

## Strategy and Description of Current Product

The Climate Prediction Center (CPC) U.S. Hazards Outlook is released daily and targets the Days 3-14 forecast period for potential hazardous conditions related to temperature, precipitation and winds. The operational outlook is currently categorical in nature, however, and potentially impactful events are often not highlighted in the Week-2 portion of the period as they sometimes do not meet forecaster confidence due to frequent high uncertainty in this time range. To address this issue, the product is systematically being converted to a probabilistic format so that improved lead time can be given for generally low probability but potentially very high impact events.

The strategy for this conversion is to do one variable at a time starting with much-above and much-below normal temperatures and this information is currently being experimentally released daily. Plans are to explore and evaluate the prospects for probabilistic heavy precipitation, excessive heat and high winds hazards forecasts during 2016-2017.

The current experimental probabilistic U.S. hazards outlook for temperature hazards contains human drawn delineations of where temperatures are expected to be either much below normal or much above normal AND where those much below (above) normal temperatures pose a hazard to life or property. The typical hazard used is forecast temperatures below the 15th percentile for much below normal temperatures or above the 85th percentile for much above normal temperatures. Then additionally, forecasters assess if the forecast temperatures cross critical thresholds 32 deg F, 90 deg F, 100 deg F, night time lows above 80 deg F, etc.

The forecasters do apply a subjective decision factor when delineating a hazard area. A cold snap in the winter or a heat wave in the summer are likely threats to life and property, while a cool period across the Great Plains in July is likely perceived as a break in the heat.

If hazardous conditions are met, forecasters use bias corrected and calibrated for historical forecast skill ensemble model output to estimate the likelihood of that event occurring, and indicate a confidence/risk of occurrence. Forecast confidence risk is categorized as slight, moderate, or high, with the categories indicating a 20%, 40%, or 60% chance of occurrence, respectively.