



WATER RESOURCES RESEARCH GRANT PROPOSAL

Project ID: 2002FL5B

Title: The Flux of Ammonia at the Air/Water Interface of Tampa Bay

Project Type: Research

Focus Categories: Water Quality, Nutrients, Non Point Pollution

Keywords: ammonia, flux, dry deposition, eutrophication, Tampa Bay, water quality

Start Date: 03/01/2002

End Date: 02/28/2003

Federal Funds: \$16,900

Non-Federal Matching Funds: \$33,800

Congressional District: 11

Principal Investigators:

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Abstract

The focus of this study is to determine the flux of ammonia at the air/water interface of Tampa Bay. It is believed that ammonia contributes approximately 60% of the total atmospheric nitrogen that is deposited to the bay. The project will be a collaborative effort between the University of South Florida, the Florida Department of Environmental Protection, and the Environmental Protection Commission of Hillsborough County. Objectives of this research are to provide more accurate estimates of the quantity and temporal patterns of ammonia loading from the atmosphere to Tampa Bay, to determine if estuarine meteorological conditions and bay salinity cause a bi-directional ammonia flux on the bay, and to explore the variation between measured data and modeled fluxes to reduce or explain any observed error. Dry deposition of ammonia to Tampa Bay and water quality parameters in the bay will be measured for one year to determine the flux of ammonia at the air/water interface. Intensive data collection will take place for two weeks each quarter with monitoring equipment located on a U.S. Coast Guard range marker in Tampa Bay. An inferential model known as the "NOAA Buoy Model" will be used in the study to estimate the air/water exchange rates of ammonia over an open water body. The data will then be used to develop algorithms that describe the temporal variability of ammonia deposition to Tampa Bay.