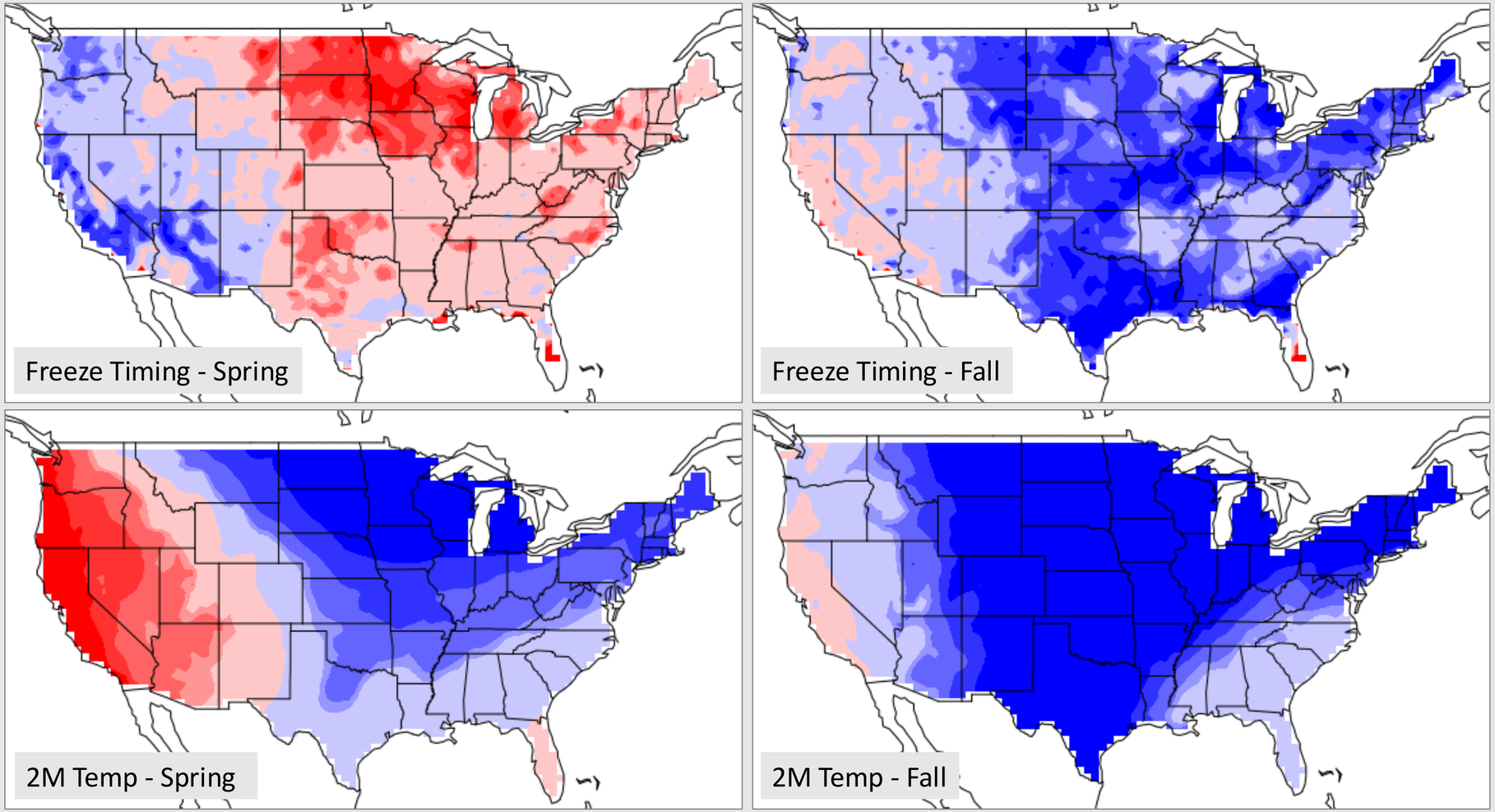
MERRA-2 Analysis Gives Insight in Trends of Spring and Fall Freezes over the United States



The timing of the last spring freeze (LSF) and first fall freeze (FFF) have large implications for agriculture, ecosystems, and water resources, making the forecasting of these vital to understand. Thomas and Bosilovich (2026) utilized MERRA-2 data to find that the LSF has trended earlier and FFF has trended later over the United States, as well as analyzed possible drivers of interannual variability of LSF and FFF – specifically modes of variability. It was found that the East Pacific/North Pacific (EP/NP) pattern is significantly correlated with the timing of the LSF and FFF (figure left, top row), as is the 2-meter temperature anomaly (figure left, bottom row).