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Predicting Dust Storms on the High Plains: A Look at December 2, 2021

Travel accidents due to dust storms are one of the leading causes of weather related fatalities on the Central High Plains. As a result, the authors of this study sought to understand and better predict days where dust storms would be possible. Analyzing 1600 observations from six ASOS sites across Kansas, Nebraska and Colorado, they were able to determine a few key surface-based parameters that tend to be present on days favored for dust storms. Since the start of the research in 2019, the initial results have been used to improve prediction of dust storms and blowing dust events days in advance for several events across the Goodland CWA.

The presentation will be a basic overview of the favorable parameters for dust storms, a discussion of dust warning and advisory criterion, and then a short case study of the December 2nd, 2021 dust event that impacted a large portion of Goodland's County Warning Area with widespread near-zero visibility and hazardous travel conditions. A second short case study from that day will be done for the Nuckolls County burn scar in Hastings' area, which had localized blowing dust issues.