

Mercury and Selenium Tissue Concentrations in Double-Crested Cormorants: Correlation with Histopathologic Findings

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ABSTRACT

Concentrations of total mercury (g) and selenium (Se) were determined in fresh brain, liver and kidney tissues from a series of double crested cormorants (*Phalacrocorax auritus*) presented to an avian wildlife rehabilitation center located in the Florida Keys. In addition, a variety of formalin-fixed tissues were examined histologically in an attempt to determine a likely cause of death for each bird.

A specific attempt was made to correlate tissue concentrations of Hg with histopathologic lesions in the central and peripheral nervous systems compatible with Hg intoxication. In this series of cormorants, liver Hg and Se concentrations were highly correlated. However, there was little correlation between liver and brain Hg concentrations and no correlation between brain and/or liver Hg concentrations and hispathologic findings.

Results of this study support the hypothesis that Se protects against high tissue Hg concentrations and that it is not possible to determine the adverse health consequences of high tissue Hg based upon its measurement in organs such as brain and liver.