



Make your own catchment

Break into two groups and at the end of the activity, both groups will compare the water flow in the different catchments.

Group 1 makes a natural catchment.

Group 2 makes an urban catchment.

STEP 1:

In your groups discuss the different features that you need in your natural or urban catchment. Consider the following:

Catchment Shape

- Topography (land shape) is important; precipitation (rain) falls in the catchment and flows downhill into creeks, rivers, dams and drains to the lowest point. Water flows faster down steeper slopes.
- River paths can change over time.

Surface Covering

- Vegetation throughout the catchment helps slow down water, increasing infiltration to the soil. Riparian vegetation (habitat beside riverbanks) is especially important.
- Hard surfaces increase the water speed and run off (i.e. less water infiltrates into the soil).

Urban/Managed Components

- Dams, wetlands, reservoirs and other storage areas hold and stop the flow of water.
- Irrigation takes the water out of the system, reducing the natural water flow.

STEP 2:

Make a river catchment in a sandpit, or using a sand table.

Note you need the following:

Natural River Catchment

- a) Collect sticks, bark, twigs, leaves and grasses.
- b) Use damp sand to create a high point to represent the upper catchment, and a low point to represent the lower catchment.
- c) Make a meandering (curved) river from the upper catchment and use lots of sticks, bark, twigs, leaves and grasses to represent Riparian vegetation along the bank to the lower catchment.
- d) In the lower catchment use sponges to simulate a wetland and use grasses and twigs to represent reeds and shrubs.
- e) Make sure you firmly pack down the sand along the river.





Make your own catchment

Urban Catchment

- Collect sticks, bark, twigs, leaves and grasses.
- Use damp sand to create a high point to represent the upper catchment and a low point to represent the lower catchment.
- Add a dam in the upper catchment.
- Make a straight river from the dam to the lower catchment.
- Use the PVC pipe to simulate stormwater drains.
- Add hard surfaces like roads.
- Use sticks, bark, twigs, leaves and grasses to represent vegetation in the catchment.
- Make sure you firmly pack down the sand along the river.

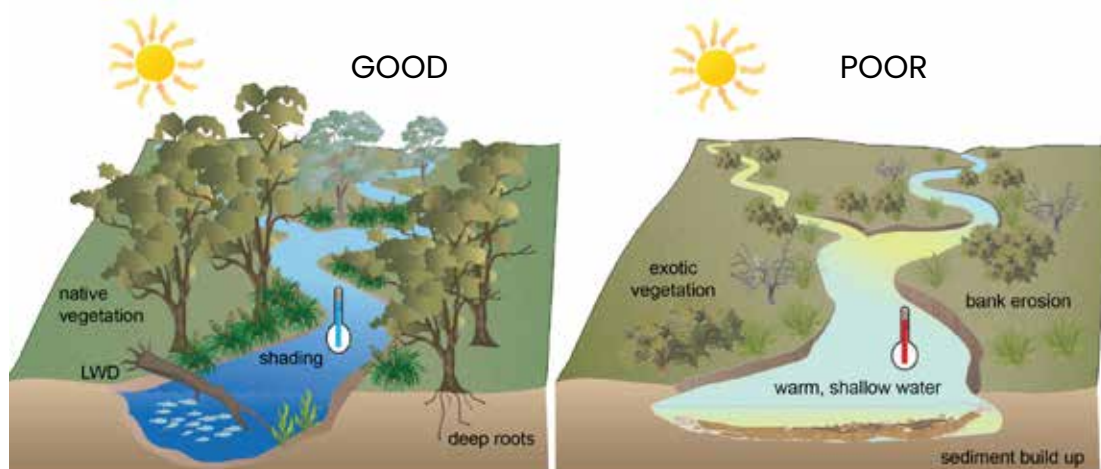
When you are happy with your urban environment, slowly add water.

- Begin with the upper catchment and pour water into the dam.
- Observe and record what happens to the water and environment.
- You can also make it rain with a watering can or spray bottle.
- Add food colouring to simulate different rain events.
- Observe and record what happens to the water.

STEP 3:

Come together as a group; add water slowly to your catchment models. Discuss the differences of how the water flows between a natural and urban catchment.

- Begin with the upper catchment and pour water into the river.
- Observe and record what happens to the water.
- You can also make it rain with a watering can or spray bottle.
- Add food colouring to simulate different rain events.
- Observe and record what happens to the water.



Good vegetation will contract and deepen the channel
Deep roots help maintain bank structure and stability, and reduce erosion
Large woody debris (LWD) provides habitat

Without vegetation, the channel will become wider and shallower
Absence or loss of vegetation increases channel instability and erosion
An absence of LWD reduces habitat

<https://www.industry.nsw.gov.au/water/science/surface-water/monitoring/river-health/inputs-river-condition-index>

