



## How Sunwater dams work

**A dam is a big wall made of earth, rock or concrete built across a river to raise the level of water behind it for storage. The water behind a dam is called a lake or reservoir.**

### Get to know the flow

Dams collect water from rainfall and runoff from the catchment (the land, rivers and creeks surrounding the dam). Some dams also collect water from other storages and pipelines.

Sunwater dams are designed to hold water and supply customers to irrigate crops, keep industry moving and provide drinking water.

Water can flow out of a dam in multiple ways – over a spillway, through an outlet or spillway gates or from a pipeline depending on the dam's design.

### Spillways

All dams have spillways that are designed to 'spill' excess water into the downstream river.

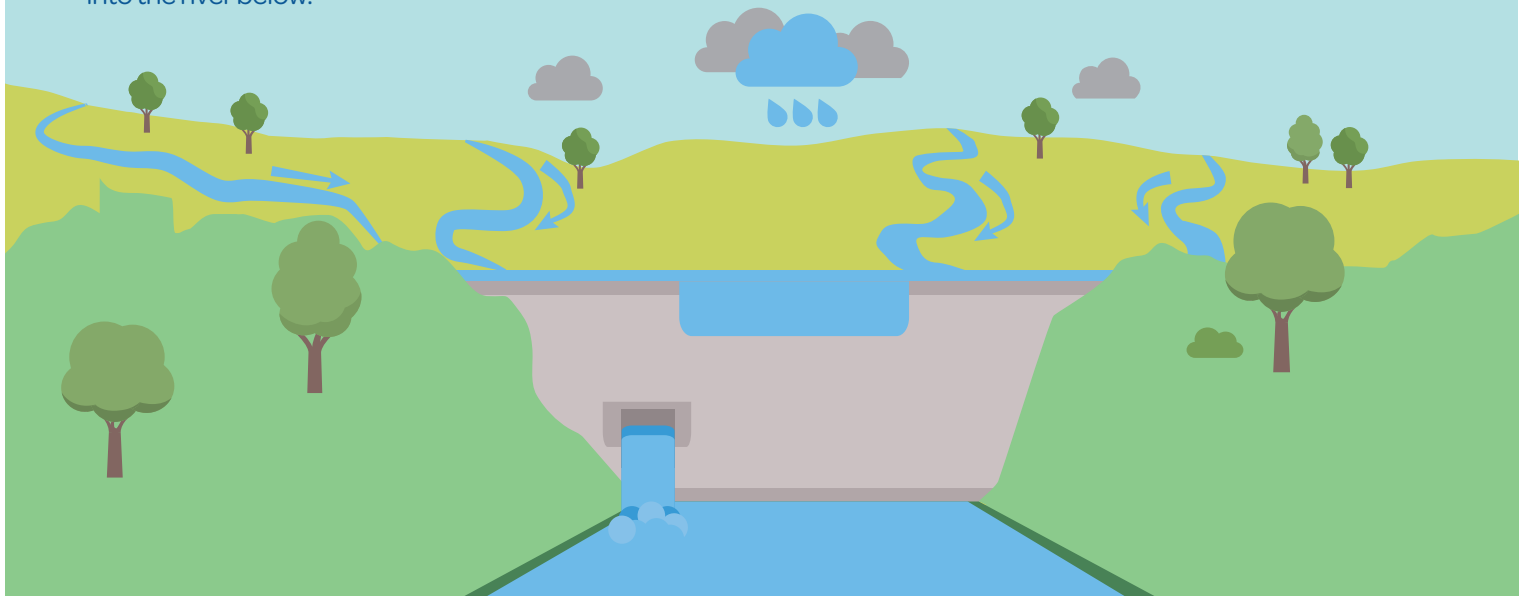
When a dam fills to its maximum storage level (also known as full supply level), water flows over the spillway into the river below.

### Dam outlets

A dam outlet is a pipe in the side of the dam wall that is used to manually release water into the downstream river.

Dam outlets can only release small volumes of water. They are used to deliver water for customers and for the environment to maintain a healthy river system.

Environmental water releases are essential for downstream aquatic ecosystems, including native animals and plants. The timing and volume of releases for each dam varies according to seasonal conditions.





## **Gated and ungated dams**

### **Ungated dams**

An ungated dam uses the spillway and outlet to release water downstream. When an ungated dam reaches its maximum storage level, water will flow over the spillway. As water continues to flow into a dam during heavy rain (inflow), it will naturally flow over the spillway (outflow) and continue into the downstream river. We cannot control how much water flows over the spillway.

### **Gated dams**

Spillway gates are positioned within the dam wall and are used to regulate the flow of excess water into the downstream river.

The number of gates on a dam can differ, as can the mechanism for operating them. For example, gates can be opened manually or automatically by a pulley system or a float system.

Many gated dams do not provide flood mitigation and are designed to operate in a similar way to an ungated dam by releasing water once the storage reaches its maximum capacity.

## **Flood mitigation dams**

Sunwater dams are not designed to provide downstream flood mitigation.

Flood mitigation happens when the rate of water released from the dam is less than the water flowing into the dam from the catchment and rainfall.

Dams designed to mitigate floods typically include a dedicated flood storage compartment above their standard water storage capacity.

During times of heavy rain, dam operators can store additional water and make controlled releases to reduce the volume flowing downstream.

Flood mitigation dams are strictly regulated, with detailed procedures stipulating the timing and size of releases to be made, and with gate mechanisms designed to safely regulate outflows.

It is important to remember that within a catchment there can be many creeks and streams that meet at different points – so a community downstream of a flood mitigation dam could still receive flood waters from another source.

**Stay informed of dam levels and be notified when dams are spilling water by downloading the free Sunwater App.**

