

Assessment of the Physico-Chemical Parameters and Heavy Metal Concentration in Water and *Callinectes amnicola* (Swimming Crab) in a Crude Oil Exposed Community (Bodo Creek), Rivers State, Nigeria

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Abstract : The exploration and production of fossil fuel particularly crude oil has led to some serious environmental damage in some oil producing communities like the Bodo Community who rely heavily on their aquatic environment for food and water. This study was therefore carried out to investigate the level of some heavy metals in water and *Callinectes amnicola* (Swimming Crab) in the month of August, September and October from Bodo creek, Rivers State, Nigeria. The physico-chemical parameters of the water were also analyzed in-situ. The levels of heavy metals, Lead (Pb), Cadmium (Cd), Chromium (Cr), Zinc (Zn), Copper (Cu) were analyzed in water and in *Callinectes amnicola* (Swimming Crab), using Atomic Absorption Spectrophotometer (AAS) after acid digestion. For the concentration of heavy metals in water, Pb ranged from 0.103 - 0.791 mg/l, Zn 0.0025 - 0.342 mg/l, Cr < 0.001 - 0.304 mg/l, Cd 0.011 - 0.116 mg/l and Cu <0.001 - 0.079 mg/l. For the concentration of heavy metals in *Callinectes amnicola* (Swimming Crab), the level of Pb ranged from 0.359 - 0.849 mg/l, Zn 0.134 - 0.342 mg/l, Cd 0.053 - 0.103 mg/l, Cr < 0.001 - <0.001 mg/l, Cu < 0.001 - 0.131 mg/l. The concentrations of Pb, Cd and Cr for all water and crab samples collected from the various stations were higher than permissible level suggesting serious anthropogenic influence. Thus, precaution needs to be taken to prevent further contamination and adequate purification measures need to be put in place. Therefore, there should be periodic environmental pollution monitoring, for assessment and awareness especially with regards heavy metal.

Keywords : Bodo creek, crude oil, heavy metal, swimming crab

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