

AQUATIC MACROINVERTEBRATE IDENTIFICATION KEY



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

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 ———>

Single shell			OR		Double shell	
Flattened shell with small hump Freshwater limpet (4)	Spiral shell, opening on left Pouch Snail (1)	Spiral shell, opening on right Gilled Snail (1)			Small, pale delicate shell Pea shell (5)	Small, darker shell with ridges Little basket shell (4)

Invertebrate Size (—)
 Average actual size unless stated otherwise.

Pollution Sensitivity*:

- (NR) Not rated
- (10)–(8) Very sensitive
- (7)–(6) Sensitive
- (5)–(4) Tolerant
- (3)–(1) Very tolerant

Acknowledgements
 ♦ This key was designed by Ron Simms and Amy Blaylock, 2002.
 ♦ Adapted by Steve Walker, November 2006.
 ♦ Assistance was kindly provided by the following staff members of the South Australian Museum: Dr. Errol Matthews, Dr. Chris Watts and Mr Robert Hamilton-Bruce.

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

Worm-like						OR							Tentacles, brushes or tails				
Green to red, twisting Non-biting midge larvae (3)	Segmented, no suckers, +/- bristles 1/2 actual size Segmented worm (2)	Long, very thin, swims in 'S' shape, can't coil Biting midge larvae (4)	Suckers, expands and contracts Leech (1)	Hair-like, swims in "S" shape Roundworm (3)	Slides along bottom Flatworm (2)	Six fleshy lobes at end of body Cranefly larvae (5)	Breathing tube at rear Mosquito larvae (1)	Large head, wriggles Mosquito pupae (1)	Grub-like with no obvious head March fly larvae (3)	Sucker on end of body, waves head Blackfly larvae (5)	Slender, with tentacles, attached to solid surface Hydra (2)	Hangs from surface by ring of hairs Soldier fly larvae (2)					





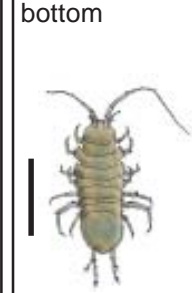
*Sensitivity ratings from SIGNAL2 system in "New sensitivity grades for Australian river macroinvertebrates. Bruce C. Chessman. Marine and Freshwater Research, 2003, 54, 95-103."

Invertebrate Size (—)
Average actual size unless stated otherwise.

Pollution Sensitivity*: ⑩—⑧ Very sensitive ⑦—⑥ Sensitive ⑤—④ Tolerant ③—① Very tolerant



4 **>3 pairs legs** — go to **5** **3 pairs legs**

10+ pairs legs

<p>Lobster-like</p>  <p>1/10 actual size</p> <p>Yabby ④</p>	<p>Swims with back up</p>  <p>1/2 actual size</p> <p>Freshwater shrimp ③</p>	<p>Walks on bottom or swims by flicking tail</p>  <p>1/3 actual size</p> <p>Freshwater Prawn ④</p>	<p>Shrimp-like, swims on side</p>  <p>—</p> <p>Scud ③</p>	<p>Walks on bottom</p>  <p>—</p> <p>Isopod ②</p>
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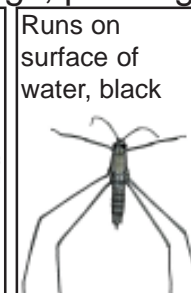
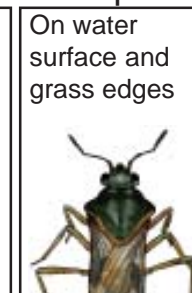
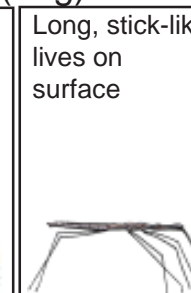
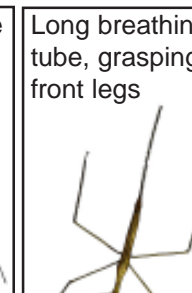
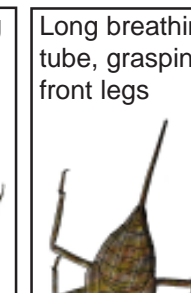
OR

4 pairs legs

<p>Tiny, swims in water</p>  <p>—</p> <p>Water mite ⑦</p>	<p>Runs on top of water</p>  <p>1/2 actual size</p> <p>Fishing spider ②</p>
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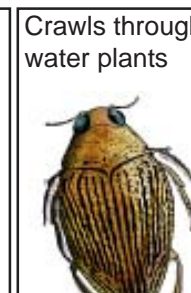
5 **Wings** — go to **6** **No wings**

Soft wings, piercing mouth parts (bug)

<p>Swims fast, right side up, black back</p>  <p>—</p> <p>Water boatman ②</p>	<p>Swims on back</p>  <p>—</p> <p>Back swimmer ①</p>	<p>Runs on surface of water, black</p>  <p>—</p> <p>Water strider ④</p>	<p>On water surface and grass edges</p>  <p>—</p> <p>Small water strider ③</p>	<p>Long, stick-like lives on surface</p>  <p>—</p> <p>Water measurer ③</p>	<p>Long breathing tube, grasping front legs</p>  <p>1/3 actual size</p> <p>Needle bug ③</p>	<p>Long breathing tube, grasping front legs</p>  <p>1/3 actual size</p> <p>Water scorpion ③</p>
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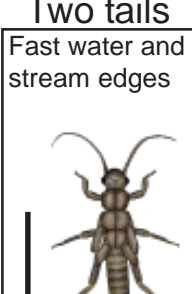
OR

Hard wings, jaws (beetle)

<p>Swims moving hind legs alternately</p>  <p>—</p> <p>Water scavenger beetle ②</p>	<p>Back legs move at same time</p>  <p>—</p> <p>Predacious diving beetle ②</p>	<p>Swims on surface, often in fast circles</p>  <p>—</p> <p>Whirligig beetle ④</p>	<p>Crawls through water plants</p>  <p>—</p> <p>Crawling water beetle ③</p>
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6 **No obvious tail** — go to **6** **Tails**

Two tails


<p>Fast water and stream edges</p>  <p>—</p> <p>Stonefly nymph ⑩</p>
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OR

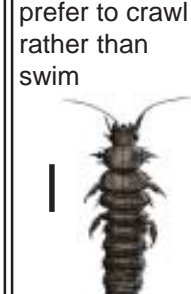
Three tails

<p>Plate-like tails, no gills on abdomen</p>  <p>—</p> <p>Damselfly nymph ③</p>	<p>Long tails, gills on abdomen</p>  <p>—</p> <p>Mayfly nymphs ⑨</p>
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Can't swim, can only crawl

 <p>—</p> <p>Riffle beetle larvae ⑦</p>

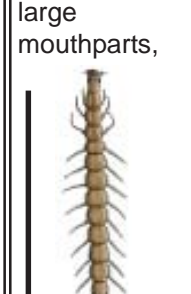
Usually brown, prefer to crawl rather than swim

 <p>—</p> <p>Marsh beetle larvae ⑥</p>
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Large mouthparts, may have 7 pairs gills on side

 <p>—</p> <p>Water scavenger beetle larvae ②</p>
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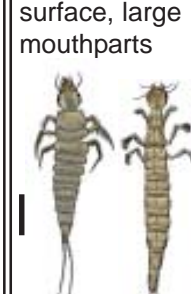
Spines on side, large mouthparts,

 <p>—</p> <p>Whirligig beetle larvae ④</p>
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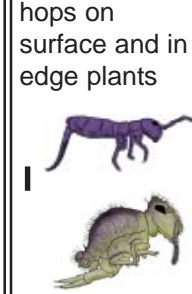
Large body, hinged mouth

 <p>—</p> <p>Dragonfly nymph ③</p>
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Hangs from surface, large mouthparts

 <p>—</p> <p>Predacious diving beetle larvae ②</p>
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Small and hops on surface and in edge plants

 <p>—</p> <p>Springtail ①</p>

In tube, case or free-living

 <p>—</p> <p>Caddisfly larvae ⑧</p>

All images on this ID Key are adapted by Steve Walker from 'Critter Catalogue: a guide to the aquatic invertebrates of South Australian inland waters (2004 EPA)' except for the crawling water beetle (Steve Walker 2006).

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