

Mangrove Carbon Stocks of the Zambezi and Rufiji River Deltas
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While mangroves have been shown to contain significant carbon (C) pools, storing up to five times more C than typical upland tropical forests per unit area, there have been few objective inventories which characterize the distribution across large area. Inventories were conducted using a Spatial Decision Support System (SDSS) that provided a framework for detailed logistical planning and field mission implementation to estimate above- and below-ground C stocks of mangroves within the Rufiji and Zambezi River Deltas. The mean carbon content in biomass ranged from 89.6 to 224.9 Mg C ha⁻¹ in Rufiji and 99.2 to 341.3 Mg ha⁻¹ in Zambezi, respectively. Live tree biomass was the dominant biomass C pool, accounted for about 88% in Rufiji and 89% in Zambezi, respectively. Soils C pool in these two Deltas are the largest, containing 213.7 to 359.5 Mg C ha⁻¹ that accounts for 61.5-70.9% of the entire stock with a mean of 64.3% in Rufiji River Delta, and 354.7 to 644.9 Mg ha⁻¹ that comprises 47% to 72% of the entire pool with a mean of 60.8% in Zambezi River Delta. Both soil and biomass C pools in the mangroves in Rufiji River Delta are lower than those in Zambezi River Delta although the deltas have similar land cover and mangrove species. The differences in biomass C stocks are likely related to disturbances, frequent harvesting in Rufiji, less anthropogenic disturbances in Zambezi in recent decades.