

The Sand Dunes in Geologic, Historical, and Present-Day Times

Far beneath the Tottori sand dunes lies bedrock that once was the ocean floor. Although it is hard to imagine today, this celebrated coastline was once bare rocky cliffs and caves lapped by the sea. The dunes formed over tens of thousands of years as large amounts of granite gravel and sand flowed to the ocean from mountainous terrain in the upper reaches of the Sendai River. Eventually a sandbar formed. Waves and coastal currents pushed the smallest granules back on land, in time filling a bay wrapped by the rocky headlands. Fluctuating sea levels, too, played their part in the formation of these early dunes, at times shifting whole beds of seafloor sediment onto this newly formed coastal terrace. Wind carried the sand farther inland, sculpting it into ever-shifting shapes. Volcanic eruptions added ash and pumice to the mix.

At times the sand dunes retreated, swallowed by the sea in coastal erosion events. At others, their volume expanded. And there were periods, such as now, when the dunes settled and stabilized. Vegetation grew lush, as evidenced by darker layers of soil in the sediment record. Although a detailed survey has yet to be done, pottery and stone vessels from the prehistoric Yayoi (300 BCE–300 CE) and Kofun (25–552) periods suggest that the dunes may have been hunting grounds. Fast forward to the Edo period (1603–1867) when the record of human activity is clearer. Pine trees were planted as a wind barrier to keep sand from inundating the Tajima route that linked Tottori with Tajima, 25 kilometers south in present-day Hyogo. Cultivation measures in the latter half of Edo established fields for mulberry and *rakkyo* shallot production.

During the First Sino-Japanese War (1894–1895) and Russo-Japanese War (1904–1905), the sand dunes were used for military training, a practice that continued, off and on, until the end of World War II in 1945. In the early 1900s, completion of tracks along the San'in Main Line railway, now roughly paralleling the Sea of Japan from Kyoto to Yamaguchi, made Tottori's dunes a popular tourist destination. Inspired by the vast and ever-shifting landscape, literati extolled the dunes in poems and writings that drew more visitors. Later, after World War II, measures to step up food production led to the afforestation and conversion to farmland of a large swathe of the dunes.

As government-sponsored projects to improve irrigation, drainage, erosion control, and farm roads were implemented, for the first time a conservation movement began. One central figure was Yoshida Shoya (1898–1972), a medical doctor and Mingei (Folk

Crafts) movement supporter remembered today for his work promoting Tottori ceramics. Joined by geographer Tokuda Sadakazu (1889–1945) and biologist Ikoma Yoshihiro (1892–1979), he spurred efforts that culminated in 1955 in the designation of 30 hectares of the dunes as a protected national monument. With the subsequent creation of San'in Kaigan National Park in 1963, 146 hectares became protected land.

The 1960s coincided with Japan's period of rapid economic growth. Tourism boomed and much of the surrounding area was developed. Camel rides were introduced to the dunes and a chairlift that still operates today was built. From the early 1970s, once again conservation attempts were strengthened to stem the growth of invasive plant species and other vegetation that was steadily encroaching on the dunes. Weeding efforts in particular from 1991 onward have reclaimed significant portions of the sandy landscape. Initiatives to preserve the scenic and biological integrity of the Tottori sand dunes continue today.