

Record sheets

This section includes the record sheets you will need to record your data. Make sufficient copies of each. The forms are:

- The short monitoring plan
- On-ground catchment survey sheets
- Site registration form

The short monitoring plan

Write your answers in the spaces and keep this as a record of your decisions. This plan provides a solid foundation should you wish to develop your monitoring plan further.

1 Why are you monitoring?

The first step in planning is to ask why you want to monitor. Answers may vary, but often groups simply want to know what the stream is like. Record your answer below.

2 Who will use your data?

Potential users might include students and/or group members. Name the main groups you think will want to use your data.

3 How will the data be used?

Data could be used for more than one purpose, e.g. to educate students about the principles of ecology or to identify major trouble spots in the waterway. Knowing their main use will help determine the right kind of data to collect. Describe their intended use.

4 What will you monitor?

The things you choose will depend on the question(s) you are asking as well as the resources available. For example, if your group wants to learn about the general ecological health of the waterway, the main types of water bugs (macro-invertebrates) present could tell an interesting story. List the things you will monitor (see 'General guidelines for monitoring' on page 20 for a full list of things that can be monitored).

5 What data quality do you want?

This depends on the question(s) you are asking and how you intend to use the data. At the very least, your data should be accurate enough to indicate the location of grossly contaminated sites. Depending on your findings, you may then choose to refine your monitoring program. For groups with a focus on education and awareness raising, the quality of the data is secondary to the actual process of collecting it.

6 What methods will you use?

This depends on your objective(s) and resources. There are often several ways of testing the same parameter. For example, for high precision turbidity readings from zero to 1000 NTU, a turbidity meter costing several thousand dollars is needed, but a turbidity tube (<\$40) is suitable for less precise readings of between 10 and 400 NTU. Use the same methods at all sites to allow comparison of data. List the methods you will use.

7 Where will you monitor?

The location of monitoring sites depends on whether you are monitoring a river, lake or estuary, and also on the purpose of monitoring. For example, monitoring at a variety of typical sites in the catchment is good for providing information about its overall condition. On the other hand, sites located above and below a source of contamination are needed to indicate its effect. Your sites should be representative of the condition of the waterway. Use a map to show your sites.

8 When and how often will you monitor?

This depends on your resources and the purpose(s) of monitoring. For example, if you are interested in a snapshot of the waterway, monitor a number of sites on the same day; monitoring contamination events, e.g. discharges from pipes, depends on the timing of the discharge; surveying the physical form of the stream is best done during low flows for safety reasons. Describe when and how often you will monitor.

9 Who will be involved and how?

Indicate who will carry out surveys and/or test water samples, who will arrange transport to sites and back, who will prepare the water testing equipment to be used, who will photograph sites, etc.

10 How will the data be managed and reported?

It is important to record and present the data. It helps to raise awareness of the condition of the waterway amongst members and helps you to refine your monitoring activities. Name who will look after the data and describe how the data will be managed.

11 How will you ensure your data are credible?

Developing answers to the first ten questions is the first step to conducting an effective visit to the waterway. For all surveys and tests, make sure group members are adequately trained. For water quality tests, make sure any instruments used are calibrated and read correctly and any water samples from rivers are taken from the main current at about 25 centimetres below the surface. List what you will do to improve the credibility of your data.

On-ground catchment survey sheets

Background information

Date: _____ Time: _____

Name of group: _____

Name of investigators: _____

Name of catchment: _____

Map name: _____

Approximate size of the catchment being surveyed: _____

Name of suburb, nearest town or settlement: _____

Describe the weather both now and in the past 24 hours.

	weather now	weather in past 24 hours
clear/sunny	<input type="checkbox"/>	<input type="checkbox"/>
overcast	<input type="checkbox"/>	<input type="checkbox"/>
showers	<input type="checkbox"/>	<input type="checkbox"/>
rain (steady)	<input type="checkbox"/>	<input type="checkbox"/>
rain (heavy)	<input type="checkbox"/>	<input type="checkbox"/>

Land uses in the catchment

1. Specific land uses identified (tick as many as apply)

	Stream-side	Within 1 km of stream	Within the catchment		Stream-side	Within 1 km of stream	Within the catchment
<u>Agriculture</u>				<u>Built environment</u>			
Cropping	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Urban residential	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Grazing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Rural residential	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Feeding lot or animal holding area	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Industry (factories)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Orchard	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Commercial (stores, offices)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Inactive agricultural land	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Schools	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tree farming	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Formal park/ gardens	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (name)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Roads or bridges	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<u>Construction underway</u>				Sewage treatment plant	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Housing development	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Water treatment plant	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Commercial development	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Petrol stations/ car repair workshops	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Road bridge repair construction	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>Other land uses</u>			
<u>Recreation</u>				Abandoned mine	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Swimming/ fishing/ canoeing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Landfill site	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Power boating	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Mining, quarry or gravel pits	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Picnic area	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Other (name)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Camp-ground	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>Bush, forests, nature reserves</u>			
Golfing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Bushland area	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (describe)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Water supply catchment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
				Forestry	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
				Inactive crown land	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
				Nature reserve	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
				Other (name)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2. Summary of the major land uses in the catchment (use approximate percentages to show the area)

Agriculture	<input type="text"/>	%
Built environment	<input type="text"/>	%
Bush, forests, nature reserves	<input type="text"/>	%
Other land uses	<input type="text"/>	%

3. Comments on land uses

Use this space to expand or explain land use descriptions you have identified above. For example, you may want to say where construction sites are located, or note the presence of cows in the water, or note contamination controls such as settling ponds.

General features of stream or catchment

4. Note the number of artificial structures that change the natural stream flow in the catchment (hydrological modifications)

None	<input type="text"/>
Dams	<input type="text"/>
Bridges	<input type="text"/>
Weirs	<input type="text"/>
Concrete banks/bottom	<input type="text"/>
Other	<input type="text"/>

5. Note the approximate length of stream that is affected by the following

Diversions (e.g. for irrigation)	<input type="text"/>	metres	or	<input type="text"/>	kilometres
Stream straightening	<input type="text"/>	metres	or	<input type="text"/>	kilometres
concrete stream bank/bottom	<input type="text"/>	metres	or	<input type="text"/>	kilometres

6. Tick the boxes that best describe the general appearance of the waterway

Litter

- none visible
- small litter occasionally (e.g. paper, cans)
- small litter common
- occasional large pieces of litter (e.g. tyres, shopping trolleys)
- large litter common

Erosion

- no streambank erosion, or areas of erosion are very rare, no artificial stabilisation
- occasional areas of streambank erosion
- areas of streambank erosion common
- artificial bank stabilisation present, e.g. man made rock walls, rip rap

Special problems (note in detail in comments section below)

- spills of chemicals
- fish kills
- wildlife, bird kills
- flooding
- periods of no flow

7. Comments on general appearance of the waterway (e.g. note time, date and size of fish kill, litter evident after heavy rain)

Record of pipes and drains

In this part, record observations on each pipe and drainage ditch found on the banks or in the stream. Photocopy additional sheets sufficient for each pipe or ditch that you are likely to find. These pipes or drains can be abandoned or active.

8. This information applies to a:

- pipe drainage ditch other (name)

9. Location of pipe or ditch

- in stream in streambank near stream

Describe location for purpose of adding to map

10. Identify type of pipe

- | | |
|---|--|
| <input type="checkbox"/> Industrial outfall | <input type="checkbox"/> Storm drain |
| <input type="checkbox"/> Agricultural field drainage | <input type="checkbox"/> Parking area drainage |
| <input type="checkbox"/> Sewage treatment plant outfall | <input type="checkbox"/> Combined sewer overflow |
| <input type="checkbox"/> Settlement pond drainage | <input type="checkbox"/> Unknown |
| <input type="checkbox"/> Other (name) _____ | |

11. Approximate diameter of pipe

- centimetres or metres

12. Describe the discharge flow

- | | | | | | |
|---------------------|---|----------------------------------|---------------------------------|---------------------------------------|---|
| Rate of flow | <input type="checkbox"/> none | <input type="checkbox"/> trickle | <input type="checkbox"/> heavy | <input type="checkbox"/> intermittent | <input type="checkbox"/> steady |
| Appearance | <input type="checkbox"/> clear | <input type="checkbox"/> foamy | <input type="checkbox"/> turbid | <input type="checkbox"/> oily sheen | <input type="checkbox"/> coloured
(name) _____ |
| Odour | <input type="checkbox"/> none | <input type="checkbox"/> sewage | <input type="checkbox"/> fishy | <input type="checkbox"/> chemical | <input type="checkbox"/> chlorine |
| | <input type="checkbox"/> other (name) _____ | | | | |

13. Describe the stream bank below the pipe or drainage ditch

- | | | |
|---|---|---|
| <input type="checkbox"/> no problem evident | <input type="checkbox"/> sewage litter, e.g. toilet paper | <input type="checkbox"/> litter, e.g. cans, paper |
| <input type="checkbox"/> eroded | <input type="checkbox"/> lots of algae | <input type="checkbox"/> other (name) |

14. Comments on the pipe or drainage ditch

Use this space to expand on or explain information provided above. For example, you may want to comment on the condition of the stream below the discharge.

Site registration form

Complete one form for each waterbody you are monitoring

Waterwatch group name: _____

School: _____ Teacher: _____ Year level: _____

Landcare group: _____ Other group: _____

Eastings (6 figures)						Northings (7 figures)							Map no.	Map name	Map scale	Site code	Site type	Site name	Name of river or waterbody and sampling location
4	6	0	2	0	0	5	4	1	4	1	0	0	8215	Tamar	1:100 000	COI 020	Stream	Coiler Crossing	Coilers Creek 10 metres from south side of bridge

* Example

Contact address: _____ Phone: _____

Form completed by (please print): _____

Don't forget - send a copy of this form, when completed, to your Waterwatch coordinator