

Restoring coastal wetlands as nutrient sinks: Case studies and regional strategies

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Coastal wetlands can provide important services, including provisioning, regulating, cultural and supporting services. Of the regulating services, wetlands can filter chemicals and sediment out of water before it is discharged into the ocean. However, due to the land reclamation for economy and society development, both the quantity and quality of natural coastal wetlands have declined rapidly over the past decades in Yellow Sea coastal regions. Fortunately, use of wetlands for the treatment of pollution have been recognized as effective ways to remove nutrients and other pollutants from land-based sources in Yellow Sea coastal countries.

In this presentation, based on the results of review study (including the coastal wetlands distribution and nutrient load in Yellow Sea, wastewater treatment and nutrient removal in Yellow Sea, mechanisms of using wetland as nutrient sinks) and case studies (including cases of returning fish and salt ponds to bays and coastal marshes in Wuyuan Bay of Xiamen, Fujian Province; using wetland for tertiary treatment associated with sewage treatment plants in Ningbo, Zhejiang Province; using species and aquaculture to achieve the co-benefits of sustainable harvest and environmental performance in Longhai, Fujian Province; nutrient bio-extraction in coastal areas through restoration in Yellow River Delta, Shandong Province, China), the author summarized and proposed recommendations on strategies, approaches and methods to enhance investment, capacity, knowledge and awareness raising to mainstream use of wetland into urban planning, marine park development, coastal wetland restoration projects and other investment decisions to enlarge wetland sink areas.

Keywords: coastal wetland; ecosystem service; constructed wetland; nutrient sink; regional strategy; Yellow Sea

