

Long Range Forecast

A VERIFICATION OF THE WINTER OF 82-83 FORECAST

David A. Gustin
National Weather Service Forecast Office
5200 Auth Road, Room 302
Washington, D.C. 20233

In November 1982 I prepared a long range forecast for the Winter of 1982-83 (Dec 82-Feb 83), which was published in the National Weather Digest (1). Figure 1 is the forecast 700 MB height anomaly prepared November 1982. Figure 2 is the actual 700 MB height anomaly for the winter.

The Pacific Ocean forecast was much better than the Atlantic Ocean forecast.

Over the Pacific Ocean a strong negative height anomaly was forecast at about 44N 160W. A strong anomaly did occur at 44N 156W.

Over the Atlantic Ocean a weak positive height anomaly was forecast at 30N 50W. It turned out that anomaly was much stronger and extended in an East/West direction all the way along 40N. A negative anomaly was forecast East/West about 45N. There was such an anomaly but it was about 20 degrees north about 65N.

Over North America above normal heights were forecast over the Rockies. This verified fairly well. Also forecasted were negative height anomalies over the southeast United States. This was o.k. but the center of the anomaly was over Texas. The bad part of the forecast was in the northeast United States. There negative height anomalies were forecast and instead there were positive height anomalies. This could be expected from what happened in the Atlantic Ocean; strong negative height anomalies west of Greenland (as seen in Figure 2) relate to positive height anomalies in the northeast United States according to normal teleconnections.

Temperature forecasts (See Figures 3 and 4 (2)), were correct in the west and extreme southern United States and wrong in the north central and northeast United States. The bad part of the forecast was a result of the bad height anomaly forecast in the northeast United States. About 50 percent of the United States area was forecasted correctly.

The precipitation forecast was better. (See Figures 3 and 5.) Most of the west and south and extreme eastern United States was forecast to be wet ... and much of the north central United States dry. This was correct. The extreme southwest part of the United States was forecast to be dry because the 700 MB anomaly there was expected to be above normal. The heights were less negative there than in the surrounding area ... but not enough to prevent heavy precipitation. Overall in the United States 70 percent of the area was correctly forecast as far as precipitation.

Over the Pacific Ocean the negative height anomaly forecast was adjusted about 10 degrees north of the cold water anomaly. This was not done in the Atlantic Ocean forecast. If that anomaly had been shifted as well, the forecast would have been much better. This will be done in any future forecasts.

In the previous article reference was made to the phenomenon known as El Nino. That phenomenon is the abnormal warming of the Pacific Equatorial current. It was stated that warm (relative to normal) Eastern Pacific Equatorial waters relate to a strengthened Aleutian low. This produces above normal 700 MB heights over the northwest United States and below normal heights over the southeast United States according to normal teleconnections. The National Weather Service winter forecast made reference to the El Nino effect. However, it was used in their forecast to explain the forecast of above normal temperatures in the eastern United States which of course would not follow from below normal 700 MB heights there. This discrepancy was cleared up after talking with Mr. Robert Dickson who is a meteorologist in the National Weather Service Long Range Prediction Group. He stated in his studies (yet to be published) that while moderately warm eastern Equatorial Pacific waters relate to below normal 700 MB heights in the southeast United States, this relationship frequently does not apply when those waters are warm enough to be considered an El Nino event.

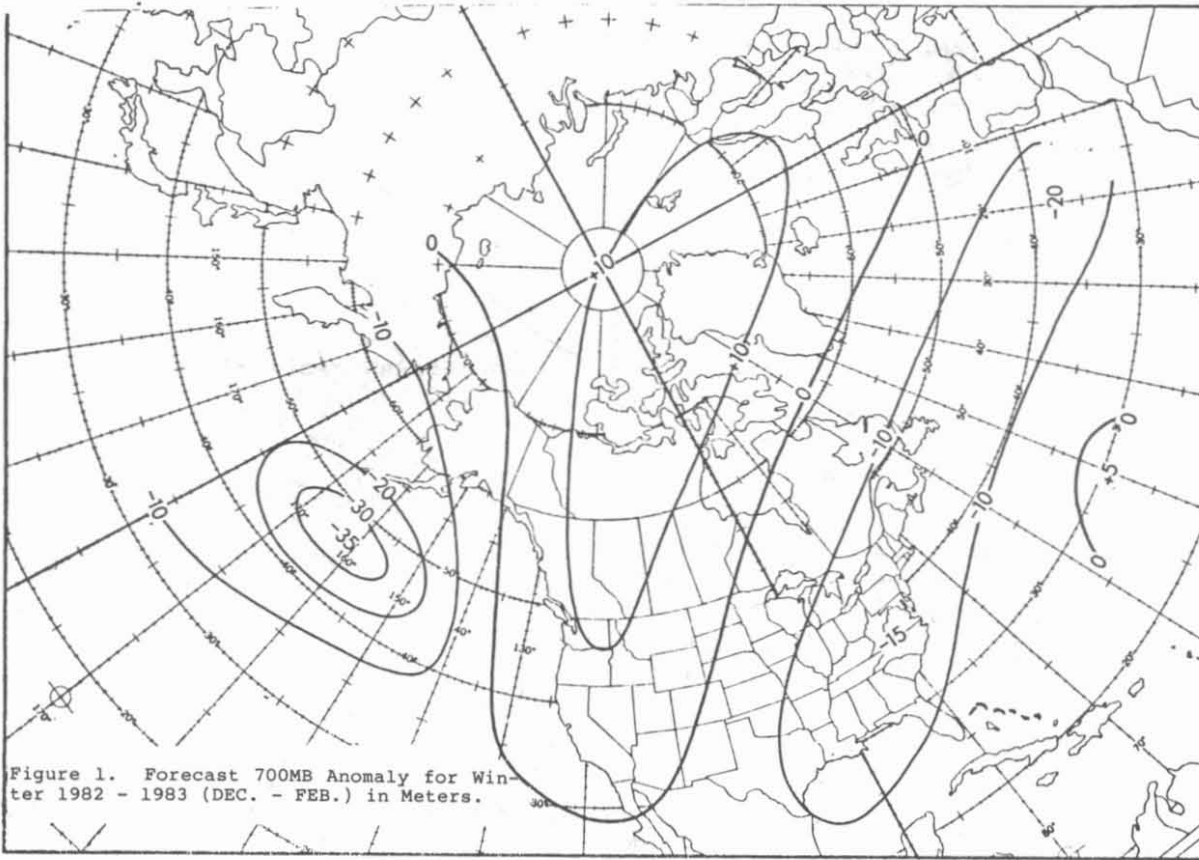


Figure 1. Forecast 700MB Anomaly for Winter 1982 - 1983 (DEC. - FEB.) in Meters.

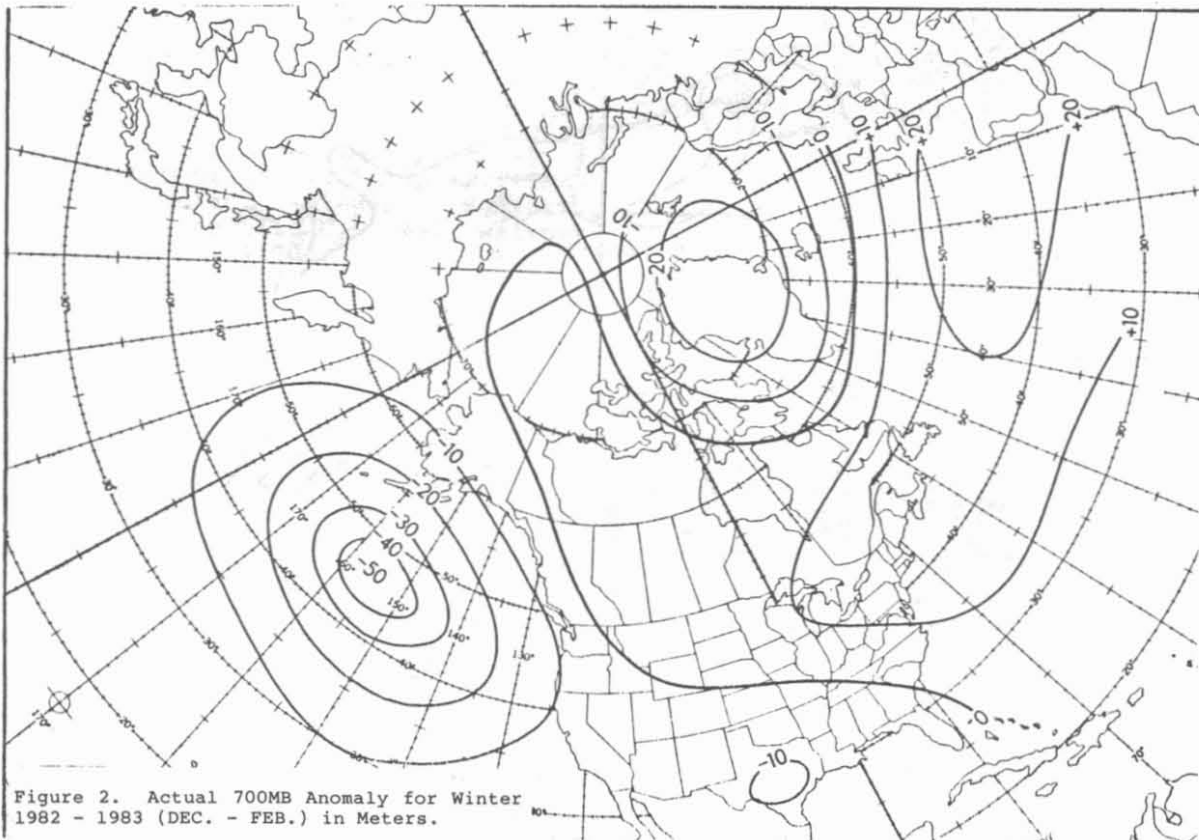


Figure 2. Actual 700MB Anomaly for Winter 1982 - 1983 (DEC. - FEB.) in Meters.

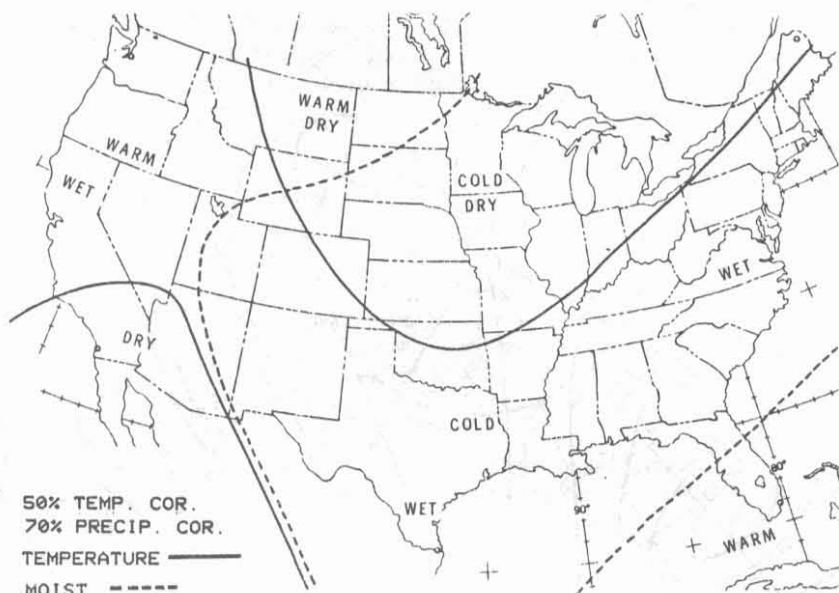


Figure 3. Final Winter Forecast (DEC. '82 - FEB. '83) by David A. Gustin.

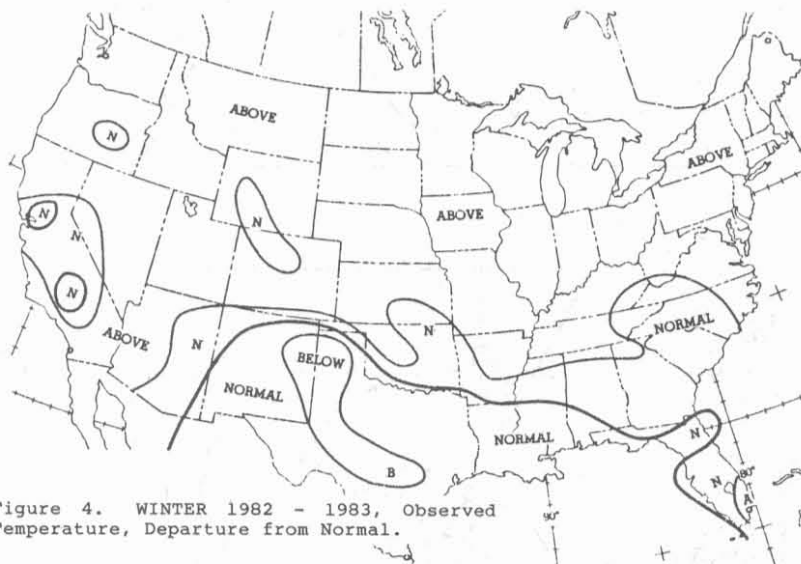


Figure 4. WINTER 1982 - 1983, Observed Temperature, Departure from Normal.

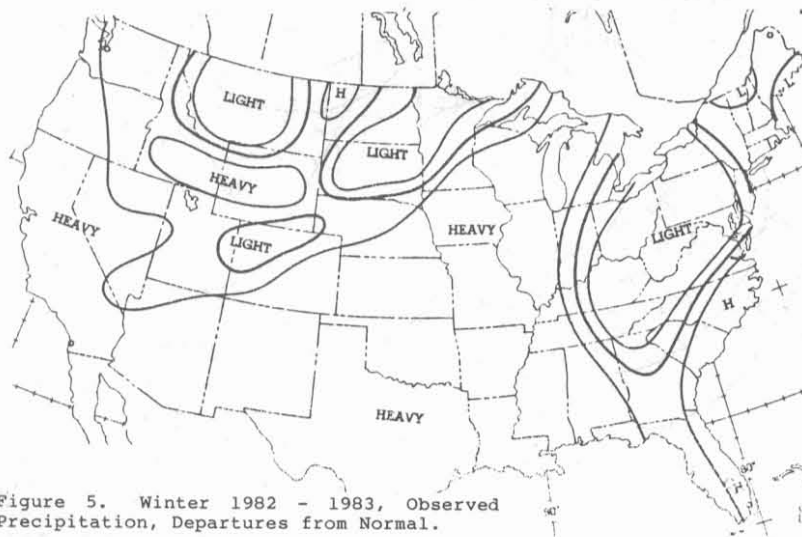


Figure 5. Winter 1982 - 1983, Observed Precipitation, Departures from Normal.

REFERENCES AND FOOTNOTES

1. Gustin, David A., "A Long Range Forecast for This Winter (December 1982 to February 1983) and How It Was Prepared," National Weather Digest, August 1982, 7:3, p. 18.
2. Figures 4 and 5 were obtained from the offices of Dr. Donald Gilman.

AAWO

The Association of American Weather Observers (AAWO) was formed on October 22, 1983 at a meeting held at the home of Herbert Talboys in Westwood, NJ. The purpose of the organization is to provide a national forum and the opportunity to exchange information for all those interested in weather observations. In attendance at the organizational meeting were: Stephen Ambrose, Gary Battel, Robert Draper, Paul Hennessey, Sol Hirsch, Robert Kovachick, David Ludlum, Patrick B. Mattison, William F. Minsinger, Steven D. Steinke, Herbert Talboys, and Robert Ziff.

Steven Steinke was elected President, Herb Talboys, Vice President, Stephen Ambrose, Secretary, and Bob Kovachick as Treasurer. The remaining meeting participants were elected Directors.

The AAWO will publish a weather newspaper known as the American Weather Observer with the inaugurating edition scheduled for January 1984; the first edition cost is \$2. Subscription membership in the AAWO is \$15 and includes a monthly newspaper. However, the cost to NWA members will be only \$7 since the NWA will provide a yearly contribution. All members interested in a yearly membership or in obtaining the first issue should contact Steven Steinke, Belvidere Daily Republican, 401 Whitney Blvd., Belvidere, IL 61008.

RADIO-TV MEETING

The annual Radio-TV meeting will be held in Washington, D.C. from April 9-11, 1984. All those interested in attending should write to Kerry Teverbaugh at: TV WTWO, Box 299, Terre Haute, IN 47808. The meeting will include sessions devoted to vendors willing to participate. Vendors who are interested should contact Sol Hirsch at the Washington office. There will be a registration fee to cover expenses for all attendees.

MEMBERSHIP LIST

The membership list published in the August Digest omitted the names of three members. They are: William H. Bauman, Robert C. Curtis and Ronald H. Ostrowski. The NWA regrets this omission.

If you have enjoyed reading this issue of the National Weather Digest, please pass it on to a friend when you are through. Thank you!

