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INFLUENCE OF NONPOINT SOURCE POLLUTION ON MICROBIAL ASPECTS OF WATER QUALITY IN NEW HAMPSHIRE'S COASTAL WATERSHEDS

Principal Investigators: Dr. Stephen H. Jones, Dr. William H. McDowell, Dr. Richard Langan, University of New Hampshire

Descriptors: Water quality management, bacteria, organic compounds, nutrients, contaminant transport, estuaries, pollutants, public health

Research Objectives:

To determine the seasonal occurrence and persistence of indicator and pathogenic bacteria in relation to nutrients, phytoplankton blooms, and DOC/DON in the Oyster River and at Furber Strait;

To compare levels of different bacterial indicators in waters impacted by different types of nonpoint pollution;

To determine the responses of fecal indicator and indigenous bacteria to estuarine water from different sources that reflect ambient variability in concentrations of DOC/DON and nutrients.

Principal Findings and Significance:

Trends thus far generally confirm our previous observations of a gradient for nutrients, fecal indicator bacteria, phytoplankton, and pathogenic vibrios from the tidal extent of the Oyster River, along a transect in the river and through Little Bay to Furber Strait. The DOC data was the first such data for the Oyster River and was showing some interesting trends with nutrients and phytoplankton dynamics. The temporal intensity of sampling during May and June of 1994 was increased to better understand the dynamics of these parameters at some of the sites. The *V. parahaemolyticus* data showed differences from *V. vulnificus* data, which is itself somewhat different from data for the three previous years. Basically, *V. vulnificus* incidence was much more frequent in Great Bay than in any of the three previous years. Discussions at the *V. vulnificus* workshop showed how comprehensive and important our unique study was compared to what is now known of its ecology.