

EDUCATIONAL RESOURCES AND APPLICATIONS AVAILABLE USING THE NATIONAL CLIMATIC DATA CENTER'S WORLD WIDE WEB SITE

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1. WHO WE ARE



The National Climatic Data Center (NCDC) is part of the National Oceanic and Atmospheric Administration (NOAA). NCDC's mission is to manage and disseminate national and global environmental data. The center collects data from around the globe, archives over a half-million magnetic tapes/cartridges, 1.2 million microfiche, and 130 million paper records. The data center has more than 150 years of data on hand and adds 55 gigabytes of information daily.

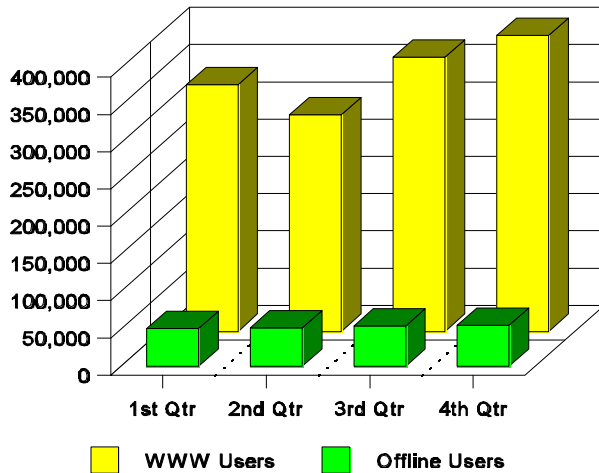
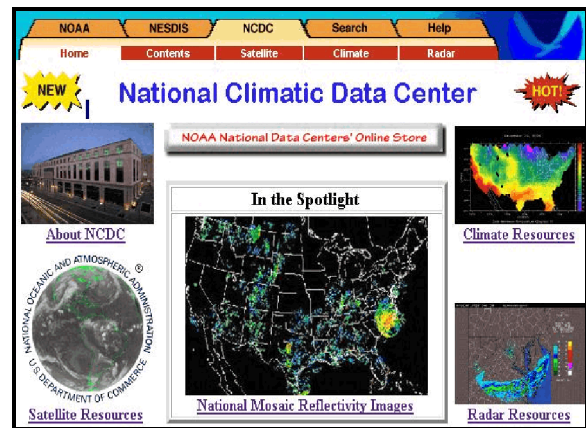


Fig 1. NCDC 1997 Contacts

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NCDC handles contacts by telephone, electronic mail, letter, or fax. The center also maintains a World Wide Web (WWW) home page at the following address: <http://www.ncdc.noaa.gov>. The WWW site handles approximately 350,000 users per quarter and continues to grow. The yearly number of on-line and off-line contacts is shown in Figure 1. NCDC contacts include a wide spectrum of business, academic, and government users. The center averages nearly 50,000 offline user contacts per quarter concerning data availability. Requests from educators and university researchers comprise about 2 to 5 % of that total.



Web address: [www.ncdc.noaa.gov](http://www.ncdc.noaa.gov)

Fig 2. NCDC's World Wide Web Homepage

NCDC's redesigned WWW page (Fig 2.) allows users access to data and information in a streamlined and efficient manner. NCDC's on-line data and inventories are broken down into specific data categories listed as various resources: **Climate, Satellite, and Radar**. The WWW site also has a section "In the Spotlight" which changes automatically and highlights a special or popular NCDC resource. The center also has a "What's New" and "What's Hot" button to bring important climate related issues to the forefront. Users can also check out the "About NCDC" to get an up to date perspective about the center. This paper will highlight several sites on the NCDC WWW page that contain data and resources of interest to the educator.

There are various ways to access on-line data at NCDC. The current WWW system was designed to have the same look and feel for users browsing the system and using the “Climate,” “Satellite,” and “Radar” resources. For example, if a user clicks on “Climate Resources” the following screen in Fig 3. will appear.



Fig 3. Climate Resources Page

The “Get/View Data” link allows users to see what particular data choices are available. This paper will show samples from the most popular educational use pages under the “Get/View Data” options of Climate, Satellite, and Radar resources.



Fig 4. Most Popular “Get/View Data” Climate Resource Option

### Climate Resources

Using the CLIMVIS system, data can be viewed as time series graphs for individual sites around the world or as contoured products for various regions of the United States. Users pick the site, time, and weather elements, then the charts are dynamically produced.

After users plot and graph their various data they have the option of downloading the data file that went into making up the individual graphs. (See Fig 5.) The above graph is one of the many products users can plot interactively by using the five “CLIMVIS” options. There is much more data and information available, so please explore the system.

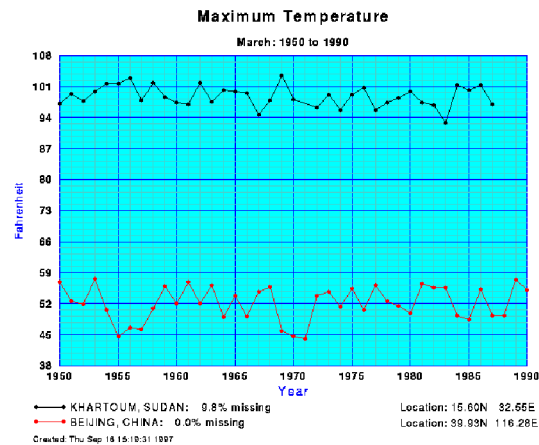


Fig 5. GHCN Maximum Temperature Graph

### Satellite Resources

NCDC also disseminates Satellite data and inventory information via its WWW pages, using different systems to deliver data, information, and images. One of the most popular options on the Satellite Resources “Get/View Data” button is the “NCDC Historical GOES Browse Server,” which is shown below in Fig 6.

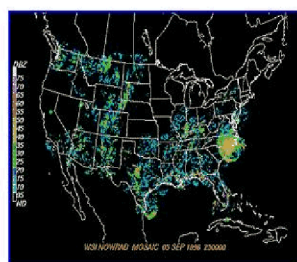


Fig 6. Most Popular “Get/View Data” Satellite Resource Option

Using the Historical Geostationary Operational Environmental Satellite (GOES) Browse Server option, users can select either full earth or Northern Hemisphere images in either visible or infrared (IR) spectrum. The system allows the users to input date, time, satellite, and channel. Browse images are then displayed with options to see the previous or next image. Users can also produce animated movies containing up to ten frames. The images can also be saved for further analysis and study. The Historical GOES browser is unique compared to other sites offering satellite images in that it provides a growing archive of on-line GOES retrospective images. It is primarily intended to aid researchers performing long term atmospheric studies involving satellite imagery. Browse imagery covering the Northern Hemisphere are available from December 14, 1996, up to the present. Prior to December 14, 1996, full earth browse imagery are available back to July 1, 1992. The center has additional satellite data, inventories, and resources available. Check out the Satellite Resources page !

[NCDC / NEXRAD / Reflectivity Images / Search NCDC](#)

### NEXRAD National Mosaic Reflectivity Images



Hurricane Fran, 5 Sept. 1996; click to enlarge

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

### Select Date

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

1 January 1997

SUBMIT

#### Currently Available

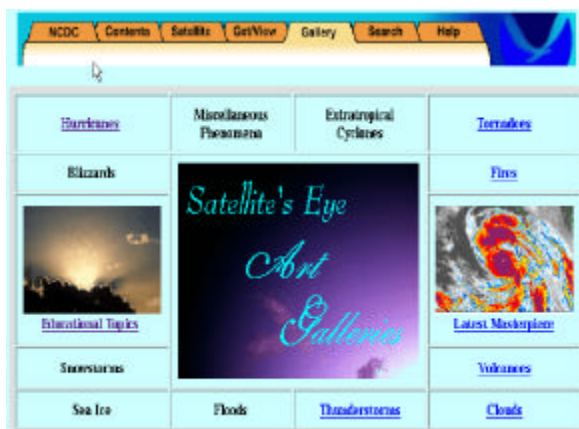
1 April 1995 to 18 April 1997, Daily  
19 April 1997 to 11 September 1997, Hourly

**Fig 7. Most Popular "Get/View Data" Radar Resource Option**

### Radar Resources

NCDC also disseminates Radar data and inventory information via its WWW pages. One of the more popular options on the Radar Resources "Get/View Data" button is the NEXRAD National Mosaic Reflectivity Images (Fig 7). The center is unique compared to other sites offering NEXRAD data in that it provides a growing archive of on-line NEXRAD retrospective images. The system generates the NEXRAD National Mosaic Reflectivity Images on the fly. Users select their image (available daily from April 1, 1995- April 18, 1997 and hourly for the period from April 19, 1997 to present). The system then returns the image to the browser; users can then click on the "animate" option and the 12 images closest to the users selection will appear as a loop product on the screen. NCDC also has inventory and other information about the NEXRAD radar system available via the Radar Resources page.

## 2. Other NCDC Educational Resources



**Fig 8. Satellite's Eye Art Gallery Page**

NCDC's Satellite's Eye Art Galleries (Fig 8.) is a series of WWW pages providing satellite images and information related to meteorological topics. Each gallery presents a series of satellite images, interpretation, and historical information concerning selected events and topics. Subjects include hurricanes, tornadoes, clouds, thunderstorms, extratropical cyclones, blizzards, snowstorms, sea ice, volcanoes, fires, floods, and miscellaneous phenomena. Detailed meteorological and satellite imagery discussions are presented under the educational topics gallery.



### Educational Resources on the Internet

[Discover in Meteorology](http://atm.gso.ncdc.gov/AMS/pubs/careers.html) (<http://atm.gso.ncdc.gov/AMS/pubs/careers.html>)  
The American Meteorological Society's information on gaining careers in the atmospheric sciences.

[College Degree Programs](http://atm.gso.ncdc.gov/AMS/pubs/96degrees.html) (<http://atm.gso.ncdc.gov/AMS/pubs/96degrees.html>)  
The American Meteorological Society's 1996 listing of degree programs in atmospheric and related sciences.



[Florida FINDER](http://atm.gso.ncdc.gov/AMS/pubs/96degrees.html) (<http://atm.gso.ncdc.gov/AMS/pubs/96degrees.html>)  
Florida State University's direct reflect and infrared weather data for the 10-12 classroom.

**Fig 9. Educational Resources on the Internet**

NCDC also has an "Educational Resources Available on the Internet" page (Fig 9). The page has various categories to help teachers and students deal with the wealth of information available via the WWW. One sub-heading entitled, "Careers in Atmospheric Sciences," lists WWW sites that contain useful information about careers in meteorology and climatology. A second sub-heading, "Classroom Teaching Resources," lists sites that have current meteorological and climatological resources.

### 3. Conclusion

NCDC offers data, information, and analysis products to the educator and student. The center has developed various WWW systems to allow users to easily retrieve climate, satellite, and radar data from a variety of national and international databases. The system will continue to grow and evolve as NCDC continues to archive and disseminate climatic data and information to our various users. The center's commitment to the educational community involves more than just the current WWW system. Please visit the NCDC Home page, as we continually add climatological and satellite data not only from domestic sites but from areas and locations around the globe.

NCDC can be contacted via the following phone number, Internet, electronic mailbox or facsimile. Please call for latest availability and pricing of any of these products and services.

Telephone Number : 704-271-4800  
Fax Number : 704-271-4876  
WWW Home Page: <http://www.ncdc.noaa.gov>  
Internet Access : [orders@ncdc.noaa.gov](mailto:orders@ncdc.noaa.gov)

WWW contacts: In order to receive the quickest E-mail response, please select the address below that most accurately reflect the content of your question.

Climate / Weather Data (including where it can be found)  
: [questions@ncdc.noaa.gov](mailto:questions@ncdc.noaa.gov)

FTP / System Problems: [root@ncdc.noaa.gov](mailto:root@ncdc.noaa.gov)

Web Pages : [webmaster@ncdc.noaa.gov](mailto:webmaster@ncdc.noaa.gov)