

ENVIRONMENTAL TOXICOLOGY AND ECOLOGICAL RISK ASSESSMENT

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Hepatotoxicity and gastrointestinal pathologies in fishes and shellfishes exposed to polluted marine waters and sediments in Sarangani Bay, Philippines**Edna P Oconer, Ma Amelia R Punla, Christine Dawn G Obemio and Tres Tinna M Dela Cruz**
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The study evaluated heavy metal load particularly lead (Pb), cadmium (Cd) and mercury (Hg) in the waters, sediments, fishes and shellfishes and seaweeds taken from 10 sampling stations along Sarangani Bay covering three sampling periods over a year. Levels of heavy metals were determined using Inductively Coupled Plasma-Atomic Emission Spectrophotometry (ICP-AES). Metal load in water follows the order Hg>Pb>Cd across stations and periods with highest mean concentration at Station 1 (Maitum), Station 3 (Maasim), Station 5 (Tambler) for Hg, Pb and Cd, respectively. For sediments, Pb showed significant difference across stations and periods with Station 10 having the highest mean concentration. Pollution Load Index (PLI) in sediments attained values >1 with highest (9.67) at Station 1 (Maitum). Extent of anthropogenic influence has been found to be very high for Pb in Station 7 (Bula) and extremely high for Hg and Cd in Station 3 (Maasim station). The accumulation of heavy metals in liver tissue of fishes and soft tissue of shellfishes was species dependent. In both fishes and shellfishes, the concentration of Pb and Cd in most organisms was found to be below the threshold. Mercury load however, was found to have exceeded the permissible levels in some fishes and shellfishes. Qualitative evaluation employed the use of histopathological technique. Results showed that 25 out of 30 reef fish liver samples and 11 out of 15 shellfish samples investigated manifest histological alterations in varying degrees of tissue change using Poleksic and Mitrovic-Tutundzic modified scale of Degree of Tissue Change (DTC). The histological changes observed in various marine fauna may be linked to the bioaccumulation of toxic heavy metals observed in the said bay as a result of various anthropogenic factors.

**Biography**

Edna P Oconer has her expertise in histopathology and reproductive biology. She has completed her Post-doctoral degree in Reproductive Physiology and PhD in Biology at the University of the Philippines, Diliman Campus. Currently, she is a Professor VI and Director of the Research and Development Center of Mindanao State University, General Santos City, Philippines.

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