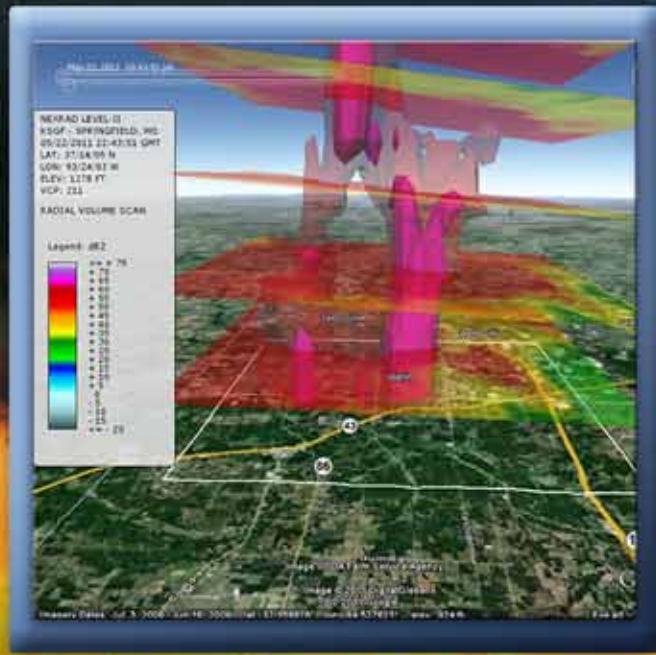


2012

PRODUCTS & SERVICES GUIDE



PRODUCTS AND SERVICES GUIDE

***NOAA's NATIONAL CLIMATIC DATA CENTER
ASHEVILLE, NC***



2012 Edition

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See <http://www.ncdc.noaa.gov/oa/climate/climateproducts.html> for a digital copy of this guide.

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A message from the Director, National Climatic Data Center

The National Climatic Data Center offers a wide range of products and services. Our users range from large engineering firms designing the latest in safe energy efficient structures, to the attorney documenting a weather event, to the individual planning for a retirement move.

Services offered include data resource consultations, subscription items and publications, copies of original records, certifications, generation of specialized climate studies, and a host of other climate-related activities. Services are delivered on a variety of media including on-line access, CD-ROM, DVD, computer tabulations, maps, and publications.



Tom Karl
Director

About the National Climatic Data Center

The National Oceanic and Atmospheric Administration (NOAA) Data Centers (of which NCDC is the largest) are world-class centers that provide long-term preservation, management, and ready accessibility to environmental data. The combined archive includes records taken even before Ben Franklin's weather observations and continues with the latest real-time satellite imagery. The Centers are part of the National Environmental Satellite, Data and Information Service (NESDIS). The NCDC is located in Asheville, NC.

NCDC Mission Statement

NCDC's mission is to manage the Nation's resource of global climatological in-situ and remotely sensed data and information to promote global environmental stewardship; to describe, monitor and assess the climate; and to support efforts to predict changes in the Earth's environment. This effort requires the acquisition, quality control, processing, summarization, dissemination, and preservation of a vast array of climatological data generated by the national and international meteorological services.

Highlights

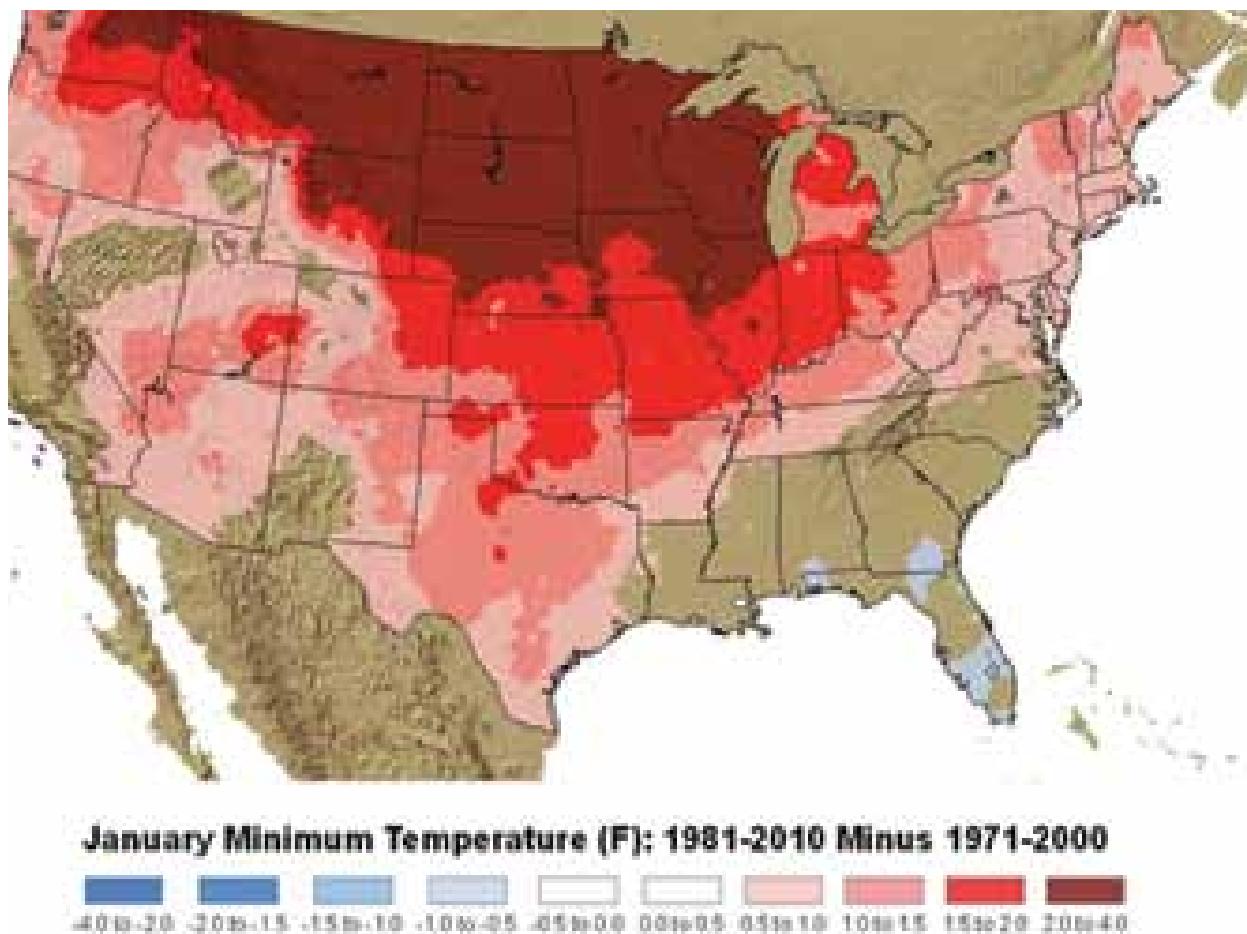
NCDC Generates Climate Data Records for Climate Monitoring

NCDC's Climate Data Record (CDR) Program capitalizes on the five-decade long investment in environmental satellites to use these data to address critical climate questions. By providing authoritative, long-term climate reference sets, NCDC allows users to focus on specific climate issues such as drought, floods, and hurricanes. Consolidating this information enables improved protection of lives, property, economic interests and security. CDR operational production removes and minimizes biases in satellite data; delivers long-term (50+ years), seamless homogeneous records characterizing climate change and variation; and reprocesses the entire period of record as new climate

algorithms and sensor knowledge are developed. This year the CDR Program transitioned five CDRs into production, including the critical tropospheric temperature record. As part of being an operational program, NCDC provides full documentation and routine production of these records.

NCDC Enhances Collaboration to Improve Archive Services

NCDC continued to improve collaboration with NOAA's future polar (NPP/JPSS) and geostationary (GOES-R) satellite programs to ensure the long term preservation of, and access to, essential and irreplaceable data of NOAA's key environmental data products. A key goal of NCDC is to preserve a



complete understanding of data so that future users can use the data independent of assistance from the original producer of the data. This goal can only be accomplished through the coordination of Data Producers, such as NOAA's satellite programs, and the NOAA Archive in the early stages of data management to ensure proper establishment of data, metadata, documentation, and level of service. In 2011, NCDC increased collaboration with NOAA satellite ground systems, mission programs, algorithm teams, and IT personnel thereby improving preservation of NOAA's key environmental data products. NCDC supported more than twelve established NPP/JPSS Working Groups and Review Boards and seven GOES-R Team meetings as well as hosted the NPP/JPSS User Conclave/Customer Forum to improve communication and understanding of goals. Additionally, to support archive requests, NCDC developed an interface for Advanced Tracking and Resource tool for Archive Collections (ATRAC) in collaboration with our sister oceanographic (NODC) and geophysical (NGDC) archives. Because of NCDC's efforts, the NCDC Archive was ready to receive, preserve, and distribute the irreplaceable and highly valuable data from the NPP satellite which was launched in October 2011.

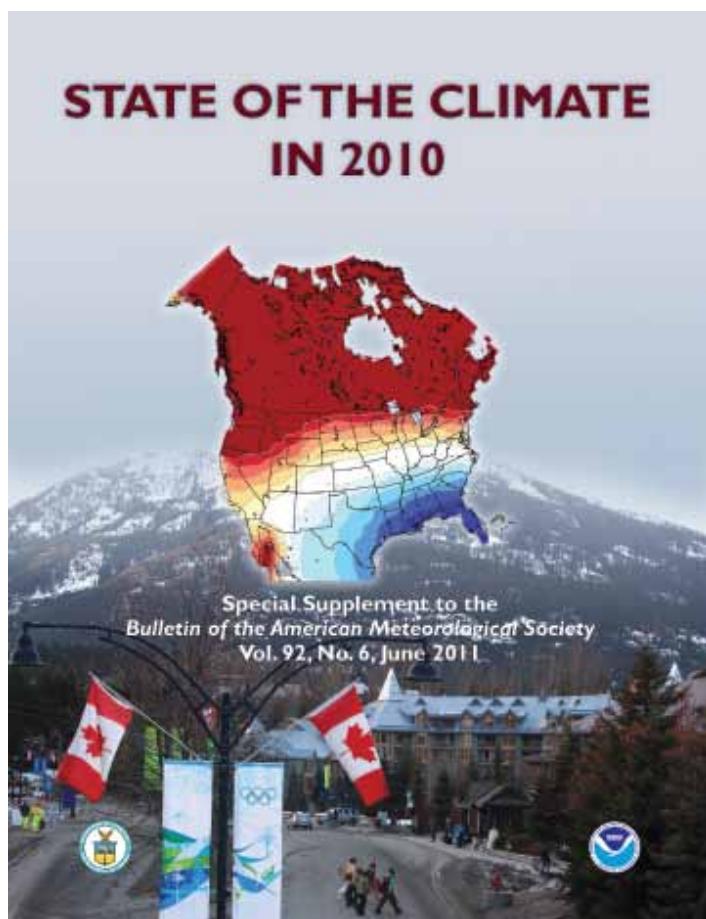
NCDC Releases 1981–2010 Climate Normals

In June 2011, NOAA's National Climatic Data Center (NCDC) released the 1981–2010 Climate Normals, which are commonly used in television weather segments for comparisons with the day's weather conditions. Climate Normals are three-decade averages of many climatological variables, most notably temperature and precipitation. According to the 1981–2010 normals temperatures across the United States were on average, approximately 0.5 degree F warmer than the 1971–2000 time period. In the continental United States, every state's annual maximum and minimum temperature increased on average. They serve as a point of reference for typical climate conditions at a given place and are used in seemingly countless applications across a variety of sectors. Builders, insurers, and engineers use Climate Normals for planning and risk management and Energy companies use the data to predict fuel demand. In addition, Farmers rely on the information to help make decisions on both

crop selection and planting times. This once-a-decade release updates the Climate Normals for more than 7,500 locations across the United States and includes more than a thousand new stations. NCDC produced hourly, daily, monthly, seasonal, and annual Climate Normals for variables such as temperature, precipitation, and snowfall. Data were also calculated for significant quantities, such as heating and cooling degree days and the number of days per month above or below certain thresholds. NCDC made numerous improvements and additions to the scientific methodology used to calculate the 1981–2010 Climate Normals, including improved scientific quality control and statistical techniques. NCDC engaged state and regional climatologists as well as industry users before and after releasing the Climate Normals and incorporated new products, specifically for the agriculture and energy industry based on stakeholder feedback.

NCDC Delivers State of the Climate Report in 2010

NOAA's National Climatic Data Center (NCDC) released the *2010 State of the Climate Report*, which provides a



peer-reviewed annual “physical” of the climate system as well as insights into our capacity to measure it using trusted sources of information. The report highlighted how El Niño-Southern Oscillation and other climate patterns play a major role in 2010 and that 2010 one of the two warmest years on record. This year’s report tracks 41 climate indicators — four more than last year — including temperature of the lower and upper atmosphere, precipitation, greenhouse gases, humidity, cloud cover, ocean temperature and salinity, sea ice, glaciers, and snow cover.. In addition, the 2010 report has the most contributors with datasets and/or analyses provided by 362 authors from 45 countries. The *State of the Climate* series has been a trusted source of the most current and reliable information on the world climate and its changes since 1990. The report has grown in scope to become a leading and highly anticipated publication. It is unique among annual major assessments in that it makes no attempt to validate climate models or make projections of future climate conditions. It is strictly built upon data compiled in the world’s agencies and academic institutions—the climate system’s vital signs. NCDC led the document from its commissioning in fall 2010, providing high-level oversight, recruiting editorial leadership, and producing companion materials to make the document more accessible to the public. *The State of the Climate Report* is published as a special supplement in the June 2011 *Bulletin of the American Meteorological Society*. The supplement was 270 pages this year, the longest ever.

NCDC Oversees Installation of the U.S. Climate Reference Network (USCRN) Soil Sensor and Relative Humidity Sensor Installation

Soil temperature and moisture as well as relative humidity are critical climate indicators to aid in long-term drought as well as climate change monitoring. Begun in FY 2009 and completed at the end of FY 2011, NCDC, in partnership with NOAA’s Atmospheric Turbulence and Diffusion Division (ATDD) in Oak Ridge, TN, completed the installation of a triplicate set of soil moisture and temperature sensors at five standard soil depths from five to 100 cm deep, in addition to relative humidity sensors, at all 114 of the USCRN stations in the contiguous United States. These new

soil and relative humidity sensors will go a long way towards enhancing the USCRN’s ability to monitor drought as well as long-term climate indicators. The benefits of this data span the range of many science and applications disciplines including the agriculture and water resources management sectors.

Development of Global Historical Climatology Network-Monthly (GHCN-M) Version 3 Temperature Dataset

Since the early 1990s the Global Historical Climatology Network-Monthly (GHCN-M) dataset has been an internationally recognized source of data for the study of observed land surface temperature variability and change. It provides monthly mean temperature data for 7280 stations from 226 countries and territories, ongoing monthly updates of more than 2000 stations to support monitoring of current and evolving climate conditions, and homogeneity adjustments to remove non-climatic influences that can bias the observed temperature record. In 2011, NCDC released the latest version, GHCN-M Version 3, of this dataset. For this new version, NCDC developed new quality control methodologies, applied a new homogeneity adjustment algorithm to extend and improve bias corrections to stations on every continent, developed a new update system to ensure all updates to source datasets can be incorporated immediately, established a version control and data quality assurance system to improve the traceability of data, and made other changes in response to user requests to broaden the use of this dataset to a wider community.

NCDC Expands Network of Paleoclimatic Reconstructions

In 2011, the NOAA Paleoclimatology Branch significantly augmented its last two-plus millennium Paleoclimate Network (PCN v. 2.0.0). In addition to the 92 high-resolution temperature records and annual/seasonal recalibrations to a common anomaly period that comprised v. 1.0.1, the PCN now encompasses a large accumulation of high-resolution proxy data (1209 time series) that have been used in several recent reconstructions of hemispheric and global temperatures, gridded global instrumental data covering 1850-2009, and other NOAA-related reanalysis

work. With the addition of this proxy and instrumental information, researchers and others interested in later-Holocene climate can now find a complete set of data tools needed to calibrate and make temperature reconstructions, and can compare these with the accumulated high-resolution reconstructions in NOAA-Paleoclimatology's archive.

NCDC Makes Advancements in Climate-related Services

NCDC continued to provide a variety of climate services and introduced new products and partnerships in 2011, including:

- Developed a prototype cell phone tour with the American Public Garden Association talking about gardens and climate change
- Established further regional and local partnership via NCDC's Regional Climate Service Directors
- Provided access to the full suite of Climate Forecast System Reanalysis Data – one of the most downloaded products in NCDC history
- Updated NCDC's popular Billion Dollar Weather and Climate Disasters information as 2011 broke a record for the number of events in a single year since record keeping began in 1980.
- Implemented a Global Drought Monitoring Web Portal to facilitate international collaboration on drought monitoring on a continental scale.
- NCDC and its NOAA Climate Services Portal partners implemented a completely revamped Data and Services section of the Portal, with integrated map services and new search capabilities.
- Climate Data Online (CDO) Version 2 was implemented and placed online, which features many new capabilities, a streamlined interface, and new datasets and products for users.
- A new Online Store was implemented in conjunction with completion of the NOAA National Data Centers E-commerce System (NES) Version 2 effort, which provides a better user experience for customers ordering products which require payment (eg, DVD product ordered online, then delivered by mail).

Online and Operational Service



The National Climatic Data Center (NCDC) maintains an Internet World Wide Web (WWW) home page service. Some of the datasets and products available via WWW are highlighted in the following pages.

Our Web system includes access to U.S. and global climatic data, model data, satellite data, radar images, inventories of datasets available off-line, publications, climate monitoring reports, special reports on extreme weather events, and an online ordering system. Nearly 1300 terabytes (1.3 petabytes) of data and information were downloaded by our customers during the 2010 fiscal year.

Several useful links are listed below and described further in the following pages:

NCDC and its NOAA Climate Services Portal partners implemented a completely revamped Data and Services section of the Portal, with integrated map services and new search capabilities at
<http://www.climate.gov/#dataServices>

A map search GIS interface—Click on “search by map” on left hand side-bar of homepage, or go to <http://gis.ncdc.noaa.gov>

Our most popular products—

<http://www.ncdc.noaa.gov/oa/mpp>

Our Online Store—A new Online Store was implemented in conjunction with completion of the NNDC E-commerce System (NES) Version 2 effort, which provides a better user experience for customers ordering

products which require payment (eg, DVD product ordered online, then delivered by mail).

<http://ols.nddc.noaa.gov/plolstore/plsql/olstore.main?look=1>

NOAA Virtual Data System (NVDS) Climate Data Online

Version 2— was implemented and placed online, which features many new capabilities, a streamlined interface, and new datasets and products for users. <http://www.ncdc.noaa.gov/cdo-web/search>

Some of the datasets and products are free of charge for all users, while some require payment through the Online Store. For ".noaa", ".gov", ".edu", ".mil", ".us", and ".k12" domain users, all online access to online data products are free of charge as long as the user's computer allows for reverse domain lookup.

The screenshot shows the homepage of the NOAA Satellite and Information Service. The top navigation bar includes links for DOC, NOAA, NESDIS, and NCDC. The main content area features a large image of a lightning bolt over a landscape. Overlaid on the image are several menu items: "About", "Data and Products", "Research and Monitoring", and "Contact". To the left, a sidebar contains links for Current Events, NOAA Climate Services, About NCDC, Data & Products, Purchase, and Climate Info. The NCDC logo is visible in the top right corner.

<http://www.ncdc.noaa.gov/oa/land.html>

Web Navigation

The National Climatic Data Center (NCDC) Web site was designed to provide quick access to major types of climatic data. Suggested means of accessing our online data are detailed below.

Land Based Data

Land based observations contain various meteorological elements (temperature, relative humidity, atmospheric pressure, wind direction/speed, etc.) that over time describe the climate of a location or region. They also include data observed by weather radars. Products derived from these measurements are accessible from <http://www.ncdc.noaa.gov/oa/land.html>.

Example data products: Local Climatological Data, U.S. Hourly Precipitation, Global and U.S. Integrated Surface Hourly Data, Cooperative Data, etc.

Upper Air Data

Upper air data consist of temperature, relative humidity, atmospheric pressure, and wind direction/speed above the earth's surface. Products derived from these measurements are accessible from <http://www.ncdc.noaa.gov/oa/upperair.html>.

Example data products: Upper Air Charts, NOAA Operational Model Archive and Distribution System (NOMADS), Integrated Global Radiosonde Archive (IGRA), etc.

The screenshot shows the NCDC website with a yellow header bar. On the left, there's a sidebar with links like 'Current Events', 'Data & Products', 'Purchase', 'Climate Info', and 'About'. The main content area has a large image of a weather balloon launching. Overlaid on the image are several text links: 'About', 'Data and Products', 'Research and Monitoring', and 'Contact'. At the bottom right of the image, there's a descriptive text box: 'Provides lists and searches of upper-air data available from NCDC.' Below the main content is a URL: <http://www.ncdc.noaa.gov/oa/upperair.html>.

Marine Data

Marine data include observations from ships at sea as well as buoys, both fixed and free floating. Data products derived from these measurements are accessible online at <http://www.ncdc.noaa.gov/oa/marine.html>.

Example data products: International Comprehensive Ocean-Atmosphere Data Set Project (ICOADS), Global Buoy Data, Voluntary Observing Ship Climate Project (VOSClim), etc.

The screenshot shows the NOAA Satellite and Information Service website. At the top, there are navigation links: DOC > NOAA > NESDIS > NCDC. On the right, there is a search field labeled "Search NCDC". The main content area features a large image of a buoy in the ocean under a cloudy sky. Overlaid on the image are several text links: "About", "Data and Products", "Research and Monitoring", and "Contact". To the left of the image, there is a sidebar with more links: Current Events, NOAA Climate Services, About NCDC, In the Spotlight, What's New, Climate FAQs, Data & Products (Model Data, Products and Services, Find a Station, Search by Map, Free Data, Data Access tools, CD-ROM Products, Climate Inventories, Metadata, Help/FAQ), Purchase (Most Popular, Subscriptions, Order Status, Online Store), and Climate Info (Regional Climate Centers, Research, Monitoring, Extremes, Global Hazards). The title "Marine Data" is centered above the image.

<http://www.ncdc.noaa.gov/oa/marine.html>

Satellite Data

Satellite data and derived products from NOAA's satellites are available through the National Climatic Data Center and Comprehensive Large Array-data Stewardship System (CLASS). Details about CLASS and products derived from these measurements are accessible from <http://www.ncdc.noaa.gov/oa/satellite.html>.

Example data products: Raw radiance data from instruments (POES Level 1b, GOES GVAR, DMSP TDR, etc.) and various satellite products, imagery, movies, and animations.

<http://www.ncdc.noaa.gov/oa/satellite.html>

Weather/Climate Events

The Weather/Climate Events section focuses on summaries, statistics, and descriptive information of weather and climate events including extreme events like hurricanes, tornadoes, floods, and severe thunderstorms. Access to these products can be found at <http://www.ncdc.noaa.gov/oa/climateresearch.html>.

[gov/oa/climateresearch.html](http://www.ncdc.noaa.gov/oa/climateresearch.html).

Example data/information: U.S. Storm Events Database, U.S. Climate Normals, Climate Maps of the United States, Extreme Weather and Climate Events, etc.

The screenshot shows the NOAA Satellite and Information Service website. At the top, there are two logos: the NOAA logo (a blue circle with a white 'N' and 'OA') and the NESDIS logo (a blue circle with three white curved lines). To the right of the logos, the text "NOAA Satellite and Information Service" and "National Environmental Satellite, Data, and Information Service (NESDIS)" is displayed. Below the logos, a navigation bar contains the text "DOC > NOAA > NESDIS > NCDC". To the right of the navigation bar are two search fields: "Search Fields" and "Search NCDC". The main content area features a large image of a landscape with mountains and clouds. Overlaid on the image is the title "Weather/Climate Events" in a large, bold, dark font. Below the title, there are several menu items: "About", "Data and Products", "Research and Monitoring", and "Contact". In the bottom right corner of the main content area, there is a text box containing the following text: "Provides lists and searches of weather/climate events data available from NCDC." On the left side of the page, there is a sidebar with several categories: "Current Events", "NOAA Climate Services", "About NCDC", "In the Spotlight", "What's New", "Climate FAQ's", "Data & Products", "Model Data", "Products and Services", "Find a Station", "Search by Map", "Free Data", "Data Access tools", "CD-ROM Products", "Climate Inventories", "Metadata", "Help/FAQ", "Purchase", "Most Popular", "Subscriptions", "Order Status", "Online Store", "Climate Info", "Regional Climate Centers", "Research", "Monitoring", "Extremes", and "Global Hazards".

<http://www.ncdc.noaa.gov/oa/climateresearch.html>

Paleoclimatology Data

Paleoclimatology is the study of past climate, from times prior to instrumental weather measurements. Paleoclimatologists use information from natural climate “proxies,” such as tree rings, ice cores, corals, and ocean and lake sediments that record variations in past climate. Records of past climate from these proxies are important for several reasons. Instrumental records of climate are limited in many parts of the world to the past 100 years or less and are too short to assess whether climate variability, events, and trends of the 20th and 21st centuries are representative of the long-term natural variability of past

centuries and millennia. For example, was the 1930s Dust Bowl drought a widespread and severe event in the United States, a rare occurrence, or have similar events occurred in past centuries? Knowledge of the long-term natural variability of the Earth climate system, and its causes, will also allow an understanding of the roles of natural climate variability and human induced climate change in the current and future climate. These data products are accessible from <http://www.ncdc.noaa.gov/paleo/paleo.html>.

Example data/information: Paleoclimatology Proxy Data, Climate Reconstructions, Climate Model output, and Climate Synthesis products.

The screenshot shows the homepage of the NOAA Paleoclimatology website. At the top, there are logos for NOAA Satellite and Information Service (NESDIS) and National Climatic Data Center (NCDC). The main navigation bar includes links for "DOC > NOAA > NESDIS > NCDC", a "Search Field", and "Search NCDC". On the left, a sidebar menu lists categories like "Data", "Paleo Perspectives", "Outreach", and "About Paleo". The central content area features a large title "NOAA Paleoclimatology" and a grid of 15 thumbnail images representing various paleoclimatology proxy data sources, including "Model", "Ice Core", "Paleo-Era", "Borehole", "Plant", "Tree-ring", "Paleocean", "Coral", "Fauna", "Historical", "Cave", "Travertine", "Lake", and "Moss".

<http://www.ncdc.noaa.gov/paleo/paleo.html>

Additional Online Data Access Portals

The NCDC Web site also includes GIS open system access to data at <http://gis.ncdc.noaa.gov>.

Climate Data Online (CDO) Version 2.0: CDO

Version 2.0 was officially released to the public on November 29. The Version 2.0 functionality includes dynamic maps, integrated station/location search capabilities, REST-ful web services, product searches, and access to legacy systems.

NVDS GIS Open System Access to Data

<http://gis.ncdc.noaa.gov>

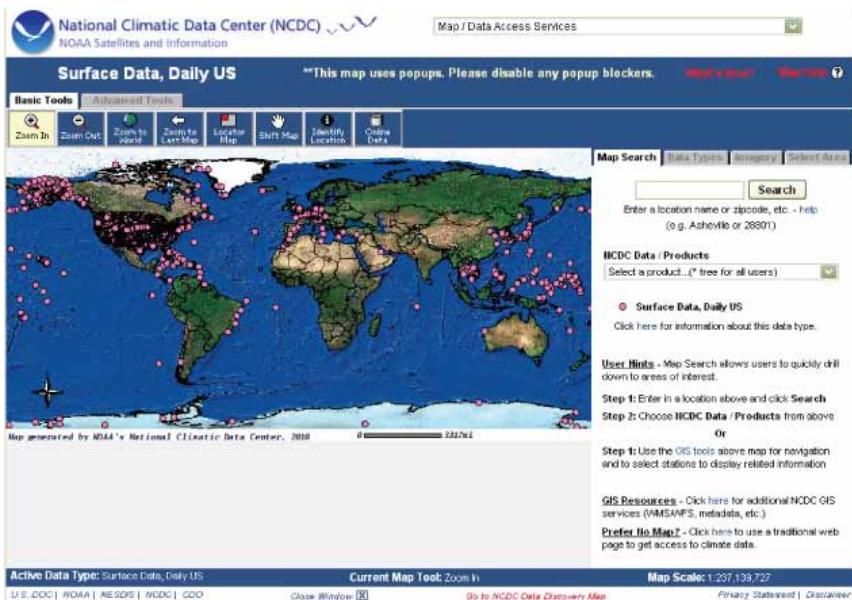
- OGC compliant WMS, WFS Services implemented
- Access to Metadata Records in Geospatial One Stop and Global Change Master Directory
- Provides access to numerous datasets, products, and graphing of data
- Faster Rich-Client tools implemented (Ajax)
- Google Earth product integration



<http://gis.ncdc.noaa.gov>

The screenshot shows the NOAA Climate Data Online (CDO) website. At the top, there is a navigation bar with links for Home, Climate Data Online, Contact Us, About NCDC, Help, and a search bar. Below the navigation bar, the NOAA logo and the text "NATIONAL CLIMATIC DATA CENTER" and "NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION" are displayed. A large banner on the left side features a map of the world with the text "Integrated Map Application" and "Access multiple layers of free, searchable climate data quickly and easily through the integrated data set map application." Below the banner is a button labeled "Go to map now". To the right of the banner, there is a section titled "Select a Climate Theme Map" with links for "Hourly/Sub-Hourly Data", "Daily Data", "Monthly Data", "Climate Indices", "Normals", and "Precipitation". On the far right, there is a "Help" section with links for "Online help", "View data samples & documentation", "Check request status", "Request assistance", "NCDC Web Services", "Web Services Documentation", and "Contact Us".

<http://www.ncdc.noaa.gov/cdo-web/search>



Sample of MAP Search Option from CDO

Most Popular Products (MPP):

The NCDC Most Popular Products Web page at <http://www.ncdc.noaa.gov/oa/mpp/> provides access to a wide range of the most commonly requested publications and digital data products. From here you can access all major publications, CD-ROMs, digital datasets, and there are special sections that list subscription products and free products.

<http://www.ncdc.noaa.gov/oa/mpp/>

Online Climate Data Directory: The Online Climate Data Directory Web page at <http://www.ncdc.noaa.gov/oa/climate/climatedata.html> provides a concise listing of all major data types (surface, upper air, marine, satellite, etc.) on one page with various means of accessing each data product listed (FTP, Web page, GIS, etc.).

The screenshot shows the NOAA Satellite and Information Service website. At the top, there is a navigation bar with links to 'DOC > NOAA > NESDIS > NCDC', a search field, and a 'Search NCDC' button. To the right, the 'National Climatic Data Center U.S. Department of Commerce' logo is displayed. The main content area features a large image of a lightning storm over a landscape. On the left, a sidebar contains links to 'Current Events', 'NOAA Climate Services', 'About NCDC', 'In the Spotlight', 'What's New', 'Climate FAQs', 'Data & Products', 'Model Data', 'Products and Services', 'Find a Station', 'Search by Map', 'Free Data', 'Data Access Tools', 'CD-ROM Products', 'Climate Inventories', 'Metadata', 'Help/FAQ', 'Purchase', 'Most Popular', 'Subscriptions', 'Order Status', 'Online Store', 'Climate Info', 'Regional Climate Centers', 'Research', 'Monitoring', 'Extremes', and 'Global Hazards'. The right side of the page has sections for 'Surface Data', 'Upper Air Data', 'Marine Data', 'Satellite Data', 'Important Notes', 'Climatology & Extremes', and 'Related links'. A footer at the bottom right reads 'Satellite Data, Products, Research, Monitoring'.

<http://www.ncdc.noaa.gov/oa/climate/climatedata.html>

NOAA National Data Centers Online Store

The NOAA National Data Centers (NNDC) Online Store provides **centralized access** to in situ data, NEXRAD radar data, GIS Services, CD-ROM & DVD products, publications, and many other products and services.

Note that many of the datasets/products are free of charge to all customers, but some require online payment for non -“gov, edu, mil, k12” users. Please visit the NCDC Free Access Web page at <http://www.ncdc.noaa.gov/oa/about/ncdchelp.html#FREE> for more information on Free Access and the Online Data Access Policy.

Entry Page:

NVDS
Data
and
Products

Category /Type

Select Criteria to the Right and Click on Continue

1) Select Category of Data ; Products
 *All
 Climate *All
 Geophysical *All
 Oceanographic *All
 Radar *All
 Satellite *All
 User Description Agriculture

2) Show This Type of Data ; Products Only *All Products

3) Select Action for Above Products
 List Search For: _____

Continue

You might want to access some of our systems directly such as
[Climate Data Online](#), [HDSS Access System](#), [GIS Map Server](#)

If you are looking for **weather data from a particular location**, you should [Locate a Weather Station](#).

<http://ols.ncdc.noaa.gov/plostore/plsql/olstore.main?look=1>

Name	Detail Name	Retail Price	Wholesale Price	Quantity	Item Total
Engineering Weather Data CDEWD	-	\$35.00	\$17.00	1	\$17.00
Order Subtotal: \$17.00					

1 - 1

Shipping Charge: \$3.00
 Foreign Service: \$0.00
ORDER TOTAL: \$20.00

Billing Information

Email Address: deb1060@gmail.com
 Customer Id: 0

Country: UNITED STATES
 Zip Code: _____
 State: _____
 City: _____
 Organization: _____
 First Name: _____
 Last Name: _____
 Address Line1: _____
 Address Line2: _____
 Address Line3: _____
 Billing Phone (numbers only): _____ Extension: _____
 Customer Classification: _____

Customer Reference

Shipping Information

Shipping Same As Billing Address: YES
 Please select a shipping address: _____

Country: UNITED STATES
 Zip Code: _____
 State/Province: _____
 City: _____
 Organization: _____
 First Name: _____
 Last Name: _____
 Address Line1: _____
 Address Line2: _____
 Address Line3: _____
 Email Address: deb1060@gmail.com
 Shipping Phone (numbers only): _____ Extension: _____
 Shipping Method: USPS 1st Class Mail
 Customer Reference: _____

Proceed to Order Confirmation

In-Situ Data

 NOAA Satellite and Information Service 
National Environmental Satellite, Data, and Information Service (NESDIS)

DOC > NOAA > NESDIS > NCDC

Current Events
[NOAA Climate Services](#)
[About NCDC](#)
[In the Spotlight](#)
[What's New](#)
[Climate FAQs](#)

Data & Products
[Model Data](#)
[Products and Services](#)
[Find a Station](#)
[Search by Map](#)
[Free Data](#)
[Data Access tools](#)
[CD-ROM Products](#)
[Climate Inventories](#)
[Metadata](#)
[Help/FAQ](#)

Purchase
[Most Popular](#)
[Subscriptions](#)
[Order Status](#)
[Online Store](#)

Climate Info
[Regional Climate Centers](#)
[Research](#)
[Monitoring](#)
[Extremes](#)
[Global Hazards](#)

Land-based Data

About
[Data and Products](#)
[Research and Monitoring](#)

Contact

Welcome to the NCDC Land-based Data Page

Please hover your mouse over the links to the upper left, or simply scroll down the page to select and view more content from this area of the NCDC website. Should you have something specific to look for, submit a search in the golden search bar above.

<http://www.ncdc.noaa.gov/oa/land.html>

General Information

1. See glossary of acronyms at end of Guide for details on terms used below.
2. The periods of record for these datasets vary considerably depending on data type and station.
3. All reference to QC pertains strictly to data checking and corrections performed within the Federal Climate Complex. Other gross QC is usually performed at the point of origin such as NCEP and AFWA.
4. The media available are: CD-ROM, DVD, and FTP transfer. These options vary depending on the dataset.
5. Cost to customer varies depending on data volume and the processing required for order.
6. This is only a summary of the major digital datasets available from NCDC. Many other datasets/data types (in addition to those listed below) are available. See <http://www.ncdc.noaa.gov/doclib> for a complete list and documentation for datasets.
7. NCDC's WWW Homepage has numerous datasets and data inventories on-line at <http://www.ncdc.noaa.gov>. NCDC makes frequent updates to this system; users are encouraged to review the homepage periodically to see what's available.

8. Points of contact for information, cost estimates, and data requests: National Climatic Data Center User Engagement & Services Branch 151 Patton Avenue Asheville, NC 28801-5001 Telephone: 828-271-4800, Fax: 828-271-4876 Internet: ncdc.info@noaa.gov

DATASET: Worldwide surface observations (hourly/synoptic)

DSI3505—Integrated Surface Data (ISD)--worldwide stations.

- **Data Type** -ASCII character data. Quality Control
-Extensive automated QC (all data); additional manual

QC for USAF, Navy, and NWS stations. Data Origin -An integration of data from numerous sources, comprising all stations available historically.

- **Content/Elements**

-About 20,000 stations currently active. -Includes wind speed and direction, wind gust, temperature, dew point, cloud data, sea level pressure, altimeter setting, station pressure, present weather, visibility, precipitation amounts for various time periods, snow depth, and various other elements as observed by each station. -Observational practices vary by country.

The screenshot shows the homepage of the NNDC Climate Data Online. At the top, there are logos for NOAA Satellite and Information Service and National Climatic Data Center, both associated with the National Environmental Satellite, Data, and Information Service (NESDIS). The URL bar shows the path: DOC > NOAA > NESDIS > NCDC. Below the header, there are search fields for Keyword(s), City, Station Name, and a 'Search NCDC' button. A navigation bar includes links to Land-Based Data, NNDC CDO, Product Search, and Help. The main title is 'NNDC CLIMATE DATA ONLINE'. On the left, there's a sidebar with links for Sample Output, Changes, ASCII Space Delimited, Printable Web Form, Hourly Summary, Inventory, Map Analysis, and Info / Help. The right side features a 'DataSet/Product Options' section with a dropdown menu containing several data series: Surface Data, Annual Summary (Over 18,000 U.S., some non-U.S. sites); Surface Data, Daily (Over 19,000 U.S., some non-US sites); Surface Data, Global Summary of the Day *; Surface Data, Hourly Global (Over 10,000 worldwide sites) [selected]; Surface Data, Marine (1662-2007 ICOADS v. 2.5, NCDC 2008-current) *; and Surface Data, Monthly (Over 18,000 U.S., some non-US sites). A button labeled 'Access Data/Products' is located below the dropdown. A note at the bottom states '* Free Product'. At the bottom of the page are links for Privacy Policy, USA.gov, and Disclaimer.

<http://cdo.ncdc.noaa.gov/CDO/dataproduct> or via FTP at <ftp://ftp.ncdc.noaa.gov/pub/data/noaa/>

- **Period of Record** -1901 to present (varies greatly by station). Notes -See <http://www.ncdc.noaa.gov/doclib> for further details. The complete dataset for 1995-1999 is available with annual updates for all stations for the period 2000-2010. Online -<http://cdo.ncdc.noaa.gov>

DATASET: Global ship and buoy observations (hourly/synoptic). The International Comprehensive Ocean Atmosphere Data Set (ICOADS) and NCDC Global Marine Data.

- **Data Type** -ASCII character data. Quality Control -Undergoes automated QC. Data Origin -Data originate from multiple sources, including GTS + some key entered data. Content/Elements

-Includes elements observed by ships, buoys and Coastal Marine Automated Network (CMAN) stations--temperature and dew point, wind direction and speed, visibility, present weather, sea level pressure, sea surface temperature, cloud data, ice data, and wave/swell heights and periods.
-Generally, buoys and CMAN stations only observe temperature, wind, pressure, sea surface temperature, and wave/swell data; while some ship reports include other elements.

-Elements vary considerably by station. Period of Record -As early as 1662 to present. Notes -See <http://www.ncdc.noaa.gov/doclib> for further details. Online -<http://www7.ncdc.noaa.gov/CDO/CDOMarine-Select.jsp> & <http://has.ncdc.noaa.gov/pls/plhas/HAS.FileAppSelect?datasetname=1173>

ICOADS Release 2.5 (1662-2007) is also available in monthly files via NCDC ftp access. These observations can be retrieved from the following location:

<http://www1.ncdc.noaa.gov/pub/data/icoads2.5>

For information on the ICOADS R2.5 monthly files, please read the following file prior to using the data: [read_icoads2.5.pdf](#)

For official ICOADS data access at NCDC, the user must select data type "icoads2.5". NCDC offers only "enhanced" R2.5 observations, which were derived using 4.5 standard deviation "trimming" (quality control screening) limits, so as to accommodate more extreme climate events, and using a broad collection of marine observations including ships, buoys and near-surface oceanographic profile temperatures. All three U.S. ICOADS Partners (NOAA/ESRL, NOAA/NCDC, NCAR) offer various data access and format options. To review all available options, please see the ICOADS Products Website at <http://icoads.noaa.gov/products.html>, looking under the "Observations" section.

The screenshot shows the NOAA NNDC Climate Data Online interface. At the top, there are links for NOAA, NESDIS, and NCDC, along with search fields for Keyword(s), City, Station Name, and a Search NCDC button. Below this is a navigation bar with links to Marine Data, NNDC CDO, Product Search, and Help. The main title is "NNDC CLIMATE DATA ONLINE". A red banner below it says "Marine Data, Hourly Global:". On the left, there are two sections: "Select Bin/Grid Scheme:" with a radio button for "10-degree bins" selected, and "Select Marine Data Type:" with a dropdown menu showing "All data types (1662 - current)" as the selected option, followed by ICOADS 2.5 (1662 - 2007), VOSCLIM (1990 - current), and Buoys/Platforms (1970 - current). On the right, there is a "Callsign/Ship ID Search:" section with a search input field and a dropdown menu showing several entries, with a note that it returns the first 1000 matches. At the bottom of the page is a sidebar with links to Common Marine Format documentation, COADS-IMMA Data format documentation, WMO Publication No. 47, Common Marine Format data sample, COADS-IMMA Comma Delimited data sample, COADS-IMMA Space Delimited data sample, COADS-IMMA data sample, and Data and pricing (if applicable) details at the CDO Help Page. The footer includes links for Privacy Policy, USA.gov, and Disclaimer.

<http://www7.ncdc.noaa.gov/CDO/CDOMarineSelect.jsp>

DATASET: Global ship observations (hourly/synoptic).

Voluntary Observing Ship Climate (VOSCLIM) Project.

ture, sea surface temperature, winds and relative humidity are also included.

- **Data Type** -ASCII character data. Quality Control -Undergoes automated QC; additional QC is performed by the UKMET Office against corresponding model fields.
- **Content/Elements**
 - Includes elements observed by ships--temperature and dew point, wind direction and speed, visibility, present weather, sea level pressure, sea surface temperature, cloud data, ice data, and wave/swell heights and periods. Background model fields for sea level pressure, air tempera-
- **Period of Record** -2001 to present. **Notes** – See <http://www.ncdc.noaa.gov/oa/documentlibrary/vosclim/imma.pdf> for data format details.
- -See <http://www1.ncdc.noaa.gov/pub/data/vosclim/vosclimshiplist.xls> for Fleet Ship List. **Online** –
 - Monthly ASCII Files:
<http://www.ncdc.noaa.gov/oa/climate/vosclim/vosclimdata.html>
 - Database Access for Subsetting Purposes:

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[VOSclim Home](#) / [NCDC Marine Data Home](#)

[About VOSclim](#) [VOSclim Datasets](#) [VOSclim Data Monitoring](#) [VOSclim Ship Information](#)

Voluntary Observing Ship Climate (VOSclim) Fleet



Image courtesy of Seatrade Reefer Chartering

 **VOS**
Voluntary Observing Ship Climate Fleet

<http://www.ncdc.noaa.gov/oa/climate/vosclim/vosclim.html>

DATASET: Hourly precipitation data for NWS and cooperative U.S. stations--DSI3240.

-Hour-by-hour precipitation amounts.
-About 2800 stations currently active. Period of Record -Generally 1948 to present.

- **Data Type** -ASCII character data. **Quality Control** -Undergoes automated and manual quality control. **Data Origin** -Various sources including ASOS and punched tape from stations. **Content/Elements**

Notes -See <http://www.ncdc.noaa.gov/doclib> for further details.

-Data are also available on a CD-ROM set. **Online** -<http://cdo.ncdc.noaa.gov>

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NNDC CLIMATE DATA ONLINE

Climate Data Online

DataSet/Product Options

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[Printable Web Form](#)
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NOMADS-Model Data *
Nexrad Radar Imagery *
Precipitation Data, 15 minute (Over 3,400 U.S., some non-U.S. sites)
Precipitation Data, Hourly (Over 6,100 U.S., some non-US sites)
Precipitation Data, Hourly Rainfall Event Statistics *
Satellite Data

* Free Product

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<http://cdo.ncdc.noaa.gov/CDO/dataproduct>

DATASET: 15-Minute precipitation data for NWS and cooperative U.S. stations--DSI3260.

- **Data Type** -ASCII character data. **Quality Control** -Undergoes automated and manual quality control. **Data Origin** -Various sources including ASOS and punched tape from stations. **Content/Elements**

-Precipitation amounts for 15-minute increments.
 -About 2400 stations currently active. **Period of Record**
 -Generally 1971 to present. **Notes** -See <http://www.ncdc.noaa.gov/doclib> for further details. **Online** -<http://cdo.ncdc.noaa.gov>



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NNDC CLIMATE DATA ONLINE

Climate Data Online

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[Local Climatological Data](#)
[NOMADS—Model Data *](#)
[Nexrad Radar Imagery *](#)
[Precipitation Data, 15 minute \(Over 3,400 U.S., some non-U.S. sites\)](#)
[Precipitation Data, Hourly \(Over 6,100 U.S., some non-US sites\)](#)

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DATASET: Cooperative station and NWS summary of day data for the U.S. DS13200.

- **Data Type** -ASCII character data. **Quality Control** -Undergoes automated and manual quality control. **Data Origin** -Various sources including key-entry from forms and ASOS. **Content/Elements**

-Includes summary of day parameters such as maximum/minimum temperatures, precipitation,

and snowfall/snow depth. Some stations have additional data such as evaporation and soil temperature. -About 8000 stations currently active.

- **Period of Record** -Generally 1948 to 2010 (some late 1800's to 2010). **Notes** -See <http://www.ncdc.noaa.gov/doclib> for further details. -Data are also available on a CD-ROM set. **Online** -<http://cd0.ncdc.noaa.gov>



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NNDC CLIMATE DATA ONLINE

Climate Data Online

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DataSet/Product Options

Satellite Data

Surface Data, Annual Summary (Over 18,000 U.S., some non-U.S. sites)

Surface Data, Daily (Over 19,000 U.S. some non-US sites)

Surface Data, Global Summary of the Day *

Surface Data, Hourly Global (Over 10,000 worldwide sites)

Surface Data, Marine (1662-2007 ICOADS v. 2.5, NCDC 2008-current) *

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DATASET: Summary of day data from NOAA's National Weather Service (U.S.), Community Collaborative Rain, Hail and Snow Network {CoCoRaHS (U.S.)}, Department of Defense (U.S. and foreign), and global sites {Global Historical Climate Network (GHCN-Daily)}.

- **Data Type** -ASCII character data. **Quality Control** -All datasets are QC'd (automated). **Data Origin** -Various sources including ASOS, directly from stations, and key-entry. **Content/Elements**

-Includes maximum/minimum temperatures, precipitation, snowfall and snow depth. Some U.S. stations have additional data such as evaporation and soil temperature. Element content varies greatly by station. -Approximately 28,000 stations are regularly updated, with over 75,000 having available historical data.

- **Period of Record** -Generally 1890's to present with the earliest observations beginning in the 1830's. **Notes** -See <http://www.ncdc.noaa.gov/doclib> for further details.


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Global Historical Climatology Network - Daily

Access

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Contacts

Description - Introduction

GHCN (Global Historical Climatology Network)-Daily is an integrated database of daily climate summaries from land surface stations across the globe. Like its monthly counterpart ([GHCN-Monthly](#)), GHCN-Daily is comprised of daily climate records from numerous sources that have been integrated and subjected to a common suite of quality assurance reviews.

GHCN-Daily now contains records from over 75000 stations in 180 countries and territories. Numerous daily variables are provided, including maximum and minimum temperature, total daily precipitation, snowfall, and snow depth; however, about two thirds of the stations report precipitation only. Both the record length and period of record vary by station and cover intervals ranging from less than year to more than 175 years.

The dataset is regularly reconstructed (usually every weekend) from its 20-plus data source components to ensure that GHCN-Daily is generally in sync with its growing list of constituent sources. During this process, quality assurance checks are applied to the full dataset. On most weekdays, GHCN-Daily station data are updated when possible from a variety of data streams, which also undergo a suite of quality checks.

Each updated and fully reprocessed copy of the GHCN-Daily dataset is assigned a unique [version number](#), and each dataset version is then archived at NOAA/NCDC for potential future retrieval. GHCN-Daily and its processing system also serve as the official archive and processing system for U.S. Cooperative Observer data, which have been comprehensively integrated into the dataset along with other U.S. daily data sources.

Users of U.S. data are encouraged to see further notes on the [Source Data](#) page regarding real-time versus time-delayed, archive quality updates. In general, real-time, update data streams are replaced by archive-quality sources 45 to 60 days after the close of a data month.

Major changes to the processing system as well as announcements of significant data additions to GHCN-Daily are provided via an RSS feed and in the [GHCN-Daily status reports](#). GHCN-Daily data documentation is provided in the [readme.txt](#) file, which includes a definition of the data quality and data source flags that accompany each datum.



Photo courtesy Grant Goode/NCDC

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NNDC CLIMATE DATA ONLINE

Global Summary of the Day (GSOD)

Retrieve data for:

Worldwide
 Geographic Region None Selected
 Country United States
 Station Range (IDs): to

[Continue](#) [Previous Page](#) [Clear Selections](#)

	Data format documentation
	Station List
	FTP Access
	Comma Delimited data sample
	Space Delimited data sample
	Graph sample

[Data and pricing \(if applicable\) details at the CDO Help Page](#)

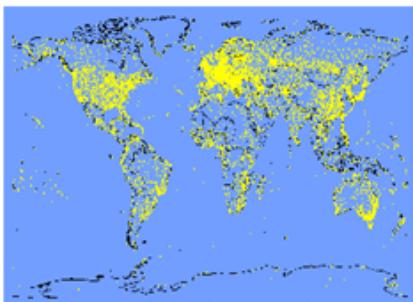
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<http://www7.ncdc.noaa.gov/CDO/cdoselect.cmd?datasetabbv=GSOD&countryabbv=georegionabbv=>

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Global Surface Summary of Day

Version 8 - Over 9000 Worldwide Stations - Updated Daily



- [Important Notes](#)
- [Informational Files](#)
- [Data Files \(Current\)](#)
- [Data Files \(All Years\)](#)
- [Data Files \(Severe Events\)](#)
- [Map of Station Locations](#)
- [Uncompression Software](#)
- [Anonymous FTP Instructions](#)
- [Details/Format](#)
- [Interactive Selection/Graphing](#)

<http://www.ncdc.noaa.gov/cgi-bin/res40?pagae=gsod.html>

DATASET: Monthly summary data for NWS and cooperative U.S. stations (DSI3220), and global sites (Global Historical Climate Network).

- **Data Type** -ASCII character data. **Quality Control** -Undergoes automated and manual quality control. **Data Origin** -Monthly summaries built from NWS and cooperative daily data as described above; and monthly data provided by individual countries.

- **Content/Elements**

-Includes temperature (mean minimum, mean maximum, overall mean, extreme minimum, extreme maximum), precipitation amount, and for selected stations--snowfall, evaporation data, and soil temperature data. -About 8000 stations currently active.

- **Period of Record** -Generally 1948 to present (some late 1800's to present) **Notes** -See <http://www.ncdc.noaa.gov/doclib> for further details. **Online** -<http://cdo.ncdc.noaa.gov>



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Keyword(s), City, Station Name

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NNDC CLIMATE DATA ONLINE

Climate Data Online

DataSet/Product Options

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Surface Data, Daily (Over 19,000 U.S. some non-US sites)
 Surface Data, Global Summary of the Day *
 Surface Data, Hourly Global (Over 10,000 worldwide sites)
 Surface Data, Marine (1662-2007 ICOADS v. 2.5, NCDC 2008-current) *
Surface Data, Monthly (Over 18,000 U.S. some non-US sites)
 Surface Data, Monthly Extremes - U.S. *

* Free Product

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DATASET: Summary of month data for U.S. and global sites {Global Historical Climate Network (GHCN-Monthly)}.

- **Data Type** -ASCII character data. **Quality Control** -All datasets are QC'ed (automated). **Data Origin** -Various international sources. Updated monthly primarily from CLIMAT messages.

• **Content/Elements**

-Includes monthly mean temperature, monthly maximum/minimum temperatures, and monthly total precipitation. Element content varies greatly by station. -Approximately 20,000 stations with precipitation data and 7280 stations with monthly mean temperature. **Period of Record** -Generally late 1800's to present with the earliest observations beginning in the 1700's. **Notes** -See <http://www.ncdc.noaa.gov/doclib> for further details. **Online** -www.ncdc.noaa.gov/ghcnm

The screenshot shows the homepage of the National Climatic Data Center's Global Historical Climate Network-Monthly (GHCN-M) dataset. The header includes the NOAA logo, the National Environmental Satellite, Data, and Information Service (NESDIS) logo, and the National Climatic Data Center logo. A navigation bar at the top has links for 'DOC > NOAA > NESDIS > NCDC'. There is a search field and a 'Search NCDC' button. Below the header, the page title is 'GHCN Monthly' with the subtitle 'National Oceanic and Atmospheric Administration National Climatic Data Center'. A main text block states: 'Effective May 2, 2011, the Global Historical Climatology Network-Monthly (GHCN-M) version 3 dataset of monthly mean temperature will replace GHCN-M version 2 as the dataset for operational climate monitoring activities. Although GHCN-M version 2 will continue to be updated with recent observations until June 30, 2011, users are encouraged to begin using GHCN-M version 3. Please see: [Summary of Recent Changes in the GHCN-M Temperature Dataset and Merged Land-Ocean Surface Temperature Analyses](#)'. Below this, there are links for 'Version 3', 'Version 2', 'Compare Version 2 vs. Version 3', 'Temperature Anomaly Maps', and 'Temperature Anomaly Time Series'. A 'Questions?' section provides contact information for the Climate Services and Monitoring Division, including address, phone, fax, email, and request E-mail. It also mentions an email for climate data requests. At the bottom, there are links for 'Climate Monitoring | GHCN Monthly | Help', 'Privacy Policy', 'Open Access to Data', the USA.gov logo, and 'Disclaimer'.

www.ncdc.noaa.gov/ghcnm.

Disclaimer: As of 11/17/2011, the version of GHCN-Monthly for temperature variables is V.3.1; for precipitation variables, the version is v.2.0. The latest information about GHCN-Monthly Version Availability is accessible from the GHCN-Monthly Website.

DATASET: National Solar Radiation Database 1991-2005 for the U.S., Guam, and Puerto Rico--DSI3284.

- **Data Type** -ASCII character data. **Quality Control**- Underwent extensive QC of data. **Data Origin** – National Renewable Energy Laboratory (NREL) Content/Elements

-The 1991 – 2005 NSRDB contains hourly solar radiation (including global, direct, and diffuse) and meteorological data for 1,454 stations. This update builds on the 1961-1990 NSRDB, which contains data for 239 stations. This includes the conventional

time series for NSRDB ground stations as well as a one-tenth-degree gridded data set that contains hourly solar records for 8 years (1998 – 2005) for the United States (except Alaska above 60° latitude) for about 100,000 pixel locations (at a nominal 10-km-by-10-km pixel size).

- **Period of Record** -1991 to 2005

Notes –See <ftp://ftp.ncdc.noaa.gov/pub/data/nsrdb-solar/solar-only/documentation/NSRDBusermanual.pdf> for further details

Online – <http://ols.nndc.noaa.gov/plolstore/plsql/olstore.prodspecific?prodnum=C00668-TAP-A0001>

The screenshot shows the NREL National Solar Radiation Database homepage. At the top, there's a logo for NREL (National Renewable Energy Laboratory) and text indicating it's a national laboratory of the U.S. Department of Energy, Office of Energy Efficiency & Renewable Energy. Below this is a blue banner with the text "Innovation for Our Energy Future". The main title "The 1991–2005 National Solar Radiation Database" is prominently displayed. To the left of the title is a paragraph of text explaining the importance of solar resource knowledge for installation planning. To the right is a large map of the United States and its territories (Alaska, Hawaii, and Guam) with numerous colored dots representing solar resource data points. An inset map shows the same information for Alaska. A legend on the right side identifies the data types and sources:

- 1991 - 2005 Update (dots representing Class I, II, III)
- Measured Solar (circles)
- 1961 - 1990 NSRDB (stars)

<http://www.ncdc.noaa.gov/oa/samples/NSDBfsv5.pdf>

DATASET: ASOS 1-minute and 5-minute data--

DSI6401-6406.

- **Data Type** -ASCII character data. **Quality Control** -Undergoes automated QC. **Data Origin** -Data originate from ASOS ingest process. Content/Elements
 - Includes most surface elements observed in the U.S. (wind speed and direction, temperature, dew point, cloud

data, sea level pressure, altimeter setting, station pressure, present weather, visibility, precipitation amount, etc).

-About 900 stations currently active. Period of Record

-Generally 1998 to present (2000 to present online).

Notes -<http://www.ncdc.noaa.gov/doclib>

Online -<http://www.ncdc.noaa.gov/oa/climate/climatedata.html#asosminutedata>

 **Surface Data: 1-Minute/5-Minute**
(Minute readings of temperature, precipitation, winds, pressure, etc)

ASOS 1-Minute Data [FTP](#) [Sample](#)
(2000 - present, DSI 6405/page 1 and DSI 6406/page 2 data)

ASOS 5-Minute Data [FTP](#) [Sample](#)
(2000 - present, DSI 6401 data)

<http://www.ncdc.noaa.gov/oa/climate/climatedata.html#asosminutedata>

DATASET: Service Records Retention System (SRRS) data.

- **Data Type** -ASCII character and binary data. **Quality Control** -No quality control performed. **Data Origin** -Data originate from ingest of NWS products. **Content/Elements**
-Includes: 1) all surface, upper-air, forecast, warning, and other text bulletins received via SRRS pro-

cesses; 2) many National Weather Service (NWS)/National Centers for Environmental Prediction (NCEP) Model-Generated Charts and Analyses; and 3) the National Digital Forecast Database (NDFD).

- **Period of Record** -Late 2000 to present. **Notes** -These are the “raw” data as received from NCEP and NWS. **Online** – <http://nomads.ncdc.noaa.gov/ncep/NCEP>



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SRRS Analysis and Forecast Charts

Chart Type Selection

The Service Records Retention System (SRRS) is an archive and access system for selected National Weather Service (NWS) operational products maintained at the National Climatic Data Center.

NOTE: This system provides National Weather Service charts that are archived at the National Climatic Data Center. Additional charts from earlier years are available for [offline ordering](#).

North American Analysis
North American Forecast
Northern Hemisphere Analysis
Northern Hemisphere Forecast
Ocean Analysis
Ocean Forecast
Southern Hemisphere Analysis
Tropical Analysis
US Radar Summary

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<http://nomads.ncdc.noaa.gov/ncep/NCEP>

DATASET: Worldwide upper-air observations—Integrated Global Radiosonde Archive (IGRA)

- **Data Type** -ASCII character data. **Quality Control**
-Undergoes some automated QC. **Data Origin** -Various sources including digital data from the stations (U.S. plus some Mexican), key entered data, digital data from source countries, and GTS.
- **Content/Elements** -Replaced Comprehensive Aerological Reference Dataset (CARDS)—DS 6305. -Includes all

elements observed in upper air soundings--generally temperature, dew point depression, atmospheric pressure, wind direction and speed

-About 1500 globally distributed stations; 900 of the stations are currently active. Period of Record
-Generally 1946 to present. **Notes**—See <http://www.ncdc.noaa.gov/oa/climate/igra/index.php> for further details. **Online** -<http://www.ncdc.noaa.gov/oa/climate/igra/index.php>



NOAA Satellite and Information Service
National Environmental Satellite, Data, and Information Service (NESDIS)



National Climatic Data Center
U.S. Department of Commerce

Integrated Global Radiosonde Archive

Data Access

- ASCII Files (FTP)
- Maps/Charts
- Metadata

Description

- Introduction
- Source Data
- Data Coverage

Methods

- Data Integration
- Quality Control
- Bias Adjustment

Other

- Journal Articles
- Related Projects
- Status Reports
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Introduction

The Integrated Global Radiosonde Archive (IGRA) consists of radiosonde and pilot balloon observations at over 1500 globally distributed stations ([Figure 1](#)). Observations are available for standard, surface, tropopause and significant levels. Variables include:

- Pressure
- Temperature
- Geopotential Height
- Dewpoint Depression
- Wind Direction
- Wind Speed

The period of record varies from station to station, with many extending from 1970 to present ([Figure 2](#)). Station records are updated daily and are available online at no charge.



Photo courtesy of National Weather Service

DOC > NOAA > NESDIS > NCDC Enter Search Term(s):

[Privacy Policy](#) [Open Access to Data](#)  [Disclaimer](#)

<http://www.ncdc.noaa.gov/oa/climate/igra/index.php>

Specialized In-Situ Products

General Information

These Specialized Products can be provided on CD/DVD or as paper copy (unless otherwise indicated). Please call 828-271-4800 or email "ncdc.info@noaa.gov" for further details. There are charges involved for these services.

Cooperative Station Extremes Tabulation: This tabulation shows daily and monthly extremes for the entire period of record (generally 1948 to 2010) for U.S. cooperative and National Weather Service sites. There are currently over 8,000 active stations. The elements included are maximum/minimum temperature, precipitation, and snowfall.

Wind Rose Summary: This summary provides a statistical summary of wind speed vs. wind direction for any station (U.S. or foreign) reporting adequate observational data. Data are tabulated in incremental 'bins' such as 0-3 miles per hour, 4-7 miles per hour, etc. and can be run for periods of record through 2009.

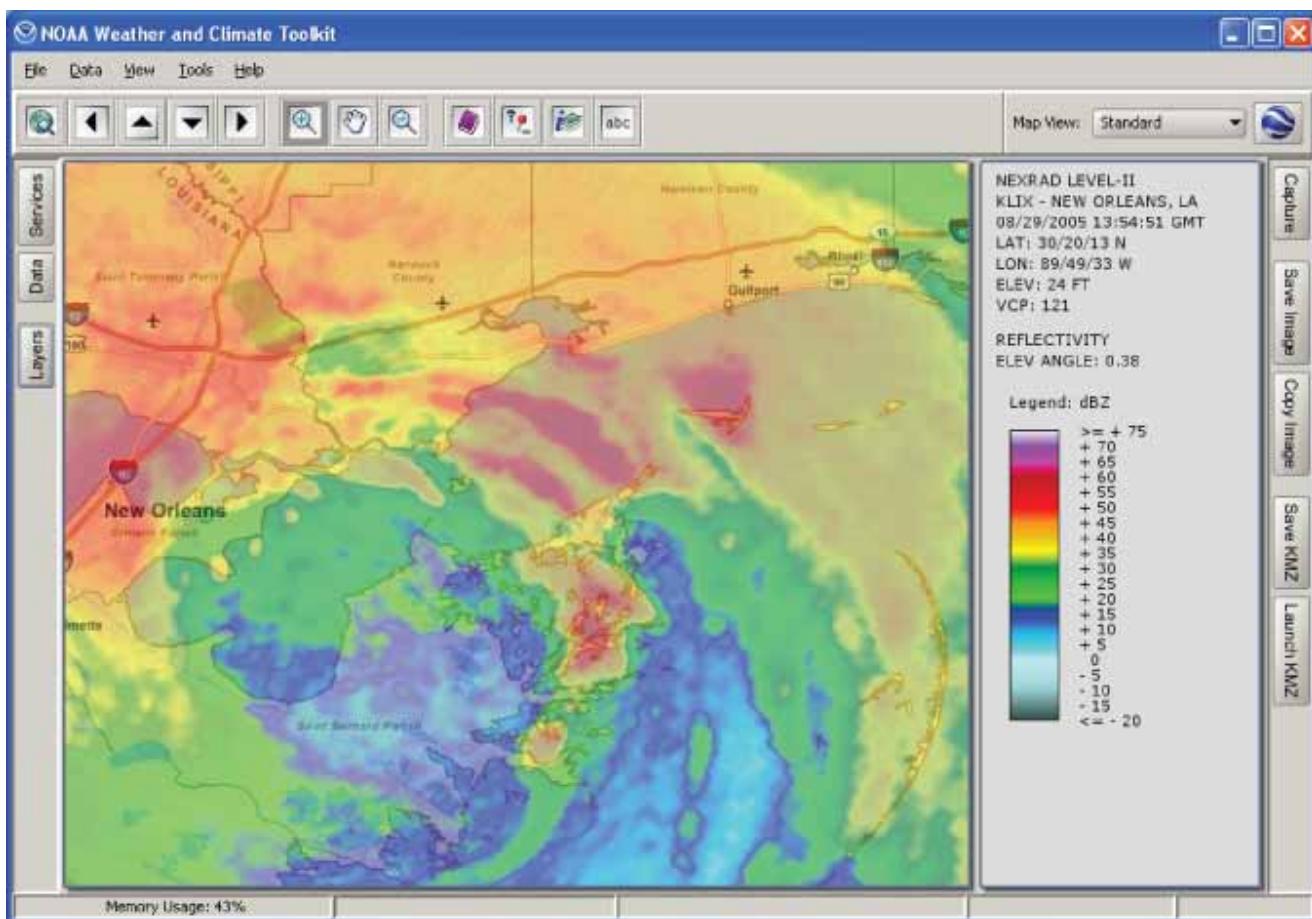
Mixing Height Summary: This summary provides a day by day estimate of the mixing height for the boundary layer by using surface and upper air observational data. It's often used for pollution and air dispersion models. This product is provided for U.S. sites only and can be run for periods of record through 2009.

Stability Array: This provides month by month averages of surface-based stability in Pasquill stability categories. Hourly or synoptic surface observations are used as input and can be run for periods of record through 2009.

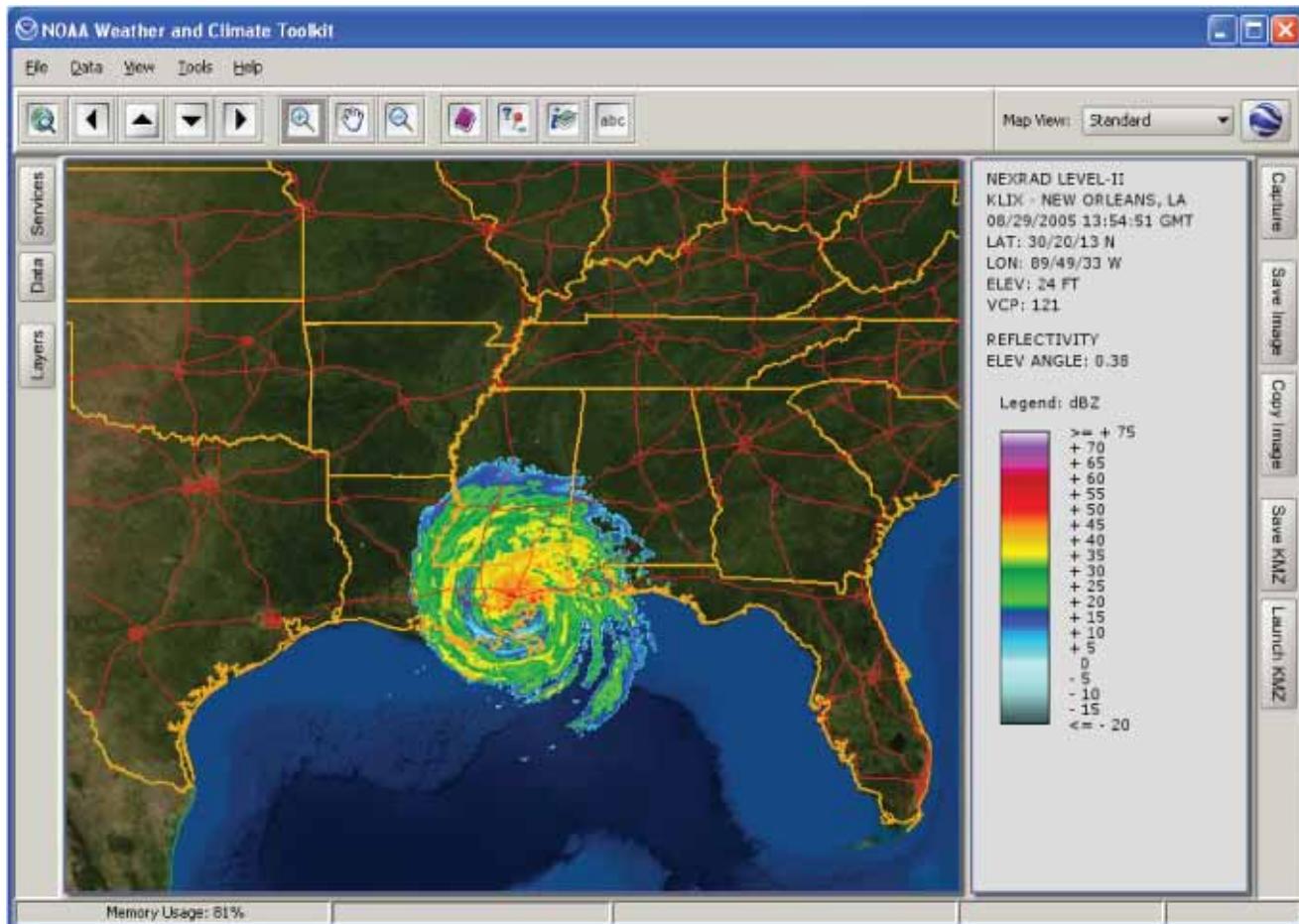
NEXRAD Products

The Next Generation Weather Radar system (NEXRAD) comprises 159 Weather Surveillance Radar-1988 Doppler (WSR-88D) sites throughout the United States and select overseas locations. This system is a joint effort of the United States Departments of Commerce (DOC), Defense (DOD), and Transportation (DOT). The controlling agencies are the National Weather Service (NWS), Air Force Weather Agency (AFWA) and Federal Aviation Administration (FAA), respectively. Level II data are the three meteorological base data quantities: reflectivity, mean radial velocity, and spectrum width. From these quantities, computer processing generates numerous

meteorological analysis products known as Level III data. Level II data are recorded at all NWS and several select CONUS DOD WSR-88D sites. Level III products are recorded at 155 of the 159 sites. The data are sent to the National Climatic Data Center (NCDC) for archiving and dissemination. All WSR-88Ds will undergo a modification to implement dual polarization capability over the next year. This new technology allows the WSR-88D to simultaneously transmit and receive in the horizontal and vertical planes, providing an additional dimension of weather features and giving the weather forecaster additional and improved tools to serve the public. A list



NEXRAD Level-II Base Reflectivity Image with ESRI background map:



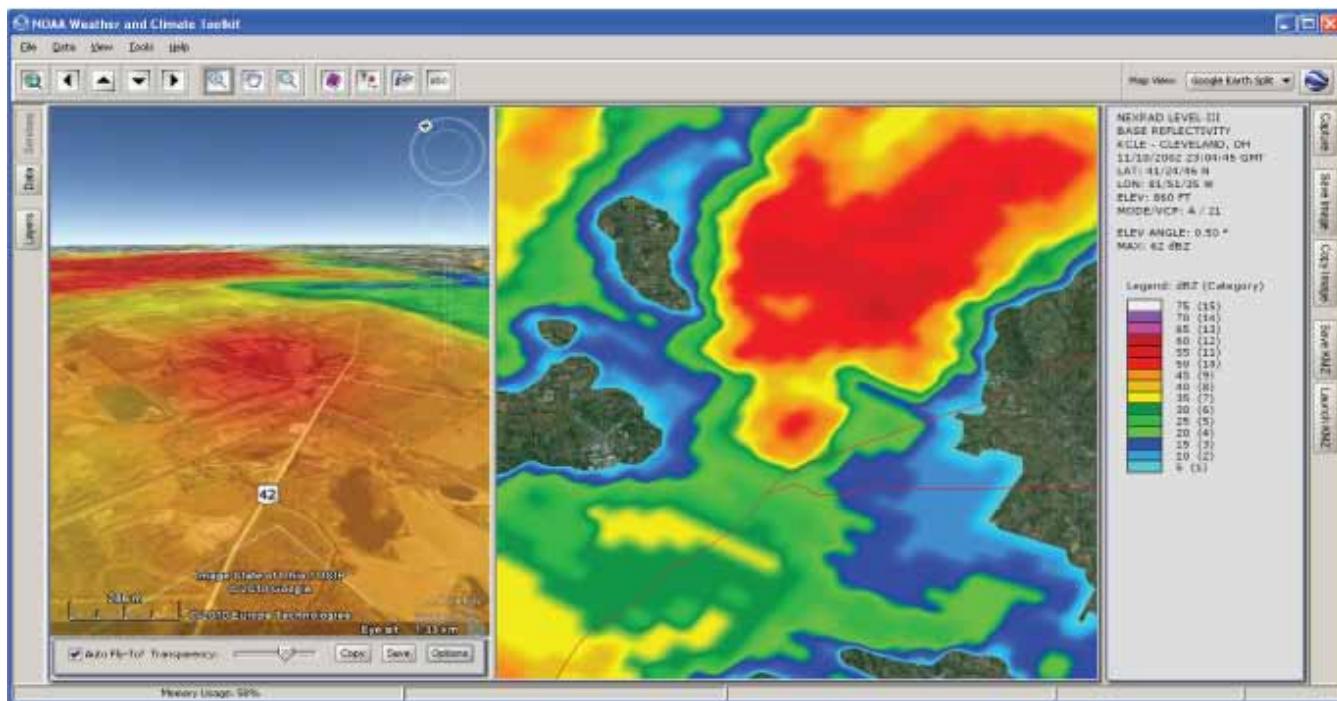
NEXRAD Level-II Base Reflectivity Image with ESRI imagery:

of all NEXRAD Level III products including the new dual polarization products can be found at the following site:

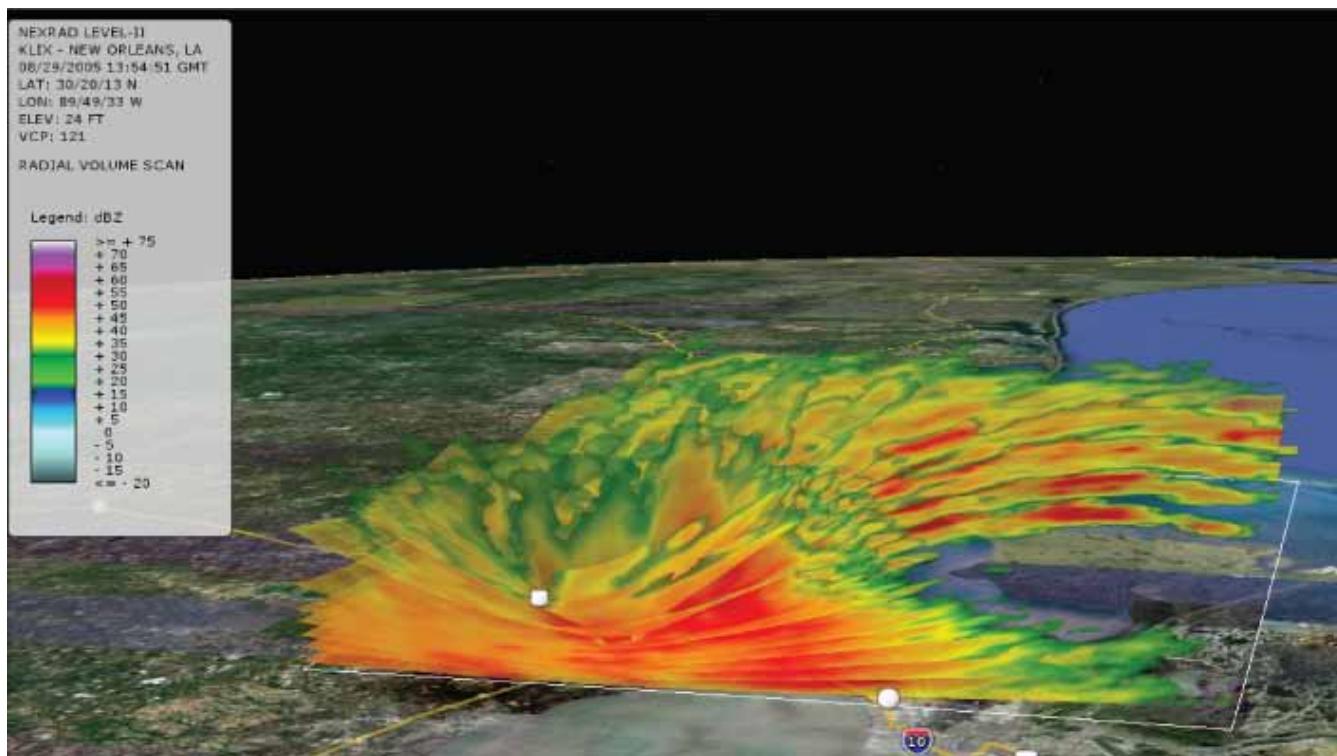
<http://www.ncdc.noaa.gov/oa/radar/radarproducts.html>

The NCDC provides a radar viewer and data export toolkit called NOAA's Weather and Climate Toolkit. It is free software which visualizes WSR-88D Level-II and Level-III NEXRAD Radar data from the NCDC Archive on Windows, Mac, and Linux platforms. This toolkit is the successor to the Java NEXRAD Tools and will visualize the new dual polarization products

Hurricane Katrina: 3-D volume scan KMZ output rendered in Google Earth.



Level-III Base Reflectivity with internal Google Earth plug-in



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[!\[\]\(3ae2f424ae6cb191ec1956414efba864_img.jpg\) Latest News](#)
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[Level-II Format Change - Notification](#)
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NCDC Radar Resources

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Welcome to the NCDC Radar Page

Please hover your mouse over the links to the upper left, or simply scroll down the page to select and view more content from this area of the NCDC website. This is the first in a series of steps we're taking to improve our site. Should you have something specific to look for, submit a search in the golden search bar above.

NCDC Radar Resources Web page <http://www.ncdc.noaa.gov/oa/radar>

The following two sites provide access to NEXRAD Level II and III data:
<http://www.ncdc.noaa.gov/nexradinv> and <http://has.ncdc.noaa.gov/>

[Try this list of ALL sites in the NCDC Archive \(includes inactive sites\)](http://www.ncdc.noaa.gov/nexradinv/choosesite.jsp)

Web site screenshot of <http://www.ncdc.noaa.gov/nexradinv/>

Web site screenshot of <http://has.ncdc.noaa.gov/>

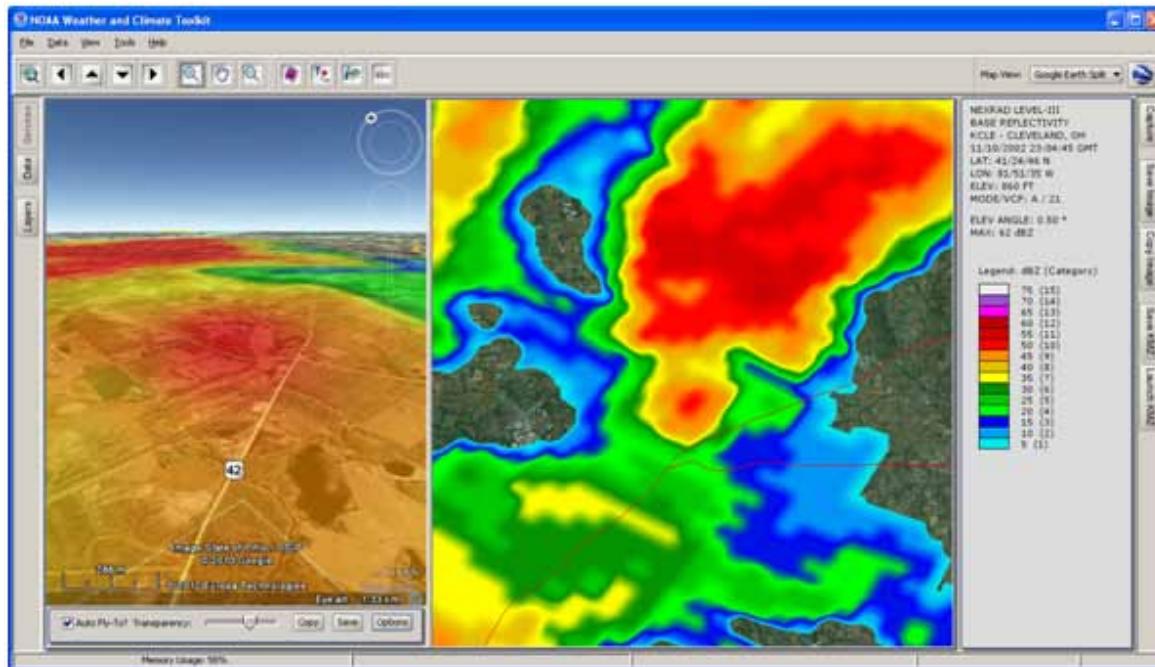
The Weather and Climate Toolkit

NOAA's Weather and Climate Toolkit is an application that provides simple visualization and data export of weather and climatological data archived at NCDC. The Toolkit also provides access to weather/climate web services provided from NCDC and other organizations, as well as community standard data formats. The Viewer provides tools for displaying custom data overlays, Web Map Services (WMS), animations and basic filters. The export of images and movies is provided in multiple formats. The Data Exporter allows for data export in both vector point/line/polygon and raster grid formats. Additional visualization capabilities include constant altitude slices of radial volume scans and isosurface export to Google Earth.

Major updates in 2011 added support for:

- NEXRAD Dual-Polarization support (Level-II moments and Level-III products)
- Isosurface export to Google Earth (KMZ format)

Example screenshots:



Level-III Base Reflectivity with Google Earth plug-in.

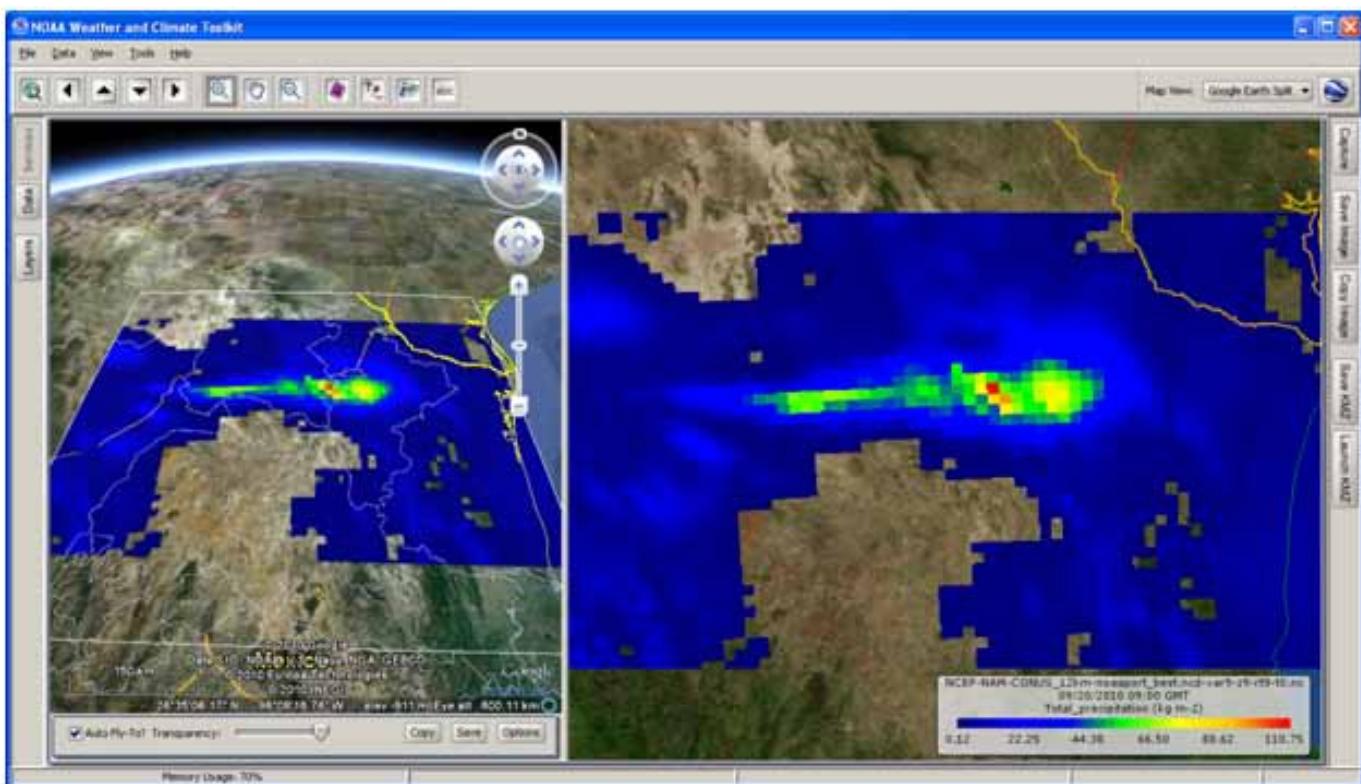
- CAPPI (Constant Altitude Plan Position Indicator) - a constant altitude cross-section of Radar data.

Current data types supported:

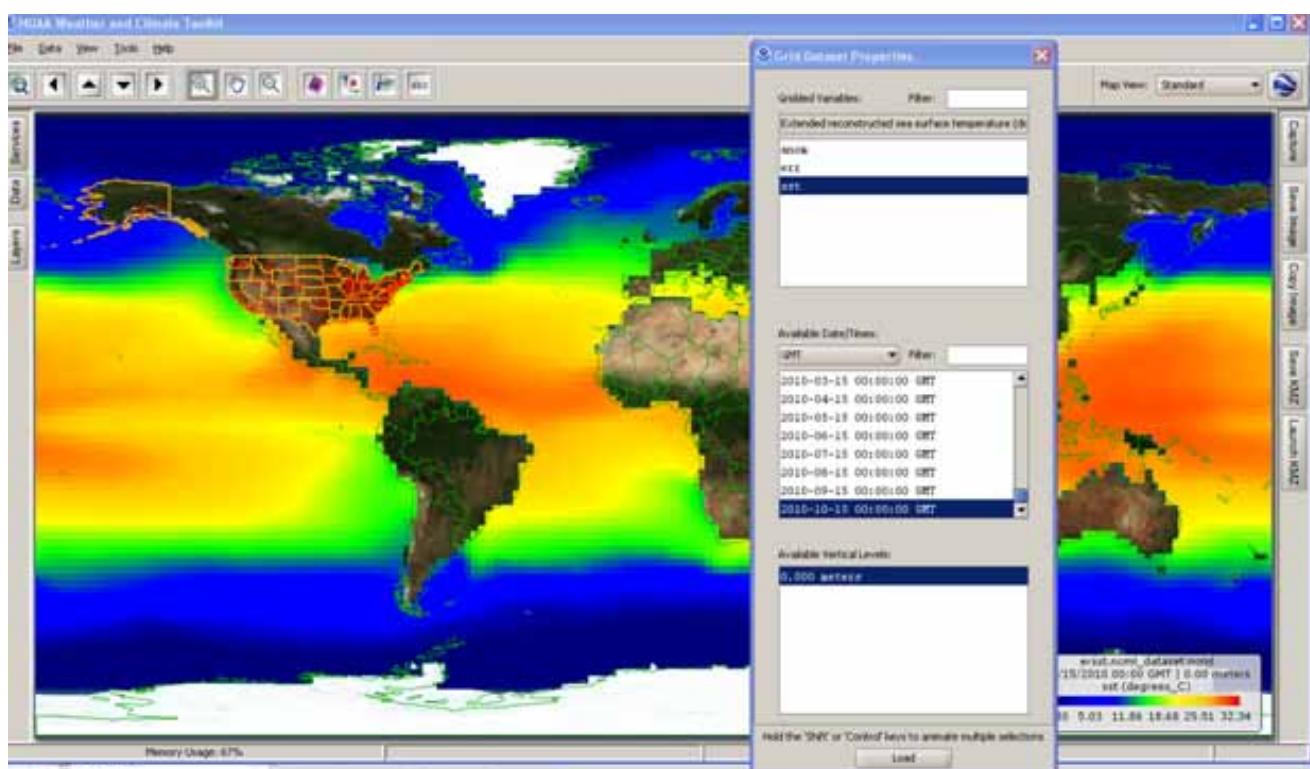
- NEXRAD Radar Data (Level-II and Level-III)
- GOES Satellite AREA Files
- Gridded NetCDF, OPeNDAP and HDF following Climate-Forecast (CF) conventions.
- NCML (NetCDF Markup Language)
- GRIB, GINI, Gempak formats

Current data services:

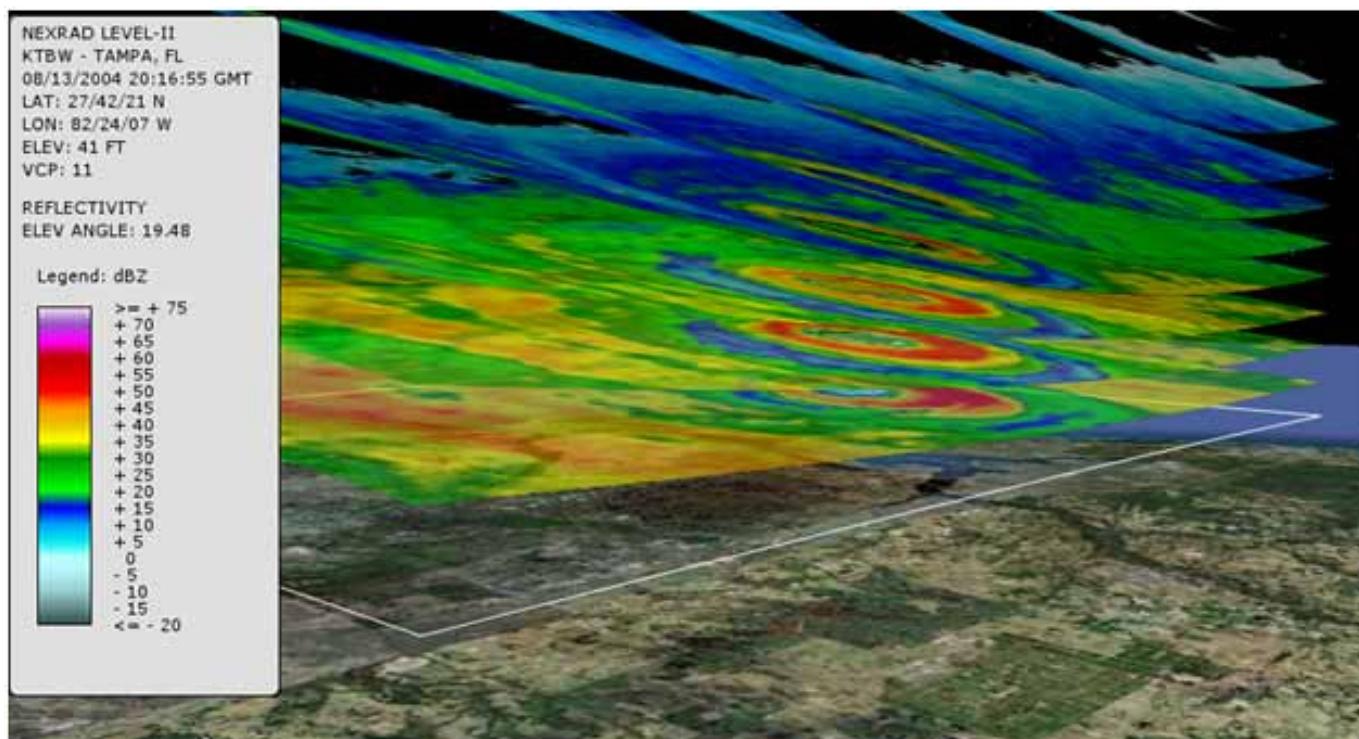
- U.S. Drought Monitor Service (from the National Drought Mitigation Center (NDMC))



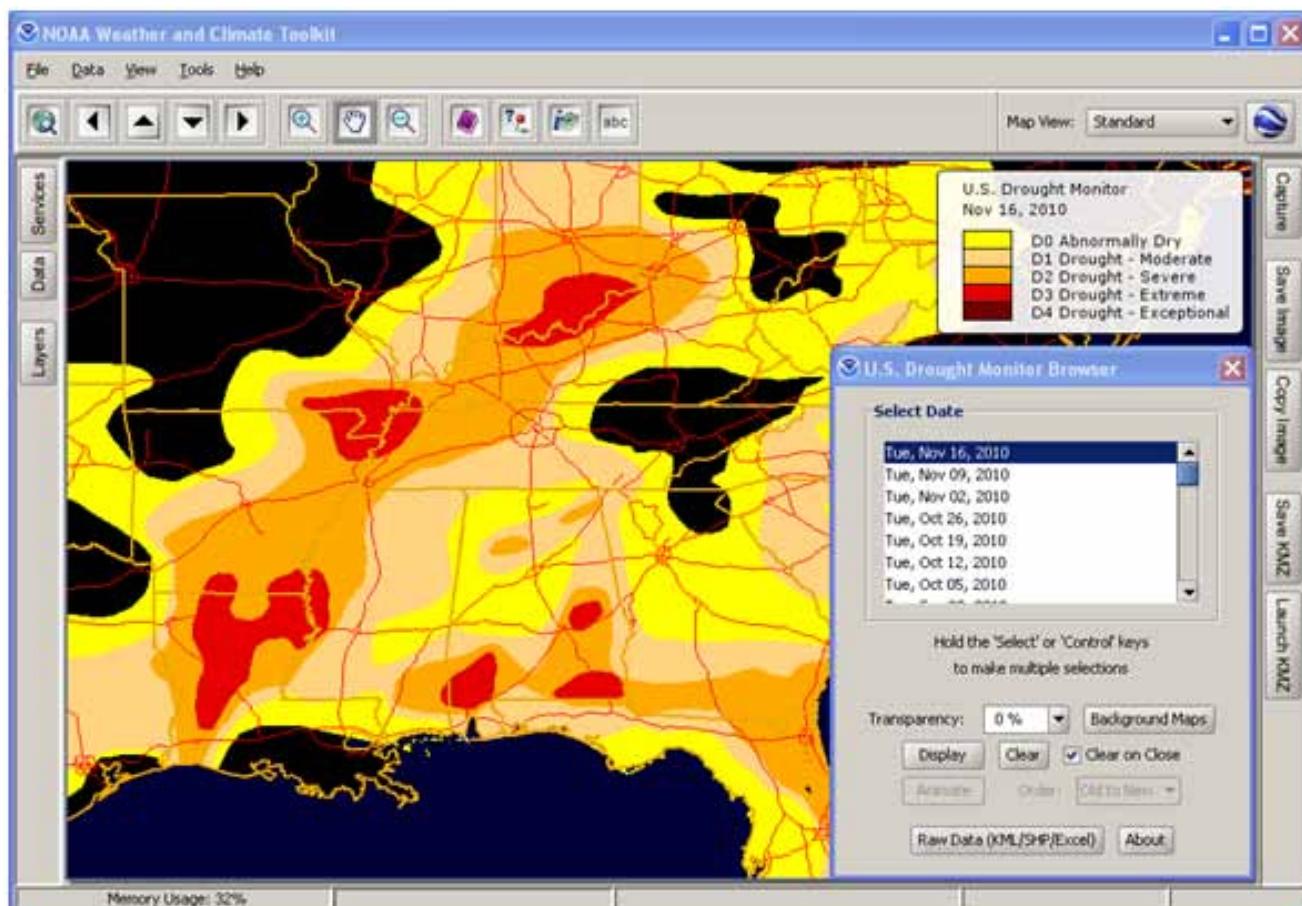
NCEP North American Model (NAM) spatial subset with Google Earth plug-in



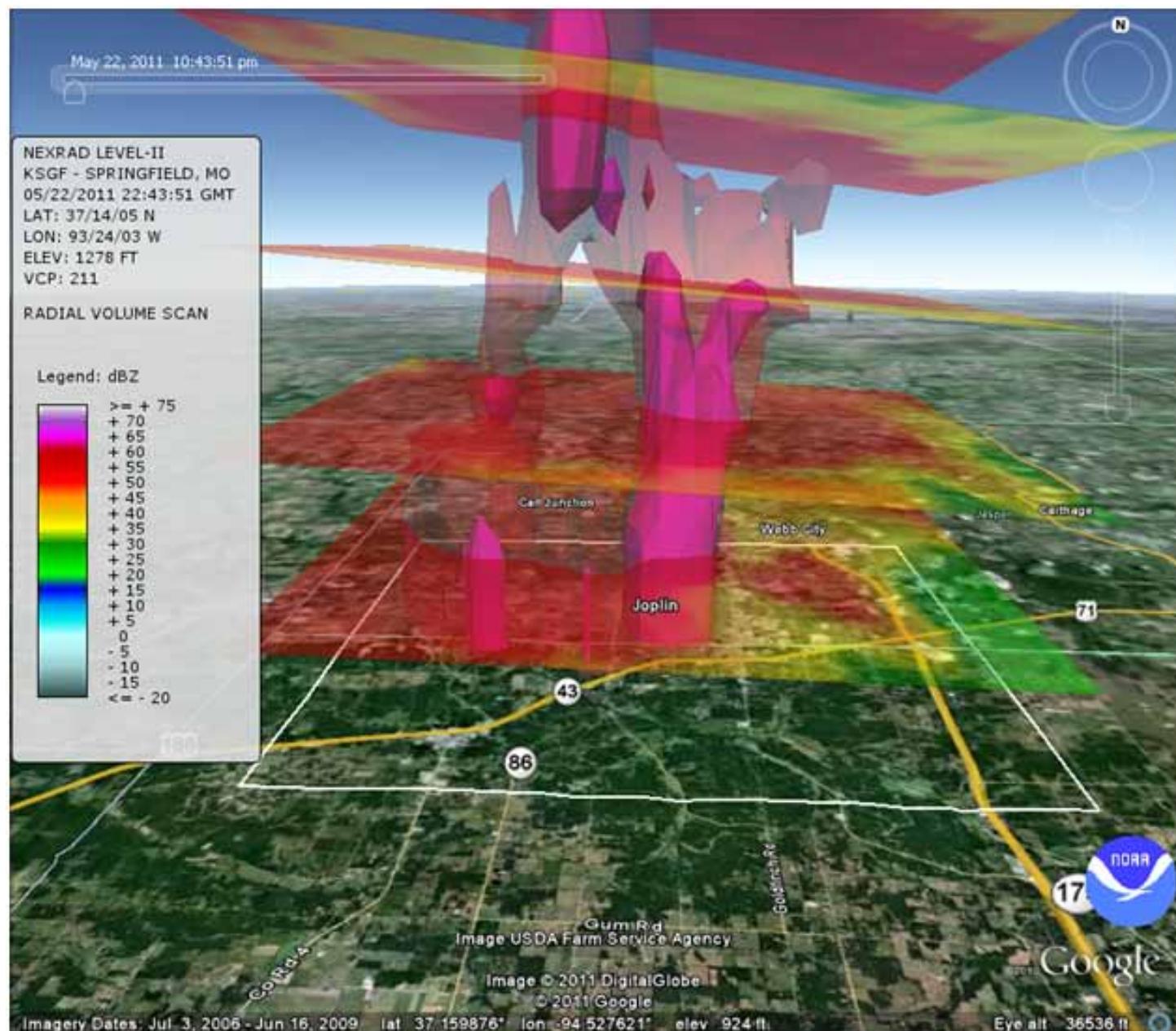
Sea Surface Temperature (remote OPeNDAP dataset)



Hurricane Charley: 3-D volume scan KMZ output rendered in Google Earth



U.S. Drought Monitor—Web Map Service



Isosurface visualization in Google Earth of May 22, 2011 Joplin, MO tornado

Satellite Data, Products & Service

Satellite data and derived products from NOAA's satellites are available through the National Climatic Data Center and the Comprehensive Large Array-data Stewardship System (CLASS). NOAA's two primary satellite systems are the Geostationary Operational Environmental Satellite (GOES) and the Polar-orbiting Operational Environmental Satellite (POES). We also distribute data and products from the Defense Meteorological Satellite Program (DMSP)

and European Organization for the Exploitation of Meteorological Satellites (EUMETSAT) Metop satellite. Please check out the many new blended products in common data formats that have been developed for long-term climatological studies.



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 **Satellite Data and Products**

Free Access to Online Satellite Data

- Raw radiance data from instruments (POES Level 1b, GOES-GVAR, DMSP TDR, etc), as well as satellite products - [Comprehensive Large Array-data Stewardship System \(CLASS\)](#)
- [Air-Sea Surface Processes: Projects and Datasets](#) 
- [Optimum Interpolation 1/4 Degree Daily Sea Surface Temperature Analysis](#)
- Globally gridded calibrated satellite radiance data - [International Satellite Cloud Climatology Project \(ISCCP\)](#)
- Globally gridded high resolution sea surface wind speed products - [Blended Sea Winds Products](#)
- Global infrared soundings from NOAA-2 through NOAA-5 - [Vertical Temperature Profile Radiometer \(VTPR\) Data](#)

<http://www.ncdc.noaa.gov/oa/satellite.html>

On-line Satellite Data - Comprehensive Large Array-data Stewardship System (CLASS)

CLASS is an IT component of the NOAA Data Centers. It enables users to perform collection level and granule level searches and ordering for polar-orbiting and geostationary satellite level 1 and level 2 products from NOAA, the Department of Defense Meteorological Satellite Program,

and EUMETSAT (Metop satellite only). Data delivery options include FTP, HTTP, and physical digital media. The former two options are free within the constraints provided via the web interface. Subscription services for near real-time data and high volume orders can be requested through the CLASS Help Desk. Below are a few views of the CLASS web system.

CLASS Home Page—www.class.noaa.gov

Details - Metadata, Documentation

Spatial

Select Geometry: XYPlane

Note: XY Plane searches are resized to enforce a minimum lat/lon difference of 0.1 degrees.

Temporal

Start Date (format: YYYY-MM-DD) <input type="text" value="2007-11-09"/> <input type="button" value="..."/>	Start Time (format: HH:MM:SS) <input type="text" value="00:00:00"/> <input type="button" value="..."/>
End Date (format: YYYY-MM-DD) <input type="text" value="2007-11-16"/> <input type="button" value="..."/>	End Time (format: HH:MM:SS) <input type="text" value="23:59:59"/> <input type="button" value="..."/>

Specify the range of the times for: Each Day Or The Entire Range Of Days

Advanced Search

CLASS Search Criteria Page

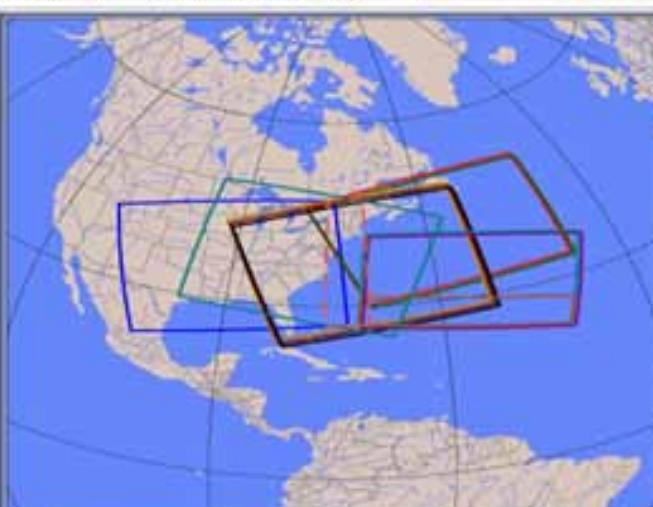
Search Results - AVHRR

Currently you have 25 hits out of 880740 entries.
There are 0 (AVHRR) items in your shopping cart. The shopping cart limit is 100.

View Details	Shopping Cart	Inventory ID	Datatype	Orbit	Start Time	End Time	Satellite	Dataset Name
1	<input checked="" type="checkbox"/>	9833923	AVHRR_GAC	49430	2007-11-15 22:35:42.612	2007-11-16 00:30:11.105	N15	NSS_GHRR_NK.D07319.S2235.E00 30.B4942931.GC
2	<input checked="" type="checkbox"/>	9834223	AVHRR_GAC	5574	2007-11-15 23:18:43.005	2007-11-16 01:01:36.504	M02	NSS_GHRR_M2.D07319.S2318.E01 01.B0557374.SV
3	<input checked="" type="checkbox"/>	9834233	AVHRR_FRAc	5574	2007-11-15 23:18:43.005	2007-11-16 01:01:36.671	M02	NSS_FRAc_M2.D07319.S2318.E01 01.B0557374.SV
4	<input type="checkbox"/>	9834563	AVHRR_GAC	28034	2007-11-16 02:06:41.247	2007-11-16 03:53:13.247	N17	NSS_GHRR_NM.D07320.S0206.E03 53.B2803435.WI
								NSS_HRPT_NM.D07320.S0211.E02 23.B2803434.WI
								NSS_HRPT_NM.D07320.S0212.E02 27.B2803434.WI
								NSS_GHRR_NN.D07320.S0518.E07 11.B1282930.WI
								NSS_HRPT_NN.D07320.S0531.E05 43.B1282929.WI
								NSS_HRPT_NN.D07320.S0539.E05 45.B1282929.WI
								NSS_GHRR_NN.D07320.S0705.E06 36.B1283031.SV

http://www.class.noaa.gov - Comprehensive Large-Array data Stewardship System

File Edit View History Bookmarks Tools Help



Please note, any data sets that share the same coordinates will be shifted for visibility.

Pan

Lat: 36.650
Lon: 285.500
Bearing: 10 deg

Zoom Factor: 1.4472096

Zoom In
 Zoom Out
 ZX
 (Detail)
 Fit Range

CLASS Search Results Page with Separate Map Window

Overlapped Region of Geographic Search:



Click on the thumbnail to view the full image.

Temporal (Geographic Overlap):

Start Date: 2007-11-16 14:34:45.392	End Date: 2007-11-16 14:40:29.33
Seconds: 344	Direction: Descending

Spatial (Geographic Overlap):

1. NW Lat,Long: 47.14,-77.98	2. NE Lat,Long: 41.38,-41.05
3. SW Lat,Long: 27.3,-78.83	4. SE Lat,Long: 22.75,-50.61

Data Set Browse Imagery:

Channel 2: 

Channel 4: 

Histogram Equalize

Click on a thumbnail to the left to open a window with a full sized browse image. You may then use the controls above to manipulate the full sized browse image.

Note, thumbnail images have been Histogram Equalized, are in the jpeg format at quality 50% and size 50%. Full browse images are in the jpeg format at quality 100% and sized 200% to bring out more details.

CLASS Detail Page showing Metadata and Browse Images

Shopping Cart							
Total size of selected data sets:	113664 Bytes	You will be notified at:					
Number of data sets:	3	Order Comment:					
Cost:	<input type="button" value="Free"/>	Delivery Method:	<input type="button" value="Electronic (FTP - Free)"/>				
<input type="button" value="Register"/> <input type="button" value="Commit Changes"/> <input type="button" value="Remove All"/> <input type="button" value="Reset"/>							
AVHRR							
Jump to AVHRR Results Jump to AVHRR Search Page							
Order	Dataset Name	Include Digital Signature	Include Archive Header	Scan Line Selection	Bits/Pixel	Channel Number	Spatial Resolution
<input checked="" type="checkbox"/>	Click on a dataset name to see the dataset details	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="button" value="8"/> <input type="button" value="10"/> <input type="button" value="16"/>	<input type="button" value="1"/> <input type="button" value="2"/> <input type="button" value="3"/> <input type="button" value="4"/> <input type="button" value="5"/>	
<input checked="" type="checkbox"/>	AVHRR_GAC NSS.GHRR.NK.D07319.S2235.E00 30.B4942931.GC	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="button" value="8"/> <input checked="" type="button" value="10"/> <input type="button" value="15"/>	<input type="button" value="1"/> <input type="button" value="2"/> <input type="button" value="3"/> <input type="button" value="4"/> <input type="button" value="5"/>	4
<input checked="" type="checkbox"/>	AVHRR_GAC NSS.GHRR.M2.D07319.S2318.E01 01.B0557374.SV	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="button" value="8"/> <input checked="" type="button" value="10"/> <input type="button" value="16"/>	<input type="button" value="1"/> <input type="button" value="2"/> <input type="button" value="3"/> <input type="button" value="4"/> <input type="button" value="5"/>	4
<input checked="" type="checkbox"/>	AVHRR_FRAC NSS.FRAC.M2.D07319.S2318.E01 01.B0557374.SV	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="button" value="8"/> <input checked="" type="button" value="10"/> <input type="button" value="16"/>	<input type="button" value="1"/> <input type="button" value="2"/> <input type="button" value="3"/> <input type="button" value="4"/> <input type="button" value="5"/>	1

CLASS Shopping Cart—Order Page

International Satellite Cloud Climatology Project (ISCCP)
 Ongoing research at NOAA's National Climatic Data Center (NCDC) is progressing toward producing a new satellite resource for climate science. Originating from the International Satellite Cloud Climatology Project (ISCCP), the data are observations from all channels on the GOES series, the European Meteorological satellite (Meteosat) series, the Japanese Geostationary Meteorological Satellite (GMS) series and the Chinese Fen-yung 2C (FY2) series. The period of record covers 1979 through the present, yet its total size is less than two terabytes since the data are sampled to 10 km and 3 hour resolution. Because the original data was archived in various formats, a consistent format has been developed to make access to the data sets easier. For

the scientific researchers needing a high resolution global gridded data set the new ISCCP B1 product may be the one you need. <http://www.ncdc.noaa.gov/oa/rsad/isccpb1/index.php>

Global ISCCP B1 Browse System (GIBBS)

As a by-product of an effort to recreate a streamlined user friendly ISSCP B1 product, NCDC has produced a satellite browse dataset containing full earth images beginning as early as 1974 and updated daily. The GIBBS contains browse images for every three hours from all geostationary satellites around the world. The link to the GIBBS is located on the left navigation bar of the ISSCP B1 data Rescue web site as shown in the following screen captures.

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GIBBS: Global ISCCP B1 Browse System

Select year...		YEAR (# of images)		1974 (985)	1975 (0)	1976 (2)	1977 (0)	1978 (5394)	1979 (19361)
1980 (10467)	1981 (21626)	1982 (30417)	1983 (31581)	1984 (17181)	1985 (16150)	1986 (15779)	1987 (20175)	1988 (19349)	1989 (15903)
1990 (17339)	1991 (17559)	1992 (20419)	1993 (27079)	1994 (26505)	1995 (25309)	1996 (31851)	1997 (32264)	1998 (36901)	1999 (41512)
2000 (42348)	2001 (42484)	2002 (42362)	2003 (42376)	2004 (43235)	2005 (55018)	2006 (58140)	2007 (49085)	2008 (48299)	2009 (44103)
2010 (46860)									

1015418 total satellite images
Last Updated: Sat Nov 20 2010, 04:05:30 EST

<http://www.ncdc.noaa.gov/gibbs/>

Hurricane Satellite ISSCP B1 (HURSAT-B1)

HURSAT-B1 data are derived from International Satellite Cloud Climatology Project (ISCCP) B1 data and spans the period 1978 to 2006. It provides coverage of global tropi-

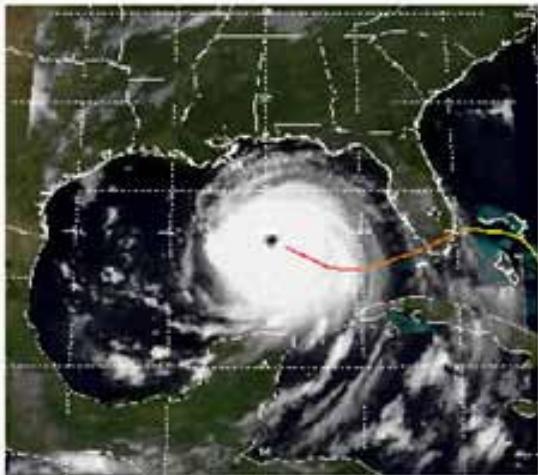
cal cyclones at 8-km and 3-hourly resolution. Also, check out the list of hurricane movies derived from HURSAT

<http://www.ncdc.noaa.gov/oa/rsad/hursat/movie.php>

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NCDC > Satellite Data > HURSAT: Hurricane Satellite Data

Introduction HURSAT-B1 Summary Details Revisions Movies Data Access Bibliography HURSAT-Basin HURSAT-MW Development Links Contacts	<h3>Introduction</h3> <p>The purpose of the HURSAT project is to provide Tropical Cyclone-“centric” satellite data. The goal is to keep data small and portable. In doing so, HURSAT data are gridded and stored using the netCDF file format.</p> <p>The HURSAT data project began with HURSAT-B1, but there is a need for HURSAT data from other satellite data sources (which have different temporal and spatial resolutions). We aim to be responsive to user’s needs. So if one of the HURSAT flavors best suits your work, please let us know. Also, if you would like to see a new HURSAT flavor (not shown in the list at left) please contact us.</p> 
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<http://www.ncdc.noaa.gov/oa/rsad/hursat/index.php>

Climate Data Records (CDR) Program

The Climate Data Records (CDR) program is part of NOAA's mandate to provide the nation with objective data and tools to help characterize, understand, predict, mitigate and adapt to climate change and variability. CDRs are the result of the Scientific Data Stewardship (SDS) Project, an inter-agency partnership originated in 2002 to develop and

implement a robust, sustainable and scientifically defensible approach to producing and preserving climate records from satellite data. In 2009, the SDS Project was renamed the CDR Program (CDRP). Currently, there are nine operational products offered from NCDC with more on the way. Please follow the link below for access and documentation

NOAA NATIONAL CLIMATIC DATA CENTER
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

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CLIMATE DATA RECORD PROGRAM

Welcome to NCDC's CDR Program

Serving the Public

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News

samsi
NSF • DOD • NCAR • UNC • NASA

NOAA's National Climatic Data Center (NCDC) recently initiated a satellite Climate Data Record (CDR) program to continuously provide objective climate information derived from weather satellite data that NOAA has collected for more than 30 years. These data comprise the longest record of global satellite mapping measurements in the world, and are complemented by data from other sources including NASA and Department of Defense satellites as well as foreign satellites.

The mission of NOAA's Climate Data Record Program is to develop and implement a robust, sustainable, and scientifically defensible approach to producing and preserving climate records from satellite data.

WHAT ARE CDRs?
The National Research Council (NRC) defines a CDR as a time series of measurements of sufficient length, consistency, and continuity to determine climate variability and change. ([National Research Council, 2004](#)).

For the first time, NOAA is applying modern data analysis methods, which have advanced significantly in the last decade, to these historical global satellite data. This process will unravel the underlying climate trend and variability information and return new economic and scientific value from the records. In parallel, NCDC will maintain and extend these Climate Data Records by applying the same methods to present-day and future satellite measurements.

WHY ARE CDRs IMPORTANT?
The results will provide trustworthy information on how, where and to what extent the land, oceans, atmosphere and ice sheets are changing. In turn, this information will be used by energy, water resources, agriculture, human health,

Serving the Public

Energy

Water

Disaster

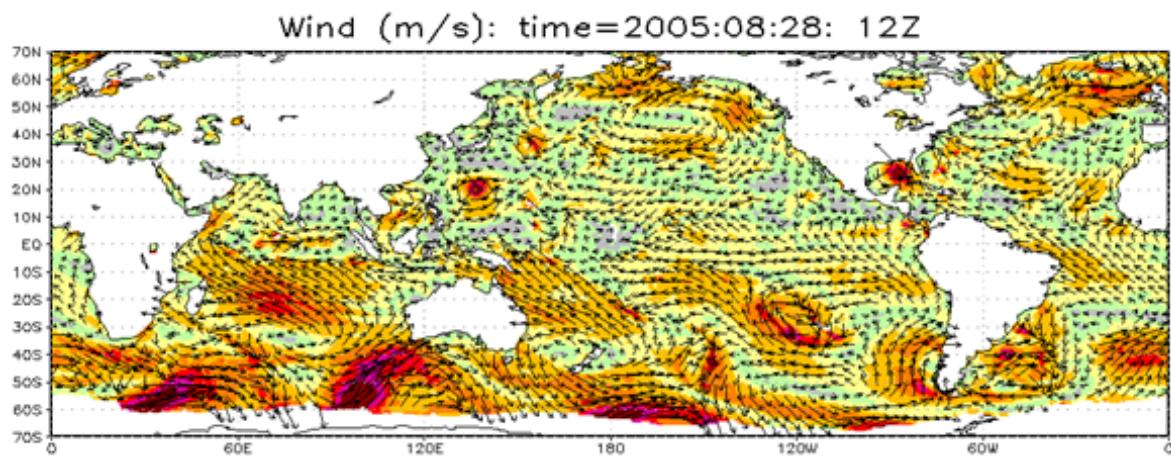
Agriculture

- NOAA's Climate Portal
- United States Global Change Research Program
- Group on Earth Observations

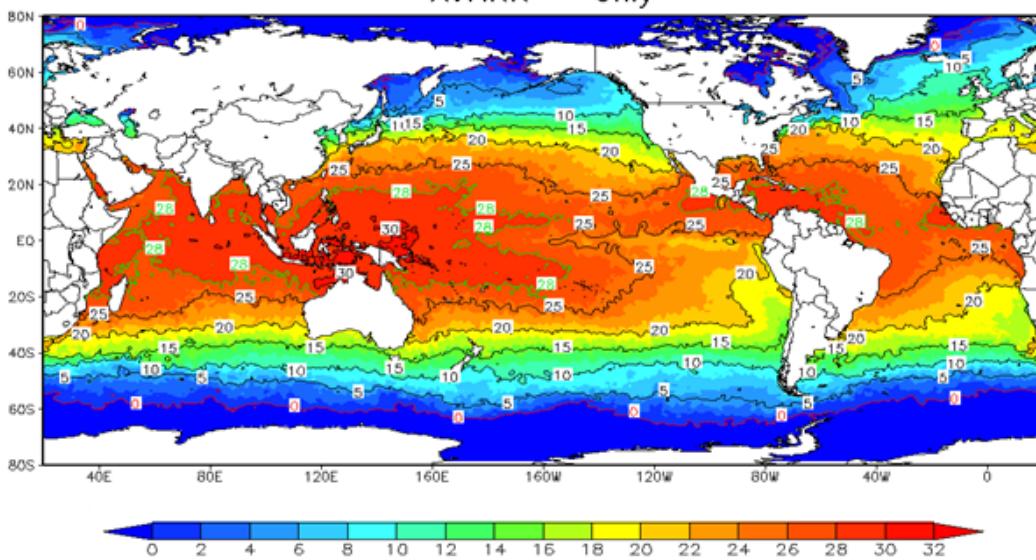
<http://www.ncdc.noaa.gov/sds/operationalcdrs.html>

Blended Sea Winds

The Blended Sea Winds product contains globally gridded, high resolution ocean surface vector winds and wind stresses on a global 0.25° grid, and in multiple time resolutions of 6-hourly, daily, monthly, and a 11-year (1995–2005) climatological monthly analyses. The period of record is 9 July 1987 to present. Data are accessible through FTP or OPeNDAP/THREDDS Data Server. See <http://www.ncdc.noaa.gov/oa/rsad/air-sea/seawinds.html>



Daily OISST Intv2: 28NOV2011
AVHRR – only



**NOAA Optimum Interpolation
1/4 Degree Daily Sea Surface
Temperature Analysis**

The optimum interpolation (OI) sea surface temperature (SST) analysis is produced daily on a 0.25° grid. The analysis uses in situ and satellite SST's plus SST's simulated by sea ice cover. Before the analysis is computed, the satellite data is adjusted for biases. For more

Weather and Climate Toolkit – satellite and radar viewer and more!

 **NOAA Satellite and Information Service** 
National Environmental Satellite, Data, and Information Service (NESDIS)

National Climatic
Data Center
U.S. Department of Commerce 

DOC > NOAA > NESDIS > NCDC

NOAA's Weather and Climate Toolkit

Quick Links

- [Weather and Climate Toolkit Home](#)
- [Order NEXRAD Data](#)
- [NCDC Radar Resources](#)
- [NOAA Radar Operations Center](#)
- [NCDC's Storm Events Database](#)

Toolkit

- [Download/Installation](#)
- [Find Data](#)
- [Image Gallery](#)
- [Java Requirements](#)
- [Export Formats](#)
- [Batch Processing](#)
- [Credits](#)
- [API / Source Code](#)

Documentation

- [User Guide/Tutorials](#)
- [FAQ](#)
- [Presentations](#)

Introduction

NOAA's Weather and Climate Toolkit is an application that provides simple visualization and data export of weather and climatological data archived at NCDC. The Toolkit also provides access to weather/climate web services provided from NCDC and other organizations.

The Viewer provides tools for displaying custom data overlays, Web Map Services (WMS), animations and basic filters. The export of images and movies is provided in multiple formats. The Data Exporter allows for data export in both vector point/line/polygon and raster grid formats.

Current data types supported:

- CF-compliant Gridded NetCDF
- Generic CF-compliant Irregularly-Spaced/Curvilinear Gridded NetCDF/HDF
- GRIB1, GRIB2, GINI, GEMPAK, HDF (CF-compliant) and more gridded formats
- GOES Satellite AREA Files
- NEXRAD Radar Data (Level-II and Level-III)
- U.S. Drought Monitor Service (from the National Drought Mitigation Center (NDMC))
- OPeNDAP support for Gridded Datasets

Planned future data types:

- Station data access via NetCDF or REST Web Services
- NOAA/NCDC Severe Weather Data Inventory

[New Features](#) / [FAQ](#) / [Tutorials](#)

<http://www.ncdc.noaa.gov/oa/wct/>

Satellite Products on THREDDS Data Server

 NOAA Satellite and Information Service 
National Environmental Satellite, Data, and Information Service (NESDIS)

National Climatic
Data Center
U.S. Department of Commerce 

NCDC > Satellite Data > NetCDF Data Access

Introduction

Data converter
AVHRR
GOES

THREDDS Data Access
ISCCP DX
ISCCP D1
ISCCP D2

GPCP (precipitation)
GACP (aerosol)
SRB (radiation)

Links

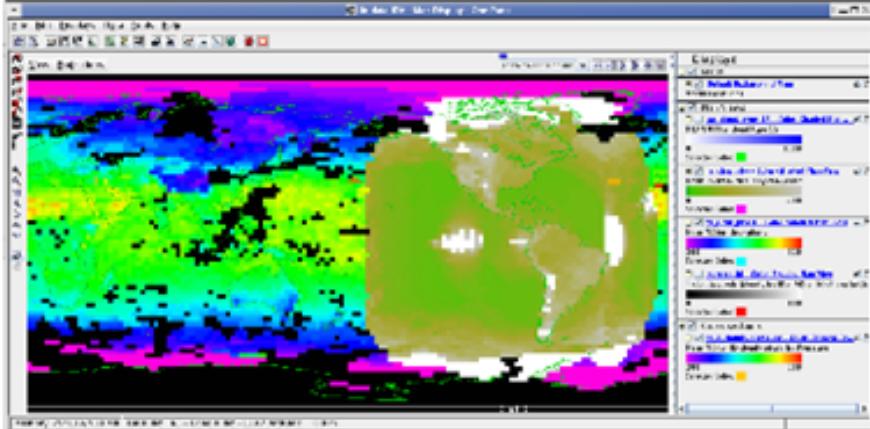
Contacts

Summary

NCDC is the archive of many satellite projects. New data access through THREDDS Data Server allows users to access data without knowing the data format.

The THREDDS Server is available [here](#).

Serving the data using TDS allows data, like ISCCP products, to be visualized using IDV.



Note: Data provided via TDS are not regularly updated. If you are interested in a time period which is not yet available, please email NCDC.SatOrder@noaa.gov to request that a specific data set be updated. Also, note that most data sets are only updated once or twice per year, thus access to real time data is not possible.

DOC > NOAA > NESDIS > NCDC Enter Search Term(s):

[Privacy Policy](#) [Open Access to Data](#)  [Disclaimer](#)

<http://www.ncdc.noaa.gov/oa/rsad/netcdf-access/index.php>

Custom Satellite Images:

NCDC provides custom satellite imagery from NOAA satellites based on user specified criteria. The images can be certified for court use. The minimum service cost is \$82.00. Please contact us for details on total costs and image enhancement options.


NOAA Satellite and Information Service 
 National Environmental Satellite, Data, and Information Service (NESDIS)

National Climatic
 Data Center
 U.S. Department of Commerce 

[DOC](#) > [NOAA](#) > [NESDIS](#) > [NCDC](#)

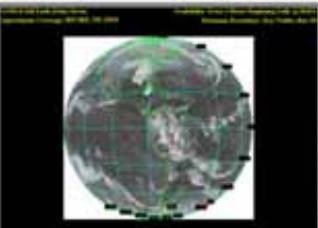
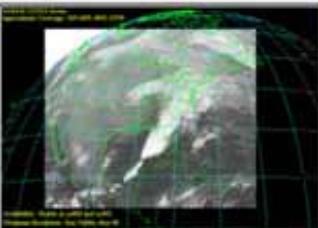
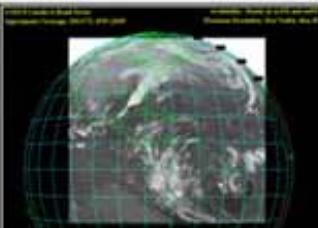
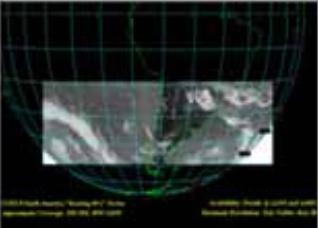
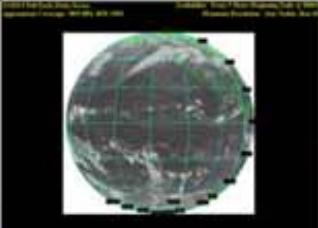
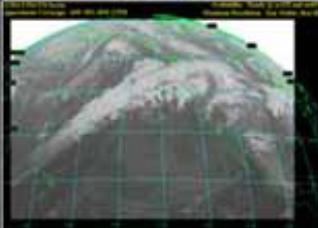
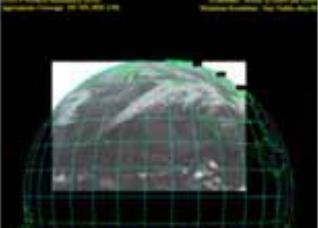
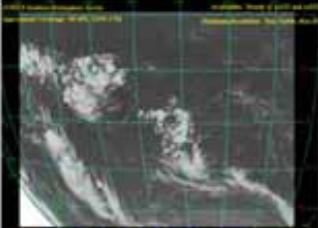
[Return to Satellite Data Page](#)

Sample GOES Image Products

[Sector Coverages](#)
[Resolution](#)
[Mapping](#)
[Enhancements](#)
[Specialized Services](#)

 **GOES-EAST/WEST Sector Coverages**

The table of images just below show the geographical coverages routinely covered by the GOES-East and GOES-West satellites. Clicking on each geographic region of interest will reveal the scheduled times each coverage is available. Additional imagery may be possible over smaller areas where severe or threatening conditions were occurring.

 GOES-8 Full Disk Sector	 GOES-8 CONUS Sector	 GOES-8 Ext N. Hemisphere Sector
 GOES-8 South America Sector	 GOES-q Full Disk Sector	 GOES-q PACUS Sector
 GOES-q Northern Hemisphere Sector	 GOES-q Southern Hemisphere Sector	

<http://www.ncdc.noaa.gov/oa/satellite/samplegoes.html>

Service Fees: While much of NOAA's NCDC satellite data and products are free to download from online IT systems, such as CLASS, service fees will apply for orders shipped on physical media. Our two most popular media are external disk drives and LTO tapes. Also, service fees may apply to very large orders in excess of 100 GB, which must be manually fulfilled and either copied to physical media or placed on FTP server. These types of orders can take several weeks to process and complete. Please contact the Satellite Services Group with your potential requirements to determine if service fees will apply in your situation.

Contact information for satellite data and products:

Telephone: 828-271-4850 x3183

Facsimile: 828-271-4876

E-mail: ncdc.satorder@noaa.gov

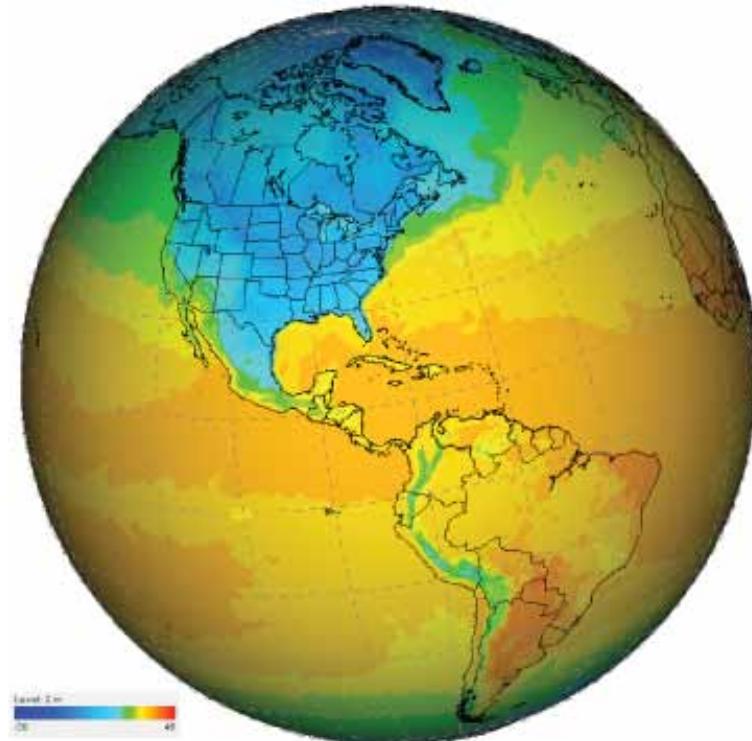
Model Data, Products &

National Climate Model Portal

Currently in its spin-up phase, the National Climate Model Portal (NCMP) will provide reliable, consistent, long-term public access, interoperability, and intercomparison of climate models and observational data sets for all levels of expertise and will be the initial access point for models under the NOAA Climate Services Portal (NCSP). With the development of tools for improvement and use of climate model data and information underway, an important early NCMP contribution is access to several reanalysis datasets, including the NCEP Climate Forecast System Reanalysis (CFSR) and North American Regional Reanalysis (NARR).

Global CFSR data in the figure below depict the very

impressive arctic air mass in place over North America on Christmas Day, 1983, under which numerous temperature records were broken and citrus crop damage measured in the billions. The NCMP website – currently under development and to be available at <http://ncmp.ncdc.noaa.gov> – will direct users to advanced model data services and information.



12 UTC 25 December 1983
CFSR 2 m Temperature (°C)
Generated from NCMP/NOMADS data with Unidata IDV

NOAA National Operational Model Archive and Distribution System

To address the growing need for real-time and retrospective access to a wide spectrum of model data the National Climatic Data Center (NCDC), National Centers for Environmental Prediction (NCEP) and Geophysical Fluid Dynamics Laboratory (GFDL) initiated the NOAA National Operational Model Archive and Distribution System (NOMADS). The model dataset archive established by NOMADS includes:

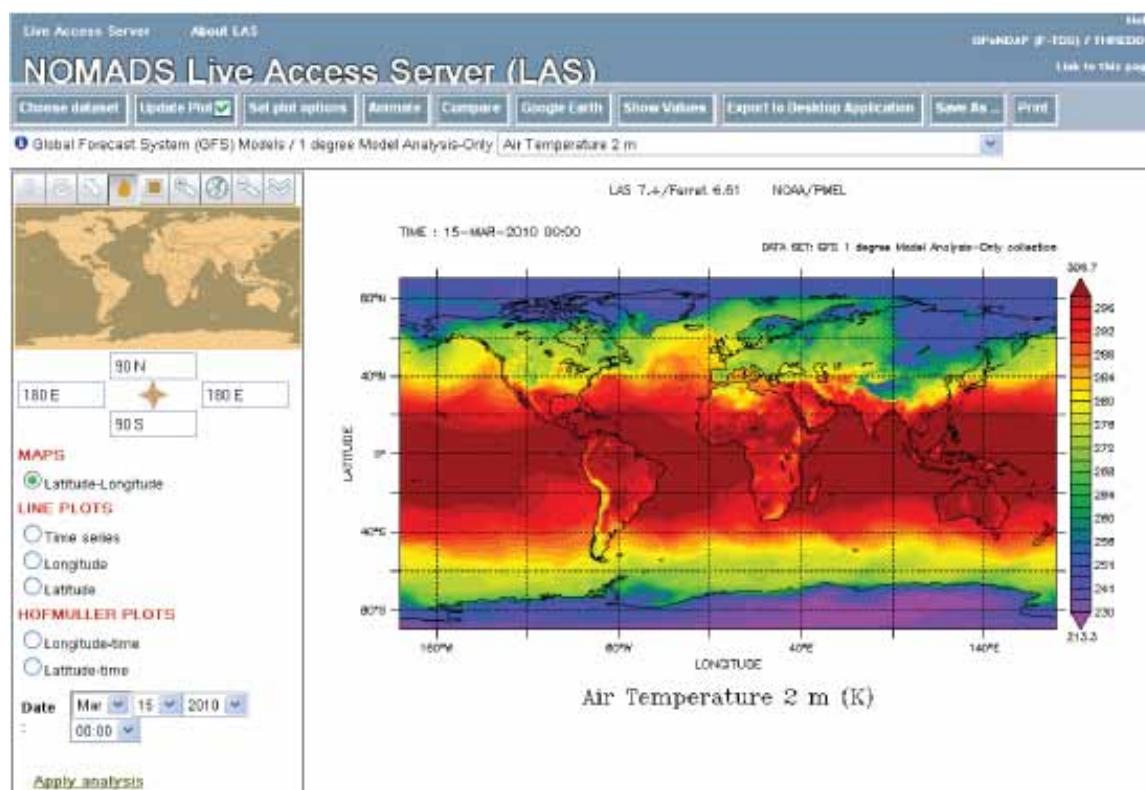
- Numerical Weather Prediction (NWP) models [GFS, NAM, RUC]
- Multi-member ensembles [GENS]
- Global Data Assimilation System (GDAS) model input and restart files

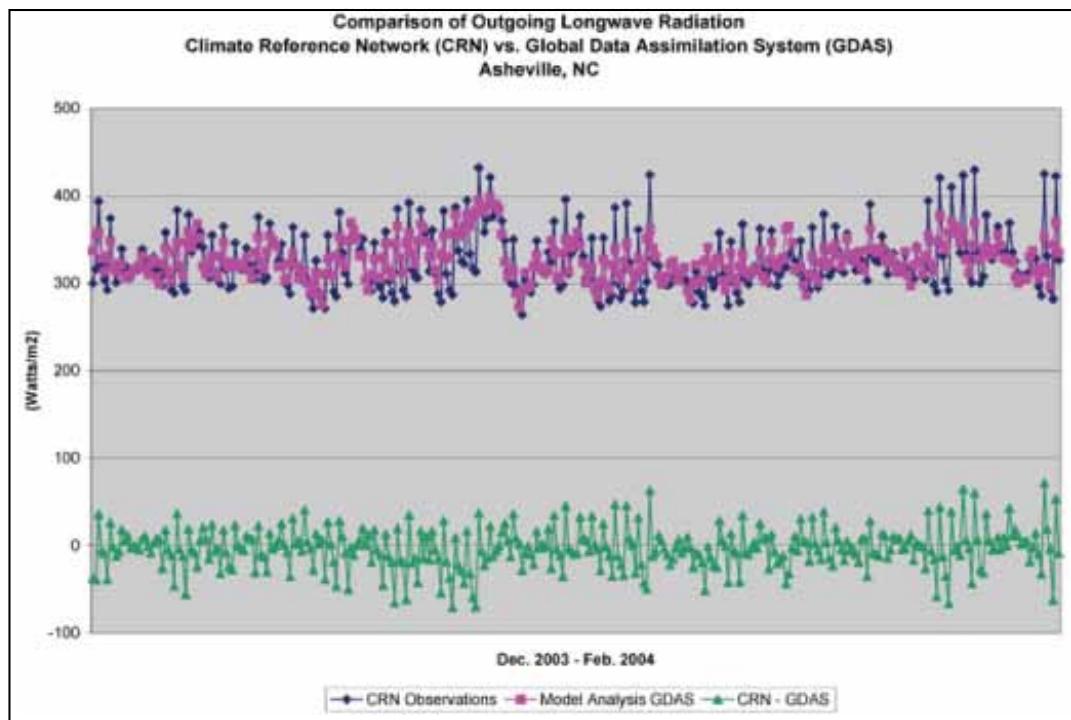
Methods of access for data and derived products:

- Distributed format independent access via OPeNDAP
- FTP and HTTP access to data subsets in their native format
- Web plotting service
- Live Access Server (LAS)
- OpenGIS Web Coverage Service (WCS) and Web Map Service (WMS) via Unidata's THREDDS Data Server (TDS)

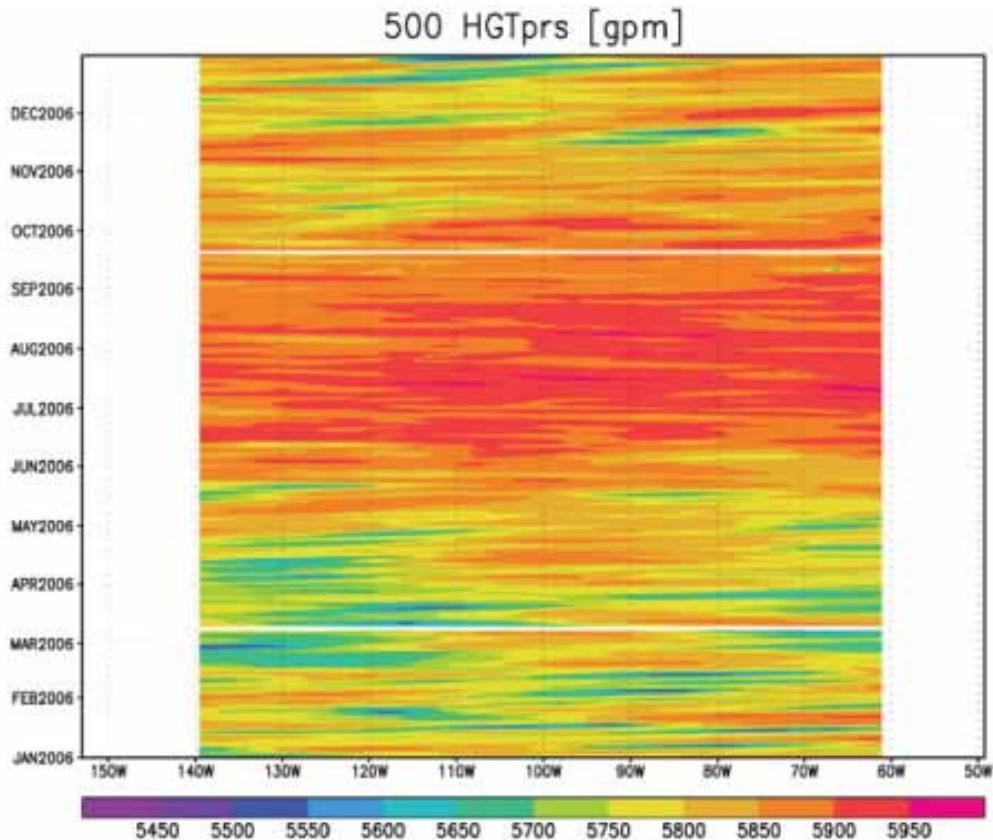
Additionally, NOMADS provides customer support for users of advanced model data and information.

NOMADS Home Page - <http://nomads.ncdc.noaa.gov/>





Example comparison of model to in-situ data



Example Hovmöller [time vs. longitude] plot of 500mb heights

Contact information:

E-mail: NOMADS.ncdc@noaa.gov

Paleoclimate Data

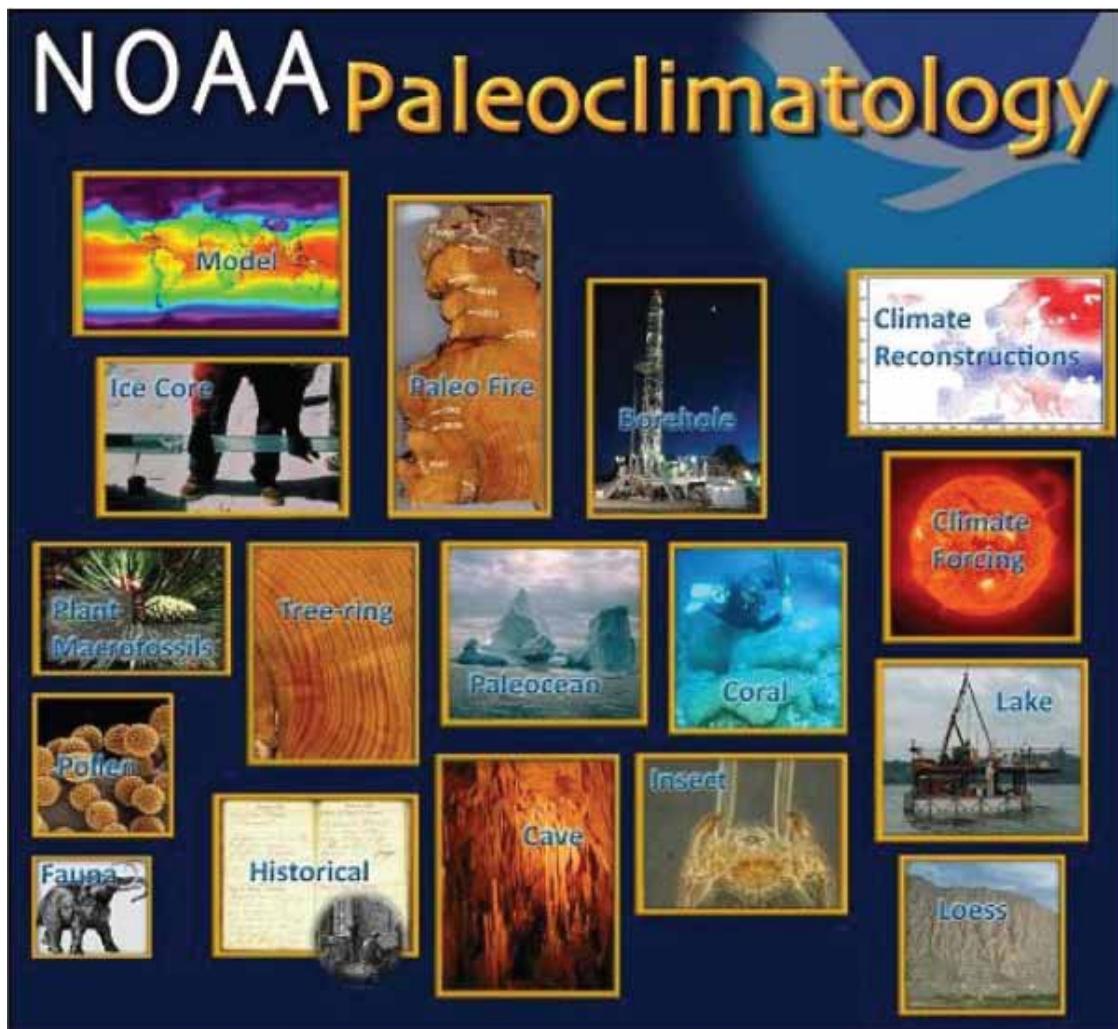
DATABASE: Paleoclimate Data—data about past climate and environment derived from a diverse range of proxies such as tree rings and ice cores. The data are time series of geophysical or biological measurements, and some include reconstructed climate variables such as temperature and precipitation.

Data Type -ASCII character data **Quality Control**

- Undergoes publication peer review and some manual QC
- Data Origin** -Academic and Government researchers
- Content/Elements** -Time series of

geophysical or biological measurements, processed average proxy values such as tree growth indices, and reconstructed climate variables **Period of Record** -All time periods prior to instrumental weather records, extending from hundreds to millions of years before present

Online—<http://www.ncdc.noaa.gov/paleo/paleo.html>



<http://www.ncdc.noaa.gov/paleo/paleo.html>

Integrated Data and Environmental Applications (IDEA) Center

The Integrated Data and Environmental Applications (IDEA) Center is advancing NOAA's mission objectives to help meet critical needs for climate, ocean, and ecosystem information to protect lives and property, support economic development and enhance the resilience of Pacific Island and other coastal communities in the face of changing environmental conditions. Program elements of the IDEA Center include:

I. Support for regional and global observing systems and programs with initial priority given to support for the Pacific Islands Global Climate Observing System (PI-GCOS), the Pacific Islands Global Ocean Observing System (PI-GOOS), and the Pacific Islands Integrated Ocean Observing System (PacIOOS) as critical contributions to the emergence of the Global Earth Observation System of Systems (GEOSS).

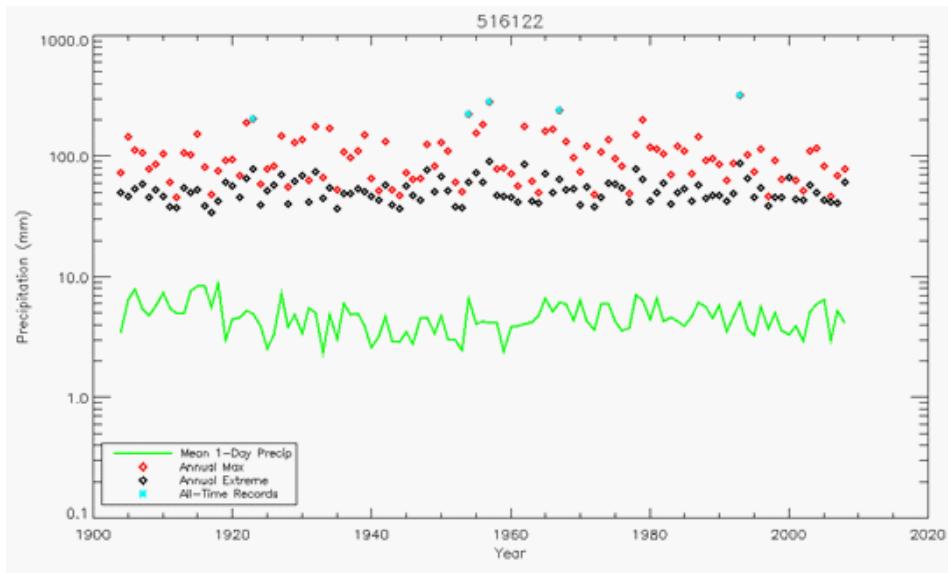
II. Development of new integrated data products and environmental applications, and supporting high priority regional and NOAA needs for enhanced information on:

- Climate vulnerability and adaptation
- Coastal and marine ecosystems
- Hazards risk management

A. The Pacific Storms Climatology Products project is an effort to improve our understanding of patterns and trends of storm frequency and intensity - "storminess" - within the Pacific region. It is exploring how the climate-related processes that govern extreme storm events are expressed within and between three thematic areas: heavy rains, strong winds, and high seas. A key outcome is the development of an integrated suite of extremes climatology-related information

and products that can be used by emergency managers, mitigation planners, government agencies, and decision-makers in key sectors including water and natural resource management, agriculture and fisheries, transportation and communication, and recreation and tourism. For more information go to <http://www.pacificstormsclimatology.org/>

Pacific Storms climatology products are the result of theme-specific data integration and product development teams that have been formed to collaboratively develop regional climatological overviews, identify corresponding extremes indicators, establish data treatment and analysis protocols, and conduct analyses. Products include the delineation of rates of sea level rise and high water return periods, as well as changes in the frequency of both short-lived intense rainfall events and extended periods of heavy rains and the linkages of these patterns and trends to climate indices. Such information is critical to risk assessment scenario development in support of coastal land-use planning and resource management. It also forms the basis for establishing infrastructure (roads, water, and sewer) design criteria, among other things. Collaborators in the



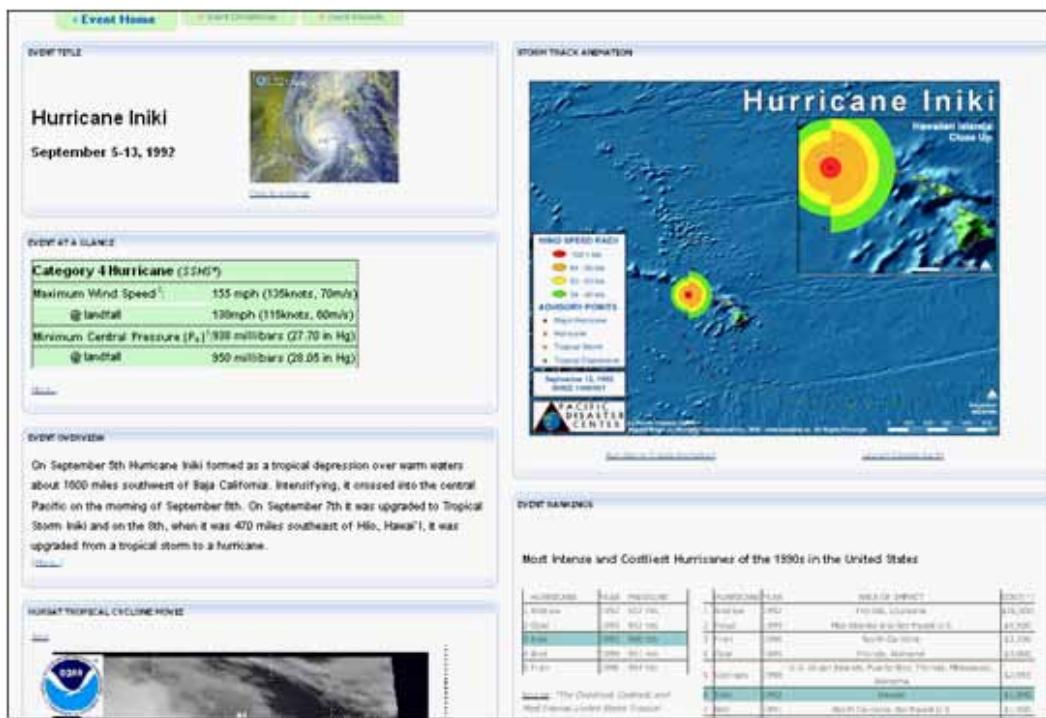
development of products include NOAA's NCDC, Center for Operational Products and Services, Coastal Services Center, and National Weather Service, as well as the University of Hawaii, University of Alaska, University of Guam, and Oregon State University. Sources of information for the products include NOAA's Integrated Surface Hourly (ISH) mean sea level pressure and wind speed data; the Global Historical Climate Network (GHCN) precipitation dataset; the National Water Level Observing Network (NWLON) tide gauge records; the National Data Buoy Center's wave buoy records; and the U.S. Army Corps of Engineers' Coastal Data Information (CDIP) buoy data.

B. The Extremes in the Pacific Integrated Case Studies (EP-ICS) project consists of comprehensive overviews of historical storm events. They include a summary of sector-specific socioeconomic impacts associated with a particular extreme event as well as its historic context climatologically. The intent is to convey the impacts associated with extreme events and the causes of them in way that enable users to easily understand them. The case studies are also intended to familiarize users with in-situ and remotely sensed products typically employed to track and

forecast weather and climate. The initial proof-of-concept website is a case study of Hurricane Iniki which struck Hawaii in September 1992. For more information go to <http://www.prcip.org/ea-portal/web/guest/home>. The IDEA Center work with NCDC IT staff to migrate this site to a web portal architecture is currently on hold.

C. The Sea Level Stations Metadata Service is a distributed metadata system describing sea level stations starting with pilot activities in a regional framework and focusing on tsunami detection and warning systems being

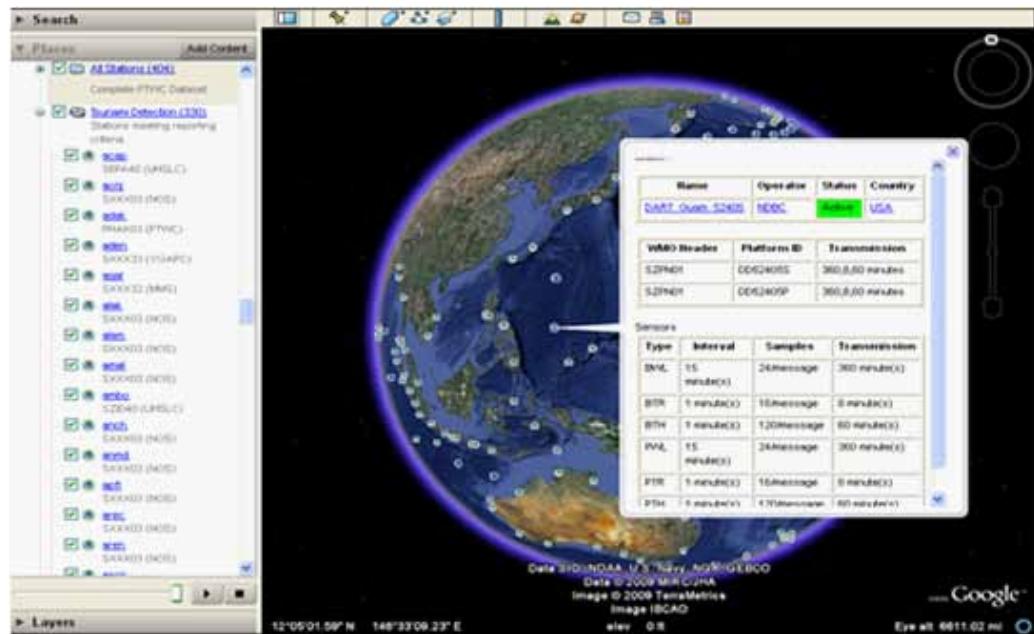
developed by various agencies. Sea level station metadata can be viewed within a Google Earth or a Geographic Information System application. Both applications are being enabled by the NOAA Pacific Tsunami Warning Center Tide Tool input data set, exposed per schema developed under the NOAA Pacific Region Integrated Data Enterprise program. For more information go to <http://www.sealevelstations.org/>



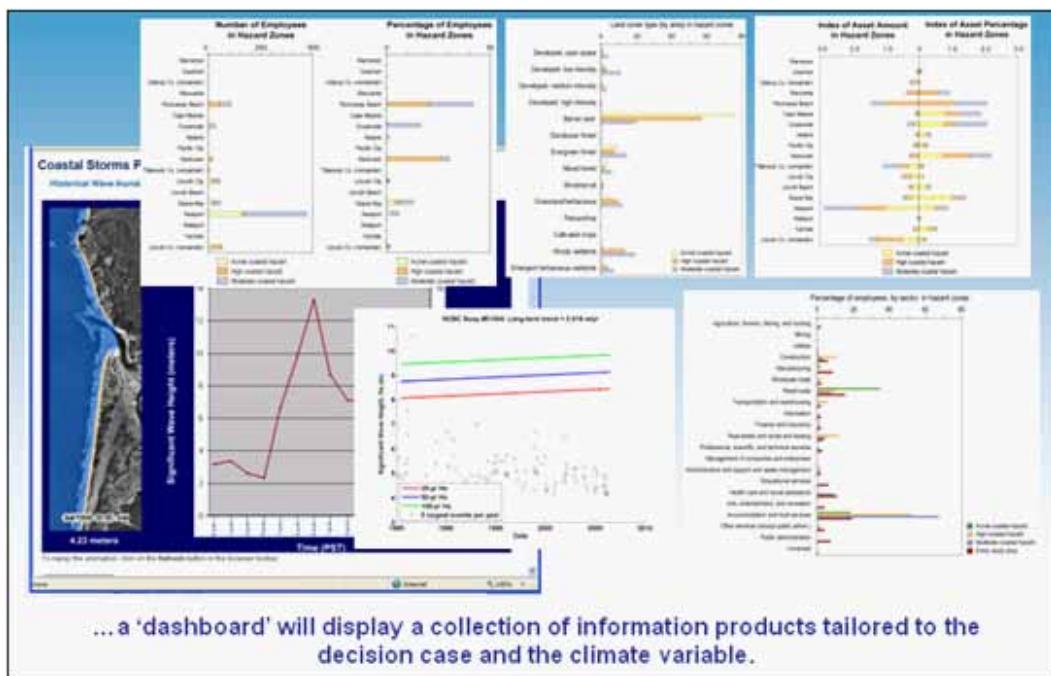
D. The Climate Adaptation Planning Information System (CAPIS) project is a locally-driven, collaborative effort to provide actionable information on climate change for use in community planning and resource management sectors using historic and modeled data that are scaled down to a specific geographic setting and delivered by a web-based decision-support interface. CAPIS is focused on the Oregon coastal shoreland setting – watersheds, estuaries, open coasts, and shallow ocean. The ultimate intent is to use this initial interface as the basis for development of a similar type of web-based tool in other regions that can be used to evaluate impacts and options related to community development and resource conservation in light of a changing climate. CAPIS is a joint effort between the Oregon Coastal Management Program and the IDEA Center. However, it is being carried out by leveraging the resources of a mix of agency, organization, and institution partners including the NOAA Coastal Services Center, the Oregon Department of Geology and Mineral Industries, Oregon State University, USGS, and NASA.

III. User engagement, education and outreach, to enhance awareness of NOAA data products and services and support the emergence of an end-to-end environmental information system designed to meet the needs of decision-makers in government, businesses and communities throughout the Pacific.

A. The developmental website, PacificIslandsClimate.org, was put together by IDEA Center staff working in support of the Pacific Climate Information System (PaCIS). This website is a gateway to a broad range



of information related to climate in the Pacific Islands. It includes summaries of programs, projects, and activities, as well as products and services. Formed through the collaboration of and contributions from a family of agencies, institutions, and organizations, it is intended to serve as a shared resource for research scientists, service providers, and decision-makers. For more information go to <http://www.pacificislandsclimate.org/>



PacificIslandsClimate.org

HOME / DATA & PRODUCTS / PROJECTS & ACTIVITIES / ASSESSMENTS / PARTNERS & PROGRAMS

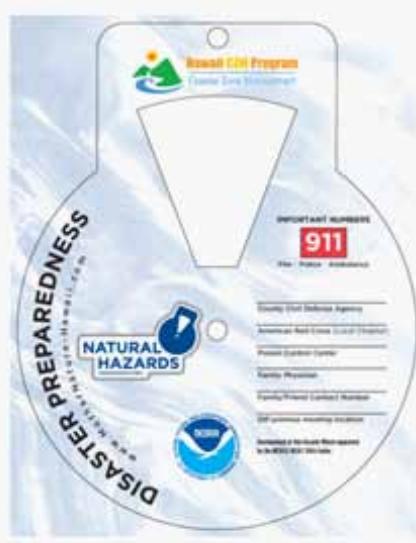
HOME
PIcIS
FOCUS AREA:
WATER RESOURCES
FOCUS AREA:
COASTAL INUNDATION
FOCUS AREA:
ECOSYSTEMS
DATA AND PRODUCTS
PROJECTS AND
ACTIVITIES
ASSESSMENTS
PARTNERS & PROGRAMS
CONTACT US



piko n. in Hawaiian navel. Figuratively, the point of connection, the center, the place around which related objects or entities are joined.

This developmental website was put together by representatives of the NOAA NCDC working in support of the Pacific Climate Information System (PaCIS).

B. The Pacific Climates Impacts Resource Guide will provide citizens and decision-makers a set of Pacific-focused, cultural and currently available materials to help frame and clarify the key issues related to climate change organized around the impact sectors identified in the U.S. Climate Change Science Program report, "Global Climate Change Impacts in the United States". This is a joint effort between the IDEA Center, National Weather Service, NOAA Pacific Services Center, University of Hawaii Sea Grant College Program, University of Hawaii College of Education, East-West Center, and the United States Agency for International Development. In late 2011, the development of the Guide was aligned with the development of the Hawaii Climate Impacts Report, a project under University of Hawaii Sea Grant College Program administration. The Impact Resource Guide will continue to focus on adaptation measures while the Impacts Report will be more



technical and rigorous and focus on impacts and mitigation. The projects will be companion pieces with similar structure and a single introduction. The projects will also be aligned with the development of the Pacific Islands section of the National Climate Assessment.

C. The IDEA Center partnered with the State of Hawaii Coastal Zone Management Program, International Tsunami Information Centre, and NOAA Pacific Services Center to update and reprint the **Hawaii Natural Hazards Preparedness Wheel** which had been out of print for 5 years. The reprinting fills a void in providing the public with an easily usable and portable source that provides important public safety information on tsunamis, lava flows, floods, droughts and other natural hazards found in the Hawaiian Islands and what to do if a disaster is imminent. The final phase of the project was completed in July 2011 with 30,000 hazards wheels printed and distributed to project partners as well as to

Hawaii state and county civil defense, emergency management and emergency services organizations and offices.

D. The IDEA Center is working with the **NOAA Ship Ka'imimoana** to produce an informational flyer for the ship. Home ported in Honolulu, Hawaii the Ka'imimoana (Hawaiian for "ocean seeker"), is dedicated solely to climate research through its support of NOAA's Tropical Atmosphere-Ocean Project.





E. Pacific Region Climate Vignettes are being developed on several topics including: how the application of a NOAA drought forecast helped mitigate impacts on Kapingam-rangi Atoll in the Federated States of Micronesia; how a pilot project being led by the NOAA Pacific ENSO Applications Climate Center to compile rainfall and temperature data is aiding agricultural interests in the Kona district of Hawaii; and how the USDA Farm Service Agency for Hawaii and the Pacific Basin are providing Livestock Forage Program aid to areas affected by recent drought conditions in Hawaii.

F. The IDEA Center assisted in designing a new **NOAA in the Pacific Region informational brochure. This work was**

carried out through the NOAA Pacific Regional Outreach Group, who focuses on outreach, education, and public affairs as a means to improve products and services in the Pacific region. The printing of the brochure was completed by the Government Printing Office and delivered to Hawaii for distribution in October 2011.

IV. Establishing the critical national, regional and international partnerships necessary to support these objectives.

A. The IDEA Center is leading coordination and support of the **Pacific Climate Information System (PaCIS).** PaCIS provides a programmatic framework to integrate ongoing and future climate observations, operational forecasting services and climate projections, research, assessment, data management, outreach, and education



to address the needs of American Flag and U.S.-Affiliated Pacific Islands (USAPI). In addition to meeting the specific needs of American Flag and USAPI as an integrated climate information system, PaCIS also provides a venue to discuss the role of U.S. contributions to other climate and climate-related activities in the Pacific including, for example, observing system programs such as the Pacific Islands Global Climate Observing System and the Pacific Islands Global Ocean Observing System. It is anticipated that PaCIS will also serve as the United State's contribution to the World Meteorological Organization's Regional Association V Regional Climate Centre. Thus, PaCIS represents the first step towards a regional climate service for the Pacific. For more information go to <http://www.pacificciss.org/>

NOAA may be the most important agency you've never heard of

NOAA IN THE PACIFIC REGION

In the Pacific, the National Oceanic and Atmospheric Administration (NOAA) employs over 700 staff located in 10 offices. Our area of responsibility stretches from the Hawaiian Archipelago to American Samoa, Guam, and the Commonwealth of the Northern Mariana Islands, including the remote island groups of the International Date Line, French Franch, and the Northern Mariana Islands. Each office has a distinct mission and all work together as One NOAA providing comprehensive information and resources for research and operations in our atmosphere and oceans in the Pacific.

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 vision of the future
Healthy ecosystems, communities and economies that are resilient in the face of change

NOAA has six integrated programs focused on FISH, OCEANS AND COASTS, SATELLITES, CLIMATE, SCIENTIFIC RESEARCH and the WEATHER. NOAA works in every state and territory and conducts research that reaches from the surface of the SUN to the depths of the OCEAN.

SCIENCE **SERVICE** **STEWARDSHIP**

At NOAA, science is the foundation of everything we do.

NOAA is the Nation's premier ocean and atmospheric science agency. Our researchers – marine biologists, oceanographers, meteorologists, geologists and more – consistently monitor, study and assess the environment. We use science to work with partners, governments and local governments, and industry partners to develop new ways to apply this information to the problems and opportunities facing all Americans.

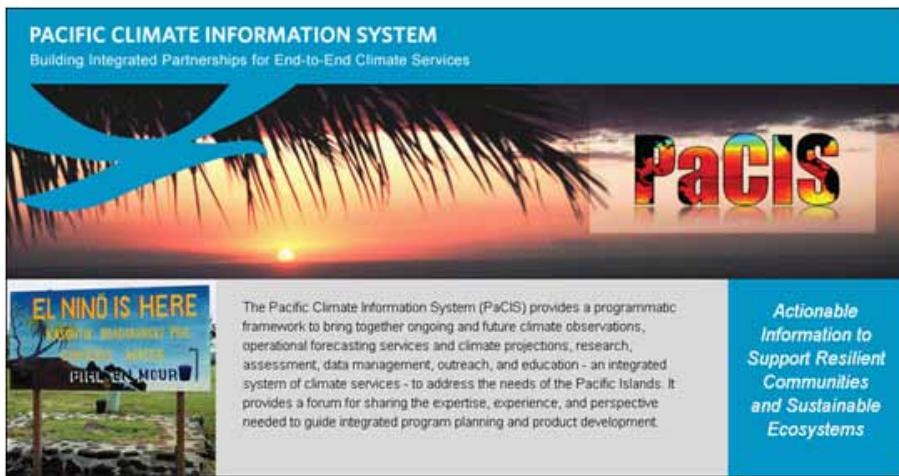
At NOAA, our work is everyone's business.

NOAA touches the lives of every American every day and works around the clock to keep families safe, properly prepared, communities thriving and businesses strong. Farmers, foresters, teachers, doctors, ship captains, airline pilots, parents, homeowners, and many others often use information provided by NOAA every day. Through our services, NOAA provides great value to the Nation.

At NOAA, we help the public make informed environmental decisions.

NOAA's information and data are a critical component of how people and businesses make daily decisions. NOAA uses its knowledge to protect people and the environment by reducing habitats and ecosystems, sustaining marine fisheries, protecting undersea marine areas, conserving marine sanctuaries and other protected areas, responding to environmental emergencies and aiding in disaster recovery.

A PaCIS Steering Committee Meeting was held in March 2011 in Honolulu, Hawaii. This meeting solicited input on the proposed foundational elements of the PaCIS Implementation Plan, a document intended to identify and prioritize actions that need to be taken by agencies, institutions, and organizations to support a collaborative, participatory process that will directly connect the best and most relevant climate science



and services in the Pacific Region to user decisions. IDEA Center staff worked with the NCDC Graphics Team to publish the document: "Towards a Pacific Climate Information System (PaCIS) Plan for Regional Climate Services: A Synopsis Based on Outcomes of the March 22-24, 2011 PaCIS Steering Committee Meeting".

B. The Pacific Islands Regional Climate Assessment (PIR-CA), a collaborative effort aimed at assessing the state of climate knowledge, impacts, and adaptive capacity in Hawaii and the U.S.-Affiliated Pacific Islands was established in June 2011. PIRCA activities include an immediate focus on bringing together scientific experts and practitioners to generate an integrated report that will provide a regional contribution to the National Climate Assessment.

C. A Pacific Regional Meteorological Services Directors Training Workshop, was held on August 8-12, 2011 in Majuro, Republic of the Marshall Islands. The theme of this workshop was "Global Framework for Climate Services (GFCS): The Role of Pacific Islands National Meteorological Services and Partners in Implementing the GFCS to Support National Programs of Action for Climate Change Adaptation in the Pacific".

D. A technical workshop, "Towards a Consensus Methodology for Projecting Sea Level Rise and Coastal Inundation in the Pacific Islands", will be held on January 10-11, 2012 in Honolulu, Hawaii. The objective of the workshop is to solicit input from experts in the area of sea level rise and related processes to formulate regional best practices and a consistent methodology for projecting long-term changes in sea level and coastal inundation in the Pacific. This understanding will be used to implement adaptation

through, for example, risk assessment scenarios for coastal land-use planning and resource management. Additionally, the results of this workshop will help inform the Pacific Islands Regional Climate Assessment, which is the regional contribution to the National Climate Assessment.

NOAA's Regional Climate Center

The National Oceanic and Atmospheric Administration's (NOAA) Regional Climate Centers (RCCs) are a federal-state cooperative effort. The RCC Program is managed by NOAA's National Climatic Data Center (NCDC). The RCC Program directly supports the following legislative mandates:

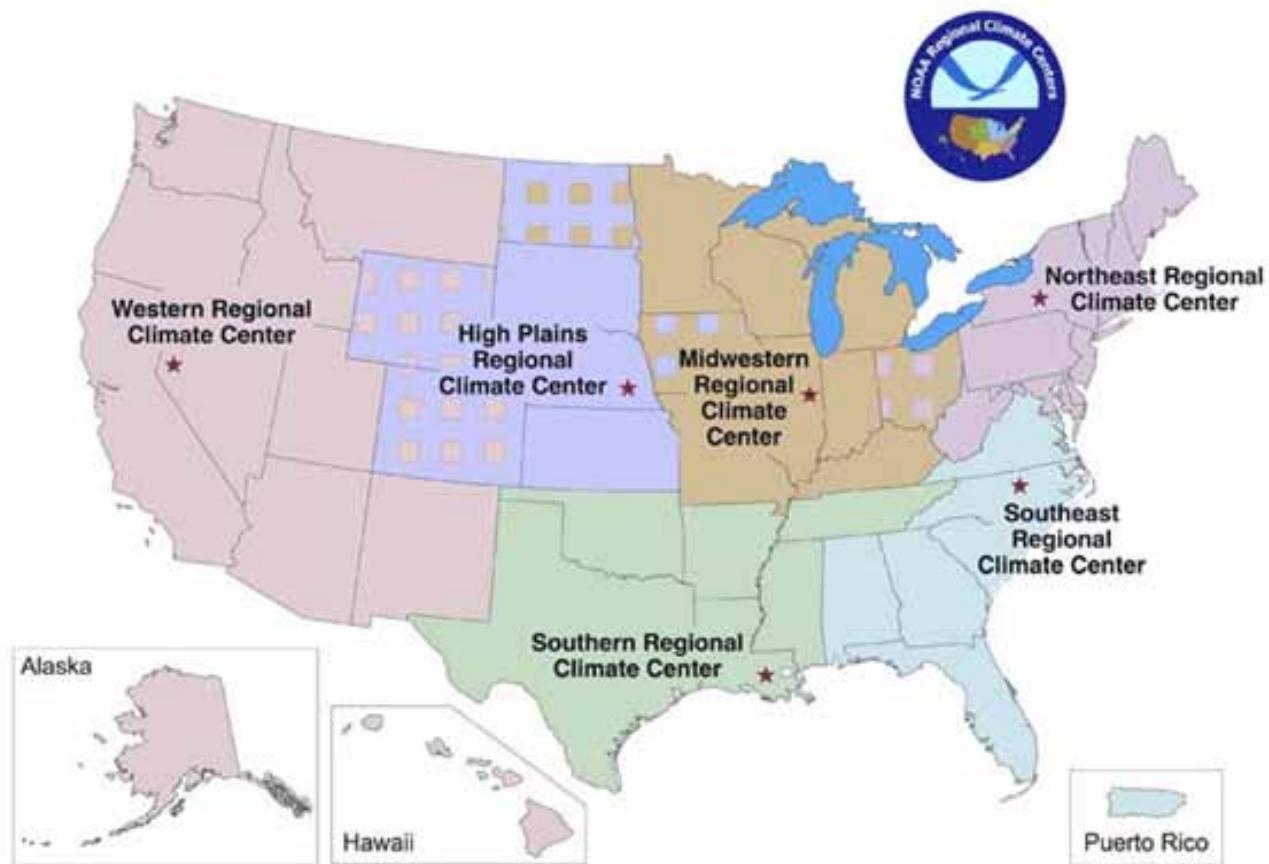
National Climate Program Act of 1978 (15 U.S.C. 2901, 2908 (PL 95-367))—mandate "...to improve the use and dissemination of climatic data and information for the economic benefit and well-being of the United States."

U.S. Global Change Research Act of 1990 (PL 101-606)—calls for the Federal Government to "...combine and interpret data from various sources to produce information readily usable by policymakers attempting to formulate effective strategies for preventing, mitigating, and adapting to the effects of global change."

The six centers that comprise the RCC Program are engaged in the timely production and delivery of useful climate data, information, and knowledge to decision makers and other users at the local, state, regional, and national levels. The RCCs support NOAA's efforts to provide operational climate services while leveraging improvements in technology and collaborations with partners to expand quality data dissemination capabilities. The RCCs respond annually to tens of thousands of requests for data and information from citizens, state and federal agencies, and weather-sensitive businesses (agriculture, transportation, risk management, etc.). More than 100 million information requests for information are annually requested through RCC online data systems. Information tailored to specific regional needs is generated at the RCCs and is shared with NCDC, National Weather Service (NWS) offices, and other agencies to ensure an integrated approach to climate analyses, planning, and dissemination for the benefit of all climate information users. RCC data delivery to the larger climate community relies on a nimble combination of near-real-time relational databases and Web-based information resources.

The current configuration of RCCs includes six centers located at Cornell University in Ithaca, New York; the University of North Carolina at Chapel Hill; Louisiana State University in Baton Rouge; The University of Nebraska in Lincoln; the Illinois State Water Survey in Champaign; and the Desert Research Institute in Reno, Nevada. The figure on the following page illustrates the location of the six RCCs, representing each geographic region of the United States.

ACIS (<http://rcc-acis.org/>) is the RCC backbone for disseminating NCDC climate information to partners and a host of regional and state climate data users. In recent years, requests for climate information from the RCCs have grown rapidly as products have been developed for many sectors, including risk management, energy production, agricultural planning, transportation services, and the general public.



Note: Checkered states participate in two regions

<http://www.ncdc.noaa.gov/oa/climate/regionalclimatecenters.html>

NOAA's Regional Climate Services Partnership

Changing climate conditions impact our lives in both subtle and measurable ways. Whether we are facing extreme precipitation events, earlier snowmelt, increased frequency and duration of drought, alterations to the growing season, or rising sea levels, the key to anticipating and responding to these changes is having the right kinds of climate information at a scale appropriate for community decision-making.

NOAA's Regional Climate Services Partnership makes climate information relevant and accessible to people from coast to coast. From engineers to insurers, gardeners to public health

officials, people who use climate data, forecasts, products, and services will find that NOAA's Regional Climate Services Partnership is the one stop shop for their information needs.

This Partnership reflects NOAA's commitment to healthy ecosystems, communities and economies that are resilient in the face of variable and changing climate conditions. It seeks to assess regional needs and vulnerabilities, and then develop and deliver timely climate services that aid mitigation and adaptation choices. The Partnership also works to build a climate-literate public that understands its vulnerabilities so that it can appropriately plan ahead.



Anchorage, AK / Honolulu, HI
Kansas City, MO / Fort Worth, TX
Bohemia, NY / Salt Lake City, UT

Learn more about the RCSDs at: [http://
www.noaaideacenter.org/rcsd/](http://www.noaaideacenter.org/rcsd/)

CD-ROM/DVD Products

NCDC has produced a suite of CD-ROMs and DVDs with diverse environmental data ranging from global tropical cyclone tracks, to worldwide climatologies, to hourly surface data. Below is a listing with descriptions of some of the more popular discs we offer. A more extensive listing, further details concerning these discs, as well as an online ordering system (with discounted prices vs. those listed below), are all accessible via

<http://www.ncdc.noaa.gov/oa/climate/climateproducts.html>.

Integrated Surface Hourly Observations:

The global surface hourly observations contained on this CD-ROM/DVD set are integrated from all of the NCDC and Navy surface hourly data, NCDC hourly precipitation, and Air Force surface hourly data. Hourly and synoptic type data for approximately 12,000 global stations are available for 1995–2005. There are 24 volumes (1995–2002) separated by geographic region and time period. Global extraction software, including a map interface, is provided to aid in identifying and easily selecting the data in either full Integrated Surface Hourly format or delimited/abbreviated format. Various elements such as temperature, dew point, wind speed and direction, sea level pressure, visibility, cloud ceiling, present weather, precipitation, snowfall, snow depth, altimeter setting, station pressure, etc., are available. The disks also contain a data inventory file showing the number of observations for each month of the year for each station. Each volume contains all the software, support files, and documentation so each volume may be used alone or in combination with other volumes for each time period. An additional seven volumes (no extraction software included) on DVD cover 2003–2010 with each year available on a single DVD. \$35 per volume.

International Station Meteorological Climate Summary (ISMCS) Ver. 4.0:

Provides detailed climatological summaries for 2,600 locations worldwide. These locations include National Weather Service stations, domestic and overseas Navy and Air Force sites, and numerous foreign stations. Limited sum-

maries are also given for approximately 4,000 additional worldwide sites. This version also contains year/month and long-term mean precipitation data for 1,000 foreign locations. Tabular or statistical data can be exported to a printer or spreadsheet. This is a joint NCDC, USAF, and U.S. Navy product. Please note that the non-U.S. data cannot be redistributed by users of the CD for commercial purposes. \$35.

NCDC Cooperative Station Data:

These CD-ROMs contain ASCII data files and associated station history files for the Cooperative Summary of the Day dataset. This dataset is a compilation of daily observations from more than 20,000 cooperative weather stations in the United States, U.S. Caribbean Islands, U.S. Pacific Islands, and Puerto Rico. It includes air and soil temperatures, rainfall, snowfall, and evaporation elements. A map interface is available on the Eastern, Central, and Western Disks. The period of record on these disks varies among stations but falls within the period from the 1850s through 2001. The update disk contains compressed files for 2002–2006 and also includes data for the “first-order” National Weather Service sites, with some additional data elements that are not reported by cooperative stations. The files are in the raw, archive format without any software for conversion to a spreadsheet ready format. \$105 for full set/ \$35 per volume/update disk.

Engineering Weather Data:

This CD-ROM contains an update of a very popular publication that was first printed by the Air Force in 1967 and republished in 1978. As compared to the Engineering Weather Data publication, the new interactive CD-ROM database contains updated meteorological tables, new summarized parameters, and graphical displays. Approximately 800 worldwide stations have been summarized. For each station, the data and information on this CD-ROM include: summarized design criteria data for dry and wet bulb temperatures and humidity ratios, average annual climate summaries, psychrometric summaries, binned temperature data, annual temperature and humidity summaries, heating and cooling degree data summaries for

building envelop loads, ventilation and infiltration loads, solar radiation data, and seasonal wind direction and wind speed summaries. Please note that the non-U.S. data cannot be redistributed by users of the CD for commercial purposes. \$35.

U.S. Daily Climate Normals:

This CD provides the 1971–2000 daily normals of temperature, precipitation, and degree days for nearly 8,000 U.S. weather stations. It also contains the monthly, seasonal, and annual normals along with the precipitation probabilities and quintiles. The interface allows the user to select an easily readable web form or a text file that can be imported into a spreadsheet. Microsoft Internet Explorer is required to view and print the web form. Text files can be accessed directly without the use of a web browser. \$35.

U.S. Monthly Climate Normals: This CD-ROM contains 1971–2000 U.S. monthly station normals for nearly 8,000 stations in the United States, selected Pacific Islands, Virgin Islands, and Puerto Rico. The normals can be accessed in both the Adobe PDF and ASCII file formats from a simple HTML interface. This product includes normals of average monthly and annual maximum, minimum, and mean temperature (degrees F), monthly and annual total precipitation (inches), and heating and cooling degree days (base 65 degrees F). \$35.

Important Notes

Some NCDC CD-ROM products were produced for use in a 'DOS' or Windows PC environment and will not work in an Apple 'MAC' environment. In addition, some of the NCDC CD-ROMs were produced in a pre-Windows 95/98/XP environment and may not work without configuration. If you have technical questions, email ncdc.info@noaa.gov.

NCDC's Climate Services Branch is responsible for distribution of NCDC CD-ROM products. Domestic customers add a \$3.00 service charge per order; foreign users add \$22.00 per order. Address:

National Climatic Data Center
Attn: Climate Services Branch
151 Patton Avenue
Asheville, NC 28801-5001

Telephone: 828-271-4800; Fax: 828-271-4876
Internet: ncdc.orders@noaa.gov

Publications

A number of NCDC Climatic Summaries, Publications, and Documents are available online (see below):

Climatic Summaries, Publications & Documents

- Annual Climatological Summaries (Monthly/Annual Summaries for U.S. Locations)
- Climatological Data (Daily/Monthly Data for ~ 8,000 U.S. Locations)
- Climate Variations Bulletin (Monthly Reports of U.S. Climate)
- Climatic Data for Frost-Protected Shallow Foundations
- Climate Maps for the United States (Over 700 Maps of Climate Normals)
- Comparative Climatic Data (Climatological Averages for U.S. Cities)
- Climates of the World (PDF format, Regional Narratives and Climatic Tables by City)
- Climatology of the U.S. - Supp #3 (Maps of Temperature, Precip, Degree Days)
- Climatology for Southwest Asia (Many Data Sources and Summaries)
- COOP Data/Record Of Climatological Observations Form
- Dynamic Normals (19 products—e.g., daily cooling degree days)
- Freeze/Frost Data for the U.S. (PDF format)
- Frost Free Maps for the U.S. (Based on 28F and 32F Temperatures)
- Heating and Cooling Degree Days (Monthly State, Regional, and National Degree Days)
- Historical Climate Publications (Publications & CD-ROMs for sale at a very reduced price)
- Hourly Precipitation Data (Hourly Precip Data for over 2,500 U.S. Locations)
- Hourly Rainfall Event Statistics (Frequency Distributions for Hourly Rainfall)
- Integrated Surface Hourly (ISH) Summaries (Summaries of temperature, wind, ceiling/visibility, etc. Note: choose Advanced Options at Accessing data selection screen, then Data Summary as output on following screen.)
- Local Climatological Data (Hourly/Daily Data for nearly 300 U.S. Cities)

- Monthly Climatic Data for the World (Selected Worldwide Cities' Climate Summaries)
- Monthly Extremes (30 products—e.g., maximum precipitation by month)
- Monthly Weather Review (American Meteorological Society Summary)
- Rainfall Frequency Atlas of the U.S. (Frequency Distributions for Heavy Rainfall)
- Storm Data Publication (Monthly Reports of Damaging Weather)
- U.S. Climate Normals (The New U.S. Climatological Normals)

<http://www.ncdc.noaa.gov/oa/climate/climateproducts.html#PUBS>

Historical and offline publication requests should be directed to NCDC Customer Service at the following contact information:

Phone: 828-271-4800
 Fax: 828-271-4876
 E-Mail: NCDC.Orders@noaa.gov

Climate Monitoring

One of NCDC's roles is to monitor and assess the state of the Earth's climate in near real-time, providing decision-makers at all levels of the public and private sector with data and information on climate trends and variability including perspectives on how the climate of today compares to the past.

The Climate Monitoring Branch at NOAA's National Climatic Data Center (NCDC) routinely produces climate assessments on a monthly, seasonal, and annual basis. The purpose of these reports, which are available since 1998,

is to provide scientific insight into the Earth's climate and historical perspective on its variability and change.

The State of the Climate reports, which place conditions for the past month, season, and year-to-date period in historical perspective, are provided as data become available. Parts of the report are available online as early as the 5th of each month, and the full report is available no later than the 15th. Each report includes hundreds of graphics and text summaries of global and U.S. climate conditions with historical perspective provided by more than 100 years of

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National Environmental Satellite, Data, and Information Service (NESDIS)

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Climate Monitoring
National Oceanic and Atmospheric Administration
National Climatic Data Center

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- [U.S. and Global Extremes](#)
- [Hurricanes/Tropical Storms](#)
- [Tornadoes](#)
- [Snow and Ice Data](#)
- [Climate Information Record Data](#)
- [Special Reports](#)
- [Other Products](#)
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August Heat Wave
The mean temperature for August (75.7°F/24.3°C) was the second warmest on record. [National Overview](#) » [Climate Report](#) » [August Rank Maps](#) »

<http://www.ncdc.noaa.gov/climate-monitoring/index.php>

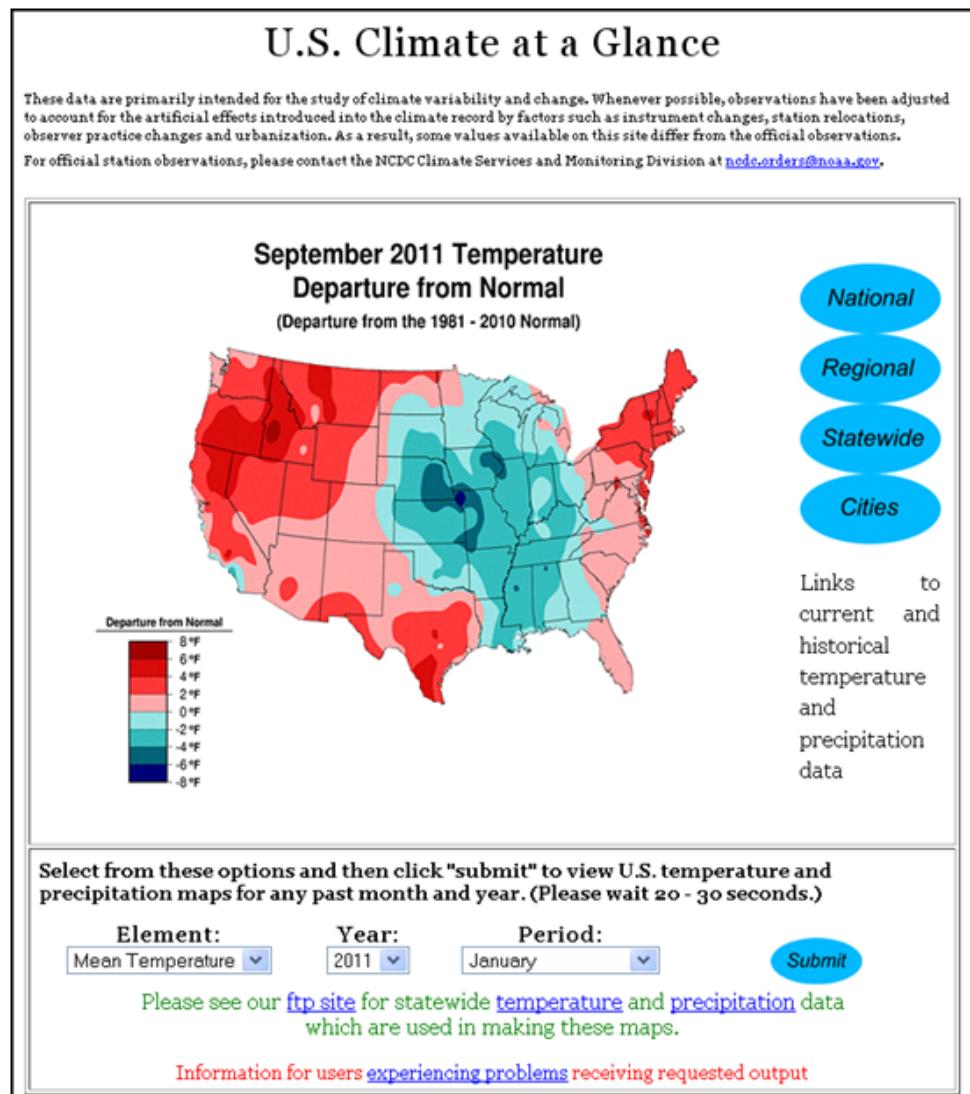
instrumental observations and hundreds of years of paleoclimate data from sources such as tree rings, ice cores, and sedimentary records. The reports consist of several sections summarizing conditions on both a U.S. and global scale.

The section on global conditions includes data on surface and upper air temperatures, precipitation, ENSO conditions, sea ice, and snow cover. A U.S. National section provides statewide, regional, and national rankings for mean temperature and precipitation. User-friendly graphics and short explanatory discussions make determination of conditions quick and easy.

The U.S. Climate Extremes section contains a list of new all-time U.S. records of significance for temperature, rainfall, snowfall, wind, and pressure.

U.S. Climate at a Glance

The U.S. Climate at a Glance web site is a popular and easy-to-use source of climate information on national, regional, statewide, and city temperature and precipitation trends and rankings. The web site provides a number of different statistics in addition to a bar or line graph; temperature or precipitation values for any month or season from 1895 to present, the respective ranking for each year from warmest to coldest or driest to wettest, the climatological average for any selected base period, and the linear trend over the period selected. Mapping of statewide temperature and precipitation values for any month or season during the period of record is also possible.



<http://www.ncdc.noaa.gov/oa/climate/research/cag3/cag3.html>

**State of the Climate
Drought
September 2011**

**National Oceanic and Atmospheric Administration
National Climatic Data Center**

Use the form below to access monthly reports.

< August 2011 Drought Report

Report: Year: Month: Get Report

Issued 13 October 2011

Contents Of This Report:

- [National Drought Overview](#)
- [Detailed Drought Discussion](#)
 - [Overview](#)
 - [Synoptic Discussion](#)
 - [Palmer Drought Index](#)
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 - [Regional Climate Center Reports](#)
 - [Pacific Island Drought](#)
- [State/Regional/National Moisture Status](#)
- [Drought Indicators](#)
- [Contacts & Questions](#)

The map displays the Palmer Z Index for September 2011, color-coded to indicate drought severity. The legend ranges from -0.75 (extreme drought) to +3.00 (extremely moist). The map shows significant areas of extreme and severe drought in the central and western US, while the eastern US is generally in moderate or slight drought.

<http://www.ncdc.noaa.gov/sotc/?report=drought>

The U.S. Drought section provides numerous drought indicators and summaries of national, regional, and local drought conditions during the past month with perspective on how the conditions compare with those during the preceding centuries.

The North America Drought Monitor (NA-DM) is a cooperative effort between drought experts in Canada, Mexico and the United States to monitor drought across the continent on an ongoing basis.

North American Drought Monitor

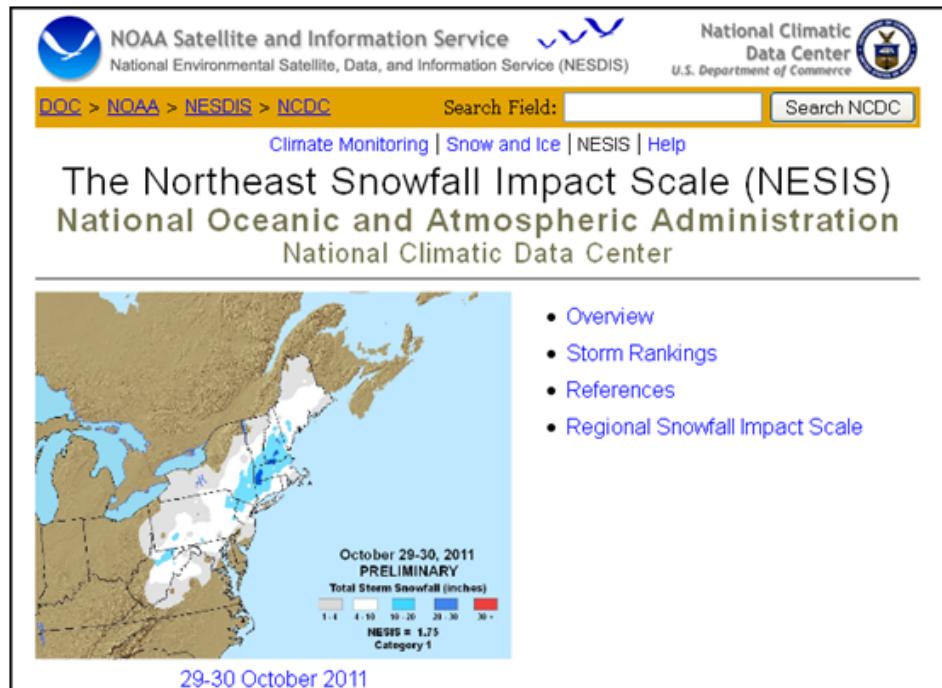
**National Oceanic and Atmospheric Administration
National Climatic Data Center**



- [NADM Overview](#)
- [NADM maps](#)
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 - [NESDIS Satellite VHI](#)
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- [Associated Links](#)

<http://www.ncdc.noaa.gov/temp-and-precip/drought/nadm/>

The Northeast Snowfall Impact Scale (NESIS) characterizes and ranks high-impact Northeast snowstorms using five categories in a manner similar to the Fujita and Saffir-Simpson scales for tornadoes and hurricanes, respectively: Extreme, Crippling, Major, Significant, and Notable. Originally developed by Paul Kocin of The Weather Channel and Louis Uccellini of the National Weather Service, NCDC produced an operational version that has been in use since early 2006 to quickly assess the impact of snowstorms on the Northeast.



<http://www.ncdc.noaa.gov/snow-and-ice/nesis.php>



<http://www.ncdc.noaa.gov/societal-impacts/>

Through NCDC's National Climate Impact Indicators program, climate indices are being developed to provide public and private sector analysts with up-to-date quantitative information on the effect of weather and climate on vital sectors of the U.S. economy and society

Climate Extremes

The U.S. Record page provides an easy and quick way to search for temperature, precipitation and snowfall station records set on a given day or month.

U.S. Records
National Oceanic and Atmospheric Administration
National Climatic Data Center

[Records Look-Up](#) | [Archived Monthly/All-Time Records](#)

Records Look-Up

Look up daily records set on a given day for a month, day, or all-time.

Time Scale: Parameter:

Month: Day: Year:

Filter by State/Territory:
 Alabama
 Alaska
 Arizona

Only return ASOS stations Return Trace values (Precip/Snow)

Recent Records Totals

[Daily](#) | [Monthly](#) | [All-Time](#)

Period		Hi Max	Hi Min	Lo Max	Lo Min	Precip*	Snow*
Yesterday	Nov 7, 2011	0	38	58	15	37	13
Last 7 Days	Nov 1 - 7, 2011	48	68	340	188	459	169
Last 30 Days	Oct 9 - Nov 7, 2011	1,058	675	934	579	2,057	521
Last 365 Days	Nov 8, 2010 - Nov 7, 2011	26,762	28,755	17,571	10,951	32,522	11,258
Month to Date	Nov 1 - 7, 2011	48	68	340	188	459	169
Year to Date	Jan 1 - Nov 7, 2011	24,651	26,588	14,638	8,763	27,752	8,055

*Precipitation and Snow totals DO NOT include trace values.

<http://www.ncdc.noaa.gov/extremes/records/>

The Global Hazards/Climate Extremes page was first presented in 2003 as a framework to summarize weather-related hazards and disasters across the world. The page is updated on a weekly basis and is focused on the following events: drought, excessive heat, flooding, severe storms,

tropical cyclones, extratropical cyclones, and severe winter weather. The information provided is a compilation from media news with satellite images and/or graphs that are relevant to the story.

State of the Climate Global Hazards October 2011

National Oceanic and Atmospheric Administration National Climatic Data Center

Use the form below to access monthly reports.

[**< September 2011
Hazards Report**](#)

Report:

Year: **Month:**

Please note: Material provided in this report is chosen subjectively and included at the discretion of the National Climatic Data Center (NCDC). The ability to report on a given event is limited by the amount of information available to NCDC at the time of publication. Inclusion of a particular event does not constitute a greater importance in comparison with an event that has not been incorporated into the discussion. Data included in this report are preliminary unless otherwise stated. Links to supporting information is valid at the time of publication, but they are not maintained or changed after publication.

Updated 24 October 2011

October 1st Super Typhoon Nalgae strikes the Philippine island of Luzon [read more](#) 

<http://www.ncdc.noaa.gov/sotc/?report=hazards/>

The Extreme Weather and Climate Events web site provides a wealth of information, data, and graphics related to extreme events such as hurricanes, tornadoes, heavy precipitation, and extreme temperatures.


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National Climatic Data Center
 U.S. Department of Commerce

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[El Nino/ La Nina](#)
[Climate Monitoring](#)

[North American Extremes](#)


EXTREME WEATHER AND CLIMATE EVENTS

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[Heavy Precipitation](#)
[Worldwide Weather & Climate Events](#)
[Historical Global Extremes](#)
[Satellite Images & Posters](#)

[U.S. Tornadoes](#)
[U.S. Local Storm Events Data](#)
[NCDC FAQs](#)
[Climatic Data](#)
[U.S. Radar Composites](#)

<http://www.ncdc.noaa.gov/oa/climate/severeweather/extremes.html>

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[Tropical Cyclones](#)

Hurricanes

NCDC is the world's largest active archive of weather data. NCDC produces numerous climate publications and responds to data requests from all over the world. NCDC operates the [World Data Center for Meteorology](#) which is co-located at NCDC in Asheville, North Carolina, and the [World Data Center for Paleoclimatology](#) which is located in Boulder, Colorado.

NCDC supports a three tier national climate services support program - the partners include: NCDC, [Regional Climate Centers](#), and [State Climatologists](#).

<http://www.ncdc.noaa.gov/oa/climate/severeweather/hurricanes.html>

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[Previous Extreme Events](#)
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Heavy Precipitation

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NCDC supports a three tier national climate services support program - the partners include: NCDC, [Regional Climate Centers](#), and [State Climatologists](#).

<http://www.ncdc.noaa.gov/oa/climate/severeweather/rainfall.html>

 NOAA Satellite and Information Service
National Environmental Satellite, Data, and Information Service (NESDIS)

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U.S. Department of Commerce

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Global Hazards

Temperature Extremes and Drought

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<http://www.ncdc.noaa.gov/oa/climate/severeweather/temperatures.html>

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U.S. Department of Commerce

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U.S. Tornado Climatology

National Climatic Data Center
Asheville, North Carolina
Updated 23 February 2011

[Recent tornado reports and information](#)

Long term/historical tornado reports and information:

• Overview	• Deadliest U.S. Tornadoes
• Tornado Alley	• Tornadoes/ Long Term U.S. Tornado Climatology (PDF)
• Timing	• Storm Events Database
• Historical Records and Trends	• Special Reports
• State Maps	• Links to Additional Information

<http://www.ncdc.noaa.gov/oa/climate/severeweather/tornadoes.html>

The screenshot shows the homepage of the NOAA Satellite and Information Service. At the top left is the NOAA logo. To its right, the text "NOAA Satellite and Information Service" and "National Environmental Satellite, Data, and Information Service (NESDIS)" is displayed, along with a blue checkmark icon. On the far right, the "National Climatic Data Center" logo and "U.S. Department of Commerce" seal are visible. A navigation bar at the top includes links for "DOC > NOAA > NESDIS > NCDC", a search field, and a "Search NCDC" button. The main title "Worldwide Weather and Climate Events" is centered above a map of the Yucatan Peninsula and surrounding regions. The map features several blue boxes containing links: "Recent Weather Events", "Previous Weather Events", "Billion \$\$ Disasters", "International", "Historical Events", "Storm Data", and "NOAA Economics & Benefits". To the left of the map is a sidebar with sections for "Current Events", "Data & Products", "Purchase", and "Climate Info". The "Data & Products" section contains links for "Model Data", "Products and Services", "Find a Station", "Search by Map", "Free Data", "Data Access tools", "CD-ROM Products", "Climate Inventories", "Metadata", and "Help/FAQ". The "Purchase" section includes links for "Most Popular", "Subscriptions", "Order Status", and "Online Store". The "Climate Info" section lists "Regional Climate Centers", "Research", "Monitoring", "Extremes", and "Global Hazards".

<http://www.ncdc.noaa.gov/oa/reports/weather-events.html>

 NOAA Satellite and Information Service
National Environmental Satellite, Data, and Information Service (NESDIS) 

National Climatic Data Center
U.S. Department of Commerce 

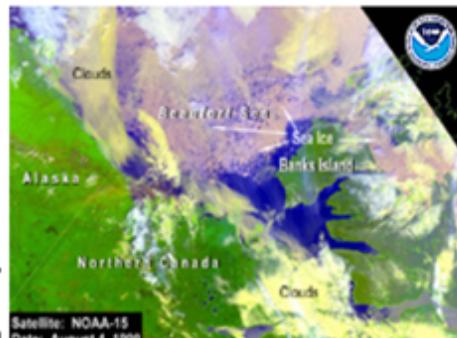
DOC > NOAA > NESDIS > NCDC **HSEI**

Historical Significant Events Imagery

Welcome
Welcome to the [National Climatic Data Center's \(NCDC\) Historical Significant Events Imagery database \(HSEI\)](#)! In here you will find hundreds of selected satellite images capturing some of the more important weather and environmental events over the last 30 years.

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Tropical Cyclone Movies

To get started, click on the [What's New](#), [Quick Search](#) or [Most Popular](#) buttons at the left. From [Quick Search](#), you can search for images of a specific type of event for the date range you desire. You will then see a list of resulting images, from which you can view/download the image files to your computer for free, or you can order hardcopy matte or glossy finish prints.


Satellite: NOAA-15
Date: August 4, 1999

Beaufort Sea showing very little ice during height of summer season - retreating sea ice possibly linked to global warming - Aug 4 (1999)

Feel free to contact the Satellite Services Group for any special imaging requirements at ncdc.satorder@noaa.gov. Permission is granted to use, duplicate, modify, and redistribute any of our images. Please give credit to NOAA / National Climatic Data Center.

<http://hurricane.ncdc.noaa.gov/cgi-bin/hsei/hsei.pl?directive=welcome>

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National Environmental Satellite, Data, and Information Service (NESDIS) 

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NEXRAD National Mosaic Reflectivity Images


WSI NEXRAD MOSAIC 05 SEP 1996 230000

Hurricane Fran, 5 Sept. 1996; click to enlarge

Select Date
Please Select Day, Month, and Year for the desired image.

Currently Available
1 April 1995 to 18 April 1997, Daily
19 April 1997 to 31 October 2011, Hourly

Images provided by Weather Services International Corp. (WSI) and NASA through the Global Energy and Water Cycle Experiment Continental-Scale International Project (GCIP)

<http://www4.ncdc.noaa.gov/cgi-win/wwcgi.dll?WWNEXRAD~Images2>

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Online Climate Data Directory

[Search Methods/ Metadata](#) NCDC is the world's largest active archive of weather data. NCDC produces numerous climate publications and responds to data requests from all over the world. NCDC operates the [World Data Center for Meteorology](#) which is co-located at NCDC in Asheville, North Carolina, and the [World Data Center for Paleoclimatology](#) which is located in Boulder, Colorado.

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NCDC supports a three tier national climate services support program - the partners include: NCDC, [Regional Climate Centers](#), and [State Climatologists](#).

<http://www.ncdc.noaa.gov/oa/climate/climatedata.html>

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Storm Events

Select State

Select Desired State or *All
 State: *All

Search the NCDC Storm Event database to find various types of storms recorded in your county or use other selection criteria as desired. The database currently contains:

The Storm Events Database contains data from the following sources:

All Weather Events from 1993 - 1995, as entered into Storm Data. (Except 6/93 - 7/93, which is missing) (NO Latitude/Longitude)

All Weather Events from 1996 - Current, as entered into Storm Data. (Including Latitude/Longitude)

Plus additional data from the Storm Prediction Center; Including
 Tornadoes 1950-1992
 Thunderstorm Winds 1955-1992
 Hail 1955-1992

<http://www4.ncdc.noaa.gov/cgi-win/wwcgi.dll?wwEvent~Storms>

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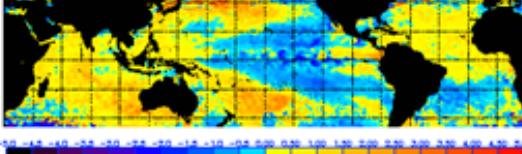
Climate Monitoring | Teleconnections | ENSO | Help

El Niño / Southern Oscillation (ENSO)

National Oceanic and Atmospheric Administration National Climatic Data Center

CPC:

NOAA/NESDIS SST Anomaly (degrees C), 11/7/2011



El Niño and the Southern Oscillation, also known as ENSO is a periodic fluctuation (i.e., every 2–7 years) in sea surface temperature (El Niño) and the air pressure of the overlying atmosphere (Southern Oscillation) across the equatorial Pacific Ocean. The presence of an El Niño, or its opposite – La Niña – sufficiently modifies the general flow of the atmosphere to affect normal weather conditions in many parts of the world. [Learn More...](#)

- CPC's Latest ENSO Diagnostic Discussion
- ENSO-Related Definitions
- ENSO Technical Discussion
- ENSO Indicators
- Data and ENSO-Related Links

<http://www.ncdc.noaa.gov/teleconnections/enso/index.php>

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NCDC Frequently Asked Questions

The NOAA National Climatic Data Center (NCDC) is one of the world's premier centers for archiving, processing, and researching climate data. As such, NCDC fields hundreds of questions regarding the data: how it is processed, how it can be accessed, and what it means. If you have a question about NCDC, climate data, or climatology, an answer may reside in our "Frequently Asked Questions" (FAQs) below. If not, please feel free to [contact us](#). We're adding questions to this site all the time.

[[Expand All](#) | [Collapse All](#)]

- **Global Climate Change Questions**
- **The Greenhouse Effect**
- **Climate Change Data**
- **Climate Definitions**
- **Briefings on Climate Change**

Answers to questions related to climate data access at NCDC may be found on [NCDC's data access and ordering FAQ page](#).

<http://www.ncdc.noaa.gov/cmb-faq/>

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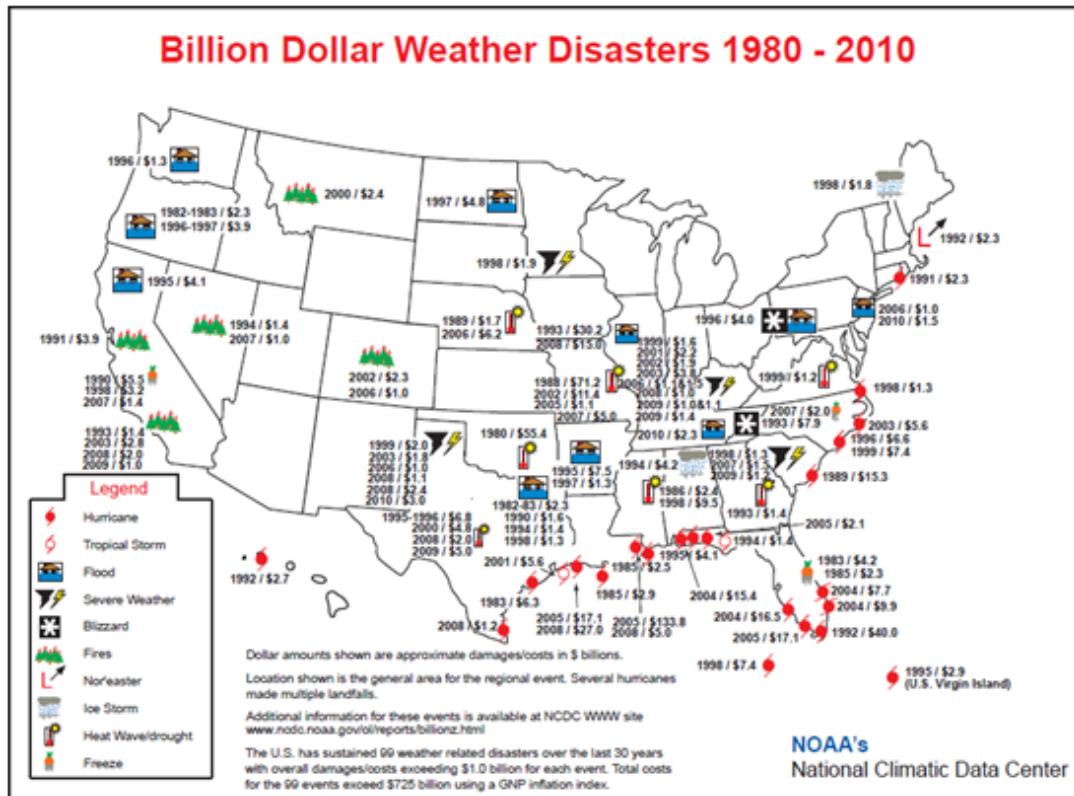
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[2003 Tech Report \(PDF\)](#)
[2006 AMS Paper \(PDF\)](#)

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<http://www.ncdc.noaa.gov/oa/reports/billionz.html>



<http://www.ncdc.noaa.gov/oa/reports/billionz.html>

NCDC Sectoral Engagement

The image shows a grid of 14 fact sheets from NOAA's National Climatic Data Center (NCDC) detailing sectoral engagement across various sectors. The sectors include:

- AGRICULTURE**
- FORESTS AND FOREST ECOSYSTEMS**
- CIVIL INFRASTRUCTURE**
- ENERGY**
- HEALTH**
- INSURANCE/REINSURANCE**
- CONSTRUCTION**
- COASTAL HAZARDS**
- NATIONAL SECURITY**
- TOURISM**
- TRANSPORTATION**
- WATER RESOURCES**
- LITIGATION**

Each fact sheet contains a brief overview, key stakeholders, examples of sector needs, and NCDC data and products of particular interest to the sector.

As part of the National Climatic Data Center's (NCDC's) desire to reach out to climate sensitive users, NCDC has expanded its services to include sectoral specific resources and workshops. This page provides information highlighting NCDC data and products that may be of interest to various sectors as well as information on user engagement workshops recently hosted or co-hosted by NCDC.

User Engagement Fact Sheets

The following fact sheets provide an overview of the sector, key stakeholders, examples of sector needs, and NCDC data and products of particular interest to the sector. For more information visit the [NCDC Sectoral Engagement Web site](#).

[Agriculture](#)

[Forests and Forest Ecosystems](#)

[Civil Infrastructure](#)

[Construction](#)

[Coastal Hazards](#)

[Energy](#)

[Health](#)

[Insurance](#)

[Litigation](#)

[Marine and Coastal Ecosystems](#)

[National Security](#)

[Tourism](#)

[Transportation](#)

[Water Resources](#)

NCDC Customer Service Contacts

NCDC provides a wide range of user services. These users range from large engineering firms designing the latest in safe, energy efficient structures, to the attorney documenting a weather event, to the individual planning a retirement move.

Services offered include data resource consultations, subscription items and publications, copies of original records, certifications, generation of specialized climate studies, and a host of other climate-related activities. Services are delivered on a variety of media including online access, CD-ROM's, DVDs, computer tabulations, maps, and publications.

For specific information regarding NCDC products and services, we recommend a consultation with one of our technicians or meteorologists.

You may call **(828) 271-4800** (selection 2 on the automated phone directory) between the hours of 8:00 AM and 6:00 PM EST. You may also email us at ncdc.info@noaa.gov.

There is a charge for most services and credit card pre-payment is required.

The e-mail address for payment information or questions in orders placed via the Online Store is nndc.weborder@noaa.gov.

Mailing address:

Commerce/NOAA/NNDC
151 Patton Avenue, Asheville, NC 28801

Tax ID #520821608

Please include the area for which you need data (city/state), the type of data you need (hourly, daily, monthly, etc./precipitation, wind, temperatures, etc.).

and the period of record you wish to cover (one day, entire month, etc).

Glossary of Acronyms

AFWA	Air Force Weather Agency
ASOS	Automated Surface Observing System
AFCCC	Air Force Combat Climatology Center
DSI	Data Set Identifier
ECMWF	European Centre for Medium-Range Weather Forecasts
ESRL.....	Earth System Research Laboratory
GTS	Global Telecommunications System
HAS	HDSS Archive System
HDSS	Hierarchical Data Storage System
IDEA	Integrated Data and Environmental Applications
MRF	Medium-Range Forecast model
NCAR.....	National Center for Atmospheric Research
NCDC	National Climatic Data Center
NCEP	National Centers for Environmental Prediction
NGM	Nested Grid Model
NOAA	National Oceanic and Atmospheric Administration
NREL	National Renewable Energy Laboratory
NVDS	NOAA Virtual Data System
NWS	National Weather Service
POR	Period of Record
PRICIP	Pacific Regional Integrated Climatology Information Products
QC	Quality Control
RCC	Regional Climate Center

