Others
The Challenge to Solve Social Issues

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Initiatives

Environmental Preservation

The Group continues to conduct its business in the natural environment and is thus involved in environmental preservation of the marine environment and biodiversity conservation activities. Among these activities is "Giving Back to the Oceans," its marine environment conservation initiative positioned within the "NYK Group ESG Story." Through its activities, the Group collaborates with partnering non-profit organizations and educational institutions seeking to protect the irreplaceable treasures that are our oceans.

● The "Yu no Mori" Reforestation Project

The NYK Group is engaged in the reforestation project "Yu no Mori," aimed at preserving the rich natural environment. In April 2022, the Group concluded a forest development partnership agreement with Gotemba City in Shizuoka Prefecture, and the Group is working closely with the city to develop the forest.

"Yu no Mori" is a project that embodies the Group's commitment to giving back to the ocean by strengthening water source conservation functions through forest creation, thereby purifying the mountains, rivers, and ultimately the sea. Japan's land is approximately 70% forested, but about 40% of these are artificial forests, and some have been left unattended for many years, leading to ecosystem disturbances and problems such as landslides. To address these issues, "Yu no Mori" aims to cultivate mixed forests that support diverse ecosystems, implementing thinning and replanting activities. The Group is committed to continuing this project in partnership with local communities.

"Yu no Mori" trees　　Forest maintenance

● Kishu Minabe Sea Turtle Research Project

Since 2016, NYK has supported the "Kishu Minabe Sea Turtle Research Project" launched by Earthwatch Japan,* a specified non-profit organization. Every July, a group of approximately 20 volunteers comprising the Group employees and local community members participate in a survey to deepen understanding of changes to the natural environment and living things.

Minabe town in Wakayama Prefecture is the largest place on the main island of Japan where loggerhead sea turtles lay their eggs, but now sea turtles are in danger of dying out. Research of the sea turtle's lifestyle has been undertaken since 1990 in Minabe town. In this program, volunteers who work under the guidance of researchers from the Sea Turtle Association of Japan and the Minabe Sea Turtle Research Project (run by a local citizen group) check and assist with attaching identification tags to the loggerhead sea turtles that come ashore at night to lay their eggs, and measuring the length and width of the turtles' shells.

*Kishu Minabe Sea Turtle Research Project:
In Minabe town of Wakayama Prefecture, loggerhead turtles are spotted yearly at Senrinohama Beach and the nearby Iwashirohama and Takahama beaches. However, due to a lack of personnel and other reasons, surveys for individual identification of these turtles have not progressed. With the help of volunteers, this program conducts surveys to count the number of eggs laid throughout a turtle's life with the goal of contributing to preserving the loggerhead turtle and revealing their ecology.

Loggerhead sea turtle　　Volunteering participants

● Visualizing Diversity Using Environmental DNA and Contributing to the Realization of a Nature-Positive Society

The NYK Group is a member of the ANEMONE* Consortium, a network that aims to realize a natural symbiotic society utilizing environmental DNA, and contributes to the expansion of a database by providing seawater samples and to the expansion of the survey areas. Vessels operated by th Group conduct sampling of seawater to gather environmental DNA (DNA originating from living things that exist in the natural environment, such as in water and soil). The samples are then analyzed at Hokkaido University and Tohoku University in Japan, and the analysis results are released on the ANEMONE Database.

Environmental DNA analysis is a revolutionary form of ecological survey that allows researchers to understand the variation and distribution of organisms living in the surrounding waters from as little as a single bucket of water. The aim of visualizing biodiversity is to incorporate this information into economic considerations. The Group will continue to provide its knowledge from a corporate perspective to put the results of this project into practice in society, thereby contributing to the conservation of biodiversity and the realization of a nature-positive society.

* ANEMONE: ANEMONE stands for All Nippon eDNA Monitoring Network, a biodiversity observation network using environmental DNA (eDNA).

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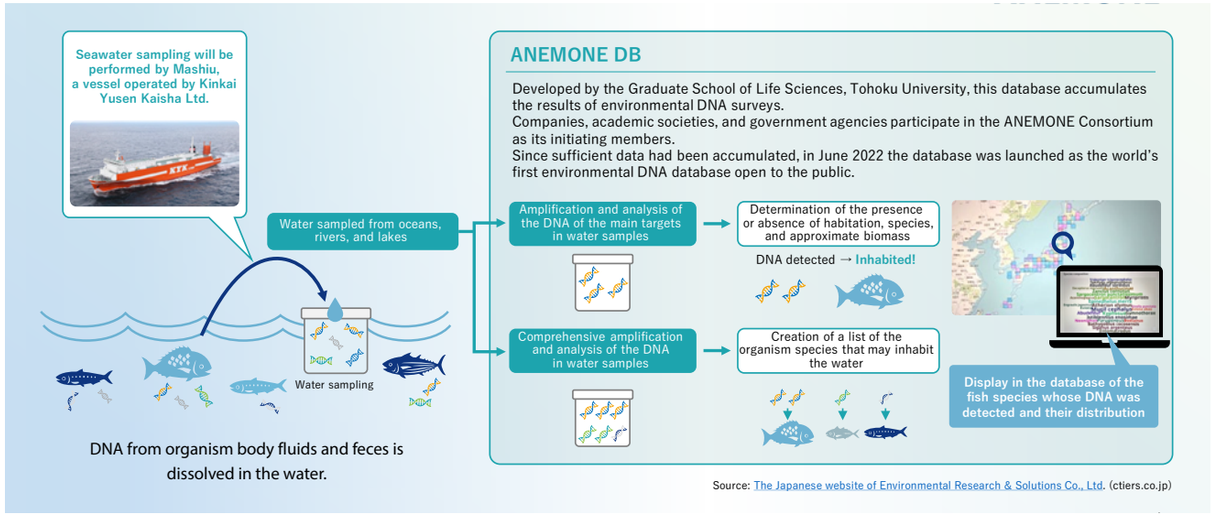
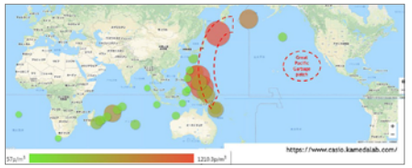
■ Overview of ANEMONE Consortium



● Contribution to the Analysis of Marine Plastics Pollution

Since 2020, NYK and the Chiba Institute of Technology have been working on world-leading marine surveys targeting all ocean areas with an aim to reveal the state of the distribution of mainly marine plastics constituting microplastics. This research targets accessible sea areas around the world. Thus far, the microplastic samples have been collected from more than 120 locations by utilizing the network of vessels held and operated by the NYK Group. Once the samples are analyzed by Kameda Laboratory at the Chiba Institute of Technology, the results are published on a website as the World Marine Plastic Garbage Map.


NYK's Vessel Network


World Marine Plastics Garbage Map

In January 2023, NYK donated a Raman microscope capable of analyzing ultra-fine microplastics to the Chiba Institute of Technology. Using the Raman microscope, the Kameda Laboratory has been able to establish the world's first method of automatically analyzing ultra-fine microplastics. The donation of the microscope has enabled world-leading research to fundamentally solve the problem of marine plastics.

NYK will continue to collect samples on its vessels and expand the range of waters the Company surveys. Moreover, the Company will continue to contribute to the international community by supporting Chiba Institute of Technology's efforts to establish methods for marine surveys focused on ultra-fine microplastics, and by supporting the provision of survey results with actual measurement data that will directly lead to a fundamental solution to the issue of marine plastics.

● Contribution to the Atmosphere Analysis Research of Tohoku University

NYK is participating in a Tohoku University research project to study global greenhouse gas distribution and circulation. For more than 40 years since 1982, sample air has been taken at sea on two container ships shuttling between Japan and Australia, and on another traveling between Japan and North America. Analysis results of the sampled air have already revealed that the northern and southern hemispheres have varying concentrations of CO_2, and also that concentrations fluctuate seasonally and yearly. By adding observation points on the ocean to points on land, NYK has contributed to research in this area.

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● Joint Research to Discover Medicinal Resources from Marine Organisms

NYK and Chuo University launched a joint research initiative to discover novel natural products from marine organisms in 2025. This project seeks to identify previously unknown substances that may have beneficial applications for humanity, including potential new medicinal resources, from marine organisms attached to ship hulls and other surfaces, and to elucidate the effects of those substances. Historically, natural products have played a pivotal role in the development of groundbreaking medicines, akin to the discovery of penicillin, the world's first antibiotic, from mold. There have been past instances where new natural products from marine organisms were discovered to inhibit the proliferation of pathogens responsible for infectious diseases. Going forward, NYK will primarily provide the environment for collecting marine organisms, while Chuo University will handle the collection, exploration of unknown natural products, and their usefulness assessment. Through this collaboration, NYK aims to discover new substances that will serve as a foundation for supporting our healthy and prosperous lives.

● Argo Program: International Science Project

The Argo Program is a project for launching floats (Argo floats) capable of monitoring ocean waters for changes in water temperature, salinity, and pressure. Approximately 3,000 Argo floats are deployed around the world, one for every 300 square kilometers of ocean, to monitor changes in the oceans indicating the effects of climate change. On November 19, 2010, NYK concluded an agreement titled "Agreement on Cooperation in Deployment of Scientific Floats for Global Ocean-Monitoring" with the Japan Agency for Marine-Earth Science and Technology (JAMTEC), a national research organization. For over a decade, the Company has been launching Argo floats, advancing the Argo Program, and contributing to the achievement of the Sustainable Development Goals (SDGs) defined by the UN.

Scientists around the world utilize the measurement results of the Argo floats in their investigations and research. Through summary reports of the UN-established Intergovernmental Panel on Climate Change (IPCC), the knowledge acquired from the plan is utilized in the framework of international global warming countermeasures and the policy decisions governing each country's response to climate change. Recently, in addition to climate change predictions regarding the El Niño phenomenon, the research has also contributed to improving the accuracy of weather reports, which are generally more familiar.

Going forward, NYK will continue to utilize the resources of its owned vessels and shipping routes to launch Argo floats in remote areas that are difficult for related organizations' ships to access.

● Supporting Environmental Preservation in Mikawa Bay

In June 2023, NYK donated 3 million yen to Nishio City in Aichi Prefecture to support the environmental preservation activities in the Mikawa Bay area, where many vessels enter and leave port. The funds mainly went toward activities such as surveys and replanting of seaweed beds* and eelgrass seedlings. Moreover, since 2023, the NYK Group employees have also been participating as volunteers for the annually held eelgrass replanting.

*Seaweed bed: A location where a variety of seaweed grow. Also referred to as the cradles of the seas, they are an important habitat that fulfills the roles of filtering water and providing a place for laying eggs and raising the young of sea creatures.

● Participation in Recycling Activities

NYK has been participating in the collection of empty disposable contact lens cases. The collected cases are recycled and transformed into various products such as ballpoint pens. NYK also utilizes these recycled products as novelties.

Supporting Developing Countries

Utilizing its resources, the NYK Group supports the realization of a society that can provide equal opportunities for education, health, and labor to people in developing countries.

● Transport Assistance for Used School Backpacks

NYK offers free transport assistance via a group company that operates container ships to support "School Backpack Supplies to School Children Program" in Afghanistan. This program is organized by JOICFP (Japanese Organization for International Cooperation in Family Planning) in which the organization donates used school backpacks of Japanese children to the children in Afghanistan.

Many of the school children in Afghanistan walk over 10 kilometers one way along steep mountain paths to attend open-air schools. By carrying textbooks and notebooks in school backpacks, they can safely walk along dangerous mountain paths. Previously, the guardians considered their children as wage workers; however, after observing children commuting to school with school backpacks, they began to become aware of the significance of education. The backpacks are now fundamental symbols of education among people in Afghanistan.

School Backpack Supplies to School Children Program