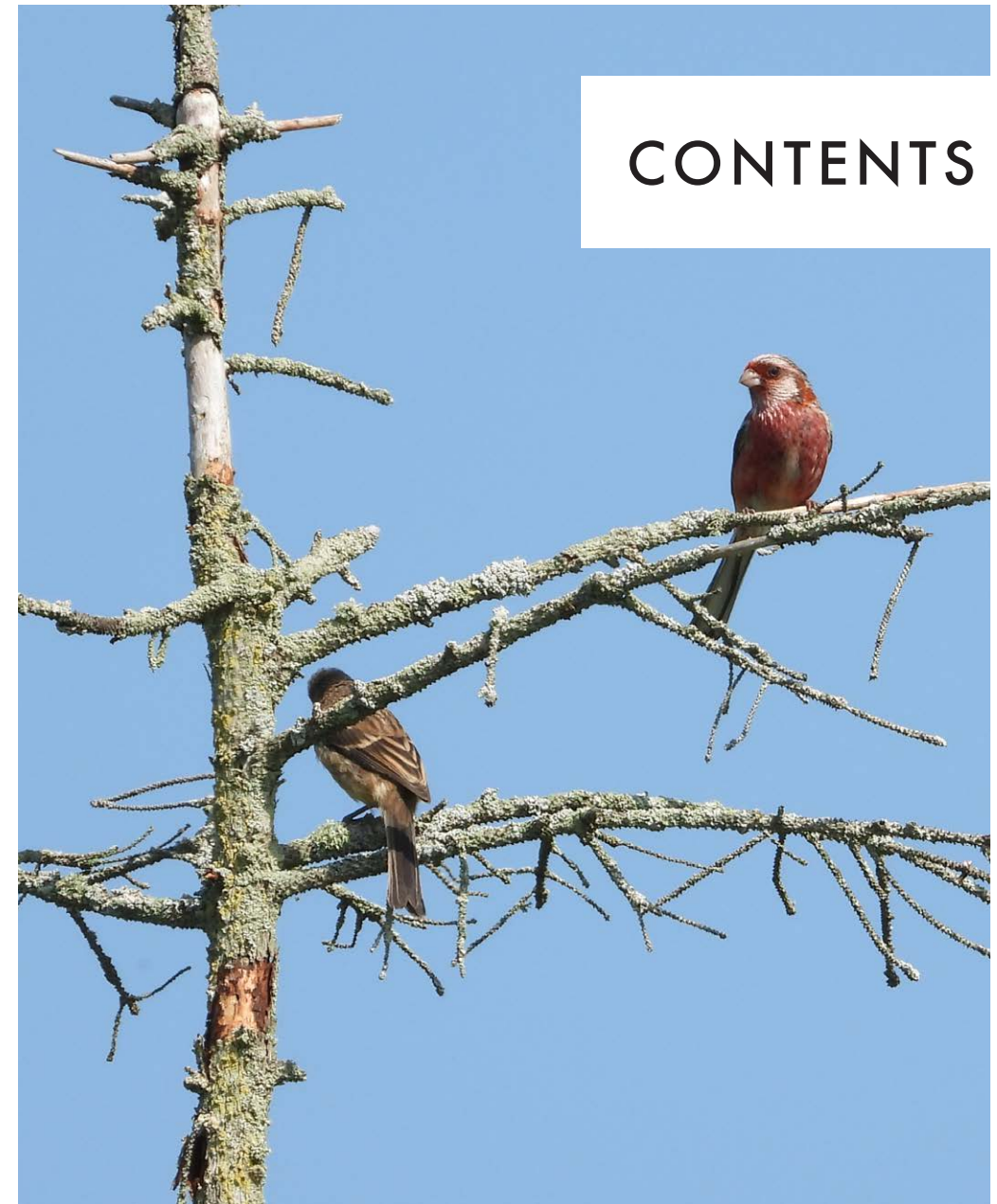


Oji Group

TNFD REPORT 2025



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Long-tailed rosefinch

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CEO Message

More Than 100 Years of Sustainable Forest Management

Since its founding in 1873, the Oji Group has operated businesses rooted in forest resources and has consistently practiced sustainable management. In 1893, we began afforestation operations and have continued cultivating rich forests to this day. Leveraging our long-standing expertise in forest management, we currently maintain and manage approximately 636,000 hectares of company-owned forests.

Maximizing Forest Functions

The Oji Group's sustainable forest management not only ensures a stable supply of wood resources but also enhances the multifunctional roles of forests, generating both environmental and social benefits. For example, forests serve as habitats for diverse flora and fauna, contributing to ecosystem conservation. Their ability to absorb and sequester CO₂ helps mitigate climate change. Healthy soil nurtures water sources, supports water retention and purification, and reduces the risk of landslides and flooding. Forests also provide scenic beauty and cultural value, serving as spaces for local traditions and artistic activities.

Advancing a Society That Properly Values Natural Capital

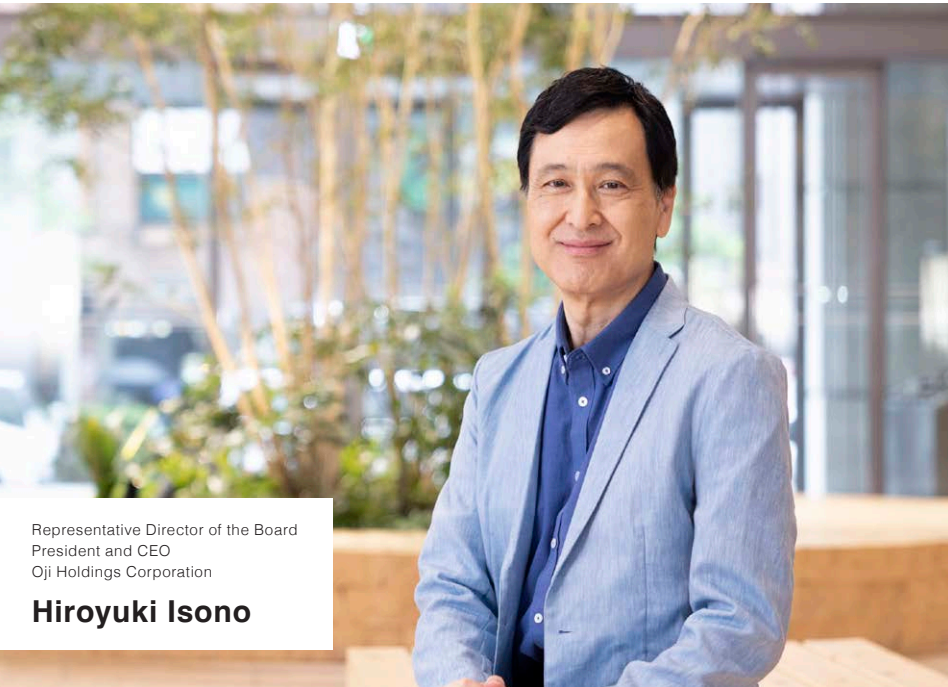
The Oji Group is actively quantifying the value of forests. In 2024, we estimated that our forests in Japan have an annual economic value of ¥550 billion. Quantifying forest value is expected to strengthen risk management, enhance transparency, and support more effective environmental conservation activities. These efforts are intended to further enhance forest functions. We are also pursuing long-term economic benefits through natural capital accounting and credit generation. Our goal is to build a society in which nature-positive management and the value of natural capital are properly recognized.

Expanding Sustainable Packaging

The Oji Group is expanding its sustainable packaging and wood biomass businesses, which utilize renewable forest resources. In 2024, we integrated technologies from Walki Group, a European packaging materials converter, to strengthen our capabilities in developing, manufacturing, and delivering environmentally conscious packaging solutions.

Strengthening Global Collaboration

In 2023, Oji Holdings established the International Sustainable Forestry Council (ISFC) to collaborate with forest-related companies worldwide in addressing social challenges. At COP16 on biodiversity in 2024, we presented our nature-positive initiatives and engaged in meaningful discussions with stakeholders from various countries and industries.



2-1 About This Report

Editorial Policy

Oji Holdings registered as a “TNFD Early Adopter” in January 2024, committing to the early adoption of the disclosure recommendations published by the Taskforce on Nature-related Financial Disclosures (TNFD). In September 2024, we released the “[TNFD Report 2024](#),” [↗](#) disclosing nature-related information recommended by the task force.

This report, in its second edition, provides updated progress on our nature-related initiatives and the latest nature-related information for our stakeholders. The editorial process referenced the following frameworks and standards:

● TNFD

- [TNFD Recommendations v1.0](#)
- [Guidance on the identification and assessment of nature-related issues v1.1](#)
- [Additional sector guidance – Forestry, pulp and paper v2.0](#)

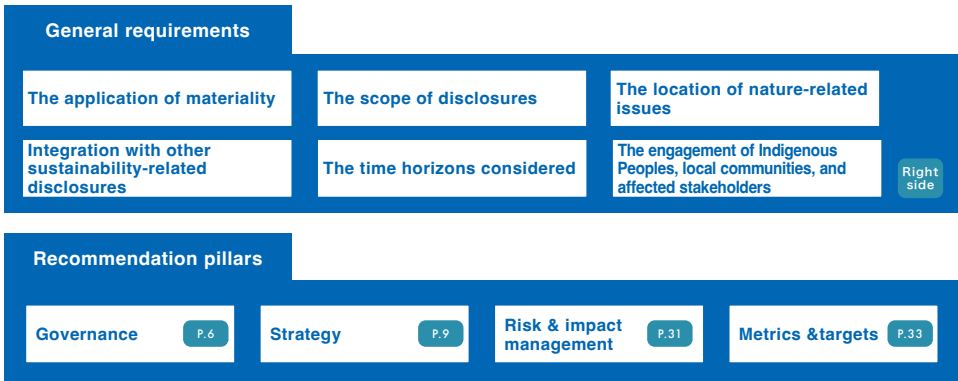
● International Sustainability Standards Board (ISSB)

- [IFRS S1 General Requirements for Disclosure of Sustainability-related Financial Information](#)
- Global Reporting Initiative (GRI)
 - [GRI3 Material Topics 2021](#)
 - [GRI101 Biodiversity 2024](#)

TNFD Disclosure Recommendations

The TNFD framework consists of six general requirements and four recommendation pillars. Each item is detailed on the following pages:

■ TNFD framework



■ General requirements

● The application of materiality

Material topics were selected by referencing the materiality approaches of ISSB and GRI, considering both the “anticipated financial impacts arising from nature-related issues” and the “impacts of business activities on local communities.”

● The location of nature-related issues

Using publicly available data on biodiversity importance and water risk, Oji Holdings identified regions likely to have material nature-related issues. Field surveys were conducted in these regions to identify the issues.

● Integration with other sustainability-related disclosures

This report exclusively discloses nature-related information aligned with TNFD recommendations. Climate-related information aligned with TCFD recommendations is disclosed on our website. Oji Holdings plans to consider integration of these disclosures in the future taking into account the interdependencies between natural capital and climate change.

● The engagement of Indigenous Peoples, local communities, and affected stakeholders

The Oji Group builds trust through dialogue and collaboration with all stakeholders, including shareholders, investors, customers, suppliers, employees, media, local communities, industry associations, and NGOs. In regions with indigenous populations, we respect their unique cultures and histories, comply with local laws, and uphold internationally recognized rights. We also collaborate with local governments, NGOs, and experts to promote environmental conservation and economic development in these communities.

● The scope of disclosures

Disclosures were made for the following scopes:

- Upstream: Key suppliers
- Direct Operations: In principle, Oji Holdings and its 217 consolidated subsidiaries (as of March 31, 2025)
- Downstream: Contributions to plastic reduction through sustainable packaging

● The time horizons considered

Quantitative data covers:

- Operations in Japan: April 1, 2024–March 31, 2025
- Operations overseas: January 1, 2024–December 31, 2024
- Information on initiatives and progress may extend beyond these periods. Nature-related issues were considered from short-term (through 2026), medium-term (through 2030), and long-term (through 2050) perspectives.

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2-2 Fundamental Approach and Commitment to Natural Capital

Basic Policy on Sustainability Initiatives

For more than 150 years since its foundation in 1873, the Oji Group has grown by continuously expanding its business fields. Our management philosophy—Creation of Innovative Value, Contribution to the Future and the World, and Harmony with Nature and Society—guides our sustainability initiatives. We are committed to advancing initiatives rooted in this philosophy, aiming to grow as a corporate group while creating sustainable value for the future in response to societal and environmental changes.

► **We pledge to help build a sustainable society through business activities**

The Oji Group's sustainable business model is built on responsible forest management—including growing, harvesting, and replanting trees—recycling paper using recovered materials, utilizing energy derived from black liquor and wood waste, and minimizing water usage while purifying wastewater. By expanding this model globally, we contribute to the realization of a more sustainable society.

► **We are committed to solving environmental and social issues**

As a global corporate group, the Oji Group contributes to solving environmental and social issues both in Japan and internationally. We believe that addressing climate change, conserving biodiversity, and respecting human rights are important global standards of conduct. Our policies are shared not only with employees but also throughout our supply chains to ensure thorough understanding and implementation.

► **We create new sustainable value**

Sustainability initiatives also represent a growth opportunity for the Oji Group. In response to the growing awareness of environmental issues, we are dedicated to providing sustainable products demanded by society. For this purpose, we will create new value and functions from wood resources by utilizing a range of core technologies that we have accumulated through paper manufacturing and forestation, which are the founding businesses of the Oji Group. The Oji Group will push forward with sustainability initiatives through its business activities and create social and economic value, thereby contributing to the establishment of a truly prosperous society.

Biodiversity Commitment

In March 2025, the Oji Group announced its Biodiversity Commitment. With a strong commitment to continuing nature-positive management and achieving the targets of the Kunming-Montreal Global Biodiversity Framework (GBF), the Oji Group pledges to avoid and reduce contributions to drivers of nature loss, reduce threats to biodiversity, and restore and regenerate ecosystems.

● **Commitment**

While maintaining our sustainable forest management and wood material procurement practices, we commit to avoiding and reducing drivers of nature loss in our operations and value chain, and to restoring and regenerating ecosystems by 2030.

[Details of the Biodiversity Commitment are available on our website.](#)

No Deforestation and No Conversion Commitment

In December 2024, the Oji Group announced its Zero Deforestation and Conversion Commitment. We have long practiced sustainable forest management and responsible sourcing without deforestation or land conversion. We will continue and strengthen these efforts to achieve zero deforestation and conversion.

● **Commitment**

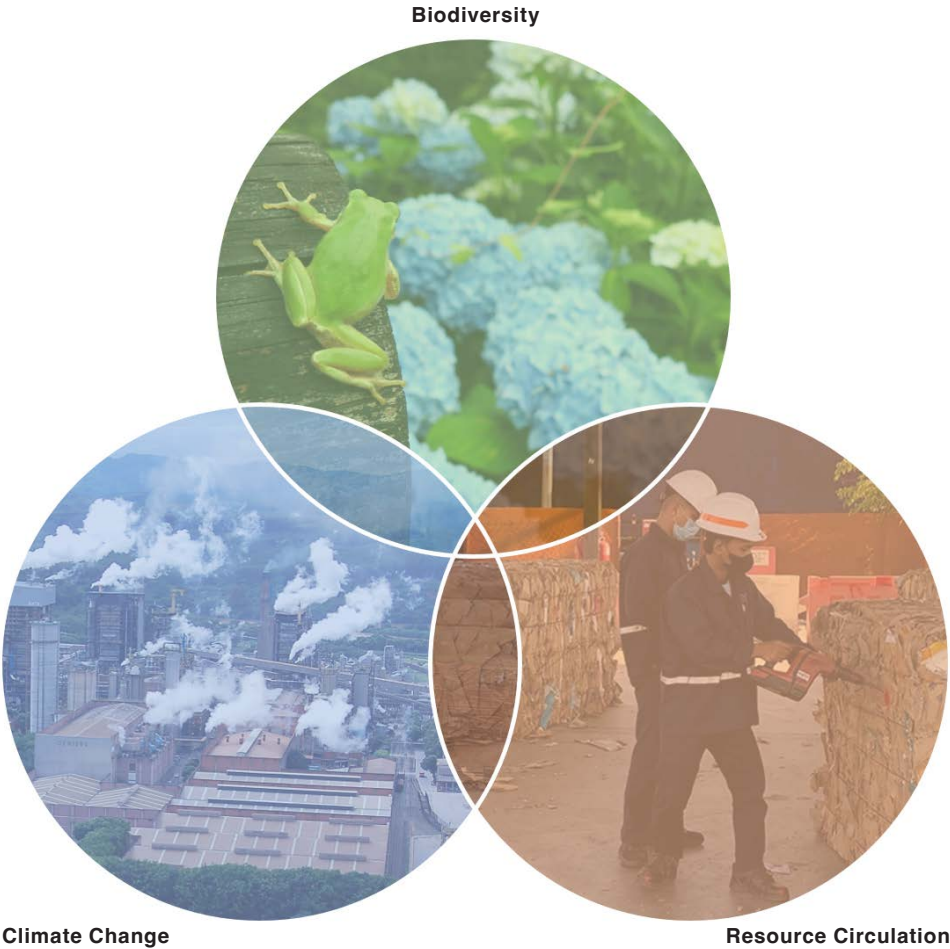
The Oji Group Commits to No Deforestation and No Conversion

[Details of the No Deforestation and No Conversion Commitment are available on our website.](#)

2-3 Integrated Approach to Natural Capital

Integrated Approach

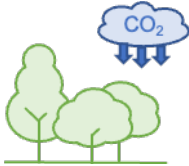
Challenges related to biodiversity, climate change, and resource circulation are deeply interconnected. Addressing these issues in an integrated manner generates synergies and leads to more effective solutions. The Oji Group implements coordinated actions across these domains to contribute to the realization of a sustainable society.



► Climate Change and Biodiversity

Climate change has severe impacts on biodiversity. Conversely, healthy ecosystems play a vital role in mitigating and adapting to climate change.

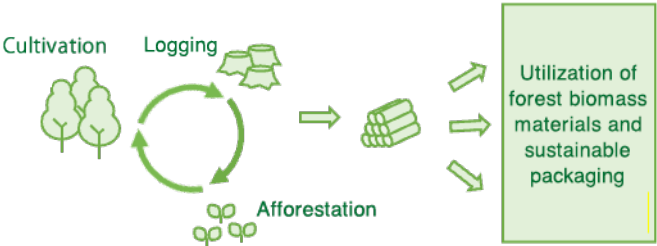
The Oji Group contributes to climate change mitigation not only by reducing greenhouse gas (GHG) emissions but also by absorbing and sequestering carbon dioxide (CO₂) through forest conservation, afforestation, and cultivation activities. Furthermore, initiatives such as planting native tree species to promote the regeneration of natural forests and enclosing degraded areas that fragment natural forests with fences to regenerate them and formulate ecological corridors that allow wildlife to move freely contribute to biodiversity conservation while enhancing CO₂ absorption and sequestration, thereby further mitigating climate change.



► Resource Circulation and Biodiversity

Excessive extraction of natural resources and pollution from waste severely damage biodiversity. Restoring nature requires sustainable production and consumption, along with waste reduction.

The Oji Group practices sustainable forest management and positions the effective use of renewable forest resources at the core of its business operations. We set voluntary control standards that are stricter than legal regulations for wastewater and exhaust gases, and strictly enforce regulatory compliance to prevent pollution. Furthermore, we promote a circular economy throughout the value chain by utilizing waste materials and developing wood-based biodegradable materials, biomass-based materials, plastic-free products, and highly recyclable sustainable packaging.



3

Governance



Golden trumpet tree

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3-1 Management Structure

Oversight by the Board of Directors

The Board of Directors of the Oji Group monitors and supervises key matters related to nature-related dependencies, impacts, risks, and opportunities across the Group and its value chain. This includes the Group's commitment to respecting the human rights of all stakeholders—including Indigenous Peoples, local communities, and other affected stakeholders—and matters related to stakeholder engagement. These issues are deliberated by the Sustainability Committee, and the outcomes are reported to and discussed by the Group Management Meeting, followed by decision-making by the Board of Directors.

■ Matters to be discussed by the Sustainability Committee

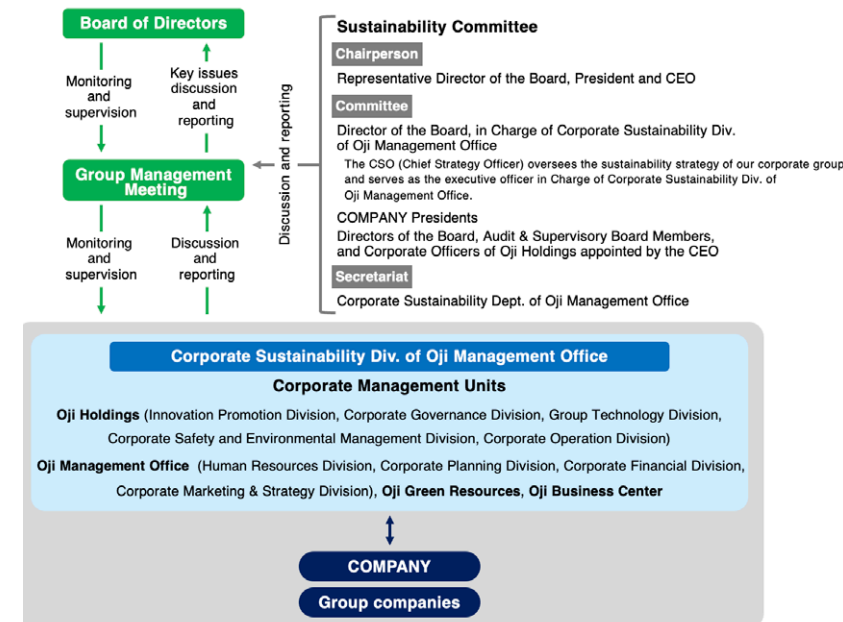
- Climate-related risks and opportunities and responses to them
- Nature-related dependencies, impacts, risks and opportunities in the Oji Group's operations, responses to them, and the restoration and enhancement of natural capital
- Nature-related dependencies, impacts, risks and opportunities in upstream and downstream value chains, responses to them, and the restoration and enhancement of natural capital
- Promotion of a circular economy
- Sustainable forest management
- Reduction of plastic use and pollution in the Oji Group's operations and supply chain
- Water-related risks and opportunities and responses to them
- Supply chain sustainability risks and responses to them
- Environmental risks and responses to them
- Human rights risks and responses to them
- Anti-corruption measures
- Inclusion and diversity
- Other important matters related to sustainability and responses to them

Management's Role and Management Processes

The Sustainability Committee is chaired by the Representative Director of the Board, President and CEO of Oji Holdings, who is responsible for the overall sustainability of the Group. The committee meets twice a year and includes Directors, Audit & Supervisory Board Members, and Corporate Officers (including the Presidents of all COMPANIES and female Outside Directors). It discusses sustainability-related risks and opportunities, and the corresponding responses. Depending on their significance, these matters are reported and referred to the Group Management Meeting for deliberation, and decisions on execution are made by the Board of Directors. Matters approved for execution are promoted by the Oji Management Office Corporate Sustainability Division, which integrates the Group's sustainability management activities.

The Corporate Sustainability Division identifies cross-group sustainability-related risks and opportunities and disseminates them throughout the Group. It reports monthly to the responsible division director and, depending on the importance of the issue, reports and submits them to the Group Management Meeting. Significant risks and opportunities are reported to the Board of Directors based on the judgment of the division director.

■ Sustainability Management Structure



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3-2 Respect for Human Rights and Stakeholder Engagement

Respect for Human Rights

The Oji Group has established the “[Oji Group Human Rights Policy](#)” [↗](#) and implements initiatives to respect human rights in accordance with the Guiding Principles on Business and Human Rights endorsed by the UN Human Rights Council, the OECD Guidelines for Multinational Enterprises on Responsible Business Conduct, and the ILO Tripartite Declaration of Principles concerning Multinational Enterprises and Social Policy. The Group also adheres to international norms, including the International Bill of Human Rights (comprising the Universal Declaration of Human Rights and the International Covenants on Human Rights), the ILO Declaration on Fundamental Principles and Rights at Work, and the United Nations Declaration on the Rights of Indigenous Peoples. In addition, the Group applies international human rights standards, including the right of Indigenous Peoples to Free, Prior, and Informed Consent (FPIC).

In February 2025, the Oji Group established a grievance mechanism by utilizing a non-judicial engagement and remedy platform provided by the Japan Center for Engagement and Remedy on Business and Human Rights (JaCER), which complies with the United Nations Guiding Principles on Business and Human Rights. This platform receives requests for consultation regarding not only human rights but also responsible business conduct, such as conduct and ethics related to the environment and nature. Therefore, it accepts anonymous reports from all stakeholders in Japan and other countries, including suppliers, local communities, Indigenous Peoples, and migrant workers. ([JaCER reporting form is available](#) [↗](#))



Stakeholder Engagement

We identify, prevent, and mitigate adverse human rights impacts that might arise from or be exacerbated by our business activities and their impacts on nature, as well as those potentially linked to our operations, products, or services through business relationships. This is achieved through ongoing dialogue with stakeholders, and we continuously evaluate the effectiveness of these efforts.

Furthermore, the “[Oji Group Behavior Standard](#)” [↗](#) stipulates that, as a member of the international society, we will respect the cultures, customs, and values of each country and region, and work together sincerely to develop our business. Through dialogue and collaboration, we work to build relationships of trust with all our stakeholders to increase corporate value. ([For details on stakeholder engagement, please visit our website.](#) [↗](#))

Stakeholder engagement initiatives

● Forest conservation and preservation of Ainu culture

The company-owned forest in Biratori-cho, Hokkaido, has a holy rocky hill, which is a sacred place (*chinomishiri*) of the Ainu, and places for preserving the view of nature and traditional cultures of the local people. To maximize the value of this area, we engaged in dialogue with the Ainu association of Biratori and the Biratori-cho municipal government to conclude the three-party Agreement Aimed at Protecting the Forest, Preserving the Ainu Culture, Taking Advantage of the Culture for the Revitalization of the Area, and Thereby Ensuring Harmonious Co-Existence in the Company-Owned Forest with a Cultural Landscape in 2017.

● Respect for traditional culture in Australia

We respect the cemeteries, traditional events, and other cultural elements of the Aboriginal people in the forests of Albany Plantation Forest Company of Australia Pty Ltd. and the forests that general timber is purchased from, by ensuring that people have access to these places. In addition, before we implement a plan to log trees in an area, we contact the relevant administrative body to confirm that the area is not registered as a reserve.

● Establishment of a regional environmental trust in New Zealand

In 2019, Pan Pac, a company based in New Zealand, established an Environmental Trust to support community-led projects aimed at enhancing, restoring, and protecting the environment and local cultures. The company contributes NZD 100,000 annually to the trust. The trust supports a wide range of initiatives, including the conservation of endangered native species in natural forests, eradication of invasive predators, and educational and cultural projects such as providing scientific educational kits. [Details of the project are available here.](#) [↗](#)

● Promoting the introduction and effective utilization of renewable energy in the region

We are planning a wind power generation project on Group-owned land, including Mount Tatsunarashi in Wakkanai City, Hokkaido. This project aims to contribute to the prevention of global warming and the stable supply of energy through the generation of clean energy, while also contributing to the development and revitalization of the local economy through the business.

In this initiative, we conducted a public notice and inspection of the environmental assessment method statement from June 11, 2024, to July 10, 2024, based on the concept of FPIC and the Environmental Impact Assessment Law. During this period, we provided information to local residents and solicited their opinions. In addition, we held a residents' briefing session to explain the details of the project and its environmental impact.

4

Strategy



Oriental dollarbird

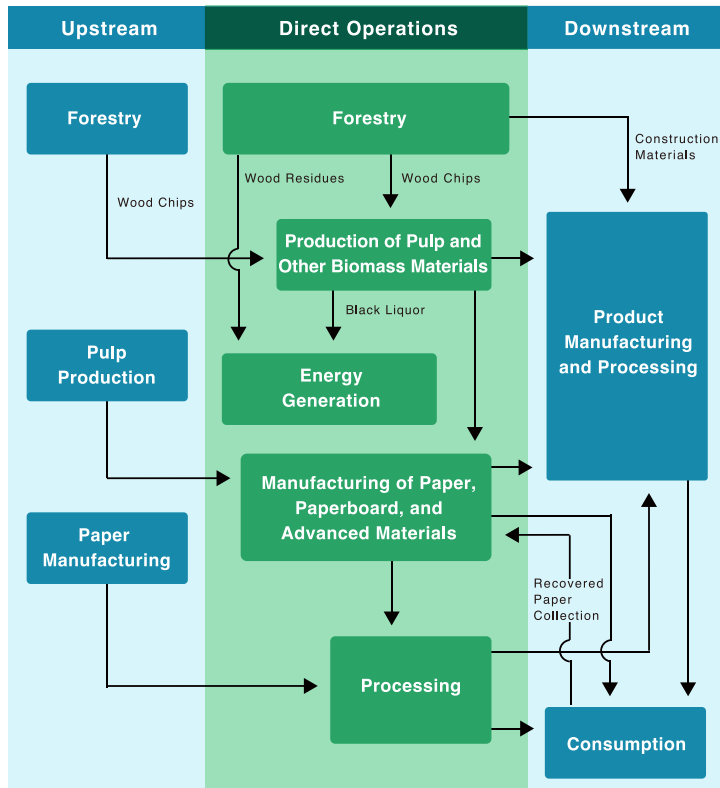
4-1 Identification of Interfaces with Nature

Value Chain

The Oji Group has consistently responded to evolving societal needs by transforming its business structure. While our current business domains are diverse, forests remain at the core of our operations.

Our direct operations include forestry; production of pulp and other materials; manufacturing, processing, and sales of paper, paperboard, and advanced materials; and biomass energy generation using resources such as sawmill residues and black liquor. We also actively promote the collection and recycling of recovered paper ([details are available on our website](#) [↗](#)). We procure wood-based raw materials, pulp, paper products, and others from suppliers.

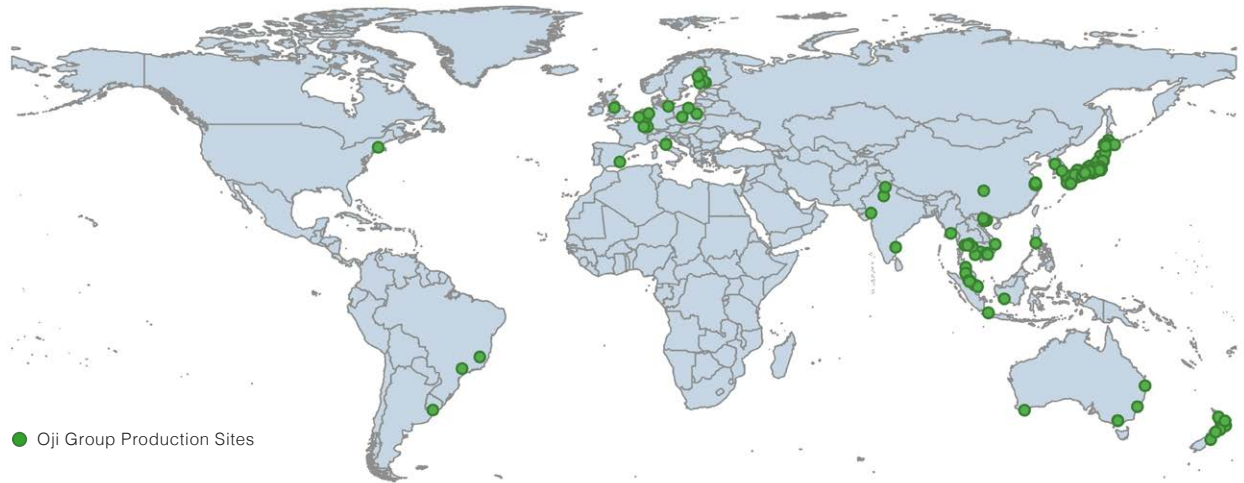
■ Main value chain



Business Sites


The Oji Group operates globally, with afforestation and wood processing activities in Brazil, Uruguay, Oceania, and Southeast Asia; packaging material manufacturing in Southeast Asia, India, Oceania, and Europe; functional material production in the United States, Germany, Thailand, and Brazil; and printing and information paper manufacturing primarily in Japan.



■ Site map



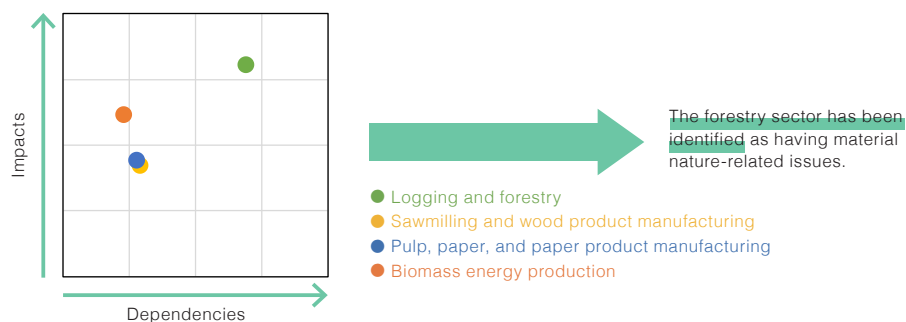
4-1 Identification of Interfaces with Nature

Sectoral Dependencies and Impacts


Using the TNFD-recommended tool [ENCORE](#), , we assessed the nature-related dependencies and impacts of each sector. Based on the results, the forestry sector was identified as having material nature-related issues due to its high level of dependency and impact.

In contrast, sectors such as sawmilling; wood product manufacturing; pulp, paper, and paper product manufacturing; and biomass energy production were found to have relatively low nature-related dependencies—except for their dependency on wood supply services—and are considered less vulnerable to environmental degradation. However, impacts such as GHG emissions, air and water pollution, waste generation, and water use must be appropriately managed and reduced. Group-wide targets have been established for each of these impact areas. (Details of targets are provided on [page 34](#). ) Water-related risks, which require particular consideration at the regional level, are evaluated separately. ([Details are available on our website](#). )

■ Sectoral assessment of dependencies and impacts




The Oji Group's Forestry

In response to the material nature-related issues identified in the forestry sector, the Oji Group has been managing its forests in accordance with its ["Sustainable Forest Management Policy."](#)  Approximately half of the forest resources used by the Group are sourced from forests that it owns and manages.

The forests owned and managed by the Oji Group span approximately 636,000 hectares across seven countries. The locations and respective scales are shown in the diagram on the right. The largest area is the forest of CENIBRA in Brazil, covering approximately 250,000 hectares, followed by forests in Japan, which cover approximately 188,000 hectares. ([Details of forest area are available on our website](#). )

Identification of Priority Areas

The natural conditions of the areas surrounding forestry sites were investigated using the ["WWF Biodiversity Risk Filter."](#)  The evaluation items include "Biodiversity Importance," which considers habitats of rare species and protected areas; "Ecosystem Integrity," which indicates the degree to which the natural environment is preserved without human influence; "Rapid Land Use Change," which shows the speed of land use changes due to urbanization or conversion to farmland; "Importance of Ecosystem Services Provision," which indicates the extent of benefits forests provide to human society such as water source recharge and carbon absorption; and "Water Stress," which relates to the quantity and quality of water resources. Through these evaluations, the forests of CENIBRA and those in Japan were identified as particularly important and designated as priority areas for assessment.

In addition, the evaluation of supplier sites is described on [page 24](#). 

■ Identification of priority areas



4-2 (1) Forests of CENIBRA (Brazil)

Business Activities and Locations of CENIBRA

CENIBRA, a subsidiary of the Oji Group, produces timber through its forest plantation operations, which is then used for manufacturing and sales of pulp. The company is based in the state of Minas Gerais, Brazil, and manages approximately 250,000 hectares of land across 54 municipalities within the biome known as Atlantic Forest.

CENIBRA's forests are adjacent to three state-protected areas—Rio Doce State Park, Serra da Candonga State Park, and Rio Corrente State Park—as well as the Southern Belo Horizonte Metropolitan Area State Environmental Protection Area and 25 municipal conservation units.

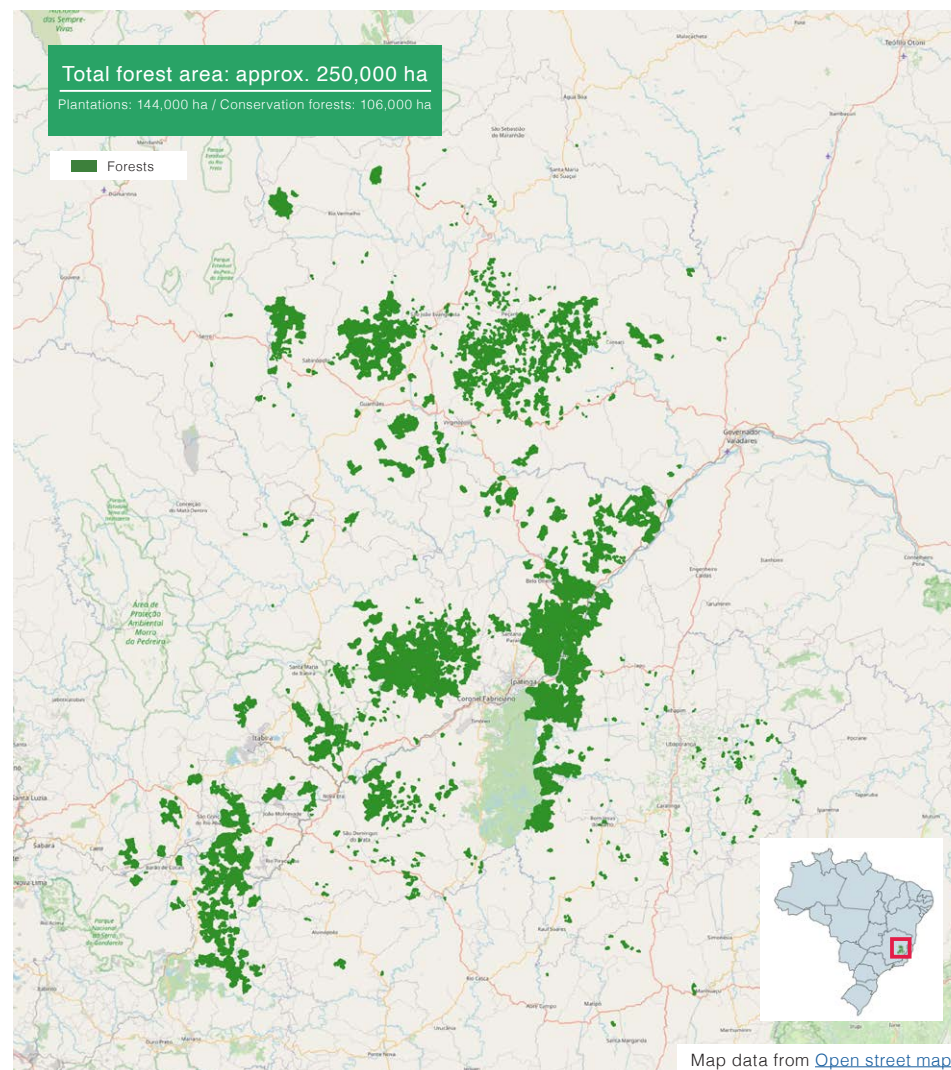
High Conservation Value (HCV) Areas

CENIBRA conducts socio-environmental surveys on its managed lands and has identified eight HCV areas in accordance with the guidance of the [HCV Network](#). [The conservation of HCV areas is one of the key criteria in certification schemes such as FSC® \(FSC®C008495\). CENIBRA appropriately protects and manages these areas. \(For details, refer to \[CENIBRA's Sustainability Report\]\(#\). \)](#)



Endangered 50-meter tree in Macedonia Farm (HCV area)

■ CENIBRA forest map



Map data from [Open street map](#)


[The map showing proximity of these forests to areas important for biodiversity is available on our website.](#)

4-2 (1) Forests of CENIBRA (Brazil)

Monitoring the State of Nature


CENIBRA regularly monitors the state of nature in its managed forests and surrounding areas. It also identifies environmentally and socially important regions and ensures their appropriate protection and management.

► Climate

CENIBRA's operating areas experience distinct dry and rainy seasons, with significant annual fluctuations in precipitation. The company operates 10 meteorological stations within its managed forests to continuously collect data on precipitation and temperature. Recent data indicate rising temperatures and declining precipitation. In response, the company selects tree species for planting based on observed climate conditions. (Details are available on [page 16](#). )


► Water Resources

Within CENIBRA's managed area, there are more than 4,500 water sources and more than 4,000 km of waterways protected in accordance with legal regulations. The Doce River, which serves as a water source for CENIBRA, extends approximately 850 km and supplies water to around 3.5 million people across 228 municipalities in its basin. In 2015, a major decline in water quality was recorded due to an external factor: the collapse of a tailings dam. In addition, low water levels have been recorded at several intake sites during the dry season.

CENIBRA monitors biological indicators, water quantity, and water quality, and takes action as necessary. For example, in regions where low water levels are recorded, reservoirs are installed to secure water availability. (Details are available on [page 16](#). ) When water quality deteriorates, discharge is strictly regulated.

► Soil

In CENIBRA's operating areas, soil serves as a critical foundation for community livelihoods. For local farmers, soil quality directly affects crop yields and product quality, and it is essential for maintaining economic stability.


CENIBRA regularly monitors soil fertility and physical properties. When reductions in organic matter or signs of compaction are detected, the company applies suitable fertilizers and conducts soil improvement measures, including subsoiling, to restore aeration and water retention capacity. (Details are available on [page 17](#). )

► Biodiversity

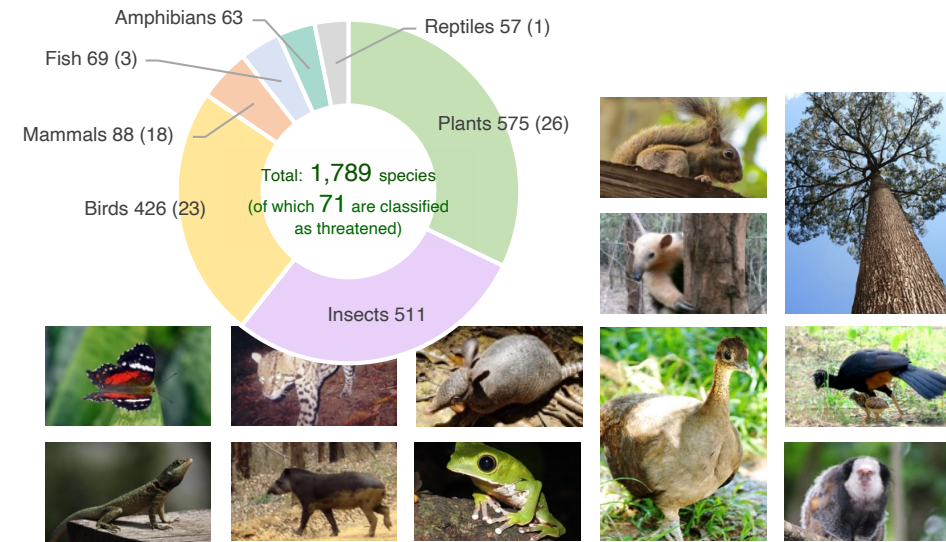
Since 2002, CENIBRA has regularly monitored biodiversity in its managed conservation areas. Monitoring results indicate a gradual increase in biodiversity, supported by conservation initiatives.

As of 2024, a total of 1,214 animal species had been recorded, including 426 birds, 88 mammals, 63 amphibians, 57 reptiles, 69 fish, and 511 insects. Among these, 45 species (23 birds, 18 mammals, three fish, and one reptile) are classified as threatened, such as the Mutum (*Crax blumenbachii*), once thought extinct in Minas Gerais in the 1970s, and the buffy-headed marmoset (*Callithrix flaviceps*), one of the world's 25 most endangered primates.

A total of 575 plant species have been identified. Among them, 26 species are classified as threatened, including Garapa (*Apuleia leiocarpa*), Jussara palm (*Euterpe edulis*), Brazilian rosewood (*Dalbergia nigra*), Brazilian sassafras (*Ocotea odorifera*), and Braúna (*Melanoxylon brauna*). Various biodiversity assessments have also been conducted, including the Shannon-Wiener Index, Simpson Index, Pielou's Evenness Index, and Gentry's Mixing Coefficient, indicating high species richness and even distribution of individuals.

In 2024, CENIBRA launched the “[Florestar Project](#),”  a new initiative to create a database of photographs taken within company-owned lands by employees, local residents, and visitors. The photos include animals, plants, and landscapes.

■ Flora and fauna in CENIBRA's forests (Number of threatened species in parentheses)



4-2 (1) Forests of CENIBRA (Brazil)

Dependencies and Impacts

Based on the data from ENCORE and considering CENIBRA's business and local community characteristics, the dependencies and impacts shown below have been evaluated as material.

Forestry operations are directly dependent on biomass provisioning service. Water supply service is essential for seedling production, dust suppression, and tree growth. Climate regulation, soil quality regulation, and water flow regulation are critical ecosystem services that support favorable conditions for forest development and contribute to the economic activities of local communities, including agriculture and livestock farming.

GHG emissions and absorption are key impact drivers of climate change, affecting wide geographic areas over long time frames. As climate change progresses, risks such as water use restrictions and more severe natural disasters could increase. Land use—including forest management—is closely linked to various ecosystem services such as biodiversity conservation, soil quality regulation, and water flow regulation, and might significantly affect nearby agricultural and livestock activities. Therefore, these impact drivers require appropriate management.

■ Dependency on ecosystem services

Ecosystem services	Loss of input	Financial loss	Social impact
Biomass provisioning	High	High	Low
Water supply	High	Medium	Medium
Climate regulation	Medium	High	High
Soil quality regulation	Medium	High	Medium
Water flow regulation	Medium	High	High

■ Impact drivers

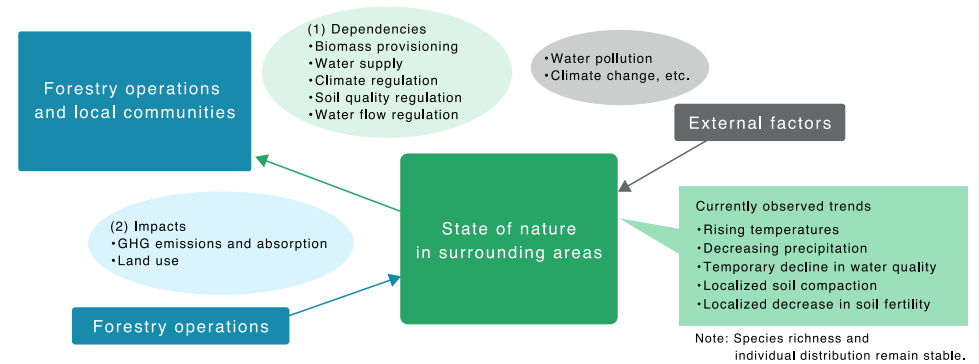
Impact drivers	Metrics	Value	Spatial extent	Duration	Magnitude
GHG emissions and absorption	GHG emissions from forestry and other machinery	99,797 tCO ₂ e/year	High	High	Low
	Net increment in carbon stocks	233,339 tCO ₂ e/year			
	Carbon stock in forests	47 MtCO ₂			
Land use	Total forest area under management	249,897 ha	Medium	High	High
	Forest certification rate*1	98%			
	Conservation forest area within owned forests	106,050 ha			

*1 Certification rate refers to the proportion of certified area within the total managed land, including owned, leased, and surface rights.

Relationship between Dependencies, Impacts, Risks, and Opportunities

Understanding the state of nature and the pathways of dependencies and impacts enables appropriate analysis of nature-related risks and opportunities. In CENIBRA's operating region, the pathways of dependencies and impacts have been identified as shown below, and the associated risks and opportunities arising from these pathways have been organized.

■ Relationship between dependencies/impacts pathways and risks/opportunities



(1) Risks from dependencies

- Degradation of key ecosystem services (e.g., timber provisioning, water supply, climate regulation) might lead to resource depletion and increased vulnerability to natural disasters.
- Access to ecosystem services (e.g., timber provisioning, water supply) might be restricted due to stricter regulations or external factors.

(1) Opportunities from dependencies

- Sustainable management and use of natural resources can enhance business resilience and secure stable ecosystem services.
- Shifts in consumer preferences could increase the market value of nature-based sustainable products and services.

(2) Risks from impacts

- Business activities might degrade ecosystem services vital to operations and communities.
- Stricter regulations and shifts in consumer preferences might lead to penalties or reputational risks.

(2) Opportunities from impacts

- Avoiding or reducing negative impacts on nature can improve compliance and supply chain stability.
- Creating positive impacts on nature can enhance corporate reputation and competitiveness.
- Enhancing ecosystem services could lead to policy or financial incentives.

4-2 (1) Forests of CENIBRA (Brazil)

Risks and Opportunities

Nature-related risks and opportunities stemming from the dependencies and impacts of CENIBRA's forestry operations and local communities were identified and assessed, considering the current state of nature and observed trends in the surrounding area. The assessment covered short-, medium-, and long-term time frames. Two scenarios were developed using TNFD's scenario analysis guidance, focusing on uncertainties closely linked to physical and transition risks. Scenario 1 assumes strengthened environmental policies and regulations, increased awareness among investors and consumers, and global progress in nature restoration. Scenario 2 assumes limited transition efforts and continued global nature degradation. Climate-related scenarios were integrated into the nature-related analysis to reflect the close interconnection between nature and climate change. These scenarios provide a structured basis for identifying risks and opportunities under future uncertainty.

The identified risks and opportunities are summarized in the table below. Response measures are described from [page 16](#) onward. Scenario analysis suggests that Scenario 1 might lead to greater financial impacts due to stricter disclosure requirements and regulations. However, appropriate responses and sustainable practices can enhance investor and consumer preference, creating business opportunities. Scenario 2 suggests reduced timber productivity, increased frequency of forest fires, and higher costs due to soil degradation. Opportunities lie in enhancing resilience to nature loss and mitigating resource scarcity through efficient use.

[Assessment details and scenarios are available here.](#)

Nature-related risks

Category	Risks	Financial effects	Countermeasures	2026	Scenario 1		Scenario 2	
					2030	2050	2030	2050
Physical	Rising temperatures and increased extremely hot days	Higher costs and lower sales due to reduced timber productivity	Mitigating climate change and improving tree breeding	●	●●	●●	●●	●●●
	Increased frequency of forest fires	Higher costs for reforestation and fire prevention	Mitigating climate change and preventing forest fires	●●●	●●●	●●●	●●●	●●●
	Accidental water pollution caused by external factors	Operational restrictions due to water withdrawal/discharge regulations	Monitoring water quality and reducing water use	●	●●	●●	●●	●●
	Soil compaction and reduced fertility resulting from forestry activities	Higher costs and lower sales due to reduced timber productivity, and higher costs due to increased fertilizer/pesticide use	Selecting appropriate fertilizers and subsoiling	●	●	●●	●●	●●●
	Significant biodiversity loss resulting from improper land management	Reduced access to ecosystem services and liability arising from biodiversity loss caused by ecosystem degradation	Avoiding deforestation, designating conservation forests, and protecting water sources	●	●●	●●	●●●	●●●
Transition	Stricter reporting requirements on nature-related risks and impacts	Higher monitoring costs and penalties due to delayed response	Acquiring certifications, complying with new regulations, and developing monitoring technologies	●●	●●●	●●●	●●	●●
	Stricter regulations on rights, permits, and allocation of natural capital	Operational restrictions such as logging and water use limits	Reducing water withdrawal	●	●	●●	●	●

Magnitude		Likelihood	
High	●	High	●●●
Medium	●	Medium	●●
Low	●	Low	●

Nature-related opportunities

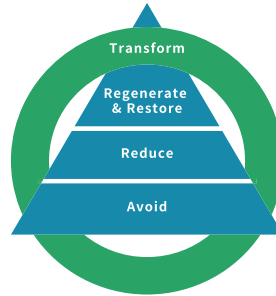
Opportunities	Benefits	Initiatives	2026	Scenario 1		Scenario 2	
				2030	2050	2030	2050
Increased demand for renewable resources and certified products due to changing consumer preferences	Increased sales	Developing new products, acquiring certifications, and complying with new regulations	●●●	●●●	●●●	●●●	●●●
Improved efficiency in timber and water use	Reduced costs, enhanced resilience to resource scarcity, and reduced negative impacts	Advancing technologies and promoting resource circularity	●●●	●●●	●●●	●●●	●●●
Utilization of degraded land	Improved land health, enhanced ecosystem services, and enhanced corporate reputation	Restoring forests	●●●	●●●	●●	●●●	●●●
Conservation and restoration of ecosystems	Enhanced ecosystem services and corporate reputation	Designating conservation forests, regenerating forests, forming ecological corridors, and reintroducing endangered species	●●●	●●●	●●●	●●●	●●●
Protection of watersheds and management of water quality and supply	Reduced risk of water shortages and enhanced corporate reputation	Protecting watersheds	●●●	●●●	●●●	●●●	●●●
Access to green finance and trading of forest carbon and biodiversity credits	Better access to funding and financing	—	●	●●	●●●	●	●
Enhanced corporate reputation through participation in initiatives, stakeholder collaboration, and community engagement	Improved external evaluations and increased opportunities for collaboration	Engaging in social activities and communicating with local communities	●●	●●●	●●●	●●	●●

4-2 (1) Forests of CENIBRA (Brazil)

Response

In response to the identified risks and opportunities, we have organized CENIBRA's actions into four categories—"Avoid," "Reduce," "Regenerate & Restore," and "Transform"—based on the principle of mitigation hierarchy and aligned with the AR3T Action Framework introduced in the guidance issued by SBTN*1.

*1 Science Based Targets Network: An international organization that develops methodologies for setting science-based targets for nature.



► Avoid

● Avoiding deforestation

CENIBRA practices forest management that avoids deforestation and the conversion of natural forests or HCV areas to other land uses.

► Reduce

● Climate change mitigation

Forests play a vital role in mitigating climate change by serving as carbon sinks. Through sustainable forest management, regeneration, and restoration, CENIBRA maintains and enhances the absorption and sequestration of atmospheric CO₂, contributing to the reduction of greenhouse gas emissions.

To improve energy efficiency, CENIBRA has invested in equipment upgrades. In 2024, the company completed the replacement of 40 harvesting machines and transport vehicles, resulting in improved safety and operational efficiency.

● Tree breeding for planted forests

CENIBRA has long engaged in tree breeding for planted forests. Through steady artificial crossbreeding, more than 20,000 varieties have been cultivated, from which approximately 15 superior varieties—selected for fast growth and pulp yield—have been deployed according to climate conditions.

● Reservoir installation

Since initiating the project in 2018, CENIBRA had installed reservoirs at 378 locations within its forest areas by 2024. These reservoirs provide a stable year-round water supply, addressing the recent decline in rainfall. In addition, rainwater stored during the wet season is gradually infiltrated into the ground, enhancing groundwater recharge. The locations of the reservoirs have been selected to ensure accessibility for local communities, promoting harmony in shared water resource use.

● Conservation forests and watershed protection

CENIBRA manages approximately 106,000 hectares of conservation forests, protecting 4,500 water sources within its properties and 969 water sources on adjacent third-party lands. The company employs mosaic forest management by strategically balancing production and conservation forests, and distributing trees of various ages and species in a patchwork pattern. This approach minimizes environmental impact, enhances resilience to pests, diseases, and extreme weather events, and improves the availability of ecosystem services.



Mosaic forest management

● Fire prevention system

In recent years, large-scale forest fires have emerged as a global issue. CENIBRA has introduced a fire prevention system that utilizes artificial intelligence (AI). The company operates 39 surveillance towers equipped with rotating cameras that cover 360 degrees, and its monitoring center operates 24 hours a day. When AI detects smoke or fire, the monitoring center contacts the nearest firefighters, enabling a rapid response. The system can pinpoint the fire's location within a couple of minutes, significantly reducing the risk of forest fires.



Fire monitoring center

4-2 (1) Forests of CENIBRA (Brazil)

Response

► Reduce

● Subsoiling

To address soil compaction caused by forestry machinery, CENIBRA conducts subsoiling, which increases rainwater infiltration into the soil and enhances the growth of planted trees. In 2018, CENIBRA began developing a planting machine in collaboration with a heavy machinery manufacturer. This machine, which automatically performs planting, fertilizing, subsoiling, and other operations, was put into practical use in 2022. CENIBRA also shares subsoiling techniques and knowledge with local farmers, contributing to groundwater recharge, reduced soil erosion risk, and improved water quality.

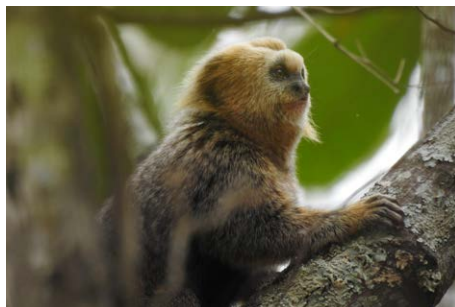


Automated planting machine during subsoiling operations

● Control of invasive alien species

Invasive alien grass species that hinder the growth of eucalyptus and native tree seedlings have been identified across CENIBRA's property. To ensure forest sustainability, CENIBRA actively works to control these species.


Furthermore, the invasion of non-native marmoset species threatens the stability of native populations of the endangered buffy-headed marmoset (*Callithrix flaviceps*) through competition and hybridization. In partnership with the Buffy-Headed Marmoset Conservation Center (CCSS) at the Federal University of Viçosa, CENIBRA has implemented a program to capture and sterilize hybrid marmosets.



Buffy-headed marmoset

► Regenerate and Restore

● Natural forest restoration

CENIBRA restores vegetation in natural forests damaged by natural disasters or located on newly acquired land, as needed. These activities are based on scientific advice from universities and are verified by third-party organizations. (Results for 2024 are presented on [page 19](#). )

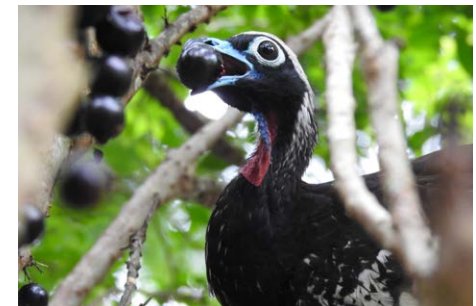
● Formation of ecological corridors

To conserve biodiversity in forest ecosystems, it is essential to secure wildlife movement routes and connect habitats. CENIBRA is implementing an ecological corridor project on third-party pastureland that separates areas of natural forest. In cooperation with landowners, fencing is installed around water sources to prevent livestock intrusion and restore vegetation. The regenerated areas function as corridors for wildlife movement and support ecosystem and biodiversity conservation. (Results for 2024 are presented on [page 19](#). )

● Reintroduction of endangered species

Since 1990, CENIBRA has been conducting the Mutum Project within the 560-hectare privately protected area "Macedonia Farm." Under a technical and scientific cooperation agreement with the Brazilian NGO CRAX (Society for Research on Wildlife Management and Reproduction), CENIBRA breeds and raises endangered birds, including the mutum (red-billed curassow), for reintroduction into the wild. More than 500 individuals from seven species have been released to date.

In April 2025, CENIBRA released five pairs of black-fronted piping guans into a protected area within the adjacent Rio Doce State Park. This species plays an important role in forest health as a seed disperser, consuming fruits from more than 41 plant species.



Black-fronted piping guan

4-2 (1) Forests of CENIBRA (Brazil)

Response

► Transform

● Social contribution and communication with local communities

CENIBRA is committed to building sustainable relationships with local communities in 54 municipalities across Minas Gerais State, mainly through the CENIBRA Institute, established in 2002, in collaboration with local NGOs.

In 2024, the company granted the use of its land and provided technical support to 399 farmers and 169 beekeepers. It also supported 50 artisans in sustainable resource management and product diversification, and offered business and marketing training to 120 entrepreneurs. Through its environmental education program, 5,161 local residents received training on forest fire prevention and biodiversity conservation, which led to increased environmental awareness and active conservation efforts.

These initiatives improve stakeholders' stable income and quality of life. They also enhance the ability of local communities to adapt and function sustainably in response to unpredictable changes in the natural environment, social changes and behavioral shifts toward greater emphasis on nature conservation, and policy changes.

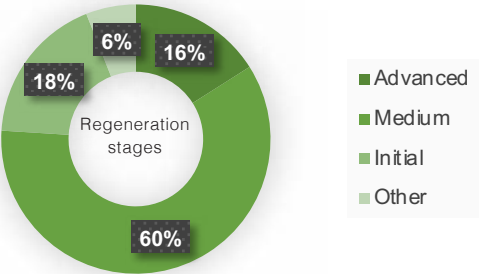
[Details of the CENIBRA Institute are available here.](#)

● Response to new regulations

CENIBRA is developing a traceability system to meet the requirements of the European Union Deforestation Regulation (EUDR), which applies in the EU, one of its key markets. The system includes centralized documentation and proof of origin for the wood it uses.

● Development of monitoring technologies

By combining LiDAR (optical remote sensing) technology with machine learning, CENIBRA classified the regeneration stages of conservation forests. This approach also enabled the identification of rocky outcrops—vulnerable ecosystems that play an important role in protecting endemic species of the Atlantic Forest.

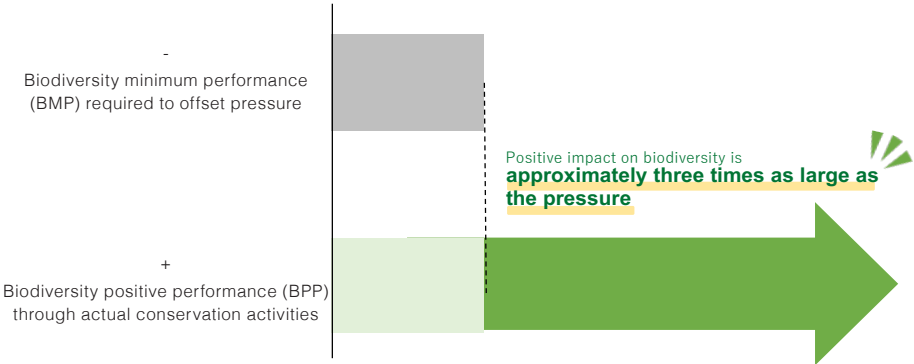


● LIFE certification

In 2024, CENIBRA became the first company in the forestry sector to obtain LIFE certification, following a third-party audit by [TECPAR](#), a public certification body in Paraná, Brazil. This international certification verifies sustainable business practices and contributions to the conservation of natural capital and ecosystem services.

To obtain the certification, CENIBRA calculated three indicators under the LIFE methodology: the Biodiversity Pressure Index (BPI), which measures the impact of business activities on biodiversity; the Biodiversity Minimum Performance (BMP), the minimum score required to offset that pressure; and the Biodiversity Positive Performance (BPP), the score of actual conservation activities. Certification requires that BPP exceed BMP. At CENIBRA, the BPP was approximately three times as large as the BMP, demonstrating the company's contributions to biodiversity and ecosystem service conservation through its business and conservation activities.

[Audit report by TECPAR](#)



4-2 (1) Forests of CENIBRA (Brazil)

Targets

In 2024, based on the results of risk and opportunity assessments and considering significant impacts on society, we set the following nature-related metrics and targets. While continuing direct “avoidance and reduction” efforts—such as avoiding deforestation, reducing GHG emissions, and reducing water withdrawal—we are also implementing “restoration and recovery” activities.

Metrics	Targets	Achievements					
		2019	2020	2021	2022	2023	2024
Area of restored natural forest*1 (ha)	At least 3,000 hectares between 2024 and 2033	170	366	399	379	359	260
Number of planted native tree species*2 (seedlings)	At least 500,000 trees between 2024 and 2033	34,827	60,624	76,433	61,599	27,480	60,271
Area of ecological corridors formed outside own land*3 (ha)	At least 3,500 hectares between 2024 and 2033	186	318	313	411	532	500
Area of natural forest connected by ecological corridors (ha)	-	1,281	2,212	2,239	1,268	2,587	9,629

*1 Area where planting and other activities were carried out to restore natural forests lost due to windthrow, fire, etc.

*2 The number of trees planted within the owned natural forests.

*3 The area enclosed by fences in collaboration with landowners to facilitate the revegetation of degraded lands between fragmented natural forests and enable wildlife to move freely.

Progress

► Natural Forest Restoration

In 2024, CENIBRA carried out restoration activities across 260 hectares of land, focusing on areas adjacent to primary forests that provide favorable conditions for the natural return of native flora and fauna.



Natural forest restoration initiatives

► Planting of Native Tree Species

In 2024, CENIBRA planted 60,271 native trees across 57 species. The seedlings used in this activity were sourced from local nurseries, selected based on regional environmental conditions and the ecological suitability of each species. Furthermore, the seedlings underwent a hardening process to gradually acclimate them to conditions similar to the planting sites, enhancing their resilience and survival after transplantation.



Planting native trees

► Formation of Ecological Corridors

In 2024, CENIBRA collaborated with landowners to fence off 500 hectares of land that had been fragmenting natural forests, promoting the natural recovery of vegetation. As a result, the total area of connected natural forests reached 9,629 hectares. This initiative aimed to restore local ecosystems and protect water sources, focusing on areas with conservation zones, water sources, or insufficient forest cover. A total of 411 agricultural workers and six municipalities participated, making it a region-wide effort. The fenced areas are subject to annual monitoring to evaluate the progress of natural regeneration.



Fence installation



Installed fence

4-3 (2) Forests in Japan

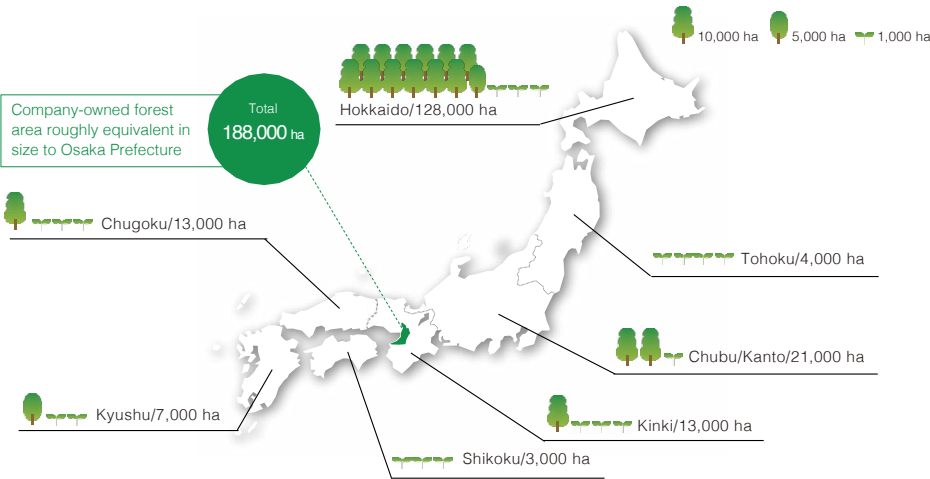
Overview of Company-owned Forests in Japan

The Oji Group has long been engaged in forest development within Japan. Afforestation efforts began in Shizuoka Prefecture in 1893, and by the 1930s, the Group had advanced full-scale forestry operations under the guiding philosophy that “those who use trees are responsible for planting them.” Today, from Hokkaido to Kyushu, we own and manage 188,000 hectares of company-owned forests encompassing approximately 650 locations.

Sustainable Forest Management

In our company-owned forests across Japan, we continuously engage in silvicultural activities such as thinning to enhance forest resources for future generations, while also utilizing forests through harvesting and replanting to rejuvenate them. Each region has a forest management division that promotes sustainable forest management aimed at both enriching and utilizing forest resources, and ensuring that diverse forest functions such as biodiversity conservation and water resource cultivation are fully realized.

■ Company-owned forests across Japan (as of end of March 2025)

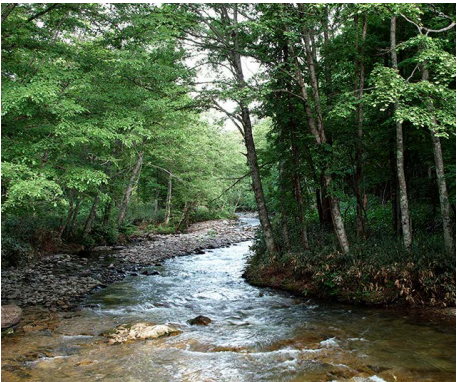


► Maximizing Performance of the Diverse Functions of Forests

In addition to timber production, we are taking the lead in maximizing the performance of the diverse functions of forests. These functions include biodiversity conservation, water resource cultivation that is essential to daily life, recreational and landscape uses, prevention of soil erosion and landslides, and the protection of scientifically valuable forests. As part of these efforts, a certain portion of the company-owned forests in Japan has been designated as conservation forests and is appropriately managed to ensure these functions are fully realized.

► Conservation Activities for Endangered Species in Various Regions

We collaborate with government agencies, environmental NPOs, academic researchers, and local communities to protect and cultivate rare flora and fauna, and to maintain and restore ecosystems. In Shimanto Town, Kochi Prefecture, we work with the Ecosystem Trust Society to conserve the habitat of the fairy pitta, a migratory bird, and the area has been certified as a Nationally Certified Sustainably Managed Natural Site by the Ministry of the Environment. Furthermore, this site has been registered under the international conservation framework known as Other Effective area-based Conservation Measures (OECMs), contributing to the global “30by30” target to conserve at least 30% of land and sea areas by 2030. In Sarufutsu Village, Hokkaido, we established the Sarufutsu Itou Conservation Council to protect the endangered salmonoid species itou, and continue to engage in conservation activities in the region.



Rich water resources nurtured by Oji forests in Biei, Hokkaido



Endangered species inhabiting Oji forests: Fairy pitta and itou

4-3 (2) Forests in Japan

Initiatives for Creating New Value

As global environmental issues become increasingly serious, the global economy is expected to grow in harmony with nature while also addressing challenges such as climate change and biodiversity loss. Companies must fulfill their responsibilities in this regard.

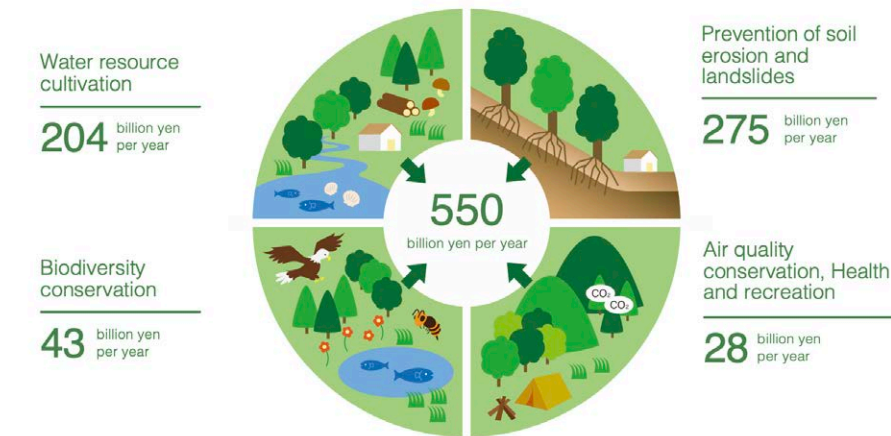
The Oji Group's business is rooted in sustainable forest management, characterized by the ability to produce goods from renewable wood resources and circulate them through a resource-efficient cycle. By further evolving this distinctive business model, we aim to achieve nature-positive outcomes.

Annual Economic Value of the Multifunctional Roles of Oji's Forests in Japan: ¥550 Billion

Discussion on global environmental issues have been especially focusing on climate change, but as the degradation of nature accelerates worldwide, there is growing momentum to institutionalize natural capital accounting—a framework that comprehensively recognizes the economic value of natural capital such as forests, soil, water, air, and biological resources—and to mobilize financing for restoration.

Against this backdrop, we conducted an economic valuation of our domestic company-owned forests (188,000 hectares) based on the methodology of the Forestry Agency of Japan. The result was an estimated annual value of approximately ¥550 billion.

■ Economic value of the multifunctional roles of Oji's company-owned forests in Japan



- Calculation based on the methodology used in the Forestry Agency of Japan's 2000 Valuation of the Public Benefit Functions of Forests.
- Reviewed by an external environmental assessment firm

Visualization of Diverse Forest Functions

► Evaluation of Biodiversity Importance

To appropriately assess and understand the state of nature, we visualized the diverse functions of forests. Based on various environmental datasets, we conducted a comprehensive evaluation of biodiversity importance across all company-owned forests, resulting in the map shown below. Forests with scores closer to 1.0 (red) are considered to have higher biodiversity importance. The Sarufutsu Forest in Hokkaido received the highest score. Due to the potential impact of business activities on nature, we are conducting on-site surveys in the forest for further investigation. (For details, see [page 22](#).)

In the previous analysis, we used a species distribution model to estimate the types of organisms inhabiting our forests. The results suggest that more than 3,000 species live across all company-owned forests, including approximately 1,400 rare species. These findings indicate that our long-standing forest cultivation efforts might be contributing to the preservation of ecosystems in each region.

■ Importance of biodiversity in company-owned forests



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

■ Number of species estimated to live in company-owned forests

Taxon	Estimated species richness	Of which, rare species
Amphibians	51	25
Birds	294	97
Seed plants	2,667	1,273
Total	3,012	1,395

► Water Resource Cultivation Assessment

Using the National Land Information Platform, we calculated the daily water source recharge volume (amount of water seeping down from the ground surface) to be approximately 5.1 million cubic meters per day. This is equivalent to the daily water usage of approximately 16.9 million people*. These results suggest that the Oji Forests play a significant role in supplying clean water and generating substantial economic benefits.

*1 Calculated as 300 L of water used per person per day in each household.

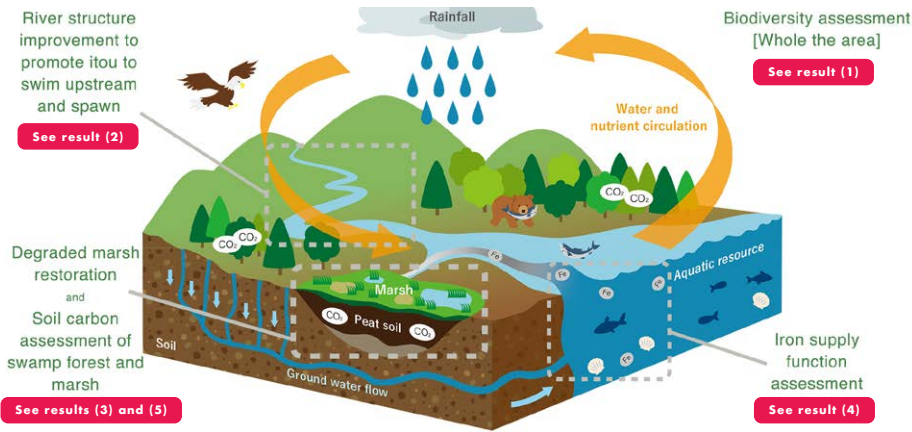
4-3 (2) Forests in Japan

Toward Establishing International Standards for Economic Value Assessment

Global action across countries and industries is required to address environmental challenges. As a company that owns and utilizes forest resources as natural capital, the Oji Group recognizes its responsibility and is committed to promoting management that balances corporate value enhancement with nature restoration through dialogue with diverse stakeholders. We aim to contribute to the realization of nature-positive outcomes.

While discussions are under way to institutionalize natural capital accounting that recognizes natural capital as economic value, international standards have yet to be established. We intend to actively participate in the process of developing these standards. In line with this, we launched the following initiatives in 2024 at the Sarufutsu Forest in northern Hokkaido.

Overview of the Sarufutsu project



► FY2024 Result (1): Biodiversity Assessment Collaboration

In collaboration with an overseas start-up, we are conducting a biodiversity assessment project that analyzes data on a wide variety of plant and animal species by integrating multiple advanced technologies, such as acoustic sensors, drones, cameras, and environmental DNA. In the FY2024 survey, 141 species of flora and fauna were identified, including the endangered red-crowned crane. The survey also enabled us to quantitatively assess habitat conditions, connectivity, and species diversity. Using these findings as a baseline, we are currently conducting the second year of surveys and analysis to monitor changes in the state of nature. Through our initiatives in Sarufutsu Forest, we aim to establish the “Oji Model,” a nature evaluation methodology that contributes to the development of international standards for natural capital accounting.

► FY2024 Result (2)–(4): Joint Research with Hokkaido University

In collaboration with researchers from Hokkaido University, we are conducting a nature restoration project that visualizes the value of five key environmental elements: CO₂, biodiversity, soil, nutrients, and water. The following summarizes the results from FY2024 and outlines future plans.

● Result (2)

We are investigating the impact of culverts and river straightening in the Sarufutsu River on aquatic life, with the aim of proposing conservation measures for the endangered freshwater fish, itou. In FY2024, we collected baseline data to evaluate the effects of these structures and conducted DNA analysis of benthic organisms, including freshwater pearl mussels.

Going forward, we will examine in detail how culvert installation methods and river meandering influence biodiversity.

● Result (3)

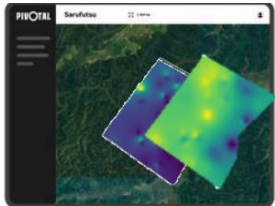
Northern peat wetlands are found only in limited regions around the world, yet they are believed to store large amounts of carbon and play a role in regulating atmospheric CO₂ concentrations. In Sarufutsu Forest, we are investigating the amount and rate of carbon accumulation in wetland areas, as well as the influence of forest presence on carbon storage. In FY2024, findings suggested that carbon accumulation level in a certain part of the wetlands in Sarufutsu forest is especially high in the world. Moving forward, we plan to expand the number of survey sites, estimate carbon accumulation across a broader area, and explore the economic value of this function.

● Result (4)

We are investigating the iron supply function of wetlands, focusing on iron as a nutrient that supports rich marine ecosystems, including scallops and other seafood. In FY2024, we measured dissolved iron concentrations at various locations in wetlands and rivers. Going forward, we plan to conduct surveys in the estuary of the Sarufutsu River and along the coast of the Sea of Okhotsk to examine the iron supply process from the forest and the river to the sea, and its impact on ecosystems.



Fixed-point camera footage captured a brown bear and a red-crowned crane with a chick, suggesting breeding activity.



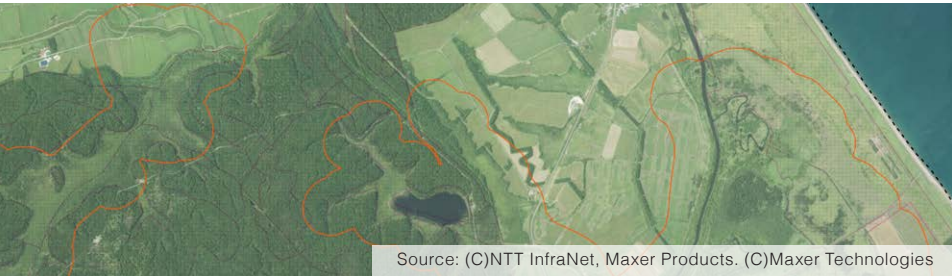
A part of our biodiversity assessment

4-3

(2) Forests in Japan

► FY2024 Result (5): Aerial Photo Analysis

Extensive marshes remain within Sarufutsu Forest, but in recent years, degradation has been observed due to aridification caused by the encroachment of bamboo and trampling by a growing number of deer. As part of this project’s marsh restoration efforts, we analyzed and compared aerial photographs from 1977 and 2023 to identify changes in marsh vegetation and environmental conditions over time. Based on these findings and on-site inspections, we plan to identify areas within the marshes that have experienced significant degradation and require prioritized restoration, and to develop a restoration plan accordingly.



Aerial photographs from 1977 (top) and 2023 (bottom)

► Participation in the Nature Positive Initiative (NPI) Pilot Program

In FY2025, the second year since the launch of our initiative, we are participating in the pilot program of the Nature Positive Initiative (NPI)*¹, with TNFD as a partner. This program brings together global nature conservation organizations, disclosure-related bodies, academic institutions, and others, with the aim of establishing standards for measuring natural capital. Using the survey results and evaluation methods from Sarufutsu, we will assess the effectiveness of the standards proposed by NPI and examine whether Japan’s unique natural conditions can be appropriately evaluated and disclosed. We will provide feedback to NPI based on these findings.

*¹ An international initiative working to establish standardized methods for measuring the state of nature (State of Nature Metrics).

Launch of Initiatives in Production Forests

► Exploring Retention Forestry

In Japan’s forestry sector, clear-cutting that harvests all the trees in a stand is the mainstream practice in production forests. As an alternative, retention forestry offers a method in which some broad-leaved trees are left standing to preserve habitats for birds and other wildlife that rely on tall trees. While this approach has been implemented in regions such as Northern Europe and North America, examples in Japan remain limited. However, over more than a decade of research by institutions such as the Forestry and Forest Products Research Institute, positive effects on biodiversity have been indicated in domestic forests.

Our retention forestry initiative began in FY2025 at the Otaru-Otsu Forest in Hokkaido. To monitor the effects of environmentally conscious forest operations, we plan to conduct pre- and post-harvest assessments using drone-based forest monitoring and acoustic analysis for bird surveys. Harvested Todo fir will be utilized in collaboration with customers as part of efforts to create new value in forestry and wood products.



Retention forestry in practice (photo by Satoshi Yamanaka)



Selection of broad-leaved trees to be retained and bird acoustic survey (Otaru-Otsu Forest)



4-4 (3) Suppliers

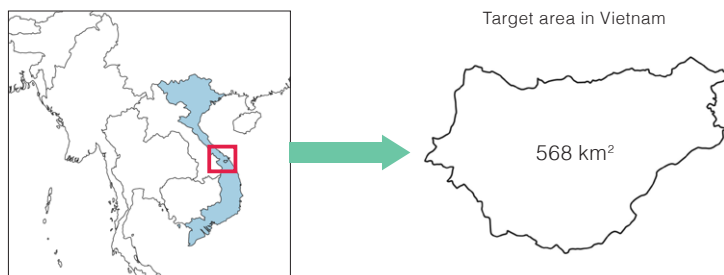
Satellite Imagery Analysis of Critical Areas

Based on discussions with customers regarding deforestation risks, we conducted satellite imagery analysis of a 568 km² area surrounding chip suppliers' sites in Vietnam, where further investigation was deemed necessary to strengthen customer trust. We commissioned a third-party organization to conduct the analysis, which identified areas suspected of deforestation or land conversion after December 31, 2020.

In the initial analysis, the internationally recognized “[EU Observatory on Deforestation and Forest Degradation \(EUODFD\)](#)” [\[\]](#) was used to narrow down the suspected deforestation area to 6.5 km². In the subsequent secondary analysis, high-resolution (50 cm) satellite imagery from the Pleiades satellite, capable of capturing data in the near-infrared spectrum, was purchased and analyzed in detail. As a result, the suspected area was further narrowed down to 0.34 km².

The findings were reported to the customer. For the areas of concern, on-site investigations were conducted jointly by Oji Group employees and the local supplier.

■ Area subject to analysis



■ Differentiation between natural forests and plantation forests in satellite imagery



Natural forest



Plantation forest

On-site Investigation

The on-site investigation in areas of concern regarding potential deforestation or conversion revealed the presence of stumps from planted trees, suggesting that the area was likely a plantation forest even before December 31, 2020. In another area, low shrub vegetation was still present, indicating that the area had not been converted to a plantation forest. Based on these findings, it was concluded that the likelihood of deforestation or conversion was low. Following the analysis of CENIBRA's forests in Brazil ([details available on our website \[\]](#)), this case reaffirmed that it is difficult to draw definitive conclusions about deforestation or conversion based solely on satellite imagery.



On-site investigation activities



A stump of a planted trees

Engagement with Suppliers

To ensure the continuation of zero deforestation and conversion, the findings were shared with nearby chip suppliers and risk mitigation measures were discussed. We will continue direct engagement with suppliers.



Discussions with the supplier

4-4 (3) Suppliers

Supplier Management

The Oji Group has formulated the “[Oji Group Sustainability Action Guidelines for Supply Chains](#)” [🔗](#) and the “[Wood Raw Material Procurement Guidelines](#),” [🔗](#) and is committed to responsible sourcing of raw materials.

All wood raw materials procured from suppliers are either FSC™-certified (e.g., FSC™ C014119), recycled, or other controlled materials that meet FSC™ requirements. In addition, we conduct annual visits to local suppliers to verify logging permits and related documents, as well as to inspect forest areas. These activities enable us to monitor compliance with the “Wood Raw Material Procurement Guidelines” and ensure traceability. In 2024, we conducted 359 visits. Through these ongoing efforts, we have built strong relationships with our suppliers.

The companies of the Oji Group are registered as Class-1 and Class-2 wood-related business operators under the Act on Promotion of Distribution and Use of Legally Harvested Wood and Wood Products (commonly known as the Clean Wood Act). In collaboration with the Japan Paper Association, we conduct due diligence to verify the legality of wood raw materials and biomass fuels.

■ Wood Raw Material Procurement Guidelines

The Oji Group requires and verifies that all suppliers produce sustainable wood raw materials. We will responsibly procure materials by examining wood raw materials from all suppliers to ensure their traceability and purchasing materials only from properly managed forests. If the source or forest management status of the purchased wood is unknown or the wood does not conform to our requirements regarding the following, we will engage in a dialogue with the supplier and request improvements. We will not source from suppliers who do not make improvements.

- Raw materials production area (logging area, forest ownership form, differentiation between plantation wood and natural forests)
- Forest management method (applicable forestry laws, forest management regulations)
- Acquisition status for forest certification
- Avoidance of illegal logging (verification of forest certification, harvest permits, records of round logs received)
- Avoidance of wood from natural forests being converted to wood from plantations or non-forest land use
- Avoidance of genetically modified (GMO) wood
- Avoidance of logging in High Conservation Value (HCV) Forests
- Avoidance of raw materials associated with major social conflicts
- Ensuring the protection of human rights and labor rights

Supplier Sustainability Surveys

Since FY2020, the Oji Group has conducted sustainability surveys of major suppliers, selected based on transaction value and product category. These surveys assess supply chain practices and strengthen risk management. Based on the results, we follow up with suppliers to request improvements and ensure compliance with the “Oji Group Sustainability Action Guidelines for Supply Chains.” We also work to improve response rates and proactively engage with low-performing suppliers to support their improvement efforts.

In addition, we conduct human rights and environmental due diligence for suppliers with significant environmental and social impacts. In our [Environmental Action Program 2040](#), [🔗](#) established in May 2025, we set a target of conducting this due diligence annually.

[Details of the supplier sustainability survey are available on our website.](#) [🔗](#)




Forest site visit with a local supplier (Australia)



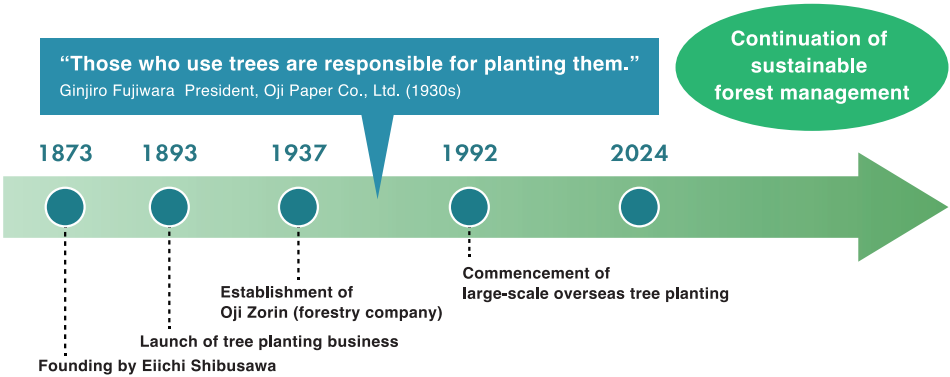
Forest site visit with a local supplier (Thailand)

4-5 Transition Plan (1): Approach

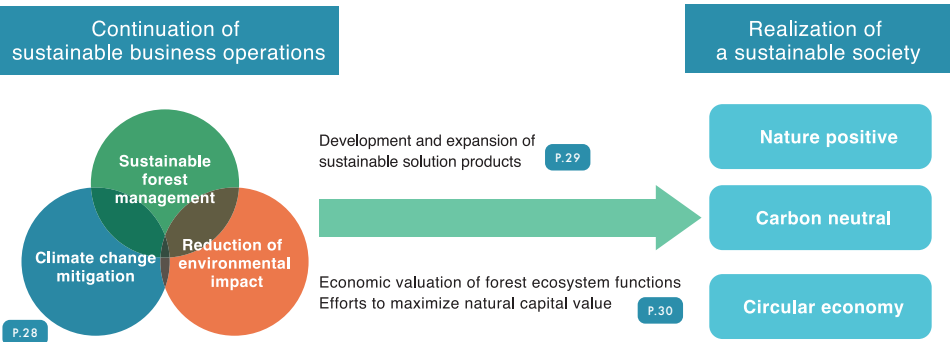
For the Realization of a Sustainable Society

The Oji Group has practiced sustainable forest management for more than 100 years. At CENIBRA, which manages the largest company-owned forest within the Group, a third-party audit has verified that its business activities have a positive impact on nature. (Details of targets are provided on [page 18](#). )



■ More than 100 years of sustainable forest management




■ Initiatives toward a sustainable society and sustainable growth



The Oji Group contributes to the achievement of the goals and targets of the Kunming-Montreal Global Biodiversity Framework (GBF) by harnessing nature-positive business operation technologies rooted in its long-standing forest resource management. Commitments and targets aligned with the GBF, as well as initiatives to achieve them, are formulated and implemented under the monitoring and supervision of the Board of Directors.

Under our [Biodiversity Commitment](#)  and [No Deforestation and No Conversion Commitment](#), , the Oji Group continues its activities in sustainable forest management, climate change mitigation, and reduction of environmental impact. We are also expanding businesses that utilize renewable forest resources, developing and promoting sustainable solution products, and evaluating the economic value of forest ecosystem functions. These efforts contribute to the realization of a sustainable society characterized by nature positivity, carbon neutrality, and a circular economy.

■ Pledge under our Biodiversity Commitment

↓ Avoidance and Reduction	GBF Targets
• We are committed to “ No Deforestation and No Conversion .” 	1
• We maintain the water resource conservation function of forests and contribute to the creation of freshwater resources.....	11
• We prevent nature loss by reducing or eliminating air, water and waste pollution.	7
• We mitigate pollution risks and the impact of pollution from plastics throughout our value chain by expanding sales of renewable eco-friendly paper products.	7
• We mitigate climate change, which is closely related to biodiversity, by maintaining and promoting the absorption and sequestration of atmospheric carbon dioxide through our self-managed plantations and natural forests. ...	8
↑ Restoration and Regeneration	
• We restore and regenerate the ecosystems of our company-owned forests through the regeneration of natural forests.	2
• We restore and regenerate the ecosystems outside our company-owned land through the establishment of ecological corridors.	2
○ Stakeholder Engagement	
• We conduct our business activities while respecting the human rights of stakeholders, including indigenous peoples and local communities.	1 22
• We provide access to remedy for stakeholders in accordance with the Guiding Principles on Business and Human Rights endorsed by the UN Human Rights Council.	9

1	CEO Message	3	Governance	4	Strategy	5	Risk and Impact Management	6	Metrics and Targets	7	Conclusion
2	Introduction									8	Appendix

4-1 Identification of Interfaces with Nature

4-2 (1) Forests of CENIBRA (Brazil)

4-3 (2) Forests in Japan

4-4 (3) Suppliers

4-5 Transition Plan

4-5 Transition Plan (2): Action Targets

Action Targets

To realize a sustainable society, the Oji Group has established a long-term vision, "[Environmental Vision 2050](#)," [which sets out its goals for 2050, namely "net-zero carbon" and "harmony with nature and society."](#) As milestones toward this vision, we have also set "[Environmental Action Program 2030](#)," [and in May 2025, we established "Environmental Action Program 2040."](#)

■ Oji Group Environmental Action Program 2040

1. Action on climate change

1) Scope 1 and 2 GHG emissions reduction

- Reducing Scope 1 and 2 GHG emissions by 50% by FY2040 compared to FY2018 levels
- Absorbing and sequestering the equivalent of 50% of FY2018 GHG emissions through our forests annually by FY2040

2) Scope 3 GHG emissions reduction

- Reducing Category 4 emissions from chip transport vessels by 40% compared to FY2018

2. Contribution to a nature-positive world

1) Abundant forests creation

- Maintaining no deforestation
- Conducting supplier due diligence at least once per year
- 100% forest certification acquisition rate and expansion of certified products

2) Biodiversity conservation

- Identifying material dependencies and impacts on nature in our operations and value chain, and avoiding biodiversity loss through our business activities with consideration for ecosystems
 - Restoring at least 5,000 ha of natural forests between FY2018 and FY2040
 - Planting at least 900,000 seedlings of native tree species between FY2018 and FY2040
 - Formulating at least 6,000 ha of ecological corridors outside own land between FY2018 and FY2040
- Collaborating with local communities, including Indigenous Peoples, and environmental NGOs to protect and nurture rare plants and animals, and to conserve and restore ecosystems
- Advancing research and development of renewable eco-friendly paper packaging and biodegradable or biomass-based materials to prevent plastic pollution



3. Promotion of circular economy and reducing pollutants

1) Promoting a circular economy

- Maintaining and improving an effective waste utilization rate of 99% or higher in Japan and 95% or higher overseas
- Achieving a recovered paper usage rate of 90% or higher for containerboard in Japan
- Reducing total water withdrawal by more than 10% compared to FY2018
- Conducting stakeholder engagement at least once per year in high water-risk areas
- Establishing and commercializing technologies for producing fossil resource alternatives such as wood-derived sugar solution from renewable forest resources

2) Reducing pollutants

- Wastewater: Reducing BOD, COD, and SS emissions by 20% compared to FY2018 levels
- Emitted gases: Reducing SOx emissions by 50% compared to FY2018 levels
Reducing NOx emissions by 10% compared to FY2018 levels
Maintaining VOC emissions intensity at FY2018 levels

4. Stakeholder engagement

1) Promoting supplier management

- Conducting supplier human rights and environmental due diligence at least once per year

2) Zero environment accidents and zero product liability accidents

- Achieving zero violations of environmental laws and regulations
- Achieving zero product liability accidents

4-5 Transition Plan (3): Development and Expansion of Sustainable Packaging

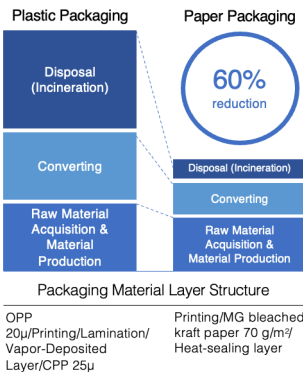
Sustainable Packaging to Minimize Plastic Use

As a solution to plastic pollution, the Oji Group is advancing the development and expansion of sustainable packaging designed to reduce environmental impact across the entire packaging value chain.

Paper-based packaging contributes to reducing both plastic use and CO₂ emissions, positioning it as a key enabler in the transition to a sustainable society.

The Oji Group sold 3,000 tons of sustainable packaging in FY2024 and will expand sales to 5,000 tons by FY2030.

CO₂ emissions reduction through the introduction of paper packaging



► Walki: Leading European Packaging Converter in a Regulation-Driven Market

In Europe, where environmental regulations are tightening, the Packaging and Packaging Waste Regulation (PPWR) is set to take effect shortly. In response, packaging material manufacturers and brand owners around the world are rapidly transitioning to recyclable, reusable, and compostable packaging.

Walki, which joined the Oji Group in 2024, actively engages in research and development to drive innovation in sustainable packaging and converting technologies. The company possesses industry-leading manufacturing expertise in materials that comply with the PPWR.

With strong capabilities in product development through collaboration with end users and a broad portfolio of packaging solutions, Walki’s materials are widely adopted by global brands in the food and consumer goods sectors.



Example of Walki’s Recyclable Paper Packaging: Outer bag for crêpe pastries under the “Paysan Breton” brand by Laïta, a major French dairy manufacturer

► Plastic-to-Paper Packaging Solution

To meet market needs for sustainable packaging in the transition to a circular economy, the Oji Group offers a diverse range of paper-based solutions. These include functional barrier papers that help extend the shelf life of food and other sensitive contents, as well as materials compatible with existing plastic packaging machinery—enabling a smooth switch to paper without major equipment changes. We are committed to developing products that combine environmental performance with practical functionality. (See examples below.)



Outer package for “Luxury Lumonde” by Bourbon Corporation



Outer bag for replacement wiper rubber for the N-BOX model by Honda Motor Co., Ltd.

► Alternative to Plastic Containers: Molded Pulp

The Oji Group provides molded pulp and paper-based container and packaging solutions tailored to a wide range of shapes and applications, including those for electronic devices, consumer goods, and food products. These solutions are developed in response to specific customer requirements.



High-quality molded pulp containers

► Water-Based Coated Paper Substrate for Plastic Reduction

The Oji Group’s advanced coating technology enables a thin and uniform layer of water-based resin to be applied to paper substrates, reducing plastic usage compared to conventional laminated materials. Development is ongoing to expand the application of these substrate to processed products such as paper cups.



Water-based coated paper cup

4-5 Transition Plan (4): Initiatives to Maximize Natural Capital Value

Preparing for the Era of Natural Capital Accounting

As global concern grows over the degradation of nature, discussions are intensifying around institutionalizing “natural capital accounting,” a framework that quantifies the state of nature and translates it into economic value to guide investment and promote restoration. The Oji Group is advancing efforts to establish the “Oji Model,” a method for quantitatively evaluating the value of nature, and to maximize that value while linking it to actual economic outcomes.



Active Engagement Toward Institutionalizing Natural Capital Accounting

The Oji Group is actively engaging in international efforts to institutionalize natural capital accounting, including sharing information at global conferences and participating in international initiatives.

We have been invited to speak at major international conferences, including the 29th Conference of the Parties to the UN Framework Convention on Climate Change (COP29), the 16th Conference of the Parties to the Convention on Biological Diversity (COP16), the World Economic Forum (WEF), the Organisation for Economic Co-operation and Development (OECD), and London Climate Action Week. Through these opportunities, we are actively sharing information on the importance of nature-positive approaches and sustainable forest management.



CEO Hiroyuki Isono speaking at a COP16 side event (November 2024)



Senior executive officer (currently executive vice president) Kazuhiko Kamada speaking at a COP16 side event (November 2024)

► Participation in the International Sustainable Forestry Coalition (ISFC)

The International Sustainable Forestry Coalition (ISFC) is a global organization composed of 22 companies (as of the end of July 2025), including forest owners and forestry investment businesses. The Oji Group is participating as a founding member. Based on sustainable forest management, ISFC consolidates and communicates the views of the forestry sector to address global challenges such as climate change, biodiversity loss, and deforestation. Within ISFC, we are actively involved in discussions that form the foundation of natural capital accounting, including the evaluation of ecosystem services provided by forests. In FY2025, we launched a joint project with the Capitals Coalition*¹ and TNFD to develop common principles and reporting formats for natural capital accounting in the forestry sector. As we work to implement natural capital accounting for our extensive natural assets, we will adopt a consistent frame of reference.



Visit to Oji Forest in Shizuoka during the ISFC Strategy Session (August 2024)



*1 A global initiative aiming to ensure that, by 2030, the majority of businesses, financial institutions, and governments make decisions that incorporate the value of natural, social, and human capital.

► Participation in the Natural Capital Accounting Consortium

Led by the University of Tokyo's Center for Global Commons, CGC—Nature on the Balance Sheet Sponsorship Program was launched as a cross-sectoral collaboration among Japanese industries to integrate the measured value of natural capital into financial accounting. Oji Holdings is a supporting member of this initiative and is working alongside domestic companies across industries to contribute to rule-making from a Japanese perspective.



► Participation in WEF's Forest Economy Group

We have joined the Forest Economy Group, which is part of the Global Future Council, a sub-organization under the World Economic Forum (WEF). This group focuses on the supply of forest-based products as an industry, as well as the restoration of landscapes*², contributions to soil and water quality, habitat connectivity, and the bioeconomy. Through collective discussions among various stakeholders, the group aims to define the role of forestry in landscape restoration and promote new financing models for multifunctional forest landscapes that contribute to both raw material supply and ecosystem services.



*2 A landscape refers to a spatial system in which heterogeneous ecosystems such as plantation forests, natural forests, and grasslands are distributed in a mosaic-like pattern.



5

Risk and Impact Management

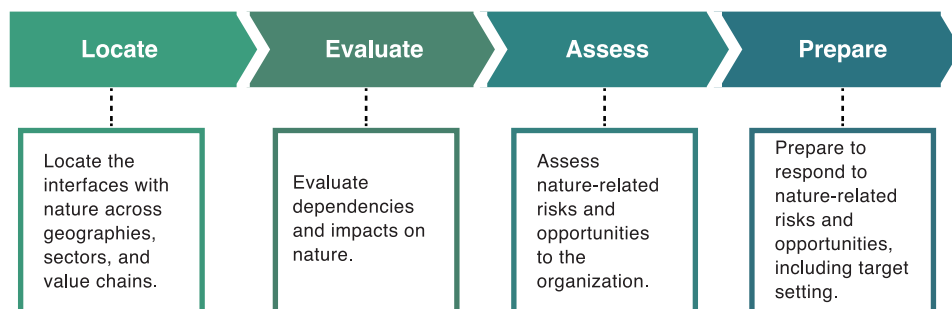
Asian skunk cabbage

Risk and Impact Management

Identification and Assessment of Risks and Impacts

The Oji Group has identified and assessed nature-related risks and impacts in its business activities across the value chain, aligned with the LEAP approach developed by the TNFD. Based on these assessments, appropriate targets have been set as needed. These targets have been incorporated into the [Group's sustainability key performance indicators \(KPIs\)](#), [🔗](#) and progress is reported annually via the website, the integrated report, and the TNFD report.

■ LEAP approach



In addition to assessments aligned with the LEAP approach, we assess nature-related risks using the following processes.

- [Environmental audits](#) [🔗](#)
- [Environmental management system \(EMS\)](#) [🔗](#)
- [Supplier sustainability surveys](#) [🔗](#)
- [Confirmation of traceability](#) [🔗](#)
- [Visits to local suppliers](#) [🔗](#)
- [Human rights due diligence](#) [🔗](#)

New Business Risk Assessments

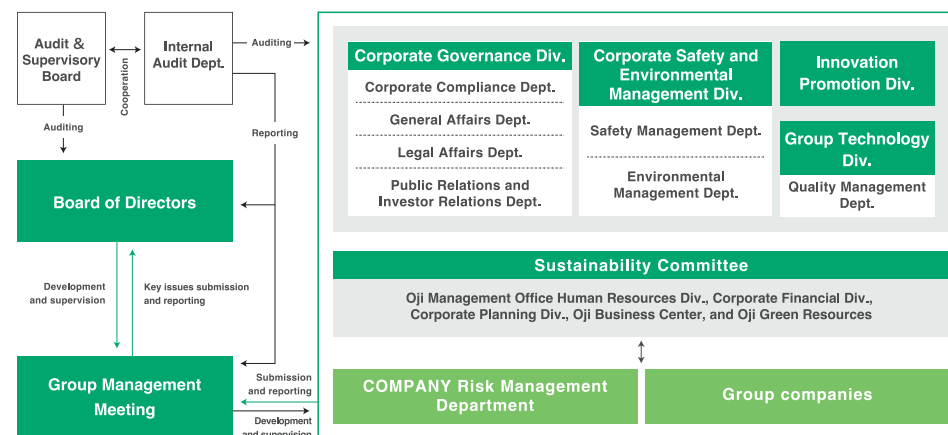
The Oji Group evaluates investment and financing proposals for new businesses and projects not only by examining their economic aspects but also from the perspectives of the environment, society, and corporate governance (ESG). These evaluations are conducted in accordance with the “[Oji Group Corporate Code of Conduct and Oji Group Behavior Standard](#),” [🔗](#) “[Oji Group Sustainability Action Guidelines for Supply Chains](#),” [🔗](#) “[Oji Group Human Rights Policy](#),” [🔗](#) and other criteria.

Process of Risk Management

The Oji Group has established the “Group Risk Management Regulations” under the supervision of the Board of Directors and manages risk accordingly.

The Directors and Corporate Officers of Oji Holdings are responsible for reporting risks in the businesses and divisions under their control to the Group Management Meeting, and important risks are also reported to the Board of Directors. The Oji Holdings Board of Directors reviews the effectiveness of its risk management process annually.

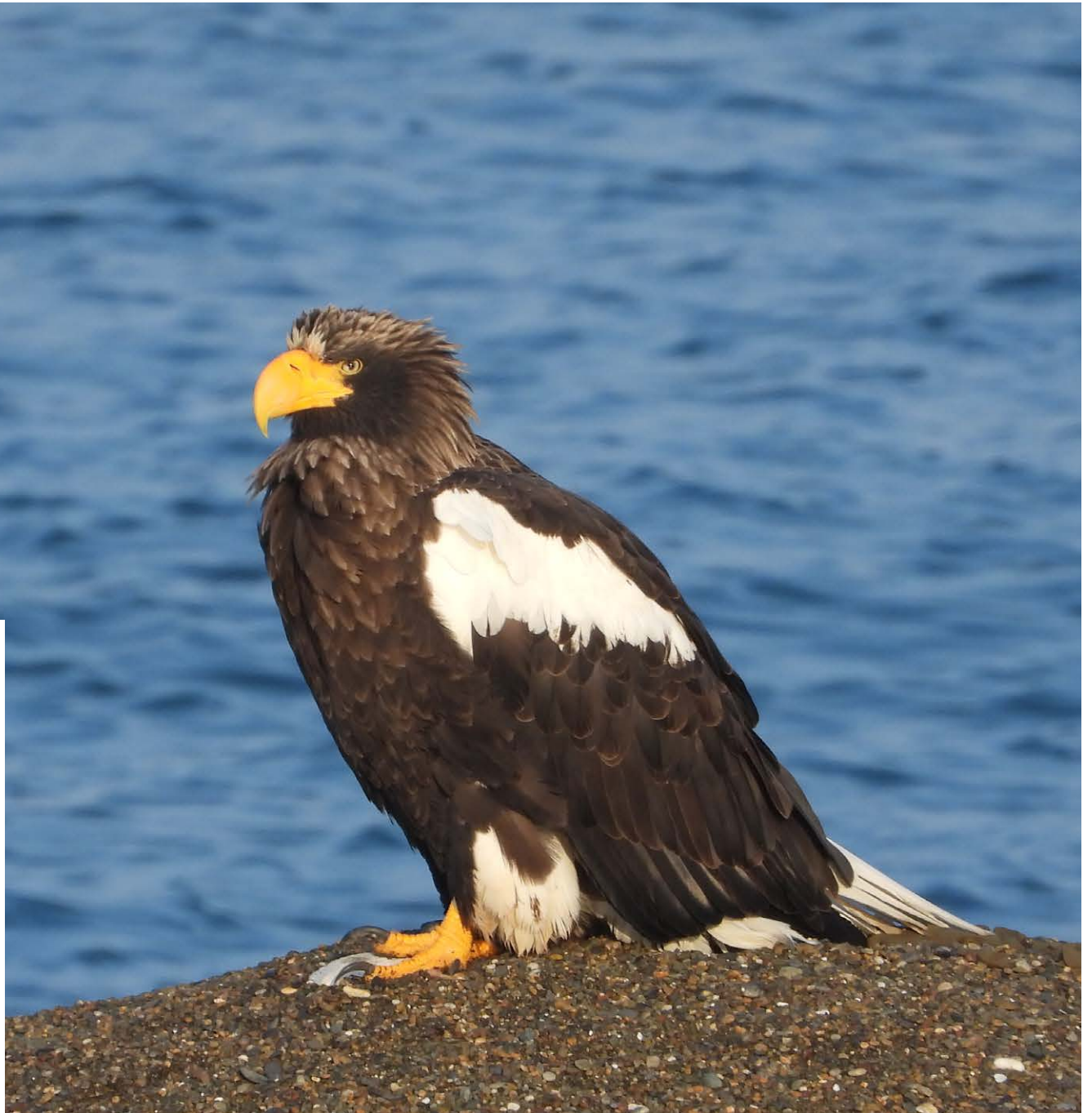
■ Risk management structure



[Details of the risk management are available on our website.](#) [🔗](#)

6

Metrics and Targets



Steller's sea eagle

Metrics and Targets

Metrics and Targets

The Oji Group uses various metrics to appropriately evaluate and manage its nature-related dependencies and impacts, following the TNFD framework. (Details are presented on [page 36](#). [🔗](#)) We have also set targets for material issues. (Details are available on our website for the “[Environmental Action Program 2030](#)” [🔗](#) and the “[Environmental Action Program 2040](#).” [🔗](#)) The metrics and targets for material nature-related issues are presented in the table on the right.

► Action on Climate Change

Forestry depends on climate conditions such as temperature and rainfall patterns. The worsening of climate change poses a risk of destabilizing wood production and procurement. In addition, GHG emissions from manufacturing and other activities have a negative impact and might lead to increased costs due to the introduction or strengthening of carbon taxes and emissions trading systems. On the other hand, afforestation and the conservation and restoration of natural forests contribute to CO₂ absorption and sequestration, generating a positive impact. The Oji Group uses GHG emissions as a metric and works toward target achievement by reducing GHG emissions and promoting CO₂ absorption and sequestration. These initiatives mitigate risks and generate opportunities.

► Contribution to a Nature-Positive World

Forestry depends on various ecosystem services including biomass provisioning, water supply, water flow regulation, and soil quality regulation. The degradation of nature poses a risk of destabilizing wood production and procurement. In addition, forest management has direct impacts on the state of nature in surrounding areas. The Oji Group uses the forest certification rate as a metric and continues sustainable forest management to avoid and reduce negative impacts. Furthermore, we use metrics such as the area of natural forest regeneration and work toward target achievement by regenerating and restoring nature. These initiatives mitigate risks and generate opportunities to enhance the value of natural capital.

► Promotion of a Circular Economy and Reducing Pollutants

Forestry and manufacturing depend on wood-based and water resources. Resource depletion could lead to raw material shortages, production line disruptions, and reduced production efficiency. These issues pose risks such as declining output, rising costs, and declining quality. Business activities have negative impacts such as air and water pollution, waste generation, and water usage, which might lead to loss of stakeholder trust and stricter regulations on emissions and water withdrawal, resulting in increased capital investment and operational costs. Conversely, wood-based resources are sustainable. The Oji Group has opportunities to reduce environmental impact across the value chain, enhance brand value, and create new revenue sources through

sustainable packaging and innovative wood-derived materials. We mitigate risks by reducing environmental impact based on targets that use waste utilization rates and pollutant loads in wastewater and air emissions as metrics, and generate opportunities by expanding our range of eco-friendly products.

► Stakeholder Engagement

The Oji Group is strengthening engagement to evaluate and manage environmental and social impacts across the supply chain.

■ Metrics and targets

	Targets	Metrics	Target value for FY2040	Actual value for FY2024
Action on climate change	Scope 1 and 2: Achieving zero GHG emissions*1	GHG emissions (thousand tCO ₂ e)	0	5,156
	Scope 3: Reducing GHG emissions from chip transport vessels by 40% compared to 2018	GHG emissions (thousand tCO ₂ e)	258	285
Contribution to a nature-positive world	Maintaining no deforestation			
	Achieving a 100% forest certification acquisition rate	Forest certification rate (%)	100	98
	Restoring at least 5,000 ha of natural forests between FY2018 and FY2040	Natural forest regeneration area (ha)	5,000	1,933
	Planting at least 900,000 seedlings of native tree species between FY2018 and FY2040	Number of native tree species planted (thousand seedlings)	900	320
	Formulating at least 6,000 ha of ecological corridor between FY2018 and FY2040	Area of ecological corridors (ha)	6,000	2,260
Promotion of a circular economy and reducing pollutants	Achieving a 99% effective waste utilization rate in Japan	Utilization rate (%)	99	99.4
	Achieving a 95% effective waste utilization rate overseas	Utilization rate (%)	95	90.2
	Reducing total water withdrawal by more than 10% compared to FY2018	Water withdrawal volume (thousand m ³)	666,358	686,547
	Reducing water pollutant impact by 20% compared to FY2018	BOD emissions (t)	6,800	6,116
		COD emissions (t)	30,850	35,200
		SS emissions (t)	13,182	13,205
	Reducing SOx emissions by 50% compared to FY2018	SOx emissions (t)	3,197	5,358
	Reducing NOx emissions by 10% compared to FY2018	NOx emissions (t)	5,872	12,220
Stakeholder engagement	Advancing research and development of renewable eco-friendly paper packaging and biodegradable or biomass-based materials			
	Conducting supplier human rights and environmental due diligence at least once per year			

*1 Includes emission offsets through CO₂ absorption and sequestration by forests

Conclusion

The Oji Group has been deepening its nature-positive management and contributing to the realization of a sustainable society by leveraging wood resources and the multifaceted functions of forests. This approach is grounded in our paper manufacturing technology cultivated over more than 150 years since our founding and our sustainable forest management practiced for more than 100 years.

In December 2024, we established the “No Deforestation and No Conversion Commitment,” followed by the “Biodiversity Commitment” in February 2025, clearly demonstrating our strong commitment to continue nature-positive management in alignment with the Kunming-Montreal Global Biodiversity Framework (GBF). Furthermore, in May 2025, we established the “Environmental Action Program 2040” to realize our long-term Environmental Vision 2050, setting specific targets such as reducing GHG emissions, restoring natural forests, planting native tree species, establishing ecological corridors, and implementing human rights and environmental due diligence.

CENIBRA, which owns the largest forest within the Group, is steadily progressing toward the nature-related targets set in 2024. In Japan, we are collaborating with various external organizations to quantify the forest ecosystem functions and importance of biodiversity.

In addition, the Oji Group is actively identifying and managing nature-related issues across the entire supply chain. In particular, we conduct multifaceted surveys of chip suppliers who provide wood raw materials, examining aspects such as traceability, forest certification status, illegal logging, and respect for human rights and working conditions. Through annual site visits and continuous dialogue, we are building trust with suppliers and reinforcing our responsible procurement system.

The Oji Group will continue to actively disclose nature-related information, enhance internal systems, and engage in communication with stakeholders to further advance nature-positive management and contribute to the realization of a sustainable society.



Long-tailed tit

8-1 Dependencies and Impacts of the Oji Group

The Oji Group manages dependencies and impacts using the metrics listed in the table below.

Category	Indicators	Interface with Nature (Dependencies/Impacts)	Metrics	Results of FY2024	TNFD Metrics No.*1
Climate change	GHG emissions and absorption	Impacts	Scope 1 emissions	5,791 kt-CO _{2e}	
		Impacts	Scope 2 emissions	1,117 kt-CO _{2e}	
		Impacts	Scope 3 emissions	6,089 kt-CO _{2e}	
		Impacts	Net increment in carbon stocks by forests owned and managed (five-year average)	1,752 kt-CO _{2e}	FP.AX.1.0
		Impacts	Carbon stocks by forests owned and managed	142,017 kt-CO _{2e}	FP.AX.1.0
Land/ freshwater/ ocean-use change	Total spatial footprint	Dependencies/Impacts	Total area of forests owned and managed	635,887 ha	C1.0
		Dependencies/Impacts	Area of production forests	472,093 ha	C1.1, FP.A.1.0
		Dependencies/Impacts	Area of conservation forests	163,795 ha	C1.1, FP.A24.0
		Impacts	Forest certification ratio of company-owned forests*2	98%	C1.1, FP.A22.0
Pollution/ pollution removal	Pollutants released to soil split by type	Impacts	Amount of pesticides from forestry operations	3,680 t	C2.0
		Impacts	Amount of pesticides classified as highly hazardous by the FAO and WHO	0 t	C2.0
		Impacts	Amount of nitrogen fertilizer used	1,539 t	C2.0
		Impacts	Amount of phosphorus fertilizer used	1,174 t	C2.0
	Wastewater discharged	Impacts	Amount of total water discharged	651,452 kilo-m³	C2.1
		Impacts	Discharged to rivers, lakes, and marshes	298,746 kilo-m³	C2.1
		Impacts	Discharged into oceans	311,015 kilo-m³	C2.1
		Impacts	Discharged into groundwater	23 kilo-m³	C2.1
		Impacts	Discharged into the sewer	41,668 kilo-m³	C2.1
		Impacts	AOX*3	0.08 kg/t-pulp	C2.1
		Impacts	Nitrogen*4	1,002 t	C2.1
		Impacts	Phosphorus*4	158 t	C2.1
		Impacts	COD*4	35,200 t	C2.1
		Impacts	Suspended solids (SS)*4	13,205 t	C2.1
	Waste generation and disposal	Impacts	Non-hazardous waste generated	3,051,538 t	C2.2
		Impacts	Incinerated*5	115,333 t	C2.2
		Impacts	Landfilled	184,244 t	C2.2
		Impacts	Other waste disposal	29,993 t	C2.2
		Impacts	Recycled	73,770 t	C2.2

Category	Indicators	Interface with Nature (Dependencies/ Impacts)	Metrics	Results of FY2024	TNFD Metrics No.*1
Pollution/ pollution removal	Waste generation and disposal	Impacts	Hazardous waste generated	65,420 t	C2.2
		Impacts	Incinerated*5	61,101 t	C2.2
		Impacts	Landfilled	574 t	C2.2
		Impacts	Other waste disposal	622 t	C2.2
		Impacts	Recycled	3,298 t	C2.2
	Plastic pollution	Impacts	Total plastic used*6	34,557 t	C2.3
	Non- GHG air pollutants	Impacts	Soot and dust*4	2,914 t	C2.4
		Impacts	SOx*4	5,358 t	C2.4
		Impacts	NOx*4	12,220 t	C2.4
		Impacts	VOC*7	142 t	C2.4
Impacts		Mercury*8	0.022 t	C2.4	
Resource use and replenishment	Water intake from high water risk areas*9	Dependencies/ Impacts	Water intake and consumption from high water risk areas	2,914 kilo-m³	C3.0
		Dependencies/ Impacts	Water intake from water supply and industrial water	0 kilo-m³	C3.0
		Dependencies/ Impacts	Water intake from rivers	1 kilo-m³	C3.0
		Dependencies/ Impacts	Others	142 kilo-m³	C3.0
		Dependencies/ Impacts	Water consumption from high water risk areas	0 kilo-m³	C3.0
	Quantity of high- risk natural commodities sourced from land/ocean/ freshwater	Dependencies/ Impacts	Wood chip procurement	4,256 kilo-BDT	C3.1, FP.A3.1
		Dependencies/ Impacts	Market pulp procurement	145 kilo-ADT	C3.1, FP.A3.1
		Impacts	FSC™ certified materials, recycled materials, or other controlled materials that meet FSC™ requirements	100%	C3.1, FP.A22.1
		Impacts	Traceability implementation	100%	C3.1, FP.A22.1

*1 Identification codes for the metrics recommended by TNFD.
FP: Forestry and Paper sector, C: Core global metrics, which all organizations should disclose, A: Additional metrics, which are recommended for disclosure in specific sectors or circumstances

*6 Packaging materials only

*2 Overseas: Area ratio in company-owned production forests
Japan: Area ratio in company-owned forests
excluding shared forests

*7 Applicable only to work sites subject to the PRTR Law

*3 Applicable only to Jiangsu Oji Paper, Oji Fibre Solutions, and CENIBRA

*8 Applicable only to Oji Paper, Oji Materia, and Oji F-Text

*4 Applicable only to regulated work sites

*5 Regardless of energy recovery

*9 Areas with Extremely High and High Baseline Water Stress in the AQUEDUCT (4.0) Water Risk Atlas

Past results are available on our website

8-2 Participation in External Initiatives

● [TNFD](#)

Oji Holdings registered as a “TNFD Early Adopter” in January 2024, committing to the early adoption of the disclosure recommendations published by the Taskforce on Nature-related Financial Disclosures (TNFD). In September 2024, we released the “TNFD Report 2024.”

● [ISFC](#)

Oji Holdings joined the International Sustainable Forestry Coalition (ISFC), established in September 2023 to address global social challenges, as a founding member. (Details are provided on [page 30](#).)

● [CGC—Nature on the Balance Sheet Sponsorship Program](#)

Oji Holdings is a supporting member of the CGC—Nature on the Balance Sheet Sponsored Program, established primarily by the University of Tokyo Center for Global Commons (CGC) to integrate natural capital into financial reporting (details on [page 30](#)).

● [Global Future Council](#)

Oji Holdings joined the Forest Economy group of the World Economic Forum (WEF)’s Global Future Council, aiming to contribute to landscape restoration and ecosystem services through forestry, and to promote new financing models for complex forest landscapes (details on [page 30](#)).

● [30by30 Alliance for Biodiversity](#)

Oji Holdings joined the 30by30 Alliance for Biodiversity, a voluntary initiative led by Japan’s Ministry of the Environment and formed by companies, municipalities, and other organizations. The alliance aims to conserve at least 30% of land and sea areas by 2030, as pledged at the G7 Summit in June 2021. Activities include registering members’ owned or managed lands in the global OECM database and expanding and supporting protected areas. The Oji Group’s Koyagauchi Forest was registered as an OECM in August 2024.

● [CDP](#)

In 2025, Oji Holdings received the highest rating of “A” from the international NGO CDP in the categories of Forests (Timber) and Water Security, in recognition of its sustainable forest management and water resource stewardship.

● [Japan Water Forum](#)

Oji Holdings supports the mission of the Japan Water Forum (JWF), an NPO that collaborates with diverse stakeholders in Japan and internationally, including UN organizations, international organizations, development banks, national and municipal governments, private companies, researchers, and NGOs. The company has been a member of the forum since its establishment in 2004.

● [CLOMA](#)

Oji Holdings is a founding member of the Clean Ocean Material Alliance (CLOMA), which promotes cross-industry collaboration to address marine plastic pollution and reduce ocean-bound plastic waste.

● [TCFD](#)

Oji Holdings announced its support for the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD) in December 2020, and has since been working to disclose climate-related information in line with the recommendations.

● [Japan Climate Initiative](#)

In December 2022, Oji Holdings joined the Japan Climate Initiative, which was established to strengthen the dissemination of information and exchange of opinions among companies, local governments, NGOs, and others actively working to address climate change.

● [GX League](#)

Oji Holdings joined the GX League, which began full-scale activities in May 2023. The League is a forum for companies endeavoring to achieve carbon neutrality to discuss and carry out the transformation of the entire socioeconomic system (the green transformation) in cooperation with the Japanese Government, universities, and financial institutions.

● [United Nations Global Compact](#)









Oji Holdings is a signatory to the United Nations Global Compact and supports its Ten Principles regarding human rights, labor, the environment, and anti-corruption. The Oji Group works to implement them in its daily business activities.

● [Keidanren Nature Conservation Council](#)

Oji Holdings endorses the Keidanren Declaration for Biodiversity and Guideline and participates as a standing committee member (vice-chairperson and committee member) of the Keidanren Nature Conservation Council. As part of this role, the Oji Group is committed to the conservation and restoration of natural capital, including biodiversity and ecosystems, across its Group companies and supply chain.

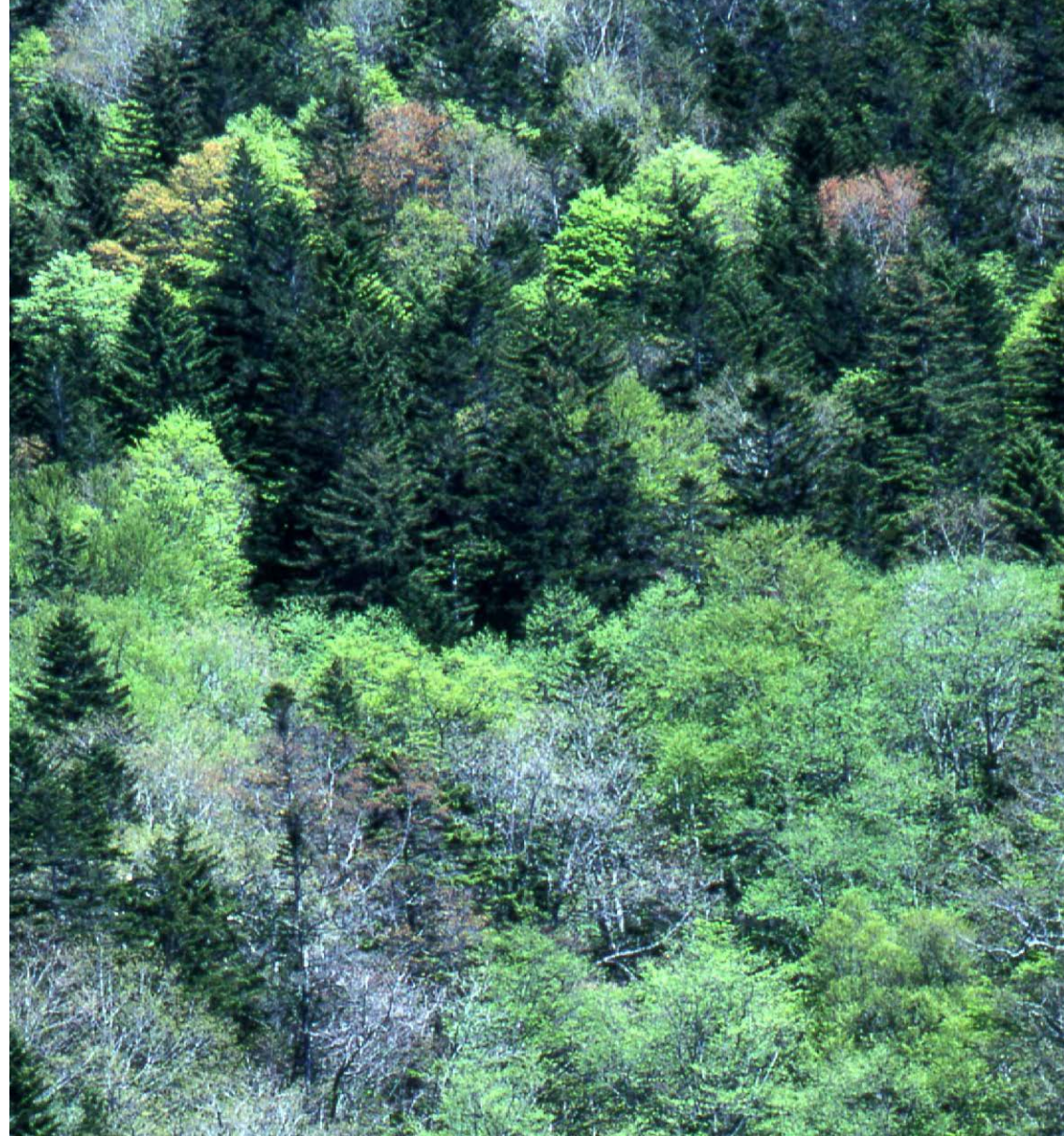
8-3 GRI101 Biodiversity Content Index

Oji Holdings has reported the information cited in this GRI content index for the period from April 1, 2024, to March 31, 2025, with reference to the Global Reporting Initiative (GRI) Topic Standard “GRI 101: Biodiversity 2024.”

GRI101 Biodiversity	Corresponding pages
101-1 Policies to halt and reverse biodiversity loss	Fundamental Approach and Commitment to Natural Capital 4 
	Transition Plan (1) Approach 27 
	Transition Plan (2) Action Targets 28 
	Metrics and Targets 34 
101-2 Management of biodiversity impacts	Governance 6 
	(1) Forests of CENIBRA (Brazil) 12 
	Risk and Impact Management 31 
	Participation in External Initiatives 37 
101-3 Access and benefit-sharing	—
101-4 Identification of biodiversity impacts	Identification of Interfaces with Nature 10 
	(3) Suppliers 24 
101-5 Locations with biodiversity impacts	Identification of Interfaces with Nature 10 
	(1) Forests of CENIBRA (Brazil) 12 
	(3) Suppliers 24 
101-6 Direct drivers of biodiversity loss	(1) Forests of CENIBRA (Brazil) 12 
	Dependencies and Impacts of the Oji Group 36 
101-7 Changes to the state of biodiversity	(1) Forests of CENIBRA (Brazil) 12 
101-8 Ecosystem services	(1) Forests of CENIBRA (Brazil) 12 



Brown-eared bulbul



Minamifurano, Hokkaido