

Using Probabilistic Rainfall and Probabilistic River Information to Provide Long-Lead IDSS for Record Flooding along the Illinois River Basin in **Eastern Oklahoma during the 2015 Christmas Holiday** Nicole M. McGavock* and Steven F. Piltz



Special thank you to Eric Jones at the NWS Arkansas-Red Basin River Forecast Center and Jamie Frederick at NWS WFO Tulsa, OK.

National Weather Service Tulsa, OK

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Widespread rain and thunderstorms begin to develop into the region late

expected Saturday through Sunday

Several rounds of heavy rain

Widespread 4 to 8 inch amounts

likely; locally heavier amounts

Flash flooding and river flooding

likely based on these amounts

High confidence in heavy rain

impacting ern OK/nwrn AR

Some uncertainty exists as to area of

greatest threat and rainfall amounts

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NWS Tulsa conference call with partner agencies

Communicate rain + river 10% worst case scenarios

Aggressive messaging – life-threatening flood event appeared likely along a recreational river.







WFO Tulsa + ABRFC emphasized near record Illinois River levels.

Official river forecast did not include record levels yet.

Probabilistic scenarios best way to provide IDSS for decision makers.

Forecast + briefings transitioned to deterministic forecasts of a near-record flood event.

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Rain began late 12/25. 8"-12" over entire Illinois River Basin, isolated reports to 18". New record crest 2.75' higher than previous

record at Tahlequah

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NWS message retransmitted through local networks, email lists.

Livestock, equipment, recreational vehicles moved.

Buildings prepared + emergency drainage ways cut to protect homes.

Residents evacuated.

Highway crews prepared early to close roads.

Staffing plans made to cover the holiday leave.