Fostering the Mountain Streams and Culture of the Beautiful Southern Japanese Alps.
36 Disaster (Jun. 1961)

Slope Fall of Mt. Onishi

36 Disaster on June 29, 1961, Sudden Fall Sweeps Through Village!!

The Koshigaya River basin suffered anti-nuclear-related disasters such as debris flows and landslides, every time it rained heavily in local areas. Among them, the disaster of 1961, that caused the fall of Mt. Onishi, is still remembered as a catastrophe. Severe local rains that began in the middle of June, 1961, reached a total precipitation of 424mm on June 29, causing slope failures, debris flows and landslides mainly in Oshika Village covering most of the basin. In the Kashio area, 51 houses were destroyed and 13 people were killed along with the destruction of the Kitagawa residential zone. 11 houses were lost in the Ogawa area. Around 9:15 on the morning of June 29th, when the rain slackened off, a 450m by 500m section of the slope of Mt. Onishi suddenly fell with thunderous roar. About 3.3 million m³ of rock and soil (enough to fill Tokyo Dome two and a half times) washed into residential zones destroying 39 houses, burying over 30 chos (approx. 73.5 acres) of rice paddy fields and claiming 42 lives in a single moment. The total damage from the downpour, with the inundation of the Koshigaya River, resulted in 55 people dead or missing with 642 people injured. The loss of farmlands, forests, roads, levees and houses totaled over ¥13 billion at the time. Oshika Village was said to be "unrecoverable."

Mt. Onishi before the fall

The moment of the fall

Onishi Kannon (Goddess of Mercy)

A statue of the Goddess of Mercy was built to commemorate the revival and consoliation of the victims' souls. The guardian looks peacefully down upon the residents while Mt. Onishi stands in the background, still vividly bearing the traces of the collapse.
Living with the Median Tectonic Line

The Koshibugawa River, which flows from Mt. Akashidake of the Southern Japan Alps, is a rapid stream with a main river channel of 31.8km long and a catchment area of 295km².

The Koshibugawa River basin has fragile geological features, which are represented by a number of tectonic lines including the “Median Tectonic Line,” the great fault running through the Japanese islands, and the “Kashio Tectonic Line,” mainly comprising mylonite. These tectonic lines may easily trigger slope failures, debris flows and landslides.

The area has frequently suffered soil-related disasters in the past. In the village, there are a lot of collapsed places named “nagi,” such as “Akanagi,” “Amefurinagi” and “Shinnagi.”
Creation of the Infrastructure that Makes You Feel Safe

The confluence of the Koshibugawa and the Aokigawa Rivers called "Shimagawara" has long been a wasteland due to constant flooding. At the beginning of the 19th century, levee construction work was implemented so that the vast flatland was developed into a fertile rice-producing area of 30 chos (73.5 acres). Due to the massive amount of soil that was distributed in 36 Disaster on June 29, 1961, the accumulated soil in the river course was removed during the restoration work, and a new course was arranged. To prevent sediment from flowing out, a large debris barrier was constructed in the upper reaches of the Koshibugawa River.

However, the river course of the Koshibugawa River, in the Ogawara area, encountered the following problems:

1. The Koshibugawa River drastically curved below the confluence with the Aokigawa River and headed directly towards Mt. Gunma.
2. For lack of longitudinal regulation, the river banks fell remarkably and the facilities drastically broke off and flowed away due to scouring from local flooding. In addition, inundation caused by abnormally sedimented sand might have occurred.

Therefore, discussions about Ogawara Consolidation Works began, targeting the following three points:

1. Preventing the river bed and banks from eroding
2. Preventing unstable sediment in the river course from traveling secondarily
3. Preventing inundation caused by abnormally sedimented sand

Before determining the facility layout plan, hydraulic model experiments were conducted. Based on the results, the plan was coordinated with local maintenance programs along the river. The project began in 1989 and continues to this day.

A Variety of Facilities Have Been Constructed through the Ogawara Consolidation Works

1. Robaben Hall
Robaben Hall has local collections to present the history and folk culture unique to the village and provide many people the opportunities to better understand the village.

2. Oishi Park
Oishi Park is at the site of Mt. Oishi's great shape falls. The park is famous throughout southern Nagano prefecture (Southern Shinshu) for its cherry blossoms, which symbolize the complete recovery from the damage caused during the disaster.

3. Medium Tectonic Line Museum
A steeped sample of the actual occurrence of the fault, large size of sample rocks and precise topographical and geographical models are exhibited here.
Consideration in Ogawara Consolidation Works

In implementing the Ogawara consolidation works, the cost was reduced by using soil and huge stones from the site. The huge stones were used for the front face of the consolidation and revetment as well as the sodding planting (block sodding) that was applied to the upper face of the revetment. These not only reduce costs but also harmonize them with the surrounding landscapes providing facilities familiar to people.

**Data on Ogawara Consolidation Works**

- Design flood discharge: 1,760m³/s
- Designed riverbed slope: 1/70

**Detailed works**

- Extension of consolidation works: approx. 2.2km
- Consolidation works: 6 units for the Koshigawara River
  - 2 units for the Aokigawa River
- Bed girdle:
  - 6 units for the Koshigawara River
  - 3 units for the Aokigawa River
- Revetment works:
  - approx. 4.3km

**Consolidation works:**

At the place where the river slope of the riverbed drastically changes, the soil flowing from the upper reaches easily sediments. Once a flood has occurred, such conditions trigger the river inundation and collapse of the riverbank.

In consolidation works, low cross dike are arranged like stairs to prevent the riverbed from eroding. That stabilizes the river flow, moderates the slope of the riverbed and decelerates the flow velocity. An array of consolidation works means that a number of consolidations and revetments are arranged in a series.

**River with consolidation and revetment works**

The riverbed slope is mild enough to control the move of debris.

**River without consolidation works**

The riverbank falls leaving the sediment to flow into the river or produces conditions for the sediment to give way.

The revetment prevents the riverbank from falling.

The river flow is gentle.
Disaster Information Base in the IT Age for Non-structural Disaster Prevention Activities.

Koshibugawa Sabo Station

Traditional sediment-related disaster countermeasures focused on hardware such as debris barriers, consolidations and revetments. However, it is also important to take non-structural measures such as the collection of disaster signs, and the monitoring and raising of consciousness in local residents. Following this non-structural point of view, the Koshibugawa Sabo Station is usually open to the public to educate them on sabo and landslides, and how to prevent disasters in the Koshibugawa River basin. In the case of a disaster, it provides necessary information to the local governments and agencies involved. It also collects, manages and transmits information and data on pre and post disaster conditions. The information base contributes to the prevention of serious damage including loss of life by distributing information on debris flows and landslides in real time to the residents through their local governments.

[Activities through lessons]
- Art: Handicraft with stones and driftwood found at the riverside
- Science: Learning about the river flow and geological features
- Physical Education: Learning by swimming with clothes on
- Club Activities: Playing in the water and building a fire

[Activity using the facilities and nature]
- Median Tectonic Line Museum and riverside: Learning about river disasters and their prevention
- Mt. Oishi: Learning about natural disasters

[Activity using events]
- Study tour at the sabo work site: Learning on river disasters and their prevention

It is necessary for children growing in good health to have a variety of experiences not only at school, but also at home and in the community. However, children today have fewer chances to gain experience in nature and life as well as through playing. The Koshibugawa River in the Ogawara area functions as a playground where children are able to fully enjoy their surroundings. Under the Waterfront Enjoyable School Project, the river located within easy reach is maintained, managed and operated as a spot for experiences and learning in nature as well as utilized in cooperation with people of the local community. Designated as the Waterfront Enjoyable School Project zone, the Ogawara area is the gateway to learn and experience nature of Oshika Village represented by the Koshibugawa River.

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