

1. Topography and Geology Relation to Biodiversity



Kaisho Forest is a hilly region with elevations between 100 to 400m. There is the Mt. Sanage region in the eastern area and the Yada River lowlands in the northern area. The landforms are made even more complicated by several small rivers, as well as ridge and valley formations.

The geology consists of mainly granite and gravel beds, each with their own unique vegetation. The impact that the geology have on the vegetation becomes obvious when comparing geological map and vegetation map.

Observation Points

1a Observation from Triangulation Station



Beautiful view from this triangulation station is allowing for easy confirmation of landform changes. Specifically, we can see the rows of mountains continuing into the Sanage range in the east as well as the low areas of Seto City spreading in the Yada River lowland regions in the northeast.

1b Sandy Gravel Regions and Vegetation

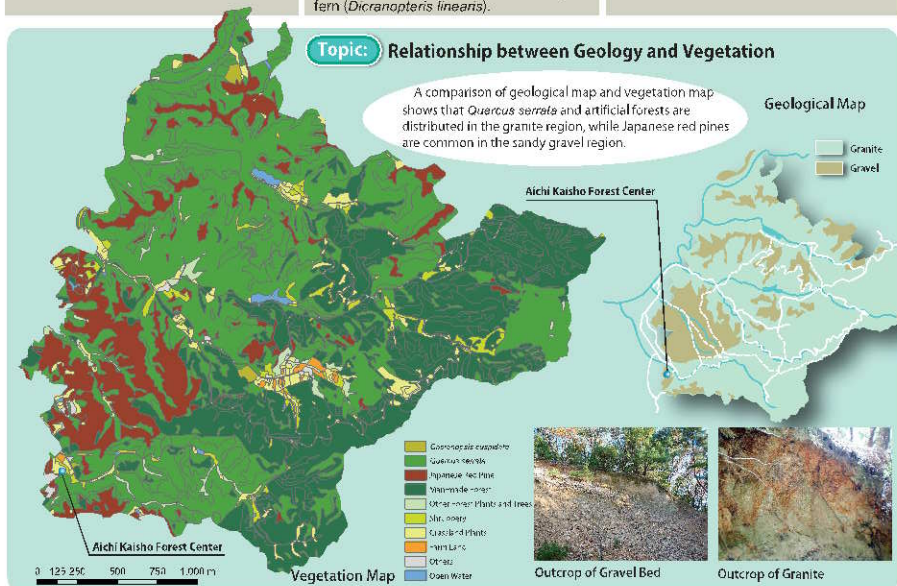


The sandy gravel beds are water permeable, hard to weathering. Thus, they have poor soil and surface water conditions, resulting in an inhospitable environment for vegetation. Plants here are mainly those that can survive in rather barren locations such as the Japanese red pine (*Pinus densiflora*) and scrambling fern (*Dicranopteris linearis*).

1c Granite Regions and Vegetation



Compared to the sandy gravel regions, the granite regions are richer in nutrients and are easier environments for roots to take hold. As such, *Quercus serrata* and *Q. variabilis* grow in the soil developed in these regions. These regions are also used for man-made cedar and cypress forests.

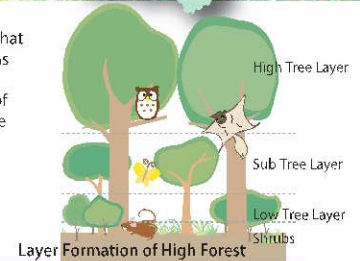


2. Life in the Forest



The largest portion of Kaisho Forest is a forest environment. The types of plant that can be found here vary depending on landforms and geology, moisture conditions and the degree of forest management.

The forest reaches up to 25m. Inside the forest is a layered formation made up of the tall tree layer, sub tree layer, low tree layer, shrubs and forest floor herbs. In the same area, mammals, birds and insects exist together by changing in their food habit, nesting and methods for avoiding natural enemies.



Observation Points

2a Flying Squirrel



Flying Squirrel

The nesting boxes are also used by birds, Marten will occasionally enter in search of prey.



Japanese Marten

Flying squirrels are mammals that live among the trees, hardly ever going down to the forest floor. These squirrels typically make nests in tree holes created by woodpeckers. However, such holes are not very common in Kaisho Forest, so they frequently make use of the nest boxes.

A study conducted by Kaisho Forest showed that the male territory believed to have been only about 2 ha had expanded to between 22 ha and 24 ha and man-made forests were being used by the squirrels.

2b 2c Management of Man-made Forests



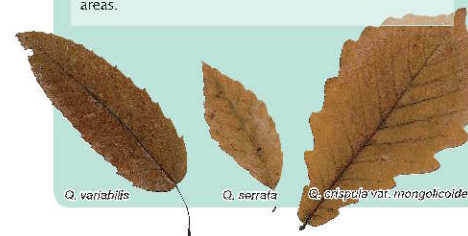
Thinning Operations

As a new forest management method, industries and the NPO Civic Society for Conservation of Kaisho Forest have worked together to conduct thinning and other management operations for the man-made forest. Proper management of the man-made forest allows more sunlight to reach the forest floor, which has helped the shrubs to flourish, attracting birds and insects, which in turn attracts their predators including larger birds and mammals. This has resulted in greater biological diversity.

Topic: Three Species of the Genus Quercus

Quercus serrata, *Q. variabilis* and *Q. crispula* var. *mongolicoides* have different shape of leaves, but they belong to the same genus *Quercus*.

Q. serrata and *Q. variabilis* distributed all over Japan, but *Q. crispula* var. *mongolicoides* is a plant relict and differentiated in the unique location of the gravel hill areas.



Topic: Gifu Butterfly and Coppices

The Gifu butterfly (*Luehdorfia japonica*), which emerges in early spring, lives mainly in the well-maintained coppices. These coppices are home to the violets and *Rhodoendron reticulatum* that provide nectar to adult insects, as well as the *Heterotropia kooyana* var. *brachypodion* used as food for larvae.

If trees are allowed to grow too thick, the forest will become too dark and the Gifu butterfly will lose its habitat.



Gifu Butterfly