



**Ribbons of Blue/Waterwatch WA**

**Indicator Aquatic Macroinvertebrates**  
an identification key for students



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Acknowledgments:

Dr Jenny Davis, Murdoch University, Western Australia. Kind permission given for the use of photographs.

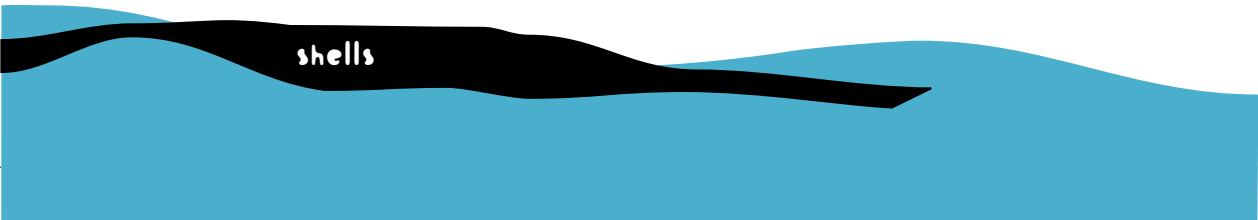
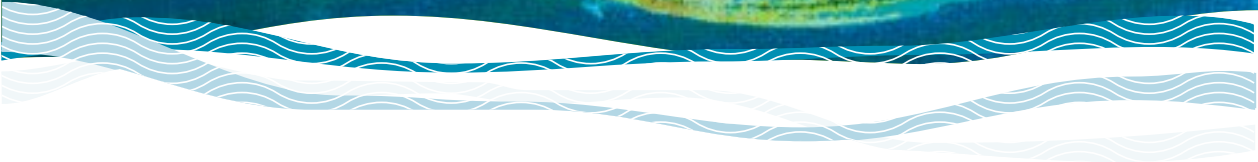
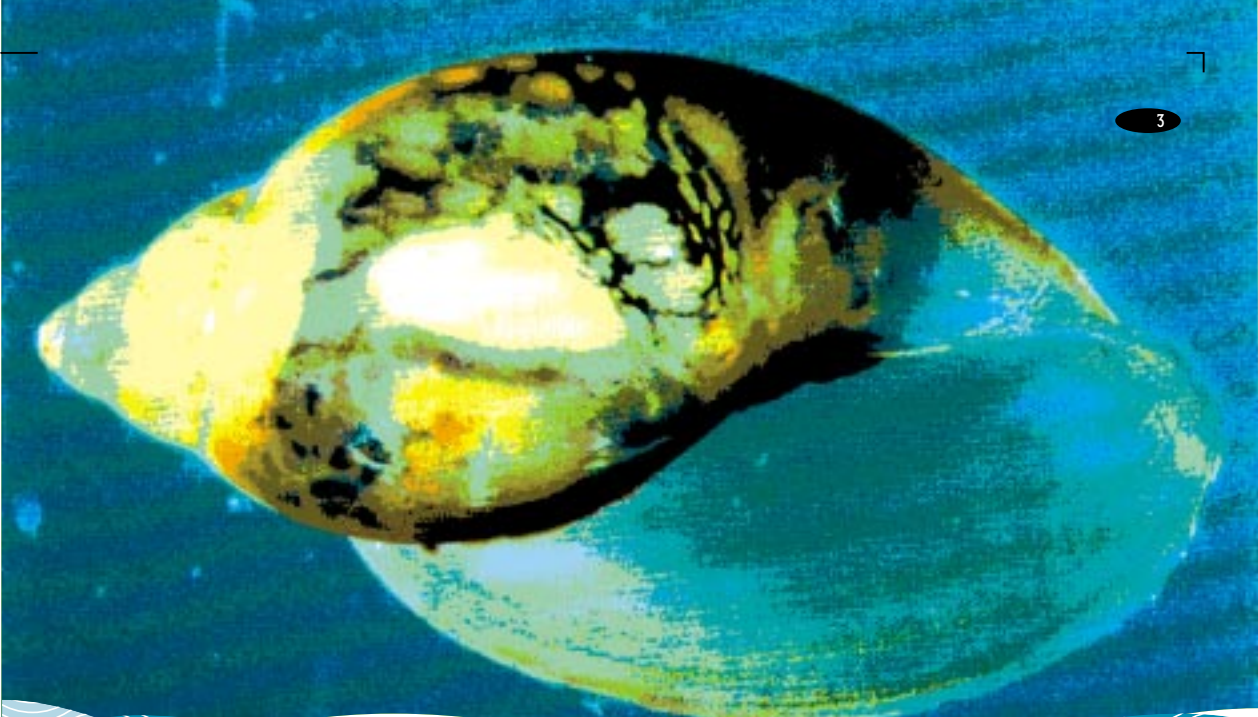
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Ribbons of Blue/Waterwatch WA Regional Coordinators.  
For trialing the key in draft form with students  
throughout the state of Western Australia.

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FRESHWATER SNAILS  
SIZE: 3 - 65MM IN DIAMETER  
MOVEMENT: GLIDES

single shell



FRESHWATER CLAM  
SIZE: UP TO 10MM  
→ MOVEMENT: DRAWS ITSELF ALONG



FRESHWATER MUSSEL  
SIZE: UP TO 80MM  
→ MOVEMENT: DRAWS ITSELF ALONG



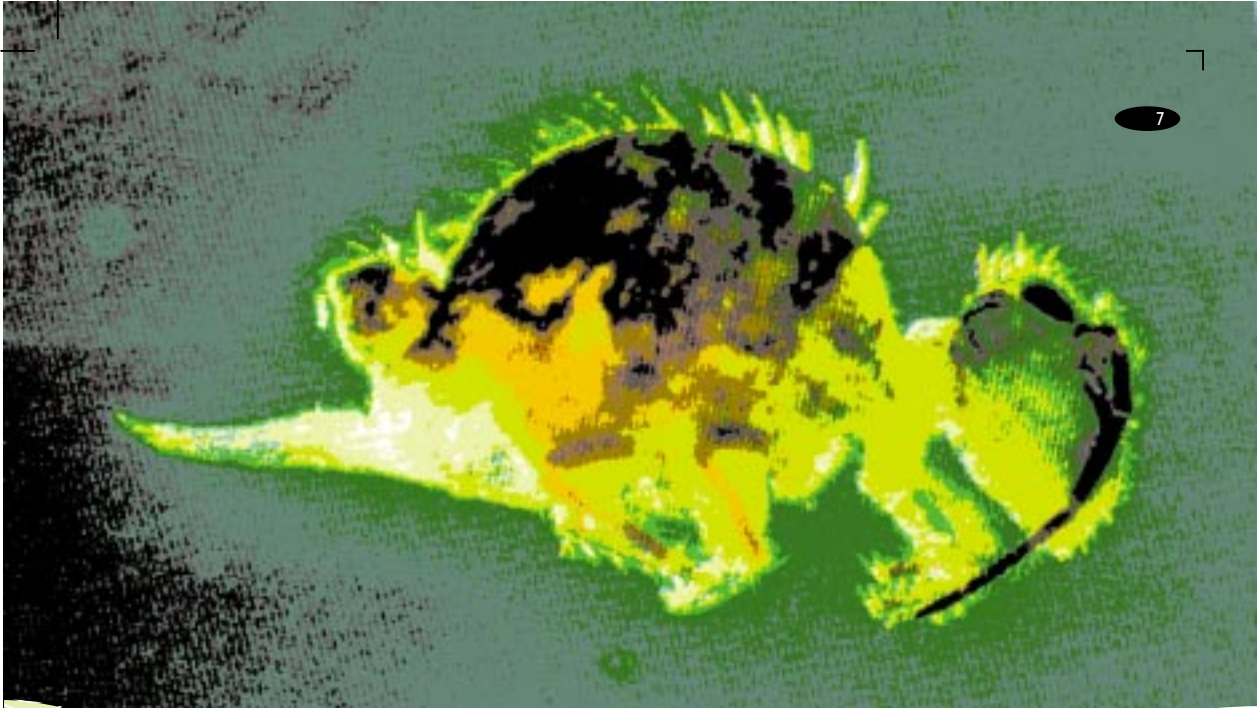
double shell



6



no shells



no legs



BLACKFLY LARVA

SIZE: UP TO 7 MM

MOVEMENT: CLINGS, WAVES



CRANEFLY LARVA

SIZE: UP TO 50MM

MOVEMENT: BURROWS



MOSQUITO PUPA & LARVA

SIZE: 3 - 6MM

MOVEMENT: ACTIVE SWIMMER, WRIGGLES



SOLDIERFLY LARVA

SIZE: UP TO 30MM

MOVEMENT: SPRAWLS, SCRAPES



With tentacles,  
brushes or tails



SEGMENTED WORM

SIZE: 1 - 300MM

MOVEMENT: PERISTALTIC



ROUND WORM

SIZE: UP TO 12MM

MOVEMENT: RANDOM MOVEMENTS



BITING MIDGE LARVA

SIZE: UP TO 12MM

MOVEMENT: SPRAWLS, BURROWS



LEECH

SIZE: 5 - 100MM

MOVEMENT: CRAWLS, SUCKS



NON-BITING MIDGE LARVA

SIZE: UP TO 30MM

MOVEMENT: BURROWS



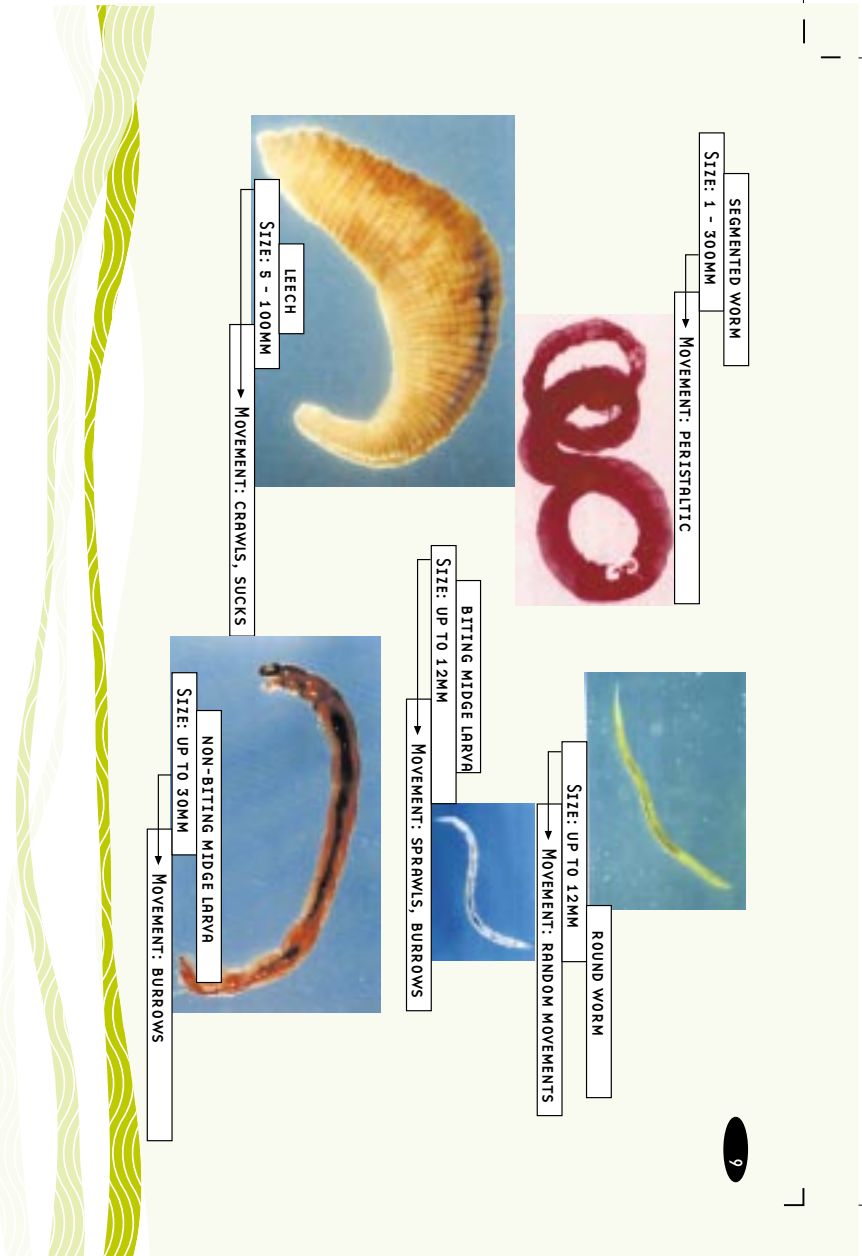
FLATWORM

SIZE: UP TO 10MM


MOVEMENT: GLIDES



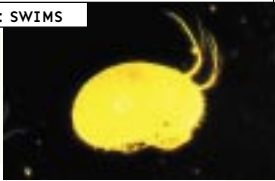
Worm-like




ALTHOUGH THESE MACROINVERTEBRATES DO HAVE LEGS THEY ARE ALMOST MICROSCOPIC AND IDENTIFYING THE NUMBER OF LEGS MAY BE DIFFICULT.  
IT IS THEREFORE EASIER TO IDENTIFY THEM BY SIZE AND MOVEMENT.



SPRINGTAIL  
SIZE: UP TO 3MM  
→ MOVEMENT: FLOATS



OSTRACOD  
SIZE: 0.4 - 0.8MM  
→ MOVEMENT: SWIMS



WATER FLEA  
SIZE: MOST < 1MM  
→ MOVEMENT: JERKY MOVEMENTS, STOP-START ACTION



COPEPOD  
SIZE: UP TO 2MM  
→ MOVEMENT: SMOOTH SWIMMER

tiny





ISOPOD  
SIZE: 2 - 12MM  
MOVEMENT: CRAWLS



AMPHIPOD  
SIZE: UP TO 10MM  
MOVEMENT: SIDE-SWIMMER



FRESHWATER SHRIMP  
SIZE: UP TO 50MM  
MOVEMENT: SWIMS, JUMPS, FLICKS



GLIGIE  
SIZE: UP TO 200MM  
MOVEMENT: CRAWLS, BACKWARD FLICK WITH SPEED



MARRON  
SIZE: UP TO 300MM  
MOVEMENT: CRAWLS, BACKWARD FLICK WITH SPEED



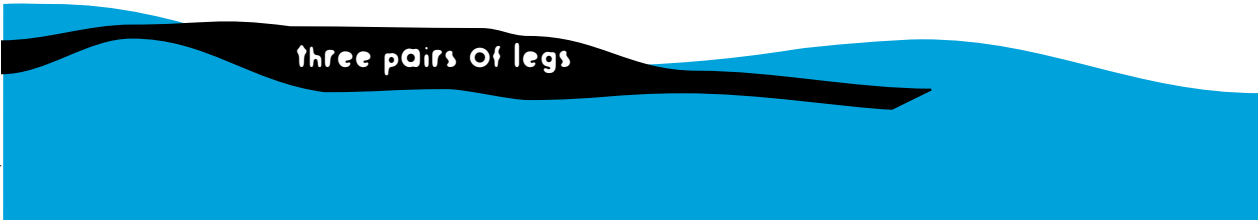
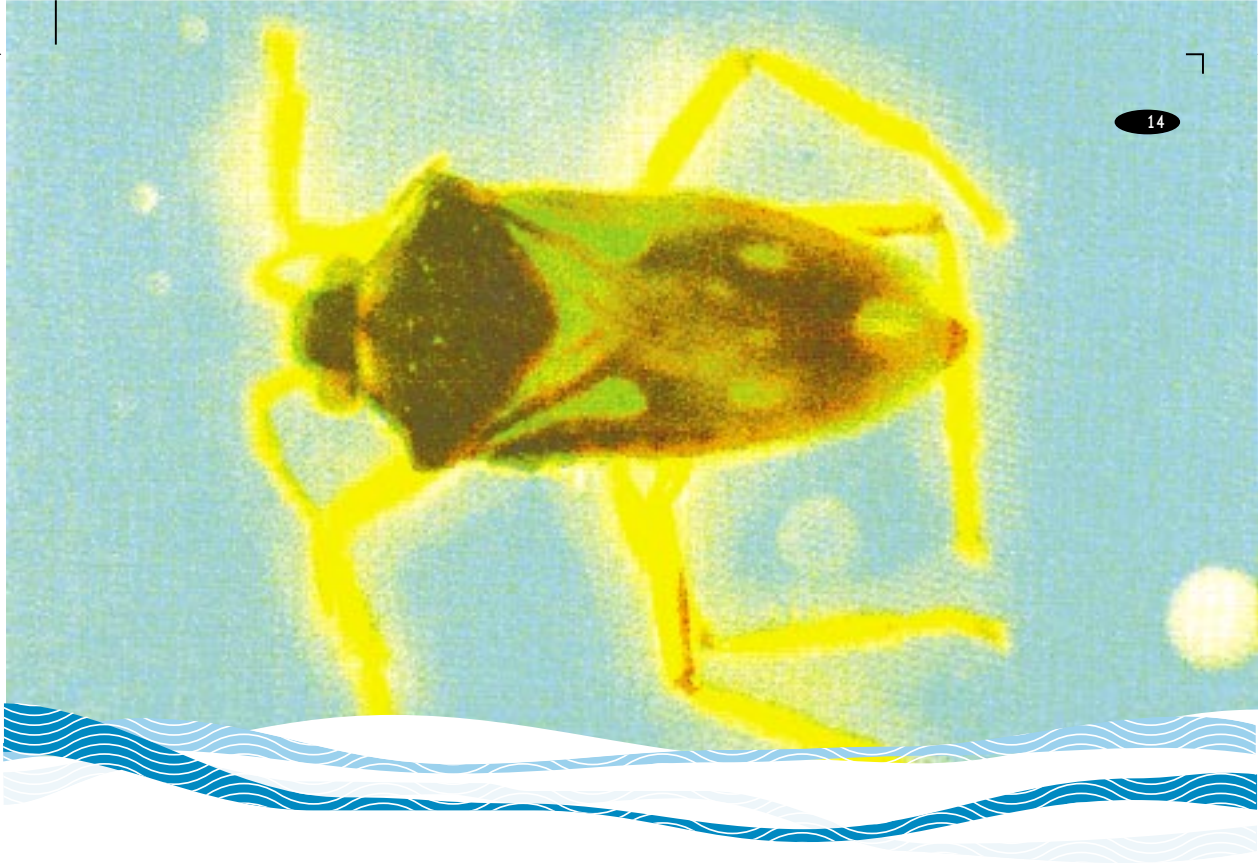
10 ♦ legs

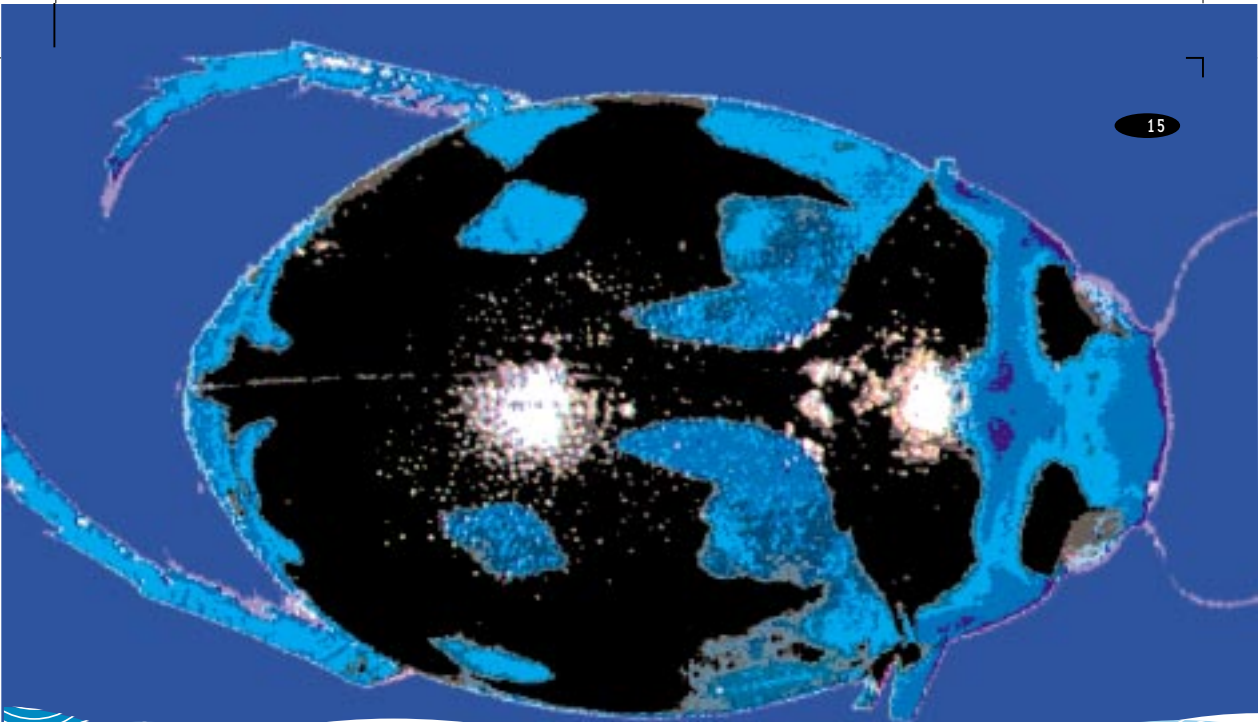


WATER MITE  
SIZE: UP TO 2.5MM  
→ MOVEMENT: FREE SWIMMER, CRAWLS

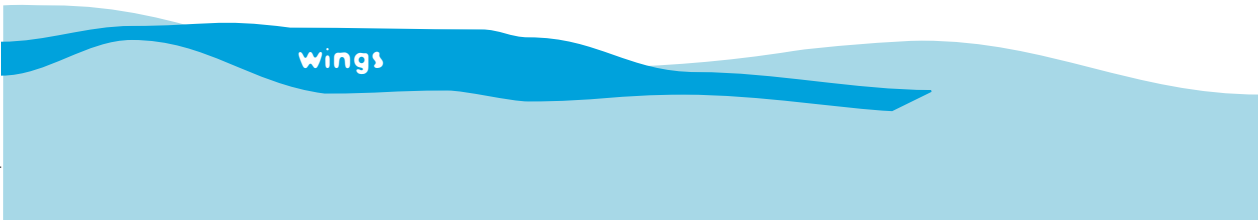


4 pairs of legs





15



wings



SCAVENGER BEETLE  
SIZE: 1 - MORE THAN 4.0 MM  
MOVEMENT: SWIMS, CRAWLS



WHIRLIGIG BEETLE  
SIZE: UP TO 6MM  
MOVEMENT: VERY FAST SURFACE SWIMMER



CRAWLING WATER BEETLE  
SIZE: UP TO 6MM  
MOVEMENT: CLOUDSY SWIMMER, CRAWLS



PREDACIOUS DIVING BEETLES  
SIZE: 3 - 35MM  
MOVEMENT: SWIMS, DIVES

beetle-like, hard wings





**WATER SCORPIONS**  
SIZE: UP TO 50MM (NOT INCLUDING RESPIRATORY SIPHON)  
→ MOVEMENT: CLIMBS, CRAWLS



**BACKSWIMMER**  
SIZE: UP TO 7MM  
→ MOVEMENT: SWIMS



**WATER BOATMAN**  
SIZE: UP TO 10MM  
→ MOVEMENT: SWIMS

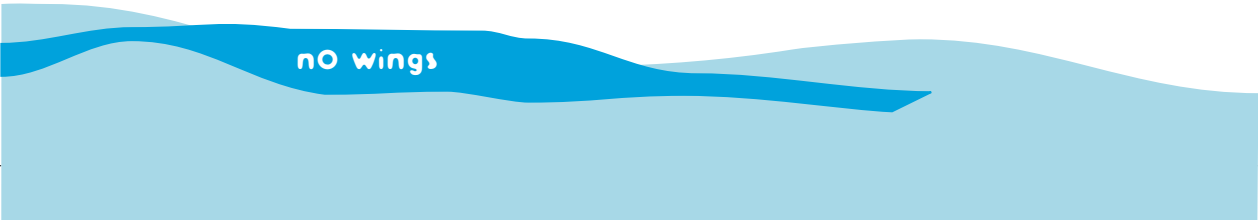
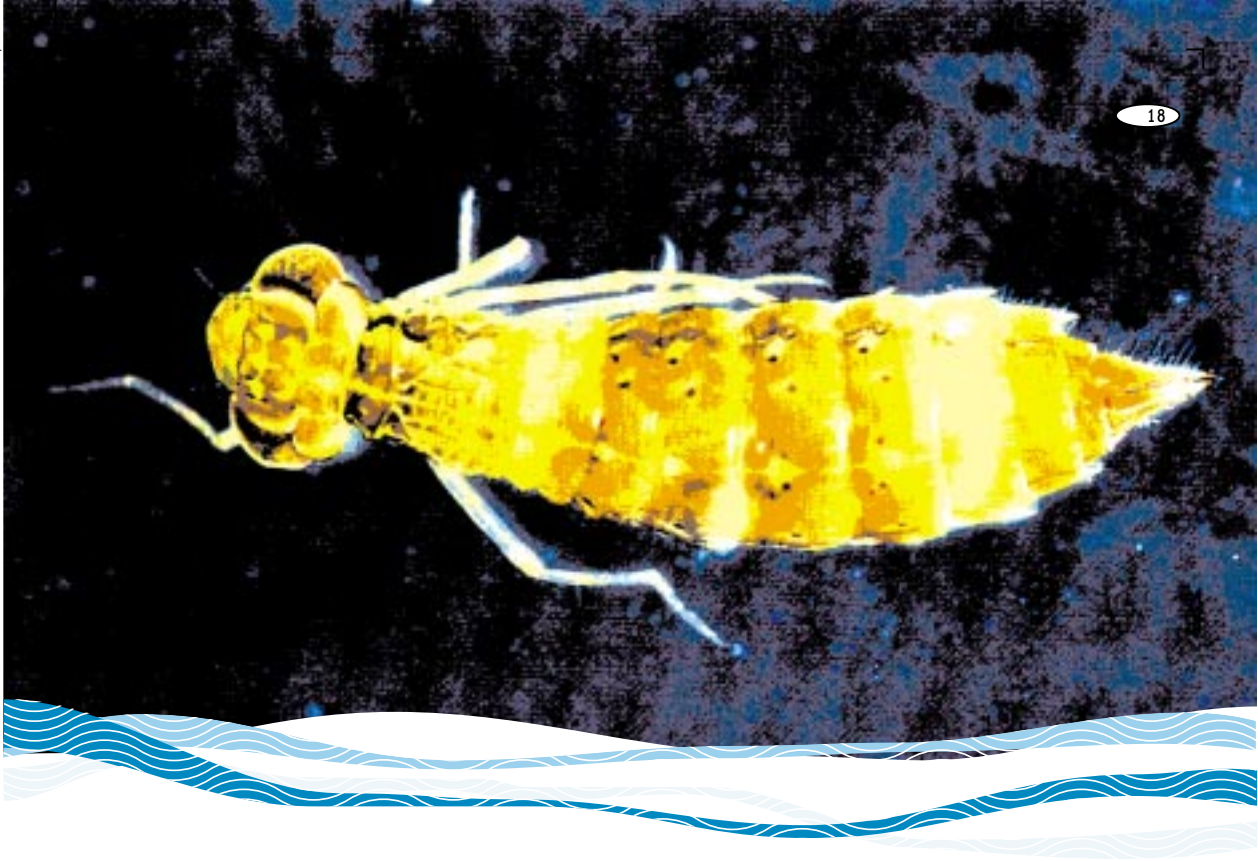


**WATER STRIDER**  
SIZE: UP TO 12MM  
→ MOVEMENT: WALKS



**WATER MEASURER**  
SIZE: UP TO 16MM  
→ MOVEMENT: SKATES

**leathery wings**

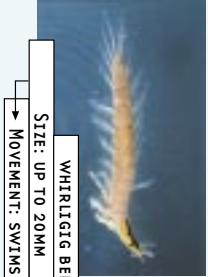




SCAVENGER BEETLE LARVA

SIZE: UP TO 7MM

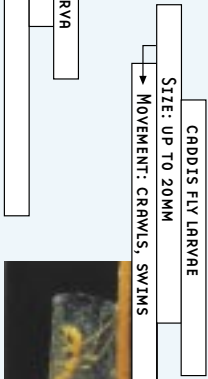
MOVEMENT: SWIMS, DIVES, CLIMBS



WHIRLIGIG BEETLE LARVA

SIZE: UP TO 20MM

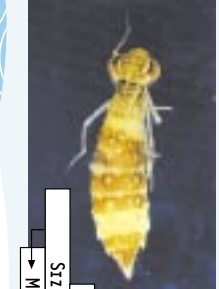
MOVEMENT: SWIMS



CADDIS FLY LARVAE

SIZE: UP TO 20MM

MOVEMENT: CRAWLS, SWIMS



DRAGONFLY LARVAE

SIZE: UP TO 80MM

MOVEMENT: CLINGS, CRAWLS




no obvious tails


pic to come?

STONEFLY LARVA  
SIZE: UP TO 8MM  
→ MOVEMENT: CLINGS

CRAWLING WATER BEETLE LARVA  
SIZE: UP TO 25MM  
→ MOVEMENT: SWIMS, CRAWLS



PREDACIOUS DIVING BEETLE LARVAE  
SIZE: UP TO 55MM  
→ MOVEMENT: SWIMS, DIVES



one or two tails



DAMSELFLY LARVA

SIZE: UP TO 27MM

→ MOVEMENT: SWIMS (NOTE - DISTINCTIVE SERPENTINE MOVEMENT OF ABDOMEN WHILE SWIMMING)



MAYFLY LARVAE

SIZE: UP TO 10MM

→ MOVEMENT: FAST SWIMMER, CLINGS



three tails