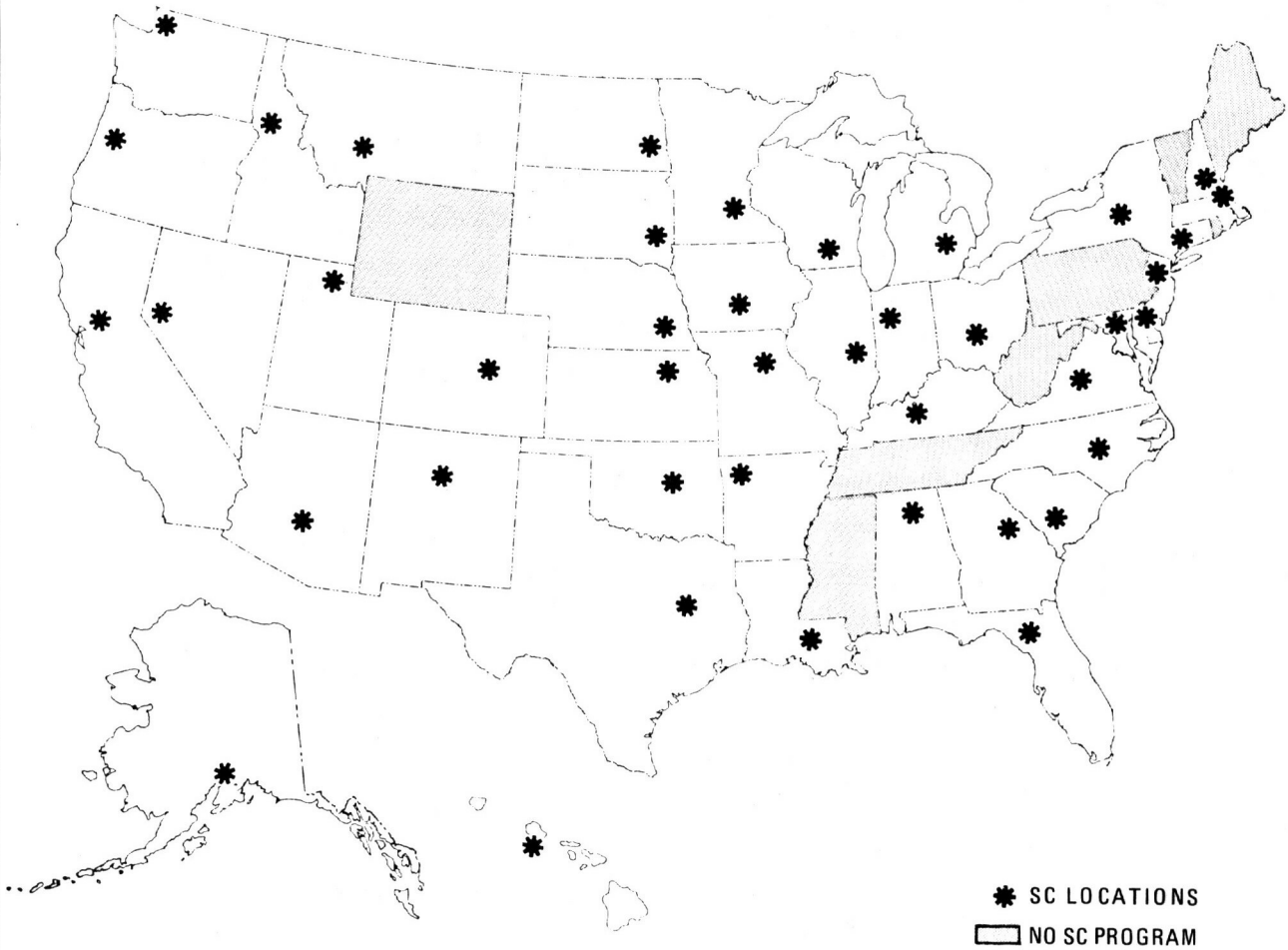
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
ENVIRONMENTAL DATA AND INFORMATION SERVICE
NATIONAL CLIMATIC CENTER

THE STATE CLIMATOLOGIST

IN COOPERATION WITH THE
AMERICAN ASSOCIATION OF STATE CLIMATOLOGISTS



VOLUME 5 NUMBER 3 JULY 1981
PUBLISHED QUARTERLY AT THE NATIONAL CLIMATIC CENTER, ASHEVILLE N.C.

The NCC and the AASC are pleased to welcome two new State Climatologists into our ranks. Dr. Charles L. Jordan, new State Climatologist for the State of Florida, replaces Dr. Clark I. Cross who retired in May 1981. Dr. Jordan's mailing address is Department of Meteorology, Florida State University, Tallahassee, FL 32306. Also, Professor Robert L. A. Adams of the Department of Geography at the University of New Hampshire, has assumed the role of State Climatologist for the State of New Hampshire following the resignation of Gerard Pregent. Professor Adam's address is Department of Geography, James Hall, University of New Hampshire, Durham, New Hampshire 03824.

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HELP US GET YOUR MESSAGE ACROSS! Each State Climatologist is asked to send to the National Climatic Center (Attention: Bill Bartlett) an indepth article on their SC Program. Each quarter a selected state will be "spotlighted" in the AASC newsletter. These articles will serve to acquaint other states with the program or programs that are being conducted by SC's. Each write-up should be accompanied by several photographs (3 1/2" X 5") to illustrate the article. If public relations brochures are available, they will suffice.

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NCC PUBLISHES HEAT STRESS DATA

The National Climatic Center has produced a new "Environmental Information Summary on Heat Stress" in response to growing public demand for information after the great heat wave of 1980.

The 6-page summary lists heat wave safety rules, heat syndrome symptoms and first aid, as well as advice to coaches. Copies of Heat Stress, Environmental Information Summary C-19 are available from the National Climatic Center.

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COVER With this issue, the title of this quarterly newsletter has been changed to "The State Climatologist" to more accurately reflect the purpose of the publication.

ANNUAL AASC MEETING

The 1981 AASC Annual Meeting has been scheduled for August 11-12 in Fort Collins, Colorado. The agenda will include items vital to the future of the AASC and State Climate Programs. Some of the topics that will be highlighted are:

1. Review of the monthly climatic summaries that are published by the State Climatologists.

2. Dicussion of State Data Bases.

3. Discussion of the in-state data collection activities.

4. Reports from Federal Agency representatives.

5. Report from members of various climatic advisory panels.

6. Committee Reports

7. Business Meeting

All AASC members should have received details on location, lodging and transportation from Thomas B. McKee, State Climatologist for Colorado.

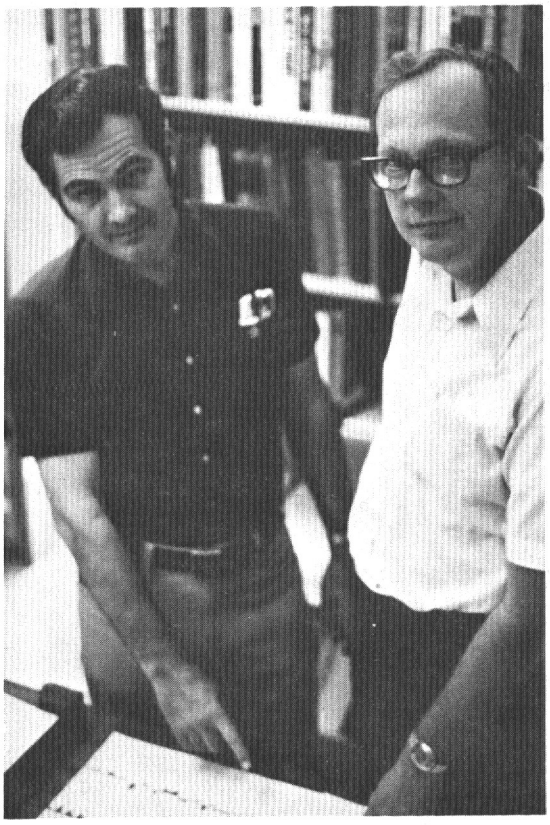
A special climate trip is being planned for the afternoon and evening of August 12. The trip will start about 1:30 p.m. and end by 10:00 p.m. Members will span the elevation range of 5,000 feet to 12,000 feet and visit the short grass prairie, forests, and the tundra all in a distance of less than 100 miles. Dinner is included in the trip. The cost of the climate trip will be included in the meeting registration fee for AASC members.

LOUISIANA OFFICE OF STATE CLIMATOLOGY

CLIMATE EXTREMES FOR LOUISIANA

Highest temperature, 114° at Plain Dealing on August 10, 1936.
Lowest temperature, 16° below zero at Minden on February 13, 1899.
Maximum rainfall in 24 hours: 22 inches on August 29, 1962 at Hackberry. In one month: 37.99 at Lafayette in August 1940.
Highest snowfall: 24 inches at Rayne, Louisiana, February 1895.

The Louisiana Office of State Climatology was established in May, 1980, as the result of a Louisiana Department of Natural Resources contract. The office staff consists of the State Climatologist, Dr. Robert A. Muller; a research associate, Charles J. Chimento; a graduate assistant, Robert Sechrist; a part-time secretary, Pat Johnson, and student workers. Dr. James Willis of the Quantitative Methods Department acts as statistical consultant to the program. The office is part of the Louisiana State University Department of Geography and Anthropology and is located in the Geology Building on the L. S. U. campus at Baton Rouge.



Dr. Robert Muller, State Climatologist (right), and Dr. James Willis (left) statistical consultant, look at graphs of precipitation over southeast Louisiana.

Charles Chimento, Assistant to the State Climatologist and Pat Johnson, secretary look over climate data on Weather Wire.

SERVICES

The office acts as a consultant to the Louisiana Department of Natural Resources. It also provides climatic data such as temperature, precipitation, wind, solar radiation, and the water budget to the public, state agencies, university research units, law firms, engineering firms, and the news media.

The Louisiana Office of the State Climatologist has contracts with federal and state agencies for some very specialized studies. The most interesting at the moment is a study of the climatic opportunities for migration of the Fall Armyworm over the southeastern United States funded by U. S. D. A. They are negotiating with the L. S. U. Center for Agricultural Sciences and Rural Development and the Louisiana Farm Bureau, for specialized agricultural climate networks and distribution of current information by radio, TV, and specialized newsletters.

Their three main channels of disseminating climate information are preliminary monthly summaries issued over NOAA weather wire, a monthly climate newsletter that is mailed out to more than 500 users, and news releases through Sandy Branch, L. S. U. Office of Public Relations.

MONTHLY CLIMATE NEWSLETTER

The monthly climate newsletter (see sample features) normally consists of five major parts:

1) a brief highlight section which is a summary

2) a synoptic weather type summary which analyzes atmospheric flow patterns during the month

3) a climatic elements analysis of each month which:

   a) interprets temperature and precipitation data for the state and relates it to energy consumption, soil moisture, and stream flow

   b) summarizes storm data

4) soil moisture from the Daily Water Budget models of four locations

5) a special feature article which may be a summary of conditions over a season, an update to the time of the news release, or average first freeze dates, etc.

The monthly climatic newsletter not only provides information on what has occurred, but also serves as an educational and advertisement tool for users. The climate newsletter introduces users to climatic concepts such as cooling and heating degree days and informs them on what information is available from our office.

Department of Geography and Anthropology
LOUISIANA STATE UNIVERSITY AND AGRICULTURAL AND MECHANICAL COLLEGE
BATON ROUGE · LOUISIANA · 70803
504/388-5942 or 388-5943

OFFICE OF STATE CLIMATOLOGY

(Operating under a Louisiana Department of Natural Resources Grant in cooperation with the National Weather Service and the National Climatic Center)

Dr. Robert A. Muller
State Climatologist

Dr. Charles J. Chimento
Research Associate

CLIMATIC NEWSLETTER FOR MAY, 1981

MAY, 1981 . . . Seventh Coolest on Record and Normal Rainfall

Highlights:

The state weighted temperature for May, 1981, is 71.2°, which is 2.8 degrees below normal and ranks as the 7th coolest on record. The lowest reported temperature was 42° at Homer, Boyce, Ashland, and Logansport. The warmest was 96° at Thibodaux and Franklinton. The state weighted average precipitation for May, 1981, is 5.53 inches, which is .34 inches above normal. The highest monthly rainfall was 12.80 inches at Greenwood Fire Tower in Northwest Louisiana. It was the 9th wettest May on record over Northwest Louisiana.

Analysis of Synoptic Weather Types:

	May		June	
	1981	1966-75		1966-75
Pacific High (PH)	10	6		0
Continental High (CH)	24	22		23
Frontal Overrunning (FOR)	16	12		7
Coastal Return (CR)	6	11		10
Gulf Return (GR)	29	26		24
Frontal Gulf Return (FGR)	12	17		11
Gulf Tropical Disturbance (GTD)	0	1		4
Gulf High (GH)	3	5		21
Continental Index (CH+FOR)	40	34	(CH+FOR)	30
Tropical Index (GR+FGR+GTD+GH)	44	49	(CR+GR+FGR+GTD+GH)	70
Storminess Index (FOR+FGR+GTD)	28	30	(FOR+FGR+GTD)	22

In synoptic weather type terms, the frequencies of weather types during May were very close to average. The succession of ridges and troughs, six ridges and five troughs, produced recurring frontal situations resulting in short but frequent bursts of showers and heavy thunderstorms which helped to alleviate serious drought conditions over most of the state.

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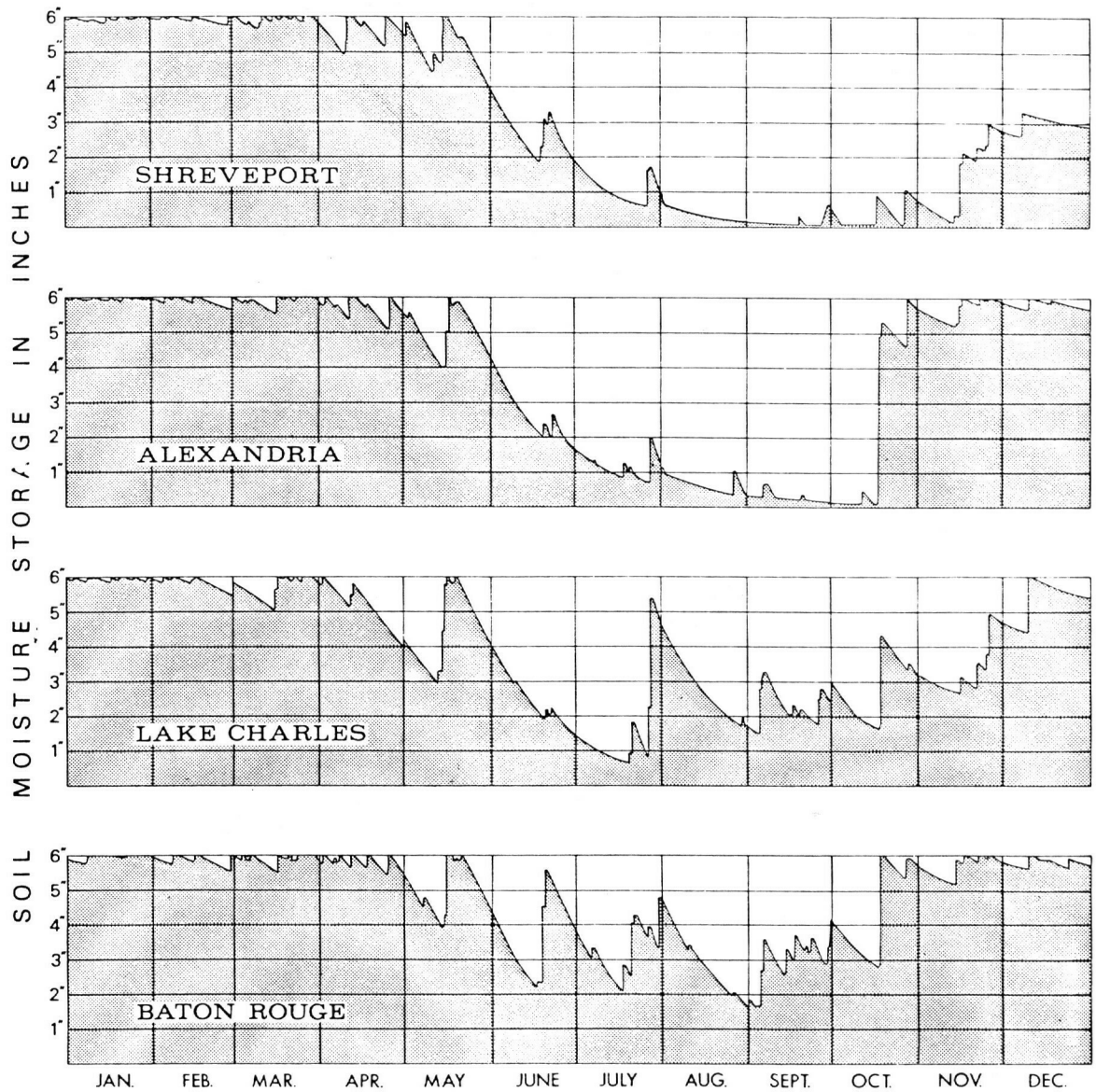
Excerpts from Monthly Climatic Newsletter

1980
DAILY WATER BUDGETS
SOIL MOISTURE STORAGE
6″ CAPACITY



Excerpts from Monthly Climatic Newsletter

WEATHER WIRE NEWS RELEASES

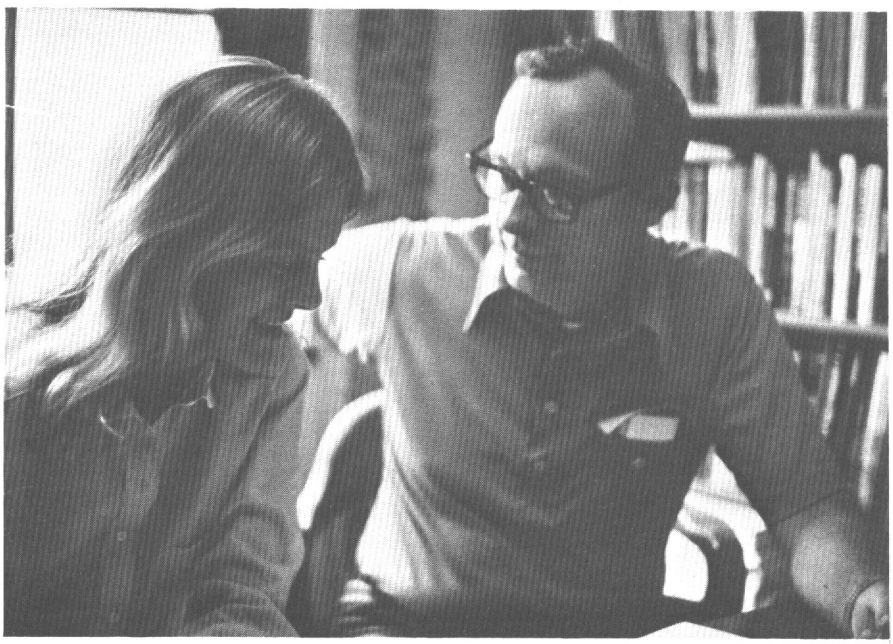
The Louisiana Office of State Climatology issues a preliminary climate analysis on or about the third working day of each month over the National Weather Service Weather Wire. Daily reports of highs, lows, and rainfall from agricultural weather stations and first order National Weather Service Offices (about 28 reporting stations) are used to calculate the average temperature and precipitation for climate divisions and for the entire state.

The news release also contains information on soil moisture. Using the weather teletype data, the office routinely calculates a water budget model for nine locations around the state. These daily calculations provide the office with an up-to-date status of the water situation across the state.

L. S. U. OFFICE OF PUBLIC RELATIONS

Once a month, Sandy Branch of the L. S. U. Office of Public Relations interviews Dr. Muller about the weather that can be expected during the upcoming month. The article is written in terms that can be understood by the average reader.

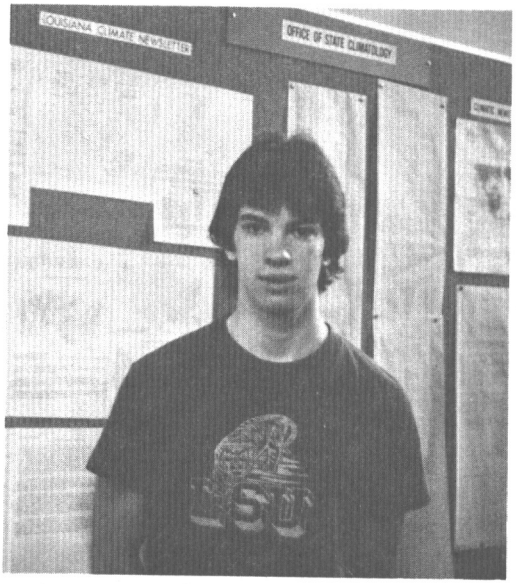
The news release is distributed by L. S. U. to all the daily and weekly newspapers in Louisiana. Sandy Branch uses a very descriptive and informal style of writing that makes the article interesting and informative. The articles entertain as well as edify.



Sandy Branch of L.S.U. Office of Public Relations interviews Dr. Muller for the Monthly Climate News Story.

Student workers Andrew VanBergen and Wendy Fox in front of L.S.U. weather instrument shelter.

Student worker John Broughton in front of climatic bulletin board.



RELATIONSHIP WITH THE NATIONAL CLIMATIC CENTER AND THE NATIONAL WEATHER SERVICE

This is a cooperative effort; the National Climatic Center in Asheville is at the core of the program. NCC has provided us with computer magnetic tapes of Louisiana, numerous publications, and some technical advice. Also, NCC publishes parts of our climate newsletter in the monthly CD for Louisiana.

Our office is very fortunate to have the close support of Malcolm Moreau, National Weather Service substation specialist for Louisiana and East Texas. For example, early in each month Mr. Moreau provides our office with substation monthly climatic forms that are the basis of our climate newsletter.

Mr. Moreau encourages the state climatologist and his assistant to accompany him on substation visits. The substation visits are valuable in assessing the exposure of weather instruments, and local conditions and for local contacts. Our office takes part in award presentations to weather observers of the state.

There is also interaction between our office and all the National Weather Service Offices in the state. They mail us their monthly preliminary local climatological data for inclusion in our newsletter, and refer some climate data requests to our office. Without the cooperation of Mr. Malcolm Moreau

and the National Weather Service Offices in the state, our newsletter would not be as extensive as it is.

The Joint NOAA/USDA Agricultural Weather Facility in Washington, DC, has also been extremely helpful. They have provided our office with the latest values of the weekly Palmer Drought and Crop Moisture Index. Their Weekly Weather and Crop Bulletin is also an extremely useful publication.

Malcolm Moreau (left) of the National Weather Service, accompanied by Dr. Muller, make a substation award presentation at St. Joseph, LA.

COST EFFECTIVENESS

The Louisiana Office of State Climatology program is a cost effective one. Here are a couple of examples of current cost effective services, and possible future ones.

The state and local government loses money when building and road construction is not finished on time. Climate data may be used to evaluate contractor claims of weather delays. If the climate is not a true factor, the contractor must reimburse the state for increased costs. Our office has supplied such data.

State funds will also be saved through the elimination of duplication of services. Once the Louisiana Office of State Climatology computer system is established, it will be the state depository for climate environmental data. Not only will it contain data from official National Weather Service stations, but it could also contain some non-published data. A central data base will prevent different state agencies from having their own temperature/precipitation gauges at the same location, or from establishing a station in an area where data are already available.

PRIMARY DATA SOURCES FOR THE LOUISIANA OFFICE OF STATE CLIMATOLOGY

Weather Wire Reports

WS E-15 from substation specialist

F-6 from National Weather Service Offices

Weekly Weather and Crop Bulletin from NOAA/USDA Joint Agricultural Weather Facility

Daily Weather Maps, published by the U. S. Dept. of Commerce

Louisiana Crop-Weather Summary issued by the Louisiana Crop and Livestock Reporting Service

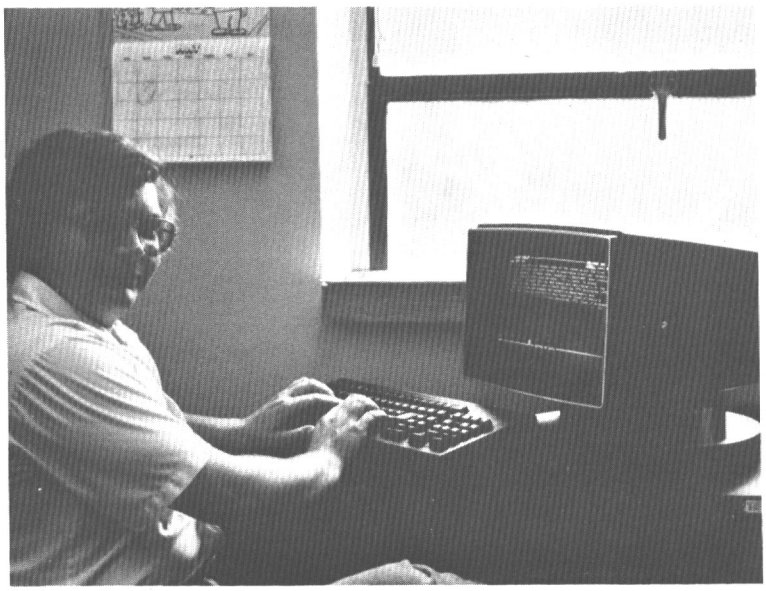
AM Weather Show, on PBS Monday through Friday at 7:45 AM

The U.S.G.S. monthly newsletter on Water in Louisiana

News releases from the Louisiana Office of Forestry

Climatological Data - Louisiana

Local Climatological Data - First Order Weather Stations



Robert P. Sechrist, graduate research assistant, is our specialist for computer processing.

For more information or to be added to the climate newsletter mailing list write:

Office of State Climatology
L.S.U. Department of Geography & Anthropology
Baton Rouge, LA 70803

Phone: (504) 388-5942

SUMMARY OF COMMUNICATION ACTIVITIES AND PUBLICATIONS OF STATE CLIMATOLOGISTS

Stanley A. Changnon, Jr., President

An extensive communication-publication survey form was prepared for inventorying the status of information transfer, largely by publications, by state-supported State Climatologists in 1981. The survey was conducted during January-February 1981 with responses provided by 29 of the 42 state climatologists. This report is a tabulation and description of these communication efforts of the state climatologists and those in their offices.

WEEKLY, MONTHLY, AND ANNUAL PUBLISHED SUMMARIES

One of the primary activities of general state climatologists, in the publication line, involves the preparation, publication and distribution of climate summaries for varying periods. These summaries typically present averages of temperature for the specific period, of total precipitation (rain and snow), and of a variety of other user-oriented climate information. These come either from various weather stations or crop-reporting districts within the states.

Table 1 presents a summary for the 29 states preparing these reports. One notes that 5 of the reporting states produce weekly summaries, the totals reveal that each month 7,585 monthly climate summaries are distributed in the United States by state climatologists.

The responses relating to these summaries also identified the user groups receiving these. The principle recipient groups include: 1) local, state and federal officials, 2) scientists, 3) the news media, 4) agri-business, 5) farmers, 6) recreation groups, 7) extension agents, 8) private industry, 9) university scientists and educators, 10) weather sensitive industries, 11) consulting engineers, and 12) libraries. In all but one state these are distributed free of charge, and with minimal charges required in one state.

Table 1. Distribution of Weekly, Monthly and Annual Climate Summaries by State Climatologists.

Type of Climate Summary	Number of States Distributing	Number of Summaries Distributed		
		Average	Range, low to high	Total
Weekly	5	1,245	120 to 3,000	6,220
Monthly	11	780	75 to 5,200	7,585
Annual	12	1,192	75 to 5,200	9,535

PUBLISHED REPORTS

One of the major means of transmitting data and information to the user community utilized by state climatologists is published reports. As shown in the attached questionnaire, information on four different type of reports were obtained. This included climate atlases (largely data tabulations), research findings, reports describing data sources, and bibliographies.

The results of the survey are tabulated in Table 2, both for 1979 and 1980. For example, if one looks under research type reports, one finds that eight of the 29 states published one or more such reports in 1979, and the average number issued by the eight states was nearly five. This also shows that the average number of research reports distributed in both years was 365 per report. Basically, the statistics on reports shown in Table 2 reveal that 30% of all of the state climatologists routinely published reports of varying types each year. State climatologists published 97 reports in 1979 and 101 in 1980.

TELEPHONE RESPONSES

Another form for presenting climatic data and information is also listed in Table 2. Under the label of "Other" are the responses to telephone inquiries and the issuance of news releases and other types of similar materials. Most of the state climatologists, 25 of 29, participate in these activities. In 1979, something like 470 per year (about 40 per month on the average) respond to calls and news needs, with a range anywhere from a low of 250 per year to a high of 7,200 in 1979. The number of states and the level of services in this service category increased (Table 2) from 1979 to 1980.

LETTER RESPONSES TO REQUESTS

Another of the principle communication activities of state climatologists are the letters prepared to respond to requests. These letter-type responses can be generally classed in two categories: 1) short letters with easily

Table 2. Distribution of Reports by State Climatologists

Type of Report	1979			1980			Average Number distributed per report
	Number of states publishing reports	Number of Reports Average	Range	Number of states publishing reports	Number of Reports Average	Range	
Atlas-data tabulations	8	4.4	1-7	14	2.8	1-6	535
Research Results	9	4.8	1-10	9	4.6	1-10	365
Bibliographies	3	1.6	1-2	1	2.0	0-2	451
Data Sources	7	3.1	1-5	4	5.0	1-10	1385
Other[1]	25	470	250-7200	27	695	350-7300	not applicable

[1]Responses to telephone inquires, new releases, etc.

summarized data, and 2) long letters with extensive complex information derived from data interpretations and often requiring special analyses. All letters were done in response to requests, typically received in letter form. The activities of the 29 states concerning letter responses are shown in Table 3. Here one notes, for example, that 11 of the 29 states participated in 1980 in letter response activities requiring short summaries with an average of 105 letters written per year. As would be expected, the number of letters with extensive analysis were less in both years. The results indicate that roughly a third of the state climatologists participated in this activity.

CLIMATE OUTLOOKS-PREDICTIONS

One of the particular types of information distributed by some state climatologists relate to "climate outlooks," essentially predictions of the weather of the following months or season. In response to this request for information, six of the 29 states reported that they issue such outlooks. The number of recipients was found to be low, ranging from 35 to 200 per state. The primary audience of these outlooks are other state agencies and agricultural interests.

Table 3. Distribution of letter Summaries in Responses to Requests to State Climatologists

Types of letters	1979		1980	
	Number of states	Average letters per year	Number of states	Average letters per year
Short letters with easily summarized data	10	95	11	105
Long letters with complex information from data interpretation and special analyses	9	24	9	28

PRESENTATION OF TALKS AND LECTURES

As part of the communication-related activities of state climatologists, we surveyed the presentation of talks, speeches, and lectures. These occur in a variety of places including universities, county and regional meetings, and at scientific conferences. The responses of the 29 state climatologists indicated that 29 presented talks during 1980. The number represented by those presenting talks ranged from a low of three to a high of 65 with an average of 12 per climatologist.

MODERN CLIMATOLOGY AT A CROSSROADS

E. Arlo Richardson
Utah State Climatologist

Climatology is one of the older atmospheric sciences, yet the updating of this science to meet the needs of modern man is lagging. After the development of the barometer, thermometer and raingage, three of the basic measuring instruments used in climatology, average values were used to define and compare the climate of different areas. Some years later as more information became available, extreme values of selected climate variables were added; but until very recently such statistics were about all that any climatological summary contained.

Average and extreme values do form a fairly reliable basis for comparing GENERAL CONDITIONS of the weather or climate at different locations but these calculations add very little to man's understanding on how climate and/or weather influences the behavior and well-being of living organisms including man himself.

With modern computers and millions of observations around the world at his disposal, modern climatology has the capability of giving greatly improved services to all aspects of the world's economy. The only requirements for such improvement are recognititon of the facts that: 1. Such services can be made available to the user; 2. Such services will be of economic value to the user; and 3. Funding is necessary to develop the computer programs which will relate the huge climatological data bank to the needs of individual disciplines.

This is primarily the direction that many modern climatologists desire to move. The tables of averages, means and extremes are being prepared on a national basis, but this is due to the fact that such summaries are the only type of climatological information with which the general public is familiar. Many decisions, which are being based on such tabulations, result in economic losses.

There is another aspect of the problem which is becoming more and more critical. In the beginning of the science, as has been previously indicated, tables of means and extremes were adequate for most people since they had only an academic interest in the weather anyway. As modern civilization began to emerge in the United States after the Civil War, the need for knowledge of future weather conditions was recognized and the National Weather Bureau was organized. Their forecasts cover specific meteorological variables which are usually compared to the average or normal values of the variables at specific locations. With the increase in costs of government, support of the climatological services at the national level was virtually eliminated. The accumulation of data at the National Climatic Center was continued, but the collection of data at the various climatological stations has received less and less support during the last ten years. Further funding to publish many types of summaries by NCC has been reduced. There seems to be a lack of

recognition by leaders in both the state and nation of the importance of climate as it relates to our modern civilization.

Let's look at some specific types of applications of climate information to several disciplines. As our prime agricultural land is being lost to encroaching urbanization, modern farmers are having to move to less productive, marginal lands. Many of these lands were once barren deserts, and there is currently little knowledge of the weather conditions which will determine the type of crops such lands will support. There are currently available computer programs which will relate such common weather measurements as daily temperature and precipitation to the growth and development of several agricultural crops. It is now possible to predict the potential for growing such crops without ever touching a plow to the soil, yet many farmers are expending thousands of dollars to develop sprinkler systems on lands which are incapable of producing agronomic crops to support such an investment.

As demands for housing increase, developers are moving into more critical areas for housing development. Developments on slopes of unstable land areas are ending in catastrophic mudslides. Building on the banks of streams without considering the water levels during flood conditions is resulting in large economic losses all of which could be reduced by consideration of a proper climate analysis of each area before construction.

Analysis of the potential climate impact is now being required on most large construction projects, but many of these analyses are of limited value since the only requirements are summaries of average conditions of the climate with little or no consideration of the extremes and the impact of these extremes on the activities at the site.

While climatologist cannot control the weather in any way, an evaluation of the occurrence of certain extremes of economic importance to various disciplines can save millions of dollars and is of great significance.

MORE SPECIFIC APPLICATIONS OF CLIMATOLOGY

One of the more useful applications of climate which is increasing in use, is that of a climatological outlook of possible future weather conditions. The climatological outlook is not a weather forecast such as those supplied by the National Weather Service. A climatological outlook is just what the name implies, an indication of possible future weather conditions based upon a statistical analysis of what has occurred in the past. These outlooks are usually expressed in terms of probabilities or chances that are similar to the odds one faces when playing the slot machines or cards at the Casinos in Las Vegas or Reno. A probability simply states that the event has occurred on the average for the period of record of 20% or 2 times out of 10, 50% equals 5 times out of 10 or 80% equals 8 times out of 10. This does not mean that the 2, 5 or 8 times will occur consecutively or in any other specific order. The probability simply means that during the period of record analyzed the event has occurred the number of times as represented by the figure. If one assumes that the weather will follow a similar pattern to that which it has done in the past, then the probability will be an indication of what conditions might be in the future.

In Utah, probabilities of the occurrence of selected amounts of precipitation at about 38 of the major weather stations in the state have been calculated for periods of 1, 2 and 3 week intervals. Probabilities have also been calculated and graphs prepared for the probabilities of measureable amounts at several stations on a daily basis. Due to a cutback in funding from the State Legislature, these analyses cannot be published; but they are available to the public for their use at the Office of the State Climatologist.

If funding were to be made available, similar types of probability analysis could be made for other weather variables such as temperature, cloudiness, snowfall, etc.

Such probabilities are very useful to almost all segments of the state's economy. Precipitation probabilities are used by contractors, engineers, range scientists, farmers, ranchers, cattlemen, businessmen and especially the ordinary citizen who is planning the best time for a vacation or wedding. The businessman uses them to plan advertizing campaigns, the farmer and rancher to determine the best time to reseed ranges, plant crops or for scheduling irrigation. The contractor and engineer uses them for planning their projects and estimating the probable number of working days that may be lost due to precipitation.

Another type of analysis, which is currently very important, is a series of tables recently completed for the State Building Board. These tables are calculated from daily maximum and minimum temperatures and are called climatological design indices. These indices are used to determine the amount of insulation and the size of heating and cooling units for homes built in various areas of the state. The normal accumulation of heating and cooling degree days also enables the average home owner to determine how the energy consumption in his home compares with what engineers compute it should do. These types of summaries are also used to determine the potential effectiveness of different types of solar collectors in various areas of the state.

These are just a few of the types of analysis that are and can be made by use of modern computers which are much more useful than averages, means and extremes which have been published for so many years. When you contact the Office of the State Climatologist for information, we can give much better service if you will state just what your problem is and allow us to select the type of information you need to solve the problem in question. As previously indicated, we have many types of summaries which have been prepared but not published, and we can prepare others at nominal cost to the user which will be much better than the old means and extreme tables previously published.

The OCS has been serving the user community of Oklahoma for about a year and one half. About 25% of its funding has been provided through designated State support. The remainder has come from the federal and private sectors. Our products are (1) a regular monthly summary, (2) irregular requests for special information, (3) a growing file of "cleaned up" climatological data, and (4) supplied research. Our data acquisition, processing and dissemination is computer oriented insofar as is possible with the equipment we have acquired, and our principal development efforts continue to be away from labor intensive operations and toward automation.

Our monthly summary is built from four components. First, the COOP data are entered into our computer system at the beginning of each month...we have received and entered about 80% of these reports by the 8th of the month. The computer then produces all summary tables and maps automatically. Second, our historical data set is entered to obtain (again automatically) answers to questions concerning normal patterns for both raw and derived variables and special information such as record rainfall or temperature.

Third we summarize information drawn from:

a) the above described computer output,

b) weather related press clippings obtained weekly from about 70 newspapers from across the State,

c) climate related summaries from other State and Federal agencies such as, for example, the Soil Conservation Service and the weekly weather and crop bulletin.

Fourth we edit, type, assemble, print and mail about 850 copies of the final product to customers both in and out of the State. Lastly, we rework the computer output late in the month to incorporate stations which arrive after our cutoff date of the 8th. A new master of the summary is filed for data reference.

We have acquired several data sets with which we model and evaluate user needs. Of these, our daily COOP and FIRST ORDER files will be of most interest here. We have structured each data set so that the user can obtain either (a) one station for all times, or (b) all stations for one time. This requires two tape files for the COOP data for each state and two tape files for the USA first order daily data. To date we have the Oklahoma and North Dakota sets completed as well as the first order national network. These files can be accessed by any remote user with a terminal. He simply can specify the parameter-space-time domain of interest and receive on his terminal either the raw data or processed information in tabular or map form. Color graphics are under development.

We are supported by NOAA/EDIS to complete the processing of the rest of the COOP data at the rate of about one state per month, and the great plains states will be the first processed according to our present plans.

Our current applied research includes:

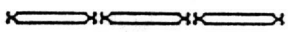
1) an interdisciplinary study on the economic impact of climate funded by NOAA/EDIS and accomplished to this point by using a series of technical and also user-oriented workshops to guide the research undertaken. The group comprises OCS, the University of Nebraska, the University of Missouri, and CEAS/NOAA,

2) a study on the climatology of cloud seeding opportunities in Oklahoma, particularly with a view to rainfall enhancement in advance of drought situations. This is funded by the Bureau of Reclamation and involves several states. In Oklahoma the group comprises OCS, AEROMET of Tulsa, and the Oklahoma Water Resources Board,

3) a study on optimal house design with respect to the ambient climate, and

4) a project to provide for the dissemination of climate information from OCS through the Television medium. This is funded in part by the NCPO and the group comprises OCS, the O.U. School of Meteorology and KTVY TV.

In summary, the Oklahoma Climatological Survey seems destined to play an active and cost-effective role in our State. We have found encouragement and support in all sectors of the community, from the firm to the urban to the state and to the federal levels, and our future looks bright (although harried).



UNIVERSITY OF DELAWARE ESTABLISHES CENTER FOR CLIMATE RESEARCH

A University Center for Climatic Research has been established in the Department of Geography under the direction of Dr. John R. Mather, State Climatologist for Delaware. Membership in the Center is open to all those in the University community who are interested in the effects of climate on human activities or on the environment and who wish to undertake climate-related research. The Center has developed definite research goals and has been effective in obtaining the necessary supporting equipment and personnel for achieving those goals. Some of the most pressing national needs, including the influence of climate on energy problems, food supplies, health, and socio-economic factors have been and are being investigated by members of the Center.

The Center received strong initial funding from several University research and development groups. These grants have made it possible to support some graduate students and other staff, to initiate pilot research studies, to establish a more ambitious Publications in Climatology publication series with C. W. Thornthwaite Associates Laboratory of Climatology, and to purchase climatological monitoring equipment. Outside funding has also been obtained under contracts from NASA on water budget modelling and the influence of moisture transfer into the lower air layers on the Goddard Space Laboratory's general atmospheric circulation model; from NOAA on the effect of climatic stress on human morbidity; and from NOAA on the socio-economic cost of severe climatic conditions.

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
Washington, D.C. 20230
OFFICE OF THE ADMINISTRATOR

UNIVERSITY AFFAIRS LETTER

Washington, D.C., May 1981

Dear Colleague,

*NOAA's Administrator designee. . .is Dr. John V. Byrne. . .*a research oceanographer and marine geologist. He earned his Ph.D. at the University of Southern California, worked 3 years as a research geologist with Humble Oil, and has been a faculty member at Oregon State University since 1960. At OSU he moved through the ranks to professor, department chairman, school dean and university vice president. No stranger to Washington, Dr. Byrne served as program director for oceanography at the National Science Foundation during 1966-67. Welcome to NOAA, John Byrne.

Top position is open in NOAA. . . the Deputy Director of the National Weather Service. Candidate qualifications include demonstrated experience in: program planning and policy development, interpersonal skills, administration and direction of programs in the physical sciences, resource acquisition, and the utilization of human resources. Applicants must submit a completed form SF-171 (obtained at the Post Office) to Mr. Joseph Smith, NWS Personnel Branch, 8060 13th Street, Rockville, MD 20910; telephone (301) 427-7924. Application closing date is May 20, 1981.

*The new director of NWC. . .the National Meteorological Center. . .*is Dr. William D. Bonner, currently Deputy Director of the National Weather Service. Dr. Frederick G. Shuman has retired but will continue to head NWC until replaced by Bonner, probably in August 1981. NMC has become an institution of world-class under the remarkable leadership of Fred Shuman. Bon voyage Fred.

An announcement. . .of the 1981 NOAA Postdoctoral Research Awards. . . can be found in the Federal Register for April 16, 1981. This is a modest NOAA grants program aimed at keeping a few outstanding postdoctorals on the campus actively engaged in academic research related to the mission of NOAA. See the reverse side of this letter for more details.

Sincerely yours,

Earl G. Droessler
Director of University Affairs

P.S. The next regular University Affairs Letter will be distributed in August 1981, in step with the academic year.

1981 NOAA RECENT POSTDOCTORAL RESEARCH AWARDS

in *Atmospheric, Fisheries, Oceanic, Satellite Sciences* and *Related Fields*

Application Deadline: *June 10, 1981* Award Date: *September 1, 1981*

In 1981 NOAA plans to award up to six Recent Postdoctoral Research Support Grants. NOAA is seeking to fund the research on campuses of a few recent postdoctorals having outstanding records and exceptional promise in academic research; those postdoctorals engaged in frontline scientific work on atmospheric, fisheries, ocean, and satellite sciences, and related fields that undergird the mission of NOAA. Eligible postdoctorals must be United States citizens and must have received their Ph.D.'s since January 1, 1979, and before June 10, 1981.

Grants will be made for 1 or 2 years, nonrenewable to the universities where the research would be carried out. Successful applicants may receive a salary of $21,000 for 12 months with applicable fringe benefits. The grant application will allow as necessary a modest request for equipment, supplies, travel, publication, plus indirect costs. It is estimated that total funding up to $40,000 per year would be available, depending upon the nature of the proposed laboratory or theoretical research.

As a special provision. . .each grantee would be asked to establish a visiting relationship with a suitable NOAA laboratory or facility and be in residence there a minimum of 1 month each year to communicate on the postdoctoral research program and results and to learn firsthand about the scientific programs and research needs of NOAA. The objective is a helpful interchange between the campus and NOAA.

Grants made to universities. . .Since the NOAA grants will be awarded to universities, formal research proposals should be prepared and processed on campus in the usual way through the university administration with signatures of appropriate campus officers. An original and five (5) copies of the proposals are required.

Those interested in applying. . .for a postdoctoral research support award can obtain further information and informal research proposal guidelines by writing to Dr. Earl G. Droessler, Director of University Affairs, NOAA, Room 5808, Department of Commerce, Washington, DC 20230.

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