岩屋ダム周辺map

独立行政法人　水資源機構

岩屋ダム管理所

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H16.8

WAY DAM

水がささえる豊かな社会

独立行政法人
水資源機構
岩屋ダム管理所

Ⅰ Overview of the IWAYA Dam project

The Iwaya dam, as a comprehensive development project, plays an important role on flood control in Kisogawa River system, as well as is used for irrigation, water supply for domestic and industrial use and hydropower (Chubu Electric Power Co.). In 1969, the project was inherited by Water Resources Development Public Corporation from the Construction Ministry and the construction was performed by Chubu Electric Power Co. After the completion of construction in 1976, Japan Water Agency has been responsible for its management.

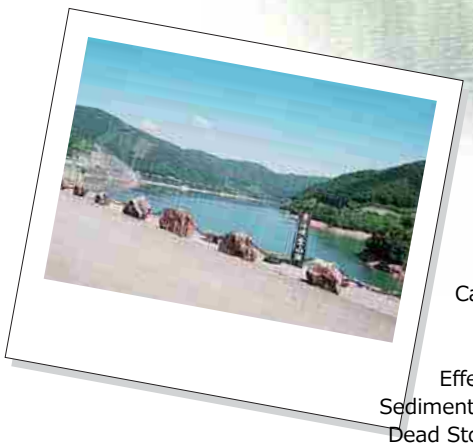
計画等の経緯

- 水系指定　1965年　昭和40年6月25日
- 基本計画決定　1968年　昭和43年10月15日
- 実施方針指示　1969年　昭和44年8月16日
- 実施計画認可　1969年　昭和44年12月17日
- 基本計画決定　1973年　昭和48年3月23日(変更)
- 実施方針指示　1976年　昭和51年3月11日(変更)
- 実施計画認可　1976年　昭和51年3月16日(変更)
- 管理方針指示　1977年　昭和52年3月22日
- 管理規程認可　1977年　昭和52年3月31日
- 管理開始　1977年　昭和52年4月1日
- 管理方針指示　1997年　平成9年1月27日(変更)
- 管理規程認可　1997年　平成9年3月10日(変更)

Ⅱ Specifications

岩屋ダムは、木曽川の中流岐阜県美濃加茂市で合流する飛騨川の上流支流、馬瀬川に建設された多目的ダムで、木曽川河口からおよそ140km上流に位置します。

馬瀬川は、岩屋ダムより約50km上流の竜ヶ峰、川上岳を源とし、南流して弓掛川と合流後、岩屋ダムを通過して和良川と合流、下呂市金山町で飛騨川と合流する流路延長約70kmの1級河川です。



Specifications of Reservoir

Location	Kanayama Town and Gero Maze, Gero City, Gifu Prefecture
Catchment Area	(Direct : 264.9㎢) (Indirect : 770.0㎢)
Total Capacity	173,500,000㎥
Effective Capacity	150,000,000 ㎥
Sedimentation Capacity	13,800,000 ㎥
Dead Storage Capacity	9,700,000 ㎥
Flood Control Capacity	50,000,000 ㎥
Water Utilization Capacity	61,900,000 ㎥

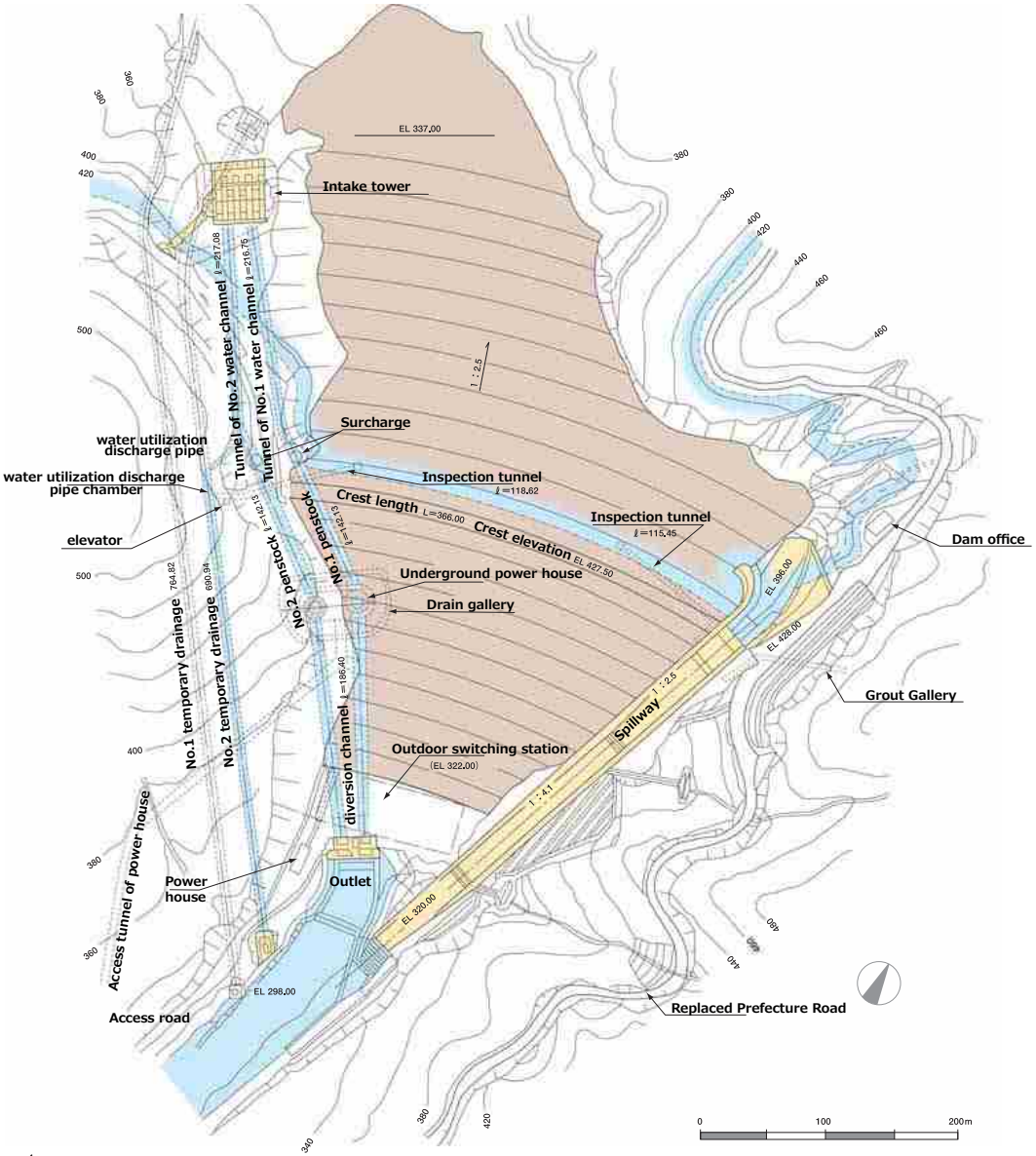
Specifications of Dam

Location	Unogen and Onbara, Kanayama Town, Gero City, Gifu Prefecture
River	Maze river of Kiso River water system
Type	Tilt impervious core type rock-fill dam
Elevation of Crest	EL427.50m
Height	127.5m
Length	366.0m
Width of Crest	10.0m
Volume of embankment	5,780,000㎥
Spillway capacity	2,400㎥/s

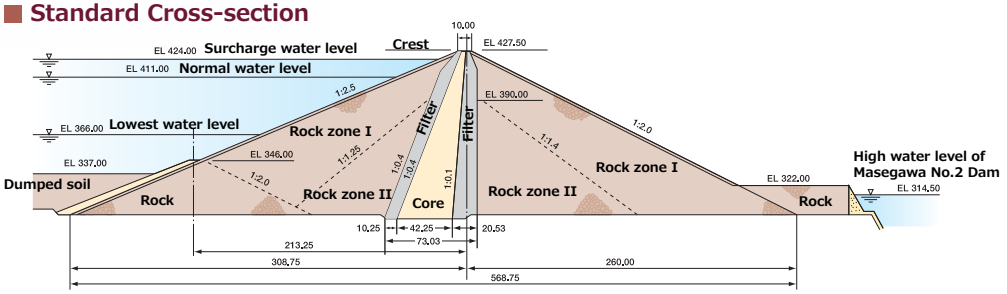
Ⅲ Dam Structure

Embankment

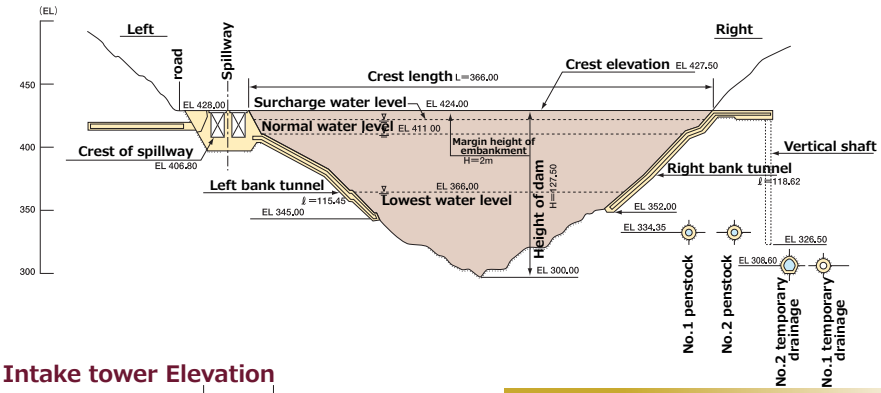
■ Plan



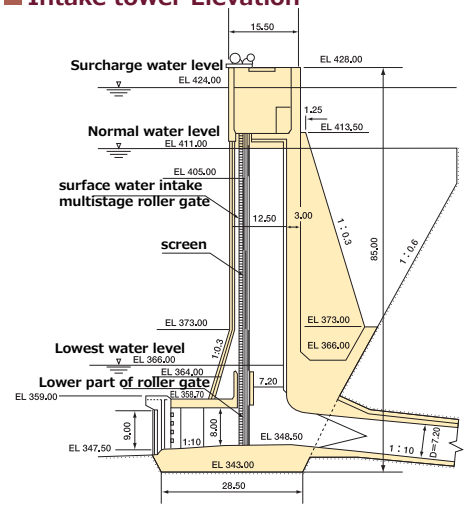
■ Standard Cross-section



■ Longitudinal Section



■ Intake tower Elevation



Selective intake equipment

Intake tower : Sub-water intake and surface water intake
Type : vertical multistage roller gate
2 tailrace pipes (Power generation)
Water utilization pipe attached on one of tailrace pipes
Maximum intake water capacity : 335 m³/s

Equipment for flood discharge

■ Crest gate

Type : Radial gate
High 18.31m× Width 10.90m 2 gate
Maximum outflow discharge : 4,000m³/s

■ Spillway channel

Type : Open channel type
Crest elevation of spillway : EL406.80
Water Channel length 364.33m
Water Channel width 21.81m~13.50

Water utilization discharge gate

■ Water utilization discharge gate

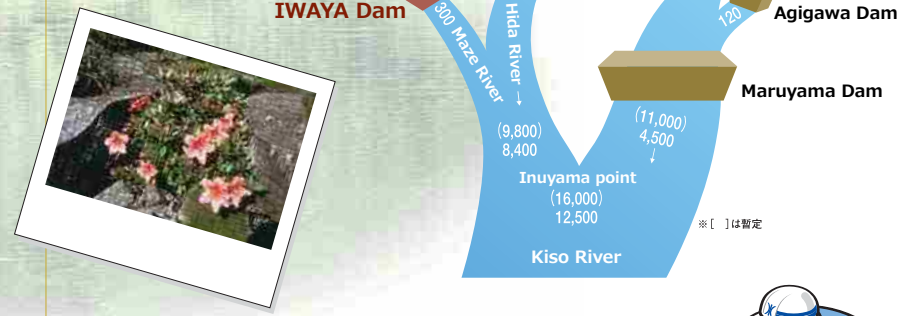
Type : Jet flow gate
ϕ1.86m 1 gate
Maximum highwater flow : 83.11m³/s

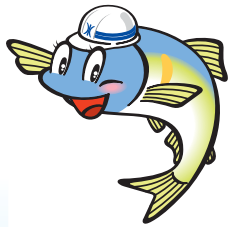
Ⅳ Purposes of the dam

1. Flood Control

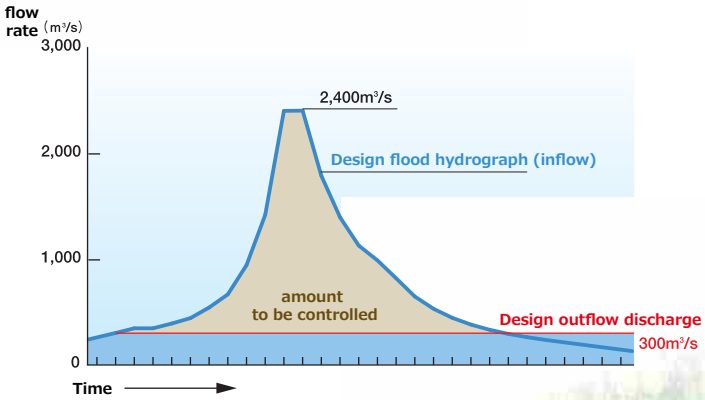
The flood regulation for Kiso River is cutting basic high water flow rate of 16000 m3 / sec by 3500 m3 / sec at Inuyama reference point, which is achieved by regulations of Iwaya Dam, Agigawa Dam and Misogawa Dam respectively. Iwaya Dam is planned to cut the plan high water flow rate of 2400 m3 / sec by 2100 m3 / sec.
Reservoir water level of Iwaya dam is lowered 13m from normal maximum water level to ensure a flood regulation capacity of 50 million m3 which is about 30% of the total storage capacity.

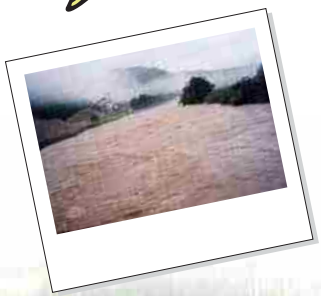
Image of plan high water flow allocation (m³/s)





Iwaya Dam flood control plan





2. New water supply

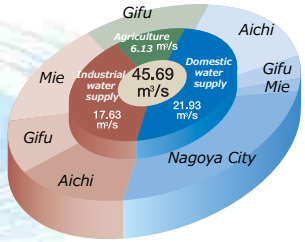
A new water supply capacity of maximum 45.69m3 is yielded and using for irrigation, domestic and industrial water supply in the area of Aichi, Gifu, and Mie Prefecture and Nagoya City. The allocation of water quantity is shown as the right table.

Details of new water supply

(Unit m³/s)

Area supplied	Irrigation (agriculture)	Domestic water supply	Industrial water supply	Total
Aichi Pref.		7.22	6.30	13.52
Gifu Pref.	6.13	1.77	4.33	12.23
Mie Pref.		1.00	7.00	8.00
Nagoya City		11.94		11.94
Total	6.13	21.93	17.63	45.69

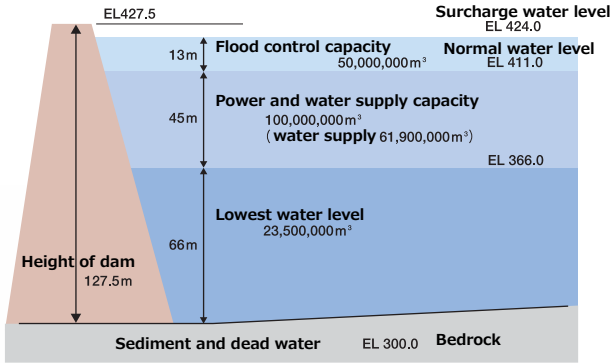
Note : The maximum capacities are shown for irrigation and domestic supply.



3. Power Generation

Maze Gawa No.1 and No.2 power plant, one sits in the underground on the right bank and another downstream of the dam respectively, brings the maximum generation capacity of 288 megawatts and 66.4 megawatts respectively.

Image of allocation of the storage capacity of Iwaya Dam



V Hydrographic Map and Beneficiary Area Map of the Dam

■ Hydrographic Map


馬瀬川第二ダム


西村ダム


中呂発電所、中呂放水路


中呂放水口

■ Beneficiary Area Map

Gifu Prefecture

	水道 (2市5町)	工業 (1市1町)	農業 (2市5町)
美濃加茂市	■	■	■
可児市	■		
関市			■
坂祝町	■	■	■
富加町	■		■
川辺町	■		■
御嵩町	■		
七宗町			■
八百津町	■		■

Aichi Prefecture

	水道 (13市7町1村)	工業 (7市5町1村)
名古屋市	■	
一宮市	■	■
津島市	■	■
江南市	■	■
稲沢市	■	■
犬山市	■	
小牧市	■	
岩倉市	■	
春日井市 (高蔵寺ニュータウン、鷹打を除く)	■	
清洲市	■	■
愛西市	■	■
弥富市	■	■
北名古屋市	■	
七宝町	■	■
美和町	■	■
蟹江町	■	■
豊山町	■	■
春日町	■	■
大口町	■	■
扶桑町	■	■
甚目寺町		■
大治町		■
飛島村	■	■

Mie Prefecture

	水道 (3市3町)	工業 (3市2町)
桑名市	■	■
四日市市	■	■
鈴鹿市	■	■
朝日町	■	■
川越町	■	■
木曽岬町	■	

Legend

- Direct catchment basin
- Indirect catchment basin
- Flooded basin
- Domestic water supply
- Industrial water supply
- Agricultural water supply
- Highway
- Main road

VI Dam Management

Control room

Measuring leakage (inside of Inspection tunnel)

There are three types of operation in the dam management; they are flood control operation, low water operation, and facility management.
These operations are carried out according to respective operation rules or management provisions

1 Flood Control Operation

- Collection of meteorological and hydrological information
- Prediction of inflow amount
- Inspect of discharge equipment

Report to related organizations
↓
Patrolling and discharge warning in the downstream
↓
Discharge start
↓
Flood control
↓
Completing of flood control

Operator console

2 Low water operation

- Provision of meteorological and hydrological information
- Consultations with related organizations
- Release of supplied water

Patrolling of the reservoir

Investigation of water quality

3 Facility operation

- Maintenance and inspection of facilities
- Maintenance and improvement work
- Verification, documentation and report
- Investigation of water quality
- Observation of displacement of dam body
- Patrolling of the reservoir
- Improvement of environment
- Administration
- Public affairs

Operation facilities

Parabolic antenna

Communication equipment

Multiplex wireless equipment
Telemeter observation equipment
Data transmitting device

wireless equipment

Control facility

Dam operation control system

Observation equipment

Observation instruments
Rainfall observation device
Water level observation device
Water quality monitoring instrument

Warning apparatus

Water discharge warning system
Water discharge warning station

Monitoring device

CCTV device

Power facilities

Power receiving equipment

Preliminary power generation equipment

Driftwood stopping facility

Boats and other equipment

Patrol boat and workboat
Warning vehicle
Elevator
Driftwood stopping facility

Sediment storage dams

Mazegawa sediment storage dam

Yugakegawa sediment storage dam

Mazegawa sediment storage dam

Ⅸ Utilization of Dam for the environmental improvement

Iwaya dam is adjacent to tourist spots including Kiso River Kokuti park, Gero hot spring, Seseragi street. A lot of people visit the places seeking for rich nature. “Reservoir Environment Improvement Project”, which aiming to develop locations for camp, hiking, fishing utilizing the natural reservoir environment, is consigned from the MLIT and implemented.

Unohara Area

Kanayama Lake camp site

Yugake Area

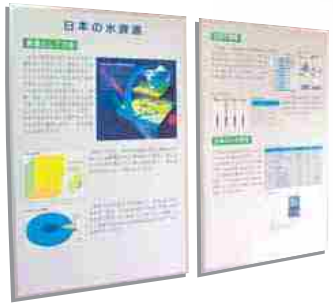
Oshidou camp site

Tennis court

Iwaya dam exhibition hall

開館時間:10時-17時
休 館 日:月曜日、12/1～3/15
入場無料

Iwaya dam exhibition hall sits beside of reservoir and opens to the public. The project construction and completion, outline of the dam are shown in an easily understood way. Photos and panels are used to make the importance of water resource clearly.



ダム湖に生息する魚

ササユリ

屋上からは
ダム本体が一望できます。

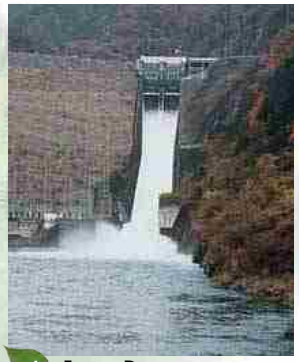
カタクリ

Ⅶ Dam management facilities

1 Rainfall station

2 Tyuro outlet

3 Management office



4 Iwaya Dam

5 Warning board

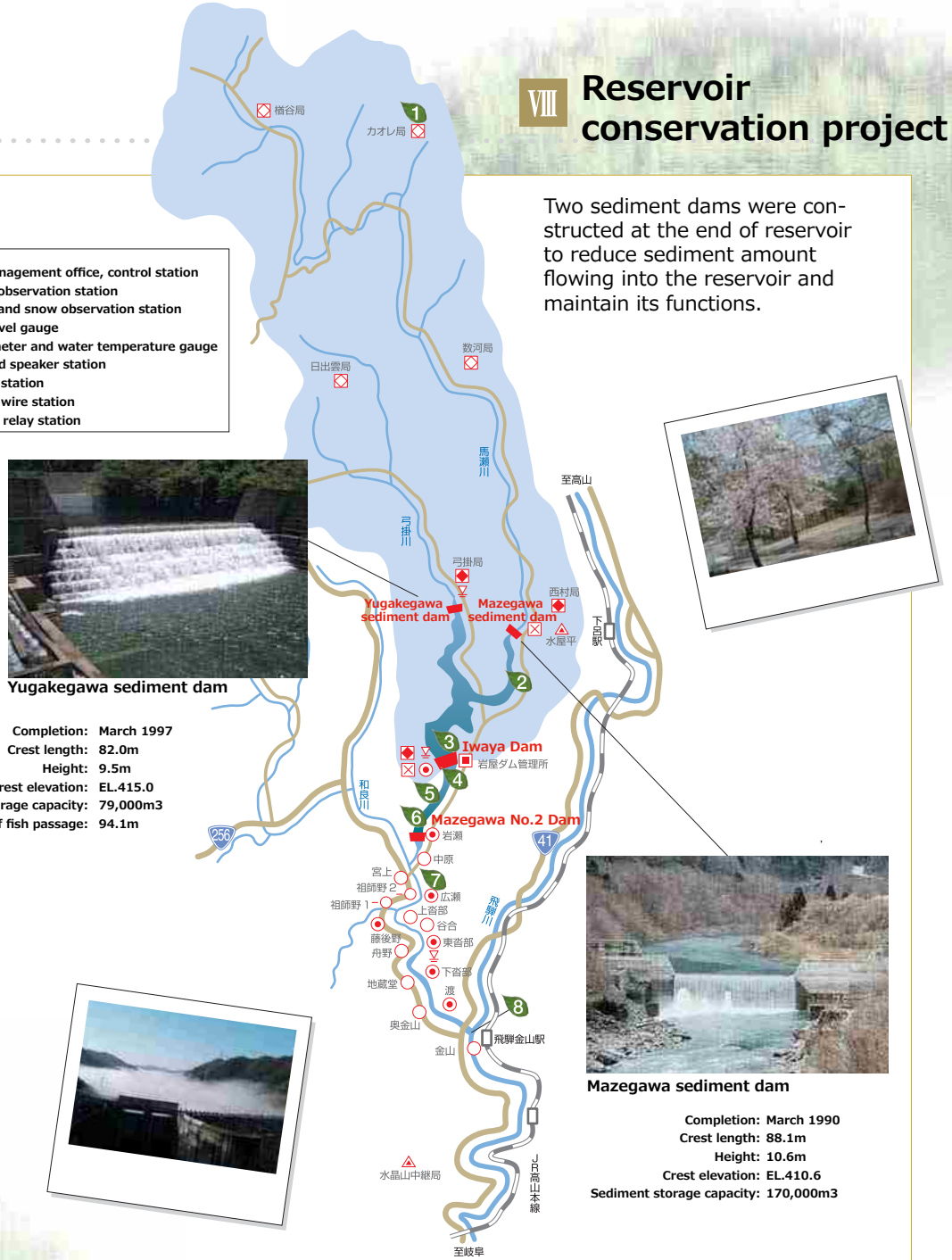
6 Maze river Dam No.2

7 Warning station

8 Confluence

Ⅷ Reservoir conservation project

Two sediment dams were constructed at the end of reservoir to reduce sediment amount flowing into the reservoir and maintain its functions.



Yugakegawa sediment dam

Completion: March 1997
Crest length: 82.0m
Height: 9.5m
Crest elevation: EL.415.0
Sediment storage capacity: 79,000m3
Length of fish passage: 94.1m

Mazegawa sediment dam

Completion: March 1990
Crest length: 88.1m
Height: 10.6m
Crest elevation: EL.410.6
Sediment storage capacity: 170,000m3