

“Integrated Ecosystem Management: Research Opportunities and Challenges”

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Abstract: An overabundance of nutrients, pesticides and other chemicals in surface and ground waters from agricultural activities are jeopardizing the availability of usable, high quality water. Excessive applications of nutrients and fertilizers have resulted in a large threat to surface and ground water quality. Increasingly, watersheds are unable to utilize or decompose the high levels of fertilizers and animal manure applied to them. As a result, excess nutrients are transported through land environments to receiving rivers, lakes, estuaries and oceans. The results are increases in noxious, oxygen consuming and occasionally toxic algal blooms, deteriorations of fisheries, and general degradation of water quality.

This presentation will discuss results obtained from a number of watershed studies aimed at quantifying interactions among watershed management, water quality, water conservation, and nutrient and sediment transport at various spatial and temporal scales. Specifically, the presentation will focus on answering the following questions: (1) How can we identify runoff source areas in a watershed so that the best management practices (BMPs) placement can be optimized to minimize off-site sediment and nutrient transport? (2) What are the linkages among processes affecting sediment and nutrient transport in terrestrial and lotic ecosystems? (3) How can we use remotely sensed data to quantify water quality in a near real time? (4) What management practices can be developed to conserve water resources for sustaining long-term agricultural productions? In addition, application of mathematical models and decision support system (DSS) tools in developing integrated watershed management options will also be discussed.

Monday, August 14, 2006

→ 1:00 p.m.

Room 3201, CIVL Bldg.