Physical & Chemical Tests
Adult Volunteers Record Sheet

WATERWATCH North East
Communities Caring for Catchments

Office Use Only Data entered/checked: / / Waterwatch Officer:

Name of monitoring group / person:

Site name/location: Site Code: (if available)

Date of Test: / / Time of Test: am / pm

GPS Coordinates (if available):

Easting: ☐☐☐☐ Northing: ☐☐☐☐☐

Climate information.

Weather	Fine / sunny	Overcast	Showers	Windy	Rain (steady)	Rain (heavy)
Current Weather					mm	mm
Past 24 hours						

Record the results for each of the tests you conducted in the table below.

What did you test?	Y/N	What it measures	Results	Comments	Equipment Calibration Date
Dissolved Oxygen		Oxygen concentration	mg/L		
			% sat		
Reactive Phosphorus		Nutrient levels	mg/L		
Turbidity		Suspended solids	N.T.U		
Electrical Conductivity		Salinity	E.C.		
pH		Acids / Alkalines	units		
Temperature		Temperature of the water	°C		
Nitrate		Nitrogen	Mg/L		

Table 1: Summary of State Environmental Protection Policies (Waters of Victoria) Environmental Quality Objectives for rivers and streams – water quality North East Victoria.

Use the table below to compare your results against the EPA Water Quality Indicators. If your results are lower than the value given on the table your results have not met the EPA range outlining that the site maybe of poor quality at this time.

BIOREGION	WATER QUALITY INDICATOR							
	Total phosphorus (ug/L)	Total nitrogen (ug/L)	Dissolved oxygen % saturation		Turbidity (NTU)	Electrical conductivity (us/cm)	pH (pH units)	
	75th percentile	75th percentile	25th percentile	maximum	75th percentile	75th percentile	25th percentile	75th percentile
Highlands – all areas	<20	<150	>95	110	<5	<100	>6.4	<7.7
Forests A – upper Murray, Kiewa & Mitta Mitta catchments	<25	<350	>90	110	<5	<100	>6.4	<7.7
Forests B – all other areas	<25	<350	>90	110	<5	<100	>6.4	<7.7
Cleared Hills and Coastal Plains – mid reaches of Ovens, Goulburn & Broken catchments	<25	<600	>85	110	<10	<500	>6.4	<7.7
Murray & Western Plains – lowlands of Kiewa, Ovens, Goulburn & Broken catchments	<45	<900	>85	110	<30	<500	>6.4	<7.7

State Environmental Protection Policies set a statutory framework for the protection of the uses and values of Victorias marine and fresh water environments. The above table is covered under the Environmental Protection Act 1970.

Ideally water quality monitoring programs involve the collection of one sample per month. Data using 12 data sets will have 95% confidence. Assumptions can not be made using less that 12 points of data which are the 25th and 75th percentile range. Water quality objectives need to relate to the statistical population being measured as it reflects the 'true' environmental quality. Given that whole populations cannot be measured, the use of 25th & 75th percentiles provide the best estimate of water quality at a site.

Macroinvertebrate Survey
Adult Volunteers

WATERWATCH North East
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GPS Coordinates (if known):

Easting: ☐☐☐☐ Northing: ☐☐☐☐☐

Kick samples gently disturb the animals living in or on the rocky bottom of the stream.
Sweep samples involve collecting macroinvertebrates living in and around the vegetation and/or edges of the stream. Please tick the relevant boxes to your site.

Edge Habitat (Sweep sample)

Did you sample edge/backwater?

☐ Yes ☐ No

Length of edge sample:

☐ 10m Other ☐ m

Time taken to sort sample:

☐ 30minutes Other ☐ min

Stream velocity where sampled:

☐ No flow ☐ Slow

☐ Medium/Moderate ☐ Fast

Bed Habitat (Kick sample)

Did you sample the stream bed?

☐ Yes ☐ No

Length of edge sample:

☐ 10m Other ☐ m

Time taken to sort sample:

☐ 30minutes Other ☐ min

Stream velocity where sampled:

☐ No flow ☐ Slow

☐ Medium/Moderate ☐ Fast

Macro Sensitivity Score: See over for macroinvertebrate record sheet.

The impact of pollution on Australian macro-invertebrates can be assessed using the SIGNAL 2 Index. Each taxon has been given a sensitivity score from 1 to 10 based on it's modelled sensitivity to pollution. The higher the sensitivity score of a taxonomic group of macroinvertebrates, the greater the pollution sensitivity.

SIGNAL SCORE = SUM OF SENSITIVITY SCORE ÷ NUMBER OF DIFFERENT TAXA GROUP

THE SIGNAL 2 INDEX SCORE FOR YOUR SITE = ☐

Signal 2 Score	Habitat quality
Greater than 6	Healthy habitat
Between 5 & 6	Mildly polluted
Between 4 & 5	Moderately polluted
Less than 4	Severely polluted

	Common Name	Scientific order, class or phylum	Abundance (Numbers)	Pollution Sensitivity (SIGNAL 2)
Very Sensitive	Scorpion fly	Mecoptera		10
	Stonefly	Plecoptera		10
	Mayfly	Ephemeroptera		9
	Caddisfly	Trichoptera		8
	Toe biter	Megaloptera		8
Sensitive	Water Mite	Acarina		6
	Dobsonfly Larvae	Megaloptera		7
	Crane Fly Larvae	Diptera		5
	Sponge Fly Larvae	Neuroptera		6
	Horsehair worm	Nematomorpha		6
	Riffle Beetle	Coleoptera		7
Tolerant	Biting Midge Larvae	Diptera		3
	Non Biting Midge Larvae	Diptera		3
	Damselfly Nymph	Odonata		3
	Round Worm	Nematoda (phylum)		3
	Dragonfly	Odonata		3
	Freshwater Mussel	Bivalvia (class)		3
	Black Fly Larvae	Diptera		3
	Freshwater Shrimp	Decapoda		4
	Side Swimmer	Amphipoda		3
	Sponge	Porifera		4
	True Fly	Diptera		3
	Whirligig Beetle	Coleoptera		4
	Water Measurer	Hemiptera		3
	Yabby	Decapoda		4
Very Tolerant	Backswimmer	Hemiptera		2
	Brine shrimp	Anostraca		1
	Caterpillar	Lepidoptera		2
	Freshwater Snail	Gastropoda		1
	Flatworm	Turbellaria (class)		2
	Freshwater Slater	Isopoda		2
	Hydra	Hydrozoa		1
	Leech	Hirudiea (class)		1
	Predacious Diving Beetle	Coleoptera		2
	Scavenger Beetle	Coleoptera		2
	Segmented worm	Oligochaeta (class)		2
	Soldier Fly Larvae	Diptera		2
	Springtail	Collembola		1
	Water Scorpion	Hemiptera		2
	Water Strider	Hempitera		2

Stream Habitat Record Sheet
Adult Volunteers

WATERWATCH North East
Communities Caring for Catchments

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Weed identification:
Are there any aquatic weeds at your site? If so please complete the following question.

Common Name: _____

Botanical Name: _____

(circle) Free floating Floating attached Submerged Emergent

Plant Features:
1._____
2._____

Surrounding land uses:

☐ Forestry ☐ Dairy Farming ☐ Field Cropping ☐ Paved Surfaces

☐ Industrial ☐ Culvert ☐ Horticulture ☐ Native Forest/grassland

☐ Aquaculture ☐ Commercial ☐ Intensive animal production (e.g. piggery)

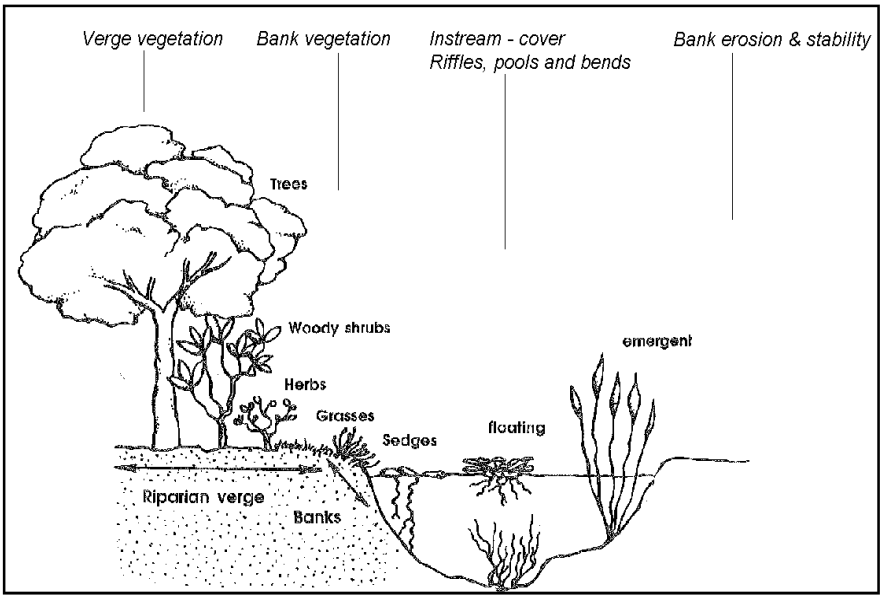
Sketch: Show site location on water body, access points, land marks, survey boundaries and access paths.

Habitat Survey Field Guide

Circle the description that most represents your site for each of the 5 questions.

	Bank Vegetation	Verge Vegetation	In-stream cover	Bank erosion & stability	Riffles, pools & bends (flowing
Excellent	**(10)** Mainly undisturbed native vegetation. No signs of site alteration.	**(10)** Mainly undisturbed native vegetation on both sides of stream. Verge more than 30 m wide.	**(10)** Abundant cover. Frequent snags, logs or cobbles with extensive areas of in-stream, aquatic vegetation and trailing bank vegetation.	**(5)** Stable; no erosion / sedimentation evident. No undercutting of banks, usually gentle bank slopes, lower banks	**(5)** Wide variety of habitats, riffles and pools present of varying depths. Bends present.
Good	**(8)** Mainly native vegetation. Little disturbance or no signs of recent site disturbance.	**(8)** Well-vegetated wide verge corridor. Mainly undisturbed native vegetation on both sides of stream; some introduced or reduced cover of native vegeta-tion	**(8)** A good cover of snags, logs or cobbles, with considerable areas of in-stream and trailing bank vegetation.	**(4)** Only spot erosion occurring. Little undercutting of bank, good vegetation cover, usually gentle bank slopes, no significant damage to bank structure.	**(4)** Good variety of habitats e.g.. riffles and pools or bends and pools. Variation in depth of riffle and pool.
Fair	**(6)** Medium cover, mixed native / introduced. Or one side cleared, the other undisturbed.	**(6)** Wide corridor of mixed native and exotics, or one side cleared, and other wide corridor of native vegetation.	**(6)** Some snags or boulders present and / or occasional areas of in-stream or trailing bank vegetation.	**(3)** Localised erosion evident. A relatively good vegetation cover. No continuous damage to bank structure or vegetation.	**(3)** Some variety of habitat e.g. occasional riffle or bend. Some variation in depth.
Poor	**(4)** Introduced ground cover, little native understorey or over storey, predominantly introduced vegetation.	**(4)** Very narrow corridor of native or introduced vegetation.	**(4)** Only slight cover. The stream is largely cleared, with occasional snags and very little in-stream vegetation. Generally no trailing bank vegetation.	**(2)** Significant active erosion evident especially during high flows. Unstable, extensive areas of bare banks, little vegetation cover.	**(2)** Only slight variety of habitat. All riffle or pool with only slight variation in depth.
Very Poor	**(2)** Introduced ground cover with lots of bare ground, occasional tree. Also includes sites with concrete lined channels.	**(2)** Bare cover or introduced grass cover such as pasture land.	**(2)** No cover. No snags, boulders submerged or trailing bank vegetation. No undercut banks. Site may have rock or concrete lining.	**(1)** Extensive or almost continuous erosion. Over 50% of banks have some form of erosion: very unstable with little vegetation cover.	**(1)** Uniform habitat. Straight stream, all shallow riffle or pool or uniform depth e.g. channelled stream or irrigation channel.

Calculate the score from each circled response then compare with habitat rating table below.



Rating	Scores
Excellent	36-40
Good	29-35
Fair	20-28
Poor	12-19
Very Poor	8-11

Total Score:

Stream Habitat Rating: