

Environment

Preservation of Marine Environment and Biodiversity

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- Dealing with Effluents and Waste from Ships
- Preventing the Transfer of Invasive Aquatic Species
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The NYK Group, which positions oceangoing shipping as one of its core businesses, recognizes its responsibility to protect the oceans and their inhabitants. Committed to environmental stewardship, the Group has identified “Preservation of Marine Environment and Biodiversity” as a key focus within its “NYK Group Environmental Vision,” and carries out related activities under the “NYK Group Environmental Policy.”

In December 2023, the Group participated in the Taskforce on Nature-related Financial Disclosures (TNFD) Forum, and in January 2024, the Group participated in the TNFD Early Adopters Declaration. In October 2024, we announced the “Nature Positive^{*1} Declaration,” and in November of the same year, we joined the “30by30 Alliance for Biodiversity^{*2},” actively promoting initiatives aimed at achieving Nature Positive.

Furthermore, in February 2025, the Group released the “NYK Group TNFD Report 2024 -A Passion for Planetary Wellbeing-” (“TNFD Report”). Based on the TNFD recommendations, this report focuses on the ocean going shipping business and adopts the TNFD-advocated LEAP approach^{*3} to assess nature-related issues. The report explains each of the disclosure items recommended by the TNFD, including governance, strategy, risk & impact management, and metrics & targets. Notably, the strategy section features a “priority area analysis” that all the ocean areas navigated by the Group’s vessels. By overlaying vessel location data from the past year with 16 indicators related to natural capital, the Group identifies sea areas that warrant special attention in the Group’s business activities. Additionally, as part of its “Giving Back to the Oceans” initiative, the Group introduces unique measures that contribute to the protection of natural capital.

The Group will continue to strive for the sustainable enhancement of corporate value by balancing corporate growth with the conservation of natural capital.

^{*1} Nature positive: Halting and reversing biodiversity loss to put nature on a path to recovery.

^{*2} 30 by 30 Alliance for Biodiversity: To achieve the 30by30 target, which aims to effectively conserve at least 30% of the land and sea as healthy ecosystems by 2030, Japan will expand the current protected areas (approximately 20% of land areas and 13% of sea areas) and promote efforts to certify areas that have been conserved by the private sector and others as OECMs. In addition, the 30by30 Alliance for Biodiversity was launched by a group of voluntary companies, local governments, and organizations to promote efforts to certify areas that have been conserved by the private sector as OECMs, as well as to expand the current protected areas (approximately 20% of land areas and 13% of sea areas) in Japan.

^{*3} LEAP Approach: An integrated methodology developed by TNFD for systematically assessing nature-related risks and opportunities. It consists of four phases: “Locate” (identify interface with nature), “Evaluate” (assess dependencies and impacts on nature), “Assess” (evaluate material risks and opportunities), and “Prepare” (prepare response and reporting).

Organization

Please see “Environmental Management” and TNFD report for the governance structure of environment-related issues, including marine environment and biodiversity conservation.

For more information, click on the link below

P.030 Environmental Management

Link For more information, click on the link below.

▶ **NYK Group TNFD Report 2024 -A Passion for Planetary Wellbeing-**
<https://www.nyk.com/english/sustainability/pdf/environment017en.pdf>

Strategies and Risk Management

Relationship between the NYK Group and Biodiversity

The NYK Group is aware of potential risks to biodiversity throughout the entire lifecycle of a vessel—from procurement to operation and disposal—and is working to prevent marine pollution and manage biodiversity-related risks by implementing measures such as adopting environmentally responsible technologies and promoting sustainable ship recycling practices.

The Group recognizes the importance of assessing nature-related risks and opportunities, as well as understanding how these may affect its business strategy and performance. In its TNFD Report, the Group has identified and disclosed nature-related risks and opportunities in its ocean going shipping business that are considered moderate or greater in magnitude. While risks and opportunities are closely linked, the Group has focused primarily on disclosing risks, including only notable opportunities. Additionally, the assumed timeframes for risk realization are set as medium-term (2030) and long-term (2050).

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■ Key Nature-Related Risks and Opportunities

Risk Category	Nature-Related Dependencies and Impacts	Business Impact	Key Financial Impacts, etc.	Degree of Risk	Time Frame		Key Measures	
					Medium Term	Long Term		
Physical Risks	Acute	Dependencies Climate regulation, Storm mitigation, Rainfall pattern regulation	Frequent and severe abnormal weather and sea conditions could impact ship operations, cause damage to and loss of cargo, and damage port infrastructure.	Expenses Increased hours of operation, higher insurance premiums, etc. Reputation Damage to reputation due to cargo that is damaged or lost overboard	Medium	○	○	<ul style="list-style-type: none"> •Formulation of business continuity plan (BCP) •Optimal shipping route selection using the Group's proprietary ship management system •Implementation of training for responding to serious accidents •Real-time updates of ships' operational status
	Chronic	Dependencies Climate regulation	Long-term and chronic changes in ocean conditions stemming from climate change could lead to the deterioration of port environments and restrictions on their use, as well as changes in cargo supply and demand locations.	Expenses Increased hours of operation Earnings Changes in the movement of cargo due to changes in supply and demand locations	Medium		○	
		Dependencies Water purification Impacts Climate change, Water pollution	Rising seawater temperatures and marine eutrophication could lead to the damage of onboard equipment at a greater frequency and an increase in the number of organisms that attach to ship hulls.	Expenses Increased ship maintenance costs	Medium		○	<ul style="list-style-type: none"> •Proper management of organisms attached to ship hulls, application of anti-fouling paints on ship bottoms, etc. •Collection of the latest information regarding international and local regulations and ensuring compliance •Participation in river restoration projects in the Philippines
		Dependencies Water supply, Water flow regulation, Climate regulation	Water shortages could impact ship operations in canals.	Expenses Increased hours of operation	Medium	○		•Engage with government agencies that manage canals
	Dependencies Climate regulation Impacts Climate change, Ecosystem disturbances	Changes in the habitats of large marine organisms could pose an increased risk of collisions.	Expenses Increased hours of operation Reputation Damage to reputation if not addressed	Medium		○	<ul style="list-style-type: none"> •Collection of information regarding key habitats for large marine organisms •Participation in a vessel speed reduction program 	
Transition Risks	Regulations	Impacts Usage of marine areas, Water pollution, Air pollution, Ecosystem disturbances, Introduction of invasive alien species	The expansion of protected marine areas and areas deemed to be important for biodiversity could lead to stricter navigational rules, such as designating areas as off-limits and imposing speed restrictions.	Expenses Increased hours of operations and expenses to address changes	Major	○		<ul style="list-style-type: none"> •Collection of the most up-to-date information on protected areas, etc. •Participation in the IMO's Marine Environment Protection Committee (MEPC) •Identification of sensitive locations and assessment of risks •Implementation of safety management in line with the NYK Group's proprietary standards
		Stricter international, national, and regional regulations could be adopted, including: <ul style="list-style-type: none"> •Regulations for the management of biological fouling on ship hulls •The International Convention for the Control and Management of Ships' Ballast Water and Sediments •The International Convention on the Control of Harmful Anti-fouling Systems on Ships •Guidelines for the Reduction of Underwater Radiated Noise •The Ship Recycling Convention •Regulations for ship scrubbers •Regulations for invasive alien species, etc. 	Expenses Increased hours of operations and expenses to address changes Earnings Market instability due to changes in ship supply and demand	Major	○		<ul style="list-style-type: none"> •Implementation of measures based on international, national, and regional regulations (e.g., proper management of ballast water, speed reduction in designated waters, management of organisms attached to a ship's hull, etc.) •Participation in the IMO's regulation formulation process •Management of ship dismantling in advance of the Ship Recycling Convention's coming into force. 	
			Expenses/Reputation Fines and sanctions if not addressed	Medium	○			

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Transition Risks	Regulations/Market/Reputation Impacts Climate change, Air pollution	Stricter regulations could lead to a surge in demand for sustainable fuels, rising prices, and heightened competition for resources.	Expenses Increased fuel costs and operational expenses Expenses/Reputation Fines and damage to reputation if not addressed	Medium	○		<ul style="list-style-type: none"> Dispersal of fuel procurement areas and reduction of fuel consumption Research and development into the use of alternative fuels
	Technology Impacts Climate change, Air pollution, Ecosystem disturbances	Development and ordering of ships with a lower environmental impact could lead to higher costs.	Expenses Increased R&D expenses and ship procurement costs	Medium	○		<ul style="list-style-type: none"> Research and development into the use of alternative fuels Increase in the number of ships built that utilize alternative fuels Adoption of the Group's proprietary bilge system and other technologies to prevent marine pollution
	Reputation Impacts Land and marine area usage, Water pollution, Air pollution	Environmental issues in the supply chain could become apparent, including at the dismantling and fuel procurement stages, leading to stricter regulations.	Reputation Damage to reputation due to social criticism	Medium	○	○	<ul style="list-style-type: none"> Appropriate management during the scrapping stage Development and publication of NYK Group Supplier Code of Conduct Consideration of nature-and human rights-related risks in areas where fuel is procured
	Reputation/Liability for Compensation Impacts Marine area usage, Water pollution	Oil pollution, cargo spills, and other marine accidents could lead to criticism from society and liability for compensation.	Reputation Damage to reputation due to criticism from society and decline in employee morale Expenses Fines, pollution removal costs, damage compensation for delays or inability to transport cargo, and higher insurance premiums	Medium Major	○ ○	○ ○	<ul style="list-style-type: none"> Implementation of assessments in line with the NYK Group's proprietary safety standards Adoption of highly safe hull structures Implementation of safety promotion campaigns
Opportunity Category	Nature-Related Dependencies and Impacts	Business Impact	Key Financial Impacts, etc.	Degree of Opportunity	Time Frame		Key Measures
Business Performance	Impacts Overall	The Group could increase its market competitiveness due to greater customer demand for sustainable transportation services.	Earnings Increased transport share Reputation Increase	Major		○	<ul style="list-style-type: none"> Addressing climate change and other natural capital-related issues by procuring LNG-fueled ships, developing ammonia-fueled ships, and other measures Dissemination of the Group's environment-related information Building relationships with various stakeholders through engagement with governments and participation in a variety of initiatives
	Impacts Overall	Changes in the way financial institutions make investment and lending decisions could improve the Group's fundraising capabilities.	Procurement of capital and funds Increased fundraising capabilities	Medium		○	
	Impacts Overall	There could be structural changes in industries, product supply and demand, etc., accompanying the transition to a nature-positive economy.	Earnings Increased profits due to changes in cargo movement and capturing new business opportunities	Major		○	<ul style="list-style-type: none"> Enhancement of existing businesses and development of new growth businesses based on forecasts of future changes in cargo movement

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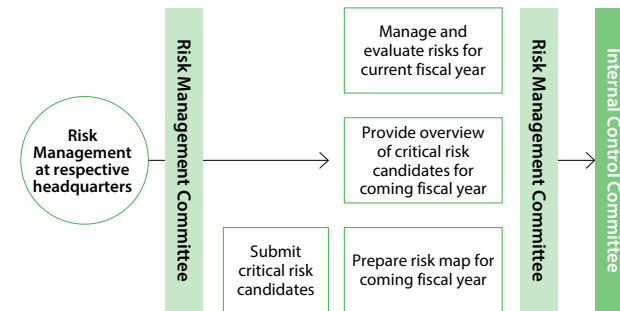
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Risk Management

Nature-related risks are treated as important issues and managed accordingly. In keeping with its risk management policy and rules, the NYK Group convenes meetings of the Risk Management Committee twice a year.

The committee, which is chaired by the president and comprises chief executives assesses and receives reports regarding progress in managing critical risks that could have a significant impact on the Group's business management and reports findings to the Board of Directors.

■ Enterprise Risk Management System



The Group recognizes that one of its core businesses—ocean-going shipping—may pose a risk of marine pollution, either through accidents or the discharge of pollutants. It also acknowledges that oil pollution or other pollutant discharges resulting from maritime accidents can threaten business continuity, not only due to the burden of environmental restoration costs but also because of the potential loss of stakeholder trust.

To address these risks, the Group strictly complies with environmental laws and regulations and strives to prevent

environmental pollution. The Group also has a system in place to deal with major emergencies and accidents.

For more information, click on the link below.

P019 No Growth Without Safety

The NYK Group also manages the environmental impact of pollutants and waste generated by ship operations, as well as the cross-border movement of aquatic species in accordance with international rules.

Initiatives

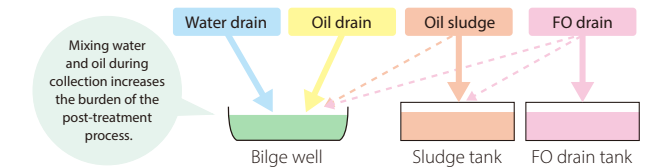
Dealing with Effluents and Waste from Ships

● Lobbying for the establishment of international guidelines for bilge systems

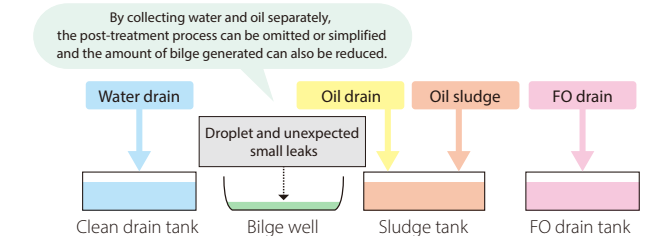
As a result of ship operations, oily bilge water containing a mixture of water, oil, and other liquid accumulate at the bottom of engine rooms, etc. In 1996, NYK developed a system that separates water and oil for collection in distinct streams, thereby enabling the simplification of the bilge post-treatment process. This system has since been implemented across the Group's owned vessels and contributes to a substantial reduction in the amount of bilge generated.

As a company that promotes environmental initiatives in the shipping industry, NYK worked with the Japanese government to expand this concept globally. The Japanese government then proposed it to the International Maritime Organization (IMO), and it was adopted as an international guideline in March 2006.

■ Conventional bilge treatment



■ NYK Standard Bilge System: IBTS (Integrated Bilge Treatment System)



● Prevention of marine pollution caused by human waste

Under Annex IV of the International Convention for the Prevention of Pollution from Ships (MARPOL Convention), ships engaged in international voyages are required to install sewage treatment plants, and the Annex also designates waters where the discharge of untreated sewage is prohibited. However, it was reported to the IMO that the sewage treatment plants installed on ships were not performing to the level stipulated in the convention, raising concerns about a possible negative impact on the marine environment. Consequently, discussions are currently underway to revise the convention and its guidelines.

NYK is a member of the working group of the Japan Ship Technology Research Association, and the company cooperates in collecting data on effluent from sewage treatment plant on the ships the Group operates. The NYK Group also express its opinions at working group meetings. In addition, as a representative of the

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members of the Japanese Shipowners' Association, NYK participates in the Marine Environment Protection Committee (MEPC), which is an IMO committee.

Preventing the Transfer of Invasive Aquatic Species

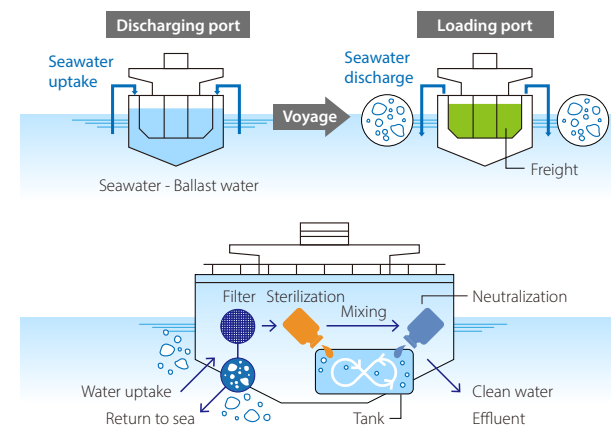
● Preventing the transfer of invasive aquatic species through ballast water

In the international shipping industry, the IMO is taking the lead in creating a framework for addressing biodiversity preservation, just as it has for GHG reduction, and the most focused effort has been on preventing the transfer of in invasive aquatic species associated with the uptake and discharge of ballast water into and from ships. Since the adoption of the "International Convention for the Control and Management of Ships' Ballast Water and Sediments" in February 2004, the NYK Group has been working on the issue of ballast water in anticipation of the convention coming into force.

In September 2017, the convention officially came into force, aiming to prevent the transfer of invasive aquatic species that affect the marine environment, for all ships engaged in international shipping around the world. Under this convention, all ships are required to install a "ballast water management system,"* which is a device that sterilizes aquatic organisms that have entered the ballast water. The NYK Group has systematically installed ballast water management system, completing installation on all its ships in 2024.

* Ballast water management system: Seawater (ballast water) is used in ships to maintain ship strength and stability, but oceangoing vessels transport not only the ballast water but also the aquatic organisms within. When the cargo is unloaded, seawater is injected as ballast water and then discharged when the cargo is loaded. Sterilizing ballast water prevents disruption of the ecosystem.

■ Image of ballast water



At present, the convention is being revised, and as a member of the Japan Ship Technology Research Association, NYK is cooperating various surveys such as the collection of data on ballast water discharge from the ships the Group operates.

● Preventing the transfer of in invasive aquatic species due to biofouling

To prevent the impact on ecosystems caused by the transfer of invasive aquatic species accumulated on ship hulls, the Guidelines for the control and management of ships' biofouling to minimize the transfer of invasive aquatic species was approved for the first time at the 62nd Marine Environment Protection Committee (MEPC 62) held by the IMO in 2011. Since then, reviews have been carried out to improve practicality and effectiveness, and the NYK Group has expressed our opinions as a member of the working group of the Japan Ship Technology Research Association, and have participated in the MEPC as a representative of the members

of the Japanese Shipowners' Association. At MEPC 80, held in July 2023, the guidelines were revised to include the frequency of in-water inspections of each part of the hull in accordance with the application of an anti-fouling system (AFS), and the implementation of underwater cleaning* based on the results of these inspections.

Following the approval of the IMO Guidance on in-water cleaning of ships' biofouling at MEPC 83 in April 2025, discussions have begun at IMO on establishing a legally binding framework for biofouling management. As a member of the working group of the Japan Ship Technology Research Association, NYK is actively participating in these rule-making discussions.

* By cleaning and removing aquatic organisms that have attached to the underwater parts of the hull while the ship is docked at the port, the transfer of in invasive aquatic species can be minimized.

Prevention of Adverse Effects from Underwater Radiated Noise and Collisions with Whales

● Management of underwater radiated noise

At MEPC 66 in 2014, the IMO approved the "2014 Guidelines for the Reduction of Underwater Noise from Commercial Shipping to Address Adverse Impacts on Marine Life" for the first time to reduce underwater noise and address the adverse impacts on marine life. Since then, reviews have been carried out to improve practicality and effectiveness, and NYK has expressed its opinions as a member of the working group of the Japan Ship Technology Research Association, and cooperated with the collection of data on underwater noise. At MEPC 80, held in July 2023, revised guidelines were adopted, including a recommendation to prepare a plan for management of underwater radiated noise.

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● Participation in the U.S. West Coast Vessel Speed Reduction Incentive Program

In ocean areas including the coasts of the United States and Canada, vessels are required to reduce speed to avoid collisions with whales. NYK participates in the Protecting Blue Whales and Blue Skies Vessel Speed Reduction (VSR) Incentive Program, which covers the southern and central California coast. This collaborative effort is sponsored by the California Marine Sanctuary Foundation*, among others. In 2025, NYK once again demonstrated its commitment to marine environmental protection by reaching the Sapphire tier, the highest ranking, for a third consecutive year.

For more information, click on the link below.

P.064 [Prevention of Air Pollution](#)

Forest Maintenance and Conservation Activities

In April 2022, the NYK Group concluded a forest development partnership agreement with Gotemba City in Shizuoka Prefecture, and in May 2024, the Group launched "Yu no Mori" as a reforestation project. The Group aims to restore the functions of forests by keeping them rich in biodiversity through mixed forestation based on the idea that "rich forests nurture rich oceans."

For more information, click on the link below.

P.105 [The Challenge to Solve Social Issues](#)

Co-creation with External Stakeholders

● Efforts to Address Marine Microplastics

In 2020, the NYK Group signed a memorandum of understanding with the Chiba Institute of Technology to use ships to collect and analyze microplastics in oceans around the world in an effort to create a solution to marine plastic pollution, a global environmental issue. Since March 2020, the Group has collected marine microplastic samples annually from the ocean using its vessels, providing approximately 200 samples to date.

For more information, click on the link below.

P.105 [The Challenge to Solve Social Issues](#)

● The River Cleanup Project in the Philippines

NYK supported the river cleanup project initiated by San Miguel Corporation, a major conglomerate in the Philippines, by donating a total of USD 1.5 million over five years, with USD 1.4 million already contributed by fiscal 2024.

The funds were used to purchase and operate excavators for river restoration activities aimed at reducing marine pollution and flood damage.

For more information, click on the link below.

P.105 [The Challenge to Solve Social Issues](#)