



Forests of Africa's Congo Basin: Carbon storage and fluxes from a large network of inventory plots

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The forests of the Congo-Ogoue basin are the world's second largest contiguous area of tropical forest. Considerably less is known about these forests than either Amazonian or Asian forests. Here we present recent data from the African Tropical Rainforest Observatory Network (AfriTRON), monitoring 196 long-term plots from across the basin and contiguous forests. The mean AGB of the plots is 215 Mg C ha⁻¹, with 425 stems ≥ 10 cm diameter. These results imply that Central African terra firme forests store considerably more carbon than equivalent Amazonian forests per unit area (~ 150 Mg C ha⁻¹), and similar to values found in SE Asian Dipterocarp-dominated forests. However, African forests have many fewer stems than typical tropical forests in SE Asia or Amazonia (c.f. ~ 600 ha⁻¹). Using repeat census plots, we also show that central African forests have been a large carbon sink on a per ha basis over recent decades, which when scaled to the region implies a globally significant carbon sink in intact forests. Lastly we investigate why Central African forests both store and sequester high quantities carbon, and compare and contrast these results with those derived from similar methods from Amazonia and SE Asia.