

People's lives utilizing coastal dunes ecosystem service

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1. Introduction

The coastal sand system is a buffer zone between the sea and the land, and originally, it has a function to mitigate the natural disasters such as tsunamis and the formation of biodiversity. People form a settlement "town" in the coastal sand dunes for a long time. However, because natural coastal sand dunes have been destroyed due to the progress of development, opportunities to receive the benefits of nature have decreased since the period of high economic growth.

In this research, I evaluate the functions and ecosystem services from people's living in the coastal sand dunes before large-scale coastal development, we will also discuss about the regeneration of the coastal sand dunes in regard to social changes.

2. Method

The study sites are coastal cities in the coastal areas of Chiba Prefecture. In coastal area of Tokyo Bay side, large scale development has been conducted since the 1960' s. Therefore, I judged it to be an effective place for evaluating coastal sand dunes before development. We investigated the environment of study sites, including the soil and groundwater. There were supported as necessities and luxury items in the area.

3. Results

In distance ratio of coastal type in Chiba Prefecture in 1993, natural coast was 23.5%, the artificial coast was 70.0%. The coastal cities of study site existed brewing industry such as soy sauce, miso, sake brewery. It was an industry that utilized ecosystem services such as the freshwater layer of the coastal dunes and the sea creatures. As a result investigated the location environment of the main coastal cities (soil, groundwater level, water quality), the coastal cities were often located on the geographical features consisting of sand, sandbanks and natural levees. The surface geology consisted of sand-rich sediments, including sand 1 (i.e., exceedingly soft), the depth of the groundwater was 3-10 m. I believe that the coastal cities benefited from the proximity of the coast.

4. Themes for the future

The future prediction in Japanese society are ①progress of population decline, declining birthrate and aging population, ②economic decline, financial tightening, ③infrastructure (roads, railroads etc.) aging and the maintenance problem, the social situation change drastically. Moreover, in the coastal industrial area, the number of companies that suspended or stopped production facilities and the expansion of idle land have increased due to the shift of major manufacturing to overseas due to the shrinking domestic

demand over the medium to long term and intensified global competition. As a future task, it is important to work on the regeneration (green infrastructure) of the natural coast sand dune utilizing idle land while cooperating with the government, enterprises, local residents, and academics.

Keywords: Ecosystem Service, Coastal Sand System, Industry, Regeneration