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DYNAMICS OF DISSOLVED INORGANIC CARBON IN THE TANA RIVER BASIN, KENYA

Here, we report data on the dynamics and sources of dissolved inorganic carbon (DIC) in the Tana River Basin (Kenya) during dry season, wet season, and end of wet season, from headwater streams to lowland mainstream sites. DIC concentrations ranged from 0.2 mmol L⁻¹ to 1.5 mmol L⁻¹ and increased consistently downstream, with notably high peaks of up to 4.8 mmol L⁻¹ in Nyambene hills tributaries, a strong indication of sub-catchment lithological inputs. $\delta^{13}\text{C}_{\text{DIC}}$ ranged between -20.8 and -2.4 ‰, generally decreasing downstream. With few exceptions, the riverine network was supersaturated in CO₂ (pCO₂ between 110 and 5204 ppm), suggesting the system is a net source of CO₂ to the atmosphere. Diurnal fluctuations were examined at different sites, and were found to be substantial only in one of the headwater streams.