Miharu Dam

With the support of so many people and parties involved, Miharu Dam was completed in March 1998 and celebrated its 20th anniversary in 2018.

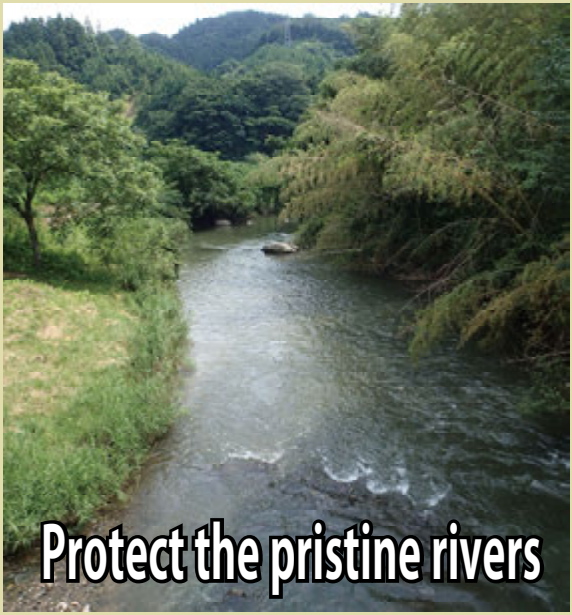
Over the past 23 years, the Miharu Dam has been instrumental in flood damage mitigation along the Otakine River and the Abukuma River, through a total of 35 instances of disaster-prevention operations (flood control).

The Dam has also been contributing to local economies and improving the quality of life of the local residents by providing water supply for agriculture, households, and factories.

The facilities surrounding the Miharu Dam are used by a total of roughly 320,000 people each year, including local residents and tourists. We will continue promoting the utilization of the Miharu Dam and its vicinity for various purposes in cooperation with the local communities.

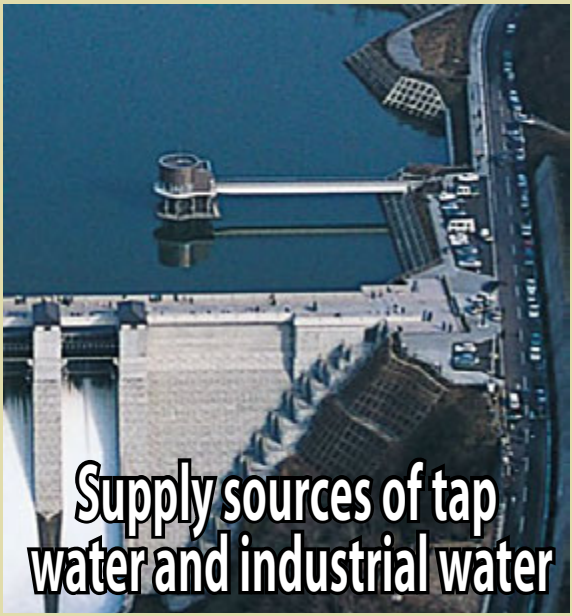
Functions of the Miharu Dam

Prevent flood damage



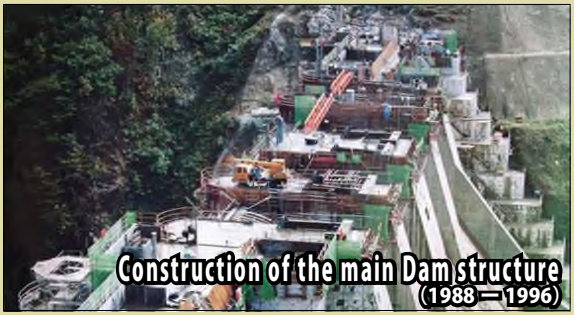
Protect the pristine rivers

Provide supplementary water for agriculture



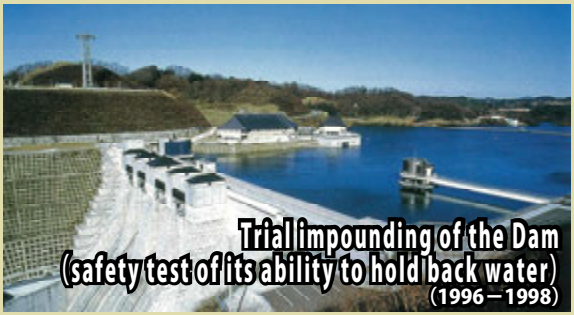
Supply sources of tap water and industrial water

History of the Miharu Dam



Construction of the main Dam structure
(1988 — 1996)

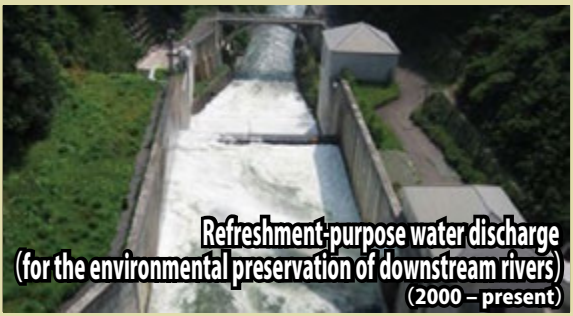
Naming of Lake Sakura
(1994)



Trial impounding of the Dam
(safety test of its ability to hold back water)
(1996 — 1998)

Construction of the entire Miharu Dam completed
(1998)

Disaster-prevention operations (flood control)
(a total of 35 instances between 1998 and 2020)



Refreshment-purpose water discharge
(for the environmental preservation of downstream rivers)
(2000 – present)

Michinoku Dam Lake Summit in Miharu
(2013)

さくら湖 20th
三春ダムはおかげさまで20周年

(2018)

Scenic landscapes worth sharing with others

The vicinity of the Miharu Dam offers astonishingly beautiful views throughout the year, featuring breathtaking cherry blossoms in the spring, lush fresh green of the forests in the early summer, foliage in the fall, and the reservoir covered in a thin crust of ice in the winter.

Abundant nature and biodiverse habitat


Large Japanese field mouse


Japanese Raccoon dog


Japanese Red Fox


Mallard


Spot-billed duck


Crested kingfisher


Common kingfisher


Japanese grass lizard


Tokyo daruma pond frog
(Near Threatened species on the Ministry of the Environment's Red List)


Schlegel's green tree frog


Golden crucian carp
(Vulnerable species on the Ministry of the Environment's Red List)


Japanese eight-barbel loach
(Endangered species on the Ministry of the Environment's Red List)


Masu salmon
(Near Threatened species on the Ministry of the Environment's Red List)

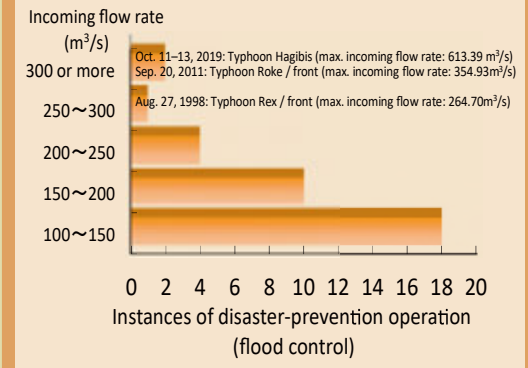

Kazaguruma
(Near Threatened species on the Ministry of the Environment's Red List)


Mikuri
(Near Threatened species on the Ministry of the Environment's Red List)

Protection of human lives and property from floods

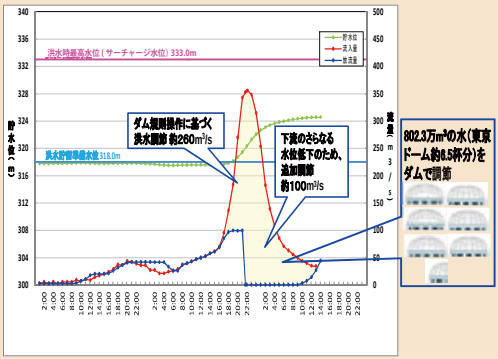
Disaster-prevention operations (flood control) mitigate the damage caused by floods in areas along the Otakine River and the Abukuma River.

Over the course of the 23 years since the start of operation in 1998 until 2020, the Miharu Dam performed a total of 35 disaster-prevention operations (flood-control) for flood damage mitigation along the Otakine River and the Abukuma River.



*Instances of disaster-prevention operation (flood control): Number of times the Dam experienced water inflow of at least 100m³/s in the reservoir and controlled the flow rate of the water discharged downstream.

Disaster-prevention operation (flood control) was performed 35 times over the course of 23 years.



*Special disaster-prevention operation: A type of dam operation to increase the amount of water held back by the dam in accordance with precipitation forecasts with the aim to minimize the amount of water discharged so as to prevent the water level of downstream rivers from rising.

Special disaster-prevention operation to counter the record flood event (Sep. 20, 2011)

Prevention of driftwood from flowing downstream

The Dam catches driftwood to mitigate damage in downstream areas along the Otakine River and the Abukuma River.

In addition to its disaster-prevention operation (flood control), the Miharu Dam also performs the function of catching driftwood to mitigate damage in downstream areas. Roughly 207 m^3 of driftwood per year (average between 2013 and 2017) is recovered from the reservoir, which is equivalent to approx. 2,070 logs of lumber per year.

Driftwood and waste stopped by the Dam

Sorting of driftwood and waste

Provision of water supply equivalent to roughly 10 times the capacity of Tokyo Dome per year

The water supplied through the Miharu Dam has supported the local residents' lives as well as the development of the industries in the area.

Lake Sakura supplies water of approx. 12,000,000 m^3 (about 10 times the capacity of Tokyo Dome)per year, which is used for agriculture, tap water, and industrial water. The Dam thus supports the local residents' living and industrial development. The tap water it provides is used by a total of 90,000 individuals, accounting for 85% of the population of Miharu town, 59% of the population of Tamura city, and 16% of the population of Koriyama city.

Arai Water Purification Plant (for Koriyama city)

Intake tower for Koriyama city

Provision of safe and worry-free water

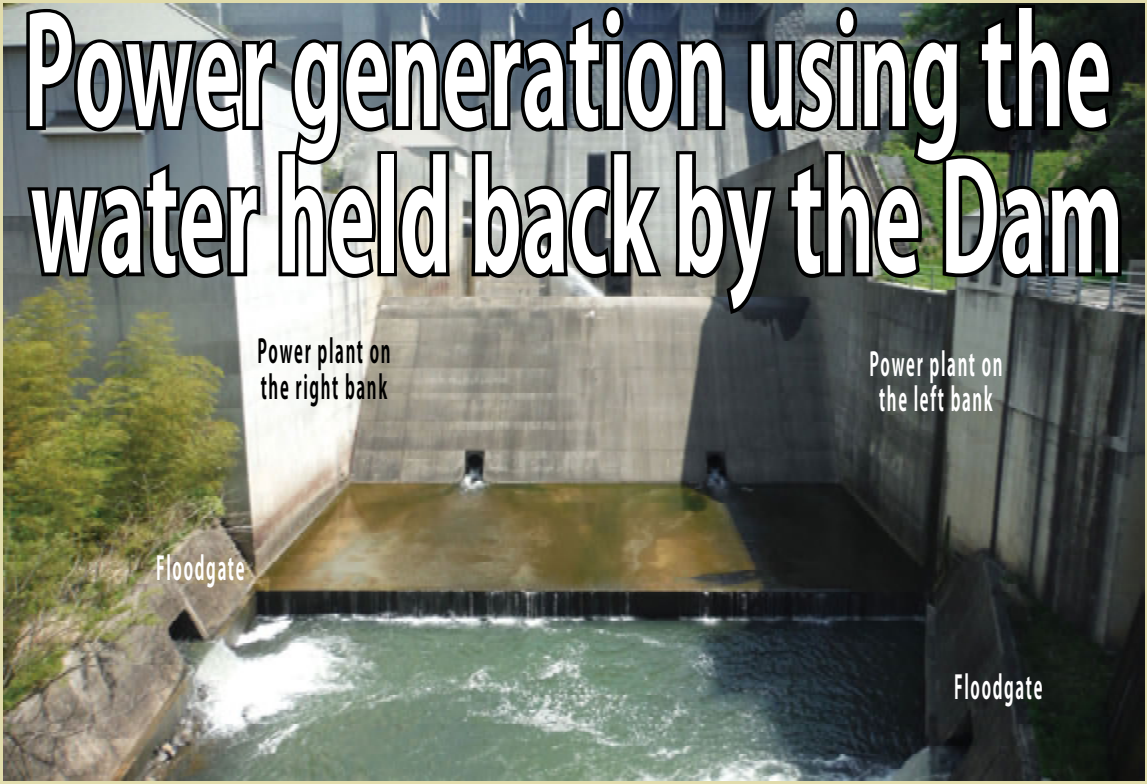
Water quality inspection and constant monitoring enable the provision of safe and worry-free water supply.

Lake Sakura not only serves as the source of tap water, farming water, and industrial water supply in the local area but also supplies water to downstream rivers. The quality of water is inspected on a daily basis at the Miharu Dam so that it only lets through safe and worry-free water for human consumption and use as well as for downstream rivers.

Water quality analysis conducted at the dam administration office

Patrol around Lake Sakura

Power generation using the water held back by the Dam

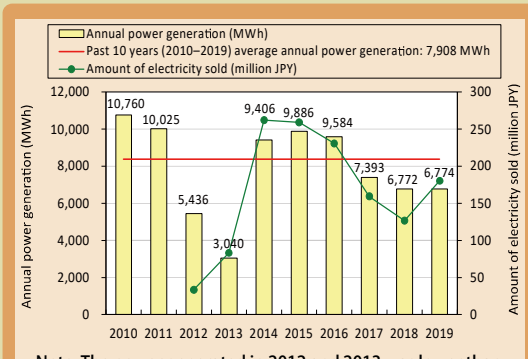


*With a river, the bank on the right-hand side facing downstream is called the right bank, while the other bank on the left-hand side is called the left bank.

The power generated at the Dam is used to operate the various facilities in the dam administration office, while surplus electricity is sold.

The Miharu Dam annually generates electricity of 7,908 MWh per year (average between 2010 and 2019), which is equivalent the amount of electric power used by roughly 1,500 households. It corresponds to power supply for about 23% of 6,400 households (as of 2019) in Miharu town.

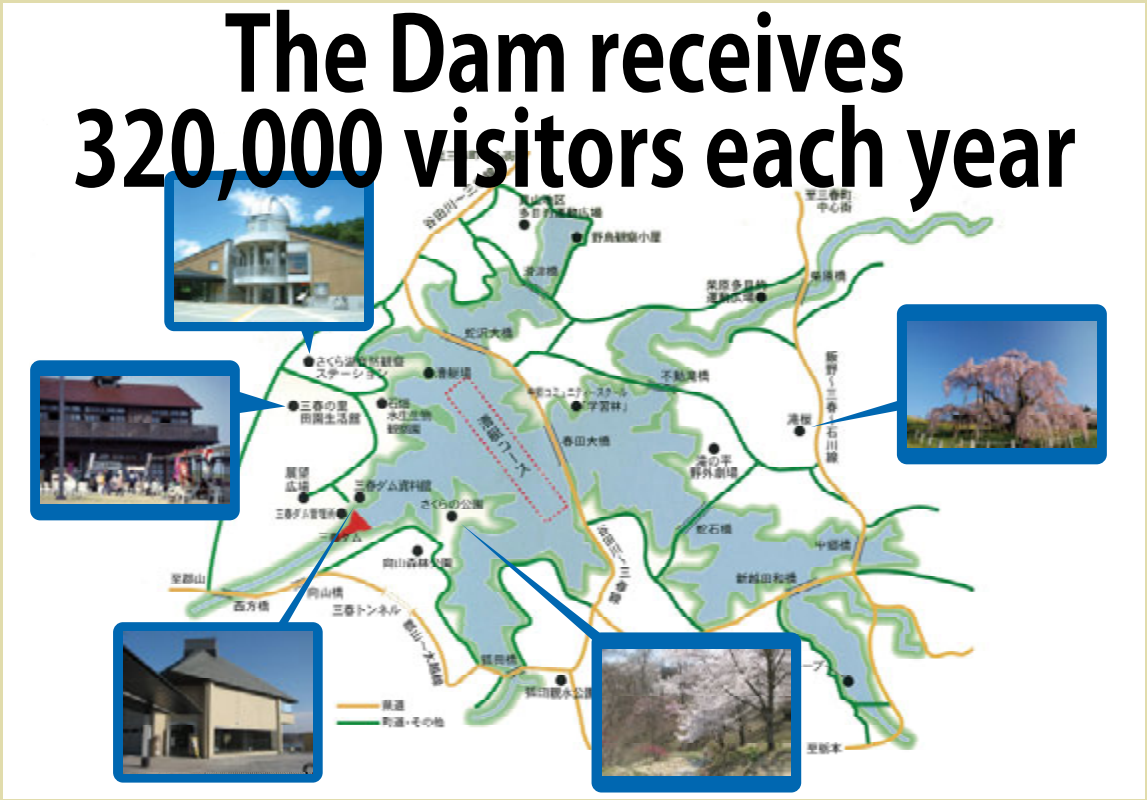
Hydroelectric power generator



Note: The power generated in 2012 and 2013 was lower than usual due to inspections of the power plant facilities conducting in those years.

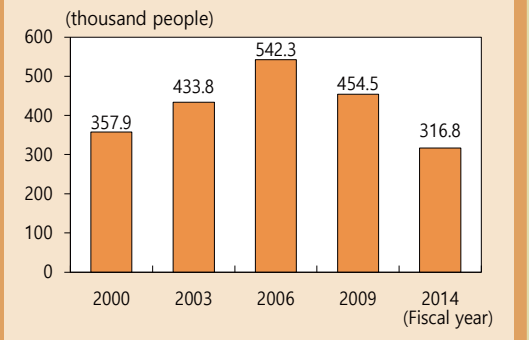
Annual power generation

The Dam receives 320,000 visitors each year

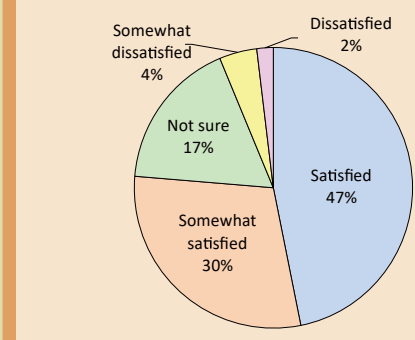


The vicinity of Lake Sakura offers a number of facilities where people can experience and learn about nature.

In the area surrounding Lake Sakura, there are many facilities where people can enjoy experiencing and learning about nature, including the Miharu Takizakura (waterfall cherry tree of Miharu), Miharu-no-sato Denen Seikatsu-kan, the Lake Sakura Nature Observation Station, the Miharu Dam Museum, the outdoor theater, the aquatic life observation park. Roughly 320,000 people visit these facilities each year. According to questionnaire surveys, roughly 80% of all visitors coming to the vicinity of the Miharu Dam were satisfied with their experience.



Number of annual visitors to the vicinity of the Miharu Dam(Survey of Dam Lake usage)



Questionnaire survey of facility users (FY 2019) (Survey of Dam Lake usage)

Opportunities to learn about and experience nature

Lake Sakura and its vicinity offer a wide range of opportunities to learn about and experience nature.

Lake Sakura and its surrounding area are so overflowing with nature that visitors can enjoy learning about and experiencing nature with ease. Every year in late July, during “10 Days for Contact with Forests and Lakes” , an event titled “Sakura Lake Nature’ s Classroom” is held, consisting of three courses: overwater exploration, insect observation, and aquatic life and plant observation. These offer great opportunities for the participants to experience the area’s nature in a casual manner.

Insect observation
(Sakura Lake Nature’s Classroom)

Overwater exploration
(Sakura Lake Nature’s Classroom)

Aquatic life observation
(general study for elementary school students)

Wild bird observation
(an event hosted by the Nature Observation Station)

Environmental preservation in collaboration with local communities

The Lake Sakura Natural Environment Forum is an annual event held in conjunction with local communities and various other stakeholders.

Lake Sakura hosts an annual event called the Lake Sakura Natural Environmental Forum jointly planned and attended by local communities, elementary and middle school students, and researchers conducting their studies on Lake Sakura, for the common goal of protecting the environment around Lake Sakura.

Research presentation by elementary school students

Dissection of non-native fish species

Explanation on insect survey equipment

Dam openly accessible to local communities

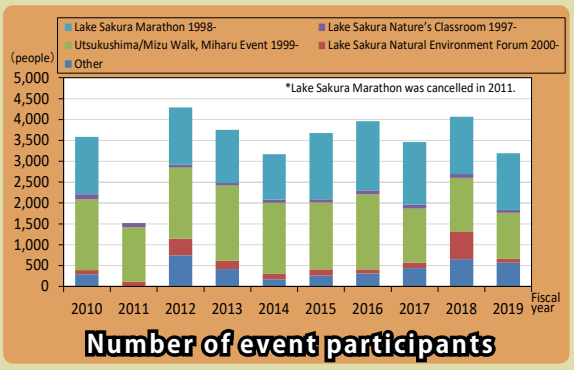
Open access to the Dam facilities is actively provided in order to promote the use and utilization of the Dam by local people and help revitalize the local communities.

On April 12, 1993, the Miharu Dam was officially designed as a dam openly accessible to local communities. Since then, open access to the Dam facilities has been actively provided, and many related events have been held in order to help revitalize the local communities. In recent years, a wide variety of events have been hosted at and around the Dam attracting roughly 4,000 visitors.

Motorcycle owners' general meeting

Tour inside the Dam structure

Lake Sakura Marathon

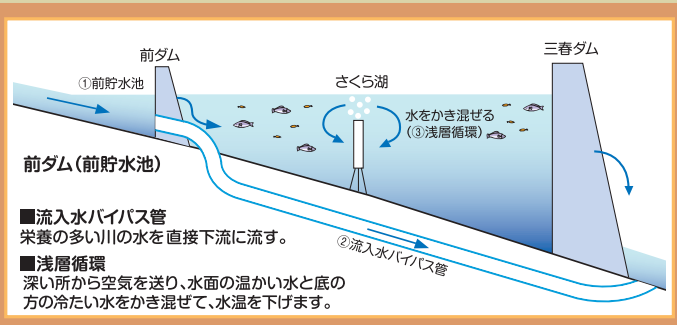


Number of event participants

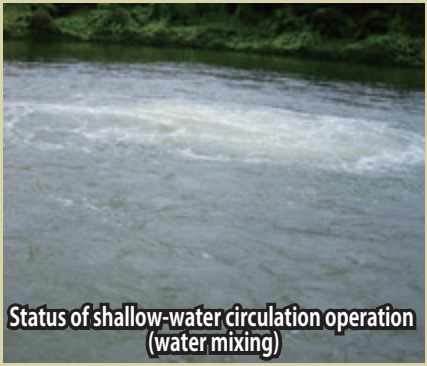
Maintenance of good water quality

The good quality of water in Lake Sakura is maintained using various methods as the water is used for tap water and agriculture.

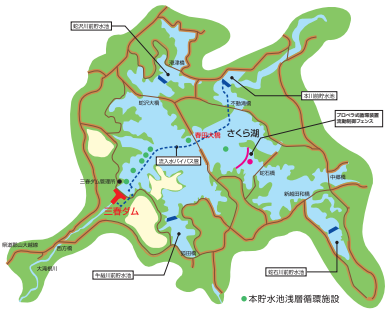
Since the start of its operation in 1998, the Miharu Dam has been functioning to maintain the good quality of water in many ways. Some of the incoming water bypasses the dam to allow the nutrient salts, etc. entering into Lake Sakura to flow downstream and the shallow-water circulation equipment operates to mix the water in Lake Sakura to suppress phytoplankton populations. These activities are evaluated each year based on outside expert opinions to constantly improve the operation methods and take other measures for increased efficiency of the Dam.



Various measures to maintain good water quality



Status of shallow-water circulation operation (water mixing)



Locations of the water quality maintenance facilities

Water quality review attended by experts

Preservation of the environment in downstream areas of the Dam

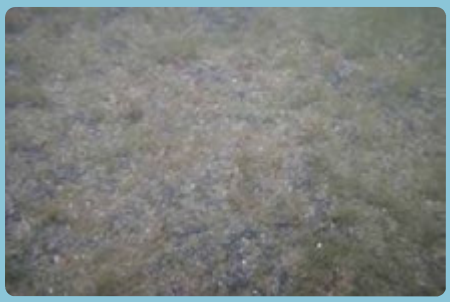
Refreshment-purpose water discharge from the Dam helps maintain the landscapes and environment along downstream rivers.

The Miharu Dam discharges water for refreshment purpose (i.e., small discharge of about 20 m^3/s) from June through October each year to preserve the landscapes and environment along downstream rivers. Such refreshment-purpose discharge has known effects of alleviating stagnant water, removal of algae off the rocks, and restoration of fish spawning grounds in downstream rivers.

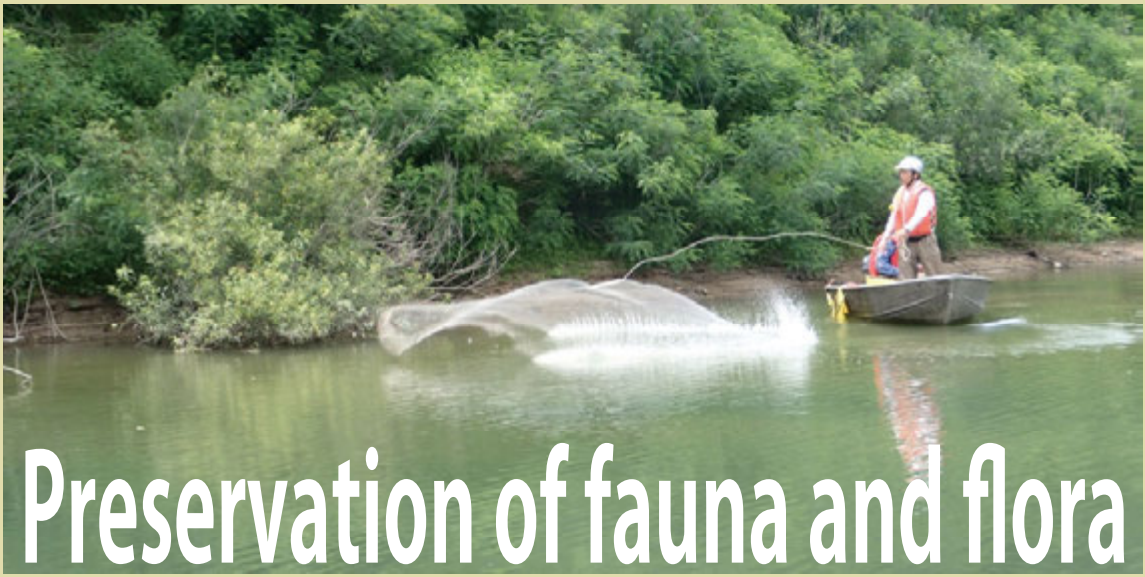
River during ordinary discharge

Algae bloom on rock surface

River during refreshment-purpose discharge



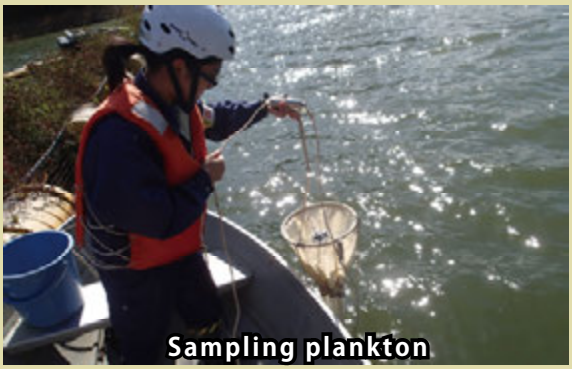
Reduced algae due to the discharge flow



Preservation of fauna and flora

Surveys have been constantly conducted since the start of the Dam construction until today to monitor changes in the local fauna and flora.

At the Miharu Dam, various surveys including the national census of river environments have been continuously conducted since before operation of the Dam to monitor changes in the species of fauna and flora inhabiting the area and their habitats, so that those living in the reservoirs and their vicinity can be protected.



Sampling plankton

Measuring fish size and other properties

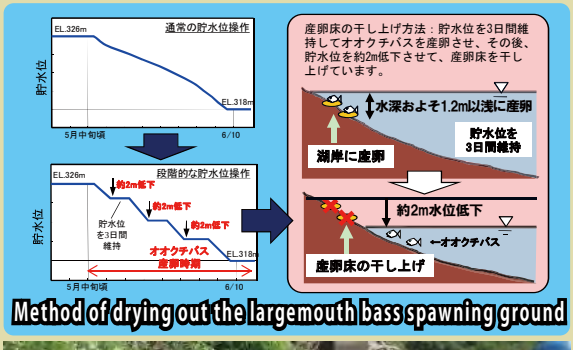
Recording plant species inhabiting the area

Recording bird species inhabiting the area

Protection of native fish species from non-native ones

Optimized water-level control in the reservoir suppresses the growth of non-native fish populations.

Since its completion, the Miharu Dam has seen increases in non-native fish populations affecting the native fish species. To address the situation, the water-level control operation on the reservoir has been optimized since 2008 to purposefully dry out the spawning grounds of the largemouth bass and the bluegill, while also using electrofishing boats to capture non-native fish species (temporarily paralyzed by electrical shock) and verify the effects of these measures.



Method of drying out the largemouth bass spawning ground


Largemouth bass eggs dried out due to the decreased reservoir level

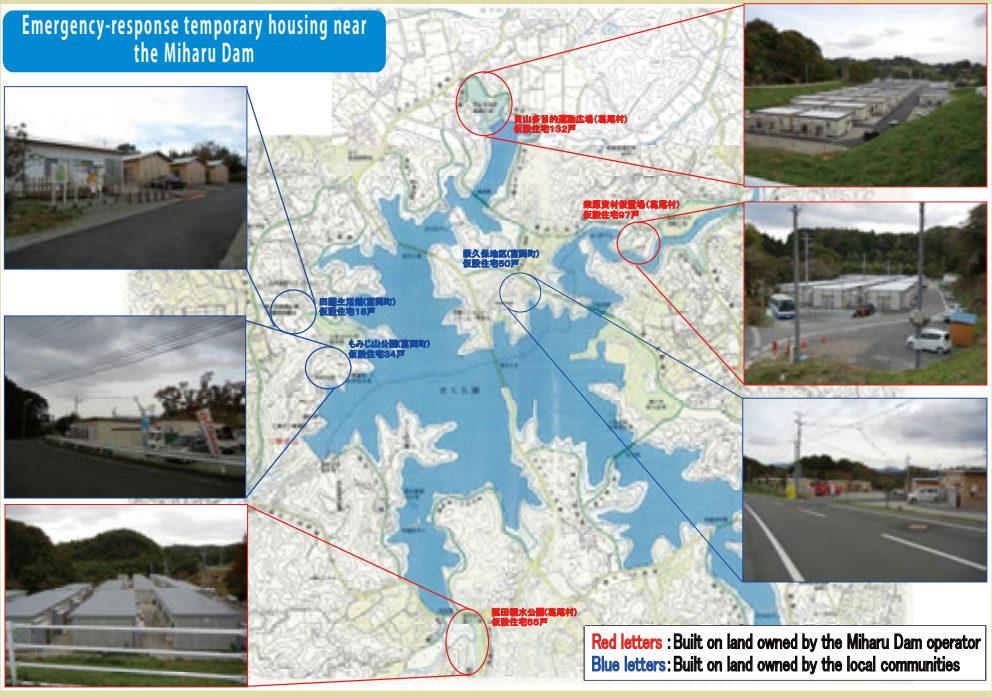

Survey of spawning ground


Non-native fish species caught by using an electrofishing boat

Support in post-earthquake restoration efforts

In the vicinity of Lake Sakura, emergency-response temporary housing units were built and an operation base for water-sprinkler vehicles was established for water supply of various types.

When the Great East Japan Earthquake occurred in 2011, the vicinity of the Miharu Dam recorded a seismic intensity of 6-lower on the Japan Meteorological Agency seismic intensity scale. However, the integrity and function of the main Dam structure and the dam administration facilities remained intact. In the wake of the Great East Japan Earthquake, the Miharu Dam provided a part of premises used as a base for operating water-sprinkler vehicles for various types of water supply and also offered the land for building emergency-response temporary housing units near the reservoir.



Let's use it together, Miharu Dam!

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三春ダムwebサイト　**リアルタイム情報配信中!**

http://www.thr.mlit.go.jp/miharu/

※リアルタイム情報:ダムの貯水位や流入・放流量などの情報が閲覧できます。

2021．2作成