

# Life of People Who Live on the Coastal Sand System in Metropolitan Suburbs and Necessary Future Actions –From the Viewpoint of Ecosystem Services –

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## 1. Introduction

The coastal sand system is a buffer zone between the sea and the land, and originally, sand beaches, coastal vegetation, wetlands, sand and coastal forests continue for several kilometers from the sea to the land area. The fresh water layer is about 10 m underground. People have settled in the coastal sand system for a long time, and have formed fishing villages used the underground freshwater layer as a fresh water source. However, because natural coastal sand system have been destroyed due to population increases and the progress of development, opportunities to receive the benefits of nature have decreased since the period of high economic growth. In this research, we focus on the sake brewing environment as an indicator of ecosystem services, and evaluate the results. We will also discuss the future direction of the coastal sand system in regard to social changes.

## 2. Method

The study sites are sake breweries in coastal areas in 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 system before development. The data from the sake breweries were from the Taisho era (1912-1926). We investigated the environment of the sake breweries, including the soil and groundwater.

## 3. Results

In coastal sand system in Chiba prefecture, the fisherman who moved from the Kansai area on west side of Japan, built a fishing village in 1573, which was the beginning of the coastal city. There were sake breweries in some coastal cities during the Taisho era. The Coastal areas in Taisho era did not modernize the infrastructure of roads and railroads etc, and natural coastal sand system existed. Regarding the environment of sake breweries that operated in the coastal areas along Tokyo Bay in 1925, the breweries were often located on the geographical features consisting of sand, sandbanks and natural levees. The surface geology consisted of sand-rich sediments, including sand. In the water environment, the depth of the groundwater was 3-10 m. I speculate that these sake breweries benefited from using the natural ingredients that formed in the coastal zone. I believe that sake brewing in these areas benefited from the proximity of the coast.

## 4. Themes for the future

The future prediction is that living areas will be shrinking due to the declining population and the damage will increase due to frequent of abnormal weather such as floods and storm surges due to climate change. Regeneration of coastal sand system is necessary for the people living in coastal areas to live a fulfilling life utilizing ecosystem services.

Keywords: Ecosystem Services, Coastal Sand System, Japanese Sake Brewery, Regeneration

