

## News Release (August 8, 2024)

### **The Wakame Seaweed Field Construction Using Ion Culture Plates project selected for the Project for the creation of blue carbon ecosystems around the Osaka Prefecture Expo site - Toward the Revitalization and Creation of the Rich Osaka Bay -**

TOYO GLASS CO., LTD. (President: Shingo Noguchi, "Toyo Glass"), a consolidated subsidiary of Toyo Seikan Group Holdings, Ltd. (Tokyo 5901; President: Ichio Otsuka), and Fudo Tetra Co., Ltd. (Tokyo 1813; President: Shinya Okuda, "Fudo Tetra"), as a joint venture, have proposed the Wakame Seaweed Field Construction using Ion Culture Plates project (hereinafter referred to as "the Project") to Osaka Prefecture and have been selected for the Project for the creation of blue carbon ecosystems around the Osaka Prefecture Expo site.\*

The Project aims to leverage the experience and expertise of both companies in seaweed field construction using Ion Culture and Tetrapods to contribute to the creation of a blue carbon ecosystem in the marine areas surrounding Expo 2025 in Osaka, Kansai.

\*Project for the creation of blue carbon ecosystems around the Osaka Prefecture Expo site

This project is part of Osaka Prefecture's public solicitation to engage private sector entities working to create seaweed fields along the coastlines of the Osaka Prefecture Expo site's surrounding marine areas. The aim is to create a blue carbon ecosystem in these areas and promote Osaka Bay's initiatives domestically and internationally during the Osaka-Kansai Expo in 2025 under the theme of "Designing Future Society for Our Lives." The selected projects will receive partial financial assistance from Osaka Prefecture.

#### **About Ion Culture (Algae Growth Agent)**

Ion culture, jointly developed by Toyo Glass and Fudo Tetra, is a glass product that has been adjusted in its composition to slowly dissolve components such as divalent iron, silicate, and phosphate ions, which promote the growth of marine plants when in contact with water.

The ion culture plates used in this project are mortar plates with ion culture placed on their surface. They are used for large-scale seaweed cultivation and the construction of seaweed fields in coastal areas. By attaching them to the surfaces of ports and breakwaters, they stimulate the growth of seaweed, contributing to the establishment of a blue carbon ecosystem.



Ion Culture Plates

### Characteristics of Ion Culture Plates:

- Plate shape allows for easy installation, such as attaching to Tetrapods or other structures.
- Release essential components for seaweed and phytoplankton growth for approximately 3 to 10 years.
- Excellent durability and controllable release period.
- Adopted in over 60 fishing ports and breakwaters nationwide.

### **Outline of the Project**

The target marine area is estimated to have high concentrations of nutrients such as nitrogen and phosphorus but relatively low concentrations of iron. The ion culture plates, which release iron, silicate, and other essential nutrients for seaweed growth, will be attached to Tetrapods to promote the early formation of seaweed fields. Additionally, spore bags containing wakame spores, as well as seed threads and parent thalli, will be attached in the vicinity of the ion culture plates to serve as a source of wakame spores.

Installation will begin in December 2024, and after installation, underwater visual inspections will be conducted twice a year to assess the coverage of the seabed by growing seaweed, referred to as the "coverage rate of marine vegetation covering a specific area of the seabed."

### Target Species: Wakame

### Target Area for Seaweed Field Creation and Coverage Ratio Goals

- Area: 150 meters in length x 2 meters in width = 300 square meters
- Coverage Ratio: 25–50% during the spring to summer period



Image of tetrapods with ion culture plates attached



Image of spore bag installation

### **About Toyo Seikan Group Holdings, Ltd.**

Toyo Seikan Group Holdings, Ltd. is a world-class comprehensive packaging manufacturer that delivers a variety of packaging containers using materials such as metal, plastic, paper, and glass. In our Long-Term Management Vision 2050, "The Future, Wrapped for All," we set a goal to go beyond our traditional field of packaging, aiming to become a corporate group that creates new value that changes society. Founded in 1917, Toyo Seikan Group Holdings, Ltd. conducts business on a global scale, with 44 group companies in Japan and 47 overseas, and currently employs a multinational workforce of 20,000 people. For more information, please visit <https://www.tskg-hd.com/en>.

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