

Japanese coastal dune crisis and future prospects

*Hajime Matsushima¹

1. Research Faculty of Agriculture, Hokkaido University

Japan is the island country consisted about 7,000 islands in East Asia. Since the land is surrounded by the sea and has a steep and narrow terrain extending from north to south, the population has concentrated on the small coastal plains. Because the coastal area has played an important role as a place of living and trade in Japan, people developed intensively as close as possible to the sea. At the results, natural coast, especially sand dune system, were lost by development, afforestation or construction of seawalls. Besides such human activity in the coastal area, the risk of damage from high tides, sea breeze and sand drifting became remarkable issues due to the increasing of extreme events by climate change. To protect the inland developed area, more seawalls and coastal afforestation forests have been constructed on coastal sand dunes along the coastline in Japan. However, these constructions have resulted in the loss of resilience of the coastal sand dune systems that form the beach. Furthermore, it is predicted that it will be difficult to provide the budget for the maintenance costs of these infrastructures in Japan by population decrease. It is considered that the usage of coastal sand dune systems as green infrastructure will be important for the future goals.

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