PRODUCT OVERVIEW

# DisturbanceTracker™

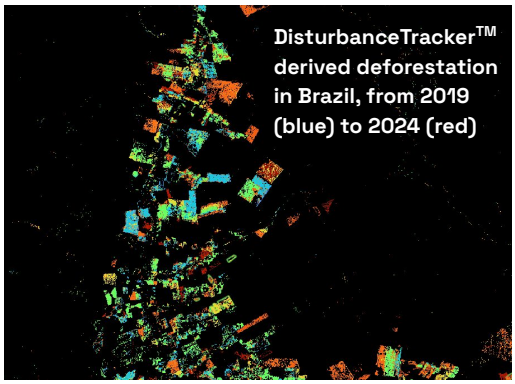
DisturbanceTracker™ is a change detection data product that can provide near real-time indicators of forest degradation and deforestation, with disturbances identified as frequently as every month. Forest disturbances are detected using both optical and synthetic aperture radar (SAR) satellite data, enabling all weather observations across cloudy areas like rainforests (SAR can see through cloud), and providing higher confidence in detections where both sensors detect a change. The use of SAR data also gives higher sensitivity to forest disturbances, allowing the detection of small scale events like selective logging.

Disturbances are initially recorded when they are observed by at least one of the sensors, on at least 2x passes of the satellite - these are classified as ***unconfirmed*** disturbances. Disturbances are classified as ***confirmed*** once the event has been observed across at least 4x satellite passes.

DisturbanceTracker™ can be used to support forest carbon project monitoring across a portfolio of projects, allowing for the assessment of the potential impact on carbon credit issuance through confirmed forest loss. It can also be used to support forestry concession monitoring for compliance purposes - for example, to ensure "No Deforestation, No Peat and No Exploitation" (NDPE) commitments are being upheld.

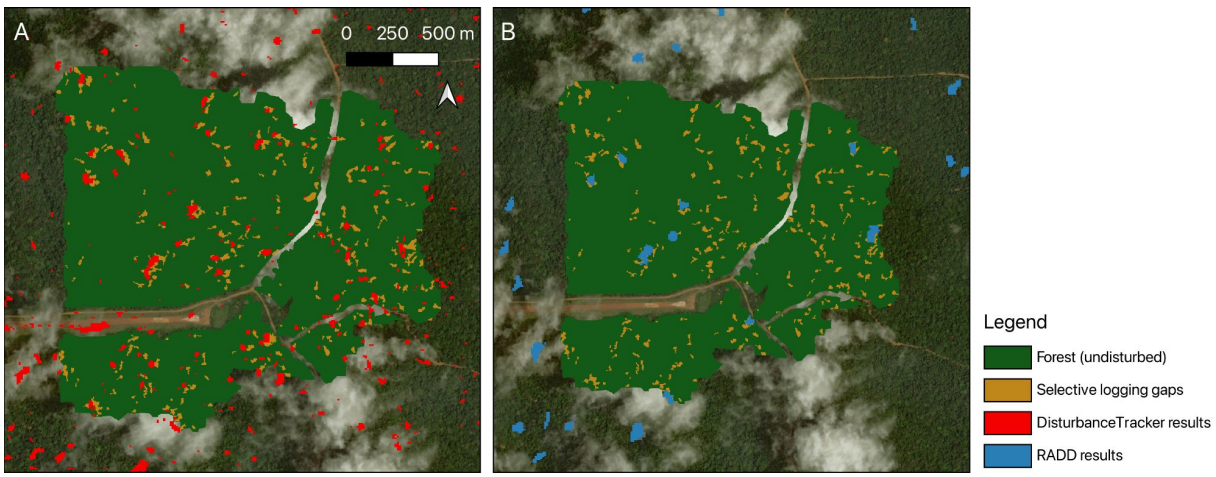
## Key Technical Specifications

- Spatial resolution: 10m
- Update frequency: monthly
- Lag time for disturbance detection:
  - 2-3 weeks (unconfirmed disturbances)
  - 1-2 months (confirmed disturbances)
- Historical coverage: from 2019 to present
- Spatial coverage: wet, closed canopy tropical forest and mangroves
- Spatial sensitivity: loss of tree canopy of ≥20m x 20m
- Delivery: Space Intelligence web platform or GEOTIFF




## Higher Frequency, Higher Accuracy Alerts (vs Open Source Monitoring Systems)

When compared against other open source forest disturbance alert systems (e.g., RADD and GLAD alerts, CTrees REDD+AI/LUCA), we find that **DisturbanceTracker™ is able to detect more small scale disturbances** (e.g., from selective logging). For example, a SAR-only precursor to DisturbanceTracker™ detected 80% of the disturbance occurring across a small study site in Gabon, compared to only 3% detected by RADD[1]. In addition, **DisturbanceTracker™ is able to detect disturbances sooner** - with our technology assigning disturbance dates as much as 6 months earlier (median) than RADD for the same study site in Gabon[2].




***Comparison of (A) DisturbanceTracker™ and (B) RADD alert results over a study site in Gabon, shown alongside LiDAR-derived selective logging gaps. Background satellite image source: © Bing.***

[1]Aquino C, Mitchard ETA et al. (2022) Reliably mapping low-intensity forest disturbance using satellite radar data. *Frontiers in Forests and Global Change*, 5:1018762. doi: 10.3389/ffgc.2020.1018762.

[2]Carstairs H, Mitchard ETA et al. (2022) Sentinel-1 shadows used to quantify canopy loss from selective logging in Gabon. *Remote Sensing*. 14, 4233. doi: 10.3390/rs14174233.