

Key Issues: 14-Development of Regional Industries

- 1-Biological Diversity
- 11-Benefits due to Power Generation



Climatic Zone:

Cf: Temperate humid climate

Subjects:

- Environmental improvement of areas
- Tourist development around the dam

Effects:

- Activation of local community through tourism development

Project name: Gosho Dam

Country: Iwate Prefecture, Japan (Asia)

Implementing Party & Period:

- **Project:** The Ministry of Land, Infrastructure and Transport
From 1973 -

- **Good Practice:** The Ministry of Land, Infrastructure and Transport

Keywords:

Concept of peripheral environmental improvement, Recreational Space, Promotion of regional development

Abstract:

As a sightseeing and recreational center, Lake Gosho and the surrounding area attract a large number of tourists, mainly due to the recent improvement of the Lake Gosho Regional Park and its favorable location near a newly-opened high-speed traffic network. This is the culmination of efforts put forth by the government, the prefecture, the city, the town and local inhabitants working together from the time the dam was constructed.

1. Outline of the Project

The Gosho Dam was built on the Shizukuishi River, the right tributary of the Kitakami, which is the largest river in the Tohoku district. It is a multipurpose dam for the Tsunagi area, Morioka City, providing flood control, irrigation, water supply and electric power generation. The construction of the dam proper commenced in April 1972 and was completed ten years later in March 1982.

The Shizukuishi River rises through the Ohu Mountains on the boundary between Iwate and Akita Prefectures and flows eastward. Converging with the Kuzuneta River, it is called the Shizukuishi River. It continues running eastward, meets the Minami River in the Gosho Dam reservoir and joins the Kitakami River south of Morioka Station, 12 km downstream from the dam. With a principal watercourse of about 40 km and a catchment area of about 782 km², the river has an abundant water supply as demonstrated by the annual run-off volume of 1.4 billion m³. Peaceful pastureland surrounds the dam, and there are several hot springs in the vicinity. From the dam, a beautiful view of the distant Minami-Hachimantai

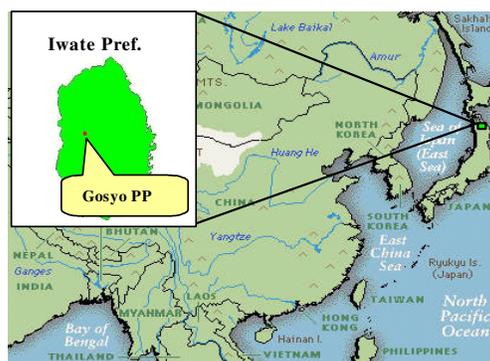


Fig. 1 Map of the Gosho Dam Site

range including Mt. Iwate, or Iwate Fuji, can be enjoyed.

Such factors as the favorable location, completion of the dam construction, opening of a high-speed traffic network, regional improvement and development all serve to bring the areas around Lake Gosho into the limelight as a center of tourism and recreational activities. The Gosho Dam is a composite type dam; a concrete gravity type on the right bank side and an impervious core rock-fill type on the left bank side. Particulars and location of the Gosho Dam are shown in Table 1 and Fig. 1, respectively.

2. Features of the Project Area

Lake Gosho is situated in a hilly volcanic zone surrounded by Mt. Iwate to the north, Mt. Komagatake to the northwest and the Tohne Mountains to the south, the hills and mountains sloping down to the flat basin floor. The Shizukuishi and other rivers form terraces and a valley plain. Lake Gosho is an artificial lake created on the plain by damming up the rivers. This topography produces excellent prospects; views of distant mountain ranges taken from the lakeshore are spectacular. A view of the Gosho Dam from high above on the downstream side is shown in Fig. 2.

Because of such topographic conditions, Lake Gosho has a number of relatively shallow parts in its 6.4-km² reservoir, an enticing invitation to migratory birds. Thus, the lake offers vast habitats to plants and animals.

Around the lake, secondary forests of varying species of trees such as *Quercus serrata* and Japanese Chestnut as well as Japanese Larch, Akamatsu and Sugi, grass fields and damp grounds are distributed. Vegetation including willows and wing nuts is found on the riverbanks. Among the animals, there is a large variety of birds; 80 species of 30 families of wild ducks have been reported. In winter, swans fly to the area. They, together with people who come to fish for pond smelts in holes made through the frozen surface, create a lively atmosphere at the lake.

These natural features form the scenery of Lake Gosho, and combined with the seasonal change of its reservoir level, fascinate visitors with the diversity of expressions.

The Gosho Dam is not far from Morioka City, a major city in the northern part of the Tohoku district. Partly due to such a short distance from the city, the dam is taken as a recreation space abundant with nature in the suburbs of Morioka. Figure 3 shows the positions of various facilities around Lake Gosho.

Table 1 Main Particulars of the Gosho Dam

Item	Particulars	
River system	The Shizukuishi River of the Kitakami River System	
Catchment area	635 km ²	
Dam	Type	Composite-type concrete gravity system and center core type rock-fill system
	Height of dike	52.5 m
	Crest length	327.0 m
	Cubic volume of dike	Concrete: 22,000 m ³ Fill: 98,000 m ³
Reservoir	Total storage capacity	65,000,000 m ³
	Effective storage capacity	45,000,000 m ³
	Effective depth	9.8 m
Electric Power Generation	Electric utilities	Public Enterprise Bureau, Iwate Prefecture
	Starting supply date	January 1, 1981
	Maximum output	13,000 kW
	Maximum available discharge	60.00 m ³ /s
	Effective head	27.32 m



Fig. 2 The Gosho Dam Viewed from High Above on the Downstream Side

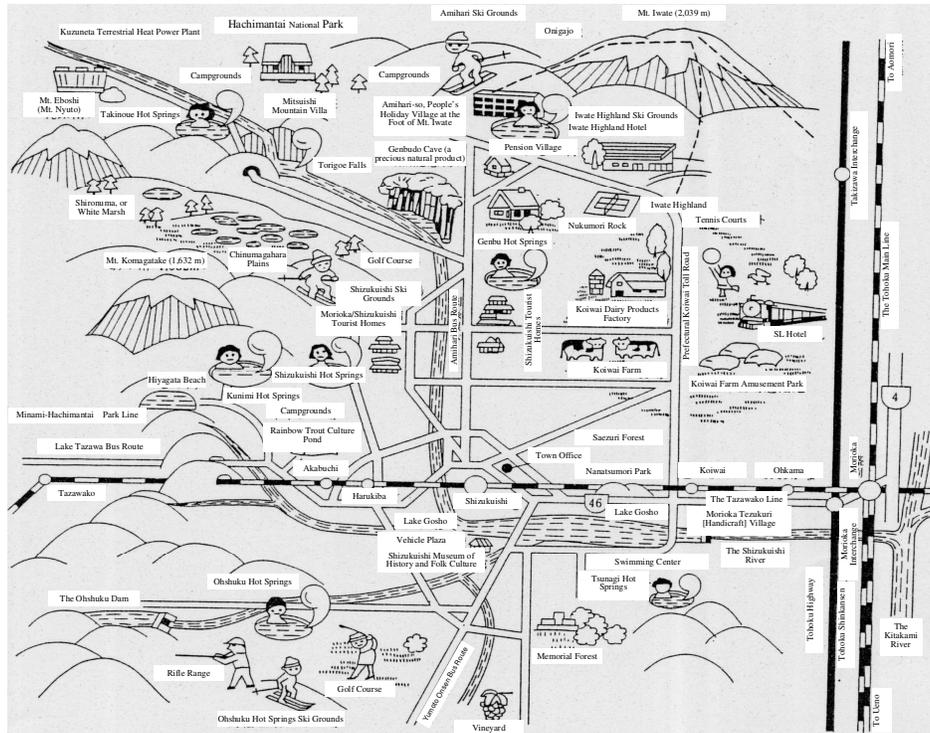


Fig. 3 Map of Facilities Around Lake Gosho

3. Benefits

Since the planning stage of the Gosho Dam, areas around Lake Gosho were considered appropriate for tourism development in response to the growing demand for everyday recreation space based on the above-mentioned remarkable environment, the opening of the Tohoku Shinkansen and the improvement of the high-speed traffic network including the Tohoku Highway.

Therefore, with a firm belief in the importance of protecting the areas around the dam from reckless development and to maintain a desirable environment as sound recreational space, three entities, the Iwate Prefecture, Morioka City and Shizukuishi Town, financed the establishment of the Lake Gosho Development Association in May 1973, the year following the start of construction of the dam proper, and full-scale environmental improvement of areas around the lake began.

1) Lake Gosho Development Association

The association members and the Ministry of Construction (then), the river administrator, organized the “Liaison Conference for Establishing the Basic Concept of Environmental Improvement Around Lake Gosho” and subsequently announced the “Basic Concept of Environmental Improvement Around Lake Gosho” in June 1979.

In parallel, the association obtained gravel from the bottom of Lake Gosho and put it up for sale. The shores of the lake and its peripheral land, which needed to be integrally conserved, were acquired in advance using the profits from the sale of gravel. Facilities in the areas for which the Ministry of Construction (then) carried out infrastructure development on the basis of the above

Table 2 Major Projects Executed by the Lake Gosho Development Association

Description of Project	
• Advance acquisition of land	8.7ha
• Improvement of natural forests	2.6ha
• Preparation of cherry orchard, tree planting	2.0ha, 1,095 trees including cherry trees
• Preparation of aquatic plant garden, slope protection with vegetation	0.56ha
• Lake Gosho Sports Park (baseball field, tennis courts, etc.)	6.8ha
• Improvement of the Children's Square	2.0ha
• Amanuma Green Square	9.8ha

concept and the land acquired in advance are now being improved.
The major projects executed by the association are shown in Table 2.

2) Infrastructure Development

Based on the Basic Concept of Environment Improvement Around Lake Goshō, the Ministry of Construction (then) executed infrastructure development on the land earmarked for watercourses as part of the dam construction work. The infrastructure development included the leveling of land in 12 areas totaling 41.3 ha, greening, road management, and cherry tree planting for the creation of two places of relaxation for the townspeople. Table 3 shows details of the infrastructure development work and Fig. 4 shows the work execution sites.

Table 3 Infrastructure Development Operation Executed by the Ministry of Construction (then)

Contents of Operation	Work Execution Sites		
	Leveling of land, greening, road management, dike management	Left bank	Shimokubo, Nonaka, Usagino, Oirino
Right bank		Yagawa, Amanuma, Tozawa, Tozawa River, Machiba, Nozoki, Tsunagi, Katakozawa	
Tree planting (Cherry trees)	Shimokubo, Oirino		

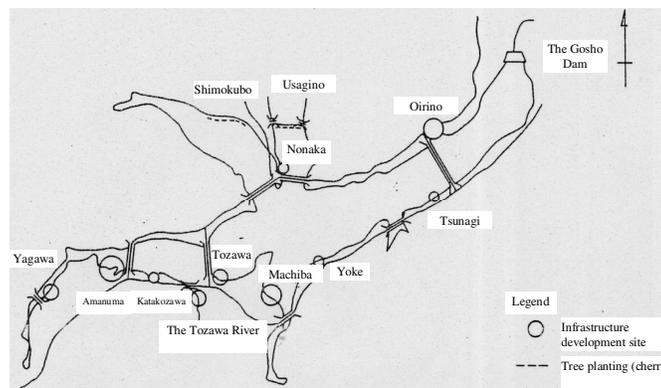


Fig. 4 Infrastructure Development Work Execution Sites

3) Advancement to Lake Goshō Regional Park

In September 1980, about one year before the completion of the Goshō Dam, the “Goshō Dam Regional Park” project, which was under consideration by Iwate Prefecture in commemoration of the opening of Tohoku Shinkansen, was approved by the City Planning Council and started as an urban park project.

A layout of the facilities of the Lake Goshō Regional Park is shown in Fig. 5. The main facilities are listed below.

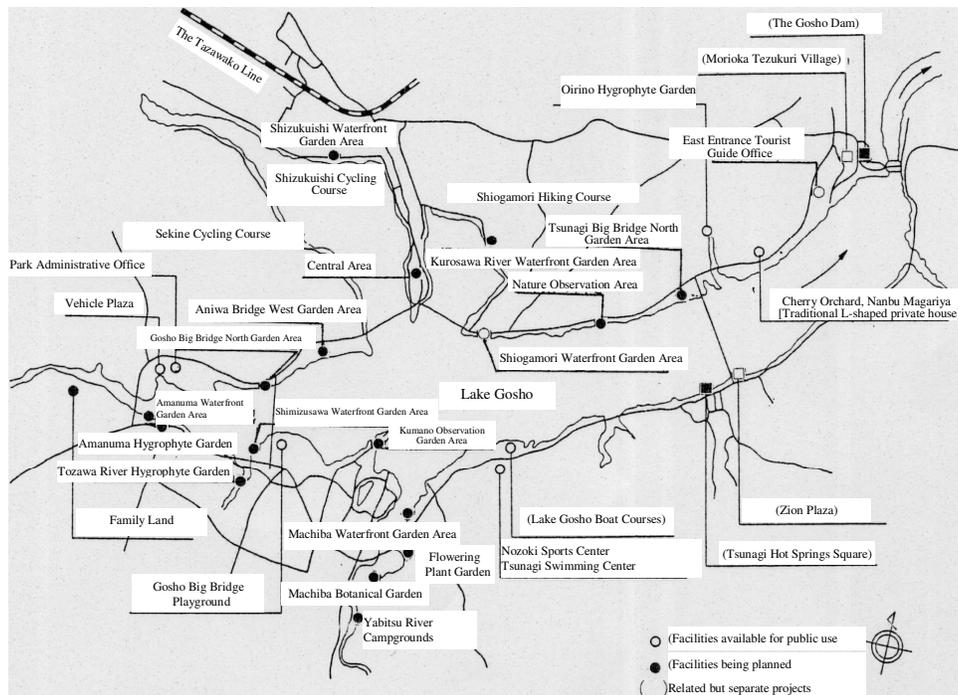


Fig. 5 Layout of the facilities of the Lake Gosho Regional Park

- a) Zion Plaza:
A park with a statue of the Maiden in Zion, the symbol of Lake Gosho.
- b) Tsunagi Swimming Center
A multipurpose swimming center, the largest in scale in the Tohoku district, fully equipped with a slider, facilities for swim events and so forth.
- c) Morioka Tezukuri Village
An establishment integrating the Morioka Local Industries Promotion Center and 14 ateliers for visitors to experience, learn and participate in making things.
- d) Lake Gosho Boat Course
Ideal for boating and canoeing. Favored with excellent conditions, it is regarded as one of the three best courses in Japan, the other two being Toda and Lake Biwa.
- e) Others
Other facilities include aquatic plant gardens, the Vehicle Plaza and a cherry orchard.

4. Effects of the Benefits

Because of the relatively stable flow regime of its rivers, Lake Gosho has fewer changes in water stages. This, as well as the scenic beauty, helps to attract people throughout almost the entire year. The largest event is the “Lake Gosho Festival” held on the last Sunday of July. The festival offers visitors “a ten-day period in which to establish a close bond with the surrounding lake and forests.” An exhibition of fireworks and many other events attract a crowd of nearly 70,000 people.

The Tsunagi hot springs on the lake had about 700,000 visitors in 1989 compared to about 300,000 in 1981 preceding the completion of the dam.

In a survey on the use of dam lakes carried out in 2000 on the dams under direct control of the Ministry of Land, Infrastructure and Transport and the ones managed by the Water Resources Development Public Corporation, the Gosho Dam having about 890,000 visitors/year held the foremost place with respect to the number of annual visitors. The Tezukuri Village with handwork ateliers and, in particular, the Vehicular Plaza with go-carts and recycled trains attracted a large number of the visitors.



Fig. 6 Lake Gosho Festival



Fig. 7 Lake Gosho Festival

5. Reasons for Success

The project related to environmental improvement around the dam lake was initiated in response to the demand by local inhabitants in the early stage of the dam construction. The government, the prefecture, the city, the town and local inhabitants jointly tackled the project to meet the demand. Helped by its favorable location, the intended effect has been produced.

6. Further Information

6.1 References

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- 3) Association for Conserving Limpid Stream of Lake Gosho: Lake Gosho News, Special issue featuring the Lake Gosho Festival, August 20, 2003

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