

The effect of suspended sediments on dissolved nitrate and nitrite concentrations in the Penobscot River Estuary, Maine

Nutrients are essential to primary productivity in the oceans and nitrate is the major limiting nutrient in the Gulf of Maine. This study investigated the concentration of nitrate and nitrite along with transmissivity in the waters of the Penobscot River estuary, ME to determine if the suspended sediments were a source of these nutrients. Two collection cruises were conducted on the river during October 2014, followed by in lab chemical analysis of nitrate and nitrite, and computer data analysis using Sea-Bird Data Processing and Ocean Data View software. Results demonstrate that some relationships exist between concentration of nitrate and nitrite and suspended sediments. This has implications within Penobscot River and for other estuaries meaning that sediments and, in particular, resuspended sediments are a source of nitrate and nitrite that are recycled back into the estuary.