

Influence of Deposition of Atmospheric Inorganic Nitrogen Compounds to Marine Ecosystem at Bay of Bengal

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To investigate the influence for the deposition of inorganic nitrogen compounds derived from the continent on the marine ecosystem at Bay of Bengal (BOB) in the North East Indian Ocean, we performed numerical simulations with and without atmospheric deposition of inorganic nitrogen compounds, using a 3-D lower trophic-marine ecosystem model (COCO-NEMURO), coupled with an atmospheric regional chemical transport model (WRF-CMAQ). The monthly mean data of wet and dry deposition of inorganic nitrogen compounds consisted of gases (HNO_3 and NH_3) and aerosol particles (NO_3^- and NH_4^+) at BOB region in 2009 –2016 produced by WRF-CMAQ were inputted to the COCO-NEMURO as a new nitrogen nutrient supplying process from the atmosphere. The results indicated that monthly average chlorophyll mass concentration at the surface in BOB was significant increase. This study indicates that the supply of atmospheric inorganic nitrogen compounds from continent to the BOB could lead to a high nutrient impact on the marine ecosystem within the subtropical region.

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