



1 Rainfall collects in the Tone River basin.

Diagram of the Tone River Basin

Discharge of water from dams

The rain that falls in Gunma and Tochigi flows into the Tone River, and about a third of that flows into the Edogawa River.

Before rain falls
Lower water level
Empty dam to prepare for flooding

During heavy rain
Water level rises
Collect water and reduce amount of water released into river

Emergency discharge
Water level has reached dam limit
Release the same amount of water as flown into dam
※ Never is more water than the amount that flows into the dam released.

The map shows the Tone River flowing from Gunma and Tochigi prefectures towards Tokyo Bay. Nine dams are marked with red dots and numbered: 1. Yagisawa Dam, 2. Naramata Dam, 3. Fujiwara Dam, 4. Aimate Dam, 5. Sonohara Dam, 6. Shimokubo Dam, 7. Kusaki Dam, 8. Watarase Reservoir, and 9. Ichiikawa City. The Edogawa River is shown joining the Tone River near Ichikawa City. Other locations marked include Maebashi, Tokyo, and Chiba. A text box explains that rain in Gunma and Tochigi flows into the Tone River, and about a third of that flows into the Edogawa River.

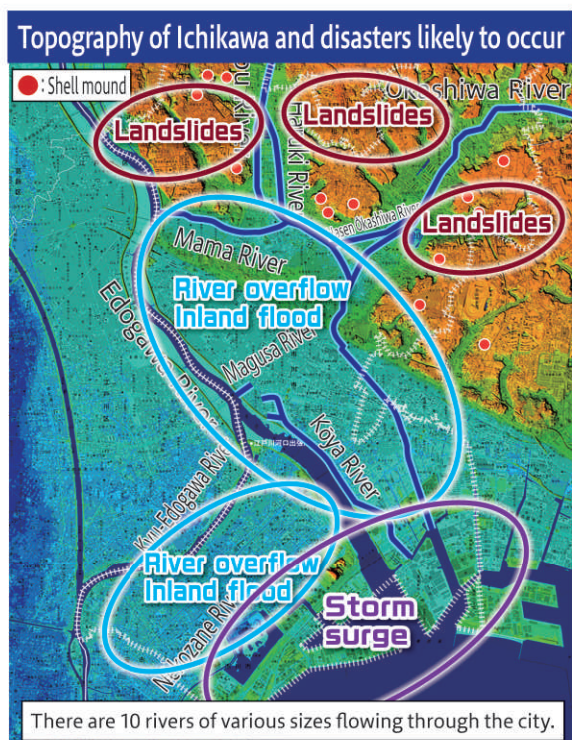
When the upstream dam **discharges water in an emergency**, the water level downstream rapidly rises.

Volume of the 9 upstream dams on the Tone River/observation data

Search

2 Different regions are prone to different types of flood damage

The northern area, which was originally land, became a plateau, while the central and southern areas, which were under the sea, became flat low-lying areas. Hence, there are many low-lying areas in Ichikawa.



Source: Geospatial Information Authority of Japan website
(https://www.gsi.go.jp/kankyochiri/degitalelevationmap_kanto.html)
Processed and created a digital elevation topographic map (Edogawa, Nakagawa, Avasegawa basin-1)

Remember this!

Types of Flood Damage in Different Regions

1 Landslides


When heavy rain falls, beware of landslides!

Areas requiring caution



A map of Ireland with the Northern region highlighted in orange. The text "Northern region" is written in white inside the orange area.

2 River overflow

There are **88 places** prone to landslides in the north of the city.

The diagram illustrates a cross-section of a river and the surrounding land. The river is shown in blue, flowing from left to right. On the left bank, there is a label 'Overflow' in a white box. On the right bank, there is a label 'Collapse of river banks' in a white box. A small brown structure, possibly a bridge or a building, is shown on the right bank, partially submerged in the river. The ground is depicted in brown, and the riverbed is shown in a darker brown. The diagram highlights the risk of landslides in the area.


Beware if heavy rainfall continues and the water level upstream rises!

Areas requiring caution

Northern region

Central region

Southern region

3 Inland flood

Rainwater that cannot be washed away accumulates in urban areas.

Backflow prevention


Beware if there is
torrential rain for a
short period of time
or if it rains heavily
for a long time!

Areas requiring caution


Northern region

Central region

Southern region

4 Storm surge

The diagram shows a cross-section of the ocean and a coastal area. On the left, a large, dark grey cloud mass labeled 'Typhoon' has two red arrows pointing upwards from its base. Blue arrows labeled 'Wind driving in water' point towards the right, where a blue wave labeled 'Surge' is breaking. Below the surge, a red starburst shape contains the text 'Storm surge'. In the foreground, a grey structure labeled 'Levee/seawall' is shown. To the left of the wall, the water level is marked with two red arrows pointing up, labeled 'Normal level'. To the right of the wall, the water level is marked with two red arrows pointing up, labeled 'Low pressure system sucking up water'. The area to the right of the wall is labeled 'Levee/seawall'.



Beware when high tide coincides with the passage of a typhoon!

Areas requiring caution



Southern region

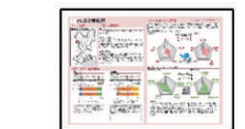
What is urban flood damage?

 When the ground is covered with asphalt, it makes it difficult for rainwater to seep into the soil and large amounts of rainwater flow into waterways and rivers all at once, making it easy for inland flooding and river overflows to occur. This type of flood damage unique to urban areas is called "urban flood damage."

You need to be careful of urban flood damage in Ichikawa City!



The city government has created a "disaster prevention chart" that shows the local characteristics and disaster risks for each elementary school district.



Preparation in Normal Times