**Aquatic macroinvertebrate identification key**

# Microscopic

1

**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 lea** NR |





**Shell No shell**

go to

3

OR

2

## Single shell Double shell



**little**

**basket shell** 4

small, darker shell with ridges

**pea shell** 5

small, pale delicate shell



1 very tolerant

tolerant

4

8 very sensitive

6 sensitive

10

7

5

3

not rated

NR

**Pollution sensitivity\*:**

**Acknowledgements**

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Adapted by Steve Walker, 2011.

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|  |  |  |  |
| --- | --- | --- | --- |
| fattened hell with small hump | spiral shell, opening on left | spiral shell, opening on right |  |
| **freshwater limpet** 4 | **pouch**  **snail** 1 | **gilled snail** | 1 |



**Legs** go to

4

3

# No legs

over page

**Worm-like**

OR

OR

**Tentacles, brushes or tails**

**Mat-like**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| green to red, | segmented, | long, very thin,  swims in ‘S’ shape, can’t coil    **biting midge**  **larva** 4 | suckers, | hair-like, swims | slides along |
| twisting | no suckers, +/- | expands and | in ‘S’ shape | bottom |
| **non-biting** | bristles | contracts |  |  |
| **midge**  **larva** 3 | **segmented** 2  **worm** | **leech** 1 | **round**  **worm** 3 | **latworm** 2 |

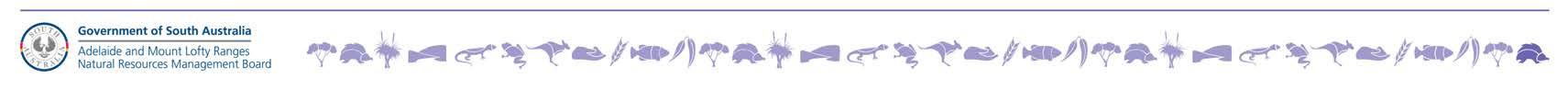
|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| fe h l e | breathing tube | large head, | grub-like with | sucker on end | slender, with | hangs from |
| at end of body | at rear | wriggles | no obvious | of body, waves | tentacles, | surface by ring |
|  |  |  | head | head | attached to | of hairs |
| **cranely**  **larva** 5 | **mosquito**  **larva** 1 | **mosquito pupa** 1 | **March ly**  **larva** 3 | **blackly**  **larva** 5 | solid surface    **hydra** 2 | **soldier ly**  **larva** 2 |



4

**freshwater sponges**

simple, multi-cellular colony

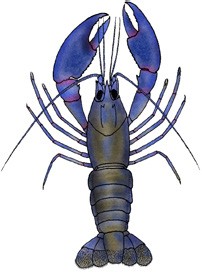
*\*Sensitivity ratings from SIGNAL2 system in “New sensitivity grades for Australian river macroinvertebrates. Bruce C. Chessman. Marine and Freshwater Research, 2003, 54, 95-103.”*

# more than 3 pairs legs 3 pairs legs

go to

5

4



lobster-like

**yabbie** 4

more than 4 pairs of legs

OR

4 pairs legs

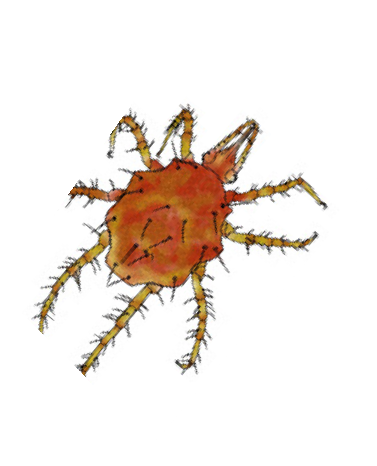


**No wings**

5

go to 6

**Wings** OR



|  |  |  |
| --- | --- | --- |
| tiny, swims in water |  | runs on top of |
|  |  | water |
| **water mite** | 7 | **fishing** 2  **spider** |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| swims with back up | 3 | shrimp-like, swims on side | walks on bottom | 2 | walks on bottom or swims by f ck ng ta l | 4 | rest on bottom of pool or swim with back facing up | can swim sideways very quickly |
| **freshwater shrimp** | **scud (side swimmer)** 3 | **freshwater slater** | **freshwater prawn** | **shield**  **shrimp** 1 | **freshwater spider**  **crab** 3 |

Soft wings, piercing mouth parts (bug) Hard wings, jaws (beetle)

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

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| swims fast, | | swims on back | | runs on |  | on water | long, stick-like | | long breathing | |
| right side up, | |  | | surface of |  | surface and | lives on | | tube, grasping | |
| black back | |  | | water, black |  | grass edges | surface | | front legs | |
| **water boatman** | 2 | **back swimmer** | 1 | **water strider** | 4 | **small water** 3  **strider** | **water measurer** | 3 | **needle bug** | 3 |

|  |  |  |  |
| --- | --- | --- | --- |
| long breathing | swims quickly | swims swiftly | climb or crawl |
| tube, grasping | using two hind | through the | across plants, |
| front legs | pairs of legs | water | poor swimmers |
|  |  |  |  |
|  |  |  | **pygmy** |
| **water** 3  **scorpion** | **creeping** 1  **water bug** | **giant water** 1  **bug** | **back** 2  **swimmer** |

**Tails**

6

**No obvious tail**

OR

2 tails 3 tails



|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| crawls along |  | can’t swim, can | usually brown, | large | spines on |  | large body, hinged | hangs from | small and hops | in tube, case or |  |
| rocks |  | only crawl | prefer to crawl | mouthparts, | side, large |  | mouth | surface, large | on surface and | free-living |  |
| **water**  **penny** | 6 | **riffle beetle**  **larva** 7 | rather than swim  **marsh beetle**  **larva** 6 | may have 7 pairs gills on side  **water scavenger beetle larva** 2 | mouthparts,    **whirligig beetle larva** | 4 | **dragonly nymph** 3 | mouthparts    **predacious diving beetle larva** 2 | in edge plants      **springtail** 1 | **caddisly larva** | 8 |





10

**stonely nymph**

fast water and stream edges

|  |  |  |
| --- | --- | --- |
| plate-like tails, | long tails, gills |  |
| no gills on | on abdomen |  |
| abdomen |  |  |
| **damselly nymph** 3 | **mayly nymph** | 9 |



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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).