CATCHMENTS
WATER CATCHMENTS CATCH WATER...

What are Water Catchments?

A catchment is an area of land that feeds water to a particular creek, river or other water body.

Water that falls as rain onto that land and runs over its surface will end up in that body of water. For example, the 'Richmond River catchment' includes all the land that catches water that ends up in the Richmond River. The Emigrant Creek Dam catchment includes all the land that catches water that ends up in Emigrant Creek Dam.

The edges of a catchment are ridgelines between hills. If rain falls on one side of the ridge, it will flow downhill into one creek. If it falls on the other side, it will flow into another creek. Sometimes, these creeks flow into different rivers, and even into different sides of the country. For example, rain falling on some ridgelines west of here (eg, near Tenterfield) will either end up in the Clarence River which flows into the sea near Yamba, or in the Murray-Darling system which flows into the sea near Adelaide!

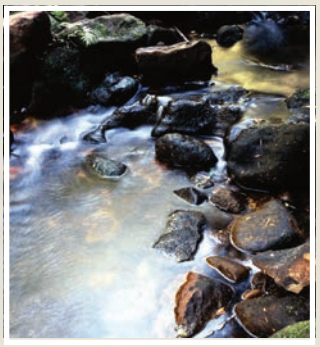
What Affects Water Quality?

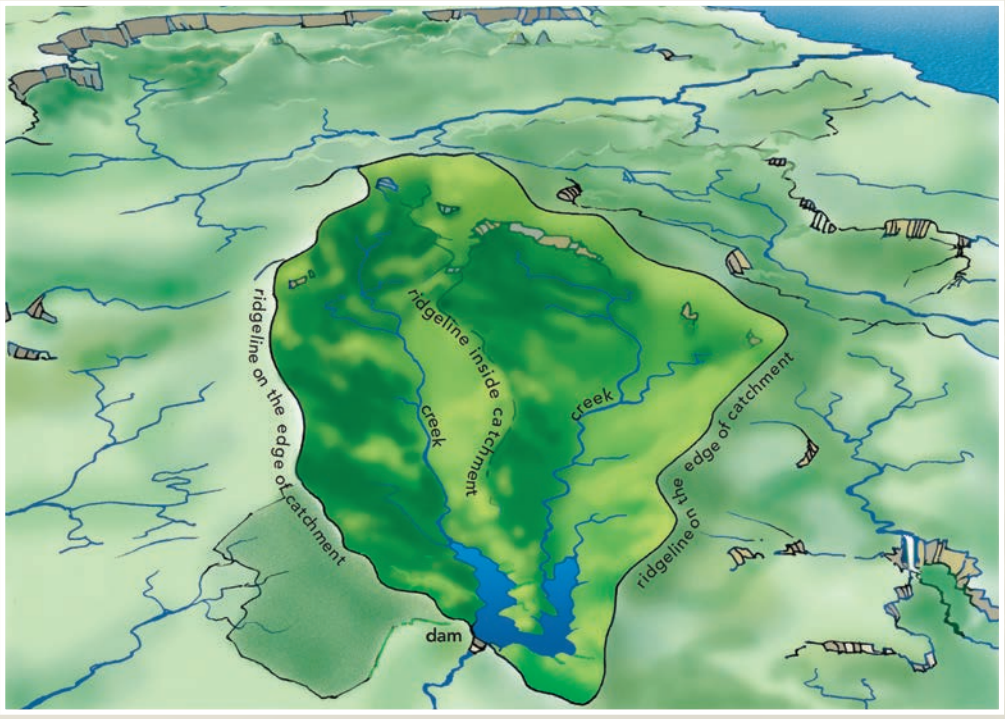
The water flowing through a catchment catches other substances that it comes into contact with.

Therefore, the quality of water produced by a catchment depends on:

- the natural qualities of the land (eg, geology, soil structure, ecosystem type); and
- how land in the catchment is used by humans (eg, for agriculture, industry, urban development, recreation, nature conservation).
- It even depends on the air quality above the catchment (eg, air pollution causing acid rain).

Large amounts of nutrients (plant foods) such as nitrogen and phosphorus are not good for water quality because they speed up the growth of plants and blue-green algae. Sediments washed into the water are also pollutants because they remain suspended in the water, and heavy metals, pesticides and microorganisms are attached to them. (See *Info Sheet 8: Water Treatment* for more details.)





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The amount of these pollutants running off a particular piece of land depends on the way that land is used.

Land-Use	Nitrogen (kg/ha/year)	Phosphorus (kg/ha/year)	Sediments (kg/ha/year)
Undisturbed forest	1.0	0.01	100
Pasture	1.8	0.2	110
Cultivated	4.4	0.6	200
Rural residential	4.1	0.7	150
Urban (unsurfaced)	3.9	0.7	530
Urban (surfaced)	9.0	2.0	770

Source: We All Use Water, Australian Water Association (2002), p.45

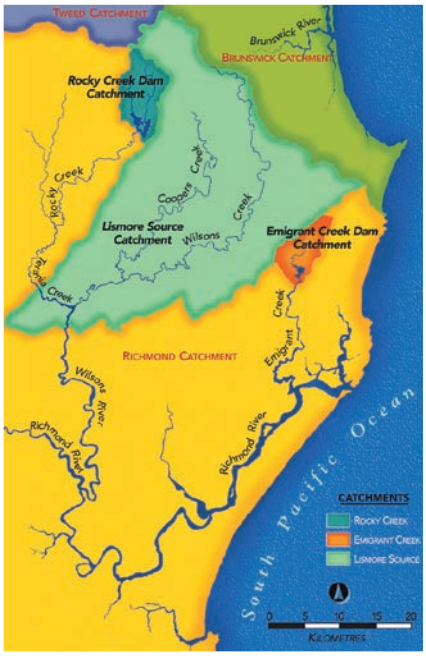
Therefore, careful management of catchments is important for good water quality, as well as for the health of their ecosystems.

What is Catchment Management?

We all live and work in one catchment or another. It is important to realize that there are often many competing demands on the land, water, and vegetation of any one particular catchment. This competition can be between the needs of different people, organisations, industries and the natural environment itself.

The challenge of catchment management is to balance and coordinate all these competing needs. It needs to provide overall management decisions and strategies, as well as encouraging everyone involved in a catchment to consider the impacts of their activities on others and on the catchment itself. It requires cooperation and coordination of activities.

In recent years, catchments have become a standard unit for the planning and management of natural resources. All catchments need management.



Water supply catchments play a special role, however, because the community requires the water quality coming from them to be particularly high to protect human health. Management may need to be more restrictive of human uses of the land. Water supply catchments need special management!

TRY THIS!

Learn with your...

"If high water quality was the most important thing to make sure came out of a particular catchment, what land-uses do you think would be most appropriate for that piece of land?" (Hint: Look at the table on this fact sheet.) "What activities do you think could be allowed in the area, and what do you think should be not allowed?"

"Imagine that the demand for water keeps on increasing. This is because more people move into this region because it is such a beautiful place to live. A new dam is built and a new water supply catchment area is declared. Some of the catchment is agricultural land and farmers and other members of the community are being asked to participate in voluntary revegetation of buffer zones around the dam. Would you like to be involved in some way? Imagine the end results. How do you feel about that? How do you think others might feel about that?"

"Pretend that your finger is a drop of rain. Let it fall somewhere on the picture of the catchment on page one. Now trace the path of that water droplet down the gullies and creeks. Does it end up in the dam, or in another catchment? Try it again, and see where that raindrop ends up this time."

Learning objective: *To understand what a catchment is, the need for catchment management, and to appreciate the challenges involved in catchment management; and Rous County Council's involvement in catchment management.*

Catchment Management in the Richmond River Catchment

There are many catchments in this region, not just water supply catchments.

Catchment management is about government, industry and community members working together to manage competing demands on the catchment. Everyone needs to be involved. Rous County Council takes a leading role in the coordination of the activities of all stakeholders in the region's water supply catchments.

It is worth noting that, as population increases in a region, the demand for water also increases, and more catchments become water supply catchments.

(Sources: web-sites of Streamwatch, Sydney Water, Sydney Catchment Authority, WA Water & Rivers Commission; We All Use Water education kit prepared by Australian Water Association)

For further information contact:

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