Criterion for Japanese NIAHS recognition

Striking landscape and Kumano Kodo

Hinoki forest facing the Kumano Sea

The Owase–Kihoku site stretches from Mie Prefecture's famous, craggy Odai Mountain Range—with an elevation of 1,000 to 1,400 meters—and descends rapidly to the coast of the Kumano Sea, in the Pacific Ocean.
The distance of 10 to 15 kilometers between the mountains and the coast comprises a very steep slope immaculately covered with hinoki trees and creating a striking landscape found in few other places in Japan.

Hinoki forest facing the Kumano Sea

Stone-paved Magose Pass in the hinoki forest

Connection with pilgrimage route forming a UNESCO World Heritage Site

The forest landscape that unfolds along the Kumano Kodo pilgrimage route is acclaimed as a cultural landscape that evolved and developed over time through forestry and wood production activities.
For some 390 years, generations of residents interacted with the forest to form the sublime hinoki forest surrounding the stone-paved path of the Kumano Kodo, creating not only an aesthetically pleasing landscape but also a historically important local resource.

New uses for the Owase Hinoki wood

G7 2016 Ise-Shima Summit

Wood production in the Owase–Kihoku site focused primarily on architectural columns in the past. New needs are being cultivated, however, considering the recent drop in new residential construction and Japan's aging population coupled with declining birth rate. As part of these efforts, the G7 2016 Ise-Shima Summit in Shima City, Mie, featured Owase Hinoki wood in the round table used in the meeting, and throughout the international media center. The wood grown with meticulously controlled human intervention displayed a beautiful grain that won the praise of the foreign guests.

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Owase Hinoki Forestry System
Born of Steep Landforms
and Heavy Rainfall

Japanese Nationally Important Agricultural Heritage Systems

Japanese Nationally Important Agricultural Heritage Systems

Owase City & Kihoku Town
Mie Prefecture

Owase Hinoki forestry system owase hinoki


Hinoki forest

The value of history and tradition

Owase City and Kihoku Town, in Japan's southern-central prefecture of Mie, lie on a steep slope to the Odai Mountain Range and are unsuitable for rice farming. Instead, forestry techniques are well developed, with artificial regeneration beginning around 1630.

Heavy average annual rainfall of over 3,800 millimeters and predominantly infertile soil—these natural features meant hinoki cypress was a good fit. Saplings were planted from 1850 onward, with the present generation of trees accounting for 90% of the man-made forest, a rarity even in Japan.

The Owase–Kihoku site turns slow growth from poor soil into an advantage by densely planting the saplings, thinning out the trees, and repeating the process to produce high-quality hinoki. This age-old model of forest management also takes account of biodiversity and the connection between the forest and the sea.

With the steep slope facing a ria coast and coverage extending to the Kumano Kodo pilgrimage route, forming a UNESCO World Heritage Site, the hinoki forest even creates a landscape unique to the Owase–Kihoku site.

The distinctive, traditional practices upheld by the Owase Hinoki forestry system won recognition in March 2017 as a Japanese Nationally Important Agricultural Heritage System (NIAHS).

Criterion for Japanese NIAHS recognition

Forestry activities designed to maintain biodiversity


Fixed net fishing for Japanese amberjack


Fish-breeding protection forest


Owase Hinoki used in oyster culture


Spawning bed for bigfin reef squid


Hands-on tree planting

Sustainable forestry taking account of biodiversity

The Owase–Kihoku site is the first in Japan to receive Forest Stewardship Council (FSC®) certification. Owing to forest management that controls the light reaching the forest floor, for instance, a larger number of plant species are found in this man-made forest than in a natural forest of broad-leaved evergreens. The site is advanced in that it not only produces high-quality timber but also promotes sustainable forestry taking account of the environment and biodiversity.

FSC
www.fsc.org
FSC® C018778
Responsible forest management label

Protecting the forest equals protecting the sea

The Owase–Kihoku site extends to a coast with important fishing grounds. This coastal area is exempt from artificial regeneration and set aside as a protection forest, currently under the designation "fish-breeding protection forest." By drawing on experience to recognize the connection between the forest and the sea, and protecting the fishing grounds even during times of active tree planting, foresters have contributed greatly to maintaining biodiversity and to conserving and sustaining the fishery resources of the Owase–Kihoku site.

As part of their biodiversity education activities, foresters also cooperate with elementary schools to set thinned wood on the sea floor as a spawning bed for bigfin reef squid.

Criterion for Japanese NIAHS recognition

Forestry system for hinoki strength and aesthetic appeal

History of Owase Hinoki forestry

The Owase–Kihoku site comprises very little flatland and only about 1% arable land. Although it was never suitable for agriculture, the site was fortunately home to forests and went by the name Kii-no-kuni or Ki-no-kuni, meaning "province of the trees." The cycle of tree planting and tending began in the mid 1600s, and forestry continued to grow thanks to advanced shipping operations that facilitated the transport of timber to large cities like Kyoto, Osaka, and Edo (Tokyo).

Established system for producing high-quality timber

Trial and error since the start of full-scale artificial regeneration led to the current model of planting 6,000 to 10,000 trees per hectare —more than double the density of general hinoki forests— and making full use of pruning techniques to produce fine boxed heart timber for columns that are either clear of or have only small, well-spaced knots. In recent years, management extends to controlling the light reaching the forest floor. That is, thinning is increased to encourage the introduction and growth of understory vegetation, thereby maintaining the forest soil while conserving the wood production environment.


Thinning


Pruning


Planting

Criterion for Japanese NIAHS recognition

Skills and knowledge for making the best use of hinoki

Techniques for enhancing the value of hinoki

The steep landforms and heavy rainfall of the Owase–Kihoku site meant that transporting the wood by road increased disaster risks as well as costs. Cable logging techniques developed of necessity but turned out to provide significant advantages, not least in terms of profitability. Because the trees could be transported at full length, log lengths could be adjusted according to market trends.

Artisanal skills for assessing log characteristics

Owase Hinoki wood is strong and beautiful, displaying dense growth rings and rich oil content. To make the best use of these characteristics, sawmillers have honed their skills for assessing the quality of each log and processing it to draw out the maximum value.

Proven strength

Owase Hinoki wood was used to provide 6,549 columns for constructing the Mie Prefectural Kumano Kodo Center. The bending Young's modulus was measured for each of these columns, and the results provided scientific proof that hinoki produced at the Owase–Kihoku site is an excellent material in terms of strength and other properties.


Dense growth rings of Owase Hinoki


Transport


Logging


Owase Hinoki columns


Sawmilling