



# The State Climatologist

## NCDC REORGANIZATION

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On October 8, 1989, the National Climatic Data Center (NCDC) placed into effect a new organizational structure. The old organization, in place since 1974, had been decimated by two A-76 studies and the ravages of time. The new organization reflects a renewed spirit for a lean, mean, yet dynamic climate data Center. A Center with its focus on the next decade and the next century. A Center with a global perspective and a desire to provide service to the growing research community into climate change. All players are not yet in place and the desks and computers must be moved to new locations, but a renewed NCDC is emerging to take its rightful place as the global leader in climate data management.

As you can see from the organization chart on the back cover, NCDC is now comprised of four Divisions and two Support Staffs. The Systems Development Staff (SDS) represents NCDC's reach to the future. Tough decisions face NCDC and the entire climatological community when it comes to the new automated observing systems of the 1990s. The SDS will serve as the focal point for such new systems as

NEXRAD, Profiler, ASOS, AWIPS, GOES I-M, and NOAA KLM. New challenges await in the field of data storage and access with technology giving us CD-ROMs, video cartridges, and optical disks. The Program Support Staff (PSS) provides administrative, fiscal, logistical, and contract support.

Our new Operations and Support Division (OSD) combines elements of three old divisions into one strong support group. Included are the Systems Branch (formerly the Systems Support Branch), Technical Services Branch which is comprised mainly of the NCDC printing facility, and the Data Operations Branch which is a totally reorganized and scaled down version of the former Data Operations Division. From this Branch flows all the current data bases and publications. Several new automated quality control efforts are being implemented (many as a directly result of input received from state and regional climatologists).

The Global Climate Laboratory (GCL), consisting of three branches - Climate Perspectives, Global Analysis, and Data Base Management - represents NCDC's

## U.S. DEPARTMENT OF COMMERCE

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL ENVIRONMENTAL SATELLITE, DATA, AND INFORMATION SERVICE

*The future of our environment may well rest on what we do in the next decade ...*

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commitment to further the science of climatology on a global scale. A new emphasis will be placed on the generation of Reference Data Bases and the applications of these long-term high quality data. Effort in placing current climate conditions into historical perspective will continue. The Data Base Management Branch (DBMB - formerly Data Base Administration) will be responsible for the Station History program and the Climate Inventory and Catalog System (CLICS).

The Climate Services Division (CSD - formerly Information Services) will continue to interface with the varied clientele of NCDC. The new Climate Applications Branch (CAB) will bring new skills to providing specialized support to the research community. The Satellite Data Services Division (SDSD), located in Camp Springs, MD, has not been changed appreciably in its role to provide complete data archiving and user services for NOAA Satellites.

The next steps in the implementation of the new organization involve the filling of key positions. As the chart indicates, several leadership positions are currently open. These positions should be filled by the first of the year. Efforts are now underway to fill other key positions in the Data Operations Branch and the Climate Services Division. Barring unforeseen difficulties, reaching user services by telephone should be easier as we usher in 1990.

What's behind us is gone. The future presents us with many challenges and opportunities. It will take the best efforts of the entire climate community (states, regions, federal, academia, and

private sector) to meet these challenges head-on. The future of our environment may well rest on what we do in the next decade.

Kenneth D. Hadeen  
Director, NCDC

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### **The Weather Factor in Preparing for a Presidential Visit**

About 2000 graduates, 500 faculty members, and almost 16,000 spectators poured into the football stadium on Saturday, May 13, 1989, along with over an inch of rain! Billed as a "once-in-a-lifetime opportunity," the occasion was the delivery of the Mississippi State University spring commencement address by President George Bush. The outdoor site was chosen to accommodate an expected large turnout, including a 100-piece university band and nearly 200 state and national reporters and photographers.

Preparation for the presidential visit was performed by a university task force of several dozen staff and faculty members and over 50 members of a White House advance team. The group began daily meetings about two weeks before commencement, and the State Climatologist was asked to join the force for the purpose of advising about the weather and the possibility of holding the event outside. I was actually asked for a forecast for 3:00 PM, May 13, nearly a month in advance! I provided a conservative climatological forecast: temperature in the mid-80s, 50-60% chance of afternoon showers.

Tuesday, May 9, the five-day outlook showed cooler-than-normal temperatures and above normal precipitation for the area. It rained

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about 1-1/2 inches that day as a cold front moved across the state. The front later became stationary along the coast, and remained so the remainder of the week. A depression in east Texas was causing widespread rain in that area, but high pressure east of Mississippi was forecast to hold that activity west of the state. I told the task force and the secret service agents that we had to be conservative when planning an event of this magnitude outdoors where it was entirely weather-dependent. I then assured the secret service that I had indeed voted Republican, so I was conservative! They never cracked a smile.

The pressure for accurate weather information became more intense as the week wore on. By Thursday I was able to pass on the three-day forecast, which called for the depression in Texas to remain there, not moving toward Mississippi before Sunday night or Monday. The group was totally in favor of the outdoor location, and I suspect the decision to hold it outdoors was made at the political level before the task force decided to. I wondered about the stationary front along the coast.

The following is a verbatim quote of the National Weather Service forecast issued at 5:20 AM, Thursday, May 11: *"High pressure will maintain the pleasant weather pattern over Mississippi today and Friday. The ridge of high pressure will be shrinking by this weekend ... as low pressure approaches from the west ... and low pressure over the east coast remains stationary. However ... at the present time it looks like the next threat of wet weather may hold off until Sunday night or Monday."* This information confirmed the outdoor site, and the

task force adopted an irreversible commitment involving nearly a million dollars in construction, landscaping, and setting-up that would continue non-stop until mid-morning on Saturday -- the big day. I continued to wonder about the stalled front along the coast.

The same forecast was issued Friday morning, reaffirming the decision to go outdoors, and spirits were high. About 4:00 PM that afternoon, the skies over the state underwent a rapid and startling transformation! High clouds began moving in from the southwest. By 5:30 PM, there was an ominous, thick deck of stratus clouds and rain could be felt in the air! The mood of administrators and decision-makers darkened like the sky, and everyone turned to the State Climatologist for -- answers? reassurance? a hanging in effigy?

From that time until the wee hours Saturday morning, the Office of the State Climatologist was the center of attention. As the pressure in the atmosphere dropped, the pressure in the office rose exponentially.

The 4:20 AM forecast called for a 70% chance of rain for the afternoon, and it began falling by 10:00. This was the biggest event I have ever been asked to help coordinate, and I had never felt so despondent. As the focal point for weather and climate information at the University, I felt almost responsible for the outcome. I felt like the day was lost. I did not wonder about the stalled front any longer. I considered Canadian citizenship.

At 2:00 PM, after a last look at the radar which showed complete coverage over all of north Mississippi, I went to the stadium in

the pouring rain to join the processional. Lots of good-natured jeers and "funny" looks were cast in my direction as we stood under the stadium waiting for the music to begin. What happened next can best be summarized by a quote from the write-up in the *University Alumnus Magazine*: "The most meticulously planned event in university history proceeded like clockwork, right down to the perfectly-timed flyover by a quartet of Air Force jet fighters at the conclusion of the national anthem. The rain even stopped just as it was time for the ceremonies to begin".

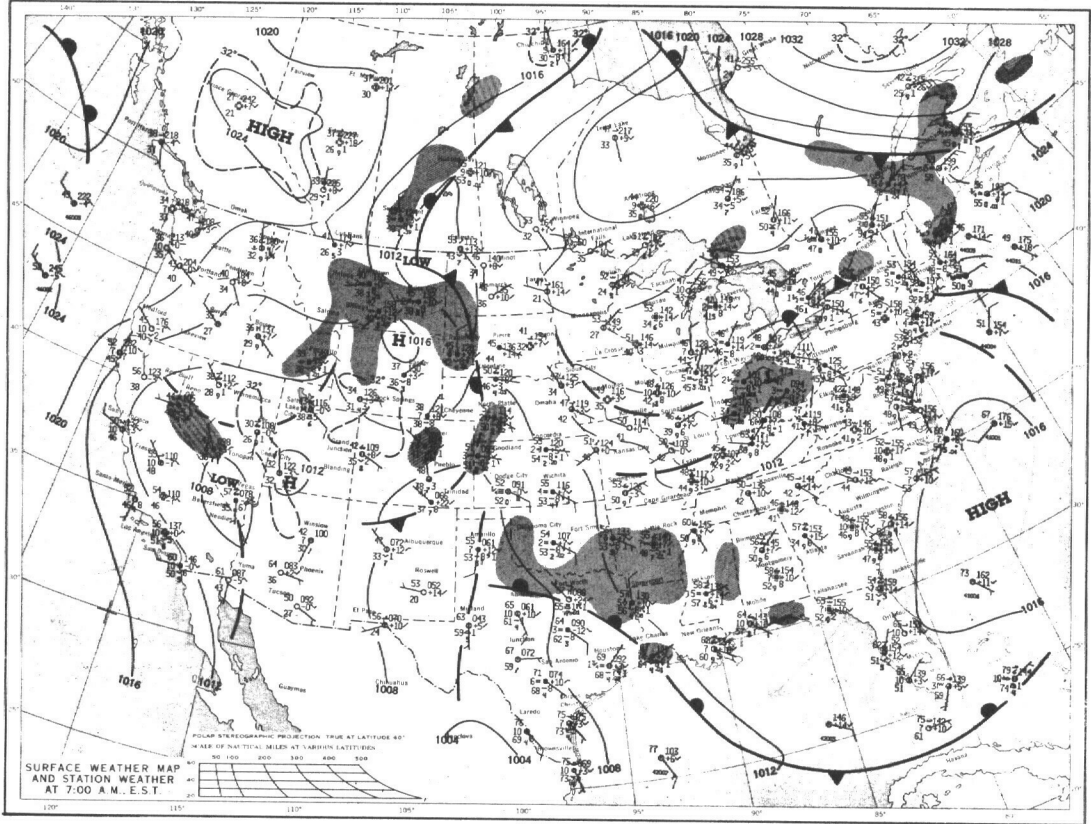
That's right! Miraculously, the clouds parted and not a drop of rain fell until after the last graduate was off the field at the conclusion of the event. Then it proceeded to rain again before finally clearing that night. Equally

miraculously, I was immediately the hero of the hour and did not have to go to Canada. So I am wondering now --- have any other SCs gone from mud to gold so intensely in so short a time over something that you had absolutely nothing to do with or no control over? Is this really part of the job? I know I will never be the same again, but the event was, in retrospect, thrilling. I will never forget the feeling I get whenever I recall the wrap-up reporter's final comments: "But then the rain stopped. The band played *Pomp and Circumstance*. The President of the United States arrived to a tumultuous cheer. It was a great day for *Mississippi State*". I am glad the State Climatologist played a small part in that great day.

Charles L. Wax  
Mississippi State Climatologist

SATURDAY, MAY 13, 1989

Miraculously, the clouds parted and not a drop of rain fell ...



**SCS National Climatic Data Access Facility**

As the world's leading provider of technical services for soil, water, and related sources to private landowners and land users, the Soil Conservation Service (SCS) has a major role to play in providing climatic services. Climate parameters are the driving force in the physical processes of soil erosion and plant growth, and they are key factors for water quality and quantity concerns. Consideration of climatic data is needed in nearly every natural resource planning activity.

Current SCS conservation activities, including the planning of Resource Management Systems (RMS), process simulation models, and climate change studies, are estimated to involve nearly nine million annual SCS applications of climatic information by the year 2000. To support the current and projected needs, it is imperative that the required data be readily available and that access be easy and direct at all organizational levels, particularly the field office. USDA/SCS office automation hardware (FOCAS) and Computer-Assisted Management Planning Systems (CAMPS) software linkage is paramount.

Unfortunately, most SCS access to climatic information is inadequate. While some special discipline needs are being addressed, there are multidisciplinary needs for climatic data that are not being met effectively. Current handling of climatic data is inconsistent with SCS automation plans. Climatic data access, processing, and use currently consume an estimated 60 staff years annually, all without a focal point of coordination.

These critical concerns were the impetus for the SCS National Headquarters Engineering Division to establish a Meteorological Data Base Committee in April 1987 to investigate these needs and how they could be met. They made a preliminary recommendation, but urged that a broader requirements analysis be undertaken by an interdisciplinary team composed of representatives from all major program areas.

In 1989 that team, known as the Climatic Interdisciplinary Advisory Group (CIAG), was formed and charged to develop a Project Management Plan outlining alternatives available to the SCS to meet the climatic data needs into the 1990s. CIAG developed three alternatives: (1) continue current operations; (2) enhance the existing West National Technical Center (WNTC), Centralized Forecasting System (CFS) data base capabilities; and (3) purchase commercially available climatic data using CD-ROM technology. Members of NOAA National Climate Program Office, NCDC, CAC, and the NWS Office of Hydrology participated in the CIAG process. CIAG member Ken Jones briefed the Regional Climate Meeting in Anaheim, CA, in January 1989, and represented SCS at the recent USDA Climate Committee sessions in Asheville, NC.

The selected alternative (2) builds on the demonstrated capabilities of the Water Supply Forecasting (WSF) Program at the WNTC. Climatic data are currently acquired, managed, and disseminated by direct computer access to the 13 western states. A CAMPS module, HYDROCLM, has been developed to make climatic data locally available to field offices. The NCDAF will

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enhance the existing CFS computer services. The staff will provide agency-wide climatic data management and analysis services. They will maintain liaison with agencies and others who have climatic data or expertise. SCS state offices will continue to work directly with SCs and RCCs for climatic services with the NCDAF, relying on this bond to meet the challenges of SCS climatic applications into the 1990s.

The creation of the NCDAF has been approved as a SCS national software and data base project. Implementation is scheduled for FY-90, with a full-time staff of three, supported by the WSF staff at the WNTC. David E. Johnson, WSF Program Manager at the WNTC, is Acting NCDAF Manager. Additionally, each NTC will designate a liaison as a collateral position for climatic services. The NCDAF will provide training and information materials to support the liaison's assistance to the states. SCS state staffs will be encouraged to develop a similar collateral assignment to assist field offices in their requests for climatic data and services.

For more information, contact:

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West National Technical Center  
Portland, OR 97209

Kenneth C. Jones  
Soil Conservation Service

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### **Cooperative Quality Control Upgrade**

A prototype system for the quality control, edit, and analysis of cooperative temperature and precipitation data has entered a second month of operational

testing. The system, Geographical Edit and Analysis (GEA), represents a major effort into employment of GIS (Geographical Information Systems) technology at the National Climatic Data Center.

GEA is an interactive areal and time series edit and analysis tool, providing for interactive quality control and display of geographically-referenced cooperative data. Along with the map depictions of a single day's observed data, there are 11 other "data screens" depicting: (1) station departure from the monthly mean, with outlier values highlighted; (2) station elevations; (3) station IDs (names); (4) station observation times; (5) time series plots; (6) temperature change from previous day; (7) temperature change to the next day; (8) daily precipitation amounts; (9) "days with" data; (10) monthly means and normals; and (11) individual correlation expressed as temperature biases.

All data are key-verified (double-keyed) so data entry errors are no longer a factor. An enhanced areal edit program, employing a more sophisticated "nearby station list," which also incorporates the comparison station lists used by the 11 western region states, has proven very effective at isolating bogus data. A rules base component gives the system an expert systems flavor, providing for automatic distinction of those data flags requiring human validation and those that can be totally automated. A parallel test is being conducted for the September data month in conjunction with the Western Region Climate Center system developed by Dr. Kelly Redmond. An enhanced rules base is envisioned. More on this system in the next issue.

Tom Reek  
Systems Development Staff, NCDC

## SC Tidbits

Dr. L. Dean Bark will be retiring as the State Climatologist for Kansas effective November 20, 1989. Dean's dedication to climatology will be sorely missed. He will hang around the office for six months or so to complete the digitizing of daily data for the Centennial stations in Kansas. Stephen Welch will assume the State Climatologist's duties until a replacement is found.

Dr. Kelly Redmond has moved from Oregon where he was State Climatologist to a new position at the Western Regional Climate Center in Reno, Nevada. Kelly is now regional climatologist, so his Oregon perspectives will have to expand by a few orders of magnitude. Unfortunately, the S/C program in Oregon has gone into a state of hibernation until the State decides which direction to go. Kelly will remain the President of the AASC.

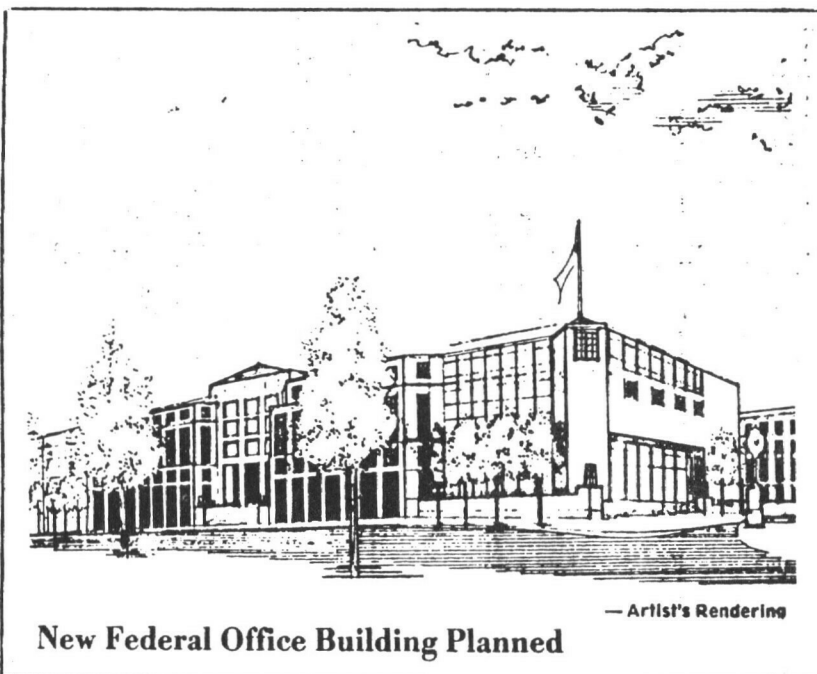
The NCDC publication *Historical Climatology Series 4-5 (Time Series of Regional Season Averages of Maximum, Minimum, and Average Temperature, and Diurnal Temperature Range Across the United States: 1901-1987)* has recently been updated to include data for 1984 through 1987.

The bound issues of the *Local Climatological Data - 1988 Annuals* have become available. This five-volume set includes all stations for which annual LCDs are available, bound in a convenient soft cover format.

Call NCDC User Services at 704-259-0682 for details. If you cannot get through on the phone, write them at NCDC, Federal Building, Asheville, NC 28801-2696.

How's the digitizing going? The Centennial Cooperative Weather Station Program (CCWSP) Committee encourages each of you to become involved in the keying of historical daily observations (generally 1890-1948) for your Centennial stations.

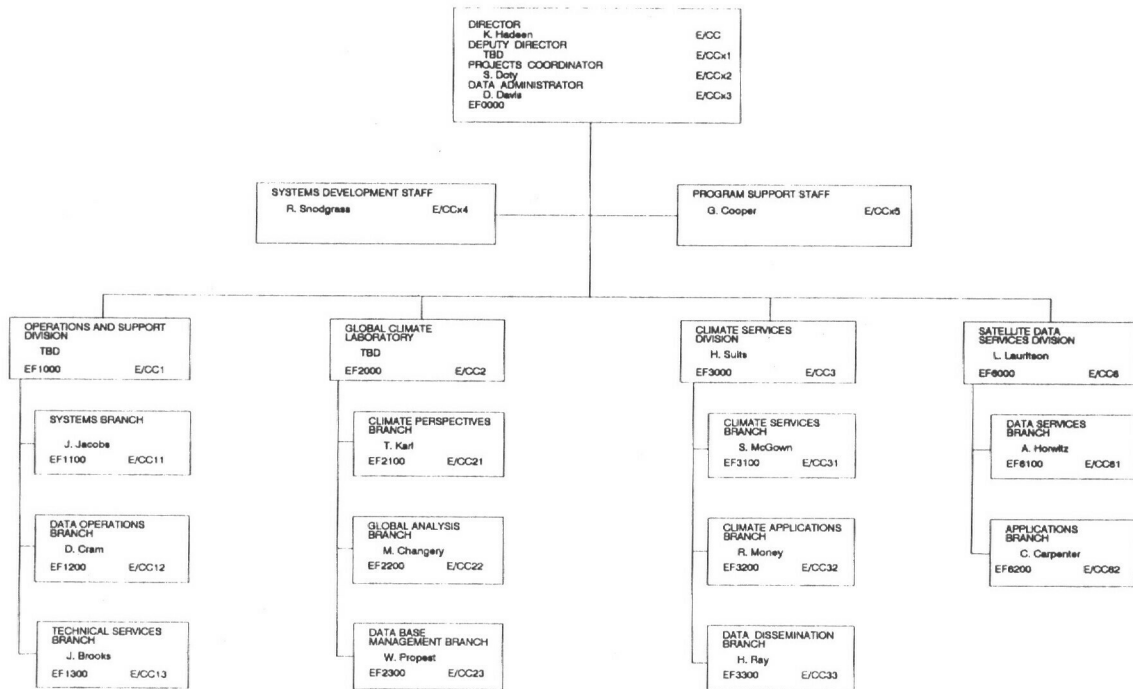
President Bush has signed the appropriations bill that contains \$4M to design a new facility for NCDC and the other Federal agencies now housed in the Grove Arcade Building. A new Federal Climate Complex will be constructed just two blocks from the present location, anchoring the western edge of downtown Asheville. Construction funding is expected to be appropriated next year. The present building is to be sold to a private developer.



— Artist's Rendering

**New Federal Office Building Planned**

# NATIONAL CLIMATIC DATA CENTER



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