

## **A Cool Season Severe Weather Episode in Northern Arizona**

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Outbreaks of severe thunderstorms in northern Arizona are most likely to occur during the transition between the moist, tropical environment of the warm-season North American Monsoon regime and the first incursions of mid-latitude baroclinic systems in September. The presence of copious tropical moisture, combined with increased convective instability and deep-layer shear, is supportive of long-lived supercells which are responsible for most of the severe weather. The transition season typically occurs during the first half of the month of September.

A late-season severe weather episode occurred in mid October 2005 well after the normal transitional season had ended. During the early morning hours and continuing into the afternoon of 18 October 2005, long-lived severe supercells occurred across central and northern Arizona. Damage surveys indicated that at least four tornadoes (including one long-track tornado) and numerous occurrences of large hail occurred across northern Arizona. We present some historical perspective on this event, examine the background environmental conditions that supported the development of long-lived supercells, and discuss the implications of this event.

***EXTREME WATER AND WEATHER EVENTS***