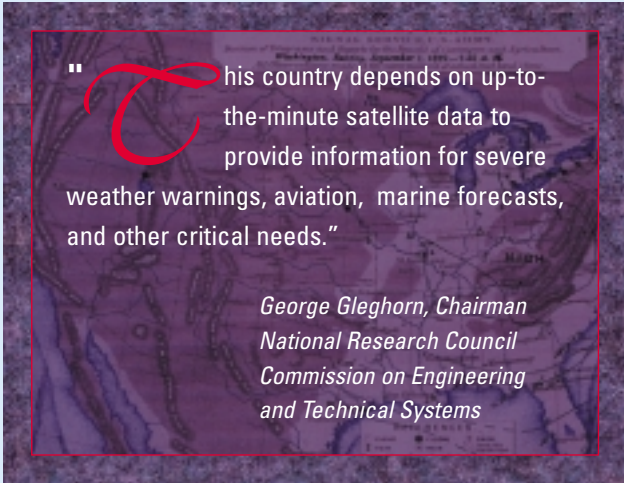




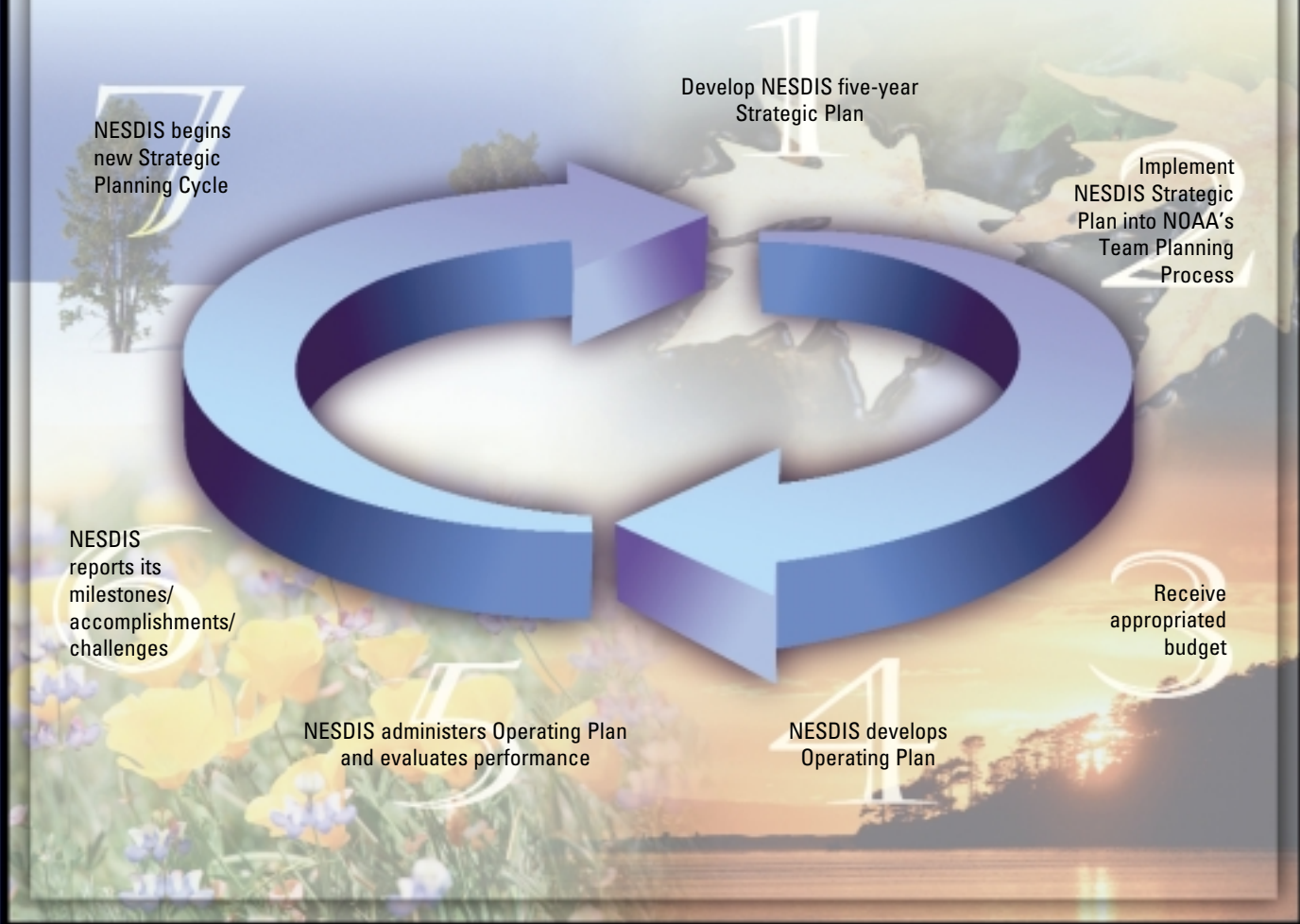
## NESDIS STRATEGIC GOALS

### THE STRATEGIC PLANNING PROCESS

Each strategic goal contains objectives that define the path NESDIS will take to accomplish the mission, achieve the vision, and bring a high-level of satisfaction to our customers. As part of the strategic planning process, NESDIS-wide teams, develop corresponding program milestones, performance measures, and resource requirements in separate documents known as implementation plans. These implementation plans serve as the basis for a NESDIS Annual Operating Plan. These documents are the primary management tools for results monitoring and accountability.



NESDIS utilizes a comprehensive mechanism for its five-year planning process including annual revisions as part of the budget process. The chart below demonstrates that process.





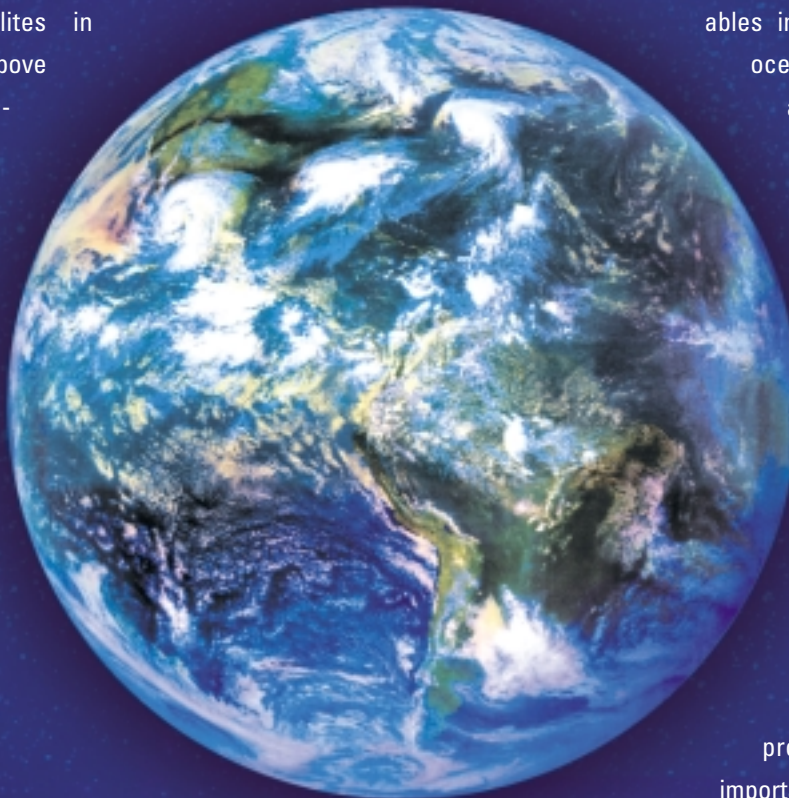
## WATCHING THE EVER-CHANGING EARTH

**G**OES satellite sensors observe cloud formations, atmospheric temperature, and moisture from 23,000 miles above Earth. GOES data help forecasters detect and track hurricanes, thunderstorms, flash floods, winter snow and ice storms, and important ocean features. Through GOES imagery, precipitation is estimated during thunderstorms, hurricanes, and snowfalls.

The United States operates two environmental satellites in geostationary orbit above the Equator. One monitors North and South America and most of the Atlantic Ocean; the other monitors North America and the Pacific Ocean basin. The two operate together to provide images of the Western Hemisphere, day and night.

Complementing the geostationary satellites are the polar-orbiting satellites (POES). Continuously circling Earth in sun-synchronous orbit (450-mile altitude), these satellites support global, long-range forecasts. Operating as a pair, these satellites ensure that observations for any region of Earth are no more than 6 hours old. In partnership with the Department

of Defense, NASA, and NOAA, a new polar satellite program, the National Polar-orbiting Operational Environmental Satellite System (NPOESS), is planned to be available in 2008. The new system will replace the polar systems currently operated by NOAA and the Department of Defense and will save the taxpayers an estimated \$1.8 billion over the life of the program.



The polar satellites track global variables in the atmosphere and oceans that affect weather and climate. These observed variables include visible and infrared radiometer data (used for imaging), radiation measurements, temperature profiles, sea surface temperatures, vegetation index, and moisture soundings. Polar satellites also provide measurements important to long-term global climate change, ozone depletion, oceanographic variables, and land surface change. Their signals are processed into environmental information used by civil and military organizations, private sector companies, researchers, schools, and other Nations.

# 1 ENHANCING OPERATIONAL SATELLITE SENSING SYSTEMS

**GOAL:** Ensure the availability of a global Earth-observing system, integrating satellite and ground assets that provide critical data and information needed to support NOAA and national programs.

**CHALLENGE:** No single platform can fulfill all environmental remote-sensing requirements. Our customers need the best mix of observations from available and planned platforms and sensors. We must maintain a comprehensive understanding of current and future user requirements and translate these requirements into policy and technology while staying within agency budget constraints. NESDIS should continue to develop access to, and successful integration of data from both geostationary and polar orbits, and from both domestic (civilian and commercial) and international operational platforms. Furthermore, NESDIS must integrate these space-based and ground-based measurements and perform adequate calibration and validation to produce useful, quality data sets.

**BENEFITS:** A robust, integrated, comprehensive satellite observing system protects the Nation and its economic infrastructure from the threats of severe weather, extreme events, and unusual climate and its often devastating impacts. The global, continuous, environmental observations provided by NESDIS drive weather and climate forecasting models and research, and contribute to the Nation's preservation of marine and coastal habitats, navigation safety and search and rescue. Partnerships with other agencies, the developing commercial remote-sensing industry, and foreign agencies allow NOAA to leverage investments and expertise. These partnerships strengthen our ability to fulfill the observing requirements for all of NOAA's assessment and prediction, and environmental stewardship missions.

## OBJECTIVES:

**1.1** Develop and implement a comprehensive process to identify, characterize, verify, and validate environmental satellite observation requirements.

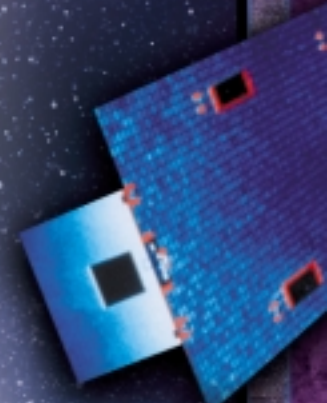
**1.2** Build and operate satellite constellations and associated ground control and data acquisition facilities to continuously provide critical data and information for NOAA's mission.

**1.3** Collaborate with other national, foreign, and commercial satellite systems to provide a robust, comprehensive, integrated global observing capability.

**1.4** Promote optimal use of data to ensure realization of benefits for atmosphere, ocean, land, and space environment applications with new and improved algorithms, enhanced data assimilation, and development of long-term data sets.

**1.5** Invest in technology and applied research to ensure continuing improvements and new capabilities in satellite observing systems and data products.

**1.6** Take advantage of opportunities for transition of remote-sensing technology developed by NASA for research that meets NOAA's operational needs.





# N E S D I S

*National Environmental Satellite, Data, and Information Service*



## 2

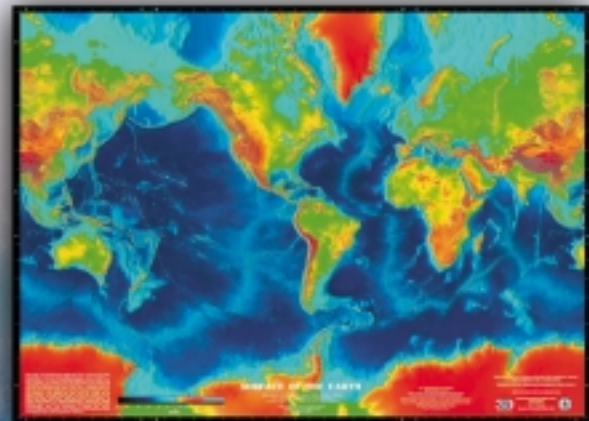
## PROMOTING CRITICAL ENVIRONMENTAL DATA AND INFORMATION SERVICES

**GOAL:** Realize the full potential of current and future satellite and ground-based data and information management systems and provide timely environmental data relevant to today's economic and environmental issues on local, regional, national, and global scales.

**CHALLENGE:** Billions of dollars are spent collecting data every year. NOAA's data holdings quadrupled during the 1990's and are expected to be eight times greater by the year 2005. In the year 2000, NESDIS archives exceeded one petabyte ( $10^{15}$  bytes) in size. Acquisition, cataloguing, quality control, archiving, development of integrated databases, and dissemination of data are critical components of our challenge. NESDIS must also use new technologies to transmit, archive, and access massive amounts of data. NESDIS needs to meet the growing customer demands, both on-line and traditional, for meaningful and accurate data sets and products of Earth's complex systems.

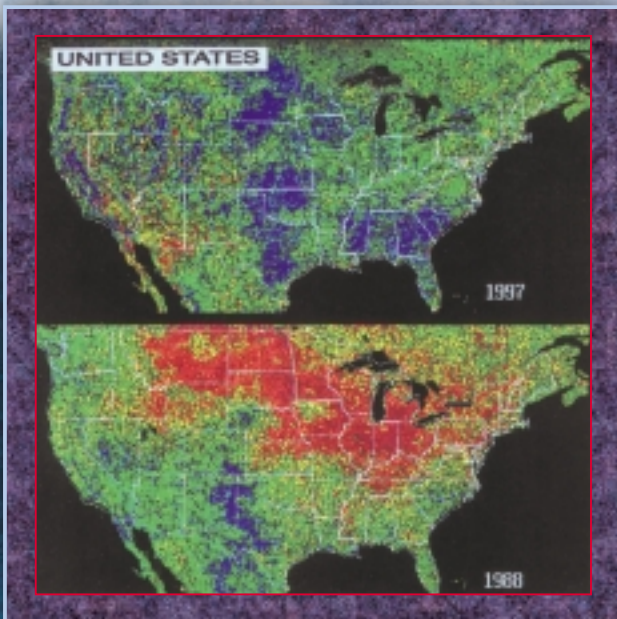
Continuous user feedback is required to ensure the usefulness of these data and services. Furthermore, since international efforts are periodically underway to restrict data sharing, NESDIS needs to be vigilant in its advocacy for the full and open international exchange of data and information.

**BENEFITS:** NOAA's data and information services provide the basis for sound policy and decision-making on the environment, the economy, and its resources. People around the world and every sector of the economy benefit from authoritative, well described, easily accessible, long-term environmental data and information services from NESDIS. Construction, transportation, agriculture, forestry, energy, health, and recreation increasingly rely on NOAA's environmental information.



**OBJECTIVES:**

- 2.1** Ensure the long-term stewardship of environmental data, products, and information critical to the Nation with robust, modernized, data processing, storage, and archive facilities.
- 2.2** Make all NESDIS environmental data and products readily available.
- 2.3** Enhance research programs to address high priority mission needs requiring long-term environmental records to identify trends and assess the environment.
- 2.4** Lead the effort in NOAA to ensure that NOAA environmental data and information are compliant with national data policy, standards and procedures.
- 2.5** Produce the highest quality products in a timely manner to facilitate prediction and assessment of the state of the environment.
- 2.6** Promote widespread availability of environmental data and information through full and open access and exchange to the fullest extent possible.

**PROVIDING GLOBAL ENVIRONMENTAL DATA**

**NESDIS** operates four national data centers that are recognized as global resources. They receive, collect, distribute, and archive data about climate, Earth geophysics, the U.S. coast, and the global oceans. These data are a "national treasure" whose long-term stewardship has been entrusted to NESDIS. NESDIS' data holdings are from NOAA, other agencies, and foreign governments. Data are generated from space-based as well as ground-based platforms and sensors. Ground-based data, also referred to as "surface" or "in-situ" data (land and ocean), include data from radiosondes, radar, buoys, subsurface floats, and readings from commercial ships.

The information from the national data centers serves a large variety of users, such as community planners, engineers and architects, business leaders, scientists, national security analysts, and policy-makers. Each of the data centers operates World Data Centers, and as such, they are the formal mechanism for the international exchange of data in disciplines related to Earth, its environment, and the Sun. The economic and environmental health of our Nation depends on the weather, climate, biological, chemical, and hydrological surroundings in which we live.

### 3 ENSURING A WORLD-CLASS WORK FORCE

**GOAL:** Create and sustain a dedicated and diverse world-class work force and provide an environment encouraging innovation, continuous learning, and teamwork.

**CHALLENGE:** NESDIS recognizes that our work force is our most vital asset. The recent economic and technological boom has resulted in a shortage of talent in our core competencies. NESDIS is in direct competition for that talent with the private sector, which may have more financial and organizational resources to attract and retain the best and brightest employees. NESDIS must aggressively pursue all avenues to sustain and invigorate our world-class work force and to conduct effective succession planning to ensure continuity of technical and managerial leadership. NESDIS management practices must foster an environment that allows it to recruit and retain team members who possess the skills, knowledge, and values to meet agency challenges.

**BENEFITS:** A well-trained, high performing, diverse work force is the fundamental component that enables NESDIS to achieve its strategic goals. A committed work force in which each member contributes according to his or her unique talents and is nurtured by our leadership will bring returns in innovation, cost savings, and synergy.



**OBJECTIVES:**

- 3.1** Implement human resource and workplace initiatives such as alternative/flexible work schedules and telecommuting pilot projects to maximize job performance and improve the work environment and quality of life.
- 3.2** Attract and retain a diverse work force with the necessary skills to advance our mission through strategic recruiting, hiring, and pay flexibility. Invest in promising new talent for our future by targeting educational institutions.
- 3.3** Recognize and reward deserving performers whose contributions advance strategic goals and initiatives using existing and expanded incentive programs and aligning agency performance and operating plans.
- 3.4** Ensure that critical skills are preserved and developed in the organization and provide opportunities for all employees to realize their full potential through comprehensive, continuous training, education, and skill assessment.
- 3.5** Improve and facilitate communication at all levels of the organization through information technology and professional interaction.
- 3.6** Fully integrate diversity into management and leadership practices, agency orientation and training, and team-building activities.

"In a world where restrictions on the flow of information seem to be increasing, NOAA's data centers have set an international model for the free and open provision of environmental data and information."

*Dr. Ferris Webster  
Chairman, Panel on World Data Centers  
International Council for Science*

**OUR MOST VITAL ASSET**

*The services provided by NESDIS are made possible by a dedicated staff of meteorologists, physical scientists, computer specialists, oceanographers, and technical and administrative personnel. Their desire to provide superior service has led to universal recognition of our organization; our work has contributed to the scientific research and policy development by organizations worldwide. As part of its work in science and research, NESDIS has developed an education and community outreach program to enhance awareness of career opportunities among students and instructors at various institutions. Agency goals are to increase under-represented ethnic and minority groups' participation in the work force by providing minority students the opportunity to experience a range of professional careers and by providing teachers the opportunity to conduct research and develop school curricula materials.*



## 4

## EXECUTING SOUND AND STRATEGIC RESOURCE MANAGEMENT

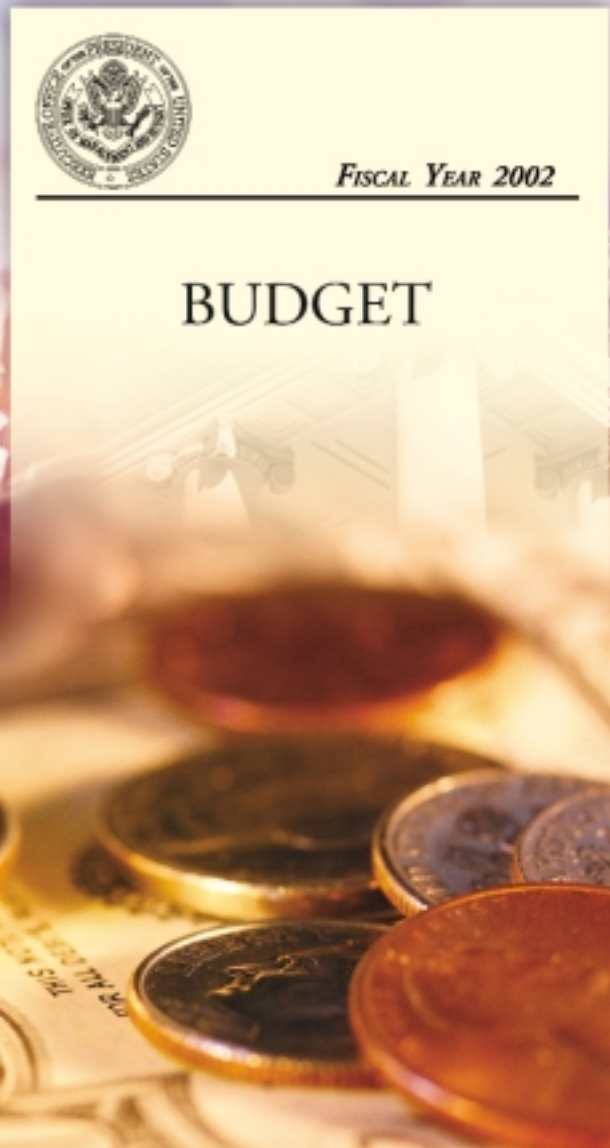
**GOAL:** Manage NESDIS resources to optimize program performance that facilitates the use of financial information for management decision-making and that improves accountability to all stakeholders.

**CHALLENGE:** Develop new and improved methods to manage the resources associated with NESDIS programs that will provide management flexibility to adapt to dynamic operating environments, and strengthen accountability in a multifaceted and geographically dispersed organization.

**BENEFITS:** By using the budget process as a guide, senior management becomes more effective in setting and communicating priorities. Operating levels of the organization will receive timely and improved information that supports management decision-making.

**OBJECTIVES:**

- 4.1** Better coordinate between program planning and the financial management process.
- 4.2** Foster a culture that emphasizes the importance of management accountability and that places decision-making at the most effective levels.
- 4.3** Provide the personnel and financial management tools required to support a dynamic, customer-oriented, service organization that manages many diverse programs.



## 5

## IMPROVING UNDERSTANDING THROUGH OUTREACH

**GOAL:** Understand customer needs and promote the value of NOAA's Environmental Satellite, Data, and Information Services to our constituents, stakeholders, and customers in making sound decisions about the environment and the economy.

**CHALLENGE:** Knowledge and availability of our products and services are key ingredients of effective outreach. A data set or product has little value if no one knows it exists or how it could be used. NESDIS' data holdings, products, and services must be easy to find, easy to use, and affordable. Developing strategic partnerships with other agencies, academic and educational institutions, non-governmental organizations, and international entities will greatly increase our effectiveness and provide opportunities to increase awareness. Also, new technological changes require on-going adaptation of our outreach strategies.

**BENEFITS:** Informed decisions on matters affecting our environment and economy need to be based on quality information. A strong and comprehensive outreach program ensures that our products, services, and science are responsive to the requirements of our constituency - present and future. From an internal perspective, effective outreach improves our program planning and instills in our organization an ethic of customer satisfaction and accountability to the public we serve.

**OBJECTIVES:**

- 5.1** Develop outreach tools using the latest technology.
- 5.2** Ensure awareness of NESDIS activities, data and information collections, products and services, and their applications and enhance use of NESDIS-generated or -provided data. Actively pursue opportunities through conferences, exhibits, educational outreach, employee exchanges, participation in professional societies and associations, and media relations.
- 5.3** Create an infrastructure that includes adequate resources, new technology, and equipment to fully support outreach activities.





## NESDIS STRATEGIC PROGRAM THEMES

### 6

#### IMPROVING WEATHER PRODUCTS AND SERVICES

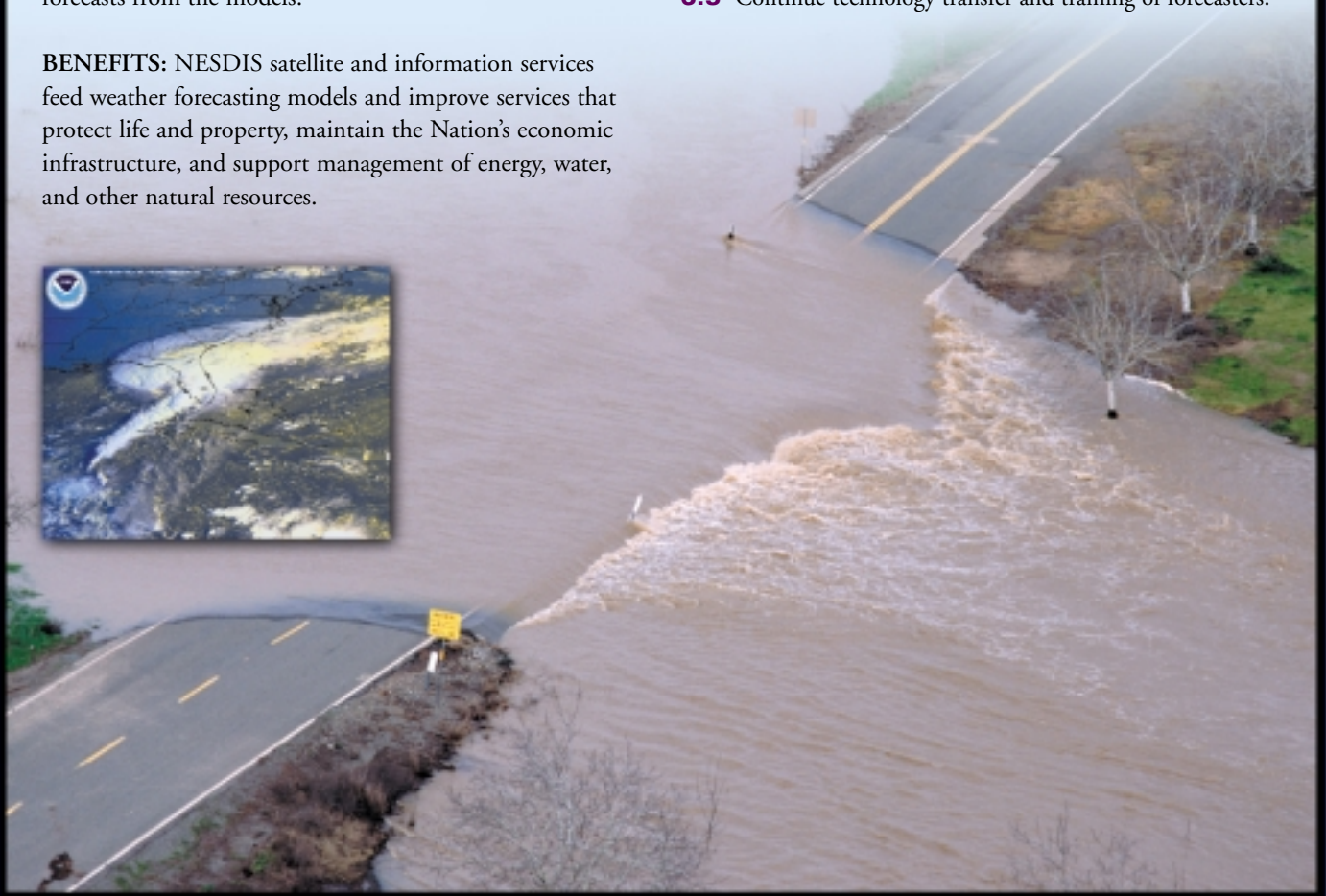
**GOAL:** Significantly improve and expand warning and forecast products and services that enhance public safety and contribute to the economic productivity of the Nation.

**CHALLENGE:** Severe weather and hazardous events (e.g. flash floods, fires, winter storms, volcanoes, and solar flares), and their increasing cost to the Nation, continue to demand further research to use existing and new satellite observations from NOAA satellites as well as those launched by NASA and our international partners. Today, much more of the available satellite data could be used in operational numerical weather prediction models. The upcoming expansion of advanced instruments and data such as NPOESS and the European polar meteorological satellite program METOP is a daunting challenge for researchers and the National Weather Service (NWS) operations to ensure production of significantly better forecasts from the models.

**BENEFITS:** NESDIS satellite and information services feed weather forecasting models and improve services that protect life and property, maintain the Nation's economic infrastructure, and support management of energy, water, and other natural resources.

#### OBJECTIVES:

- 6.1** Establish a Joint Center for Satellite Data Assimilation with NOAA and NASA partners to improve the use of satellite data in numerical weather prediction models.
- 6.2** Ensure timely reporting and distribution of satellite products to NWS forecasters and the private weather sector.
- 6.3** Support NOAA and national weather and hydrology research goals by developing and implementing products using satellite data and by making archived data more readily available.
- 6.4** Address new user requirements in the design of satellite systems.
- 6.5** Continue technology transfer and training of forecasters.





## 7

## EXTENDING CLIMATE SERVICES

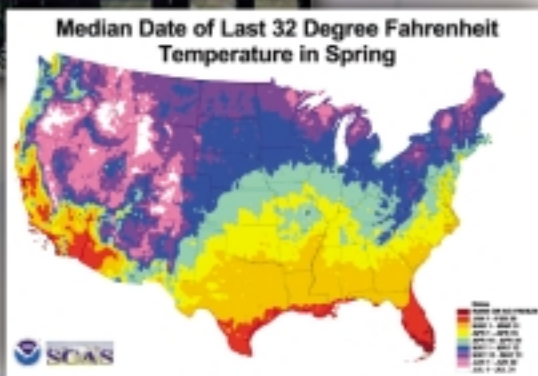
**GOAL:** Expand NESDIS' broad array of existing climate system services to meet the needs of NOAA's user community.

**CHALLENGE:** NOAA's operational observing networks have been developed primarily to support weather observations, but new requirements for studying the climate system require a multi-purpose system. Consequently, there will be strains on existing systems to meet new climate requirements. Our challenge is to use the current operational satellite observing system in a comprehensive way to extract the best quality climate products possible as we plan for observing systems that serve both weather and climate system needs.

**BENEFITS:** NESDIS' contributions to climate system services will help improve the level of accuracy and lead-time to predictions of significant climate events. Our satellite and information services support NOAA's ability to detect and predict climate events such as El Niño that have a dramatic impact on agriculture, water resources, energy, fisheries, and ultimately all U.S. consumers. In addition, NESDIS' activities support NOAA's ability to monitor the long-term climate record and assess issues such as global warming and climate trends in the context of sustainable development.

**OBJECTIVES:**

- 7.1** Plan and implement a NESDIS component of an observing and monitoring climate system that can satisfy local, regional, and global needs, and which includes NPOESS, the Global Climate Observing System, the Climate Reference Network, as well as archiving and easy access to data and products.
- 7.2** Transform observations into useful climate information through research, diagnostic analysis, and modeling.
- 7.3** Provide analyses and assessments of the climate to decision-makers.



## 8

## IMPROVING COASTAL SERVICES

**GOAL:** Provide a timely and relevant suite of coastal ocean observation data, information, and analysis services that fully uses technology to meet our customer and partner needs.

**CHALLENGE:** Rapid population growth along our coasts and expanding demands on the Nation's coastal resources create increased challenges in natural resources management, in sustaining coastal ecosystem health, and in supporting continued coastal economic base growth. Coastal ecosystems transcend political boundaries and are strongly linked to the larger coastal ocean. To deal with the coastal management issues at hand, decision-makers will require increasingly high spatial and temporal resolution observations afforded by new data distribution technologies, and improved environmental sensing systems. NESDIS has a key role in partnership with the other NOAA offices to help ensure that satellite, data and information services are readily available in a timely manner that meet our customers' needs.

**BENEFITS:** Better coastal information products and services will improve the assessment and management of coastal resources, promote improved marine transportation, and aid critical infrastructure development. These efforts should reduce costs of coastal damage, help reduce degradation of coastal resources and ecosystems, strengthen fisheries health, and keep coastal economies strong.

**OBJECTIVES:**

- 8.1** Increase one-stop access to NOAA and other coastal data sets in response to customer needs.
- 8.2** Expand use of space-based remote sensing science and technology in coastal regions.
- 8.3** Simplify use of both near real-time and reference coastal data and information.



## 9

## PROVIDING OPERATIONAL OCEAN SERVICES

**GOAL:** Strengthen U.S. leadership in the development and long-term continuity of operational oceanographic and climate-related observation data, applications, and information to meet expanding environmental and economic challenges facing our customers and partners.

**CHALLENGE:** The ocean has profound effects on human welfare and economic well being on scales from days to centuries. As shown in the last 1997-1998 El Niño episode, changes in remote regions of the Pacific Ocean led to major coastal storms in the United States, shifts in economically important commercial fisheries, and major modifications to the customary precipitation patterns critical to U.S. agriculture. No single Nation possesses the resources to mount the observation efforts necessary to achieve a program of continuous, global observation of the oceans. This observational capability will be achieved only through interagency and international partnerships. Selected in-situ observations (fixed and drifting buoys, ships, sub-surface floats) are also essential for developing comprehensive ocean databases and for validating satellite measurements.

**BENEFITS:** Expanding and improving the collection and dissemination of ocean observations will improve weather, climate, and coastal environmental forecasts, leading to better adaptive strategies by socioeconomic sectors dependent on, or vulnerable to, weather and climate events. Our efforts will also facilitate safe and efficient marine transportation, coastal management, and support competitive trade and commerce that travel through U.S. ports. Furthermore, our work will provide key support for an interagency effort to integrate existing and planned new elements of a sustained ocean-observing system. This will meet common research and operational agency needs:

detecting and forecasting oceanic components of climate variability; ensuring national security; managing resources for sustainable use; preserving and restoring healthy marine ecosystems; mitigating natural hazards; and ensuring public health.

**OBJECTIVES:**

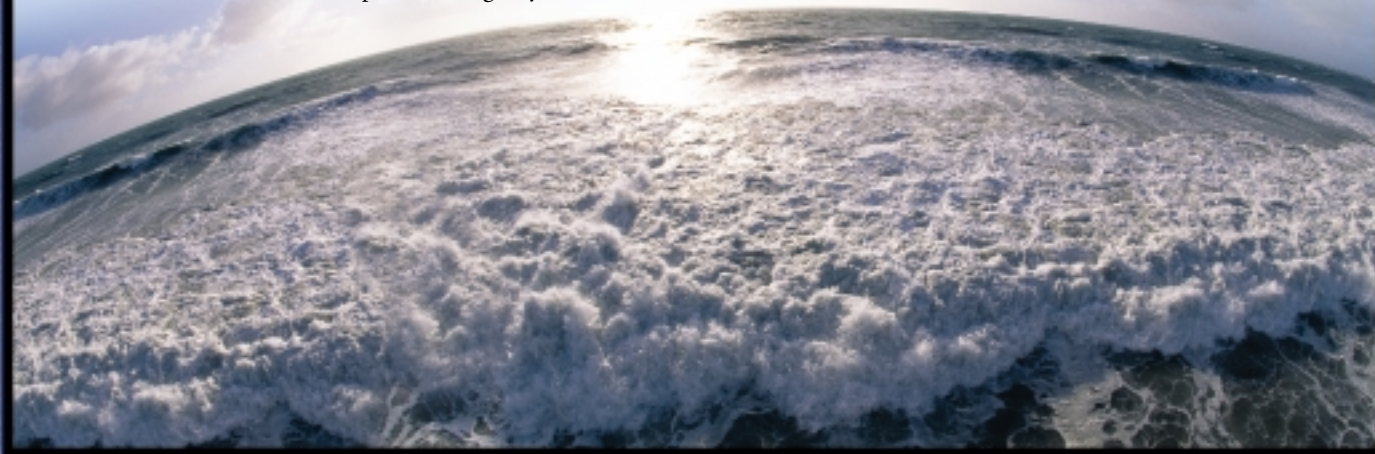
**9.1** Support the development and long-term continuity of the Global Ocean Observing System through strategic design that utilizes NESDIS' satellite and in-situ data, and data archives to enhance environmental, commercial, and human uses of oceans and coasts.

**9.2** Develop NESDIS global ocean services using a sustainable business approach: strengthen partnerships with stakeholders, customers, and constituencies to identify products, services, and upgrades that are responsive to users and have a strategy for funding support to assure full implementation.

**9.3** Develop quality assured ocean applications that fully utilize and integrate current and emerging satellite, in-situ, and historical data.

**9.4** Establish partnerships with private and international sectors to access satellites and data needed to enhance NESDIS and other national ocean services.

**9.5** Provide national and global leadership in civilian operational oceanography, through participation in: advisory groups; development of new satellite sensors; improved collection of current and historical global ocean data; and, capacity building that develops infrastructure and trains new ocean scientists.



## 10

## SAVING LIVES AND PROPERTY THROUGH HAZARDS SUPPORT

**GOAL:** Protect life and property through improved prediction, preparedness, response, recovery and mitigation of natural and technological hazards.

**CHALLENGE:** With improved coordination and use of technologies, NESDIS can provide local, national, and international emergency managers with tools and products to help reduce risk to lives and property. NESDIS' efforts in this area must place critical environmental products and information in the hands of local, state, and Federal disaster management and response personnel, where and when they are needed. Enhanced support can address needs in such diverse areas as aviation safety endangered by volcanic ash, coastal hazards including pollution and harmful algal blooms, severe weather events, wildfire management, and solar storm prediction and warnings.

**BENEFITS:** More easily accessible and timely NESDIS products and services will contribute to saving lives and property. Globally, disasters kill thousands of people each year and average over \$440 billion in property damages. In the United States, natural disasters cost an average of more than \$52 billion per year. As population grows, the incidence and severity of these disasters appear to be rising. Disasters redirect critical resources from the growth of economies to rebuilding devastated areas. NESDIS can provide capabilities to minimize these losses.

**OBJECTIVES:**

- 10.1** Improve use and enhancement of NOAA satellite and data systems for disaster reduction support.
- 10.2** Leverage investments in national, commercial, and foreign satellite programs to provide products critical to disaster reduction and recovery both nationally and internationally.
- 10.3** Partner with other local, state, and Federal agencies to deliver NESDIS products to emergency managers and local officials in a timely manner.



## SUPPORTING NOAA AND DOC STRATEGIC GOALS

The NESDIS strategic plan serves as an integral part of the implementation strategy for fulfilling the strategic goals of NESDIS' two parent organizations, NOAA and the Department of Commerce (DOC).

NESDIS is one of the five NOAA line offices that implements NOAA's mission to describe and predict changes in the Earth's environment and to conserve and manage the Nation's coastal and marine resources to ensure sustainable economic opportunity.

### NOAA'S STRATEGIC GOALS:

- ✦ Advance Short-term Warning and Forecast Services
- ✦ Implement Seasonal to Inter-annual Climate Forecasts
- ✦ Predict and Assess Decadal to Centennial Change
- ✦ Promote Safe Navigation
- ✦ Build Sustainable Fisheries
- ✦ Recover Protected Species
- ✦ Sustain Healthy Coasts

NOAA in turn supports the Department of Commerce mission to promote job creation, economic growth, sustainable development, and improved living standards for all Americans by working in partnership with businesses, universities, and local communities.

### DOC'S STRATEGIC GOALS:

- ✦ Strengthen Management at All Levels
- ✦ Provide Infrastructure for Innovation to Enhance American Competitiveness
- ✦ Observe and Manage the Earth's Environment to Promote Sustainable Growth
- ✦ Provide Information and a Framework That Enable the Economy to Operate Efficiently and Equitably

"There is so much more we need to learn about our planet. One major way to do this is through remote sensing technologies. NESDIS provides us with operational platforms that are critical to our understanding of the Earth's global weather system. Without satellite imagery and sounding data to initialize numerical forecast models the quality of our forecasts would be severely diminished. As the era of NPOESS approaches, improved satellites will take us to the next level in understanding our global and local environments."

*Dave Jones*  
CEO, StormCenter.com, LLC

## SERVICES FOR TOMORROW

Anticipating the growth and rapid pace of change is vital to shaping the NESDIS vision for the new millennium. Several factors, including future observational capabilities and information technology, our stakeholders, and a more efficient government will present opportunities for NESDIS to excel and deliver improved products and services to meet tomorrow's challenges.

Advances in observational capabilities (next generation instruments) and information technology will help NESDIS reduce the cost of current services, while improving and expanding its capabilities to meet the ever-increasing demands of the global population for environmental information. NESDIS will be able to deliver more data in less time, leading to improved services for our customers and to their constituents.

Interactions with our stakeholders and partners must increase for NESDIS to keep pace with the rapidly changing world. In a continuing effort to provide the best products and services to our customers, NESDIS will implement a process of incorporating constituents' input into NESDIS activities. To strengthen this relationship NESDIS will meet more frequently with our users to assist in developing, educating, and serving that community. This relationship will accelerate important breakthroughs in environmental

science and technology and bring important socio-economic benefits to the Nation.

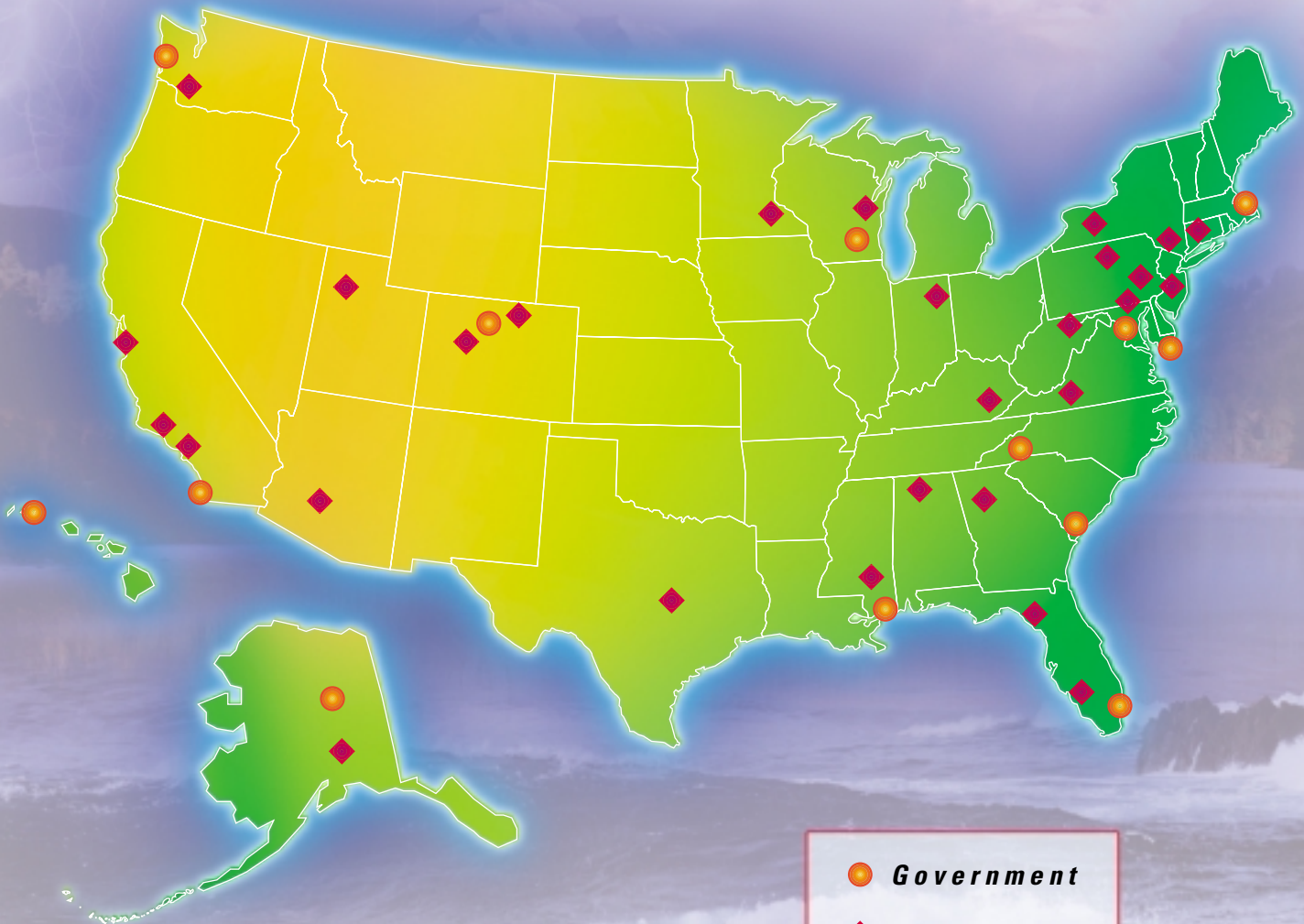
The new millennium should bring a more responsive and efficient government, enabling NESDIS to better understand user requirements and possess the resources to meet those requirements. Working with NOAA, our parent organization, NESDIS can seize the opportunity to build on the best practices of the private sector and other parts of government to foster a more dynamic and responsive agency.

As guardians of our environmental satellite and data resources, NESDIS professionals are dedicated to our mission and strive to be the best that we can be -- watching over and protecting the world's environment.



# N E S D I S

## GOVERNMENT AND CONTRACTOR LOCATIONS



 *Government*

 *Contractors*



**National Environmental Satellite, Data, and Information Service**

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