

CEOS Biomass Recommendations for New Acquisitions

Sites with **field plots** and **airborne lidar**, preferably with **TLS**

Airborne Lidar Specs

- Minimum 4 shots /m²
- Preferably acquired same season as field plots
- Acquired within 2 years of field acquisition
- Repeated every ~5 years or when disturbance detected
- Area min ~3x3 km (but less OK if using drone)
 - Covers plots + local environmental and forest structure gradient

Field Plot Specs:

- Preferably square plots
 - Minimizes edge effects, easier to link to gridded products
- Min plot size of 0.25 ha in tropics (ideally 1 ha with 25 m subplots)
- Stem-mapped where possible
- Smaller than 0.25 ha in temperate and boreal OK provided airborne lidar

• Sampling of Field Plots for local lidar biomass maps

- Covering gradients sampled by airborne lidar (e.g. topography, biomass range, etc.)
- Sufficient number to train a lidar model (10-30 plots)

TLS Specs

- Sample in existing long-term plots
- 1 ha plots preferable
- Grid pattern
- Spacing 10 m in dense areas, 20 m in open areas, or whatever yields consistent sampling and minimizes occlusion
- Instrument must have ability to range to tallest trees (e.g. Riegl vz400 or greater)
- Repeated every ~5 years or when disturbance detected