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The State Climatologist

WHAT STATE CLIMATOLOGIST CAN DO FOR THE COOPERATIVE PROGRAM

Contents

Introduction

There is nothing so precious to State Climatologists as well documented, uninterrupted, long term, digitized climate data, with thoroughly annotated hard copy back-up, from a consistent and spatially distributed network of weather stations. We find ourselves turning increasingly to real-time automated observing networks to answer the myriad of "what's happening right now?" climate questions that characterize the priorities of the world in which we currently live and work, yet for determining the state of our climate; its fluctuations, extremes and longer term changes; we invariable turn back to the data that has served climatologists so well and so long -- the data from the Cooperative Program (CP). For most of our country it is the only source of data that is well documented, historically consistent (at least in a relative sense), and readily available.

A strange thing about State Climatologists and the Cooperative Program is that we are the prime users and communicators of the data, but we are not involved in the management or operations of the Program. In terms of history, this is a relatively recent phenomenon. Prior to the termination of the federal State Climatology program in 1973, State Climatologists worked directly with the CP in their respective states. Now that each State Climate office is independent of each other and independent of the source of the data, the National Weather Service (NWS), we are free to do whatever climate work we feel is important to our States with whatever funding we can secure.

Unfortunately, with all of our other duties laying heavily on our shoulders, this means that we often take the Cooperative Program for granted. Like most everyone else in the country, we assume that the data will always be available. We assume that the staff of the National Weather Service will maintain the network to our satisfaction and keep the data flowing in our direction. We assume that climate data needs for the future will be planned for. But is this realistic? As the NWS completes its modernization and restructuring activities, will the CP continue with sufficient funding and priority to satisfy the needs of climatologists? What do you think? Climatology is not terribly high on today's NWS priority list. I'm not sure that the continued expansion of electronic data collection by other organizations will be successful in making up for any NWS deficiencies.

I know that there are varied opinions among climatologists about what the future of the CP should be. Some may feel that the present program is a dinosaur. Others feel that it is alive and well and just needs a bit of nourishment. Some

wish to see it automated. Others fear that automation is not practical, affordable or appropriate and may not have the desired results. I, for one, have yet to find a network of observing sites in this country that can provide the quality and the spatial scale of year-round measurements of precipitation and snowfall that is provided by the CP. From my perspective (biased in some way, I am sure), the measurements of precipitation and snowfall are the most important climatological observations affecting our resource utilization and infrastructure here in the U.S. and is the greatest reason to preserve and improve the CP. The CP is far from perfect. Its weaknesses are well known. Yet its benefits and longevity probably far surpass what was envisioned by its founders in the 19th Century. It has earned respect, and it is worthy of our attention.

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Time To Get Involved

As a group, it is we climatologists who most fully use and appreciate the data from the Cooperative Program (both its strengths and weaknesses). If there is action to be taken on behalf of the Cooperative Program, then who are we waiting for?

It is time that we quit sitting around waiting for the data to arrive and the databases to be updated. It is time that we quit complaining about erroneous and missing data, time of observation biases, station moves and urban effects. If we truly believe that the Cooperative Program is an essential part of State and National climate monitoring, research and service, then it is time we stand up for what we believe in and help guide the Cooperative Program into the Twenty-First Century. After all, we represent a very small group within this country who truly understand the broad uses and the great economic values associated with the data from the Cooperative Program. Who else could do a better job of demonstrating the importance of this nationwide information resource?

I know that it is difficult for us since the Cooperative Program is not our program. It belongs to the NWS, and we entrust it to them to meet the nation's needs. But, like it or not, we must recognize that it is not the highest priority program within the NWS. It is fortunate the CP does support some of NWS's focused activities such as River Forecasting, forecast verification, and WSR-88D radar ground truthing. But these are so secondary to the primary forecasting and warning activities of the NWS that it is surprising the Cooperative Program exists at all.

NWS Modernization and Restructuring -- an Opportunity

For several years now we have talked about the planned NWS modernization activities and how these changes might affect the Cooperative Program. It is no longer something off in the distant future. It is happening right now

and will soon be completed. The Cooperative Program Managers (CPMs), that for years kept the Cooperative Program going, are now phasing out and giving way to a management system of Data Acquisition Program Managers (DAPMs) and Hydrometeorological Technicians (HMTs) with a variety of data-related responsibilities.

The Cooperative Program Managers (CPMs), that for years kept the Cooperative Program going, are now phasing out.

What does this mean for climatologists and the CP? Here is a local example. For many years, two CPMs have been responsible for managing and maintaining the CP in Colorado each with their own specific area. The CPM for the eastern one-quarter of Colorado also handled sizeable portions of western Kansas and Nebraska. Now, as some NWS offices have been closed and other new forecast offices have come into existence, there are one DAPM and five HMTs at each of four different offices all sharing the responsibilities that the former CPMs had. The good news is that there are many more individuals who can now help maintain the Cooperative Program. The bad news is these 24 people have many other responsibilities outside of the CP that may take higher priority. Some appreciate climatology, but others don't. For me, there is also the question of logistics. Instead of 2 people to share my CP concerns with, I now have 24 folks to work with. I am sure there will also be job transfers, promotions, and retirements complicating the picture.

The challenge of voluntarily getting acquainted and maintaining a professional relationship with this many workers makes it tempting just to throw up my hands and say, "Oh who cares anyway." But the fact is, I do care and so do you. That is why 1996 is a very important year for the Cooperative Program and a year where State Climatologists need to get involved. The increased number of personnel now working with the CP and the current national mood for reinvention and reprioritizing federal programs, make this an exceptional opportunity for State Climatologists to take an active role in shaping the future.

What Can We Do In Our Own States?

There are several action items that can be done to support and participate actively in the CP.

There are several action items that can be done to support and participate actively in the CP. Here are some ideas we have been trying out in Colorado during this interesting period of NWS restructuring.

1) Communicate with local NWS offices.

It is essential that each SC get acquainted with the Meteorologist in Charge (MIC) at each Forecast Office responsible for your State. Try to visit each office and get to meet each DAPM and as many HMT's as possible. Invite them to your office. Talk about the importance of the data from the CP and how you and others use it.

Perhaps discuss new ways to exchange data (NWS Forecast Offices will be on the Internet).

Perhaps discuss new ways to exchange data (NWS Forecast Offices will be on the Internet). Give a training seminar on the climate of your state and uses of climate data to the staff of each Forecast Office. The NWS, whether they know it or not, continues to be where most people seek out climate information since the public generally (and appropriately) does not make a distinction between weather and climate. When each NWS office gets to know you, there is a distinct risk that they may refer many of the hundreds of calls they get for climate information to your office. Be ready for more business, or be ready to provide them with better information resources to answer their requests locally.

Show an interest and stay in touch with the DAPMs and HMTs.

2) Provide climate information to current NWS cooperative observers.

We send our monthly climate summary to each observer in the State, and we maintain a feature "Observer of the Month" to give special recognition to the efforts of cooperative observers. I try to visit at least one observer any time I am out in the State.

3) Help organize special programs to recognize and educate weather observers.

The 1991 Centennial celebration was a wonderful shot in the arm for the Cooperative Program. About 25% of Colorado's observers attended, most at their own expense. We are currently planning another similar activity for the near future.

4) Show an interest and stay in touch with the DAPMs and HMTs.

Remember that the NWS personnel responsible for the CP are often not familiar with how and why the data are climatologically important. So tell them. Remind each DAPM of the locations of best long term stations in your state. This will help them give these stations priority. Provide a map of where new stations would be most helpful for climate monitoring. Point out any data problems you are aware of. Be helpful and encouraging; they grow quickly tired of just hearing about problems.

5) Educate NWS personnel about data continuity issues.

Most personnel are only slightly familiar or concerned about the impact of station moves, time of observation biases, instrument exposures, equipment changes, and urban heat islands. If you are concerned about these matters, share your concerns enthusiastically.

6) Help get publicity for the Cooperative Program.

The media truly take climate information for granted but you can easily get them interested in where data come from and how it is used. News stories seem to help the morale of both cooperative observers and NWS personnel -- and maybe even climatologists.

7) Help the NWS to realize how they use and need the data themselves.

For years the Cooperative Program operated in a vacuum. But with better communication, the NWS is making more use of CP data. Zone forecast verification, ground truth analysis of WSR-88D radar products, and hydrologic applications are the most obvious. The more the NWS uses the data themselves, the higher priority it becomes.

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8) Help with data quality control.

For states like Colorado where the State Climatologists receives and processes cooperative data each month, it is possible to spot data problems promptly. The most effective data quality control takes place when errors or observational problems are caught quickly and where observers are contacted and, if necessary, retrained promptly. Help the HMTs spot these problems themselves. This improves the product even more.

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What Can We Do Nationally

The Cooperative Program is a national program with a national budget. For long term policy, planning, and budgeting, we must involve ourselves at a national level. State Climatologists and members of the American Association of State Climatologists (AASC) can have impact on national priorities, policies and plans, but only if they speak up, both individually and as a respected group.

1) Persistently communicate with NWS headquarters.

Keep the issues of climate data constantly before them and stay involved in the long-range planning and budgeting process. We should make use of NWS personnel in the Washington, DC, area who are familiar with State Climatologists' activities to help us stay involved.

2) Stay in touch with Congress.

Many of us have at least casual contacts in the Senate and House of Representatives. Those of us who don't should make the effort to establish contacts. We should routinely be informing our representatives of our State's needs and the benefits of climate monitoring.

3) Work with the National Research Council's Committee on NWS Modernization.

A few of us have spoken with this committee, but more of us should make the effort.

Through policy statements and position papers, the AASC could exercise a much greater role than they currently do.

4) Utilize our AASC organization as a vehicle for expressing needs and future direction for climate data gathering and information dissemination.

Through policy statements and position papers, the AASC could exercise a much greater role than they currently do. This may require providing some financial support to members to help prepare, obtain approval, and present these policy and position statements. For example, if we have feelings about the future of the CP and CP modernization, we should state, present and promote these feelings clearly and strongly.

5) Identify major business users and supporters of the CP in the economic sectors who benefit substantially from climate data. Their communications to NWS headquarters and Congress may carry more weight than our own.

The reason many of us have not done much to support the Cooperative Program is time.

What Can We Do Individually? -- Be a Cooperative Observer

Perhaps the best way to support the CP is to be involved directly in it. Being cooperative observers ourselves or helping manage a local cooperative substation in our own town keeps us directly involved with the real down and dirty aspects of the program. The best climate stations in the country usually are ones operated by groups or individuals who take a personal and professional interest in the data and establish the station as an ongoing research activity. If each of us managed at least one top-notch station, we could be well on our way to having the benchmark climate network that many of us feel is essential. I guarantee you, I have learned more applicable climatology by being the director of the 107-year-old Fort Collins weather station than by any other professional activity that I have pursued.

Where Will I Find the Time

The reason many of us have not done much to support the Cooperative Program is time. Supporting the CP may seem like time and money wasted with no obvious payback. After all, it's the NWS's job. It's not in our job descriptions, and any time we spend takes away from our other important work that probably pays our bills.

I understand these concerns. They are legitimate. For 18 years I have tried to spend a few hours each month supporting the Cooperative Program, and for 18 years I have wondered if it really did any good. Despite my efforts I still see lackluster data, data inhomogeneities and all the assorted problems that plague climatologists.

Fortunately, as I look back, there have been small victories. The CP Centennial celebration in 1991 was a huge success. Cooperative observers are now asking for more training opportunities and chances to meet together as a result of the Centennial experience. Many observers read our publication,

Each month I am surprised as more cooperative observers send me e-mail messages via the internet.

COLORADO CLIMATE, thoroughly. Many maintain their own climate records on home computers. Each month I am surprised as more cooperative observers send me e-mail messages via the internet. We have more long term, stable cooperative stations than at any time in the past. For the first time, we have a cooperative station that is being operated as a project of a local historical society due to the recognition of the great historical value of the station. We also enjoy a better and more direct relationship with the NWS than at any time since the federal State Climatologist program was abolished. Nationally, data continuity has become a phrase that means something. Data continuity studies are even funded now and then. The CP has been recognized as a valuable national data resource.

Perhaps most importantly, many have come to appreciate the fact that climatology is more than just numerical data.

Perhaps most importantly, many have come to appreciate the fact that climatology is more than just numerical data. It is not a hard and cold science. Climatology is alive and includes people and human responses to the ever-variable nature of climate. In fact, weather attracts human curiosity in such a way that there will always be men, women and children who enthusiastically and almost compulsively watch and record what they see. The Cooperative Program has captured the essence of this dynamic relationship by involving a broad spectrum of society in all walks and stages of life in the process of monitoring and describing climate. It is a wonderful combination. It is a system that may not be as uniform, objective, and predictable as a locally managed network of electronic weather stations. It is a system that makes good use of voluntary efforts of citizens willing and able to share a little of their time, even as they grow old, for the benefit of many who they will never know.

One Final Plea

I am not big on New Year's resolutions, but I would like to challenge you to make 1996 the year in which you do something for the Cooperative Program. Do what you can, on whatever scale you are able. I think you will find that there are rewards for your efforts that may surprise you.

When we meet in Wyoming this summer, let us share our stories and come together with enthusiasm to offer our support to help propel the Cooperative Program into the 21st Century.

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International Station Meteorological Climate Summary (ISMCS) Version-3 CD-ROM

The National Climatic Data Center (NCDC) announces the availability

of the International Station Meteorological Climate Summary (ISMCS) Version 3 CD-ROM. This CD-ROM is the third in a series produced at the Federal Climate Complex in Asheville, North Carolina, as a joint product of NCDC, the U.S. Navy, and the U.S. Air Force. It contains detailed climatological summaries for about 2,200 international locations along with brief summaries for about 5,000 other locations.

The software is IBM-compatible and allows the user to view, print, export, and even graph (histograms of selected tables, wind roses, etc) the data. The user can select the station or region in a number of ways, such as by World Meteorological Organization (WMO) station number, individual country, alphabetical sort, latitude/longitude area, or mouse click on a user-defined map. This upgrade from Version 2 includes 1,100 additional non-U.S. locations with detailed summaries, several additional tables and narratives, and new graphical plots of selected tables.

The cost of this CD-ROM is $125 in U.S. funds (including shipping/handling), and it can be purchased from NCDC as shown below:

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