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| ***Global Vegetation Monitoring in near Real-time*** |
| Forest disturbance alert systems enable low latency monitoring of forest loss, supporting forest management activities and enforcement. We have been monitoring forest loss pan-tropically in near real-time using Landsat satellite data with the system GLAD-L since 2017, and across the Amazon basin using Sentinel-2 data since 2020. Expanding from tropical to global, our most recent alert system, DIST-ALERT, flags all vegetation cover loss relative to its seasonal near-term historical range using Harmonized Landsat Sentinel-2 (HLS) data. With a revisit rate of 2-4 days, this freely available 30 m dataset is uniquely suited for near-real-time monitoring. The fractional vegetation cover is mapped using a K-Nearest Neighbors model trained with vegetation cover percent estimates derived from 8 cm multispectral drone data collected across numerous biomes. The vegetation cover is estimated for each new observation and compared to the minimum cover estimate from all observations in a seasonal window of ±15 days in the previous three years. Observations with anomalously low fractional vegetation cover are flagged as disturbance and monitored through subsequent observations to track duration and build or decrease confidence. All of the high confidence disturbance alerts throughout the calendar year are summarized to an annual product. When combined with an ancillary forest mask, this new system allows users to monitor forest loss events far beyond the tropics and in both seasonal and evergreen forests. Together these systems provide high cadence disturbance alerts to support enforcement of conservation policy, aid land managers, and facilitate downstream science. |