GFOI Global Forest Observations Initiative | Plenary 9-11 May 2023

WAGENINGEN UNIVERSITY & RESEARCH

RADD alerts

Johannes Reiche & WUR radar team

http://radd-alert.wur.nl | http://radar-rs.wur.nl

Summary I

- Forest disturbance alerts for the humid tropics using cloud-penetrating 10-m Sentinel-1 radar
- Developed in collaboration with Global Forest Watch, Google, UMD, ESA, USFS
- Weekly updates available via GFW, SEPAL, GEE and http://radd-alert.wur.nl
- Complement existing alerts (GLAD, JJ-Fast, …) to support law enforcement & transparency

Current geographies (50 countries, 2019 – now)

Reiche & many others (2021), ERL

Summary II

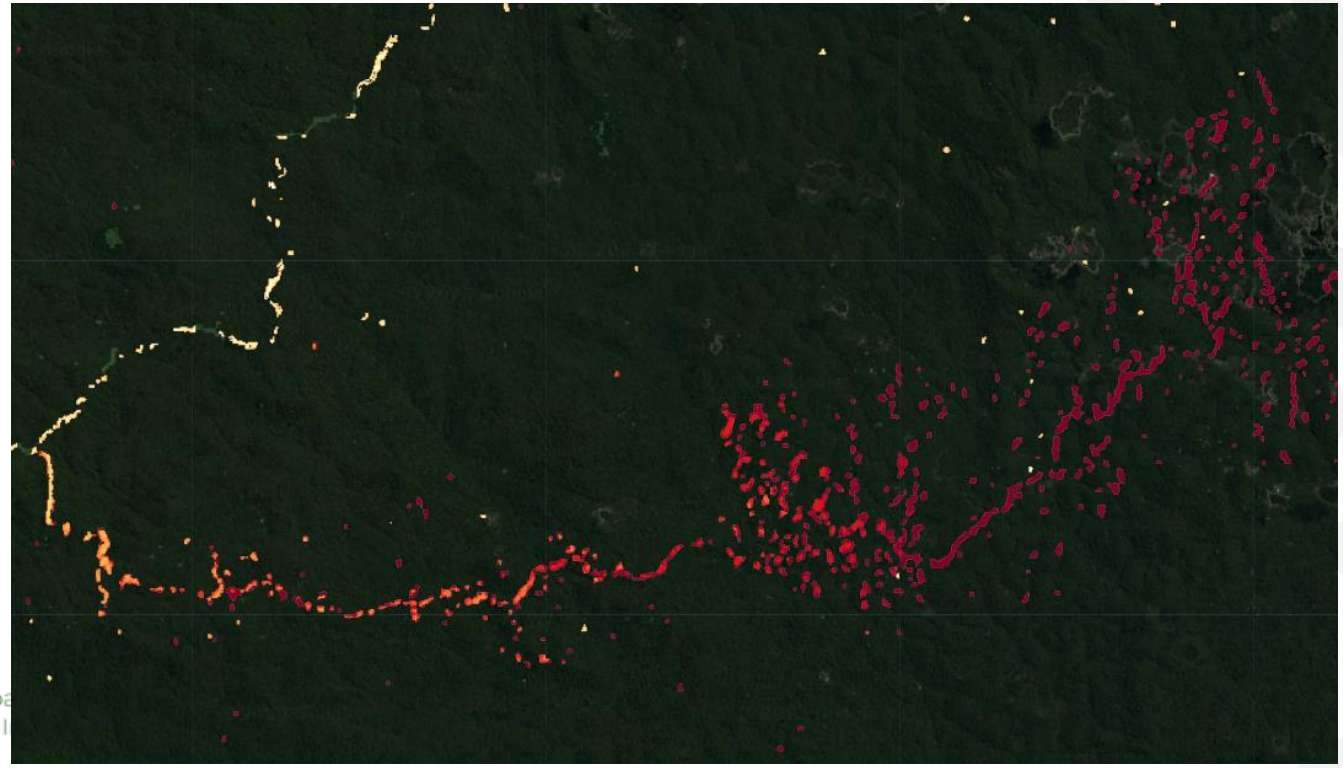
- Low and high confidence alerts and date of first detection
- 0.1 ha MMU

Selective tree logging
(Central African Republic)

Summary II

- Low and high confidence alerts and date of first detection
- 0.1 ha MMU
- **Low false-detection rate (<5%), low-to-moderate omission rate (5 – 50%, much lower when assessing events)**

(Doblas et al., 2023, Balling et al., under review, Reiche et al., in prep.)

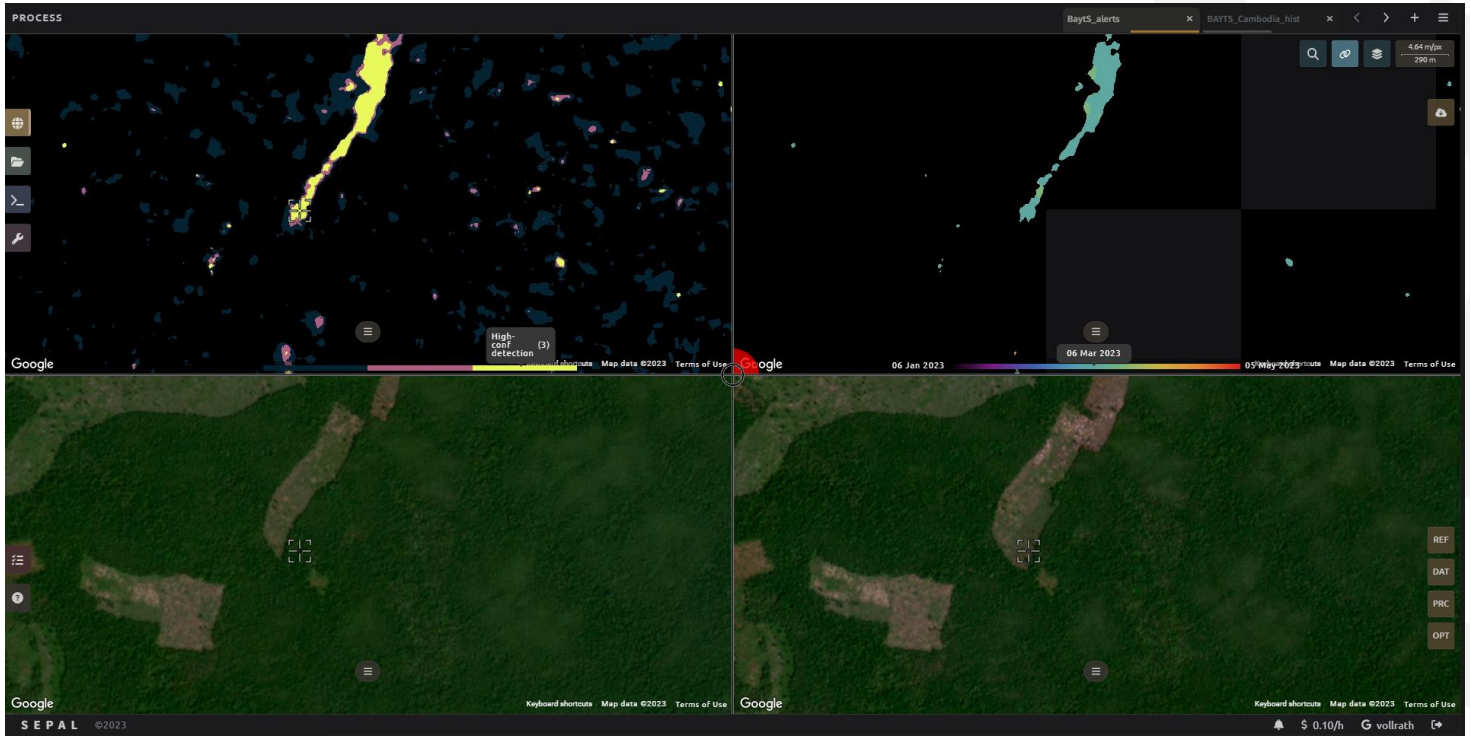


Selective tree logging
(Gabon)

Global
Observations

Open-source tools

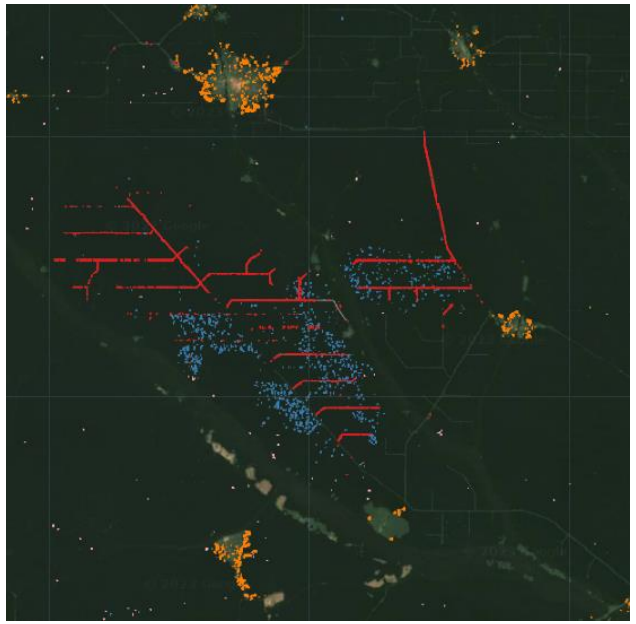
- GEE package for generating analysis-ready Sentinel-1 backscatter data (Mullissa et al., 2021)
- SEPAL implementation of probabilistic change detection method (Bayts-S1 alerts)

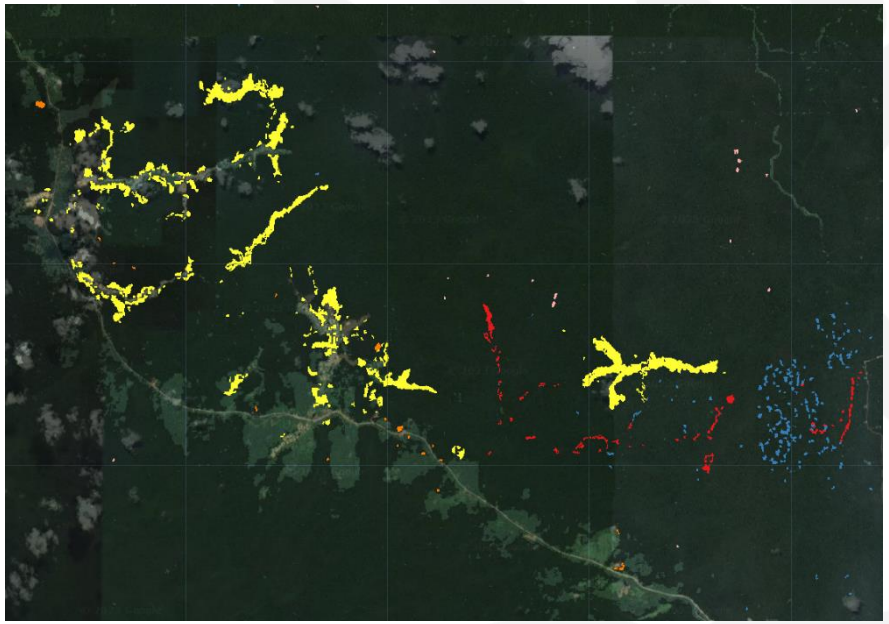


Bayts-S1 alerts in SEPAL

Next steps

- Expansion to other geographies, incl. SEA, Dry forests, EU
- Assessing logging intensities (Welsink et al., 2023, ERL)
- RADD v2 (improved pre-processing, radar texture …)
- Mapping direct drivers (Slagter et al., in revision) and follow-up land use (Masolele et al., in revision)





Bart Slagter et al., in revision

- Smallholder agriculture
- Road development
- Selective logging (related to tree felling and skidding)
- Mining
- Other (e.g. flooding or windthrows)

Thank you.

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