

Abstract Submitted  
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**Convection-driven pattern formation in lawn grasses** SALLY THOMPSON, Nicholas School of The Environment, Duke University, KAREN DANIELS, Dept. of Physics, NC State University — Spatial patterns of 'dead' lawn grass have often been ascribed to Turing-type reaction-diffusion processes related to water scarcity. We present an alternative hypothesis: that the air within the grass canopy is unstable to a convective instability, such that chill damage caused by falling cold air is responsible for the creation of brown and green bands of grass. This hypothesis is consistent with several features of small-scale vegetation patterns, including their length scale, rapid onset and transient nature. We find that the predictions of a porous medium convection model based are consistent with measurements made for a particular instance of lawn-patterning in North Carolina.

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