

Barbara E. Mayes\*, Robert J. Leffler, and Robert E. Livezey  
NOAA/NWS/OCWWS/Climate Services Division, Silver Spring, MD

## 1. INTRODUCTION

The National Oceanic and Atmospheric Administration's (NOAA's) National Weather Service (NWS) provides climate services at the national level via the NWS Climate Services Division and the NWS Climate Prediction Center (CPC). CPC responsibilities include issuing climate outlooks, assessments, and monitoring products. With respect to those products, the NWS Climate Services Division, via its liaison to external customers and partners, ensures that customer feedback is incorporated into decisions regarding new and changes to existing climate outlooks, assessments, and monitoring products. Through the Climate Services Division, external input to CPC products is assured.

## 2. METHODS OF GATHERING FEEDBACK

Beginning in 2003, the CPC website includes a link to a ten-question survey (see links below) that evaluates customer satisfaction and use on any CPC product and solicits suggestions for improvement. If a change to a specific product or suite of products is proposed, then a link may be provided to a short questionnaire that specifically asks for customer feedback regarding the proposed change. The results of both the general surveys and the specific questionnaires are sent to the NWS Climate Services Division customer liaison as well as to a representative within CPC.

NWS Climate Services also solicits customer feedback during conferences and workshops. Input that is documented (for example, via meeting summary) during these workshops can be specifically cited in future product evaluations. Thus, NWS tries to gather and document specific comments during conferences and workshops to qualify the anecdotal input that is received during both formal meetings and casual discussions.

## 3. CUSTOMER FEEDBACK ON CHANGES TO CPC PRODUCTS IN 2003

NWS Climate Services Division solicited customer feedback for several specific proposed product changes or implementations during 2003. Additionally, several customers provided comments via the online CPC product feedback form on various CPC products. While not all of those customers who provided feedback received a reply, all of the web-based input was read by NWS Climate customer liaison and CPC representative, and all input is saved for future reference.

### 3.1. 6-to-10 Day Outlook Suite

Customers provided feedback for the proposal to gradually eliminate the 6-10 Day Outlook suite in much larger numbers than for any other proposed change to CPC products, but the feedback was mixed. Even after soliciting further input via email from customers who did respond, NWS could not deduce a clear mandate favoring or opposing the change from its customers. At press time, no official decision has been made regarding the future of the 6-10 Day Outlook suite.

### 3.2. One-Month and Three-Month Outlooks

NWS proposed to change the graphical depiction of probability of above or below normal temperature or precipitation in its monthly or seasonal outlooks, changing from contours of probability anomaly (chance of the condition occurring, contoured at percent above the climatological mean of 33.3%, with intervals of 0, 5, 10, 20, etc.) to contours of probability (chance of the condition occurring, contoured in percent, with intervals of 33, 40, 50, etc.). Initial customer response indicated confusion about the actual depiction of the proposed change, as the initial service change announcement was disseminated in all-text format. In response, CPC provided links to "before" and "after" maps (Figures 1a and 1b, respectively) to aid its customers in visually interpreting the proposed change. The change to the one-month and three-month outlooks has been implemented.

### 3.3. Drought Blends

NWS CPC developed objective long-term and short-term drought blend indicators to support its U.S. Drought Monitor, which is produced jointly with the U.S. Department of Agriculture (USDA) and the National Drought Mitigation Center. The new products were designed both to aid in producing the U.S. Drought Monitor and to provide additional, objective information beyond the scope of the Drought Monitor. The drought blends were posted as an experimental product, and after favorable customer feedback, will be implemented (in the near future as of press time) as official products.

### 3.4. Eastern Pacific Hurricane Outlook

Minimal but positive customer feedback supported CPC's implementation of the Experimental Eastern Pacific Hurricane Outlook, analogous to the existing Atlantic Hurricane Outlook, in 2003. The outlook also will be issued as an experimental product in 2004, after which it will be evaluated to determine whether it should

---

\*Corresponding author address: Barbara E. Mayes, National Weather Service Headquarters, 1325 East-West Highway, SSMC-II Room 13353, Silver Spring, MD, 20910; email: Barbara.Mayes@noaa.gov

be implemented as an official product. The customer comment period is open through November 2004.

#### 4. SUMMARY AND FUTURE PLANS

NWS Climate Services Division and Climate Prediction Center work together to ensure that customer feedback is included in any decisions regarding product changes or implementation of new products. The Internet has provided a convenient means of gathering customer feedback on CPC products, but it is not the only method of interaction. NWS Climate Services also gathers feedback through meetings and conferences via personal contact and also welcomes phone and email feedback. Through these means, the process of gathering customer feedback is a standard step in the process of CPC product improvement and implementation.

NWS is planning to implement a Customer Relationship Management web tool in 2004 that will direct customer questions to the NWS expert best able to answer that question. Questions input via the NWS website will be

channeled to a subject area expert and will be tracked to ensure a timely response. Customers will also have access to a Frequently Asked Questions page that may provide an answer without any wait for a response. In addition, NWS Climate Services has developed a Frequently Asked Questions website that may assist customers. NWS Climate Services continues to solicit feedback from its partners and customers to assure the best response to their needs.

#### 5. LINKS

NWS Climate Services Division:  
<http://www.nws.noaa.gov/om/csd/index.shtml>

NWS Climate Prediction Center:  
<http://www.cpc.ncep.noaa.gov/>

NWS CPC Product Feedback Form:  
<http://www.cpc.ncep.noaa.gov/NWS-feedback-form.html>

NWS Climate Frequently Asked Questions:  
<http://www.nws.noaa.gov/om/csd/NWSClimate/FAQ/>

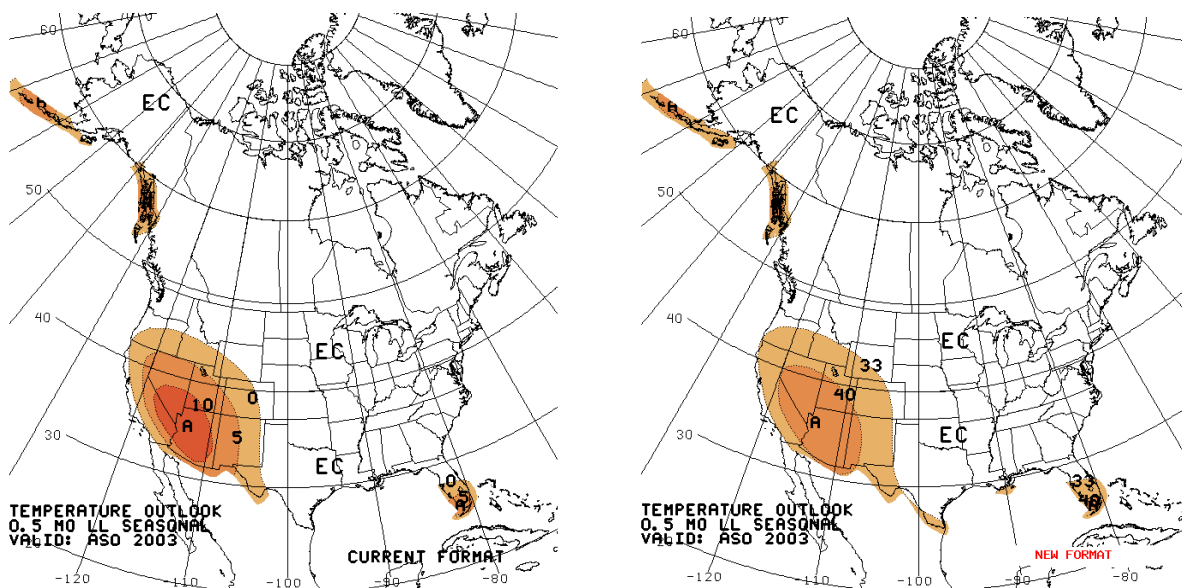


Figure 1. NWS Climate Prediction Center three-month outlook as formatted before (Figure 1a) and after (Figure 1b) implementing a change in the contour intervals. Contours in Figure 1a are of probability anomaly of temperature above normal for the August-September-October outlook issued in July 2003, while contours in Figure 1b are of actual probability of temperature above normal for the same outlook.