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| **A high spatial resolution land surface phenology dataset for AmeriFlux and NEON sites** |
| **Introduction/Aim:** Vegetation phenology is a key control on water, energy, and carbon fluxes in terrestrial ecosystems. Because vegetation canopies are heterogeneous, spatially explicit information related to seasonality in vegetation activity provides valuable information for studies that use eddy covariance measurements to study ecosystem function and land-atmosphere interactions.**Methods:** Here I present a land surface phenology (LSP) dataset derived at 3 m spatial resolution from PlanetScope imagery across a range of plant functional types and climates in North America.**Results:** The dataset provides spatially explicit information related to the timing of phenophase changes such as the start, peak, and end of vegetation activity, along with vegetation index metrics and associated quality assurance flags for the growing seasons of 2017–2021 for 10 × 10 km windows centred over 104 eddy covariance towers at AmeriFlux and National Ecological Observatory Network (NEON) sites.**Conclusion:** These LSP data can be used to analyse processes controlling the seasonality of ecosystem-scale carbon, water, and energy fluxes, to evaluate predictions from land surface models, and to assess satellite-based LSP products. |

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