

Goulburn River

2007-2008 Monitoring Report



Google Satellite Map of the Goulburn Broken Catchment presenting Waterwatch water quality monitoring sites in the Goulburn River region



The upper reaches of the Goulburn River. GOU009 - Goulburn River at Doctors Swamp Reserve after fire and heavy rain February 2007 - Turbidity 258 NTU



The upper reaches of the Goulburn River. GOU009 - Goulburn River at Doctors Swamp Reserve before fire and heavy rain July 2006 - Turbidity 5 NTU

The two photos above show how photographic records can be just as important as water quality results in terms of collecting baseline data on a waterway.

Why monitor a waterway?

Monitoring data may be used to:

- establish **baseline conditions** (where no prior data exists);
- determine water quality trends;
- identify current and emerging problems (**investigative or problem-orientated monitoring**); and/or
- increase knowledge of the relationship between water quality and land use.

As part of a water quality monitoring program, you will be finding answers to these questions about the quality of the Goulburn River:

- ? Are there any large problems with water quality in the Goulburn River?
- ? Can any trends be identified in the Goulburn River?
- ? What are probable causes of problems identified in Goulburn River?
- ? What actions could be taken, and by whom, to help reduce or rectify this problem?

Goulburn River in 2007/08

Thanks to the efforts of a variety of monitors, both groups and individuals, there were about 39 monitoring sites on the Goulburn River and its tributaries during 2007/08. The sites tested are too numerous to list but include sites in the upper, mid and lower reaches of the river. For example:

- GOU001 - Goulburn River at Woods Point
- GOU017 - Goulburn River before Alexandra Breakaway bridge
- GOU030 - Goulburn River before Seymour
- GOU043 - Nagambie Lake
- GOU060 - Goulburn River at Moira Park Kialla West
- GOU080 - Goulburn River at Balaclava Road Shepparton
- GOU085 - Goulburn River after Wastewater Treatment Plant
- GOU099 - Goulburn River at Stewarts Bridge, Echuca

Monitors recorded measurements for the four main parameters recorded by Goulburn Broken Waterwatch, which are:

1. **Electrical conductivity** - how much Total Dissolved Solids (especially soluble salts) is in the water
2. **Turbidity** - how cloudy the water is
3. **Phosphorous** - how much phosphorous (nutrients) is in the water
4. **pH** - how acidic or alkaline the water is.

Some sites were also monitored for Dissolved Oxygen.

Goulburn River Results

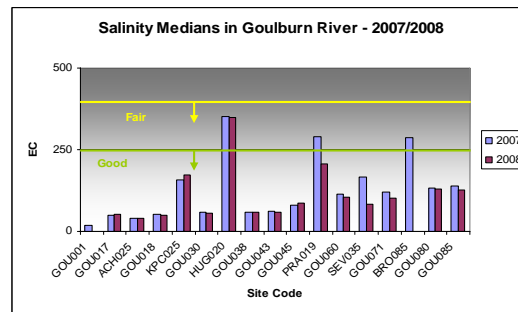
Electrical Conductivity

The part of conductivity in which we are interested is Total Soluble Salts or **salinity**. Aquatic plants and animals can only survive within certain salinity ranges so changes in salinity levels result in changes in the variety and types of plants and animals found.



A Waterwatch monitoring site in the mid reaches of the Goulburn River. The Goulburn River north of Old Wooden Bridge, Seymour.

Using the Index of Stream Conditions, the Goulburn River is rated as “**Degraded**” if levels are greater than 750 EC’s. In 2007 and 2008, the conductivity was below 400 EC’s from the top of the catchment at Woods Point, all the way to Shepparton. Conductivity appears to be higher in the tributaries compared with the Goulburn itself, most likely due to reduced flows (see graph below). This type of data can be useful for management agencies in determining sources of inputs into our waterways.

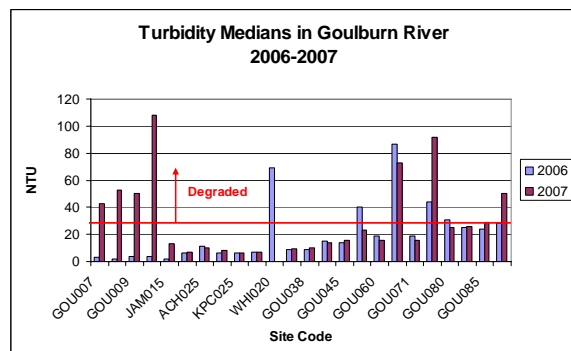


Turbidity

Turbidity measurements taken in Goulburn River in 2007 were rated as “**Degraded**” in the upper part of the catchment as a result of the fires and heavy rain. The graph below shows a comparison with the 2006 results with “normal” results around 5 NTU. This is a great example of how valuable baseline data is.

As for electrical conductivity, there seems to be a pattern of the tributaries to the Goulburn River having higher turbidities than the Goulburn River itself, and as the River moves further downstream it can be seen that the turbidity in the Goulburn River gradually increases as a result of their input.

Turbidity relates directly to rainfall and runoff. A hard fast rain washes a great deal of soil into the water (hence the high turbidities in areas affected by the fires). Erosion of river banks due to a lack of riparian vegetation is common in the Goulburn and Broken River catchments. Turbidity may also be the result of waste discharge, urban runoff and the presence of excess nutrients causing algal growth.



Certain catchment management practices such as the retention of vegetation along streams, fencing of waterways, farming practices such as contouring and stubble retention and elimination of stock access to waterways can lower turbidity in streams. Off creek watering of stock is another way of lowering the turbidity in streams.

Further Details

For further information on any of the data presented or about Waterwatch please contact:
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