



# False spring research needed

January 28, 2020

Depiction of a false spring (green line) compared with a typical spring (blue line) in terms of air temperature and day of the year.

*Depiction of a false spring (green line) compared with a typical spring (blue line) in terms of air temperature and day of the year. The 30-year average temperature (gray line) is included for a reference point, along with potential direct and indirect responses to each type of spring. Data from NDAWN (<https://ndawn.ndsu.nodak.edu/>) were manipulated by the authors to create conceptual figure.*

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Discrete weather events where early spring warming is interrupted by a late spring frost (false spring) are predicted to increase in the Northern Great Plains, USA. These false springs can damage native plant and crop production, which severely impact plant-dependent wildlife, humans, and economic stability. Such severe economic consequences from false springs have not yet received adequate research to direct possible management strategies.

In an article recently published in *Agricultural & Environmental Letters*, researchers explored the literature to better understand current knowledge and research gaps regarding false springs. The researchers found major knowledge gaps in regions where

false springs are expected to increase in the future (e.g., Northern Great Plains). Research on the effects of false springs in both croplands and natural systems is needed in order to provide land managers the tools and strategies necessary for adapting to these climate change–associated weather events.

Investigating both above- and belowground effects of false springs will be important as they can negatively impact specific plant and animal species. Given their predicted increase, scientists should begin initiating research now on how false springs impact vulnerable regions in order to reduce negative consequences and economic losses from false spring events in the future.

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Kral–O'Brien, K.C., O'Brien, P. L., & Harmon, J. P. (2019). Need for false spring research in the Northern Great Plains, USA. *Agricultural & Environmental Letters*, 4 (190025). <https://doi.org/10.2134/ael2019.07.0025>

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