

## Flood: UPSC Environment and Ecology

A flood is an overflow of water on land. Sometimes a river might receive extra water, either from heavy rains or other natural disasters. When this happens, the water overflows from its normal path in the river bed and onto the dry land.

This article will give further details about floods within the context of the IAS Exam

### What are the causes of a flood?

During a flood, people should move themselves and their most precious belongings to higher ground quickly. The process of leaving homes in search of a safe place is called evacuation. Floods occur at irregular intervals and vary in size, duration and the affected area.

Water naturally flows from high areas to low lying areas. This means low-lying areas may flood quickly before it begins to get to the higher ground.

Floods can also occur in rivers when the flow rate exceeds the capacity of the river channel, particularly at bends or meanders in the waterway. Floods often cause damage to homes and businesses if they are in the natural floodplains of rivers

The following factors can lead to flooding:

#### Rains

Whenever there are more rains than the drainage system can take, they can cause floods.

#### River overflow

Rivers can overflow their banks to cause a flood. This can happen when there is more water upstream than usual, and as it flows downstream to the adjacent low-lying areas there is a burst and water gets into the land.

#### Strong winds in coastal areas

Seawater can be carried by massive winds and hurricanes onto the dry coastal lands and cause flooding. This is made worse if the winds carry rains with themselves. Sometimes water from the sea resulting from a tsunami can flow inland to cause damage.

#### Dam breaking

Dams are man-made structures mounted to hold water flowing down from a highland to a lowland. The power in the water is used to turn propellers to generate electricity. Sometimes, too much water held up

in the dam can cause it to break and cause overflow in the area. Excess water can also be intentionally released from the dam to prevent it from breaking and that can also cause floods.

### **Ice and snow melts**

In cold regions, heavy snow over the winter usually stays unmelted for some time. Some mountains have an ice cap on them. Sometimes the ice suddenly melts when the temperature rises, resulting in massive movement of water into places that are usually dry. This is usually called a snowmelt flood

### **Urban Flooding**

Urban flooding is the inundation of land or property in a built environment, particularly in more densely populated areas, caused by rainfall overwhelming the capacity of drainage systems, such as storm sewers. Although sometimes triggered by events such as flash flooding or snowmelt, urban flooding is a condition, characterized by its repetitive and systemic impacts on communities, that can happen regardless of whether or not affected communities are located within designated floodplains or near any body of water

### **What are the effects of a flood?**

The most immediate effect of a flood is the catastrophic loss of life and destruction of buildings and other structures like bridges, sewerage systems, canals etc.

Floods also damage power transmission and sometimes power generation along with loss of drinking water treatment and water supply. Lack of clean water combined with human sewage in the flood waters raises the risk of waterborne diseases, which can include typhoid, cholera and many other diseases depending upon the location of the flood.

- Flood waters typically inundate farm land, making the land unworkable and preventing crops from being planted or harvested, which can lead to shortages of food both for humans and farm animals.
- Entire harvests for a country can be lost in extreme flood circumstances. Some tree species may not survive prolonged flooding of their root systems.  
Secondary and long-term effects
- Economic hardship due to a temporary decline in tourism, rebuilding costs, or food shortages leading to price increases is a common after-effect of severe flooding.