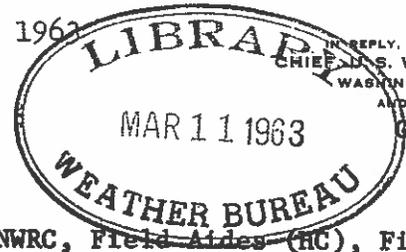


UNITED STATES DEPARTMENT OF COMMERCE
WEATHER BUREAU
WASHINGTON

February 7, 1963



IN REPLY, PLEASE ADDRESS
CHIEF, U.S. WEATHER BUREAU
WASHINGTON 25, D. C.
AND REFER TO
G-3.1

MEMORANDUM

TO : Area and State Climatologists, NWRC, ~~Field Aides (HC)~~, Field Aides, River Forecast Centers, River District Offices, Regional Substation Management Units, and Area Engineers (with copies to Regional Administrative Offices and Advisory Agricultural Meteorologists for information)

FROM : Director, Climatology

SUBJECT: Climatological Services Memorandum No. 97

1. CLIMATOLOGICAL SERVICES MEMORANDUM: The CSM has been a useful link between the Office of Climatology and its field activities. Its contents have been more informative than hortatory. This reflects the generally excellent performance on the part of our field personnel. Most of them have been imaginative, diligent, and remarkably successful in their dealings with the public.

This note, however, would be pointless if there are not occasional exceptions to the rule. These, fortunately rare, slips involve often carelessness in furnishing information and even errors. This should therefore serve as a reminder that reliability and high quality are as important as quantity and speed in production. We should make this a basic tenet of performance.

2. A RESEARCH REPORT: "Prediction of Soil Moisture under Meadow in Iowa" and "Prediction of Soil Moisture under Oats in Iowa for the Spring Period" are Parts I and II of a report recently written by Dr. Robert H. Shaw of Iowa State University. This is a report covering the Weather Bureau-Iowa State University Contract No. Cwb 10278.

Dr. Shaw has prepared only a modest number of copies of this report, but he does have a few extra copies available and has offered to send copies to those who request them - as long as the supply lasts. Send requests to him at the Department of Agronomy, Iowa State University, Ames, Iowa.

Brief summaries of the two parts of this report follow:

Part I

Soil moisture under meadow was estimated for June, early August and early November using April, June and August soil moisture survey data as the starting points. Plant available water in the 5-foot profile was the value computed. Precipitation amounts were added to the soil moisture supply after deducting for runoff. An antecedent precipitation index was used to compute runoff.

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Evapotranspiration was estimated as a varying percentage of open-pan evaporation. When necessary, a factor was used to account for the effect of moisture stress. Correlations between observed and computed soil moisture were 0.97 for the April to June period and for the June to August period, and 0.98 for the August to November period.

Part II

Soil moisture in the top 5 feet of soil under oat fields in June was estimated using the April Iowa soil moisture survey data as a starting point. Evapotranspiration and runoff losses were estimated for each day.

Up to the time of seedling emergence plus 2 weeks, loss was estimated as 0.1 inch evaporation per day, provided that available moisture was present in the top 6 inches of soil. After this date the rooting depth was increased 6 inches each week and loss was evapotranspiration. Class A open-pan evaporation data were used as the measure of evaporation potential and were multiplied by 0.80 to estimate evapotranspiration each day when no moisture stress was present. A special factor was used to determine evapotranspiration on stress days. The correlation between observed and computed June soil moisture was 0.98.

3. JEFFERSON AND HOLM AWARDS: The following memo has gone out to the four Regional Substation Management Units, the Pacific Area Climatologist, and the Territorial Climatologist at San Juan:

"This is to remind you that nominations for the above awards should reach us, through the NWRG, by April 15. Please advise the Field Aides (HC) and all offices concerned with substation observers of this. This would alert them to be aware of possible candidates prior to the reporting date.

"WB Form 037-2 has been revised this year, to give less weight to longevity and to provide for additional pertinent comments not requested in the numerical evaluation. The revised forms, marked 9-62, should be used for nominations and the old forms destroyed. An initial supply of the new forms (sample attached) has been sent to you, and additional copies should be obtained through the usual channels."

4. ARTICLES FOR WEATHERWISE: (Re CSM 95, Item 3.) In recent discussions with the Editor of Weatherwise he elaborated further on the type of story concerning cooperative observers that he would like to carry in the current series.

Dr. Ludlum emphasized that the stories should be national rather than regional in nature and that they should be of interest to cooperative observers generally.

Stories involving studies which use cooperative observer data are not desired for the series; however, Dr. Ludlum would like to print abstracts of such stories which may be available in experiment station bulletins or similar publications.

5. CONDENSED STATE SUMMARIES FOR THE NATIONAL WEEKLY WEATHER AND CROP BULLETIN: We would like to receive all of these regular weekly messages in a form ready for direct typing for photo offset printing. This is already true of many state summaries, but others require much editing out of minor weather and crop details and extra wordage. These are condensed telegraphic summaries of major weather and crop progress and conditions and need only enough wordage to express the proper meaning. Our desire is to reduce the time and cost of transmission and preparation for publication of this material, and still present the basic information.

We suggest that Chapter C-0506 entitled "Weekly Weather and Crop Summary Messages to Central Office" in WB Manual Volume III be reviewed. An examination of the State summaries as printed in the Weekly Weather and Crop Bulletin will give a pretty good idea of the content and form desired. The period covered is for the week ending Monday morning; not Monday through Friday plus a separate treatment each week of the weather over the weekend as another unit. The USDA is sending a similar request to their State Statisticians to coincide with this CSM item.

6. PROGRAM REDUCTION: Indications are that the remainder of this fiscal year will be characterized by a severe austerity program. It is important that field personnel understand this and attempt to avoid any unnecessary expenditures. In order to absorb part of the cost of the recent pay raise the Weather Bureau is required by the Department of Commerce to make a 3% reduction in personnel and to effect an over-all reduction of \$430,000 in programmed expenditures during FY 63. This will hit Climatology particularly hard because the consolidation of WRPC activities at the NWRC has placed a heavy financial load on our funds. For this reason it has become necessary (for this fiscal year) to reduce the existing programs as follows:

- a. Delay revision of Climatological Data base maps.
- b. Eliminate the isoline temperature and precipitation maps in the Monthly Climatological Data.
- c. Suspend all work on the Climatological Data for the Caribbean and West Indies.
- d. Delay publication of the Climatological Data Annuals until after July 1, 1963.
- e. Reduce the Local Climatological Data Annual publications for each 1st Order Station to a summary of current year data only.

7. RECORDING AND TELEMETERING PRECIPITATION GAGE: The Weather Bureau has on order 250 of the newly designed punched-tape recording gages. These are to be weighing-type gages with an 8-inch diameter collector, and with a capacity of not less than 15 inches of liquid precipitation. They will have an accuracy of \pm 0.15 inch of precipitation anywhere within the gage range, and a sensitivity such that it will respond to increments of 0.025 inch of precipitation anywhere within the measuring range of the gage. The accumulated precipitation amount will be indicated on a dial for immediate reference, and will be punched on a paper tape in a standard binary-decimal data code in 5-minute intervals. The gages will also have the capability of telemetering the current gage reading when interrogated remotely by radio or telephone. The recorder for the gage will be operated by dry-cell

batteries that will be capable of operating for at least one month without attention. The power source for the timing device that controls the punching of the recorder tape will have sufficient capacity to operate the clock for at least 6 months.

Equipment is available for translating the punched tape record into digital values.

The first gage has been received by the Weather Bureau and is now undergoing acceptance tests.

8. CLIMATIC SUMMARIES OF RESORT AREAS: (Ref. Item 11, CSM 91). Plans for a new series of publications entitled "Climatic Summaries of Resort Areas" are nearing completion. The first of the series, No. 21-46-1 for Berkeley Springs, West Virginia, is about ready for printing. A copy will be sent to each state and area climatologist. While it is intended that this summary serve as a general guide for the preparation of others, changes in the format and content will be considered if the available data or selected location warrants.

It is hoped that within the next year each state and area climatologist will be able to prepare a similar summary for a resort area with which he is familiar. To avoid duplication and to maintain a degree of continuity and uniformity, the selection of particular resort areas and modification of the format or content should be coordinated with this office before work is started.

9. FUNDS: Travel expenses of an employee are generally charged to the funds that pay his salary. For example, travel costs for a State Climatologist going to a meeting or attending school on a Weather Bureau scholarship would normally be charged to climatological funds.

State Climatologists should, therefore, keep us advised of any unusual travel plans or other activities that would be an expense to climatology and which we might not be prepared for.

10. CITATIONS FOR JEFFERSON AND HOLM AWARDS: These citations should now be prepared by the office originating the nomination. Last year two citations were in error as to the length of time served by the observers and thus these two certificates had to be done over and exchanged for the incorrect ones after presentation. All offices and individuals submitting Form 037-2 nominating observers for the Jefferson and Holm awards are therefore urged to verify citation statements, especially in regard to length of time served. It is important also that the observers names be spelled correctly, and that other statements in the citation be accurate.

11. STATE AND AREA CLIMATOLOGISTS ON LEAVE: State and Area Climatologists are urged to advise the O/C when they plan to be on leave for periods of more than a week.

12. STORM DAMAGE CATEGORIES: The following was written to a State Climatologist:

"We consider combining dollar values of storm damage to obtain totals over a period of time to be a misleading statistical use. For example, while small damages may be fairly accurately estimated, no assurance should be given a user that damage estimates, especially for the large storms, are more than one indication of the intensity of the occurrence.

"Then, too, in some cases there is a delayed effect which may substantially change the original damage estimates. This may be particularly true where widespread damage by freezing results in a substantially higher price for the surviving produce.

"The changing value of the dollar also weakens use of this parameter in comparing damages over a long period of years.

"These are some of the reasons why we have substituted the category breakdown (with interval ranging from \$50 to \$4,500,000,000) for the former practice of attempting to publish dollar values. We suggest that you explain this to requesters interested in accumulated dollar values."

13. THE OTHER WEATHERMEN: The Kiwanis Magazine carried a story with the above title in its February 1963 issue. The story features the Weather Bureau's corps of cooperative observers.

14. CLOSING OF KANSAS CITY WRPC: January 31, 1963, was the closing date for the Kansas City WRPC. A few employees will be retained at Kansas City for a month or so to reduce the personal hardship resulting from their loss of employment. During this period their services will be used toward preparation of the Annuals for the Kansas City area or for other assignments as required.

15. PUBLICATIONS DISTRIBUTED TO STATE AND AREA CLIMATOLOGISTS SINCE CSM #96: "Soil Surveys - a valued tool for all land users". USDA Soil Conservation Service, Picture Story No. 146, September 1962.

"Livestock Shelter Design", G. L. Hahn, H.C.S. Thom, and T. E. Bond. Reprint from Agricultural Engineering, Vol. 43, No. 12, pp 704-709, December 1962.

"Forest Meteorology and Forest Fire Control at the Yale School of Forestry". Reprint from Yale Forest School News, Volume L, No. 4, October 1962.

"Precision of Estimates of Evapotranspiration in Missouri Climate", by Wayne L. Decker, Missouri Agricultural Experiment Station Journal Series No. 2404.



H. E. Landsberg

GUIDE TO CLIMATOLOGICAL SERVICES
MEMORANDUM NO. 97

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