

【Yunomaru Highland Ecology】

The Yunomaru Highland can be broadly divided into two ecological zones: the subalpine coniferous forest, and the alpine wetlands and high slopes.

Trees cover much of the Yunomaru Highland range, particularly on the northern slopes, where snow accumulation protects them from winter winds and freezing temperatures. Conifers like northern Japanese hemlock, Veitch's silver-fir, Japanese white pine, and Japanese larch form the bulk of the forest, but broad-leaved trees such as Erman's birch and Japanese white birch grow here, too. Reforestation efforts following World War II introduced the Japanese larch (*karamatsu*) to many other areas of the country, but the Yunomaru Highland is one of its original habitats.

The presence of alpine ecosystems in this highland area, at what is normally considered a subalpine elevation, is made possible by several climactic conditions: northern air currents from the Sea of Japan meet warmer currents south of the highland slopes, producing strong winds; the soil in the higher reaches of the highland is shallow, rocky, and relatively arid; and there is considerable variation between daytime and nighttime temperatures. These are conditions to which alpine plants are well-adapted. It is thought that around 10,000 years ago, when the last ice age ended and temperatures began to rise, the comparatively harsh climate of the Yunomaru Highland was able to sustain plant species that died out elsewhere. Today, these ancient survivors persist in the isolated wetlands and on the high, exposed slopes.

In light of climate change, protecting the highland's alpine ecosystems is an ongoing concern. As annual temperatures rise, subalpine tree species are able to survive at higher elevations, and they have begun to encroach upon the alpine areas. The Ikenotaira Wetland is gradually drying up, and both it and the Japanese azalea fields east of Mt. Yunomaru are under siege by invasive bamboo grass. Annual initiatives led by local organizations combat these trends by pulling up encroaching vegetation, regulating access to these areas, and promoting environmental awareness.