

Shiribeshitoshibetsu River

Outline of Flood Control Projects





Sunset at the Shiribeshitoshibetsu River where it flows into the Sea of Japan (near its estuary)



The Shiribeshitoshibetsu River and the nearby urban area (Kitahiyama Town)



Shiribeshitoshibetsu River and the nearby urban area (Imakane Town)



Oshubunnai Falls, upstream from the Shiribeshitoshibetsu River (Imakane Town)

Outline of the Shiribeshitoshibetsu River

Outline

The Shiribeshitoshibetsu River, located in the southwestern part of Hokkaido, is the only class A river in Southern Hokkaido. It originates from the mountain ridge that runs from Mt. Taihei (1,190 m) to Mt. Oshamambe-dake (972 m). With its river channel length and catchment area being 80 km and 720 km², respectively, the river flows through all of Imakane Town and part of Kitahiyama and Setana towns.

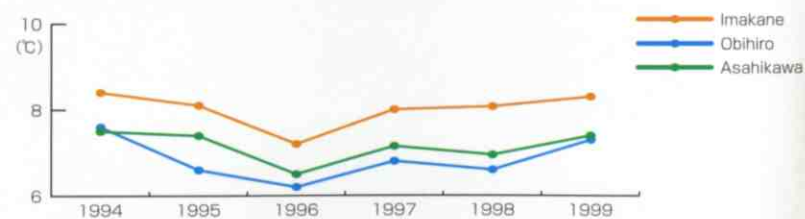
The Shiribeshitoshibetsu River is considered to be a very important river because it is the source of domestic noncommercial water for riverside urban areas and agricultural water for farming areas (agriculture is the region's mainstay industry), as well as a relaxation space for riverside citizens, and from the viewpoint of individualistic community building etc.

Climate

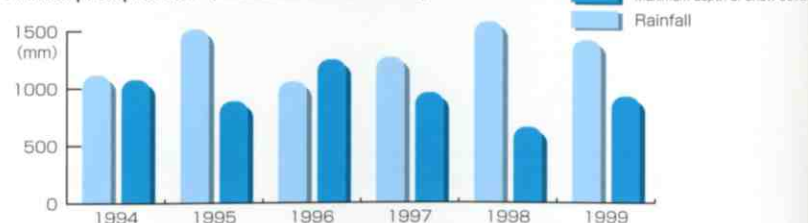
Located at the northernmost limit of the temperate climate zone, the Shiribeshitoshibetsu River features a relatively mild oceanic climate that is particularly affected by the Tsushima Warm Current flowing northward in the Sea of Japan.

Rainfall is relatively low in Hokkaido.

Annual mean temperature (Imakane Observatory)



Annual precipitation (Imakane Observatory)



History of the Shiribeshitoshibetsu River Basin

Origin of the name

The name Shiribeshitoshibetsu River was formed by adding "Shiribeshi" to distinguish it from the Toshibetsu River in Tokachi Subprefecture. Shiribeshi is one of 11 districts in Hokkaido that were designated by the **Kaitakushi** (Development Commission) in 1869 and at that time contained the northern part of present-day Hiyama Subprefecture. The name "Toshibetsu" is believed to have originated from "toshu betsu" (meandering river)" or "to ushi betsu" (river with many marshes)" in the Ainu language.

Kaitakushi (Development Commission)

Reclamation period of rice cropping

Experimental production was conducted for the first time at three furrows of rice paddies in the basin area in 1891. From the time of the Sino-Japanese War (1895) to the end of the Meiji era (1912), group settlers promoted agricultural development, leading to the establishment of an agricultural infrastructure in the basin area. However, as much as 99.8% of crops were dry field crops as of 1909.

History of floods and flood control

During the colonization era, the Shiribeshitoshibetsu River was completely primitive. Despite strong demands from citizens, no progress was made in river improvements. This caused citizens in the basin to suffer tremendously from fear of floods that hit the area twice a year due to increased river water levels caused by the melting of snow in spring and typhoons in summer. Under these circumstances, flood damage, which was referred to as the largest-scale damage caused by floods up until that time, occurred in August 1929, causing 12 deaths in the basin area.

In the summer of 1932, when another great flood was recorded, an extratropical cyclone that developed from a typhoon caused extensive damage due to heavy rain.

As a result of successive floods, full-fledged flood control construction work was finally initiated in 1934. From 1938, when the first phase of construction was completed, to the end of World War II, repair work was suspended amidst the state of emergency at hand, i.e. war.

After the end of World War II, flood control work resumed in 1948, but major floods occurred in 1953, 1961 and 1962.

Among others, a pair of typhoons (Nos. 8 & 9) in August 1962 passed through Hokkaido, causing significant damage in the basin, including the collapse of levees and the washing out of bridges.

With the enactment of the New River Law in 1965, a consistent river management system was implemented for the river systems. In 1968, the Shiribeshitoshibetsu River was designated as a class A river and a decision was made to construct the Pirika Dam by the River Council in 1969.



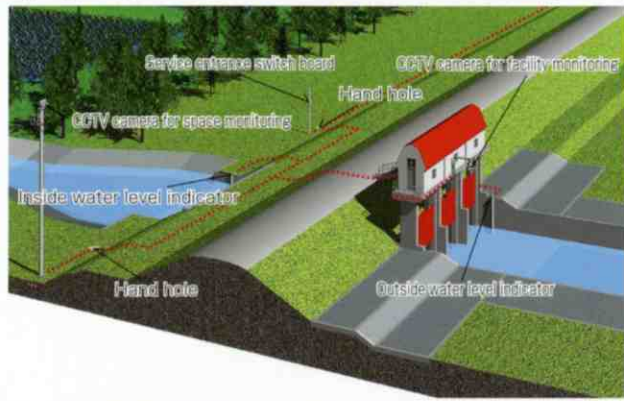
Inaho Bridge washed out during the flood in August 1929.



Pirika Dam completed in 1991

Optical Fiber Laying Project & TV Camera Installation Project

Optical fibers, TV cameras, etc. have been installed to reinforce the supervision of the state of downstream flood damage and share information on the state of dam discharges and disaster prevention with local governments. Currently, camera images and water levels can be monitored at the Imakane River Office.



Reconstruction of sluiceways

There are a total of 66 sluiceways and sluice pipes in the Shiribeshitoshibetsu River, some of which have deteriorated due to the long period of time that has passed since their construction. Though emergency measures such as repairing of cracks have been taken thus far, some of these have deteriorated so severely that repair has become impossible.



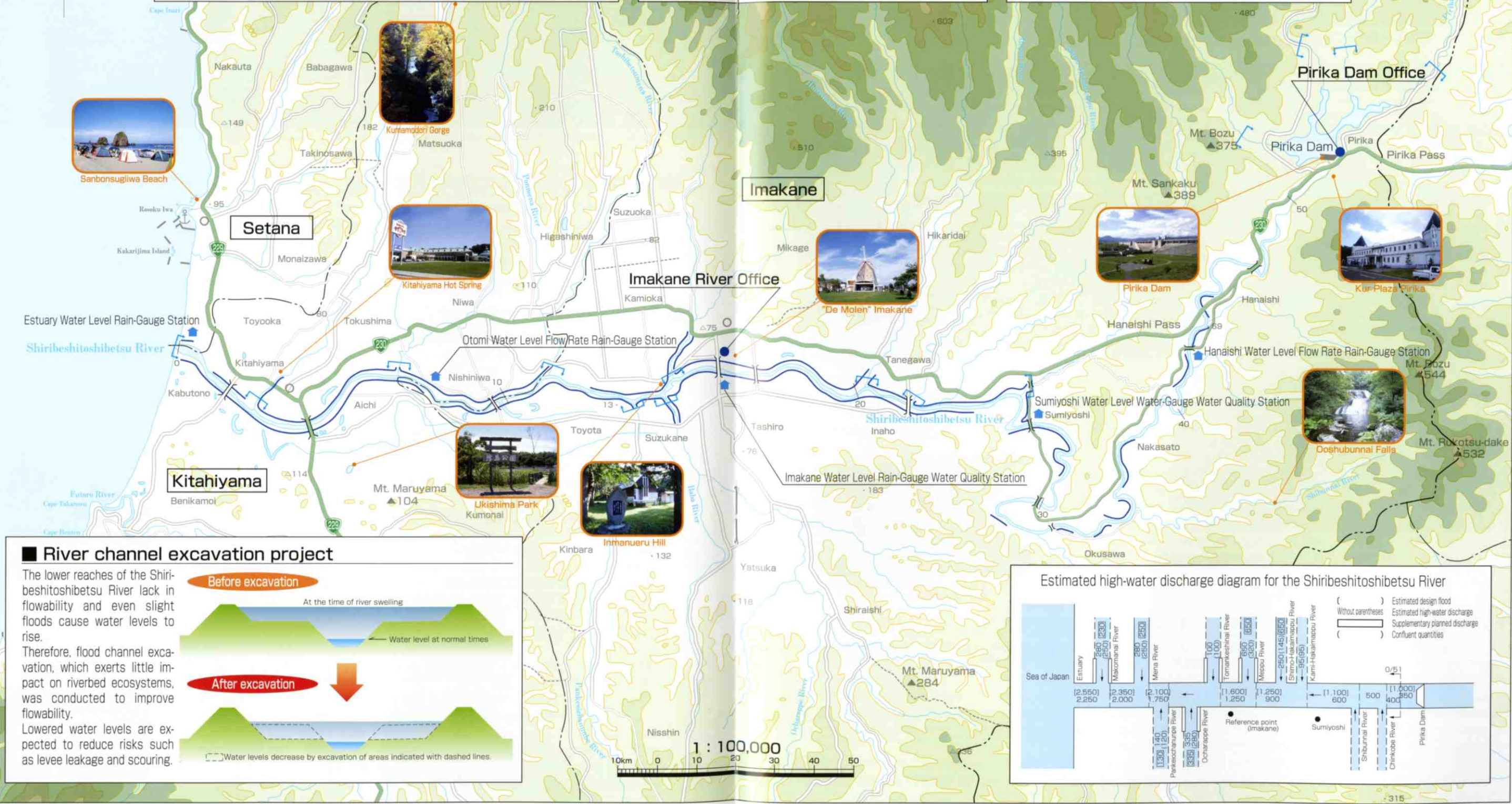
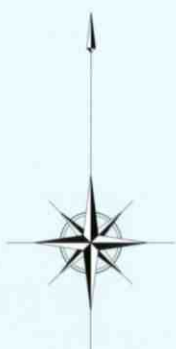
Since this poses a high risk of the occurrence of disasters, such as flooding-induced embankment leakage, systematic reconstruction efforts are under way.

Pirika Dam fishway improvement project

A great number of fish, such as cherry salmon, sweetfish and whitespotted char, inhabit the Shiribeshitoshibetsu River. The Pirika Dam, however, is a major obstacle for migratory fish, including cherry salmon, as they head toward the upper reaches - favorable spawning grounds. Therefore, a 6-km-long fishway has been constructed near the dam to create a livable environment in which fish inhabiting the area can freely move upstream and downstream from the dam.

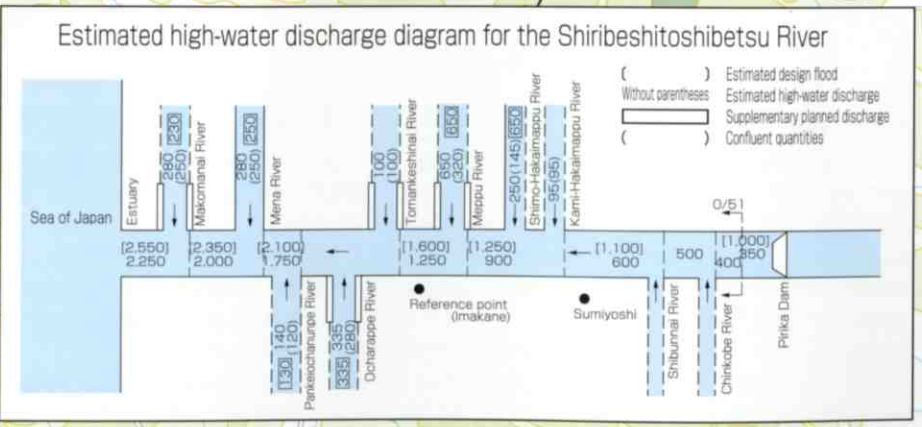
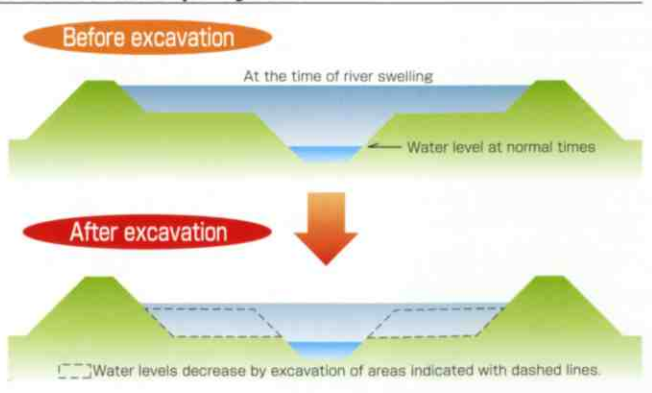


Oku-Pirika Hot Spring



River channel excavation project

The lower reaches of the Shiribeshitoshibetsu River lack in flowability and even slight floods cause water levels to rise. Therefore, flood channel excavation, which exerts little impact on riverbed ecosystems, was conducted to improve flowability. Lowered water levels are expected to reduce risks such as levee leakage and scouring.



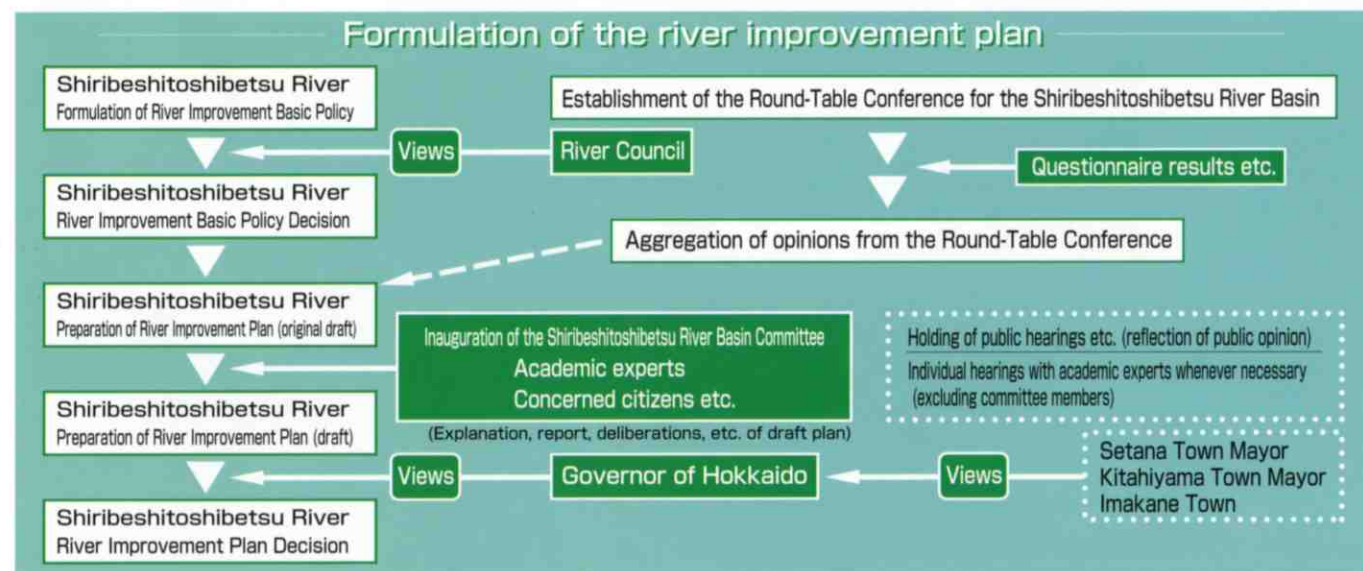
Shiribeshitoshibetsu River

Flood control projects

The Shiribeshitoshibetsu River is the only class A river in Southern Hokkaido, and it runs through the grain belt. It is considered to be an extremely important river from the viewpoint of disaster control in riverside urban areas as well as in agricultural areas (agriculture is the region's mainstay industry), supply of domestic noncommercial water and agricultural water, relaxation spaces for riverside citizens, individualistic community building, etc.

To this end, inland water measures and earthquake disaster countermeasures have been taken to ensure high-level safety and peace of mind, and high-quality improvements have been carried out to ensure that citizens can enjoy real affluence, such as the preservation and improvement of a favorable natural environment and the provision of opportunities for exchanges among people, goods, information, etc., as well as for various inter-regional partnerships.

River improvement plans



Club for Becoming Familiar with the Shiribeshitoshibetsu River

Since January 2000, meetings of the "Club for Becoming Familiar with the Shiribeshitoshibetsu River" have been held four times to provide a forum for exchanging views with local citizens. Participants actually go to the river site and freely discuss what the Shiribeshitoshibetsu River has to offer and what river improvements are being made. The results of such meetings will be reflected in future river improvement plans. The Shiribeshitoshibetsu River regained its position as Japan's clearest stream thanks to cooperation and collaboration with local governments (drainage improvement) and citizens (activities of the Clear Stream Protection Council etc.). The exchange of opinions will continue on with the goal of "protecting clear streams."



Activities of the "Club for Becoming Familiar with the Shiribeshitoshibetsu River"

Shiribeshitoshibetsu River Clear Stream Protection Circle

This corporate body was established on September 16, 1988 to pursue clear stream protection and projects related to the river environment of the Shiribeshitoshibetsu River, thereby contributing to the conservation of the environment. This circle was incorporated as an NPO on April 2, 2002.

Its activities include the following: awareness raising on environmental conservation of the Shiribeshitoshibetsu River and the maintenance of its clear stream; river beautification and cleaning; creation of a waterfront to deepen interaction; guidance on the protection and catching of fish resources; research on and protection of river water quality; tree planting on dry riverbeds; and other necessary environmental preservation and clear stream maintenance activities.

Immediate, concrete activities can be described as follows: river cleaning of the entire river basin; maintenance and management of river parks; releasing of salmon and trout fry; and demonstrating leadership both in aquatic life research and the Waterfront School Promotion Council.

Round-Table Conference for the Shiribeshitoshibetsu River Basin

In conjunction with the amendment of the River Law in 1997, procedures to reflect the views of academic experts, local citizens, heads of local governments, etc. in river improvement plans were introduced.

In this regard, the Round-Table Conference for the Shiribeshitoshibetsu River Basin was established in 2001 with 19 members, including experts on the environment, river engineering, agricultural science, etc., representatives of civic organizations, related institutions and mayors of towns in the basin area. This Conference aims to make the Shiribeshitoshibetsu River more open to the community by reflecting proposals made by members in the river improvement plans.



Issuance of a river information magazine

To inform citizens in the basin area of river improvement efforts, the national government's basic policies for improving the Shiribeshitoshibetsu River, improvement details, etc. will continue to be disclosed to citizens. One disclosure method is the issuance and distribution of the "River Information Magazine" to all households in the three towns located in the basin area.

River Information Magazine "Seiryu" is also available on the River Information homepage.
Hakodate Development and Construction Department
River Information Homepage
<http://www.hk.hkd.mlit.go.jp/water/index.html>



Pirika Dam

Pirika Dam is a multi-purpose dam completed in 1991. It has Japan's longest crest length of approximately 1.5 km, and is Hokkaido's first composite dam, a structure that combines a gravity concrete dam and a rock-filled dam. With a green athletic park and other facilities constructed around it, the dam has played a major role in regional revitalization.



Specifications of the dam

Location :	Aza Pirika, Imakane-cho, Setana-gun, Hokkaido		
Type:	Gravity concrete & rock filled / composite dam		
Dam height :	40.00 m		
Height of non-overflow portion :	Concrete portion EL 126.50 m	Rock-filled portion EL 128.00 m	
Crest length :	Concrete portion 755.00 m	Rock-filled portion 725.00 m	Total 1,480.00 m
Dam volume :	Concrete portion 360,000m ³	Rock-filled portion 510,000m ³	Total 870,000m ³

Specifications of the reservoir

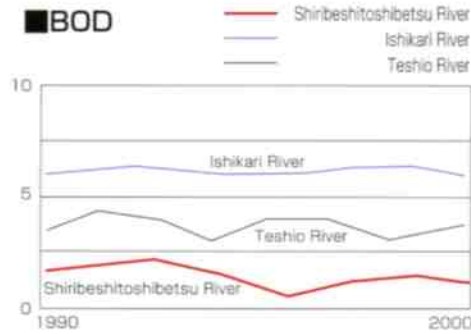
Catchment area	115.00km ²	Normal top water level	EL.119.80m
Inundation area	1.85km ²	Surcharge water level	EL.123.10m
Total reservoir capacity	18,000,000km ³	Design flood level	EL.125.00m
Effective reservoir capacity	14,500,000km ³	Flood control level	EL.114.00m
Flood control capacity	12,000,000km ³		
Drinking water capacity	2,500,000km ³		

Water quality surveys

The Shiribeshitoshibetsu River has been renowned as a clear river as seen by the fact that the Ainu place name "Pirika" (beautiful) is still used upstream. In 1987, the Ministry of Construction (present-day Ministry of Land, Infrastructure and Transport) began water quality surveys for class A rivers nationwide. The Shiribeshitoshibetsu River was chosen as Japan's clearest river in the first survey and for four consecutive years until 1990 and then again in 1994. In FY 2000, for the first time in six years, it became the clearest river in Japan for the sixth time.



BOD

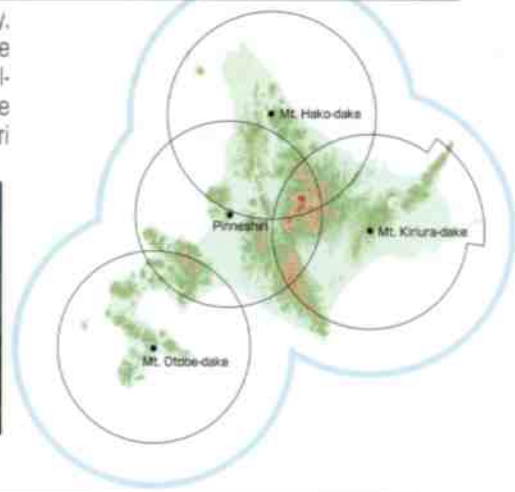


BOD (biochemical oxygen demand)

As one of the water contamination indices, this refers to the volume of oxygen consumed when microbes oxidize and decompose organic matter (pollutants) in the water over a specific period of time. For "raw" water used in water works, it is preferable that the BOD is 3 mg/l or lower.

Southern Hokkaido Radar Rain and Snow Gauge Observatory

A test installation of the Southern Hokkaido Radar Rain Gauge Observatory, located on Mt. Otobe-dake, was carried out in December 1990 making it one of the Hokkaido Regional Development Bureau's four radar rain gauges. Full-fledged operation of the observatory began on November 15, 2001. The observatory covers the southeastern part of Hokkaido and part of Aomori Prefecture.



Information transmission through IT



Providing information on precipitation and water levels in real-time

The Ministry of Land, Infrastructure and Transport provides visual information over the Internet on radar precipitation, telemeter precipitation, telemeter water levels, etc. for each river throughout the nation as river disaster prevention information.

<http://www.river.go.jp>



River information via i-mode

Real-time observation data are also available through mobile phones (i-mode compatible models) for 109 water systems nationwide.

<http://i.river.go.jp>

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