

Aquatic macroinvertebrate identification key



climate change biodiversity water food air waste transport purchasing

1 Microscopic — go to **2**
 Bigger than microscopic — go to **2**

green, white or black seed shrimp (NR)	teardrop shape, jerking movement copepod (NR)	swims with a jerk using antennae water flea (NR)
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2 Shell — go to **3**
 No shell — go to **3**

Single shell		Double shell	
flattened shell with small hump freshwater limpet (4)	spiral shell, opening on left pouch snail (1)	small, pale delicate shell pea shell (5)	small, darker shell with ridges little basket shell (4)
spiral shell, opening on right gilled snail (1)			

3 Legs — go to **4** over page
 No legs — go to **4** over page

Worm-like										Tentacles, brushes or tails						Mat-like
green to red, twisting non-biting midge larva (3)	segmented, no suckers, +/- bristles segmented worm (2)	long, very thin, swims in 'S' shape, can't coil biting midge larva (4)	suckers, expands and contracts leech (1)	hair-like, swims in 'S' shape round worm (3)	slides along bottom flatworm (2)	six fleshy lobes at end of body crane fly larva (5)	breathing tube at rear mosquito larva (1)	large head, wriggles mosquito pupa (1)	grub-like with no obvious head March fly larva (3)	sucker on end of body, waves head blackfly larva (5)	slender, with tentacles, attached to solid surface hydra (2)	hangs from surface by ring of hairs soldier fly larva (2)	simple, multi-cellular colony freshwater sponges (4)			

*Sensitivity ratings from SIGNAL2 system in "New sensitivity grades for Australian river macroinvertebrates. Bruce C. Chessman. Marine and Freshwater Research. 2003. 54. 95-103."

Pollution sensitivity*:

- (NR) not rated
- (10-8) very sensitive
- (7-6) sensitive
- (5-4) tolerant
- (3-1) very tolerant

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 Adapted by Steve Walker, 2011.
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4

more than 3 pairs legs

3 pairs legs go to

5

more than 4 pairs of legs

OR

4 pairs legs

lobster-like yabbie 4	swims with back up freshwater shrimp 3	shrimp-like, swims on side scud (side swimmer) 3	walks on bottom freshwater slater 2	walks on bottom or swims by flicking tail freshwater dawn 4	rest on bottom of pool or swim with back facing up shield shrimp 1	can swim sideways very quickly freshwater spider crab 3	tiny, swims in water water mite 7	runs on top of water fishing spider 2
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5

No wings go to

6

Soft wings, piercing mouth parts (bug)

swims fast, right side up, black back water boatman 2	swims on back back swimmer 1	runs on surface of water, black water strider 4	on water surface and grass edges small water strider 3	long, stick-like lives on surface water measurer 3	long breathing tube, grasping front legs needle bug 3	long breathing tube, grasping front legs water scorpion 3	swims quickly using two hind pairs of legs creeping water bug 1	swims swiftly through the water giant water bug 1	climb or crawl/ across plants, poor swimmers pygmy back swimmer 2
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Hard wings, jaws (beetle)

swims moving hind legs alternately water scavenger beetle 2	back legs move at same time predacious diving beetle 2	swims on surface, often in fast circles whirligig beetle 4	crawls through water plants crawling water beetle 3
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6

No obvious tail
Tails

2 tails

OR

3 tails

fast water and stream edges stonefly nymph 10	plate-like tails, no gills on abdomen damselfly nymph 3	long tails, gills on abdomen mayfly nymph 9
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crawls along rocks water penny 6	can't swim, can only crawl riffle beetle larva 7	usually brown, prefer to crawl rather than swim marsh beetle larva 6	large mouthparts, may have 7 pairs gills on side water scavenger beetle larva 2	spines on side, large mouthparts, whirligig beetle larva 4	large body, hinged mouth dragonfly nymph 3	hangs from surface, large mouthparts predacious diving beetle 2	small and hops on surface and in edge plants springtail 1	in tube, case or free-living caddisfly larva 8
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All images on this ID Key are adapted by Steve Walker (2006) from the B&W images in 'Critter Catalogue: a guide to the aquatic invertebrates of South Australian inland waters (2004 EPA)' except for the crawling water beetle (Steve Walker 2006).

