

A Waterways Health Check

rating your local waterway



Each waterway pictured here is different. How would you rate them for health? This document gives you a system that helps you score a waterway by examining it in a number of different ways.

How healthy is your local creek, stream, lake or wetland? Here's a simple guide that will help you rate the health of your local waterway. It's easy, doesn't take too much time or require complex equipment, and it will allow you to tune into a vital component of our environment.

How's your local creek? Is it a place of thriving life, clear water and healthy bush? Is it an area that you enjoy visiting or walking by? Or is it a smelly, dirty trickle that's best avoided?

Our wetlands, creeks, streams and lakes (which we'll refer collectively to as waterways) are far more than just a part of the scenery – they're the lifeblood of the environment. They provide homes for wildlife and plants, water supplies for homes, industries and farms, and places of recreation and enjoyment for us all.

Besides being important environments themselves, our waterways and wetlands also reflect the health of the surrounding land because they're the collection point for water coming from all around. A healthy waterway usually reflects that the local environment is in good shape, whereas an unhealthy waterway often means other things are going wrong somewhere in the catchment.

But how can you tell if a waterway is healthy? It's actually quite simple to estimate the overall condition of these environments. You don't need high-tech equipment or chemicals, but you will need your senses, your common senses and a genuine concern for the waterway.

What's in a feeling?

When you visit a waterway you very quickly form an opinion on whether it's healthy. It's more of a feeling than a detailed understanding; but ask yourself what goes into creating that feeling. Clearly it's based on what you see, smell, and touch (it's not wise to taste water from waterways).

Of course, most of your judgement is based on what you see, but you can break this down into a number of areas as well. How much litter is around? How health and mixed is the vegetation? How clear is the water? All these things add up to a 'feeling' for the waterway's health. To convert your 'feeling' into some form of health rating you could consider each of these areas separately, giving each a mark.

Over the next couple of pages we've proposed areas or categories in which you can make judgements on your local waterway. In each category you can rate your waterway and then combine your scores to come up with an overall rating for the area. In this way you've converted your 'feeling' into a series of numbers you can use to compare different waterways or different places on the same waterway.

This approach is not completely objective (based only on fact) because it's still using your senses and your judgements, not machines and monitors that measure absolute quantities. On some days you might be happy with the world and give a waterway high marks. On another day you might have had a bad time at school and your gloomy mood might have you scoring low marks. However, it's a good start to breaking down your 'feeling' and it's also getting you to examine components of the waterway.

Once you've tried a few ratings of your own, there are ways of making your scores more objective and meaningful. Then we'll discuss ways of actually improving the score itself – that is, improving the health of your waterway.

What rates?

We've suggested nine areas or categories you might like to consider. Each category is rated out of 10, and the lower the mark the poorer the condition of the waterway in that category. We've also suggested things you might look for when making your rating, but it's impossible to come up with indicators that will work in every situation and in many cases you'll need to come up with your own indicators or modify the ones we've suggested. In general, keep in mind that 10 is the best possible rating you can hope for with your waterway, and zero is the worst. Then judge where your waterway might fall on this scale.

You might like to use the next two pages as a master score card. Make photocopies of them for every waterway site you score. Keep good notes on each site, recording the location, date and details on anything special that might vary from visit to visit. This is important so you can more meaningfully compare your scores if you visit the site over time. For example, if you visit after a large storm the water might be quite stirred up and murky, and you need to know this when comparing the site with a visit at a time when no rain has fallen.

Try rating your own local waterway and then turn to the final page for a discussion on how you can use these results. Next to each category is a box with a tip on how you might try to make your monitoring more objective.

Waterway health check

Make notes on each category on a separate sheet

Site information

Name of wetland/waterway:

If unnamed, what is the closest town, suburb or road.

Location:

Provide sufficient details so that you or someone else using your directions can return to exactly the same spot to repeat your rating.

Date:

Weather:

Has it rained in the last 24 hours?

(If yes, was it heavy rain?):

Area being rated:

Create a simple site map using a road directory or local plan. Mark in features that might affect your waterway. Mark in where you made your rating.

Provide enough detail so that when you repeat your rating you're examining the same area. For example, you might look at an area 50 metres on either side of the waterway, stretching up and down the waterway as far as you can see.

CATEGORY 2 litter

Make notes on the type of litter floating on or in the water or on the surrounding land. (Include natural litter such as leaves sticks and animal faeces.)

If litter seems to collect in one particular area, take a photo of that area each time you monitor your waterway so you can compare litter buildup.

YOUR RATING

Rating Category 2

0. Lots of human litter such as car bodies, tyres, plastics and cans, oily films and/or excessive algae growth.
- 1.
2. A lot of human litter, cans, plastics or algae.
- 3.
- 4.
5. Some human litter such as garden rubbish and plastics
- 6.
- 7.
8. One or two pieces of human litter, and local vegetation such as leaves floating in the water
- 9.
10. No human use at all, preserved in its natural state



What kind of litter is found in your waterway, and how much is there?

CATEGORY 3 pipes and drains

Look for pipes, drains or trenches leading into your waterway. Examine what's coming out of them (by smell and sight: don't touch or taste), record how many there are and make notes on what you think they're there for.

Without touching the discharge from the pipes, figure out a method of calculating what the volume of any discharge is.

YOUR RATING

Rating Category 3

0. A number of pipes from industry and/or sewage treatment and/or urban stormwater.
- 1.
2. Some pipes or trenches
- 3.
- 4.
5. No pipes from industry, but some urban stormwater drainage
- 6.
- 7.
8. No pipes or drains
- 9.
- 10.



What are the pipes and drains bringing to your waterway?

CATEGORY 1 land use

Walk around the area surrounding your waterway. Record land uses that you see or land uses you're aware of in the local area.

Create a list of places where water comes from that flows into your waterway.

Rating Category 1

0. Lots of industry nearby, most of land cleared, soil bare, environment disturbed
- 1.
2. Some industry, some land cleared
- 3.
- 4.
5. Some commercial, recreational and residential land use
- 6.
- 7.
- 8.
- 9.
10. No human use at all, in its natural state

YOUR RATING



What's the land being used for around your waterway?

CATEGORY 4 extra structures / modifications

In addition to pipes and drains, record the presence of other artificial structures such as weirs, concrete banks, piers or any artificial modification of the water flow.

Describe what effect you think these structures have had on the waterway.



Stormwater filters such as shown here are designed to catch litter that might accumulate in other areas.

YOUR RATING

Rating Category 4

0. A number of artificial structures, large modification of natural flow
- 1.
2. Some artificial structures or some flow modification
- 3.
- 4.
5. No concrete structures or minimal modification of water flow
- 6.
- 7.
8. No extra structures or artificial modifications
- 9.
- 10.

CATEGORY 5

smell

Sit by the waterway and record any smells. Take a sample of water and record its smell (don't taste it). A strong natural smell in wetlands and estuaries should be recorded as 6 or more.

Take a sample of water in a glass jar and ask other people how they would judge the smell. Is it the water that smells or something else at the waterway?

YOUR RATING

Rating Category 5

0. Very strong, unnatural chemical smell
- 1.
2. Strong unnatural smell
- 3.
- 4.
5. Stronger decaying smell or slight unnatural smell
- 6.
- 7.
8. Very slight smell, perhaps natural decay
- 9.
10. No smell / natural smell



The water is clear but doesn't smell very nice!

CATEGORY 6

water clarity

Collect a water sample in a clear container. Hold it up to the light. Record how clear the sample is.

If your water sample is murky, allow it to stand for a couple of days. Do particles settle out of it, causing it to become clearer?

YOUR RATING

Rating Category 6

0. Milky brown or green colour with particles and scum. You can hardly see through it!
- 1.
2. Cloudiness and/or greenish colour, with some particles or film
- 3.
- 4.
5. Some colour and particles
- 6.
- 7.
8. A little colour
- 9.
10. Colourless and clear as tap water



It's looking good!

CATEGORY 7

vegetation

Look at the banks and the land extending from the waterway. Note if the vegetation is natural or introduced, and if the soil is eroded or stable.

Using flora books or consulting local experts, learn the names of your local plants. Create a list of species growing around your waterway.



There's vegetation around but the banks themselves are eroded and appear unstable.

YOUR RATING

Rating Category 7

0. Lots of introduced plants, much clearing, bare ground, pasture, extensive erosion
- 1.
2. Mixed plants, much clearing, large eroded areas
- 3.
- 4.
5. Mixed native and introduced plants. Some clearing. Small corridor of vegetation. Some minor erosion.
- 6.
- 7.
8. Mainly native plants. Natural vegetation extends up to 30m from water, no erosion
- 9.
- 10.

CATEGORY 8

invertebrate animals

(insects, crustaceans, molluscs and so on)

Sit by your waterway and look for invertebrate animal activity. Run a scoop net through the water and see if you can catch insects or other invertebrates.

Scrape up the first centimetre of sediment with a tin. Put it into an ice cream container and wash it with lots of water. Draw any animals you find.

YOUR RATING

Rating Category 8

0. No invertebrate animal life visible at all
- 1.
2. Only one or two types of animal life visible (probably snails leeches or worms)
- 3.
- 4.
5. Fewer than five types of animals found
- 6.
- 7.
8. At least seven types of animals found
- 9.
10. Many types of animals found including insect larvae and nymphs



Run a scoop net through the water and see what you catch.

CATEGORY 9

vertebrate animal life

(birds, reptiles, fish, amphibians and mammals)

Sit by you waterway and look for vertebrate animal activity. Note both the variety and number of birds. Look for fish, listen for frogs and record any animal tracks

Using bird books, learn the names of birds around your waterway and compile a list. Keep a chart of what birds are around at what times of year.

YOUR RATING

Rating Category 9

0. No vertebrate animal life visible at all
- 1.
- 2.
3. One type of animal life (birds)
- 4.
- 5.
6. Two types of animals found
- 7.
- 8.
- 9.
10. Many types of vertebrate animals found



What birds are using the waterway near you?

total score

Using your Score

Okay, now you have a series of numbers (and a total) that serves as an indicator of the health of your local waterway. What do you do with that number?

Your health rating is a good starting point for further work but you should keep in mind that a single score is only a rough indication of the waterway's health. If you're really concerned about looking after this important environment there are two things you should be considering. First, learn how you can make your health rating more valid (that is, improve the quality of your judgement). Second, take steps to improve the health of your waterway (in other words, change things so your total score increases).

Improve your rating

Here are four simple ways to improve the way you do your rating. See if you can come up with additional ways of your own.

- 1. Involving the judgements of a number of people.** Your scores are based on your own judgement. By involving more people you'll produce a more accurate result. See if you can get a group of friends to run their own health check on your waterway. Offer to do the same on theirs. Does your individual score change if a number of people make the same test and you average everyone's scores?
- 2. Make multiple ratings.** It's not enough to simply do a single rating on your local waterway or wetland. To really appreciate the health of these areas you need to make the rating several times in different places and at different times. By making many ratings you begin to tune into the changing nature of your waterway. You also become more skilled at the process of rating.
- 3. Learn about the different categories.** Discover new ways of making a better judgement. For example, you could find out how to do a more objective clarity test, learn more about the invertebrates in your area, learn a little chemistry and add your own categories on water pH or conductivity, or investigate land uses in your local area to better assess the impact on your local waterway.

- 4. Contact your local Waterwatch Facilitator.** He or she should be able to help you find out about other assessment techniques and put you in contact with people who can help you.

Improve your score

Rating your local waterway is all about tuning in to these vital environments. However, making an assessment of their health is only the start of the process. Now that you have some measure of their health, how are you going to improve their situation?

Clearly there are some actions you can take that will quickly make a difference. If litter is a problem, why not organise a few like-minded friends to get in there and clean things up? It'll improve the health score and provide some peace of mind.

Other areas of health are less easily addressed but you can still make a difference over time if you're really motivated. Of course, the more people working to make a difference the better, so why not try to enlist the aid of your class?

Or why not join a local waterwatch group? By joining a local conservation group you'll be surrounded by people who care for the environment, who know what some of the problems are and who have some idea of how those problems might be fixed. If you'd like to find out how Waterwatch might be able to help you, contact your State or Territory Waterwatch contact (see Waterwatch Facilitators).

Improving all the scores

Imagine if everyone began monitoring their local waterways, and tried to improve them. We'd really become an environmentally friendly community and our waterways and wetlands might start taking on a healthy glow. They'd become places we enjoyed visiting and learning about. Unfortunately, our waterways are in need of a bit of help but programs such as Waterwatch are beginning to make a difference.

One project run each year by Waterwatch is a national 'Snapshot' of the condition of



Enlist your friends or your class, or join (or create) a local Waterwatch group. Not only will you get more work done, you'll help spread the word on the importance of looking after our waterways.

the country's waterways. It's one way to really tune into your local environment while placing your local scene in a national focus. Contact your State or Territory Waterwatch Facilitator to find out how you can become involved in Snapshot.

The task of caring for our waterways is an important one in which everyone has a stake. So next time someone asks you how your local waterways is, will you be able to tell them?

Waterwatch State and Territory Facilitators

If you would like to find out how Waterwatch is operating in your State or Territory, contact the relevant number or check out the Waterwatch website (<http://www.waterwatch.org.au>)

National

Phone (02) 6274 2312
Fax (02) 6274 2268

Tasmania

Phone (03) 6336 5254
Fax (03) 6336 5311

South Australia

Phone (08) 8204 9117
Fax (08) 8204 2107

Queensland

Phone (07) 3896 9737
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Western Australia

Phone (08) 9278 0646
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