SC Adopt-a-Stream Key to Macroinvertebrates

This works for most common aquatic macroinvertebrates scored for the SC Adopt-a-Stream program. Start with #1. Choose which group of characters (1a or 1b) best describes your animal. The number to the right of your choice directs you to the next group of characters. Continue to choose and follow the numbers until you reach the name of your animal. Use the pictures to confirm your identification. Additional pictures can be found at the end of this key. There are a few invertebrates that are not scored in the SC AAS program. Pictures of some of the most common of these can also be found at the end of this key.

1a Has real hardened legs with joints — go to 2

1b Does not have legs with joints; may have various soft fleshy leg-like parts — go to 14

2a Six legs — go to 3

2b More than 6 legs — go to 12

3a Has no hair-like or feather-like tails (may have fleshy leg-like parts on back end) (Fig. 1) — go to 4

3b Has 2 hair-like tails or 3 tails shaped like hairs or feathers (can break off) (Fig. 2) — go to 6

Fig. 1 No tails

Fig. 2 Two or three tails

4a Top surface of abdomen (behind where legs attach) soft and fleshy (Fig. 3) — go to 5

4b Top surface of abdomen hardened (Fig. 4) — go to 8

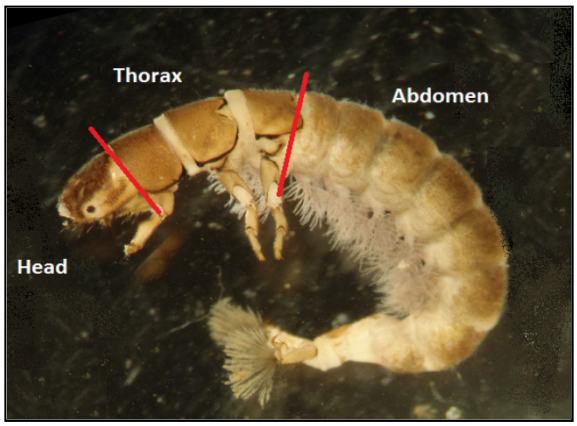


Fig. 3 Fleshy abdomen of common net-spinner

Fig. 4 Hardened abdomen of dragonfly

5a A single long filiment extends from each side of each abdominal segment (Fig. 5)
dark, sturdy and often large; never has a case; head broad and flat, will bite
(small, pale bugs with filiments are likely whirligig beetle larvae not scored in AAS) **Dobsonfly /Fishfly**

5b No long filiments extend from sides of abdomen;
may have gills under abdomen and/or may live in a case go to 10

Fig. 5 Dobsonfly / Fishfly

6a Three flattened feather-like tails (Fig. 6) **Damselfly**

6b Tails hair-like go to 7

Fig. 6 Damselflies

7a Gills on each side of the abdomen or on top of it
most with 3 hair-like tails, rarely with 2 (Fig. 7) **Mayfly**

7b Two hair-like tails; no gills on sides or top of abdomen (may have gills beneath) (Fig. 8) **Stonefly**
(stick bugs are not scored in AAS)

Fig. 7 Mayflies

Fig. 8 Stoneflies

8a Small, mostly black bugs that crawl slowly; A very hard shell covers abdomen; body shape not streamlined; legs visible from above; do not swim; some have yellow markings (Fig. 9) **Riffle Beetle** (adult)

8b Body flattened, almost circular and divided into many segments legs hidden beneath, most common in the piedmont and mountains (Fig. 10) **Water Penny**

8c Not as above go to 9

Fig. 9 Riffle beetle adults

Fig. 10 Water pennies

9a Broad abdomen and big eyes; body often large; flat or cup-shaped mouthparts under head can unfold to reach forward and catch prey (Figs. 4, 11) **Dragonfly**

9b Small elongate body entirely covered by very hard hard plates; tiny eyes; trapdoor containing gills beneath last segment (Fig. 12) **Riffle Beetle** (larva)

9c Not as above; includes other aquatic beetles and true bugs not included in AAS scoring

Fig. 11 Dragonflies (including mouthparts under head)

Fig. 12 Riffle beetle larva

10a Lives in a case made of silk and pieces of sticks, leaves, roots, or sand (Fig. 13) **Caddisfly**

10b Not a case maker (Fig. 14, 15) go to 11

Fig. 13 Caddisflies (with cases)

11a Thick tufts of gills beneath abdomen (Fig. 3, 14); hard plates cover the top of all three thoracic segments (the ones nearest head with legs attached) **Common Net-spinning Caddisfly**

11b No gills beneath abdomen (Fig. 15); the tops of fewer than three segments behind head completely covered by hard plates **Caddisfly**

Fig. 14 Common net-spinning caddisflies

Fig. 15 Caddisflies (without cases)

12a Body flattened horizontally; often with tan or pink color pattern (Fig. 16) Back end of body has a single wide flat plate; Crawl slowly **Sowbugs**

12b Body not flattened; no single wide flat plate go to 13

Fig. 16 Sowbugs

Fig. 17 Scuds

13a Body higher than wide; usually white, fast swimmers
Back end of body tapers almost to a point (Fig. 17) **Scuds**

13b Body shaped like a lobster; usually crawl; end of tail like a fan (Figs. 18) **Crayfish**
(SC also has small freshwater shrimp which are not scored in AAS)

Fig. 18 Crayfish

14a Shell divided into 2 similar halves (Figs. 19) **Clams and Mussels**

14b With one-part shell (Figs. 20 - 23) go to 15

14c Without shell go to 16

Fig. 19 Clam and mussel

Fig. 20 Lunged snail

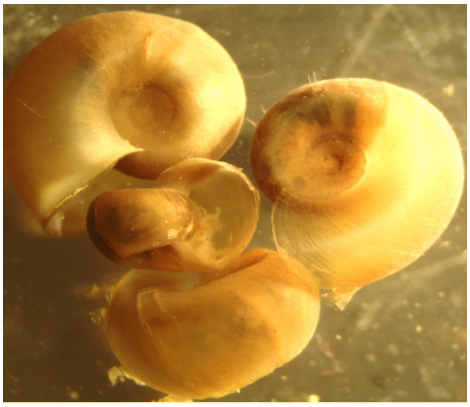


Fig. 21 Lunged snail

15a Shell opening on left when facing you with point up
Opening with no hardened "door" (Fig. 20) **Lunged Snail**

15b Shell spirals within the same plane and so has no elevated point
Opening with no hardened "door" (Fig. 21) **Lunged Snail**

15c Shell opening on right when facing you with point up
Opening with hardened "door" (Fig. 22) **Gilled Snail**

15d Shell shaped like a tiny low cone with no spiral at all
Opening with no hardened "door"; looks a little like a water penny but of course has no legs and shell is not divided into segments (Fig. 23) **Lunged Snail**

Fig. 22 Gilled snails

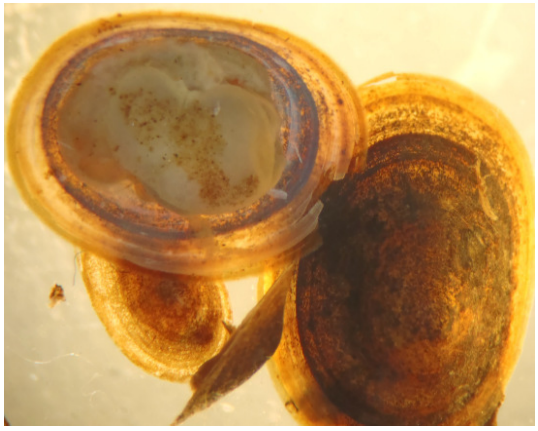


Fig. 23 Lunged snails (limpets)

16a Head hardened; body tiny, seldom over 1/4 inch long; one fleshy "leg" may be visible near head or it and the head may be too small to see even with a magnifying glass (Fig 24, 25) go to 17

16b No exposed hardened head; usually larger go to 18

17a Tiny slender "C" shaped body; No fan-like brushes on head; sometimes bright red; usually seen in your pan either floating on the surface or thrashing back and forth in the water (Fig. 24) **Midge Fly**

17b Tiny bowling pin-shaped body; fan-like brushes on head may be visible typically lay still on the bottom of your pan or move slowly like an inchworm creamy white often with mottled gray or pink pattern (Fig. 25) **Black Fly**

Fig. 24 Midge flies

Fig. 25 Black flies

18a Small body with fleshy "feet" like a catepillar; head end pointed; tail end divided into two long fingers; uncommon in SC outside the mountains and upper piedmont; should look almost exactly like the picture since there is only one known species in SC (Fig. 27) **Aquatic Snipe Fly**

18b Body grub-like usually with many finger-like projections (or sometimes just 2) at back end (Fig. 26); common and variable in size and appearance **Crane Fly**

18c Body with many segments like an earthworm; no finger-like projections (Figs. 28, 29) go to 19

Fig. 26 Crane flies

Fig. 27 Aquatic snipe flies

19a Has two suckers on underside,one at each end; body at least somewhat flattened (Fig. 28) **Leech**

19b No suckers; round; looks like a small to tiny earthworm (Fig. 29) **Aquatic Worm**

Fig. 28 Leech

Fig. 29 Aquatic worms

The following pages show additional pictures of macroinvertebrates including some on the last page which you may find but which are not included in scoring your site for SC Adopt-A-Stream.

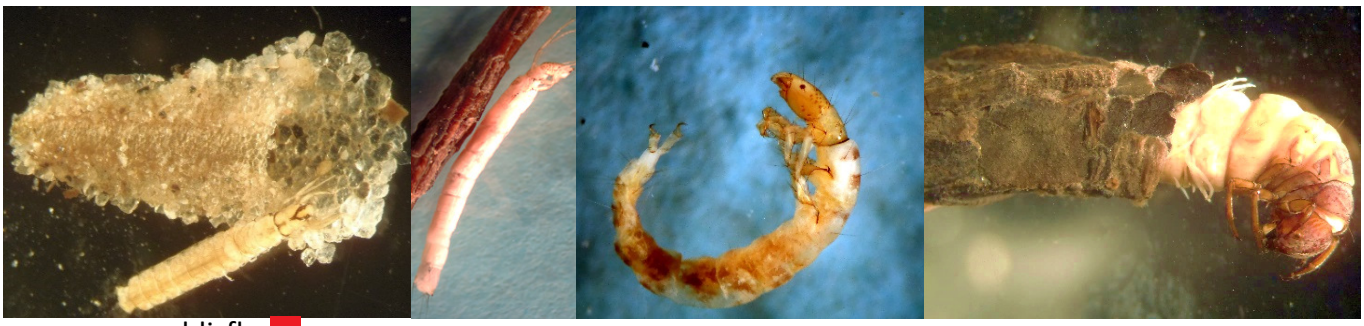
Sensitive

Small
Typical
Largest

Actual size range in each group is shown by colored bars.

mayfly

stonefly



caddisfly

riffle beetle

water penny

aquatic snipe fly

gilled snails

Somewhat Sensitive

Small
Typical
Largest

Actual size range in each group is shown by colored bars.


common net-spinning caddisfly

cranefly

crayfish

sow bug

scud

damselfly

dobsonflies and fishflies

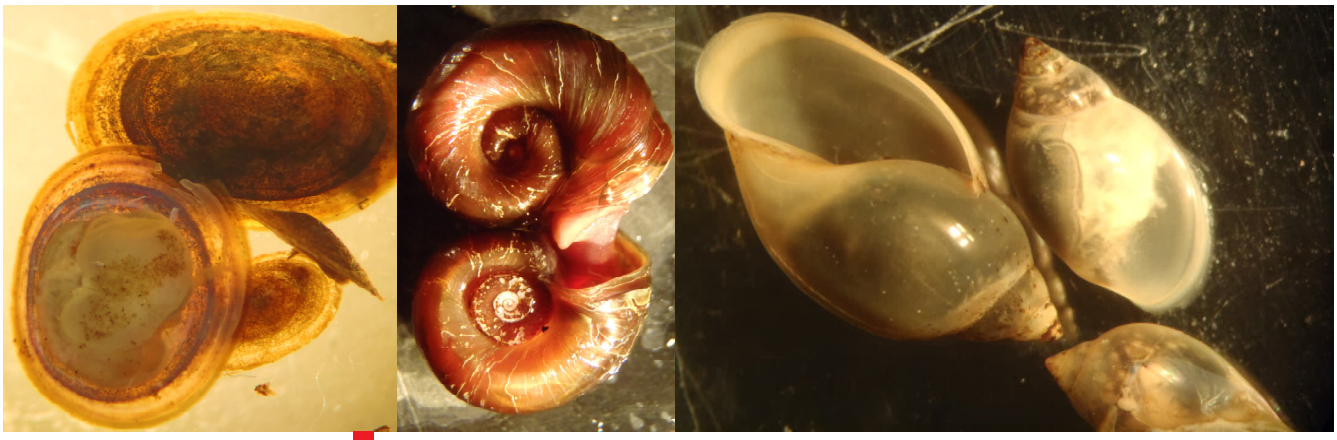
clams and mussels

dragonfly

Tolerant

Small
Typical
Largest

Actual size range in each group is shown by colored bars.



lunged snails

midge fly

black fly

aquatic worm

leech

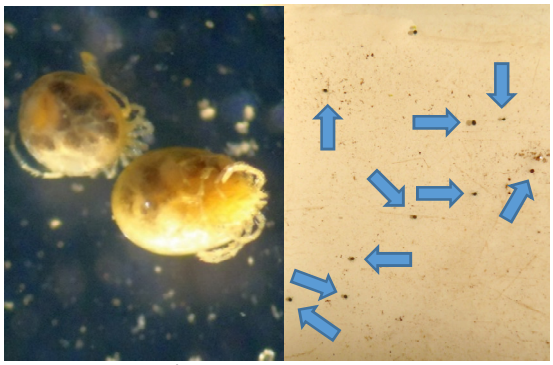
Not Scored

Small
Typical
Largest

Actual size range in each group is shown by colored bars.

Below are examples of some of the more common aquatic macroinvertebrates which are not included in the AAS scoring.

Freshwater shrimp



Water mites (tiny black dots with smooth constant swimming motion)

Alderfly

Water Measurer

Water scorpion

Backswimmer

Giant water bug

Water strider

Predaceous diving beetle

Whirligig beetle

Crawling water beetle

Water scavenger beetle