

Water Quality Monitoring

Tests and definitions

The Dharriwaa Elders Group River Rangers are conducting weekly water quality testing, measuring a range of factors that affect the quality of the river water. Different results affect the health of native animals and plants, and the health of the people that rely on the river for food and water. Below is a description of each test that is being conducted and an explanation of how each reading should be understood.

Depth

Definition

The lowest level that the river can be for small, medium and large native fish movement in the river when it stops flowing. Small and moderate fish need more than 30 cm and large fish need more than 50 cm.

Threshold

Green/good: greater than 1000cm

Amber/average: 500cm-1000cm

Red/bad: less than 500cm

Potential of hydrogen (pH)

Definition

pH measures the acidity of the water. The pH scale ranges from 0-14 with 7 being neutral. Australian and New Zealand Environmental and Conservation Council (ANZECC) guidelines for Southeast Australia Lowland River outlines a lower limit of 6.5pH and an upper limit of 8.0pH. The Barwon-Darling and Far Western Water Quality Objectives (Lowland Rivers) outline ranges of 6.5 to 8.5pH.

Threshold

Green/good: 6.5 – 8.5

Amber/average: 6 – 6.5 or 8.5 – 9

Red/bad: less than 6.5 or higher than 9

Dissolved Oxygen (DO) mg/L

Definition

NSW DPI fisheries recommends 6-8 mg/L dissolved oxygen for normal water, with fish kills occurring below 3mg/L. Dangerous levels for fish are between 2-4 mg/L.

Threshold

Green/good: 6 - 8mg/L

Amber/average: 4 - <6mg/L

Red/bad: <4mg/L

Electrical Conductivity (EC)

Definition

It measures the salinity (saltiness) of the water. ANZECC guidelines for South-east Australia Lowland River and Barwon Darling and Far Western Water Quality Objectives (Lowland Rivers) recommend EC limits for fresh water as between 125 - 2200.

Threshold

Green/good: 125-2200

Amber/average: >2200

Red/bad: <125

Temperature

Definition

Changes in water temperature (fast and slow) can cause fish deaths. Water temperature changes can cause different life stages of fish to occur (e.g. migration and breeding). Warm water channel ranges between 18-24 degrees Celsius. The effects of cold water pollution, which can be harmful to native fish, occurs below 16 degrees Celsius.

Threshold

Green/good: 18-28 degrees

Amber/average: 16 – 18 degrees

Red/bad :< 18 or >30 degrees

River Flow

Definition

River flow is measured by gauges that are operated by WaterNSW. Native fish need different levels of flow to be healthy.

Threshold

Green/good: 280 - 42,000

Amber/average: 80 - <280

Red/bad: <80

Algae Alert

Definition

The level of algae in the water, measured at gauges operated by WaterNSW. Some types of algae are unsafe for people and native fish. Alerts are issued by WaterNSW depending on how severe the algal bloom is.

Threshold

Green = good

Amber = average

Red = bad