

# Sustainable Management of Feitsui Reservoir



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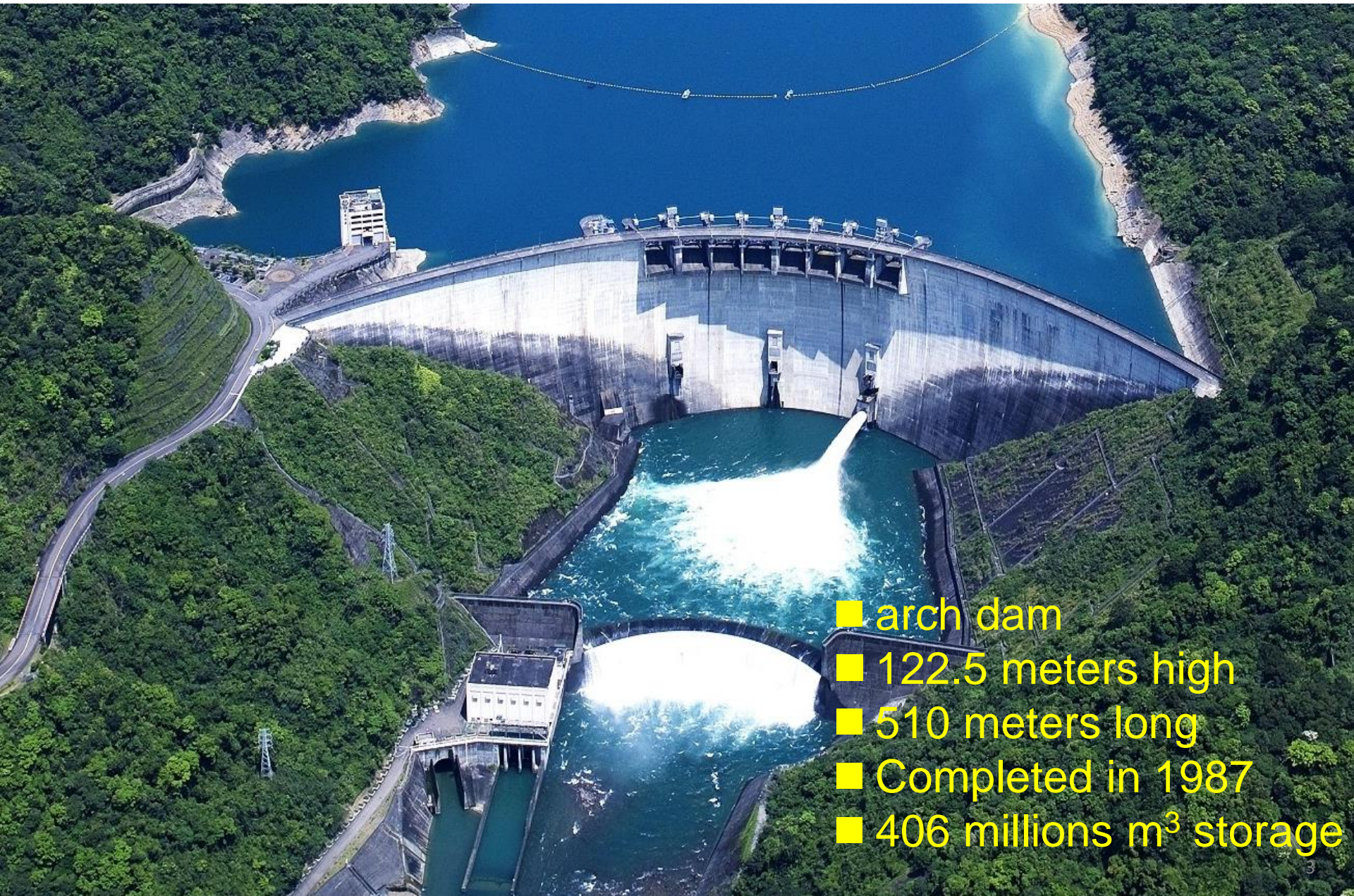
# Location of Feitsui Reservoir



- In northern Taiwan
- Second largest In Taiwan
- Supply water for 6 million people



# Basic Data of Feitsui Reservoir

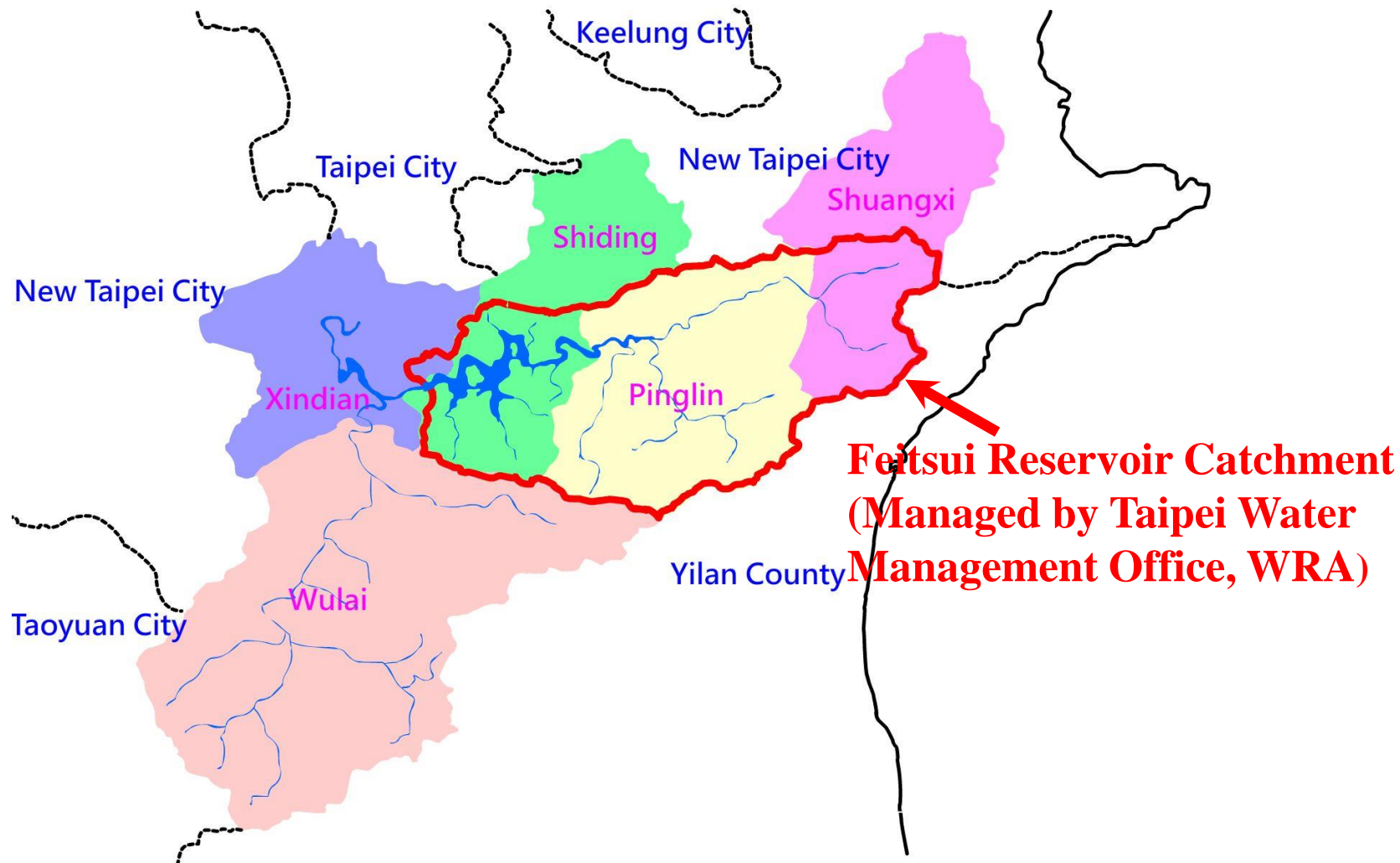


- arch dam
- 122.5 meters high
- 510 meters long
- Completed in 1987
- 406 millions m<sup>3</sup> storage



# Feitsui Reservoir Catchment

**Demarcated as Part of Taipei Water Resource District in 1984**

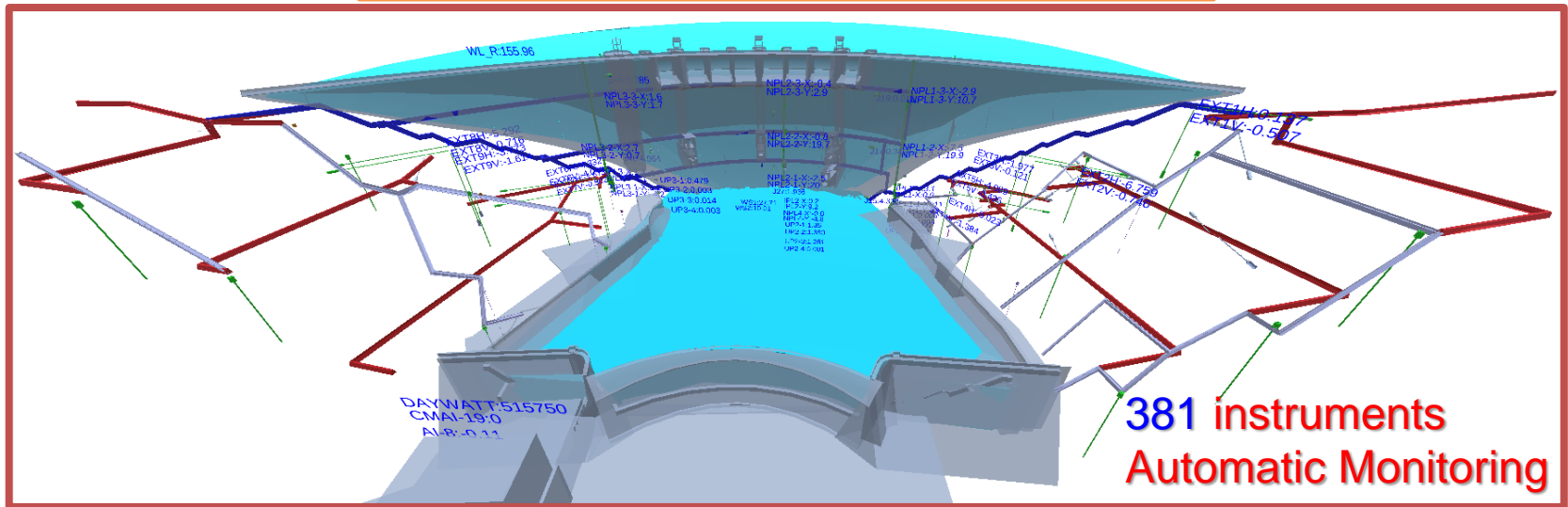


# Sustainable Management



# SAFETY

## Dam safety surveillance system



## Strong motion monitoring system



# SAFETY

Per hour

Safe!!



Stay safe!

Enhance real-time alert

Define warning thresholds

Per day  
(9:00 am)

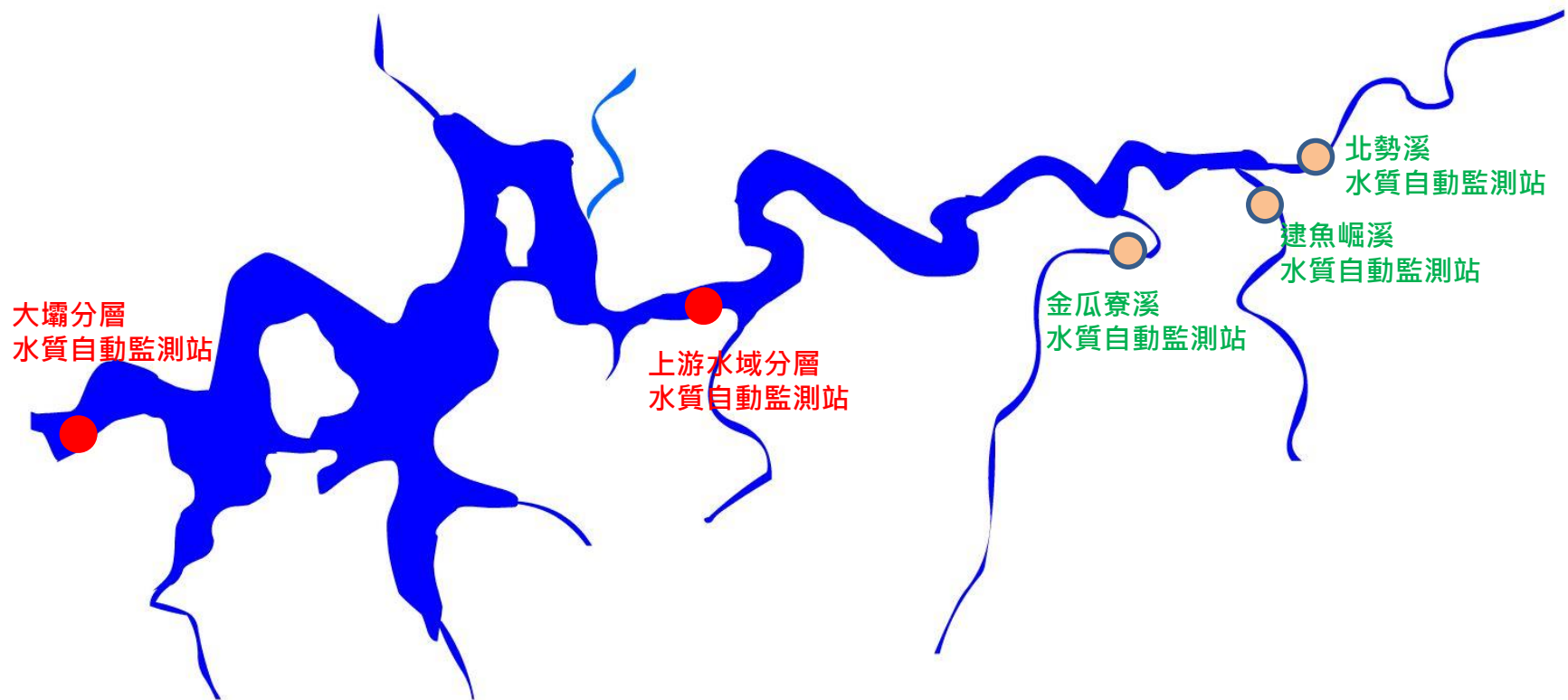
Real-time alert!!





# EXCELLENCE

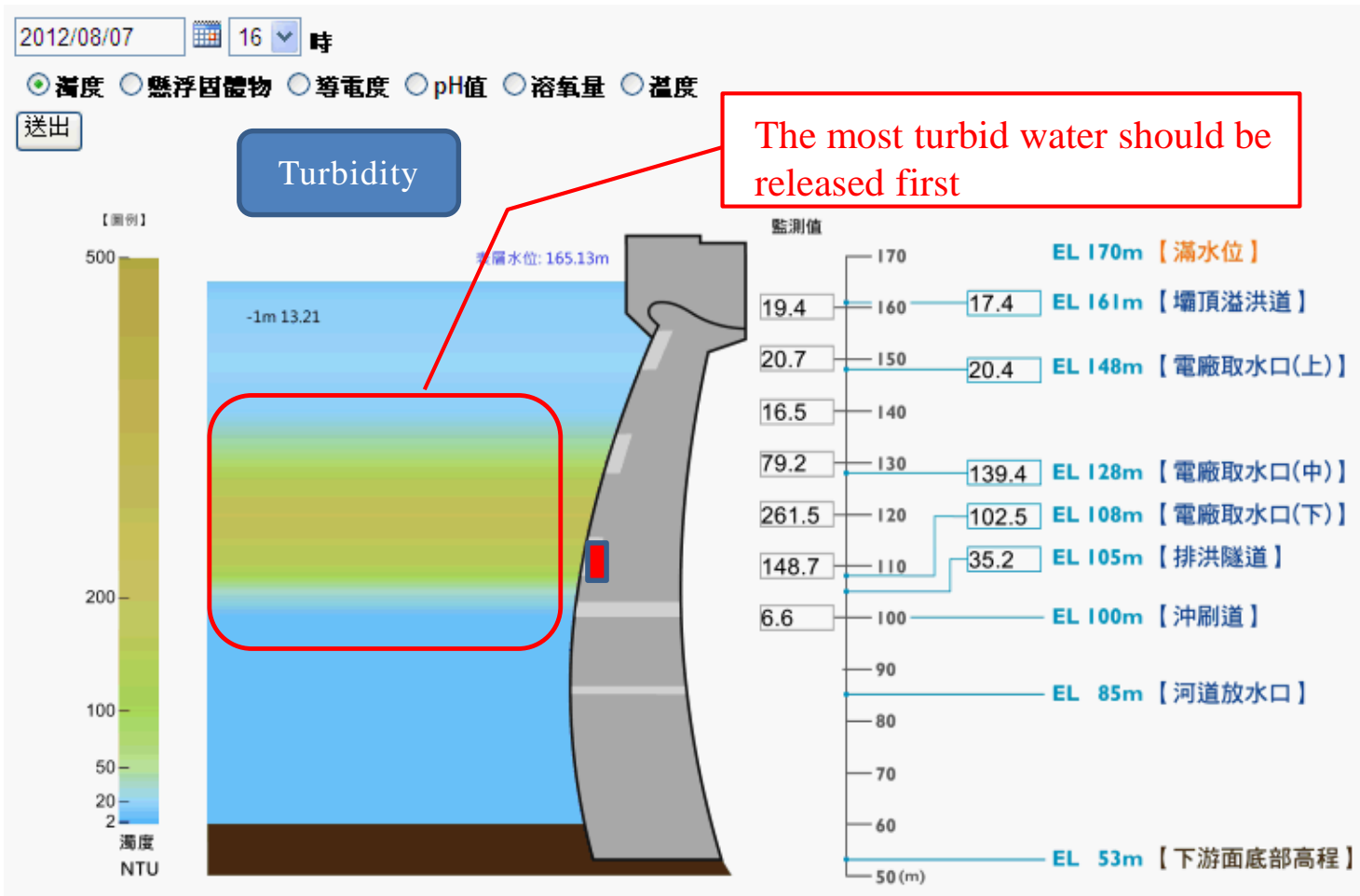
- Tributary Water Quality Monitoring Station
- Water Quality Vertical Profile Monitoring Station



Layout of Water Quality Monitoring Stations in Reservoir



## Sediment reduction : “Storing the Clear and Releasing the Muddy”



Turbidity distribution, after typhoon

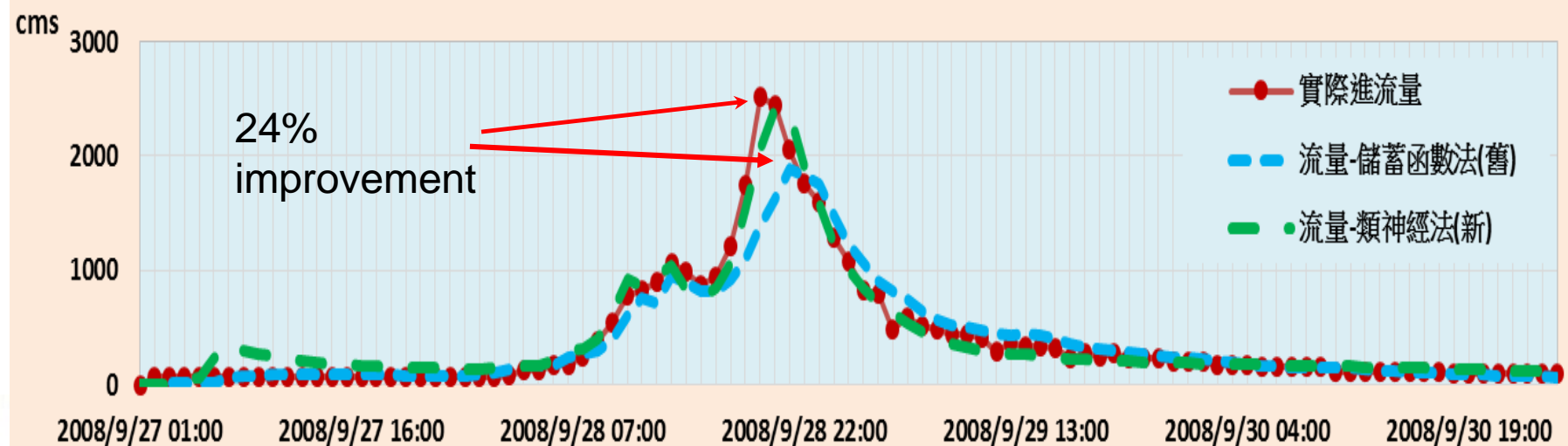
# SMART

## Smart Decision-making System

### Pre-releasing Flood Operation



### Improve Rainfall Runoff Model





# SMART

## LoRa Wireless Environment

### ➤ LoRa Features :

- 1) Long Range : 15 to 20 km
- 2) Low Power Consumption

### ➤ 4 LoRa Base Stations Around Feitsui Reservoir



## Apply to Reservoir Management

### 1.Data Real-time Communication



### 2.Vehicle Tracking



### 3.Electronic Fences





# ECOLOGY



Emerald Green Tree Frog



Yellow-margined Box Turtle



Black Kite



Butterfly Ecological Garden

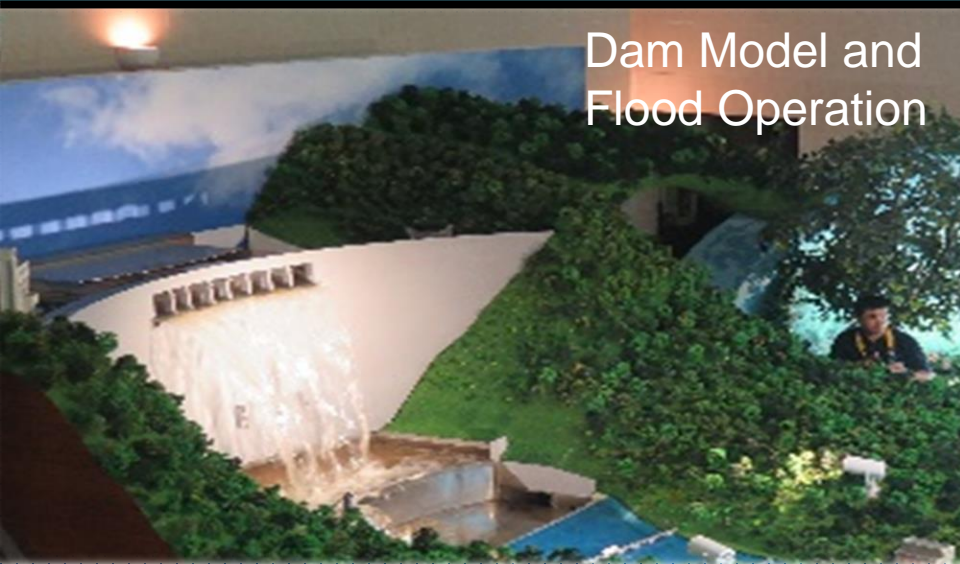


Emerald Green Tree Frog Ecological Garden



# ECOLOGY

## Hardware



Dam Model and  
Flood Operation



Arch Teaching Aid



Plume Line Model

## Software

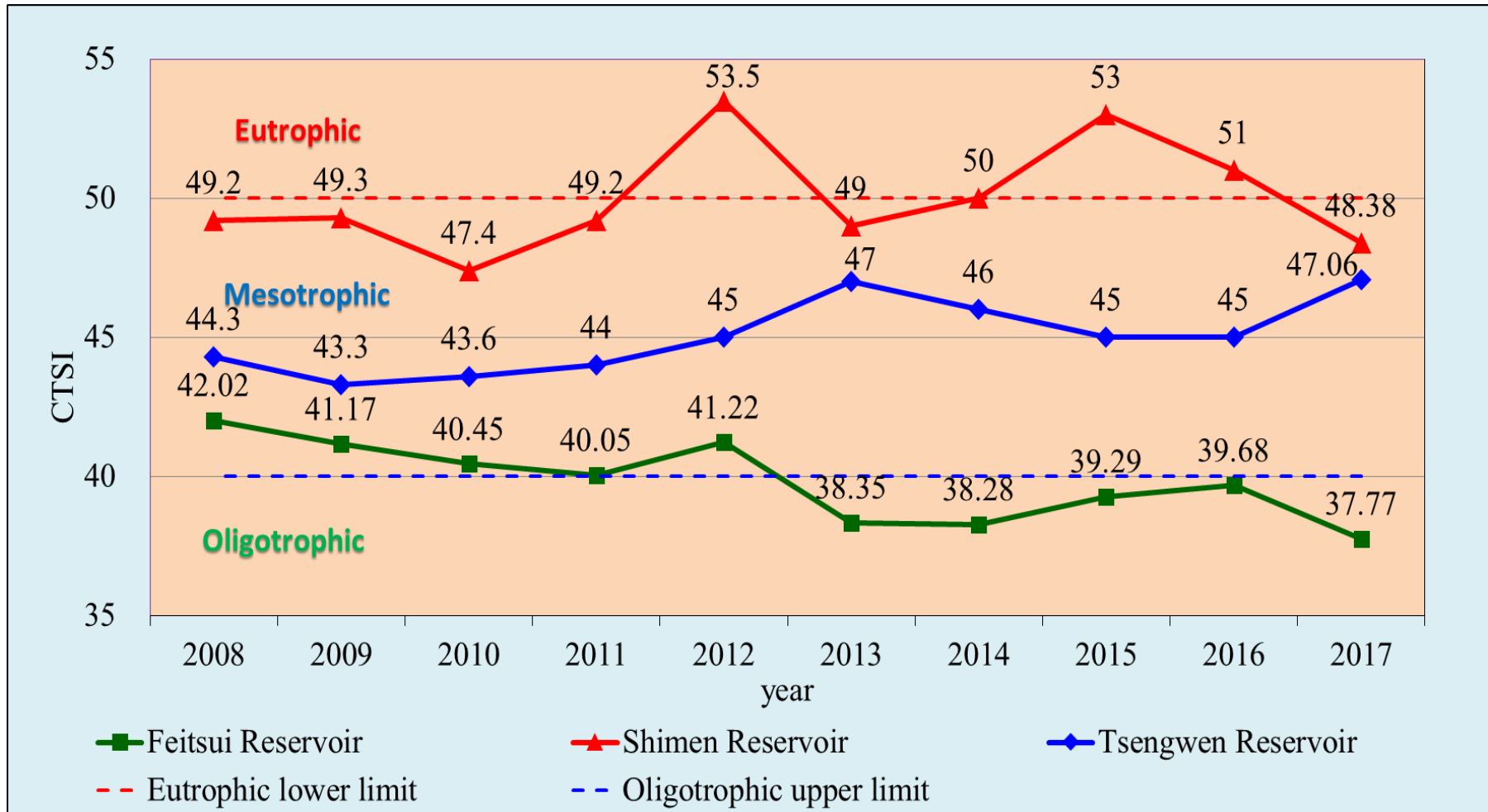


Classes by Age



Classes by Topic

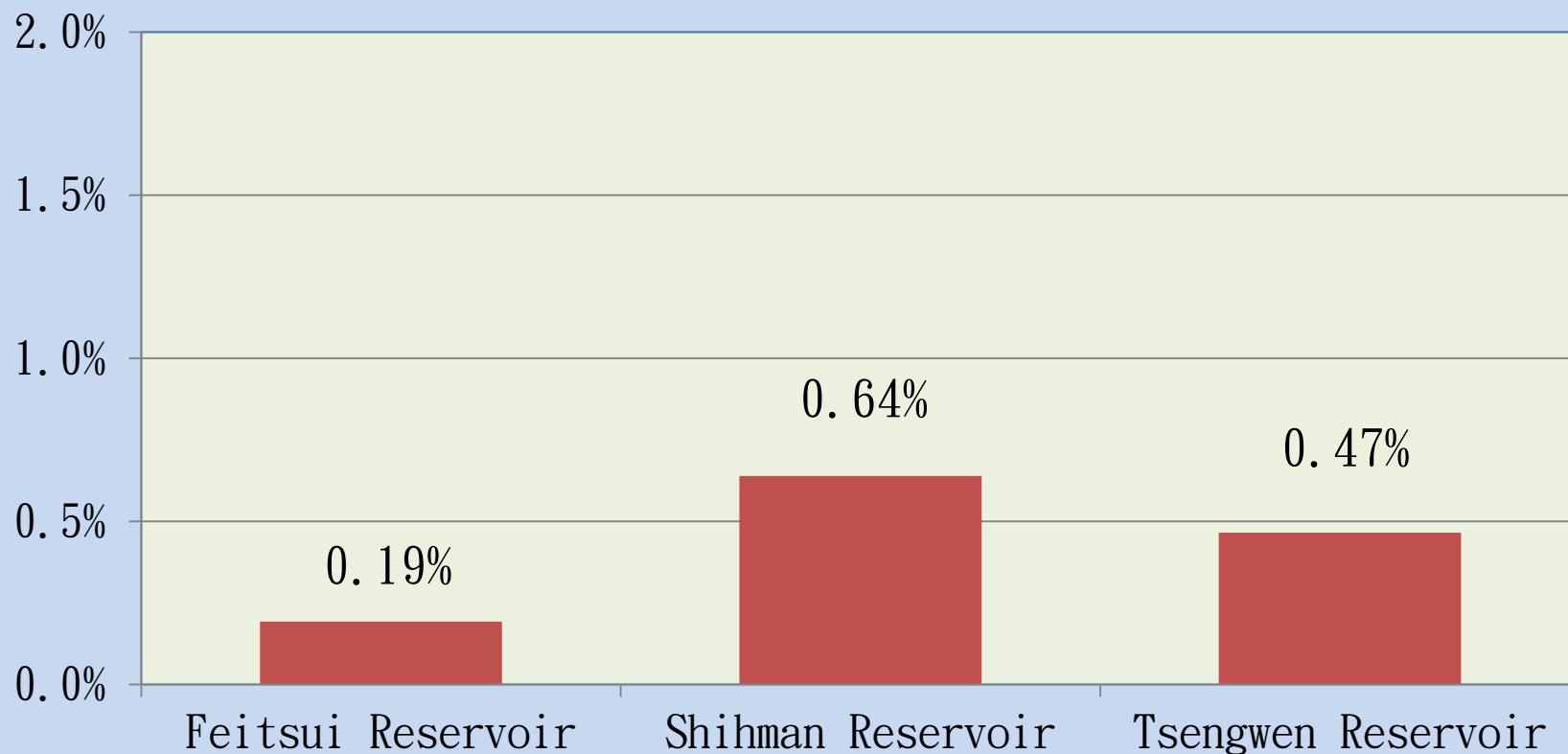
# Water Quality of the 3 Largest Reservoirs in Taiwan





# Sediment of the 3 Largest Reservoirs in Taiwan

Annual average sediment ratio



# The Guardian of Taipei Water Resource



THANK YOU  
FOR YOUR ATTENTION !