

What is your role in Regional Climate Services compared to the other players?

RCCs are quasi-operational (from the perspective of our data handling services and from continuously-updated web presence). RCCs are a bridge between operational, quasi-operational, and research organizations. We also have activities of our own in all three areas.

Although RCCs have a strong orientation toward data, they, like NCDC, are not merely data centers. A primary goal is to turn data into information. A part of the activities are geared toward understanding this transformation process. This cannot be effectively undertaken unless one understands the clientele and their decision environment. The latter is an area that the RISAs have endeavored to specialize in. But RCCS also have overlapping and complementary activities in this area.

Another type of expertise we offer is an understanding of the observational process, and all of its arcanery, that is, all the complexities of ensuring data stewardship of data observed, recorded, and delivered from numerous platforms, in excessively varied forms.

A particular Climate Service that RCCs provide, that few others do, is ~new data~. Every day brings something that wasn't there yesterday, so people have to keep coming back.

RCCs sit in the middle. At regional scales, RCCs work up-scale and down-scale. In the WRCC, for example, earlier activities were a precursor back to 1995 of what is now known as NIDIS through the Western Drought Coordination Council.

What Administrative agreements and arrangements or associations with non-NOAA entities under which RCCs operate as a result of being an RCC

WRCC is the official archive for the National Interagency Fire Center (NIFC) of data from the RAWS (Remote Automatic Weather Stations) network. WRCC has the most complete and authoritative copy of the data base, and of the metadata history. All data and metadata from all sites are continuously ingested, stored, and made available for distribution. NIFC and the RAWS network are often pressed into service during emergencies, and WRCC has had to post RAWS data on special maps for national distribution on short notice, for events such as the World Trade Center collapse (7 sites), the space shuttle Columbia recovery (4 sites), Hurricane Katrina (8 sites), the Los Alamos Cerro Grande fire (9 sites), and a number of major forest fire complexes in the western states over the last decade.

The State of California, through the California Energy Commission, has asked WRCC to host California climate information as part of the California Climate

Data Archive, because WRCC is a NOAA climate center. The Natural Resources Conservation Service (NRCS) has on several occasions directed users to WRCC when its computers or web pages have failed, again because the climate facility is a NOAA RCC. Yucca Mountain data for the Department of Energy are allowed to be stored at WRCC because it is a NOAA facility.

A variety of other non-NOAA organizations, private and public, and large research projects, have asked WRCC to ingest and act as permanent storage site for their data, because of the official NOAA status and reputation as a neutral broker for information. This last consideration is very important to many customers.

The SERCC is currently under obligations (contracts actually) to customers to provide data monthly. These groups include Construction Companies, Federal Correction Facilities, Consulting Companies, County Hospitals, Engineering Groups, and Energy Companies.

The HPRCC is presently obligated to membership agreements with Colorado State University, Iowa State University, Kansas State University, North Dakota State University, South Dakota State University, and the University of Wyoming. The agreement is to acknowledge and nurture areas of common interest in climate research and information delivery. The member states agree to participate with the High Plains Regional Climate Center for the purpose of carrying out applied climate studies and improving the capability to deliver climate services on such climate-related subjects that are of mutual importance

In addition HPRCC has agreed to supply the data, calculated indices, and maps to the "drought monitor team" for use in assessing drought severity. When there is drought in Nebraska, HPRCC, together with the Nebraska State Climatologist and the National Drought Mitigation Center, reports the climate status to the governor and the governor's action team. In addition, HPRCC has agreed to furnish climate data and information to many parties through subscription to our interactive system. For some clients who have larger data needs (e.g. Pioneer Hi-Bred International) HPRCC has agreed to be their data provider

As a more specific, detailed example, the NRCC is administratively-connected to several organizations, as follows:

USDA

NRCS: Development and operation of AgACIS

Joint Ag Weather Facility: Daily provision of real time climate data

American Association of Civil Engineers

The Director is a member of the committee of frost protected shallow foundations

State of NY

The Director has taken on an expanding role as “science advisor” for the state office on climate change policy

Hudson River Estuary Program

The Director sits on the climate advisory panel

NY Water Resources Institute

The Director sits on the Advisory Council of this group with ties to the major Northeast Watersheds (Hudson, Delaware, Susquehanna)

American Association of State Climatologists

The NRCC is the developer of the scACIS, which will provide State Climatologists with a custom ACIS interface to promote standardization of climate service products

NY State Wine and Grape Foundation

The NRCC is under contractual agreement to produce maps of climate suitability for vineyards in the Northeast

Northeast Weather Associates

The NRCC maintains the database of a set of dataloggers (approximately 50) operated by this groups. We are also under contract to link both NEWA and NOAA data to a suite of disease and pest monitoring and forecast models covering NY, PA with planned expansion to New England. In short our affiliation with this group addresses the area of Integrated Pest Management.

Various Mosquito Control Districts (NY and NJ)

The NRCC is a partner in an OGP project on West Nile risk

NY Sea Grant and various coast engineers and emergency managers

The NRCC conducts applied research through NTRACS on east coast winter storm impacts

NY Ocean and Great Lakes Ecosystem Conservation Council

The NRCC is a member of the Science Advisory Council

Can you give some examples or narratives that describe Regional Climate Services?

The Nature Conservancy owns and manages most of Santa Catalina Island, and needs weather and climate data to do so. Thus, the WRCC has designed a network, selected the equipment, installed the stations, programmed the dataloggers and communications, and ingest, store, display, disseminate, and summarize the data. We have performed similar services for many public and private wind power efforts, and for other purposes. Our service requests vary from people who we have worked with before to, of course, newcomers everyday. If I had to place a barometer on the type of call we get often it would be the person who calls and their first sentence is “I have been on-line and on the phone trying to find (specific) Climate information for my (child, law firm, environmental consulting project) for days and I cannot find what I need.” By the end of the conversation the SERCC has provided them exactly what they needed, either immediately from a free resource on-line or after a small fee for

the formatting and delivery of the data. Before the call ends they are praising us and are just so happy they know where to go in the future for these data.. These type of calls tell us a few things, One: that our staff is very knowledgeable of all the various resources that exist for climate information, Two: that there seems to be a void somewhere for marketing and advertising of the resource power of the RCC's. Of course we are in the process of resolving this for the Southeast by developing a One Stop Shop Website for Climate Information and a Climate data/Information Clearinghouse

As for a current example, I would say that the SERCC LSR Archive Product http://sercc.com/climateinfo/monthly/lsr/se_lsr.html is one of a kind and developed from the demand of our law enforcement, legal and insurance customers who needed to verify that a Weather Hazard or Extreme had taken place near an accident/claim location. The NCDC Storm Event Database is a great resource but is usually 90-120 days behind the current month. So the SERCC developed a database that archives all LSR(Local Storm Reports) issued by a NWSFO in the area and created a GIS Graphical User Interface that allows customers to examine reports from the nearest NWSFO pertinent to the accident or claim. This product works in real time so as soon as the LSR is issued the Customer can pull it up. We have been archiving data since July 2005 and future goals for this product are to share with the other 5 RCC's and develop it for there areas and expand the query capabilities.

As a developing example, both the SERCC Director and the Deputy Director have established contacts with members of the Public Health community, in particular with the Centers for Disease Control and Prevention in Atlanta and with the Environmental Protection Agency in Washington DC and in Research Triangle Park. We are now getting beyond the initial exploratory work and are developing strategies to provide pertinent climatic information in an understandable form and a timely manner. This includes both near-real time information for operational needs associated with current and emerging public health problems and longer-term climatic data allowing linkages between climate change and potential public health impacts.

With millions of acres of irrigated agriculture in the High Plains, much of it above the Ogallala Aquifer, many users call the HPRCC asking for weather data with the goal of reducing irrigation to a level that will maintain high yields but well below the maximum water that could be applied. We refer them to our on-line evapotranspiration data where they can determine how much water their crop has used on a daily basis from the recent weather data. The decision to irrigate again is made when the total evapotranspiration since the last irrigation exceeds the irrigation capacity of the system. In addition we provide them with important guidelines from the irrigation specialists and refer them to further decision making information that has been developed through our research
<<http://snr.unl.edu/climate/FarmSmart/weatherindex.htm>>

A MRCC customer of long standing has been using station climate data to track heating and cooling degree days for their energy firm. With the advent of a GIS capability at their office, they wished to make real time maps of degree days for the whole U.S. After working with the energy firm to pull more station data in real time, our service climatologist recognized that our gridded temperature data would meet their needs much more efficiently. After exchanging information and product samples, and further discussion, the client agreed that our quality controlled gridded data would work very effectively in real time, and adopted this approach to solve their climate information need.

With its varied economy, climate services in the Northeast touch on numerous sectors. The NRCC confers with the US Golf Association and related turf management companies on a weekly basis providing perspective on weed development, disease risk and moisture stress. These services also extend to specialty agricultural. Data are provided on daily and weekly intervals to investment banking firms in the region. Historical climate data influence engineering design in the region based on the outcomes of several NRCC-conducted applied research projects.

What would your “elevator talk” on your Regional Climate Center include?

Steve Hilberg, Director Midwest RCC

MRCC services and research contribute to the decision-making processes of leading firms in the energy, agricultural products, and insurance sectors in the Midwest. In the last year, we supported the informational basis for the development of alternative energy resources, including wind data for wind farm development, soil moisture and crop model data for those in the ethanol industry, and estimates of solar radiation for solar cell deployment. The MRCC has a long history of studies examining weather and climate catastrophes and their insurance impacts. MRCC researchers are among the leading experts in climate extremes and their variations over time. MRCC service staffers are expert in providing for the data needs of our clients large and small through standard and customized services. Our data, information products, and expertise lead to many positive outcomes for climate stakeholders in the Midwest.

Art Degaetano, Director Northern RCC

Many aspects of urban and rural planning require the interpretation of climate data and climate change studies. The NRCC collaborates with decision makers in NY and the other Northeastern states, working with regional multistate agencies such as the Susquehanna River Basin Commission. Climate influences not only water quantity but also issues related to water quality. Collaboration between the NRCC and programs such as NOAA's Sea Grant addresses coastal issues such as salt water intrusion, storm surge, pollutant runoff, and sea level rise.

Ken Hubbard, Director High Plains RCC

Applied Climatology in the sector of Agriculture has always been a mainstay of the HPRCC. The region is a transition zone from the humid eastern plains, to the semi-arid plains, and into the mountains. Irrigation from ground and surface water is highly developed in the region and the grasslands support some of the larger cattle herds in the country that in turn supply feedlots and beef processing plants. Cattle calving operations in winter and cattle heat stress in summer are sensitive to the seasonal weather. With the nation's corn belt and grain fields increasingly harvested for fuel for automobiles, we find ourselves called upon to offer guidance in issues of energy as well to provide supporting climate information to weigh the potential competition for feedstocks between cattle producers and bio-fuel producers.

Peter Robinson, Director Southeast RCC

The SERCC is set, with the strong support of the UNC-Chapel Hill, to interact more closely with the Centers for Disease Control on issues of Climate and Health. Further, with the extensive expertise in Air Quality on campus and in NOAA's office co-located with the EPA in the Research Triangle Park, the SERCC is set to blend climate expertise with considerations of air quality and its impacts on human health.

Kevin Robbins, Director Southern RCC

The SRCC assists the Louisiana Governor's Office of Homeland Security and Emergency Preparedness by interpreting climate scenarios of tropical storms. The SRCC has helped to produce synthetic storm scenarios for emergency planning and exercises such as Hurricane Delaney and, more recently, Hurricane Pam - a study that illustrated the impact of a theoretical storm hitting metropolitan New Orleans and the Louisiana coast. During actual hurricane events we go beyond data analysis to interpret environmental events within the context of evolving emergency response needs. (see <http://www.unidata.ucar.edu/community/katrina/katrinasrcc.htm> for a detailed description of what we do during emergencies). Furthermore, with extensive experience in Integrated Data Management, the SRCC helps to integrate the access modules of NOAA's ACIS system into the USGEO IDE framework."

Tim Brown, Director Western RCC

The WRCC works closely with all major western resource management agencies to improve the application of climate knowledge for topics spanning water, fire, agriculture, timber, fish and wildlife, recreation, transportation and health. The center conducts and advises numerous observational activities on behalf of state and federal agencies. The western U.S. is warming far faster than the remainder of the nation, and WRCC is coordinating with many regional players to characterize regional variability in climate and the impacts on urban and rural populations and ecosystems.