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Aspects of the Physico-Chemical Characteristics of Rivers in Kahuzi-Biega National Park, Democratic Republic of Congo

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ABSTRACT

The physico-chemical characteristics of ten permanently flowing rivers from Kahuzi Biega National Park (Democratic Republic of Congo) were examined in July 2007. Water samples were collected from ten sites between 1800 and 3200 m asl and analyzed for the following chemical parameters: biological oxygen demand, total and carbonate hardness, alkalinity, total phosphorus, nitrogen, nitrate, and ammonia. Discharge, current velocity, temperature, and oxygen saturation were analyzed on site. In general, the chemical parameters revealed relatively low concentrations compared to others rivers in the region. The rivers were cold (10°C - 15°C), well oxygenated, had low conductivity (generally <100 µS/cm), and had pH values ranging between 5.5 and 7.6. Nitrogen and phosphorus were also low (0.086 - 0.25 µmol/L for phosphorus and 2.21 - 4.25 µmol/L for nitrogen) in all rivers. The main natural sources of nitrogen and other nutrients are from rain and atmospheric deposition, organic matter decomposition, and fixation of molecular nitrogen from allochthonous inorganic material. In the forested rivers of Kahuzi-Biega National Park the terrestrial and riparian environments are the only sources of nitrogen and phosphorus to the river water.

KEYWORDS

Physico-Chemical; Parameters; Rivers; Kahuzi-Biega National Park

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