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| **Tree Canopy Cover Recovery of Southern Yellow Pines after stand-replacing disturbance** |
| **Introduction/Aim:** The United States Forest Service 2021.4 tree canopy cover product suite contains an annual science product derived from both Landsat and Sentinel-2 data spanning 2008-2021, but has not yet been evaluated for its potential utility in monitoring forest ecosystem recovery after stand-replacing disturbances in southern yellow pines.**Methods:** Southern yellow pines were identified by selecting areas classified as evergreen in at least six of eight United States National Land Cover Database epochs and no more than two shrub epochs. 651 independent locations of pine forests with stand-clearing disturbances between 1986 and 2011 were identified using a 70% confidence of fast loss in the Landscape Change Monitoring System. We calculated stand ages using the fast loss disturbance, resulting in values of tree canopy cover from age 0 to 35 years. We calculated mean tree canopy cover at each age to assess regional patterns of tree canopy recovery after disturbance.**Results:** Results show the mean annualized tree canopy cover data following a trajectory of sharp increase after disturbance. Tree canopy cover begins to level off at approximately 80-85% at approximately age ten and decreases after age 30. The pattern follows the expected trajectory of regrowth, as seen in our prior work with other indicators, such as the enhanced vegetation index. Our results suggest that annualized tree canopy cover opens new possibilities for assessing canopy recovery after disturbance, enabling biophysically meaningful and spatially specific assessments of climatic, edaphic, and anthropogenic drivers.**Conclusion:**  |