

Title: Changes in the spatial distribution of migratory shorebirds along the Shanghai shoreline, China, between 1984 and 2004

Author(s): [Ge, Zhen-ming](#); [Wang, Tian-hou](#) (thwang@bio.ecnu.edu.cn); [Zhou, Xiao](#); [Wang, Kai-Yun](#); [Shi, Wen-yu](#)

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Abstract: Migratory shorebirds in the East Asian-Australasian Flyway use the Shanghai shoreline as an important stopover site. Until recently, little was known about the influence of intensive reclamation on the shorebirds using this shoreline. We investigated the distribution of shorebirds in 10 fixed-sample sites in 2004-05 and compared the results with those of surveys at the same sites in 1984-85; we also examined physical changes in intertidal wetlands and coastal land-use at these sites. In 2004-05, 25 shorebird species were recorded, and the seasonal abundance of shorebirds in 2004-05 was similar to that recorded in the 1980s, but the number of species observed in both northern and southern migration periods declined between 1984-85 and 2004-05 even though the overall numbers of birds had not. Since the 1980s, over 500 km² of intertidal mudflats along the Shanghai shoreline have been reclaimed, though similar to 190 km² of these mudflats have been reclaimed but not yet developed and could be considered fairly high-value habitat for shorebirds. Most of the shorebirds that were observed were on these reclaimed but undeveloped mudflats. The physical characteristics of the mudflats had been transformed over the preceding two decades through reclamation, siltation, erosion and, at some sites, artificial vegetation planting, and two habitat variables-the width of mudflats and the width of the upper intertidal zone-significantly affect the abundance and distribution of shorebirds. We discuss some implications for conservation related to rules and guidelines for reclamation of wetlands, and make recommendations on land-use procedures for artificial wetlands.

Address: Wang, Tian-hou ; E **China** Normal Univ, Shanghai Key Lab Urbanizat and Ecol Restorat, Sch Life Sci, 3663 N Zhongshan Rd, Shanghai 200062, Peoples R **China**

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