

### Weirs: What and why?

A weir is a small barrier built across a stream or river to control the flow of water and raise the water slightly on the upstream side. Weirs can be used to prevent flooding, measure water flow, and hold water to be used in towns, homes, industry, or irrigation.



Maude Weir on the Murrumbidgee River was built in 1939-1940.

### How are weirs and dams alike?

Both are built across streams or rivers to block the flow of water across a landscape.

Both are used to control the flow of water and raise the water levels on the upstream side.



Warragamba Weir

### How are weirs and dams different?

Generally weirs allow water to flow over the crest (top) of the weir and sometimes in underneath sections. Dams usually don't allow water to flow over the crest; dams control water releases through gates or spillways.



Balranald Weir (Murrumbidgee)

### What are weirs made of?

Weirs are usually made of concrete or steel. Some older weirs were made from natural rock and compacted soil-fill to create a barrier to hold water.



**Liverpool Weir** is a sandstone and natural rock weir.



**Penrith Weir** is a concrete weir.



**Gogeldrie Weir** is a steel weir.



## Safety around weirs

Although weirs are commonly used for recreational activities (like fishing, swimming and kayaking) the downstream side of weirs can be extremely dangerous.

Water coming out of a weir can cause a circulation of water known as a hydraulic jump. This hydraulic jump can hold people under the water. **To be safe, avoid the downstream side of weirs.**

### SAFETY FIRST

There are more than 3000 weirs in NSW. WaterNSW maintains more than 350 of them!

## Fishways on weirs

The Nepean weir on the Hawkesbury-Nepean River near Penrith has a fishway to help fish move back upstream. Some fish move upstream and downstream for breeding or migration. Fish can rest in each pool as they move up the fishway. This fishway is used for tiny gudgeons to large Australian Bass.



Cox's Gudgeon



Australian Bass



Pheasant's Nest Weir Upgrade

## How do we monitor and maintain weirs?

WaterNSW continually monitors and checks its weirs. Dam operators complete daily maintenance tasks to manage the weirs and ensure the weirs operate effectively and efficiently.

Pheasant's Nest Weir is an important part of Sydney's water supply and for environmental flow in the lower river. It was upgraded to modernise flow management and add a fishway.

## Did you know?

The **Baiaime's Ngunnhu** (Brewarrina Fish Traps) are ancient stone fish traps. They are one of the oldest human-made structures in the world and were made by the Ngaemba People of Brewarrina on the Barwon River. The stone walls of this weir guided upstream swimming fish into holding ponds where First Nations people caught them.

*Photo: Circa 1880 Museum of Applied Arts and Sciences, Tyrrell Collection. Gift of Australian Consolidated Press under the Taxation Incentives for the Arts Scheme, 1985. Unattributed studio*

