

Impact of urbanization on coastal environmental changes: a case study of Shanghai city

Abstract

The coastal zone, commonly known as the land-ocean interaction region, has significant economic and ecological impacts on human beings. It is vital for us to maintain the balance between environmental protection and anthropogenic development. Therefore, we must ensure that the coastal cities and the ocean interact in an equilibrium status. Only by connecting the coastal cities and the ocean together, can we reach the sustainable development goals of this area. However, "emphasizing the land, despising the ocean" and "emphasizing the use, disregarding management" have always been China's traditional concepts of development. Land reclamation, severe damage to the marine ecological environment and long-term vacancy are widespread. During the process of coastal cities development, these cities are widely influenced by changes in the marine ecosystem. The challenges currently faced are mainly marine pollution and land reclamation. As one of the mega coastal cities in the world, Shanghai needs to clarify the trends and status of its coastal environmental changes and the interaction between cities and its coastal zones, and provide scientific support for the sustainable development of Shanghai and its ocean. This research uses two different evaluation methods, which are "Ocean Health Index (OHI)" and "Pressure State Response (PSR)", to complete an evaluation of the marine ecosystem health trends and status in Shanghai. The evaluation results of the two methods demonstrate that the marine ecosystem in Shanghai has been developed in a healthy tendency since 2009, yet it is still in a sub-healthy state. The scientific advice for the sustainable development of Shanghai and its oceans are needed, which should take the SDGs (Sustainable Development Goals) as the guiding principle.