

Internal Cycling of Nitrogen and Nitrogen Transformations.

- [M. Voss, N. Wannicke](#)

Leibniz Institute for Baltic Sea Research, Warnemünde, Germany

- [B. Deutsch](#)

Stockholm University, Stockholm, Sweden

- [D. Bronk, R. Sipler](#)

Virginia Institute of Marine Science, Gloucester Point, VA, USA

- [R. Purvaja, R. Ramesh](#)

Anna University, Chennai, India

- [T. Rixen](#)

University of Bremen, Bremen, Germany

Current as of 30 July 2012

Abstract

Nitrogen is an essential element for all life forms and undergoes various transformation processes mostly mediated by microbes along biogeochemical gradients in the water column and in sediments. Along estuarine gradients a variety of regulating factors such as salinity or nutrient concentrations change rapidly. These processes are summarized and the interactions among processes are presented. A focus lies on dissolved organic nitrogen as an important component for the nutrition of bacteria and phytoplankton. Moreover, organic nitrogen mediates the transport of nitrogen from primary producers into the microbial food web. Most studies summarized here focus on nitrogen in temperate estuaries, but we also present a summary of nitrogen processes in tropical mangrove ecosystems.

Keywords

- Assimilation, Coastal seas, Denitrification, Dissolved organic nitrogen, Estuaries, Mangroves, Microbial food web, Nitrification, Nitrogen budget, Nitrogen cycling, Viral shunt.