The Arkansas Basin River Forecasting Center (ABRFC)

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The Arkansas Basin River Forecasting Center is located in Tulsa, Oklahoma. The mission of the ABRFC is to provide technical support to the National Weather Service's efforts to provide river and flood forecasts and warnings for protection of life and property and to provide basic hydrologic forecast information for the nation's economic and environmental well-being.

The ABRFC is responsible for providing river and flood forecasts and warnings for the Arkansas River above Pine Bluff, Arkansas and the Red River drainage area above Fulton, Arkansas.

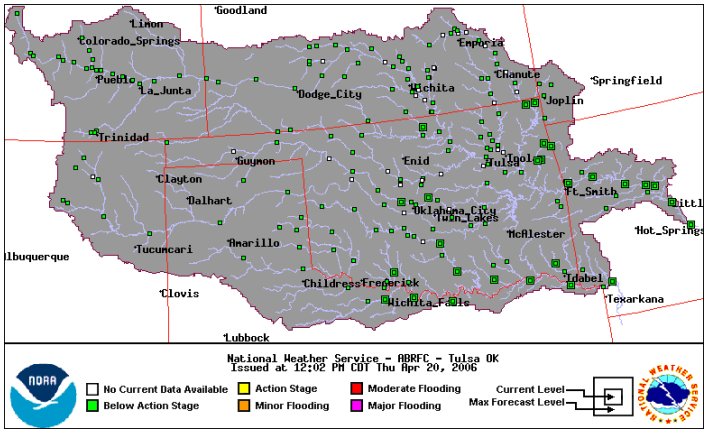

Figure 15a: Map of the ABRFC area including major cities. This map is a forecast point status for flooding in the Arkansas-Red Basin.

This area includes parts of seven states in and around Oklahoma and covers 208,000 square miles. Southeastern Colorado and northeastern New Mexico are included in the area covered by the ABRFC. Major cities within the ABRFC area include Colorado Springs, CO; Dodge City and Wichita, KS; Oklahoma City, OK; and Amarillo, TX among others (Figure 15a).

Record floods in the spring of 1945 in the Arkansas and Red River basins prompted the founding of the "Tulsa River Forecast Center" in December of 1947, renamed the Arkansas Basin River Forecast Center in 1991. The ABRFC was the prototype RFC for modern technologies and operations. It developed many advanced techniques and procedures that are used in hydrometeorological operations today.

The 15 person staff includes both hydrologists and meteorologists. Together, they are responsible for hydrologic forecasting, hydrometeorologic analysis and support, and quality control of data. The hydrologic forecaster is responsible for the production of river forecasts, flash flood guidance, data summary products, running the river forecast computer model, and the coordination of river forecasts on a daily basis. The hydrometeorologic analysis and support forecaster is responsible for preparing the precipitation and temperature data input for the river forecast model. That forecaster is also in charge of the hydrometeorologic discussion product and the coordination with the NWS Forecast Offices. On a seasonal basis, water supply forecasts, flood outlooks, and drought summaries are also put out by the ABRFC.

The ABRFC hydrometeorologists provide precipitation forecasts. Quantitative Precipitation Forecasts (QPF) are predictions of precipitation amounts over an area. The ABRFC creates QPF forecasts for the Arkansas-Red Basin three times a day (00z, 12z, and 18z). Six-hour increments for the next 24 hour period are used as an input into the ABRFC hydrologic model. The ABRFC uses all 24 hours of QPF to determine the River Flood Outlook. However, due to the limitations of precipitation forecasting, the ABRFC only uses 12 hours of QPF for forecasting river stages. The ABRFC also provides water supply forecasts. The ABRFC issues water supply forecasts and images monthly from January through May of each year. Colorado forecasts are for the period April through September, while New Mexico forecasts are for the period March through June. New forecasts become available by the fifth working day of that month. These forecasts are used by water management agencies in their decision-making processes. These products are both text and graphical.

Figure 15b: The Gage is a quarterly newsletter produced by the ABRFC.

The ABRFC also produces a quarterly newsletter called The Gage (Figure 15b). This newsletter includes multiple articles with seasonal information important to the Arkansas-Red Basin area. All of this information, along with the climatology of the area, and articles from The Gage, is available on the ABRFC website. Interactive maps on the website allow the user to view the specific area of interest and any hydrological information for that area.

On the Web

- For more information about ABRFC, visit their website at: http://www.srh.noaa.gov/abrfc/
- This article was adapted from an article found at: http://www.srh.noaa.gov/abrfc/aboutpage.shtml.

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