

# Trace Metal Concentrations in Commercially Important Fishes from some Coastal and Inland Waters in Ghana

C. Tay\*, Ruby Asmah and C. A. Biney

CSIR-Water Research Institute, P. O. Box AH 38, Achimota, Accra, Ghana

Corresponding author; E-mail: collinstay@hotmail.com, korblatay@yahoo.co.uk

## Abstract

An assessment was conducted on the concentrations of zinc, copper, manganese, iron, lead and cadmium in 10 different fish species caught from some coastal and inland waters in Ghana, as part of a project on monitoring of pollution in water bodies in Ghana. Shellfish species (*Egeria paradoxa galanata* and *Atya gabonensis*) caught from inland waters had higher elemental concentrations than those caught from coastal waters. Mean concentrations of Fe and Mn were higher in *E. paradoxa galanata*, *A. gabonensis* and *Trachiurus trachiurus*, while *Panulirus regius* and *Sardinella eba* had higher mean concentrations of Cu. *T. trachiurus*, *Dentex congoensis* and *T. ovatus* had higher mean concentrations of Pb, while *T. trachiurus* and *S. eba* had higher mean concentrations of Zn. Mean Cd concentrations in the fish species were relatively low, with mean concentrations of *Cynoglossus cadenati*, *D. congoensis* and *T. ovatus* below detection limits. The mean concentrations of Zn, Cu, Pb and Cd for shell fishes were comparable to those obtained from previous studies in Ghana. However, they were lower than those reported in other areas of the sub-region. The mean concentrations of Zn, Cu, Pb and Cd in fin fishes were higher than those obtained from previous studies in Ghana. However, these values were comparable to those obtained from other areas in the sub-region. Compared to WHO limits, the levels of Zn, Pb, Cu and Cd in the fish species were lower, and, therefore, safe for human consumption. The study also showed that all the fish species except *S. eba*, *Solar crumophthalmus* and *P. regius* are safe for human consumption with respect to Zn, Cu and Fe.