AMBER Assessment and Modelling of Baltic Ecosystem Response

Deliverable B1-1

WP B.1 Estimate of N-removal in contrasting estuarine systems (24 mo)

Aim: Loss rates of nitrogen through denitrification and anammox in the Oder River and Lagoon, the Nemunas River with the Curonian lagoon at the southern Baltic and Kalix River in northern Sweden.

Purpose: To improve the parameterization of the coastal biogeochemical model and thereby improve the predictive capacity of the models.

Method: Field investigation in 2009 and 2010 in the Curonian and Oder lagoon and in 2010 in the Kalix; isotope pairing technique to quantify denitrification and anammox; stable isotopes in nitrate (d15N and d18O); nutrient concentrations (NO3-, NO2-, NH4+, PO43-).

Deliverables: Estimate of N-removal in spring and autumn for both lagoons and the Kalix river.

Responsible PI: Susanna Hietanen (UH)

Partners: UH, IOW

Internal linkages: Input for WP C.4., D6, 10

***Implementation*:** Due to the budget cuts the observation program was reduced. Samples were collected from the Arkona basin in southern Baltic Sea on several cruises 2009-2010 to follow the seasonality of nitrogen removal processes. The Oder lagoon was visited once during the active removal season (June 2010). These field campaigns were performed by researchers of University of Helsinki and Institute for Baltic Sea Research (IOW). The Curonian Lagoon nitrogen removal capacity of the River Nemunas nitrate loading was evaluated by researchers of the Klaipeda University.

The datasets have been described in metadatabase that can be found at AMBER homepage (http://www.io-warnemuende.de/amber-observations.html)