

Catchments

WHAT IS A CATCHMENT?



A catchment, or watershed, is the area of land from where a river or lake captures water from rain, ice or snow.

The water may remain above ground as surface water, in creeks, pools and other wetlands, or it may pass underground to become groundwater, within layers of porous soil or rock called aquifers

Catchments in the Northern and Yorke Region

There are four main catchments in the Northern and Yorke region. They are the Light, Broughton and Wakefield catchments in the Mid North, and the Willochra catchment in the Upper North. Each of these catchments serves a number of aquifers.

How do surface and ground-water interact in a catchment?

In most of the Northern and Yorke region, rainfall is irregular and the runoff entering farm dams and streams is erratic. Groundwater recharge is also variable. After a long dry spell, runoff quickly soaks into the sub-soil, and many native trees, especially eucalypts, are adept at trapping and storing moisture, so that a shower of rain may have no apparent effect at the surface. Once the groundwater and plants are replenished, more rainfall will pool as surface water, streams will flow and dams will fill.

Around Clare the rainfall is more seasonal, beginning in autumn and continuing through winter and spring.

In the dry summer, throughout the region however, the streams cease to flow and contract to waterholes of varying permanence. Some of these are short-lived, and others last through summer.

The longer-lasting pools are probably fed partly by groundwater. They are important summer-time refuges for aquatic plants and animals.

Surface water and groundwater reserves in the region are closely linked, and must be valued and managed as one resource.

Why are catchments important?

Catchments provide people, stock and flora and fauna with drinking water. They provide people with water for domestic and industrial use, including irrigation, and they cater for recreation and tourism. They may also include important cultural sites. Wildlife depend on catchments for food, shelter and breeding sites. Catchments are important in environmental, economic, social and cultural terms.

Any negative change in the condition of a catchment is likely to be reflected in local streams and lakes, and in the groundwater. For example, pollution by chemicals, soil erosion due to land clearance, or excessive water use may result in a decline in the health of local streams and lakes.

Water quality and quantity

The quantity and quality of water affect river red gums, birds and frogs, other aquatic flora and fauna, and ecological communities like wetlands, floodplains and nearby land.

Take a river, for example. A healthy river needs water of sufficient quality and quantity. And there can be little surface flow until groundwater reserves are recharged. The surface water must be delivered often enough and at the right time of year, to meet the needs of aquatic plants, animals and people.

The quantity of water matters little if its quality is unsuitable. It may contain too much salt or sediment, perhaps as a result of land clearing, or too many nutrients from sewage or other sources.

Saline water, for example, is unlikely to be drinkable or useful for irrigation, and it can kill many kinds of aquatic organisms. Trees like river red gums are often victims of salinization. Excessive salt in the soil may kill mature trees



or prevent regeneration. In turn, the loss of trees reduces habitats for parrots, possums and many insects and other invertebrates. Fish, frogs and other species are likely to be lost.

Where there are fewer fish and frogs, water birds may not have sufficient food, and they too may leave the area. In ecosystems like these all things are connected, so that a change in any one thing inevitably has consequences up and down the food chain.

In very disturbed areas, pest species often take over, and the effects on the ecosystem are magnified.

Pest animals like wild goats, for example, can damage watercourses by eroding the banks, pugging the sediments, fouling the water and destroying vegetation and pasture cover. This spoils drinking water for stock, leading to lost farm productivity.

Pest plants like pepper trees, olives, artichokes, introduced bulbs, dog roses and African boxthorn add to the damage. Autumnal leaf fall into a watercourse for example adds nutrients and organic matter, and these may degrade the quality of water, limiting its use by wildlife and stock.

When you encounter a stream or a lake infested by pest species, or polluted or degraded in some other way, the cause often is to be found not in the waterbody itself, but in the surrounding catchment. It is hard to imagine a healthy stream or lake in a degraded catchment.

How can catchments be protected?

Here are things we can do to help protect catchments:

- Control pest species like goats, foxes and rabbits
- Remove olives, willows, boxthorn and other weeds, and replace them with native species
- Plant appropriate native species to control sedimentation and run-off into watercourses
- Ensure that farming practices are sustainable
- Ensure that water and land together are managed sustainably for the benefit of people and the environment
- Follow best-practice guidelines and regulations relating to water use
- Follow recommendations in catchment management plans
- Monitor the health of catchments
- Protect permanent pools as wildlife refuges



For more information

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