

# Inundation due to heavy rain (July, 2006)

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**Overview of heavy rain on July 20-23, 2006**

**Damage along Sendai River due to heavy rain (July 2006)**

**Damage along Sendai River due to heavy rain (July 2006)  
[Torai Area, Miyanojo Satsuma Town in Kagoshima Prefecture]**

**Effect of flood control by Tsuruda Dam  
[Torai Area, Miyanojo Satsuma Town in Kagoshima Prefecture]**

**Flood control by Tsuruda Dam (quick summary)**

**Damage along Kuma River due to heavy rain (July 2006)**

**Damage along Komenotsu River (Kagoshima) due to heavy rain (July 2006)**

## Inundation due to heavy rain (July 17-19, 2006)

**Overview of heavy rain on July 17-19, 2006**

**Damage along Tenryu River due to heavy rain (July 2006)**

**Damage along Hii River due to heavy rain (July 2006)**

# Overview of heavy rain on July 20-23, 2006

## Record RainFall in Southern Kyushu Prefectures (Kagoshima, Kumamoto, Miyazaki)

### Human and housing damage (Since July 3)

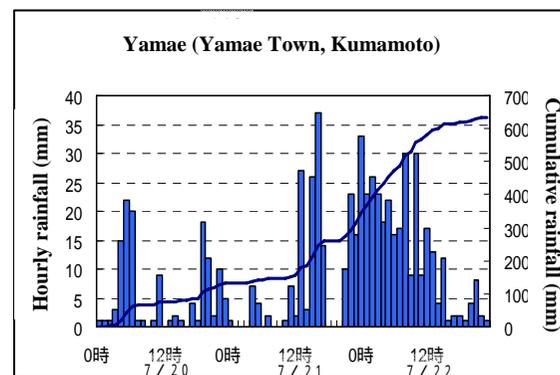
Source: Fire and Disaster Management Agency,  
As of 18:00, July 27

Human Damage				Housing Damage				
Dead	Missing	Injured		Complete	Half	Partial	Inundation	
		Serious	Minor				Above floor	Below floor
5	0	2	22	47	22	97	2,045	2,166

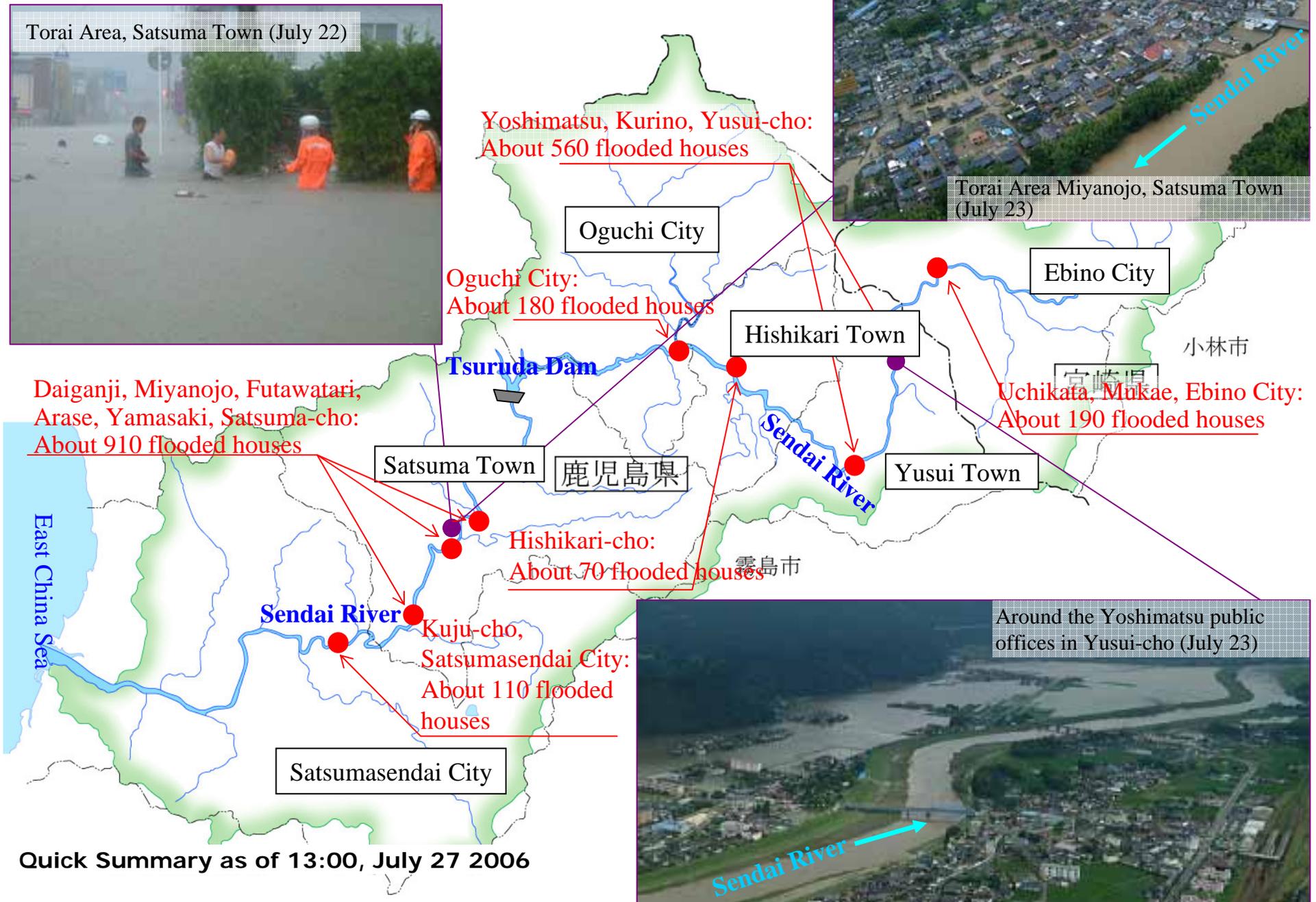
Note: The numbers are the total of three prefectures (Kagoshima, Kumamoto, Miyazaki).

### Status of rivers under the governmental management in all Kyushu (as of 6:00 July 24)

4 river systems & 6 rivers exceeded the dangerous water level (the level very close to flooding).  
8 river systems & 15 rivers exceeded the warning water level (the level requiring careful watching).

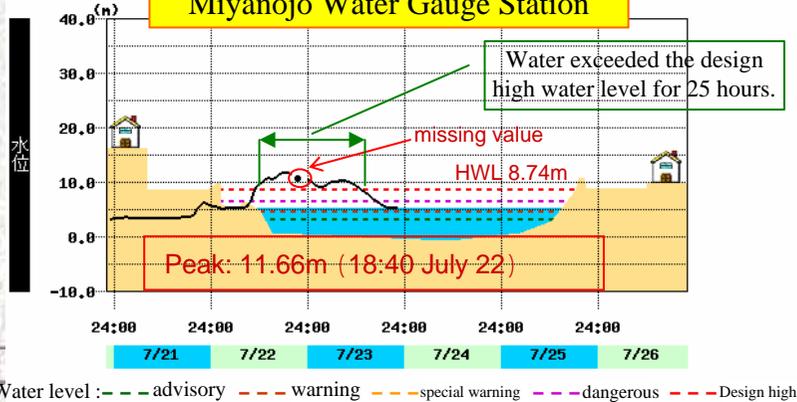


# Damage along Sendai River due to heavy rain (July 2006)



# Damage along Sendai River due to heavy rain (July 2006) [Torai Area, Miyanojo, Satsuma Town in Kagoshima Prefecture]

## Miyanojo Water Gauge Station



Tsuruda Dam helped reduce the water level by 1.3 meters in Miyanojo, Satsuma Town.

Peak water level 11.66m+1.3m (without Tsuruda Dam)

Peak water level 11.66m ↓ 1.3m

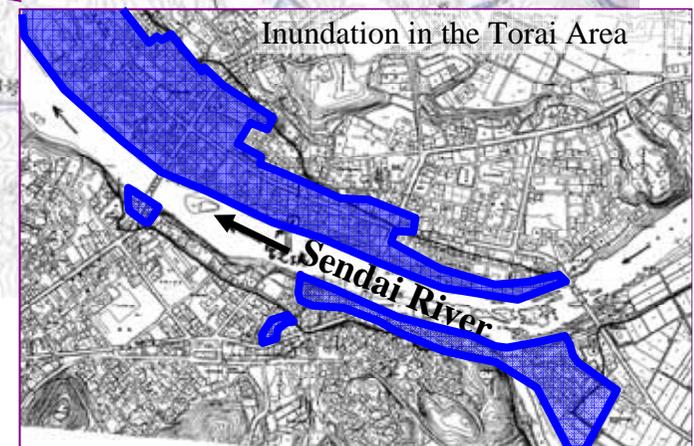
H.W.L 8.74m

Satsuma Town

Inundated area



Inundation in the Torai Area



### Chronological events in Torai Area, Satsuma Town

- 7/22 10:00 Satsuma Town Disaster Response Headquarters was established.
- 10:55 Evacuation recommendation was issued (308 households, a total of 711 people).
- 11:30 Water exceeded the design high water level at the Miyanojo Water Gauge Station.
- 11:45 Request for dispatching the Self Defense Forces (SDF) to Kagoshima was made for rescuing isolated residents.
- 12:25 Evacuation order was issued (911 households, a total of 2,124 people).
- Past 13:00 60 SDF members arrived and began rescuing by boat.
- 14:40 Tsuruda Dam began operation for extraordinary flood.
- 19:17 SDF confirmed no isolated resident was left from the air by helicopter.
- 7/23 13:00 The water level at the Miyanojo Water Gauge Station went below the design high level
- As of 14:00 About 600 houses were confirmed to be inundated by the Ministry of Land, Infrastructure and Transportation.

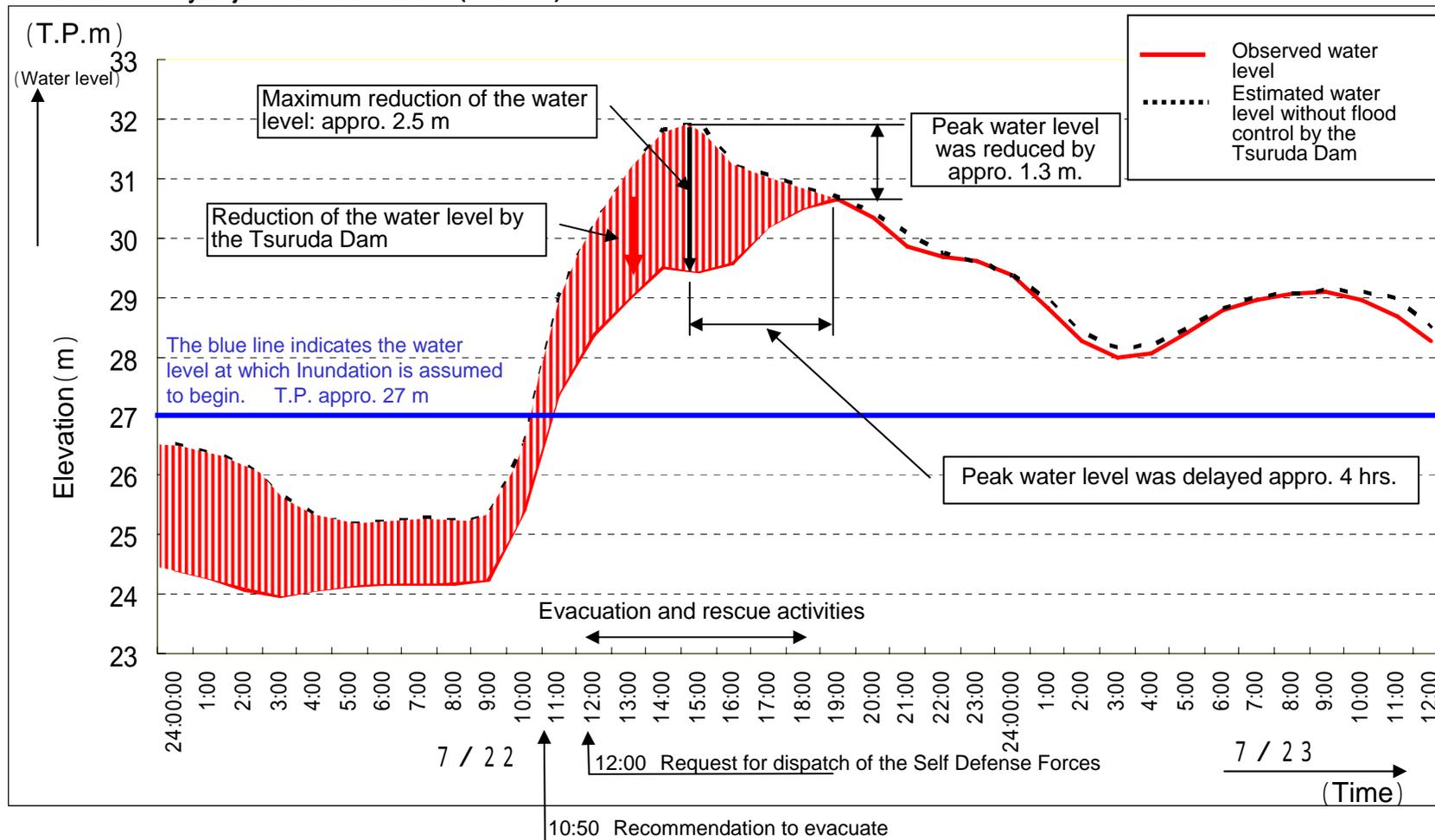
# Effect of flood control by Tsuruda Dam

## 【Torai Area, Miyanojo Satsuma Town in Kagoshima Prefecture】

\*The values given are from quick summary and may change in the future.

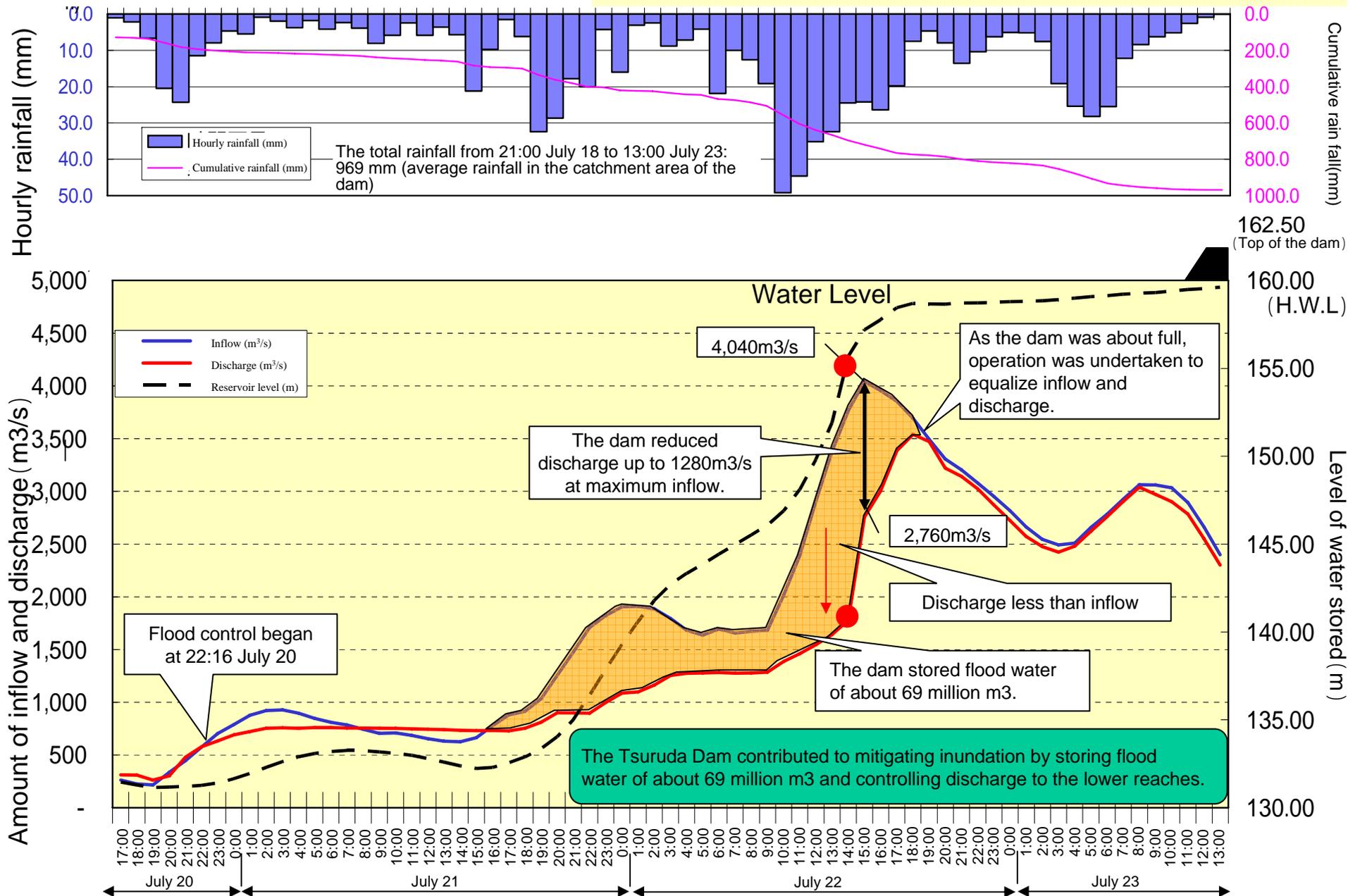
### Torai Area, Miyanojo Satsuma Town in Kagoshima Prefecture

< Sendai River Miyanojo Observation Station (37k700m) >

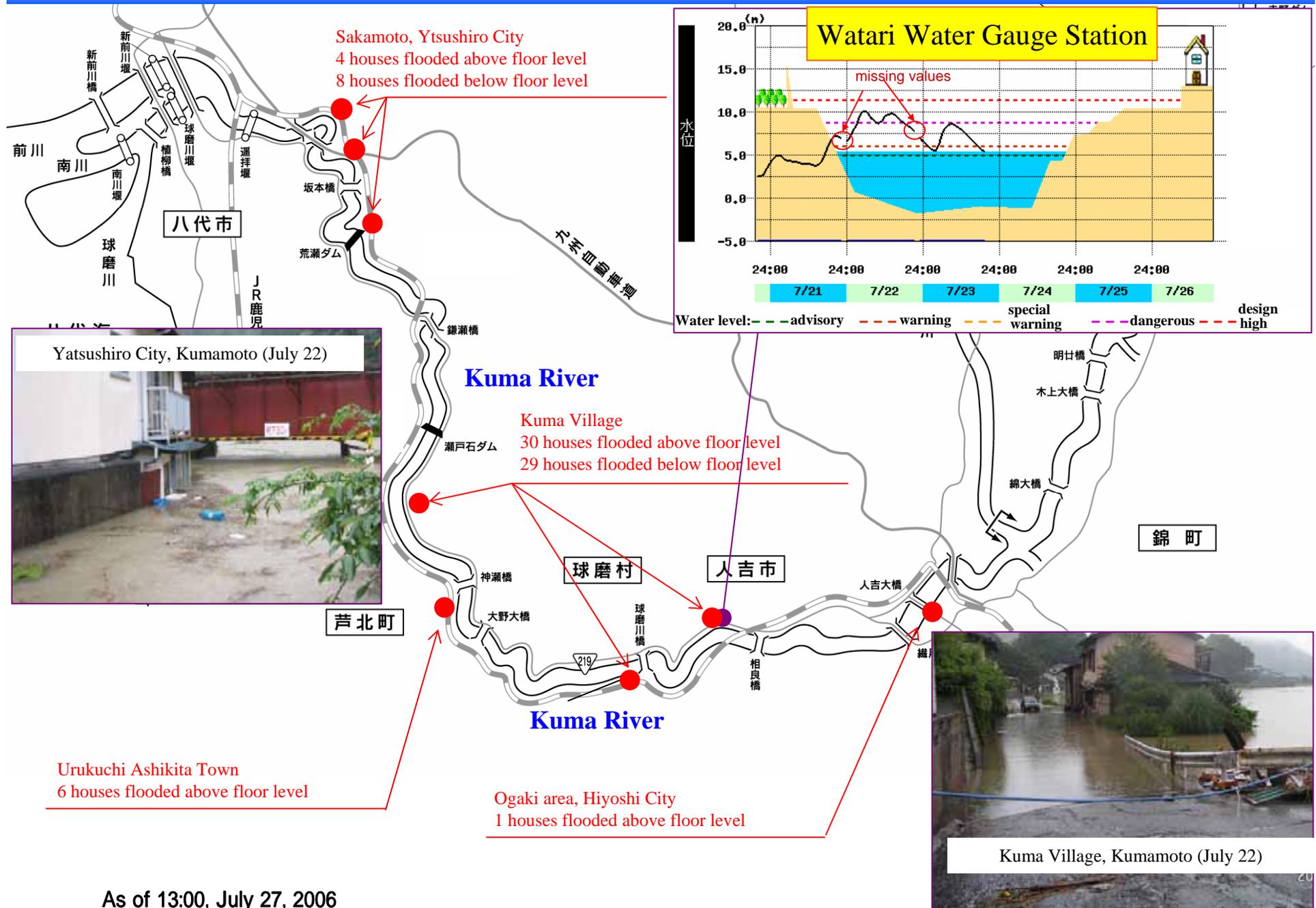


# Flood control by Tsuruda Dam (Quick Summary)

\*The values given are from quick summary and may change in the future.



# Damage along Kuma River due to heavy rain (July 2006)



As of 13:00, July 27, 2006

## Damage along Komenotsu River (Kagoshima) due to heavy rain (July 2006)

- Record continuous rainfall of 900 mm was observed at Izumi-okawauchi Observation Station.
- The water level of the Komenotsu River exceeded the dangerous water level at Kasugabashi Water Gauge Station.
- Overflow occurred at 3 points along the Komenotsu River in downtown Izumi City.  
(900 houses flooded above floor level; 600 houses flooded below floor level)
- Largest water disaster since Typhoon Dera (June 19, 1949)



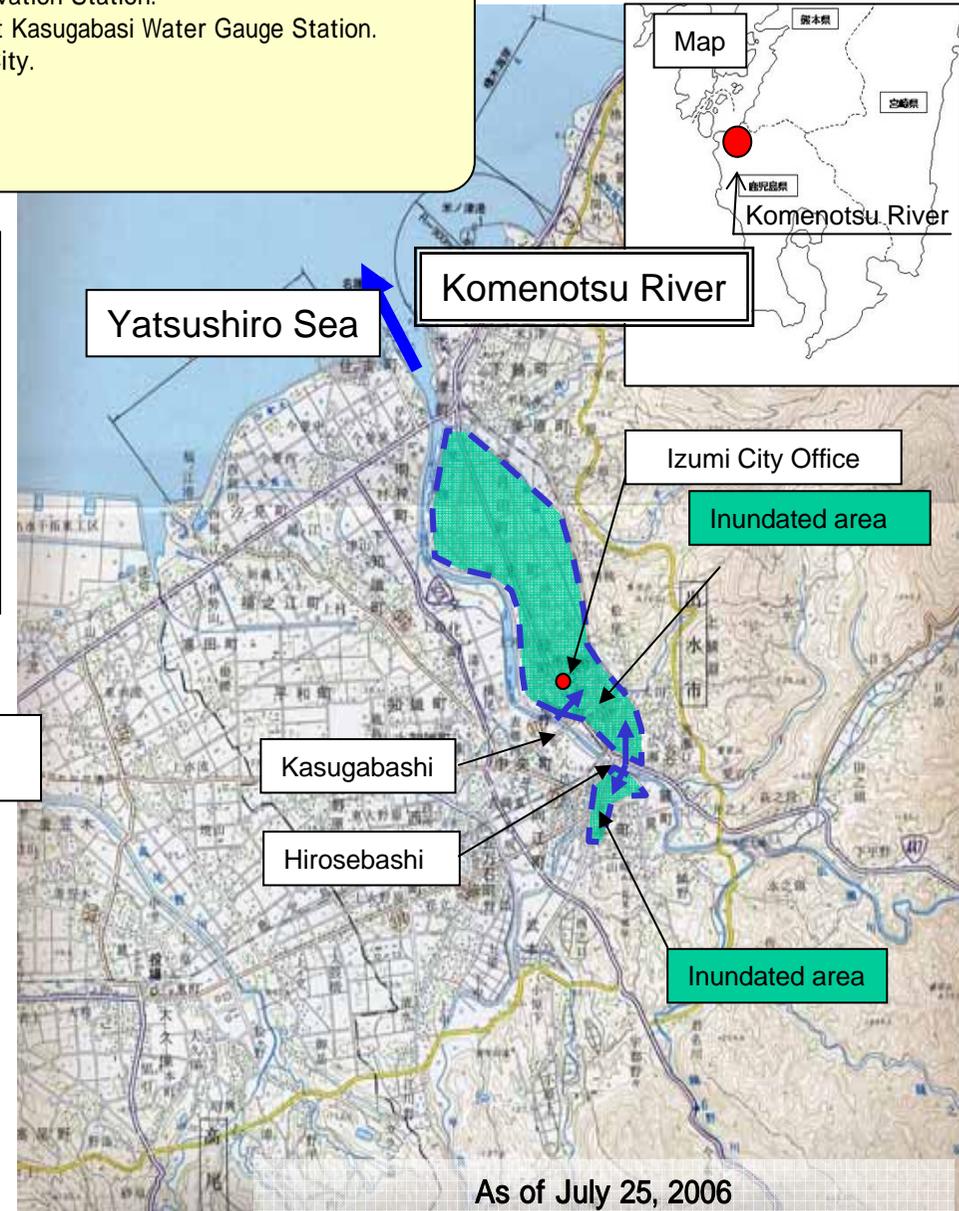
Overflowing in the upper reach of Hirosebash Bridge



Overflowing in the lower reach of Kasugabashi Bridge



Inundation in right side of Komenotsu River



# Overview of heavy rain on July 17-19, 2006

## Record Rainfall over the Sanin & Hokuriku Regions & Nagano Prefecture

Source: Fire and Disaster Management Agency

### Human and housing damage (Since July 3)

As of 18:00, July 27

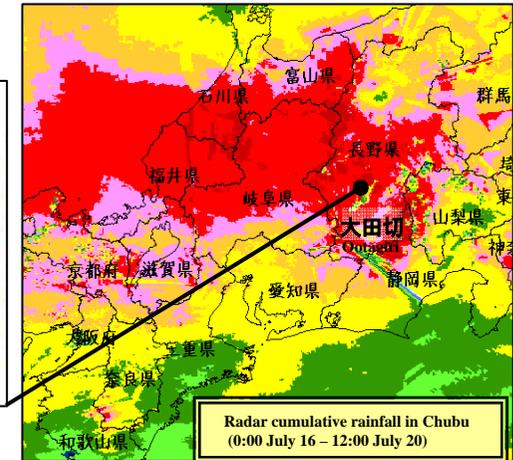
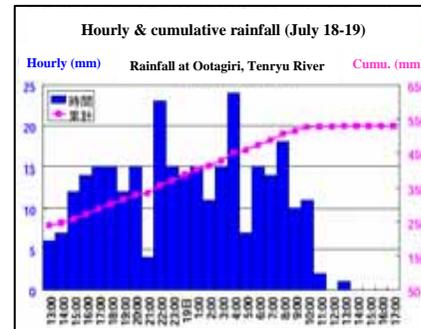
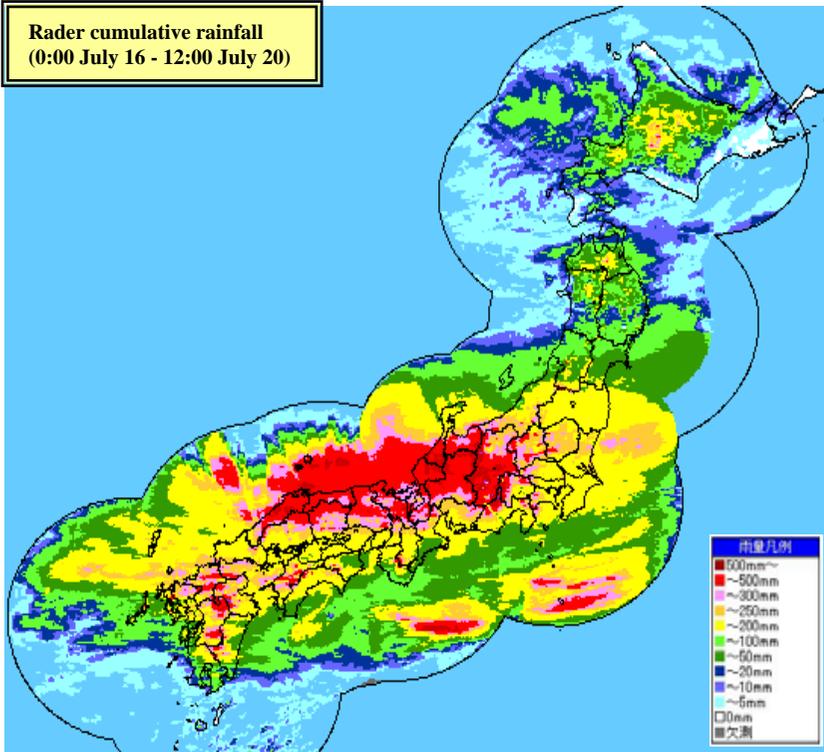
Human Damage				Housing Damage				
Dead	Missing	Injured		Complete	Half	Partial	Inundation	
		Serious	Minor				Above floor	Below floor
15	6	7	23	26	6	197	1,445	2,804

### Status of rivers under the governmental management in Sanin, Hokuriku & Nagano (as of 6:00 July 24)

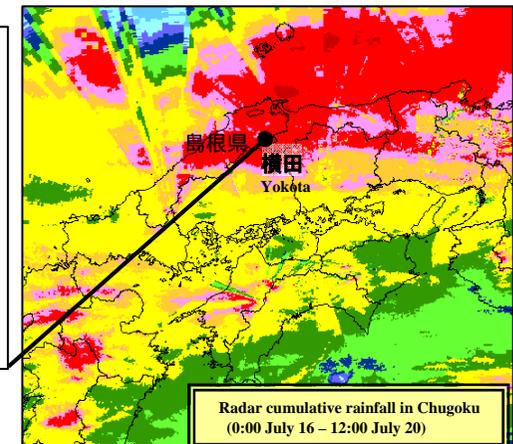
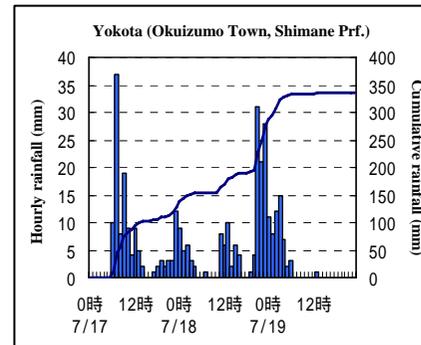
11 rivers exceeded the dangerous water level (the level very close to flooding).

61 rivers exceeded the warning water level (the level requiring careful watching).

Rader cumulative rainfall  
(0:00 July 16 - 12:00 July 20)



Radar cumulative rainfall in Chubu  
(0:00 July 16 - 12:00 July 20)



Radar cumulative rainfall in Chugoku  
(0:00 July 16 - 12:00 July 20)

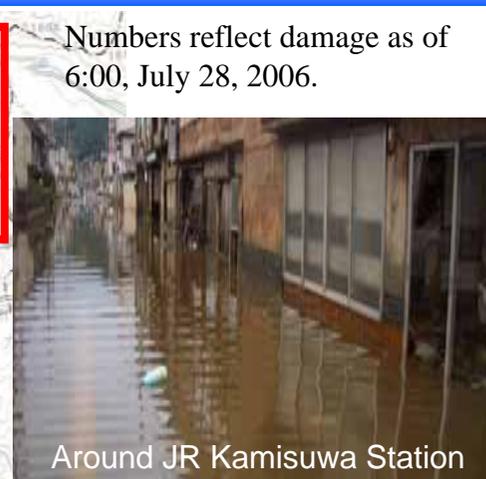
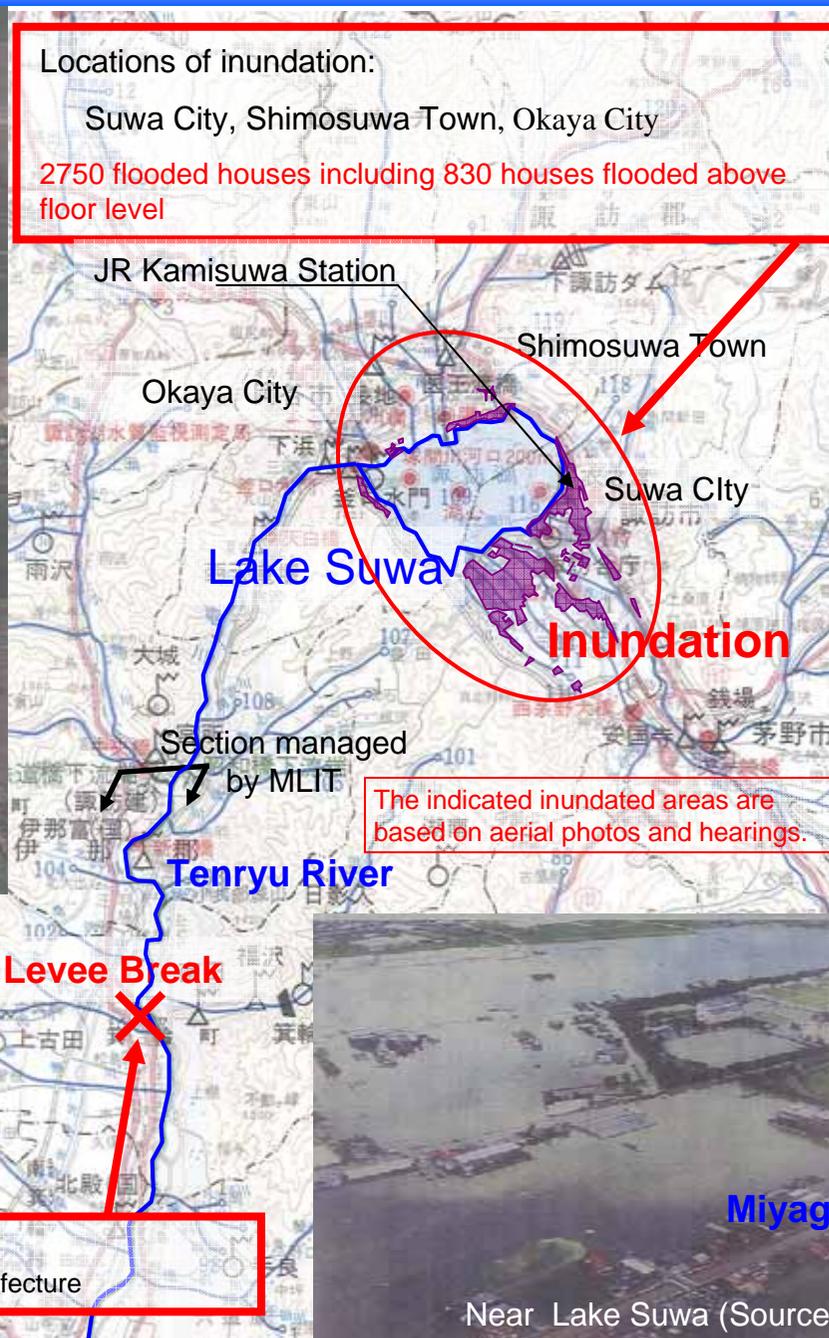
Nagano Prefecture had three times the mean monthly rainfall in three days.

Ootagiri Precipitation Station for the Tenryu River system recorded:  
**529 mm** (approximately **2.6 times** the mean July rainfall in Nagano)

Shimane Prefecture had a mean monthly rainfall in three days.

Yokota Precipitation Station for the Hii River system recorded:  
**335 mm** (approximately **1.4 times** the mean July rainfall in Shimane)

# Damage along Tenryu River due to heavy rain (July 2006)



A levee break on the right bank of Tenryu River  
Matsushima-kitajima, Minowa Town, Nagano Prefecture



# Damage along Hii River due to heavy rain (July 2006)



Largest inundation since 1972  
 →The water level of the Hii River exceeded the design water level by about 1 meter.

