

## Wildlife in Hiruzen

As part of Daisen-Okii National Park, the Hiruzen Highlands plays an important role in sustaining a healthy biosphere for thousands of plants and animals.

Some of the species and varieties found here cannot be found anywhere else in the world. Such species often reference the region in their names, such as *Hiruzen baikamo* (*Ranunculus nipponicus* var. *okayamensis*), a flowering waterweed that grows in the small irrigation canals that once supplied water for agriculture and daily life to Hiruzen farmers. Another is *Hiruzen suge* (*Carex aphyllopus* var. *impura*), a sedge first collected in 1930. It grows on all three peaks of the Hiruzen Sanza, but is most abundant on Mt. Naka-Hiruzen.

Numerous threatened and endangered species can be found in the Hiruzen Highlands. One of the most famous endangered residents is the small longhorn beetle called *fusahige-ruri-kamikiri* (*Agapanthia japonica*). Measuring 15–17 millimeters, these beetles are notable for their elongated black bodies, metallic purple sheen, and tufted antennae. Their populations once spread throughout central Japan and even Hokkaido, but have dwindled with the reduction of their grassland habitats. They are now found only in Okayama and Nagano Prefectures, and only reliably in Hiruzen. The Ministry of the Environment has designated the species as critically endangered (CR), meaning it faces an extremely high risk of extinction in the wild.

The Hiruzen Highlands is an important stronghold for these beetles because their life cycle is tied to a flowering plant called the citron daylily (*Hemerocallis citrina*), which grows only in wet grasslands. Adult *fusahige-ruri-kamikiri* feed on citron daylilies and lay their eggs in the stems. The larvae pass the winter nestled inside the plant, feeding on it as they develop, then hatch in June or July. Without Hiruzen's population of citron daylilies, the species would be virtually homeless.

One of the most critically threatened freshwater bivalves in the world is Hiruzen's species of pearl mussel, *Margaritifera laevis*. Freshwater bivalves play an important role in the aquatic ecosystem, as they filter particulate matter, release nutrients, and mix sediment. Globally, their numbers have drastically declined in the last few decades due to human activity and habitat reduction. Freshwater pearl mussels require a shallow river habitat with water that flows at a languid pace and does not rise above 18°C–20°C. In Hiruzen, the Tendani and Obara Rivers provide exactly this sort of environment. The rivers also host populations of red-spotted *masu* trout (*Oncorhynchus masou ishikawae*), in whose gills the mussel larvae live for about two months before dropping down into the riverbed sediment as juveniles.

Another rare species that inhabits the area is the Japanese luehdorfia (*Luehdorfia japonica*), a white and yellow tiger-striped butterfly with distinctive red and blue markings on its hindwings. It appears only once a year, around April, which has earned it the nickname of *haru no megami*, or “spring goddess.” The Ministry of the Environment has designated it a vulnerable (VU) species, indicating there is a risk of its extinction in the wild.

The Japanese luehdorfia thrives in broadleaf deciduous forests with sparse undergrowth. In mountainous Japan, the scarcity of flat, open land has historically led people to settle in mountain valleys and farm the foothills surrounding them. These harvested fields and forests were termed *satoyama*. Wooded areas outside the town were coppiced, meaning their trees were routinely cut for charcoal and then allowed to grow back. Leaves, fallen branches, and scrub brush were gathered from the forest floor for fuel and fertilizer. In short, *satoyama* practices created the perfect environment for the Japanese luehdorfia.

In modern Japan, *satoyama*-style land management is becoming rarer as the population ages and young people choose urban over rural life. Without regular maintenance, *satoyama* environments revert to natural forestland. This process has claimed many former grasslands and coppiced woods, reducing the habitats of species that depend on them. Across the country, the range of the Japanese luehdorfia is shrinking. This trend is also present in Hiruzen, though for now *satoyama* practices continue, and local residents maintain coppiced woods where the “spring goddess” can still be seen dancing.