

OUR WATER SUPPLY SO NEAR YET SO FAR...



The Rocky Creek **water supply system** supplies water from this rainforest catchment to people all around the region. It is made up of the catchment, dam, water filtration plant, pipelines, and reservoirs, all managed by Rous County Council.

Because your water is 'on tap', you may think that its source is very close to you. Think again!



Rain falls into the **catchment** of Rocky Creek Dam. This catchment is a beautiful, healthy ecosystem of rainforest and is one of the best protected catchments in Australia. (You will learn more about this catchment later in the Water Walk.)



Raindrops fall from the sky onto the glossy green leaves of rainforest trees, and drips towards the ground, bouncing off smaller trees, palms and shrubs, and finally landing on the leaf litter that covers the forest floor. Even when no rain is falling, the water vapour of mist and cloud is caught by the leaves and branches of rainforest trees, forms into droplets and runs down the tree trunks into the leaf-litter.

Having found its way to the forest floor, the water flows downhill towards creeks and gullies, traveling quickly across and through the leaf litter and forming tiny streams that rapidly enter the creeks that flow into the dam.

Not all of the water, however, stays near the surface. Some water soaks into the soil, following the roots of trees and cracks in the soil, and deeper into the ground. Eventually it flows into the groundwater which is then slowly released from springs and soaks for days, weeks and months later. This groundwater also feeds the dam.

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That is the equivalent of about 7,000 Olympic sized swimming pools!

Rocky Creek Dam contains 14,000 megalitres of water when it is full. That is the equivalent of about 7,000 Olympic-sized swimming pools (like the new pool in Lismore)! The dam wall is 27 metres high and is made of about 80,000 tonnes of rock, soil, clay and concrete (that's enough to fill about 16,000 concrete trucks!) Construction of the dam began in 1949 and it flooded 478 acres of farmland (that's nearly 2 square kilometres, the size of 400 football fields). The village of Bangalow was the first centre to receive water from the dam in November 1953.

The run-off from the catchment produces very soft, clear water. The red soil and rainforest ecosystem in the catchment, however, result in a high level of dissolved iron and organic matter in the water supply. This is particularly so when the water level is low in the dam. This means that water needs to be treated and filtered



* Pipelines carrying bore water and Emigrant Creek supply also carry Rocky Creek supply.



before being distributed for human use. (You will learn more about the process of **water treatment** in the next sign and information sheet on the Water Walk.) This happens at the Nightcap Water Treatment Plant, right next to the dam.

The treated water then flows downhill from here (200 metres above sea level) through pipes to a series of huge tanks or '**reservoirs**' placed throughout the region.



Reservoirs are used so that large pipes don't need to go all the way into towns from the water treatment plant. They work by evening out our 'demand' for water. At some times of the day, people use a lot of water all at once (eg, when everyone gets into the shower early in the morning before work and school, or when they get home in the evening and water the garden). If we had to supply all these people with water at the same time from the dam and water filtration plant, we would need a huge treatment plant and pipelines. Instead, water is treated steadily day and



night and transported to the reservoirs. That way, there is a lot of water stored nearby, ready to be used when everyone wants it at once.

These reservoirs are often placed on the top of hills, so that water can flow by gravity to houses and businesses. Most reservoirs are filled by gravity (because Rocky Creek Dam is higher above sea level than they are). Some of these reservoirs, however, are higher than Rocky Creek Dam and so water needs to be pumped up to them. Pumps are also needed when there is a high demand for water and **pump stations** are used to boost the pressure in the water mains and fill the reservoirs.

The network of large **pipes** called '**water mains**' that supply these reservoirs is a total of about 500 kilometres long! Most of these pipes are underground, but they are marked by white posts coming out of the ground. Maybe you've seen them in paddocks

or running along the side of roads. The network of smaller pipes that take water from the reservoirs to houses and businesses is a total of about another 1,000 kilometres! (That means that if all the pipes in the system were laid end to end, they would stretch from here to the Snowy Mountains!)

Before the water gets to the taps in your home, school or business, it passes through a **water meter** that is on each property. The meter measures how much water is being used.

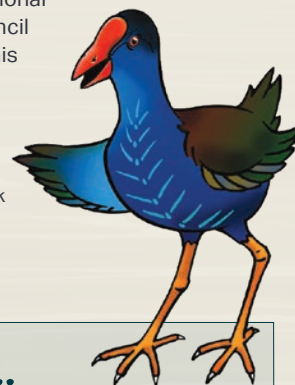
The amount of money you pay for water rates depends on how much you use. If you use less, you pay less. (You will learn more about how to conserve water later on the Water Walk)

We usually just turn on the tap without thinking about all this!

Upon its completion in 1952, the whole water supply system including trunk mains to Lismore, Evans Head, Byron Bay and Brunswick Heads cost about 1 million pounds. (It would cost about \$100 million to construct it today).

Operation and maintenance of the regional water system costs Rous County Council about \$10 million a year. If you live in this area, your water rates pay for this.

(Sources: Rocky Creek Dam brochure produced by Rous County Council; 'From Catchment to Tap' poster by Rous County Council; Rob Kooyman (2003a) Rocky Creek Catchment)



TRY THIS!

Learn with your...



"If you live or work in the region of this map, locate where your house, school or workplace is. Using the scale on the map, calculate how far water has to travel from Rocky Creek Dam to where you use it."



"Can you imagine what life would be like without such a water supply system? Where would we get our water from? How would we make sure it was safe to drink? How do you feel about this?"



"If you live or work in the region of this map, locate where your house, school or workplace is. Use your finger to trace the source of the water that you use there. Find the closest reservoir, and the pipeline back to Rocky Creek Dam."

Learning objective: To understand and appreciate the existence of the different components of the water supply system.

For further information contact:

Rous County Council

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These information sheets were originally prepared for Rous County Council by Sustainable Futures Australia in liaison with Widiabul elders. © Rous County Council and Sustainable Futures Australia 2004. This is an educational project for the protection of water land, and for reconciliation.

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