FIELD SAMPLING AND HABITAT ASSESSMENT SHEETS (v.14, Feb 06)

RIVER …… **CATCHMENT** ……

SITE LOCATION …… **DATE** …… …… **TIME** ……

LOCATION CODE …… **PHOTOGRAPH NUMBER(S)** ……

RECORDER(S) NAME(S) ……**LOCATION DOCUMENTATION COMPLETE ?** ……

LENGTH OF SURVEYED REACH …….. **m**
This is defined as 10X the average stream width, to a maximum of 150m. Minimum reach length is 50m.

Stream Habitat in surveyed reach (%): **Riffle/Run** ……% **Pool** ……. %

Stream Width from edges of water. Take 5 evenly spaced measurements within surveyed reach; also record max. & min.

1……m 2……m 3……m 4……m 5……m **Max**.: ……m **Min**.: ……m

Method used: tape measure [ ] range finder [ ] estimate [ ]

Channel Width from tops of banks 1……m 2……m 3……m 4……m 5……m

Method used: tape measure [ ] range finder [ ] estimate [ ]

WATER QUALITY MEASUREMENTS: Round to one decimal place.

Instrument(s) make, model and number ……..

Water Temperature (ºC) …… **pH** ……

Conductivity (ambient) …… **µS/cm** …… **mS/cm** **Alkalinity (mg/L):**

Low range test, 23 ml, ……. drops x 5 = ……..

Conductivity (@ 25 ºC) …… **µS/cm** …… **mS/cm**

High range test, 7 ml, …… drops x 20 = ...……..

Dissolved Oxygen (mg/L) ……
(agitate probe if flow <5 cm/sec)

% Sat. Dissolved Oxygen …… ... **Turbidity (NTU)** (usually measured in lab) ……
(agitate probe if flow <5 cm/sec)

Water samples collected? Yes [ ] No [ ]

SITE OBSERVATIONS (**Indicate appropriate number in brackets at right; some may consist of >1 category.**)

LOCAL POINT SOURCE POLLUTION: 1. None 2. Gravel road/track/ford 3. Tip 4. Quarry 5. Drain 6. Fish farm 7. Earthworks 8. Mine 9. Stock access point 10. Culvert 11. STP 12. Other ……..……..[ ]

IS THERE EVIDENCE OF HEAVY RAINS OR SPATES IN THE LAST WEEK? 1.yes 2. no [ ] 3. not sure

RIVER …… **DATE**…… **LOCATION CODE** ……

REACH: All information in this section refers to the entire reach.

SUBSTRATE DESCRIPTION (% cover): **USE % COVER AND PARTICLE SIZE DIAGRAMS.**

		phi
Bedrock	……[……...]	(-9.5)
Boulder	(>256mm) ……[……]	(-9.0)
Cobble	(64-256mm) …….[……]	(-6.5)
Pebble	(16-64mm) ……...[……...……..]	(-4.5)
Gravel	(2-16mm)……..[.....]	(-2.0)
Sand	(0.06-2mm) ……..[……...]	(2.0)
Clay/Silt	(<0.06mm) …….. [……]	(8.0)

Total ……..**100**%…….

OTHER STREAM FEATURES

% of reach covered by…	**<1%**	**1-10%**	**10-35%**	**35-65%**	**65-90%**	**>90%**
Willow Roots	0	1	2	3	4	5
Moss	0	1	2	3	4	5
Filamentous algae	0	1	2	3	4	5
Loose silt lying on substrate (organic & inorganic)	0	1	2	3	4	5
Total macrophytes	0	1	2	3	4	5

(For macrophytes, include those which are out of the water but in the active channel.)

ORGANIC MATERIAL (% cover of organic material)

Coarse Particulate Organic Material (leaves and wood < 10cm diameter) **1**. = <5% **2**. = 5 – 20% **3**. = >20% [ ]

Snags/Large Organic Material (wood >10cm diameter) **1**. = <5% **2**. = 5 – 20% **3**. = >20% [ ]

CURRENT VELOCITY IN REACH: Choose one percentage category for each flow category in the reach:

	0%	**1-10%**	**11-40%**	**41-60%**	**>60%**
No obvious flow	0	1	2	3	4
Slow	0	1	2	3	4
Medium/moderate	0	1	2	3	4
Fast to very fast	0	1	2	3	4

VEGCAT (Land use category for AUSRIVAS.) This refers to land use beyond the riparian zone (30m).

1. **Urban**
2. **Intensive agriculture**
3. **Mostly cleared, grazing**
4. **Significant patches of forest remaining, some forestry/agriculture (eg, grazing)**
5. **Native forest/natural vegetation** [ ]

SHADING of stream channel, as at mid day (shading category for AUSRIVAS). **USE % SHADING DIAGRAMS.**

1. <5% **2.** 6-25% **3.** 26-50% **4.** 51-75% **5.** >76% [ ]

LEFT BANK AND RIGHT BANK REFER TO DIRECTION FACING DOWNSTREAM.

LANDUSE: **1. Native forest** **2. Forestry** **3. Native heath/grassland** **4. Grazing** **5. Cropped**
Left Bank **6. Residential** **7. Industrial** **8. Recreational** **9. Intensive agriculture** [ ]

LANDUSE: **1. Native forest** **2. Forestry** **3. Native heath/grassland** **4. Grazing** **5. Cropped**
Right Bank **6. Residential** **7. Industrial** **8. Recreational** **9. Intensive agriculture** [ ]

RIVER …… **DATE**…… **LOCATION CODE** ……

RIFFLE /RUN: All information in this section refers only to the riffle/run area sampled.

Invertebrates collected by …… **Invertebrates picked/ sorted by** ……
Length of riffle/run sampled: 10 metres [ ] Other …….. **metres. Time taken to pick sample** ……..…**mins**.
Approx. # of invertebrates picked: 200[ ]…150[ ]…100[ ]…50[ ] If <150, why?……...

SUBSTRATE DESCRIPTION (% cover): **USE % COVER AND PARTICLE SIZE DIAGRAMS.**

Bedrock ……[……...]
Boulder (>256mm) ……[……]
Cobble (64-256mm) …….[……]
Pebble (16-64mm) ……...[……..……..]
Gravel (2-16mm)……..[……..…]
Sand (0.06-2mm) ……..[……]
Clay/Silt (<0.06mm) …….. [……]
Total ……..**100**%…….

IF RIFFLE/RUN NOT SAMPLED, WHY NOT:
1. Not present [ ]
2. Too shallow [ ]
3. Too small [ ]
4. Too dangerous [ ]
5. Other …… [ ]

Percentage of sampled area covered by:	**<1%**	**1-10%**	**10-35%**	**35-65%**	**65-90%**	**>90%**
Willow Roots	0	1	2	3	4	5
Moss	0	1	2	3	4	5
Filamentous algae	0	1	2	3	4	5
Macrophytes	0	1	2	3	4	5
Loose silt lying on substrate (organic & inorganic)	0	1	2	3	4	5

Coarse Particulate Organic Material (leaves and wood < 10cm diameter) **1**. = <5% **2**. = 5 – 20% **3**. = >20% **[ ]**
Snags/Large Organic Material (wood >10cm diameter) **1**. = <5% **2**. = 5 – 20% **3**. = >20% **[ ]**

DEPTH 1……cm 2 ……cm 3……cm 4……cm 5……cm
Take 5 representative measurements from the riffle/run habitat over the range of depths in the kick sample.

CURRENT VELOCITY in sampled area. Tick boxes for each current velocity present; more than 1 box can be ticked:
Kick sample**: 0=no flow** [ ] **1=slow** [ ] **2=medium/moderate** [ ] **3=fast to very fast** [ ]

EDGE / BACKWATER: All information in this section refers only to the edge area sampled.

Invertebrates collected by …… **Invertebrates picked/ sorted by** ……
Length of edge sampled: 10 metres [ ] Other …… **metres. Time taken to pick sample** ……..…**mins**.
Approx. # of invertebrates picked: 200[ ]…150[ ]…100[ ]…50[ ] If <150, why?……...

Percentage of sampled area covered by:	**<1%**	**1-10%**	**10-35%**	**35-65%**	**65-90%**	**>90%**
1. Backwaters	0	1	2	3	4	5
2. Leaf packs/CPOM	0	1	2	3	4	5
3. Undercut banks	0	1	2	3	4	5
4. Roots	0	1	2	3	4	5
5. Bare edge	0	1	2	3	4	5
6. Logs (wood >10cm)	0	1	2	3	4	5
7. Trailing bank vegetation (including grasses)	0	1	2	3	4	5
8. Filamentous algae	0	1	2	3	4	5
9. Macrophyte	0	1	2	3	4	5
10. Moss	0	1	2	3	4	5
11. Loose silt lying on substrate (organic & inorganic)	0	1	2	3	4	5
12. Other……	0	1	2	3	4	5

CURRENT VELOCITY in sampled area. Tick boxes for each current velocity present; more than 1 box can be ticked:
Sweep sample: **0=no flow** [ ] **1=slow** [ ] **2=medium/moderate** [ ] **3=fast to very fast** [ ]

RIVER …… **DATE** …… **LOCATION CODE** ……

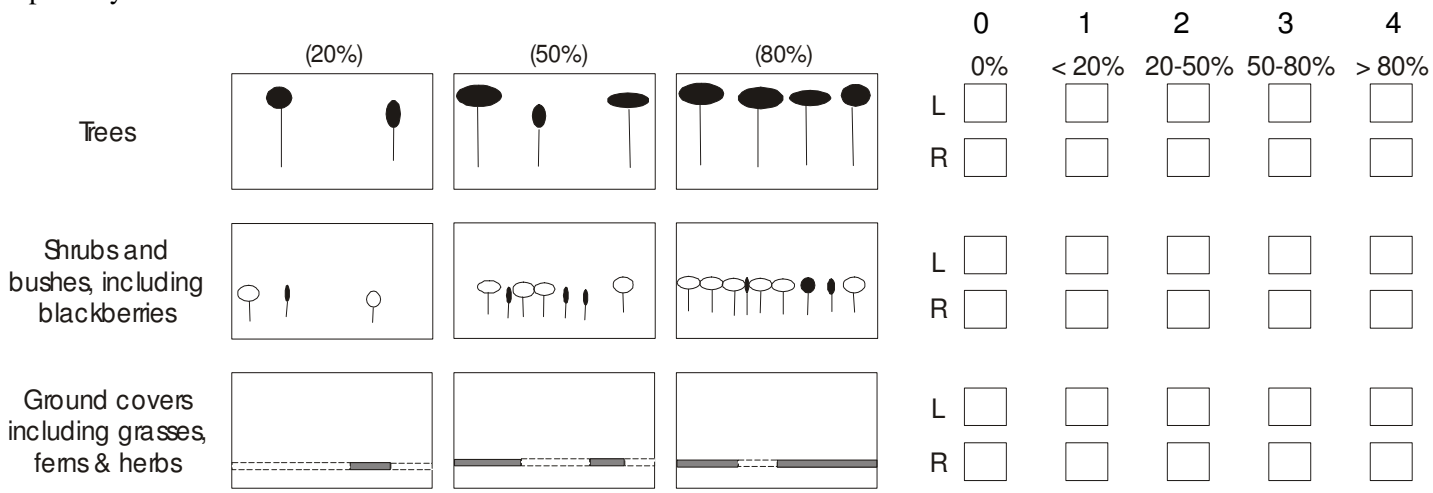
ALL LEFT BANK AND RIGHT BANK REFER TO DIRECTION FACING DOWNSTREAM.

RIPARIAN CHARACTERISTICS of surveyed reach

Width of riparian zone (to a maximum of 30 m perpendicular to flow)

Left bank …… **m** **Right bank** …… **m**

Structural composition of riparian zone Using the diagrams below as a guide, tick the box corresponding to the percentage category that best describes the percent cover of each vegetation category; evaluate left (L) and right (R) bank separately.

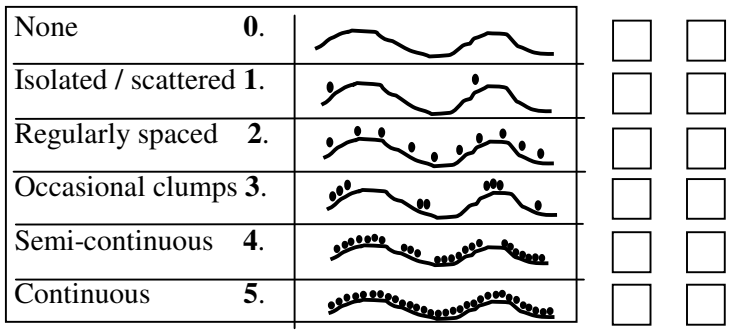


		0	1	2	3	4
		0%	< 20%	20-50%	50-80%	> 80%
Trees	L	☐	☐	☐	☐	☐
	R	☐	☐	☐	☐	☐
Shrubs and bushes, including blackberries	L	☐	☐	☐	☐	☐
	R	☐	☐	☐	☐	☐
Ground covers including grasses, ferns & herbs	L	☐	☐	☐	☐	☐
	R	☐	☐	☐	☐	☐

EXOTIC VEGETATION what percentage of each of the following categories is made up of exotic vegetation:

	0 = 0%	**1 = 1-10%**	**2 = 11-40%**	**3= 41-60%**	**4 = >60%**
Trees	[ ]	[ ]	[ ]	[ ]	[ ]
Shrub layer	[ ]	[ ]	[ ]	[ ]	[ ]
Ground cover	[ ]	[ ]	[ ]	[ ]	[ ]

Longitudinal extent of riparian vegetation:
Choose one category for each bank. Do not include ground cover layer except where site is in native grassland.



		Left bank	Right bank
None	**0**.	☐	☐
Isolated / scattered	**1**.	☐	☐
Regularly spaced	**2**.	☐	☐
Occasional clumps	**3**.	☐	☐
Semi-continuous	**4**.	☐	☐
Continuous	**5**.	☐	☐

RIVER …… **DATE**…… **LOCATION CODE** ……

DIATOM SAMPLING FIELD NOTES

HARD SURFACE SAMPLE

Substrate type: 1. rock **(preferred) 2.** wood/bark **3.** cement **4.** macrophyte **5.** other …….. **[ ]**

Substrate shaken before sampling: yes no

Approximate depth of substrate: 15cm **(preferred) [ ]** Other…….cm

Habitat type: 1. riffle **(preferred) 2.** run **3.** other ……..…… **[ ]**

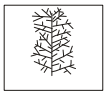
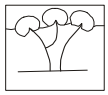
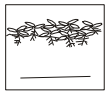
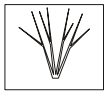
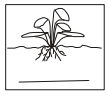
MUD/DETRITUS SAMPLE

Habitat type: 1. pool **(preferred) 2**. backwater **3.** other …… **[ ]**

Approximate depth of substrate: 5cm **(preferred) [ ]** Other……cm

MACROPHYTES IN REACH

Indicate which macrophyte structural types are present in the reach with the following <u>abundances</u>:
I = isolated, S = scattered, B = in beds, C = choking the stream:

Submerged	Floating	Emergent
 ☐ Feather like Eg: Myriophyllum, Ceratophyllum, Chara	 ☐ Attached lily like	 ☐ Reed like Eg: Typha, Phragmites
		 ☐ Unbranched, broad leaf form Eg: Curled dock, Water plantain, Arrowhead
 ☐ Broad strap like Eg: Vallisneria, Triglochin	 ☐ Free floating, small plant Eg: Azolla, Duckweed	 ☐ Grass like Eg: Paspalum
 ☐ Grass like	 ☐ Free floating, large plant Eg: Salvinia, Water hyacinth	 ☐ Tussock/ rush like Eg: Juncus, Cyperus, Carex
 ☐ Branched form Eg: Elodea, Potamogeton		 ☐ Branched form Eg: Panunculus, Polygonum

NONE PRESENT [ ]

Other Structural Types?:

Vegetation samples collected for identification in the lab: Yes [ ] No [ ]

ARE ALL SPACES FILLED IN ON ALL SHEETS? Yes [ ] No [ ] Checked by…….