

Analysis of water and salt migration in sea reclamation regions under a semi-arid climate

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Abstract In recent years, sea reclamation has expanded rapidly to adjust to economic development, which would gain a lot of valuable construction land and provide an effective approach to relieve the shortage of land resources in coastal cities. However, reclamation destroys the coastal ecosystem and causes the movement of the fresh-salt water interface and ionic equilibrium. This research conducted an analysis of the formation conditions of salinization in the land-filled regions. Meanwhile, the problems caused by the high salinity were examined around the Bohai Sea. It is necessary to study the mechanisms of water and salt migration in the processes of leaching and evapotranspiration, especially the mobility process of salt in mud. It is concluded that the key to salinization governance is increasing the water storage capacity of soil layers and opening the underground drainage systems. Finally, several promising measures have been proposed for repairing the coastal eco-system such as rainfall utilization and conservation tillage.

Key words sea reclamation; salinization; semi-arid; migration; Bohai Sea