How to measure water supply from streams, creeks and rivers

Follow the instructions below to measure the water supply from streams, creeks and rivers on your property.

The flow rate of natural water bodies varies throughout the year with seasonal conditions. For an accurate result the flow rate should be measured at the time of year in which you will be utilising the resource, or multiple measurements should be taken throughout the year if it is utilised constantly.

1. Measure the depth of the waterbody (use a piece of rope with clearly marked intervals, or a solid measure such as a pole with marked measures). Repeat at three points: one on either side of the water body and one in the middle. Average this result.
2. Measure the width of the water body – avoid the narrowest and the widest parts. Repeat three times and average the result.
3. Mark out a known length (e.g. 10 m) along one edge of the water body. Get a timer ready.
4. Starting at one end of the marked length, drop a buoyant object (an orange works well) in the water and start the timer. Follow the object until it crosses the end of the marked line and record the time taken to cover that distance (in seconds).
5. Repeat this measure 3 times and average the result.
6. Divide the travel distance (e.g. 10 m) by the seconds taken to travel the distance. This calculates travel time in metres/second.
7. Multiply the metres/second by 0.85. This is the water velocity.
8. Multiply the average depth by the width of the water body to get a cross-sectional volume (m^3).
9. Multiply the cross-sectional volume by the velocity to calculate flow in cubic metres per second. Multiply this by 1000 to calculate litres/second.
10. Multiply litres/second by 86,400 to calculate litres/day.
11. Multiply litres/day by the number of days you anticipate the resource will be used to calculate total water volume accessed (in litres).
12. Divide the total water volume accessed by 1,000,000 to convert the value to megalitres.