

“Toxicological Studies in Tropical Ecosystems: an Ecotoxicological Risk Assessment of Pesticide Runoff in South Florida Estuarine Ecosystems”

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Pesticide usage in South Florida has been a concern for many years. Pesticide runoff is a result of agriculture, industrial discharges and urban discharges such as landscaping and golf courses. Increases in pesticide levels over the last ten years have shown effects in coral reef communities, seagrass beds and many aquatic wildlife communities of fish, clams, and oysters. A study of the C-111 canal system and nearby waters has been conducted over the years to determine these potential pesticide risks. Pesticide concentrations were determined in surface water and tissues of aquatic wildlife using Gas Chromatography (GC) and Gas Chromatography-Mass Spectrometry (GC-MS). The high pesticide concentrations seem to be linked to agricultural runoff into the canal system. The major pesticide of concern, endosulfan, was detected at all sites sampled. Endosulfan levels exceeded criteria of EPA chronic freshwater quality, however the high levels did not cause acute effects in fish, and chronic effects seen in oysters and clams could not be proven to be caused by endosulfan itself. The monitoring of pesticides in the C-111 canal system is crucial, considering the fact that the canal provides a source of water to the Everglades.

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