

Assessment of physicochemical qualities, heavy metal concentrations and bacte

The physicochemical and microbial qualities of Shanomi creeks in the Niger Delta of Nigeria were assessed between January and October 2011. The temperature across sampling stations ranged between 26 and 27.7°C, while pH varied from 7.49 to 8.74. Turbidity ranged from 176.62-189.96 NTU and conductivity varied between 360.45 and 454.88 µS/cm. The concentrations of other physicochemical parameters were as follows: BOD (6.39-7.64 mg/L) COD (84.25-97.27 mg/L); ammonia (26.83-33.98 mg/L); nitrate (37.25-43.89 mg/L); nitrite (37.35-41.75 mg/L); and phosphate (28.83-37.85 mg/L). The relative dominance of metals in the water followed the sequence: Al > Zn > Cu > Fe > Mn > Cd > Pb > Hg > As. Faecal and total coliform densities ranged from 1.05 × 10² to 4.25 × 10³ (cfu/mL) and 1.56 × 10² to 6.40 × 10⁴ (cfu/mL) respectively. The study reveals that the water under study was heavily polluted and of serious threat to the aquatic biota and public health.

Key words: Aquatic biota, contamination, pollution, public health, microbial indicators, toxic effects.