

Iwaki River system
Aseishi River

Aseishigawa Dam



Aseishigawa Dam Mascots
Achan and Papa

History of Aseishigawa Dam

- June 1971: Implementation plan survey begins
- April 1973: Construction begins
- December 1975: Conclusion reached on compensation standards and agreement signed (201 properties submerged)
- September 1979: Construction of main dam structure begins
- August 1986: Concrete casting of main dam structure is completed
- November 1987: Trial flooding begins
- October 1988: Construction is completed
- April 1989: Transition made to management and operations
- April 2017: Renamed Aseishigawa Dam Management Branch
- October 2018: 30th anniversary of operations



The Aseishigawa Dam is a concrete gravity dam constructed to stabilize water demand and to upgrade flood control functions as a replacement to the Okiura Dam completed in 1945.

The Aseishigawa Dam is a “multipurpose dam” that has four different roles: flood control, river ecosystem conservation, municipal water supply, and power generation.

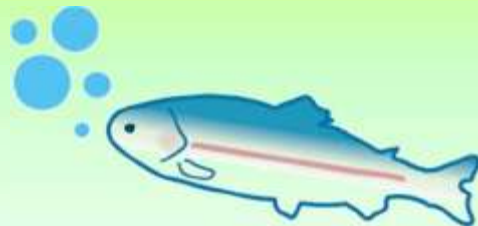
Aseishigawa Dam's functions

Mitigating flood disasters



Planned flood discharge at dam site:
Adjusted from 2,000m³/sec to 500m³/sec

Maintaining proper waterflow functions



Providing consistent replenishment for existing water supplies, and conserving the river's ecosystem.

Generating power



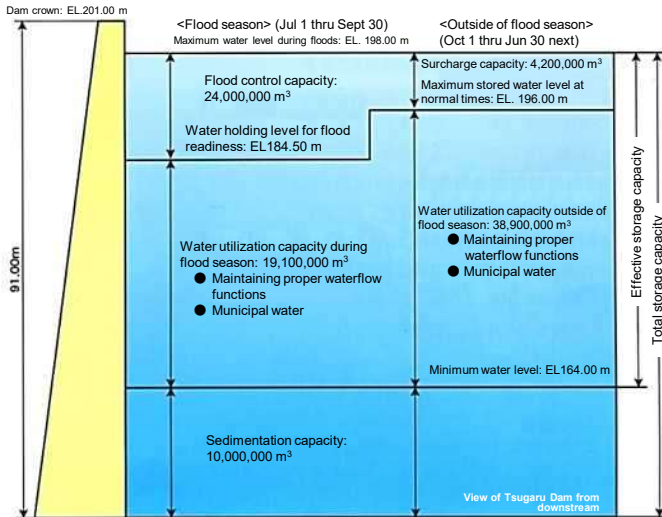
Maximum generation output: 17,100 kW

Supplying municipal water



Water supply to the 9 municipalities of Kuroishi, Hirosaki, Goshogawara, Hirakawa, Aomori, Fujisaki, Itayanagi, Tsuruta, and Inakadate
Up to 132,800 m³/day

Aseishigawa Dam and Reservoir Specifications



Dam and Reservoir Specifications

River		Aseishigawa River, Iwaki River system, Class-A River
Reservoir	Watershed area	225.5 km ²
	Flooded area	2.2 km ²
	Total storage capacity	53,100,000 m ³
Dam	Type	Concrete gravity dam
	Dam head elevation	EL: 201.0m
	Dam height	91.0 m
	Dam head length	330.0 m
	Dam head width	8.0 m
	Dam volume	Approx. 700,000 m ³
	Water intake facilities	Shared intake facility: 5-stage cylinder gate Agricultural water intake facility: 4-stage cylinder gate Municipal water intake facility: 4-stage cylinder gate
Water releasing facilities	Crest gates: Width 7.0 m x Height 10.8 m x 4 gates Orifice gate: Width 4.0 m x Height 5.3 m x 1 gate Conduit gates: Width 2.8 m x Height 3.6 m x 2 gates	
Total project cost	Approx. 90.5 billion yen	

Water releasing facilities schematic

Intake towers

These facilities are used for taking water in from the dam lake. They open their gates to take in water from the dam lake. From these intake towers, the water passes through the dam to different facilities, finally flowing out into Iwaki River.

Crest gates (emergency flood spillway)

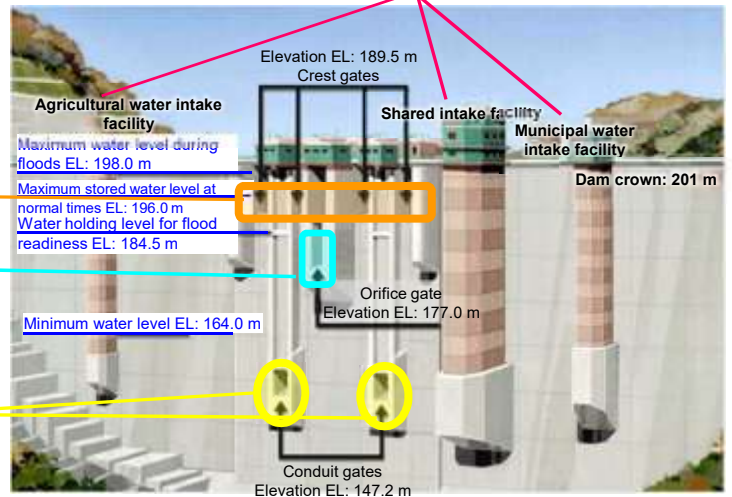
These gates are used during major flooding. There are four gates at a height of 189.5 meters.

Orifice gate (principal spillway)

This is used to release water to maintain the water level when there is an inflow from snowmelt or minor flooding. There is one gate at a height of 177.0 meters.

Conduit gates

These gates are central to the dam's flood regulating functions. There are two gates at a height of 147.2 meters.



Water quality preservation measures

Unusual odor and taste (moldy odor) in the water from Aseishigawa Dam was reported in September 2012. To address this issue, we now operate three lake water circulators as part of our water quality preservation efforts.

What causes the moldy odor?

Surface strata temperature: 20°C or more

Algae that produces moldy odor begin to appear when the surface strata of the water reaches a temperature of 15°C or higher, and begin to actively proliferate at 20°C or higher.

Water temperature gradient: 0.5°C/m or more

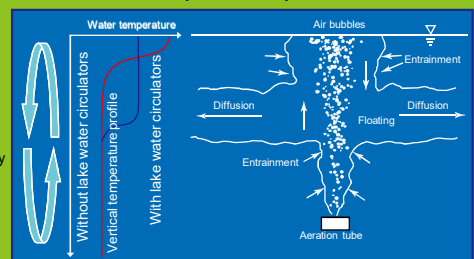
Circulation between the surface and lower strata is suppressed when the surface strata has a water temperature gradient of 0.5°C/m or more. This causes algae to accumulate in the euphotic (light-reaching) layer of the surface strata where they actively proliferate.



Lake water circulators

Effects of lake water circulators (aerators)

- Lake water circulators (aerators) are used in other dams as a measure to curb moldy odors and have been verified to be effective in significantly reducing water temperatures.
- Calculations indicate that by circulating and mixing the water with lake water circulators (aerators), the temperature of the water's surface strata can be reduced from 23°C to 18°C.



Dam management

Flood response

Whenever flooding is expected, we prepare forecasts on potential inflow volumes into the dam, and conduct reviews on flood control and projected release volumes based on weather information, as well as data on rainfall amounts, water levels, and other data from different observatories. Before we perform a release, we alert river users and residents downstream who live near the river through public loudspeakers and sirens, conduct patrols on alert cars, and notify all relevant organizations.

Response during normal times

We monitor flow rates on a daily basis, and adjust the volumes we release from the dam to ensure that water flowing in rivers downstream of the dam maintain their proper functions, as well as for supplying municipal water.

Managing our surroundings

We keep an eye out for any anomalies or changes to the dam lake and its bank slopes, as well as for any illegal waste disposal.

We perform monitoring studies of water quality, and flora and fauna to understand the impact the completed dam has on the environment, and the effectiveness of the different environmental conservation actions being taken.

<Gate operating room>



<Patrolling by drone>



<Repairing a release valve>



Dam Light-Up Events

We hold regular light-up events as part of our effort to help vitalize our neighboring communities.



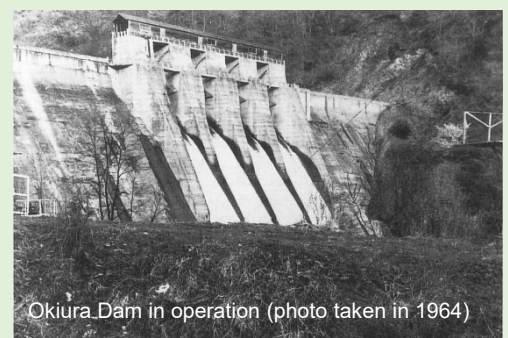
Okiura Dam: Japan's first multipurpose dam

Name: Okiura Dam

Purposes: Flood control, irrigation, and power generation

Type: Linear overflow concrete gravity dam

- ◆ This was the first construction project for a multipurpose dam to be launched in Japan.
- ◆ Construction began in December, 1933, and concrete casting for its main structure began in November 1936. The dam was completed on March 31, 1945.
- ◆ 75 years since its completion, the dam remains a valuable heritage site that gives us a glimpse into the civil engineering technologies of the time. At a time when supplies and materials were in short supply, engineers applied their engineering expertise to cast the dam's internal and external concrete.
- ◆ Now that the Aseishigawa Dam has been constructed, this dam is now submerged in the former's dam lake.



Okiura Dam in operation (photo taken in 1964)

What to see around Nijinoko Lake

Nijinoko Lake Peony garden



(Best time to visit: mid to late June)

Nijinoko Lake Rock Festival



(Scheduled for early August)

Oyama no Omoshie School



Nakano Momijiyama Nakano Shrine



(Best time to visit: mid-October to early November)

Revel in our priceless ties with nature



Open early September to mid-November

Tsugaru Kokeshi Doll Center



Tsugaru Traditional Craft Center



Koarashiyama Kuroishi Hot Springs Snow Festival Snow Village Festival



Tsugaru Traditional Craft Center (special events area) From early February to mid-February)

Nijinoko Lake canoes



Dam Light-Up



Come see us first!

Free resting area and administration building

Roadside station, Michinoko

- Furusato Shop
- Nijinoko Rest House
- Food stall village
- Free resting area and administration building
- Kaiju no Izumi
- BBQ area
- Peony garden
- Putting golf
- Large playground equipment
- Stage tents

▲ Relax and enjoy the meals you purchase at the food stall village in the resting area. Thank you for your kind consideration for other guests.

Food stall village

- ▲ Crowd-favorite mochi-mochi-doughnuts
- ▲ Kuroishi's B-grade gourmet dish, yakisoba in soup

Come and enjoy Kuroishi's B-grade gourmet dish—yakisoba in soup—as well as crowd favorite mochi-mochi (chewy-soft) doughnuts, and crispy curry bread. These are perfect for lunch or when you just need a little bite to eat.

What-to-see map

Bask in nature's beauty

Japanese erythronium walking trail

(Best time to visit: late April to early May)

Tohoku Regional Development Bureau, Ministry of Land, Infrastructure, Transport and Tourism
Iwaki River Dam Central Management Office
Aseishigawa Dam Management Branch

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Legend

- Nature-oriented tourist destinations
- Facility-based tourist destinations
- Other tourist destinations
- Restrooms
- Souvenirs
- Meals
- Hot spring (day trip visitors welcome)
- Parking