

Free testing Covers:

Electrical Conductivity

Total Dissolved Solids (salinity)

Pesticides and Nutrients

pH and sediment Load

Equipment and containers

Water quality monitoring provides a very effective indicator of catchment and property health.

We encourage anyone interested in monitoring creeks, gullies, dams or sub-surface water to contact us or come along to a field day.

Further reading

Water sampling - The Technica Manual

Pesticide Management in Catchments

A Century in the life of the Dawson River (2001)

River Contaminants (2001)

Tools and Techniques for river management (2004)

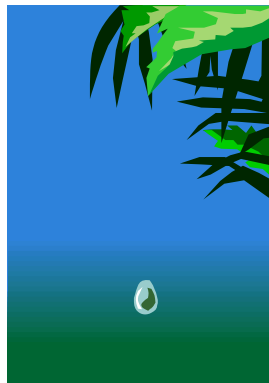
Contamination of Australia Groundwater Systems with Nitrate

Sediment Watch Results - 2001-2002

The conditions of River catchments on QLD

Downstream effects of land use in the Fitzroy Catchment 1997-98

If you would like to find out more information, or start collecting your own samples contact the Land-care Office and we can get you started. A full range of results are also available.



We would like to thank the following organisations for their support in maintaining our monitoring program:



Queensland
Government
Natural Resources
and Mines



Natural Heritage Trust
HELPING COMMUNITIES HELPING AUSTRALIA
A Commonwealth Government Initiative

Taroom Shire Landcare Group Inc

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Water Quality Monitoring



**Turbidity or
Sediment
Nutrients
Pesticides
Water flow**

Water sampling

Landcare and landholders monitor the sites after rainfall events and during periods where there is little flow. If we can identify the points at which turbidity increases, we can determine whether the increases are naturally occurring or exacerbated by activities in the area, such as

- Eroded banks
- Gravel dirt roads
- Stock access to creek banks
- Various cropping and grazing land management practices
- Climatic condition and
- Ground cover.



A water analysis is often essential before water is used for stock, domestic, or irrigation purposes. Chemical or biological composition can adversely affect crops, soils, humans, animals, or even equipment.



Having an analysis carried out is not as simple as filling a bottle and giving it to an analyst. The accuracy of a water analysis is very much dependent on the sampling methods employed and the time elapsed between sampling and analysis.

Turbidity

Sediment and other solids enter the waterways as a result of erosion (land, beds and banks). It is estimated that an average of 4 million tones of sediment are exported from the Fitzroy basin each year.

Consumption of 'murky' waters is not necessarily a health hazard, but many may be risky if the suspended particles contain toxic micro organisms. The relative Nephelometric turbidimeter (NTU) is the preferred

Typical values for Australian drinking water range between 1 and 60 NTU depending on filtering. 'Crystal' clear water usually has a turbidity of less than one.

Results found in the Upper Dawson are usually 50-70 times this. In general the

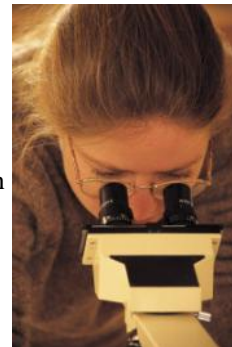
- Woleebee measures around 4200 NTU,
- Dawson River at Taroom has an average of 800 during rainfall events and a range of 200-400 during normal flow.
- In depth results are available from the Landcare Office.

Nutrient levels refer to the amount of phosphorus and nitrogen that is present in the water. Nutrients are important as they promote healthy plankton blooms, which are necessary to maintain turbidity levels and provide feed for fish. Increase levels of nutrients however may be harmful. It can cause excessive plankton growth, potential blue green algae blooms and oxygen depletion. High levels of nutrients can be caused by high stocking densities, over feeding (very common in winter), high productivity, and dead plant and animal matter.

Water quality along most of the Dawson is reasonable, with quite high concentrations of nutrients such, especially phosphorous, algal growth is probably limited by light.

Parameters measured include:

- Temperature, dissolved oxygen & pH
- Electrical Conductivity (EC) a Juandah Creek sample was 5 times the ANZECC guideline of 110mS/cm
- Total Suspended Solids (TDS)
- Suspended particulate matter
- Nitrogen under low flow conditions the Upper Dawson was well above the trigger level, although this varied with seasons and flow volume.
- Phosphorous levels are naturally high in the upper Dawson and as with the Nitrogen concentrations vary with seasons and flow rates.



Pesticides and Herbicides

Herbicides and insecticides reach waterways by running off the areas where they were applied, either directly or indirectly when attached to eroded soil or organic particles. They also have the potential to contaminate groundwater by leaching through the soil.

Atrazine a commonly used herbicides, is often found at concentrations above guidelines in waterways throughout the upper Dawson, but particularly in the lower Bungaban and Woleebee sub catchments. Other Herbicides such as Diuron and Dieldron have also been detected at very high levels.

Equipment required

- Turbidity tube
- Collection container (bucket on a rope or the long pole kit)
- Beaker/measuring jug
- Container of clean water (for dilution of very turbid samples)
- Field recording sheet
- Pencils & eraser
- Camera (optional)



Why measure turbidity?

Turbidity is a measure of the relative clarity of the water – the greater the turbidity, the murkier the water. Turbidity is the result of suspended solids from such sources as clays, silts or small organic particles from eroded lands and stream banks, plankton/algae, industrial wastes and sewage.

The term turbidity simply refers to the scattering of light and is measured in standard Nephelometric Turbidity Units (NTU). The most economical way to measure turbidity is to use a nephelometer, which is a far more expensive instrument. A nephelometer is located at the Biloela Research Station and can be used to verify readings from the turbidity tube.