
Results of Economic Value Assessment of Company Owned Forests in Japan and Quantification Projects Calculated Annual Economic Value of Approx. 550 Billion Yen

Oji Holdings Corporation (President: Hiroyuki Isono; Headquarters: Chuo Ward, Tokyo; hereinafter, the Company) announces that it has assessed the economic value of the forests it owns in Japan. The results of this assessment and implementation of quantification projects are as follows.

For more than 100 years, the Company has been implementing sustainable forest management through afforestation under its philosophy: Those who use trees have the responsibility to plant trees. The Company also owns forests which are approximately three times as large as Tokyo (the total area of its forests in Japan and other countries is approx. 635,000 ha). This is the largest-class forested area owned by a private corporate entity in Japan. The Company call them Oji Forests.

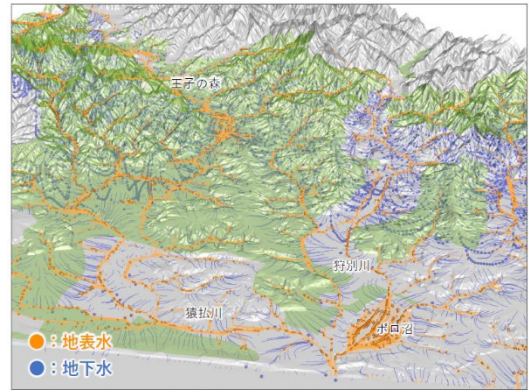
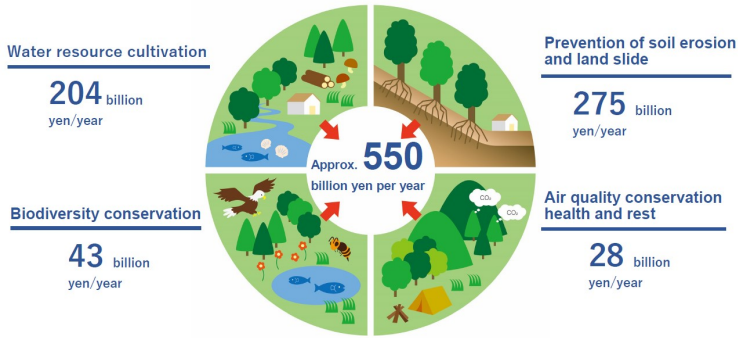
In recent years, as detailed in the TNFD Recommendations^{*1)} and in other documents, companies are required to assess their corporate activities' dependence and impact on the natural environment, as well as the risks and opportunities which stem from this, and disclose this information. There is also movement toward the institutionalization of natural capital accounting, which regards natural capital including forests, soil, water, atmosphere and biological resources as economic value. Forests provide diverse types of value, including not only value due to timber production but also because of biodiversity, the prevention of sediment runoff, and water source cultivation.^{*2)} The Company has calculated the economic value^{*3)} of the Oji Forests in Japan (approx. 188,000 ha) using the method described in *Shinrin-no Koueki-teki Kiono no Hyokagaku-ni Tsuite* (Valuation of the Public Benefit Functions of Forests) published by the Forestry Agency of Japan. As a result, the Company found that the annual value of these forests is a total of approx. 550 billion yen.

Further, as a result of the analysis of various data, the Company found that the forests cultivate approx. 5.1 million m³ of water, which means storing and creating the amount of water used by 16.9 million people in one day.^{*4)} It was also estimated that the forests are a habitat for more than 3,000 species of living organisms (including approx. 1,400 rare species).^{*5)}

Among them, the Oji Forest in Sarufutsu village, Hokkaido is located at the southern limit of the world's boreal forests. It is estimated to be highly important for biodiversity for many reasons such as its marshes where peat accumulates and being a habitat of the Japanese huchen (*itou* in Japanese), an endangered freshwater fish. Accordingly, the Company has launched a project to measure the value of its natural capital and evaluate it qualitatively in collaboration with Hokkaido University and a startup that has technologies for visualizing biodiversity.

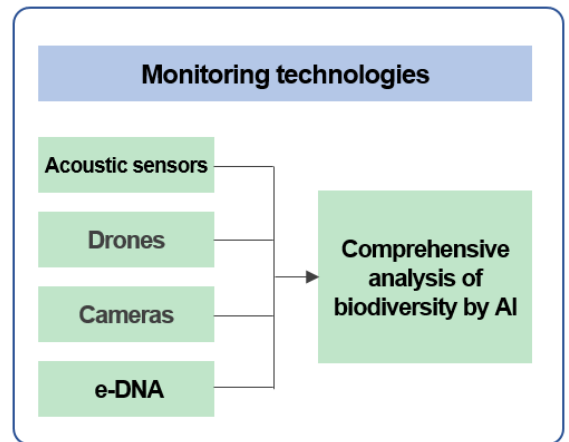
The Company will continue to transform its nature-positive management toward the natural capital accounting era.

Assessment of the economic value of Oji Forests in Japan and projects to quantify forest functions



Assessment of the forests' public benefit functions and economic value

Visualization of the amount of water cultivated, surface water, and groundwater flow



Earthstar Geographics | Esri, TomTom, Garmin, FAO, NOAA, USGS

Importance of Biodiversity (The importance of forest biodiversity increases as the score approaches 1.0 (red).)

Field surveys conducted using the latest monitoring technologies provided by a startup

Themes of the surveys for assessing the diverse functions of the Sarufutsu forest conducted in collaboration with experts from Hokkaido University

	Category		Theme	Initiative
	Nature restoration	Value assessment		
All regions		○	Biodiversity assessment	Biodiversity assessments utilizing drones, cameras, acoustic sensors, environmental DNA, and other cutting-edge technologies
Rivers in forests	○		Re-meandering forest rivers	Re-meander small rivers that were straightened due to the construction of forest roads, altering organism habitats
			River structure improvements (e.g., culverts)	Increase connectivity by improving river structures that fragment habitats
		○	Biodiversity assessment (aquatic life)	Assess diversity before and after the above-mentioned nature restoration efforts
Marshes	○		Degraded marsh restoration	Ascertain current marsh conditions, which are degraded due to factors such as the encroachment of bamboo and stamping by deer, and conduct restoration efforts
			Biodiversity assessment (plants)	Assess diversity before and after the above-mentioned nature restoration efforts
		○	Iron supply function assessment	Assess using actual measured values in marshes, rivers, and oceans
Swamp forests, marshes		○	Swamp forests and marsh soil carbon assessment	Assess Sakhalin spruce swamp forest and marsh soil carbon content using actual measured values

*1) The Taskforce on Nature-related Financial Disclosures (TNFD) is a task force for building a framework for disclosing information about the impact of deforestation, marine pollution, and similar events on businesses and finance.

*2) Water resource cultivation refers to forest soil's function of retaining rainwater, equalizing the amount of water that flows into rivers, thus preventing floods and droughts and also purifying the water in the process.

*3) Calculation based on the methodology used in the Forestry Agency of Japan's 2000 Valuation of the Public Benefit Functions of Forests (calculated by multiplying the Forestry Agency's estimated national valuation by the ratio of Oji Holdings' forest area to the national forest area). The calculation unit and evaluation method were updated where possible (water resource cultivation, biodiversity conservation, air quality conservation).

*4) The amount of the water resources cultivated by the 188,000 ha of Oji Forests in Japan was analyzed based on data on surface water and groundwater using the National Land Information Platform (estimated assuming one person consumes 300 liters of water per day).

*5) The types of organisms that inhabit an area were estimated based on a species distribution model (a method for estimating the spatial distribution of species using a dataset of environmental factors that influence distribution). This was applied to 3,776 native bird, amphibian, and seed plant species, and estimates of endangered species included endangered species in Class I and II (groups with the highest risk of extinction) from the Japanese Red List for each prefecture..

Presentation today

For more than 100 years, the Company has been operating businesses founded on forest resources. It is working to develop its environmentally friendly packaging and biomass businesses. In this presentation meeting, the Company made a presentation about the establishment of the economic value of its forests, which are among the largest forested areas owned by a private corporate entity in Japan.

Kazuhiko Kamada, Director of the Board and Senior Executive Officer of the Company, explained three agenda items for sustainable growth: (1) the public value of forests, (2) the economic value of forests in the era of natural capital accounting and (3) the establishment of the economic value of Oji Forests.

He started by explaining the public value of forests, the first agenda item. He described the multiple functions of Oji Forests, including their water source cultivation function, with which forest soil retains rainwater and equalizes the amount of water that flows into rivers, preventing flooding and drought and also purifying the water in the process, and their function of preventing sediment runoff and collapse, where understory vegetation and forest litter control surface erosion and forest root systems prevent sediment collapse.

Regarding the economic value of forests in the era of natural capital accounting, he stated that, in light of the international community's vigorous discussion of natural capital accounting, through which the economic value of natural capital is reflected in accounting systems, the economic value of Oji Forests in Japan was calculated based on the Forestry Agency of Japan's estimation method, resulting in the total annual value of the forests being estimated to be as much as approx. 550 billion yen.

Regarding the final agenda item, the establishment of the economic value of Oji Forests, he explained that in the forest near Sarufutsu village in Hokkaido, which is estimated to have the highest degree of importance for biodiversity among the approx. 650 Oji Forests in Japan, the Company will undertake a project to visualize the value of CO₂, biodiversity, soil, nutrients and water, which are five key elements of the natural capital of forests in collaboration with Hokkaido University. He also explained a project to visualize the biodiversity of the Oji Forest near Sarufutsu village by analyzing data about various species of animals and plants using a combination of cutting-edge technologies, including audio sensors and environmental DNA, jointly with an overseas startup.

Regarding future initiatives, he explained that the Company will maximize the value of not only Oji Forests

in Japan but also forests in other countries from new perspectives, including reflecting the regional characteristics of the forests and improving accuracy, and work to implement other initiatives for creating new natural capital credits following the establishment of carbon credits, aiming to impact the creation of global standards as well.

Comment from Hiroyuki Isono, Representative Director of the Board and President

Our businesses are founded on forest resources. Today we explained the functions and the economic value of the forests that we own.

The targets of these assessments did not include soil, but there are a number of measurement methods for determining the value of forest resources, including the soil. Accordingly, as a company whose owned forested area is one of the largest in Japan, we would like to play a leading role in establishing the methods and improving their accuracy.

We will continue to move forward under the slogan: Growing Forests, Utilizing Forests.

Comment from Kazuhiko Kamada, Director of the Board and Senior Executive Officer

In light of the international trend toward natural capital accounting and the ongoing discussion about it, I believe that the economic value of forests will be extremely important in the future.

In a dynamically changing world, as a company that owns significant natural capital, which we call Oji Forests, we will be actively involved in these changes and continue to transform the nature-positive management we have been developing for over 100 years.



Hiroyuki Isono, Representative
Director of the Board and President



Mr. Kamada giving a presentation

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