

Catchments

Clean water is vital to healthy communities, agriculture and economies. We need clean water upstream to have healthy communities downstream, and the health of rivers, lakes, bays, and coastal waters depend on the catchments and wetlands where they begin.

Catchments and wetlands provide many benefits to communities by trapping floodwaters, recharging groundwater supplies, filtering pollution, and providing habitats for fish and wildlife. Farms across Australia depend on clean, reliable water for livestock, crops, and irrigation.

NSW Stage 4
Geography
GE4-1
GE4-2
GE4-5

Research and discuss water catchments to help you answer the following questions.

What is a catchment?

1. In 25 words or less, write what you think a catchment is.

2. Label the parts of a catchment using the following clues:

- Estuary Ocean Rivers Mountain peaks Lowest point Dam
Creeks First order streams



3. List 4 types of natural environments you may find in a catchment.

- 1) _____
- 2) _____
- 3) _____
- 4) _____

4. List 4 types of built environments you may find within a catchment.

- 1) _____
- 2) _____
- 3) _____
- 4) _____

Catchment land use impacts

1. As water runs off the land it will take with it all sorts of pollutants. Match the land use photos with the potential pollutants or impacts (contaminants) from that activity. There may be more than one contaminant for each land use.

Land use



Farming



Storm water



Dairy farm

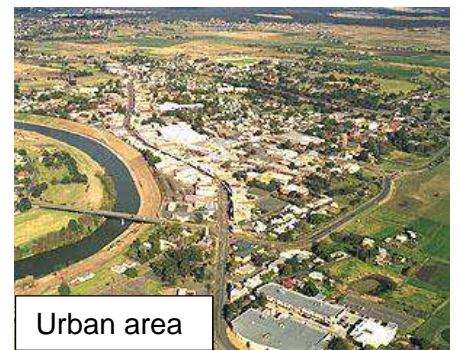
Contaminants

- Plastic bottles
- Detergents
- Grease
- Fertilisers
- Petrol
- Grass clippings
- Pesticides
- Plastic bags
- Manure
- Oil
- Phosphates
- Sediment
- Paint

Land use



Rubbish tip



Urban area



Road

2. List 4 things people can do to help protect our waterways.

- 1) _____
- 2) _____
- 3) _____
- 4) _____

3. You are a farmer who runs a dairy farm in the Williams River Catchment. Your cattle have direct access to the river for drinking and you have noticed that the banks of the river are becoming eroded (wearing away). As a result, the water quality directly downstream from your farm is extremely turbid (muddy). Think of 2 things that you can do to help improve this situation.

1) _____

2) _____

Catchment management

Catchments are generally divided into Upper, Middle and Lower Catchments. Using the case studies below think about the impact these operations have on the catchment and water quality.

Upper catchment: agricultural production

Growlong Farm is located in the upper catchment and produces beef cattle. The farm backs onto the creek and pumps water from it to the stock water troughs and for the house garden. The creek has been fenced off and many native trees have been planted along the banks, however previously cattle were able to access the creek to drink. Growlong Farm use herbicides to eradicate weeds and apply fertilisers to their pastures. They manage their stock numbers based on the season and are careful not to overstock their property.

What are the potential impacts on the water catchment from Growlong Farm?

What have Growlong Farm done in recent years to reduce their impact on the water catchment?

How does the management of water at Growlong Farm impact on water quality further downstream?

Middle Catchment: Industrial Factory

Riverside Pulp and Paper Mill is located in the middle catchment and produces paper and packaging materials. The mill, or factory, backs onto the river and the factory has a license to use water from the river in the factory. This water is used in some of the machinery and for cleaning purposes. Chemicals are used in the factory to bleach materials and for processing and cleaning purposes. The internal and external areas of the factory are cleaned by hosing with high pressure water once per week. Drains have recently been installed for this cleaning water to be treated however previously the water went into the storm water or onto the grassed areas near the river.

What are the potential impacts on the water catchment from Riverside Mill?

What have Riverside Mill done in recent years to reduce their impact on the water catchment?

How does the management of water at Riverside Mill impact on water quality further downstream?

Lower catchment: Town and Saltwater Fisheries

Fresh Fish Company is located in a small coastal town where the main industry is fisheries. Fresh Fish Company farm and harvest oysters and saltwater fish species and their produce is sold directly to customers and in restaurants and cafes.

Why does the Fresh Fish Company rely on clean water for their business?

How could the water management practices upstream impact on the produce of the Fresh Fish Company?

How could poor water management in the catchment affect the people and economy of the town?
