

# Nagano City Flood Hazard Map

## My Household's Disaster Preparation Plan

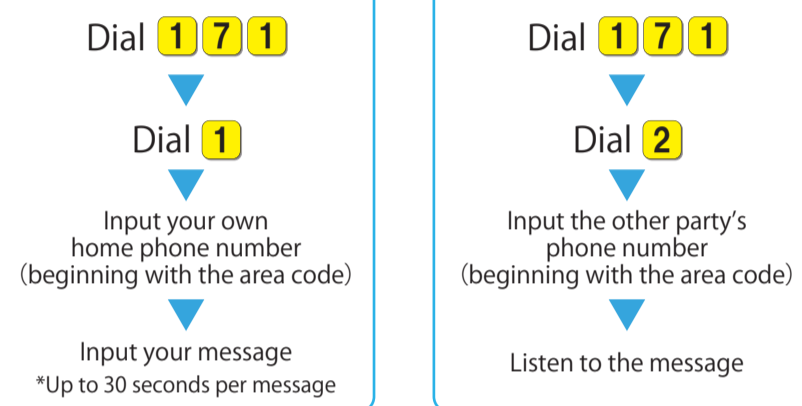
Discuss with your family, relatives and neighbors how to prepare for disasters by determining which evacuation centers you will use and creating a list of emergency contacts. You should also choose a meeting place in case family members get separated.

My family's evacuation centers (At least two)	Location	
	Location	
	Location	
Meeting place if separated	Name	Contact method
Emergency contact details	Name	
Neighbor's contact details	Name	
People who will evacuate together	Address	Phone number

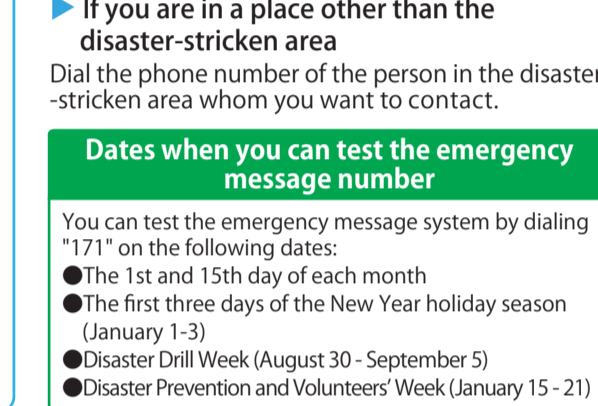
## "171" – Phone number for emergency messages

An "Emergency Message" phone service will become available if there is difficulty with telephone communications due to a large-scale disaster. (This service is not available in normal times.)

### How to record a message



### How to listen to a recorded message



**▶ If you are an evacuee**  
Dial either your own home phone number or the number of the person in the disaster-stricken area whom you want to contact. (As an evacuee, you are requested to actively transmit your personal safety information.)  
**▶ If you are in a place other than the disaster-stricken area**  
Dial the phone number of the person in the disaster-stricken area whom you want to contact.  
**Dates when you can test the emergency message number**  
You can test the emergency message system by dialing "171" on the following dates:  
● The 1st and 15th day of each month  
● The first three days of the New Year holiday season (January 1-3)  
● Disaster Drill Week (August 30 - September 5)  
● Disaster Prevention and Volunteers' Week (January 15 - 21)

## Emergency Message Board

If a large-scale disaster occurs, mobile phone operators will set up an "Emergency Message Board." Messages registered on these message boards can be checked using Internet-connectable PCs or cell phones operated by other mobile network carriers.

NTT Docomo	▶ <a href="http://dengon.docomo.ne.jp/top.cgi">http://dengon.docomo.ne.jp/top.cgi</a>	
au	▶ <a href="http://dengon.ezweb.ne.jp/">http://dengon.ezweb.ne.jp/</a>	
SoftBank	▶ <a href="http://dengon.softbank.ne.jp/">http://dengon.softbank.ne.jp/</a>	

# How to Use the Hazard Map

Merely having a hazard map with you doesn't mean you are safe. To ensure smooth evacuation at the critical moment, be prepared for disasters by fully understanding the information written on the hazard map. You should also make the Hazard Map your own by filling in important pieces of information, such as hazardous spots to be aware of, evacuation centers, and people to contact.

- 1 Confirm the location of your house**  
To begin with, mark the location of your house.
- 2 Check hazardous locations such as flood prone areas or landslide prone areas.**  
Areas expected to receive flood damage, are color-coded on the map. Also, areas where landslides and mudflows are a risk are color-coded in green or brown. Be sure to identify these hazardous areas well in advance.
- 3 Confirm the locations of your evacuation centers.**  
Since Nagano City does not designate evacuation centers area by area, you are requested to check the map and look for at least two places you consider to be the safest. If there are no designated evacuation centers or other emergency refuges near your home, look for other safe places and input them in your "My Household's Disaster Preparation Plan"

- 4 Determine the safest evacuation route for you.**  
Determine the best evacuation route to your nearest evacuation center (the place chosen in 3) and enter it in your hazard map. When planning a route, try to avoid dangerous places that are susceptible to flooding or to landslides.

- 5 Discuss actions to take during disasters.**  
Discuss beforehand with your family and neighbors the dangerous places near your home, evacuation centers, evacuation routes, and how to evacuate. It is important to be ready to evacuate quickly when danger is imminent. It is also important to discuss evacuation methods and how to help people need assistance evacuating.

- 6 Confirm your evacuation route with your own eyes.**  
Actually visit the facilities and follow the route as determined in 2 - 5 above with your family and neighbors, and confirm that the facilities and routes are safe while doing so. Also record, as shared information, any precautions to be taken during evacuation as well as landmarks.

- 7 Prepare emergency supplies.**  
Using the items listed on the Emergency Supplies page as a reference, discuss which items you should take with you when evacuating, and prepare them as necessary.

# Weather Warnings/Advisories and Hazard Distribution Map Regarding Flood Warnings

Nagano Local Meteorological Observatory issues a weather warning or advisory to raise an alarm when extreme rain greater in intensity than "hard rain" or "heavy rain" is forecast and is likely to cause a disaster. The hazard distribution map regarding flood warnings is used to forecast growing risks of flood occurrence at small to medium-size rivers (including rivers whose water levels are already known) that are not the targets of flood forecasts for designated major rivers. When a flood warning or advisory is issued, the distribution map enables you to identify, as an area, which section of which river is at increasing risk of a flood disaster. Risks are determined in five stages and color-coded based on the judgment whether a three-hourly predicted value of rainfall over the target watershed area has reached the reference values for a flood warning or advisory.

Type	Criteria for Issuing Warning/Advisory	Hazard Distribution Map Regarding Flood Warnings
Special heavy rain warning	When the most extreme rain in several decades is forecast due to a typhoon or a localized torrential rain or when heavy rain is expected due to the strongest typhoon in several decades or an extratropical cyclone of the same scale.	
Heavy rain warning/ Flood warning	When a serious disaster is likely to occur due to heavy rain.	
Heavy rain advisory/ Flood advisory	When a disaster is forecast to occur due to heavy rain.	

**Flood Forecasts for Designated Major Rivers**  
This forecast concerns major rivers, managed by the national or prefectural government, that have wide catchment areas and are likely to receive large-scale flood damage. The forecast is issued when any such river is considered likely to suffer a flood.

**Hazard Distribution Map Regarding Flood Warnings**  
Risk level:  
● Flood Onset Information  
● Flood Hazard Information (Equivalent to "Special Heavy Rain Warning")  
● Flood Alert Information (Equivalent to "Special Heavy Rain Warning")  
● Flood Advisory  
● No warning/advisory issued

**NHK Data Broadcasting**  
Change your TV channel to NHK, then press the button on the remote control.

**Meteorological Agency (Hazard Distribution Map Regarding Flood Warnings)**  
<https://www.jma.go.jp/jp/suigaimesh/flood.html>

## Water levels of the rivers that flow in Nagano City

As water levels of these rivers rise due to heavy rain and increase the risk of flooding, the river administrator (the national or prefectural government) issues disaster prevention information according to the criteria shown below. Know the criteria for the river that flows near your home, workplace, or school and use the knowledge as a reference for your evacuation.

River bank	Water-level Observation Points									
	Chikuma River (Kuisseke)	Saigawa River (Tatega hana)	Saigawa River (Hirotsaki)	Saigawa River (Hirotsaki)	Saigawa River (Koichi)	Saigawa River (Okada)	Saigawa River (Toyo take)	Asakawa River (Tomi take)	Torii River (Torii River)	Torii River (Torii River)
Dangerous water level	5.00	9.60	6.50	7.50	1.80	2.60	1.50	3.00	2.80	
Evacuation judgment water level	4.60	9.10	5.80	6.80	1.50	2.00	1.30	2.50	2.50	
Water level for flood advisory	1.60	5.00	5.20	5.20	0.00	1.10	1.00	1.80	1.90	
Flood-fighting corps standby water level	0.70	3.00	3.60	3.60	-0.50	0.50	0.50	1.20	1.50	

※ The Torii River water-level values are given as references only because the observation targets Iizuna Town. (unit: meter)

**NHK Data Broadcasting**  
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**Nagano City Disaster Prevention Information Portal**  
<http://nagano-bousai.jp/>

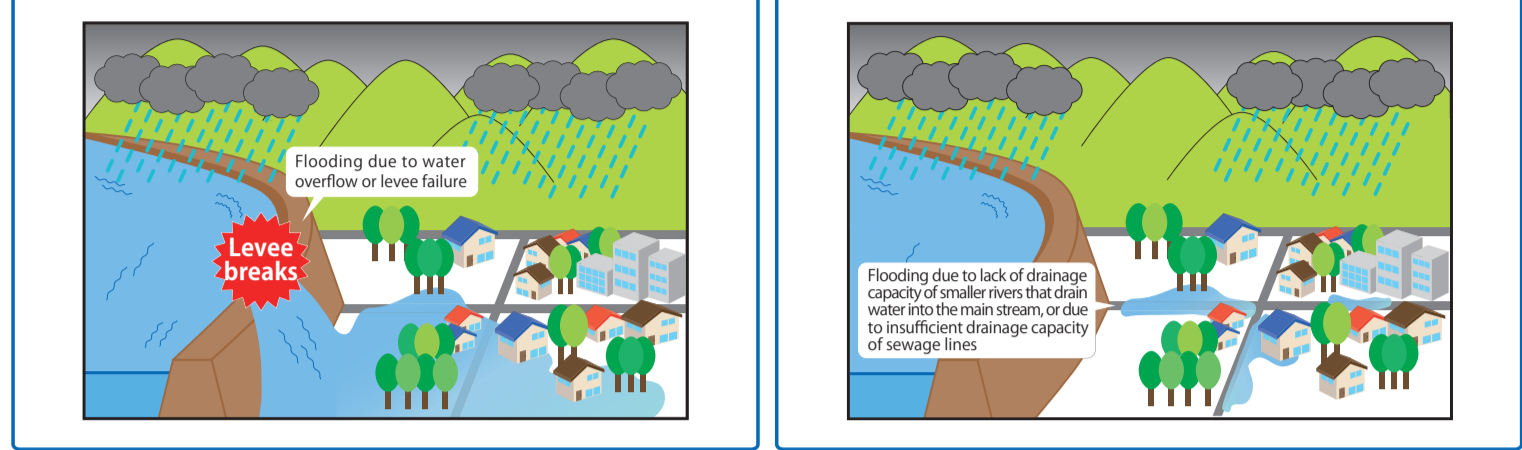
**Nagano Prefecture River & Landslide Information Station**  
<http://www.sabo-nagano.jp/>

**River Disaster Prevention Information**  
<https://www.river.go.jp/>

## Types of Flooding

**Flooding due to river water**  
Water in embanked areas such as houses and towns is called "inland water", while river water is referred to as "external water". River water floods occur due to overflow or levee failure, causing houses and farmlands to flood. Once river water flooding occurs, an enormous amount of water flows in suddenly and causes significant flooding over a wide area, resulting in collapsed houses and human suffering.

**Flooding from within the levee**  
During a heavy rainfalls, side ditches, sewage lines and drains alone can fall short of dealing with rain water. Also, where branch rivers join the main stream, water from the main stream can flow backward into the smaller branch streams as the main stream rises in water level. Flooding from within the levee occurs when rain-water beyond the drainage capacity floods structures, land and roads. Cases of damage caused by localized torrential rains have been on the increase in recent times.



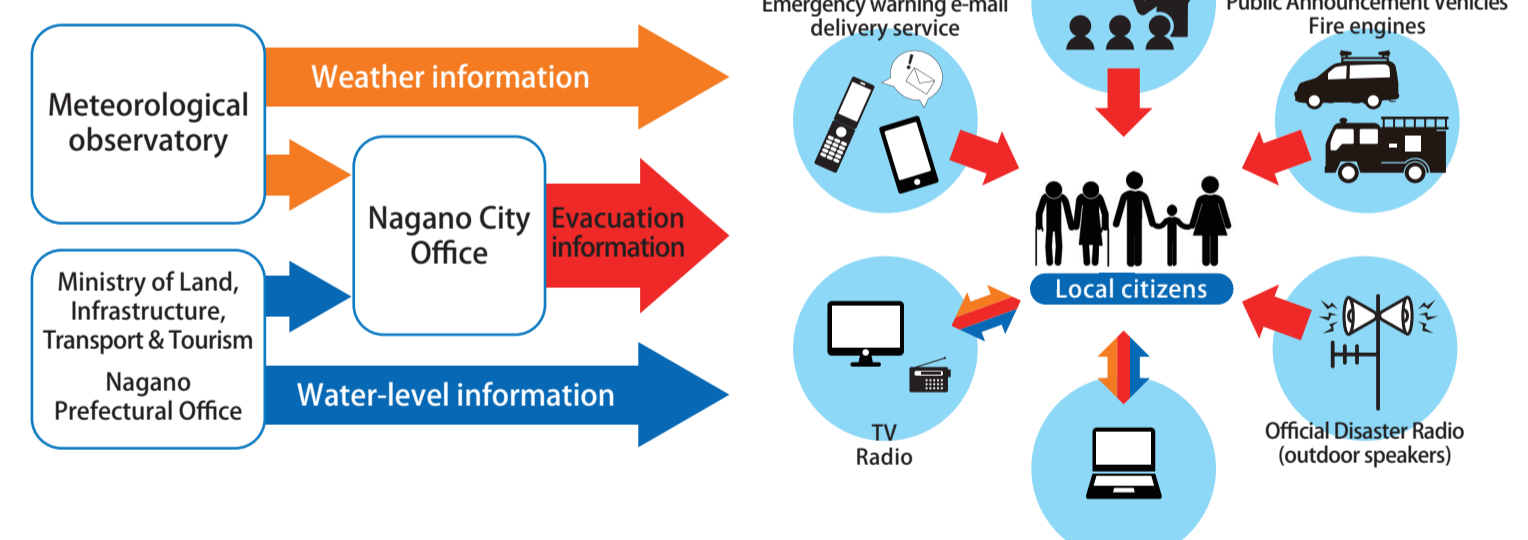
## Areas in Need of Early Evacuation, and Recommended Evacuation Actions by Degree of Flooding

Early evacuation is necessary for people in the following areas shown on the map. In the event of a flood, first confirm evacuation actions to be taken, then start evacuating immediately once an evacuation advisory or warning has been issued.

Area	Evacuation action	In case of delayed evacuation
Early evacuation areas	Flood flow	Early evacuation is necessary because wooden houses can be destroyed by flood flow caused by bank breakage.
	Bank erosion	Early evacuation is necessary because houses can be destroyed by bank erosion.
House Flooding hazard area		Early evacuation is necessary because second or upper floors are at risk of inundation.
		Evacuation is desirable because floors lower than the second may be flooded. Early evacuation is necessary for first-story buildings in areas where first floors are at risk of flooding.
Other estimated flood areas		Evacuees may arrive from predicted flood areas, so residents of safe areas are encouraged to help them.

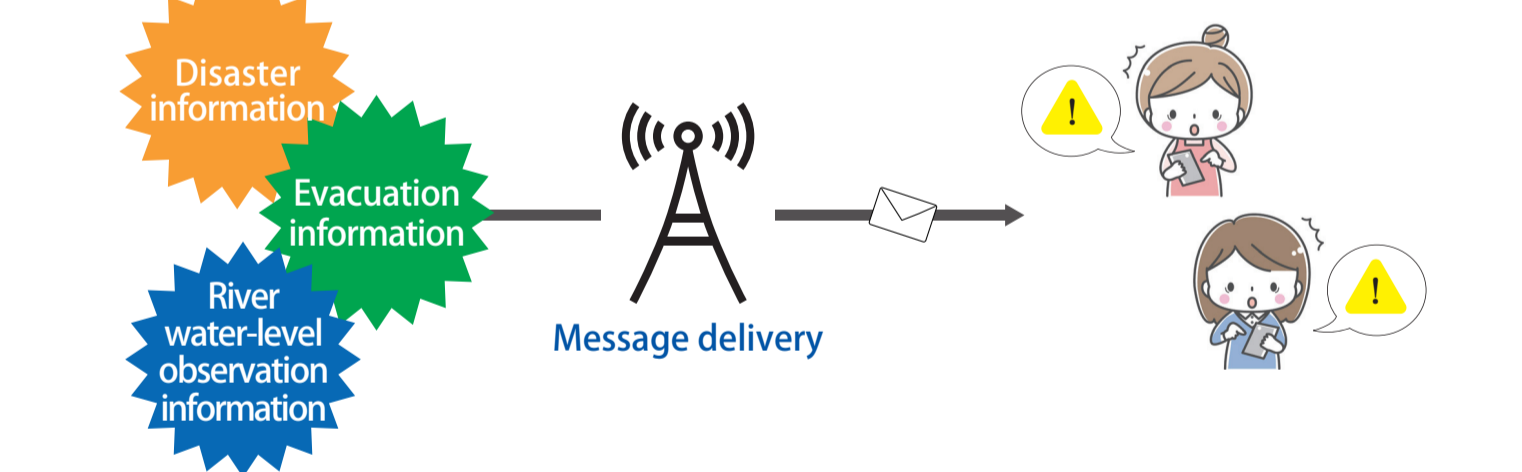
**Additional information from image:**  
If your area is already flooding, moving to your evacuation center can endanger your life even more. If that is the case, you should evacuate to a safer place nearby. If stepping out of your house appears dangerous, remain indoors and protect your safety.  
Unless the top floor of your house remains undamaged by flooding, stay indoors and protect your safety.

# Information Transmission and Acquisition Routes



## Nagano City Disaster Prevention E-mail Delivery Service

This service e-mails weather, evacuation and other related information from Nagano City to cell phones, smartphones and PCs. Take full advantage of this useful service.



- 1 Registration Procedure**
  - Send a blank e-mail  
Send a blank e-mail to [bousaimail@nagano-bousai.jp](mailto:bousaimail@nagano-bousai.jp)  
● Leave the subject and message spaces blank.  
● If your device is set to mail service refusal mode, change the setting so that it can receive e-mails from "@nagano-bousai.jp".
  - Access the URL stated in the return mail
  - Confirm the "Terms of Use." Your registration is complete if the mail delivery setting screen is displayed.

**Types of Disaster-Prevention Information Delivered**

● Evacuation-related information, fire-related information	● Tornado warning
● Earthquake information (for intensity 4 or higher)	● River water-level observation information
● Weather information (warnings or advisories for heavy rain, flooding, and heavy snow)	● Civil Protection Information
● Landslide warning (Nagano City area, Kinasa/Togakushi area)	

\*You can choose which types of warnings to receive.

## Yahoo! Disaster Warning

This service allows information announced by the Nagano City Office to be delivered via app or e-mail. It is possible to receive notices at up to three designated locations within Japan, as well as at your current location. Use the following links to learn how to download the app or how to register for the e-mail version.

\*Nagano City needs to be registered as a designated location

**Yahoo! Disaster Warning** ▶ <https://emg.yahoo.co.jp/>

**App version** ▶

## Types of Evacuation Information

Degree of urgency	Type	Actions to be taken by citizens
High	Evacuation order (Urgent)	If you have not evacuated yet, you are urged to immediately move to your evacuation center. If your life will be endangered by going out to the evacuation center, you are advised to move to a nearby safe place or find a safer place within your house instead.
	Evacuation advisory	Be quick to start evacuating to your evacuation center. If your life will be endangered by going out to the evacuation center, you are advised to move to a nearby safe place or find a safer place within your house instead.
	Advisory for evacuation preparation and starting evacuation of the elderly etc.	Those who will take more time for evacuation (the elderly, the disabled, infants, etc.) as well as their caregivers are advised to start evacuation. Other people are advised to make preparations for evacuation by making contact with family members, checking emergency supplies, and so on.

## Evacuation Precautions

A number of dangers may be lurking along the way to your evacuation center. Make sure to obtain correct information and watch out for dangers in the surroundings along your evacuation route. To ensure quick and smooth evacuation, try to avoid dangerous places and work together with your neighbors as much as possible.

**Evacuate as a group of two or more**  
**Use a long stick as a cane**  
**Wear a helmet or a protective hood**  
**Use comfortable sneakers**  
\*Never use rubber boots!

**Try to evacuate as early as possible**  
It is very dangerous to evacuate your house after it has been flooded. Based on available rainfall and river water-level information, begin evacuating on your own without waiting for an evacuation advisory if you sense danger.

**Evacuate after calling out to neighbors**  
Avoid evacuating alone. Instead, call out to your neighbors and try to evacuate together with them. You should also lend a hand to those who need early evacuation, such as the elderly, infants and the sick.

**Evacuate on foot if possible**  
It is very dangerous if your car is submerged in water and stops moving. Its doors won't open due to water pressure. Also remember that your immovable car can hamper activities of emergency vehicles.

**Do not get close to rivers and canals**  
Water levels of rivers and canals are very changeable, so make sure to avoid rivers and canals and choose a route least affected by flooding.

**Beware of the following when evacuating**

- Underpasses**  
An underpass refers to a passage underneath a road or railway at a grade-separated crossing. Make sure to note all underpass locations well in advance, and plan a route to bypass them in case of emergencies. \*Passenger cars have difficulty operating in 30 cm high floods.
- Manholes and side ditches**  
Once flooding occurs, water gets muddy and makes it difficult for you to see under your feet. If manhole or side-ditch covers are out of place, you could tumble over or fall down. As a precaution for safe evacuation, use a long stick to keep on your feet by avoiding obstacles.

## Emergency Supplies

Discuss disaster preparedness with your family and community members, including responses to take in case of an emergency.

<b>Emergency food</b> □ Food (chocolate, crackers, canned food, packaged food, etc.) □ Drinking water □ Necessities according to individual family requirements - for example, things like powdered milk for babies.	<b>Clothing &amp; other daily supplies</b> □ Clothing (underwear, outerwear, socks, etc.) □ Towels □ Tissue paper and wet wipes □ Work gloves, rain gear and plastic bags □ Glasses and false teeth □ Sanitary items, disposable diapers, etc.	<b>Emergency medical supplies</b> □ Adhesive plasters and bandages □ Triangular bandages □ Disinfectant and ointment □ Eye lotion □ Household medicine □ Copies of your health insurance card and prescriptions
<b>Lighting equipment</b> □ Flashlight □ Spare batteries (in extra quantities) □ Candles □ Gas lighter, etc.	<b>Other items</b> □ Portable radio with FM □ Hat/Cap (helmet) □ Knife □ Cell phone and emergency charger □ Cash □ Writing implements, etc.	<b>Additional notes:</b> -When packing emergency supplies, the standard weight to carry for men is up to 15kg and 10kg for women. -Prepare at least 3 days' worth of drinking water, or 7 days' worth if possible. -Check the contents of your emergency supply kit at least once a year, and replace any item past its expiration date. -Keep emergency supplies not in one place, but in several different places like a car and porch. -Also prepare any other items particular to your own family that members may need in case of emergencies.

## Past Disasters

The Chikuma River basin has suffered disastrous and far-reaching flood damage many times in the past. We should not forget about these disasters as they are valuable lessons. Enhance your disaster preparedness by taking to heart that such disasters are dreadful events that can occur around you at any time.

**The "Inu-no-Mansui" flood of August 1742**  
This flood, known as the worst to occur during the early modern period, took place on August 1 and 2, 1742. It was so named because it occurred in the Year of the Dog ("Inu" in the Chinese zodiac). The torrential rain that began to fall on July 27 didn't stop until August 1, causing the Chikuma River and its tributaries to flood, as well as landslides. It took about 2,800 lives in the Chikuma River basin. Farmlands also sustained devastating damage. This placed an enormous financial burden on the local Matsushiro clan, the negative impact of which continued even into the late 19th century in the Meiji Era.  
(Source: Visiting "Inu-no-Mansui", Shinano Mainichi Shinbun)

**Flood damage by typhoons**  
**The Flood of September 1982**  
This year is remembered as a "bumper year of typhoons", when four major typhoons made landfall in Japan. Typhoon No. 18, which formed around Guam Island on September 6, kept advancing northward and hit the Omaezaki area around 18:00 on September 12th and traveled through the Japanese archipelago the following day to end up as an extratropical cyclone at 9:00 on the 13th. The amount of rainfall for the Chikuma River basin areas averaged 166.5mm for the Tategahana-Ojima area and 158.9mm for the Horinouchi area.  
As for the Chikuma River basin, the Tategahana district suffered a devastating flood with the highest water level recorded in recorded history. This resulted in enormous damage such as the loss of embankment and concrete blocks used to line the Chikuma River, and flooding due to levee breakage at the tributary Tarukawa River, as well as flooding inside the levee along the other tributaries. A damage overview for Nagano Prefecture revealed: 37 casualties, 3 completely destroyed houses, 13 partially destroyed houses, 2,022 houses flooded above floor level, and 3,214 houses flooded below floor level.  
(Sources: Flooding of the Chikuma River 3/31/19\* The Shinano river system 3/31/19\*)

**The Flood of September 1983**  
The large, powerful Typhoon No. 10 approached Kyushu on September 27th. This caused warm and humid air currents to flow into and create an autumnal rain front in the southern coast of Honshu. After landfall on the Nagasaki City area on the 28th, the typhoon changed into an extratropical cyclone, then, driven by the jet stream, advanced eastward at a furious speed of over 100km per hour.  
From the morning of the 27th, rain continued to fall in the Chikuma River basin and Saigawa River headwaters, which became stronger in the afternoon of the 28th. The rainfall during the two days amounted to more than 200mm in these areas. The amount of this record-setting rainfall reached 112mm in Nagano City on the 28th alone. The weather quickly improved on the following day (the 29th) as the extratropical cyclone left Nagano for the eastern sea. But the local river water levels continued to rise. The swelling water caused the Chikuma River main bank to collapse. Reported damage in the Chikuma River basin was: 53 completely destroyed houses, 92 partially destroyed houses, 3,906 houses flooded above floor level, and 6,975 houses flooded below floor level.  
(Source: "Flooding of the Chikuma River")

As reminders of the flood-caused desolation, high-water posts showing traces of floods of the past can be found in various parts of Nagano City. Notable among them are the flood water level post in the Myoshijo Temple precincts of the Tsuno district and the Zenkoji-daira flood water level post in the Akanuma district. Taking the opportunity of the major floods that occurred in two consecutive years of 1982 and 1983, the Toyono-machi district set "Chikuma River flood water level" posts (one each in every neighborhood) to indicate the water levels 336 meters above sea level reached during the great flood of 1742. We would like you to make use of these posts as a means to hand down to future generations the history of large-scale floods experienced by our predecessors. Visit these high-water posts and see the dreadful flood water levels yourself. It will surely help enhance your flood prevention awareness.  
(Source: The Chikuma River Office website)