



# Our Strategic Vision for Stewarding the Nation's Climate Data

NOAA's National Climatic Data Center



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# FOREWORD From the Director

The Nation needs a trusted authority on climate and historical weather information. Each day, governments, businesses, and individuals make long-term decisions regarding life and livelihood that require an accurate understanding of the natural environment. They need, and increasingly demand, trusted and authoritative information on the current and changing state of the climate. NOAA's National Climatic Data Center (NCDC) has an excellent national and international reputation for developing, stewarding, and delivering authoritative climate datasets and monitoring products.



NCDC's Strategic Vision is a fundamental framework for ensuring that the Center has the ability to respond to critical environmental information priorities in support of decision making.

This vision positions us to respond to changing opportunities and challenges as well as to better deliver on our Mission by improving the alignment of activities and skills. We have the opportunity to optimize operations by better integrating across functional areas. We can sustain and grow the Center's core competencies by developing, enhancing, and refining cross-NCDC processes, standards, and governance, as well as strengthening the dialog with our customers.

The goals in this Strategic Vision are intended to be both proactive and aspirational, and they reflect our desire to provide as much value to the Nation as possible. They describe our most important priorities for the Center and their links to the communities that we serve.

The NCDC Strategic Vision communicates to those outside NCDC where we plan to go over the next five years. It describes in broad terms the choices and accomplishments we will make and serves as the framework for our Operational Plan. With that clarity, we can continue to improve our collaboration with partners and our value to stakeholders.

NCDC has a long history of delivering world-class science, reliable archives, and superior customer service. This Strategic Vision represents a future that is more focused, innovative, and effective than ever. It reflects the efforts of a diverse and talented group of scientists, technologists, professionals, and managers, all of whom are dedicated to fulfilling the data acquisition, archive, access, assessment, service, and administrative functions of a first-rate environmental information organization.

I look forward to working together with you to achieve the goals outlined here. Together we can serve the Nation's increasing need for a trusted authority on climate and historical weather information.

Thomas R. Karl, L.H.D.  
Director, National Climatic Data Center

# CONTEXT

NCDC is a part of the National Environmental Satellite, Data, and Information Service (NESDIS) line office within NOAA. The context of this Strategic Vision inherits directly from the mission and goals of both NOAA and NESDIS.

## NOAA MISSION

Science, Service, and Stewardship

To understand and predict changes in climate, weather, oceans, and coasts

To share that knowledge and information with others

To conserve and manage coastal and marine ecosystems and resources

## NOAA's LONG-TERM GOALS

Climate Adaptation and Mitigation

An informed society anticipating and responding to climate and its impacts

Weather-Ready Nation

Society is prepared for and responds to weather-related events

Healthy Oceans

Marine fisheries, habitats, and biodiversity are sustained within healthy and productive ecosystems

Resilient Coastal Communities and Economies

Coastal and Great Lakes communities are environmentally and economically sustainable

## NESDIS MISSION

NESDIS is dedicated to providing timely access to global environmental data from satellites and other sources to promote, protect, and enhance the Nation's economy, security, environment, and quality of life.

## NESDIS VISION

The NESDIS vision is to be the world's most comprehensive source and recognized authority for satellite products, environmental information, and official assessments of the environment in support of societal and economic decisions.

# NCDC MISSION

To Steward the Nation's Climate Information

NCDC is responsible for preserving, monitoring, assessing, and providing public access to the Nation's treasure of climate and historical weather data and information.

# NCDC VISION

To Be the Nation's Trusted Authority on Climate and Historical Weather Information

NCDC will be the most comprehensive, accessible, and trusted source of state-of-the-art climate and historical weather data, information, and climate monitoring.

# NCDC CORE VALUES

Scientific Rigor, Data Integrity, Transparency, and Public Service

# NCDC BENEFITS to the NATION

The safety, health, economy, and environment of the United States are sensitive to weather and climate variability and change. NCDC stewards and provides quality climate data, information, products, and services that are critical to:

1. Informing government and private-sector businesses and industries
2. Informing the public about climate
3. Providing the foundational data for advanced climate research
4. Providing official records for legal purposes



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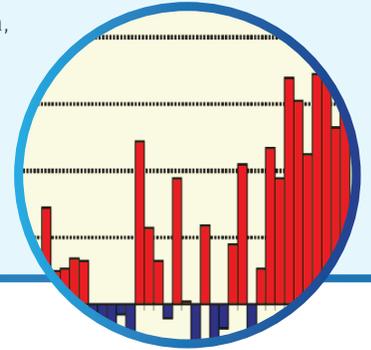
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# STRATEGIC THEME 1: Science

Advance climate data science through the analysis and synthesis of quality climate and historical weather observations, climate modeling output, and climate assessments.

NCDC's vital role in advancing climate science is to provide state-of-the-art authoritative data, information, and insight about the climate system. NCDC scientists continually improve the quality of the data and information, augmented with contextual insight. Scientific assessments integrate knowledge from many disciplines to provide authoritative information to decision makers at every level, from local to global. When pursued on a sustained basis, assessments and monitoring efficiently build a strong foundation of scientific understanding.



## Objectives

- 1. Sustain Observations.** Sustain the capacity to observe long-term changes in the global Earth system, particularly by supporting reference and sentinel networks. In particular, sustain the U.S. Climate Reference Network as a vital long-term commitment. Implement a process for understanding the value of sustaining and changing observing networks.
- 2. Sustain Assessments and Monitoring.** Support the development of the Intergovernmental Panel on Climate Change Assessment Report 5 and other international assessments. Support the development of reports for the National Climate Assessment and the annual *Bulletin of the American Meteorological Society* State of the Climate Report, including reports on explaining extremes. Monitor the state of the climate on a regular basis for the national and international community.
- 3. Develop Use-Inspired Data and Products.** Create and enhance datasets and climate products based on peer-reviewed science to meet documented user needs. Continue to develop climate data records to provide long-term, consistent, and continuous time series of measurements.
- 4. Understand Extremes.** Provide data and information to advance scientific understanding of the past, present, and future states of climate and weather extremes and their impacts on human and biogeophysical systems. Lead NOAA's Executive Working Group on Extremes.
- 5. Communicate Uncertainties.** Understand, quantify, fully document, and communicate to decision makers easy-to-understand information on data quality and confidence levels for all of NCDC's operational products.
- 6. Extend the Record.** Improve understanding of past climate by extending and strengthening the historical record from instrumental and paleoclimate sources, with a focus on acquisition of imaged and digitized data.
- 7. Integrate Societal, Behavioral, and Economic Factors.** Support the integration of societal, behavioral, and economic sciences into the effort to better understand coupled Earth and human systems. Improve the scientific framework for understanding and reporting on billion-dollar disasters and the socioeconomic impacts of climate and weather extremes.

## STRATEGIC THEME 2: Stewardship

Sustain long-term storage and access to past, present, and future climate and weather information.

NCDC has the unique and profound responsibility for the long-term management and stewardship of NOAA's climate and historical weather data, as well as that from other national and international agencies. NCDC will advance its capability to acquire, archive, and provide access to data and information about the integrated Earth system and the vulnerabilities of integrated human-natural systems to variability and change. NCDC will align with other NESDIS data centers to continue to secure a long-term record for the future. NCDC will continue to improve its outstanding information management capabilities in accordance with national and international standards and best practices..



### Objectives

1. **Advance the Archive.** Use modern archive technology in support of high-volume and complex datasets. Prepare to meet the demands of the accelerating influx of climate data from satellite sensors, radars, and numerical models.
2. **Steward Use-Inspired Data and Products.** Maintain the acquisition, archive, and access functions of existing datasets and products, including climate data records. Ensure that all data and derived products are archived with complete transparency and provenance. Provide a mechanism to ensure the authenticity of the data and derived products upon receipt by users. Ensure key products meet NOAA's requirement for operational status: formal commitment to ensure they are sustained, systematic, reliable, robust, and timely.
3. **Model Best Practices.** Be the "gold standard" for long-term data stewardship. Ensure the scientific quality, integrity, and long-term utility of climate records through design-phase quality reviews, network monitoring, thorough documentation, and the extraction (data mining) and blending of new observations and historical records. Ensure that all new datasets, all major changes, and all data for the National Climate Assessment meet internal standards for traceability, lineage, and provenance. Ensure that every archived dataset includes accurate and complete metadata (data that describes the dataset), adhering to industry best practices and well-defined standards. Publish the metadata to allow external discovery, namely, by national and international data catalogs.
4. **Support Standards.** Follow relevant policies and legislation, including the Data Quality Act, to guide the evolution of datasets. Continue international data stewardship engagement. Ensure that the archive follows all relevant National Archives and Records Administration guidelines. Establish internal and external review processes to operate as a national records center. Share and collect best practices with environmental data management groups, such as NOAA's Environmental Data Management Committee and the Group on Earth Observations.
5. **Sustain International and Interagency Partnerships.** Represent the U.S. Government in commitments to the international climate community. Continue to provide scientific leadership to international and interagency organizations. Continue to host World Data Centers for Meteorology and Paleoclimatology.

## STRATEGIC THEME 3: Service

Provide information products and services to inform climate-relevant decisions.

Decision-makers around the Nation and the globe are recognizing the need to effectively minimize and prepare for the impacts of variations and changes in the climate system. Their decisions require accurate and timely scientific climate and historical weather information. NCDC, as the Nation's trusted authority on climate and historical weather information, will continue to strengthen and balance its portfolio of products and services to meet the needs of its stakeholders.



### Objectives

- 1. Manage Product Portfolios.** Develop a product portfolio management capability, including periodic needs assessments, research to operations integration, and joint product design on every new product or significant upgrade. Implement product management best practices to ensure products meet stakeholder needs. Implement portfolio management best practices to prioritize, synergize, and manage products within the portfolio. Actively retire existing products that are no longer most relevant to users.
- 2. Strengthen Partnerships.** Strengthen partnerships with private-sector providers of value-added climate products in order to maximize the value to decision makers. Support the private sector and other users by providing education on using environmental data for risk management and for identification of development opportunities.
- 3. Improve Communication.** Broaden our reach to the range of stakeholders who are aware of and use our products, and deepen their understanding of the value of our products in meeting their needs. Develop and communicate analyses that assess and articulate the benefits of robust climate data to the Nation. Use a diverse set of communication vehicles, including social media, to reach multiple audiences at the right time with the right message. Leverage internal knowledge capital by implementing new and enhanced methods to communicate within the Center.
- 4. Support Customers.** Enhance stakeholder trust through customer education. Improve support and reduce incoming support requests to NCDC through online documentation, redirection of support requests to partners, and other means.
- 5. Deliver Regional and Sectoral Services.** Optimize roles, processes, and products to maximize the value delivered to regional and sectoral stakeholders. Leverage existing regional and sectoral assets and partners.
- 6. Enhance Web Presence.** Provide multiple intuitive interfaces for scientists and non-scientists to easily discover and access information. Provide easy and efficient access to information by providing data that adhere to community-established data formats. Develop streamlined collaborative processes for content development and publishing. Optimize product usability through joint product design with users. Ensure all new or redesigned systems meet Federal Information Security Management Act standards for accessibility.

## STRATEGIC THEME 4:

# Enterprise Support

Continuously improve execution of all projects, programs, and operations. Improve our ability to integrate business practices that encourage an efficient, effective, and transparent organizational environment.

Efficient, effective, and focused execution has never been more important. Achieving NESDIS and NCDC's strategic goals requires us to transform the way we do business. Every project and activity will deliver measurable and meaningful progress toward strategic goals. NCDC operational and development activities will follow rigorous procedures and standard engineering practices to efficiently ensure the quality of our products. NCDC will continuously improve our organization and administration, in alignment with NOAA's Enterprise Goal, and in collaboration with the other NESDIS data centers. NCDC will adopt and leverage common NOAA and NESDIS systems and processes as available in the pursuit of efficiency.



## Objectives

1. **Ensure Information Technology Security.** Protect NCDC's technology assets by implementing industry best practices and applicable federal security policies. Leverage NOAA enterprise security infrastructure. Implement application-level security reviews.
2. **Optimize Enterprise Processes.** Develop, enhance, maintain, and adhere to Center-wide processes including document management; configuration management; quality management; and project, program, and portfolio management. Implement a structured methodology to define, measure, analyze, improve, and control key operational processes in order to reduce costs and improve value to stakeholders.
3. **Enhance Enterprise Architecture.** Develop, maintain, communicate, and enforce an NCDC Enterprise Architecture consistent with NOAA, DOC, and national guidance that efficiently and effectively supports development, testing, and production environments and includes hardware, software, and applications.
4. **Develop Workforce.** Reshape and train NCDC's workforce to ensure our personnel have the right skills to achieve our strategic objectives. Ensure NCDC is continuously developing future leaders. Establish a mentoring program that pairs mentors and mentees across the organization. Encourage informal mentoring for skills needed to achieve our strategic objectives. Ensure NCDC's functional organization structure is optimized to support our strategic goals most efficiently and effectively.



*Protecting the past... Revealing the future*



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