

# Biodiversity

## Basic Policy

Recognizing that natural capital and biodiversity are foundational for realizing a sustainable society, the JFE Group has endorsed the Declaration of Biodiversity by Keidanren and Action Policy and conducts business in harmony with nature across the world. We particularly recognize the preservation of biodiversity as a key challenge and conduct assessments to minimize the ecological impact associated with our business activities. Our initiatives include cooperating with the community to monitor biodiversity and carry out preservation activities around the steelworks, the key facilities for our business, and in surrounding areas. We are also involved in developing iron and steelmaking slag products that can help restore the marine environment. Furthermore, beyond our business operations, we launched a joint research program with a local government and conduct environmental education for local communities.

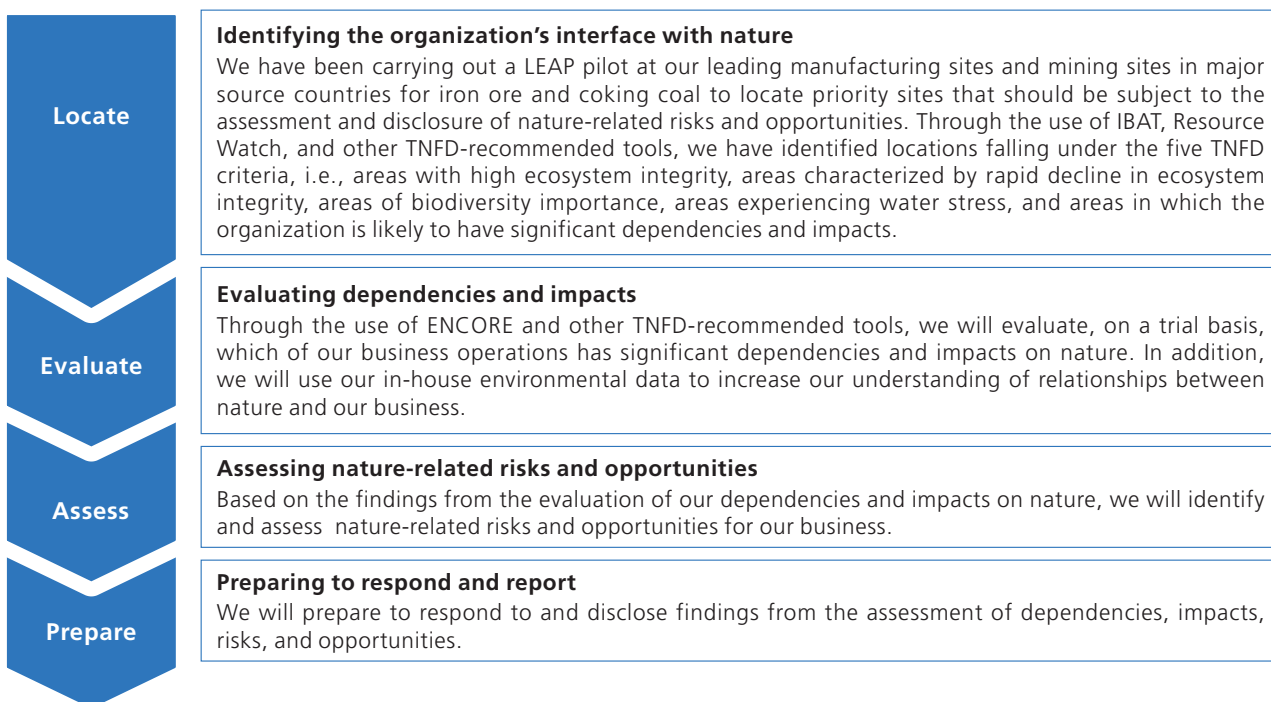
▶ [Declaration of Biodiversity by Keidanren and Action Policy \(Revised Edition\)](https://www.keidanren.or.jp/en/policy/2018/084.html) (https://www.keidanren.or.jp/en/policy/2018/084.html)

## Initiatives

### Risk and Opportunity Assessment in Line with the LEAP Approach

The JFE Group began pilot testing the LEAP approach in line with the recommendations of the Taskforce on Nature-related Financial Decisions (TNFD), starting with JFE Steel’s leading manufacturing sites and its upstream operations at external mining sites in major source countries for iron ore and coking coal. We will increase our understanding of relationships between nature and the Group toward the disclosure of material risks and opportunities in accordance with the TNFD framework.

#### ■ Progress in pilot LEAP assessment



## Initiatives to Preserve Biodiversity



### Environmental Impact Assessment

To minimize the ecological impact of our business activities on surrounding areas, we are monitoring biodiversity around all of our business sites and planting trees while also preserving rare species in the compound. An environmental impact assessment is conducted in accordance with laws and regulations before launching construction of a new manufacturing site or business. We assess the biodiversity of the surrounding areas as well as our premises to fully understand the situation and to implement the necessary measures for preserving the ecosystem.

### Replanted a Rare Species of Orchid Found at a Planned Construction Site

Plant No. 1 in the JFE Ohgishima Thermal Power Plant, an aging facility, was renovated and resumed operations in 2019. Before this construction, we conducted an environmental prediction and evaluation for the renovation, in accordance with the Environmental Impact Assessment Act and Electricity Business Act. As a result, the Kugenuma orchid, a plant listed in Japan's Ministry of Environment's fourth version of the Red List as an endangered species (Threatened II- Vulnerable, VU), was discovered at the planned construction site for power generation facilities. To preserve the orchids, we replanted them in a different location of the site that had a similar environment.



A Kugenuma orchid discovered at the planned construction site for the JFE Ohgishima Thermal Power Plant

## Contributing to Biodiversity and the Creation of an Attractive Seaside Town by Utilizing Steel Slag Products (Partnership Agreement with Yokohama City)

Silty sediment (sludge containing large amounts of organic matter) piles up at the ocean bed along the seaside frontage of Yamashita Park in Yokohama City, Kanagawa Prefecture, and significantly deteriorates water quality in summer. As a result, the ocean's ability to function as a spawning ground or environment for nurturing organisms has been lost. In a joint research project with Yokohama City, JFE Steel is restoring the intrinsic ability of the waters to purify seawater with the help of marine organisms by using carbonated steel slag products such as Marine Block™ to form shorelines as a base for the adhesion of organisms and assist in improving the marine environment. Immediately after an experiment, we observed an increase in the presence of marine organisms such as starfish and sea cucumbers around the area, and the populations continuing to grow. Moreover, we estimated that 8,400 kl of seawater (equivalent to seventeen 25-meter swimming pools) is filtered per day by filter-feeding marine creatures such as bivalves and sea squirt. We also estimated their impact on the removal of COD\*<sup>1</sup> and the reduction of CO<sub>2</sub> in comparison to results obtained through water purification at sewage treatment plants.

The findings from the research project were presented at many exhibits and other events, helping to raise local awareness of environmental protection. This public-private research project for improving the marine environment has earned public recognition, with Yokohama City and JFE Steel jointly receiving the FY2021 Environmental Award (Group-2) of the Japan Society of Civil Engineering\*<sup>2</sup>. In September 2022, JFE Steel won the Minister of Land, Infrastructure, Transport and Tourism Award of the 5th Eco Pro Awards\*<sup>3</sup>, sponsored by the Sustainable Management Promotion Organization, a general incorporated association.

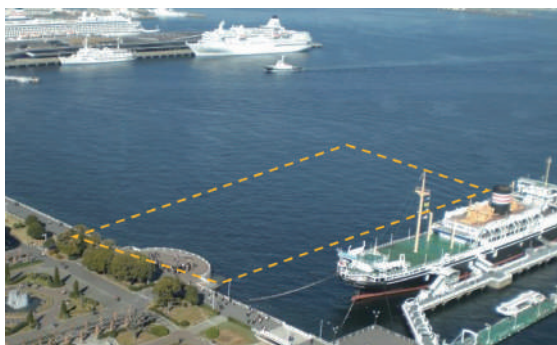
\*1 COD stands for chemical oxygen demand, an indicator for water pollution in seas, oceans, lakes, and ponds. It represents the amount of oxygen (mg/l) consumed when pollutants present in water, such as organic matter, are oxidized.

\*2 The Japan Society of Civil Engineering Award is a prestigious award with a history of over 90 years. The Environmental Award (Group-2) is given to an innovative project that has contributed to any combination of environmental preservation, improvement, and creation activities by developing or operating civil engineering technology or systems.

\*3 The award is given to goods, services, technology, solutions, or business models with specific and outstanding eco-friendly attributes that are widely recognized by businesses, consumers, investors, and market players in the Japanese market.

▶ **FY2021 Environmental Award of the Japan Society of Civil Engineering** (<https://www.jsce-int.org/node/780>)

▶ **The 5th Eco Pro Award (Japanese only)** ([https://sumpo.or.jp/seminar/awards/5th\\_eco-pro\\_award\\_results.html](https://sumpo.or.jp/seminar/awards/5th_eco-pro_award_results.html))



The dotted line indicates the area in which slag products are being used at Yokohama Bay (photo taken by Yokohama City)



Colony of sea squirts on Frontier Rock™



Marine Block™ covered by marine bivalves (Yokohama Bay area)

## Advancing Biodiversity Verification of Steel Slag Products in Collaboration with Venture Businesses

JFE Steel keeps a water tank containing the coral-covered steel slag product Marine Block™ at the exhibition area at the reception of the head office, offering visitors the opportunity to enjoy watching coral and tropical fish while learning about our initiative to preserve the ecosystem using steel slag products. We also intend to conduct experiments inside the tank. Innoqua Inc.\* is providing technical support for the exhibition, which has been featured by several newspapers and TV programs as an example of business collaboration in the field of the environment.

\*A venture company engaged in the development of systems for managing and nurturing corals and fish by combining its aquarist know-how with IoT and AI.



Healthy coral growth on Marine Block™ inside the water tank



## Firefly Festival

JFE Steel has opened its Environment Pond at the Chita Works to the community for a firefly viewing festival every year since 2014. Children at the event have the opportunity to release fireflies. The Company is nurturing an environment that preserves the ecosystem together with the local community by maintaining the watering holes and surrounding environment within the steelworks site and these firefly viewing events.



Releasing firefly larvae



Stream within the Chita Works site where fireflies are released



Firefly viewing party

## The Chita Works Certified as an Aichi Biodiversity Company

In November 2022, our Chita Works was recognized as a certified enterprise under the Aichi Biodiversity Company Certification Program in its first term launched by Aichi Prefecture based on the Aichi Biodiversity Strategy 2030. The program is intended to encourage more businesses in the prefecture to play a pivotal role in preserving local biodiversity by certifying those that have implemented outstanding initiatives to do so.

The Chita Works is working with academia and the public sector, including the local community and nursery schools and kindergartens, to release firefly larvae in the stream running through the site and help them gain a foothold, apart from holding firefly viewing festivals for local residents. Since FY2022, the Chita Works has also exchanged information about the migration of the chestnut tiger butterfly, a species that travels more than 2,000 kilometers across Japan, with municipalities on the Chita Peninsula in Aichi Prefecture. The compound of the Chita Works is filled with thoroughwort and other plants to make it green for the butterflies. The works will continue to take on more initiatives for biodiversity preservation while strengthening its cooperation with the local community.



**EN JFE Engineering**

## Initiatives in Relation to Construction Works

For large-scale construction or construction work carried out near watersheds or mountainsides, customers and/or the relevant authorities may conduct preliminary investigations depending on the importance of preserving the surrounding environment. Various preservation conditions may then be required, including the protection of living creatures.

JFE Engineering respects the proposed conditions and thoughtfully considers biodiversity preservation by keeping the impact of construction works at a minimum. For example, the company may propose a construction method that minimizes the impact of noise or drainage pollution. For its steelworks, the status of biodiversity on its premises and in surrounding areas is checked, and necessary measures are taken to ensure preservation.

## Biotope for Children's Learning Experience

JFE Engineering has conducted some renovation work at the JFE Dragonfly Path in the Tsurumi Works, and since 2009 it has been inviting children in the community to learn about the ecosystem at a biotope, Dragonfly Pond, located along this path. In 2022, the JFE Dragonfly Path Fan Club, a group mainly composed of neighborhood residents, organized a research event that involved capturing dragonflies in order to learn about their ecology and the local environment.

Furthermore, JFE Engineering has been a co-sponsor of the How Far Do Dragonflies Fly since FY2020, with the aim of improving the quality of green spaces in the Keihin coastal areas and contributing to biodiversity. The forum brings together companies, residents, governments, and experts and conducts research activities such as capturing dragonflies that fly in 15 green spaces and biotopes scattered throughout the Keihin Coastal Area and inland areas, tagging them, releasing them, and tracking their movements. The JFE Dragonfly Path also serves as one of the research sites. This forum celebrated its 20th anniversary in 2022, and JFE participated in a panel discussion at the commemorative event at Yokohama City Hall and exchanged opinions with other companies.



Dragonfly Pond serving as biotope



The event celebrating the 20th anniversary of the How Far Do Dragonflies Fly Forum



## Participation in Kanagawa Prefecture's Reforestation Partner Program

In March 2023, the JFE Engineering Group's J&T Recycling Corporation expressed its support for the Kanagawa Reforestation 50 Year Plan and signed a memorandum of understanding with Kanagawa Prefecture on the Reforestation Partner Program\*, an initiative launched by the prefecture.

The company's intent is to use the program as part of its environmental protection and harmony activities while supporting the prefecture's vision. Under the partnership, the company's employees volunteer to help thin trees and take part in other efforts for conserving forests, a valuable source of water for future generations. In May 2023, 18 employees who joined the company in April helped prune trees at the Municipal Forest for the 21st Century located in Ashigara, Kanagawa Prefecture, and learned firsthand the importance of environmental preservation and volunteering.

The Reforestation Partner Program grants naming rights to participants for parts of the prefecture-owned forests, one of which is now called the J&T Kankyo Miracle Forest (with the word "miracle" expressed in kanji, meaning the "future is coming"). J&T Recycling Corporation is constantly enhancing its ESG initiatives to improve the environment.



New employees pruned trees in a volunteer activity



J&T Kankyo Miracle Forest



Valuation report on CO<sub>2</sub> absorption by the forest

\*For details about the Reforestation Partner Program, please refer to:

▶ [Website for Kanagawa Prefecture \(Japanese Only\)](https://www.pref.kanagawa.jp/docs/pb5/partner.html) (https://www.pref.kanagawa.jp/docs/pb5/partner.html)

## Endorsing and Participating in External Initiatives

As a member of the Keidanren Committee on Nature Conservation, the JFE Group endorses the Declaration of Biodiversity by Keidanren and Action Policy and actively engages in the conservation of nature and biodiversity. In addition, the Group took part in the Business for GBF Project, launched by the Ministry of the Environment and Keidanren Committee on Nature Conservation. JFE Steel's steel slag product was selected by the Ministry and Keidanren and introduced as an example of an initiative that contributes to the conservation of biodiversity. Going forward, we will deepen our understanding of and contribute to the Post-2020 Global Biodiversity Framework and other global initiatives committed to preserving nature and biodiversity.

For further details on external initiatives, please refer to:

▶ [Business for GBF Project, Ministry of the Environment](https://www.biodic.go.jp/biodiversity/private_participation/business/en/) (https://www.biodic.go.jp/biodiversity/private\_participation/business/en/)

## Products and Technologies (Preserving Biodiversity)

The JFE Group endorses and participates in the Challenge Zero initiative that is being jointly sponsored by Keidanren and the Japanese government. And we are collaborating with Yokohama City on a project that uses steel slag to improve the marine environment while also developing various products aimed at conserving biodiversity.

For more on products and technologies related to environmental protection, please refer to the following information.

▶ [Development and Provision of Eco-friendly Processes and Products](#) (P.108)

▶ [Challenge Zero](https://www.challenge-zero.jp/en/member/34) (https://www.challenge-zero.jp/en/member/34)