

A SPACE-TIME LOOK AT TWO-PHASE ESTIMATION FOR IMPROVED ANNUAL INVENTORY ESTIMATES

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Abstract—Over the past several years, three sets of new temporal remote sensing data have become available improving FIA’s ability to detect, characterize and forecast land cover changes. First, historic Landsat data has been processed for the conterminous US to provide disturbance history, agents of change, and fitted spectral trajectories annually over the last 30+ years at 30 m resolution. Second, the collection of TimeSync data is becoming more widespread and allows image interpreters to capture three decades of forest disturbance and recovery on FIA plots in a consistent and repeatable fashion. Third, the Image-based Change Estimation (ICE) project is gaining momentum and involves collecting detailed land-use land-cover change information on FIA plots using two or more dates of NAIP imagery. Here we present a two-phase estimation approach to combine wall-to-wall landsat-based products, TimeSync observations, and FIA plot data in space and time, improving annual estimates of forest attributes. We illustrate this approach using data collected in the state of Utah. We also discuss potential for integrating ICE data under this framework.

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