

# Stream Insects & Crustaceans

## GROUP ONE TAXA

*Pollution sensitive organisms found in good quality water.*

- 1 *Stonfly: Order Plecoptera.* 1/2" - 1 1/2", 6 legs with hooked tips, antennae, 2 hair-like tails. Smooth (no gills) on lower half of body. (See arrow.)
- 2 *Caddisfly: Order Trichoptera.* Up to 1", 6 hooked legs on upper third of body, 2 hooks at back end. May be in a stick, rock or leaf case with its head sticking out. May have fluffy gill tufts on lower half.
- 3 *Water Penny: Order Coleoptera.* 1/4", flat saucer-shaped body with a raised bump on one side and 6 tiny legs on the other side. Immature beetle.
- 4 *Riffle Beetle: Order Coleoptera.* 1/4", oval body covered with tiny hairs, 6 legs, antennae. Walks slowly underwater. Does not swim on surface.
- 5 *Mayfly: Order Ephemeroptera.* 1/4" - 1", brown, moving, plate-like or feathery gills on sides of lower body (see arrow), 6 large hooked legs, antennae, 2 or 3 long, hair-like tails. Tails may be webbed together.
- 6 *Gilled Snail: Class Gastropoda.* Shell opening covered by thin plate called operculum. Shell usually opens on right.
- 7 *Dobsonfly (Hellgrammite): Family Corydalidae.* 3/4" - 4"; dark-colored, 6 legs, large pinching jaws, eight pairs feelers on lower half of body with paired cotton-like gill tufts along underside, short antennae, 2 tails and 2 pairs of hooks at back end.

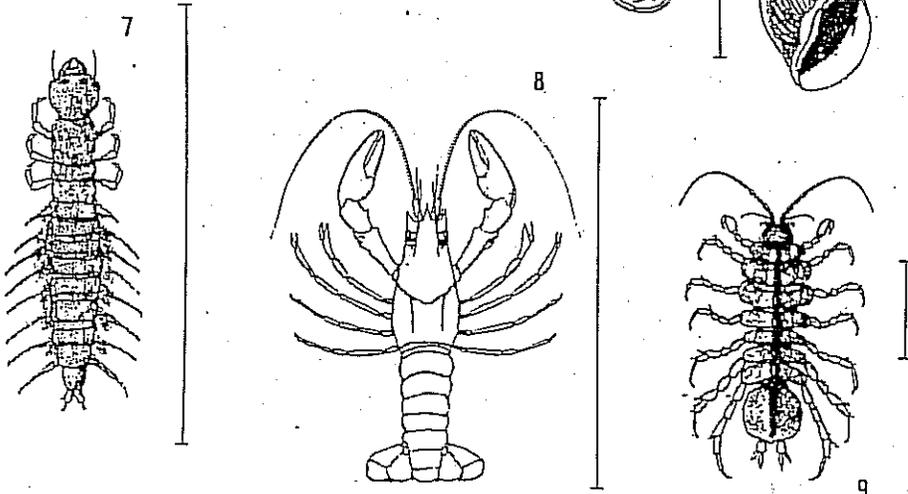
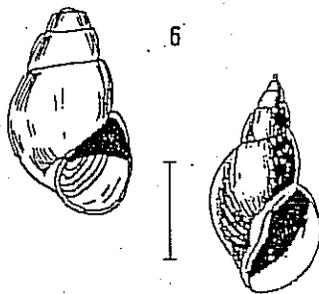
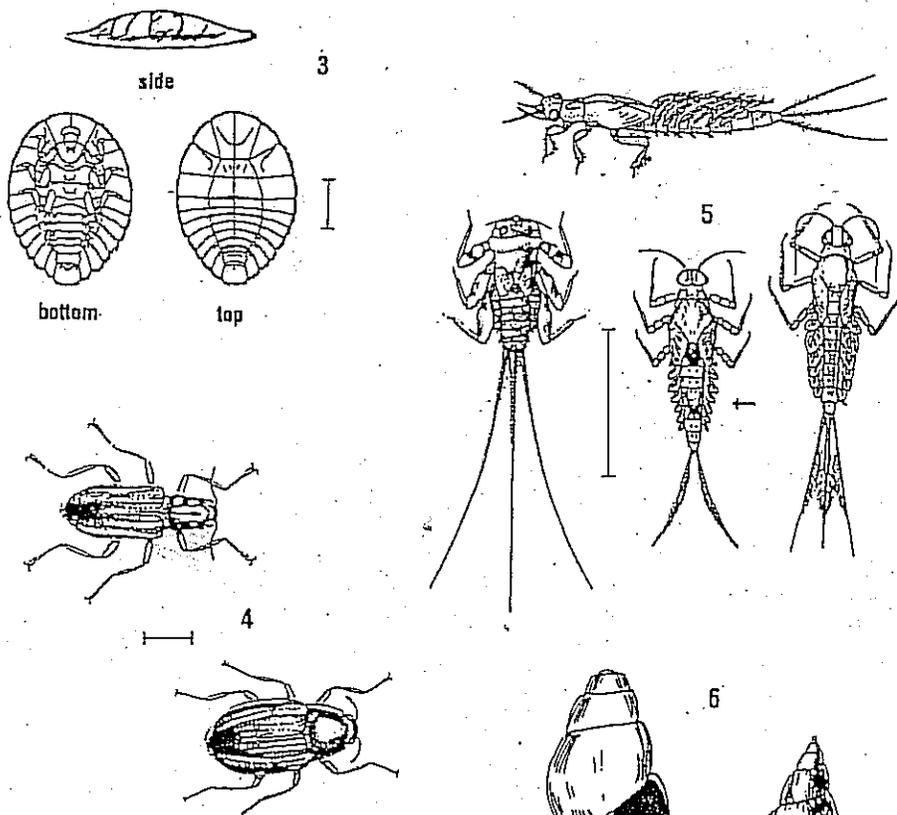
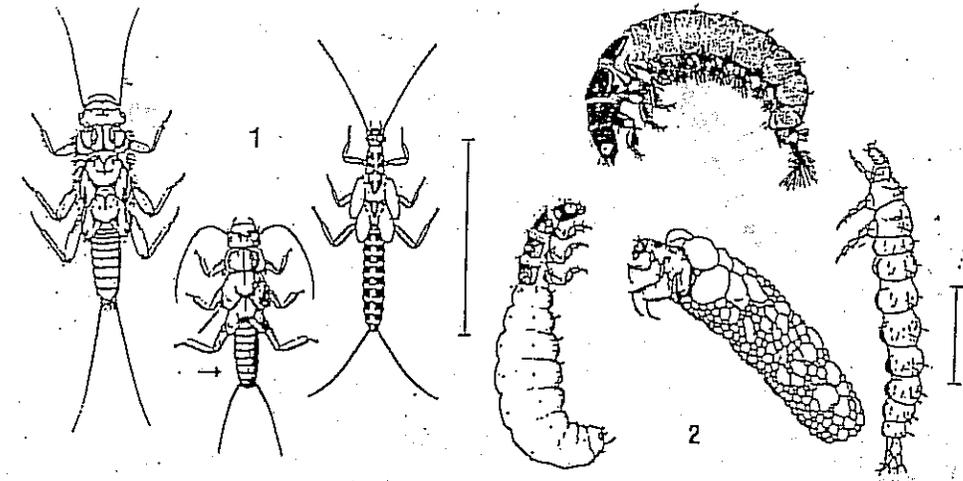
## GROUP TWO TAXA

*Somewhat pollution tolerant organisms can be in good or fair quality water.*

- 8 *Crayfish: Order Decapoda.* Up to 6", 2 large claws, 8 legs, resembles small lobster.
- 9 *Sowbug: Order Isopoda.* 1/4" - 3/4", gray oblong body wider than it is high, more than 6 legs, long antennae.

## Save Our Streams

Izaak Walton League of America  
1401 Wilson Blvd, Level B  
Arlington, VA 22209



Bar lines indicate relative size

## GROUP TWO TAXA continued

10 *Scud: Order Amphipoda*. 1/4", white to grey, body higher than it is wide, swims sideways, more than 6 legs, resembles small shrimp.

11 *Alderfly larva: Family Sialidae*. 1" long. Looks like small hellgrammole but has 1 long, thin, branched tail at back end (no hooks). No gill tufts underneath.

12 *Fishfly larva: Family Corydalidae*. Up to 1 1/2" long. Looks like small hellgrammole but often a lighter reddish-tan color, or with yellowish streaks. No gill tufts underneath.

13 *Damselfly: Suborder Zygoptera*. 1/2" - 1", large eyes, 6 thin hooked legs, 3 broad oar-shaped tails, positioned like a tripod. Smooth (no gills) on sides of lower half of body. (See arrow.)

14 *Watersnipe Fly Larva: Family Athericidae (Atherix)*. 1/4" - 1", pale to green, tapered-body, many caterpillar-like legs, conical head, feathery "horns" at back end.

15 *Crane Fly: Suborder Nematocera*. 1/3" - 2", milky, green, or light brown, plump caterpillar-like segmented body, 4 finger-like lobes at back end.

16 *Beetle Larva: Order Coleoptera*. 1/4" - 1", light-colored, 6 legs on upper half of body, feelers, antennae.

17 *Dragon Fly: Suborder Anisoptera*. 1/2" - 2", large eyes, 6 hooked legs. Wide oval to round abdomen.

18 *Clam: Class Bivalvia*.

## GROUP THREE TAXA

*Pollution tolerant organisms can be in any quality of water.*

19 *Aquatic Worm: Class Oligochaeta*. 1/4" - 2", can be very tiny; thin worm-like body.

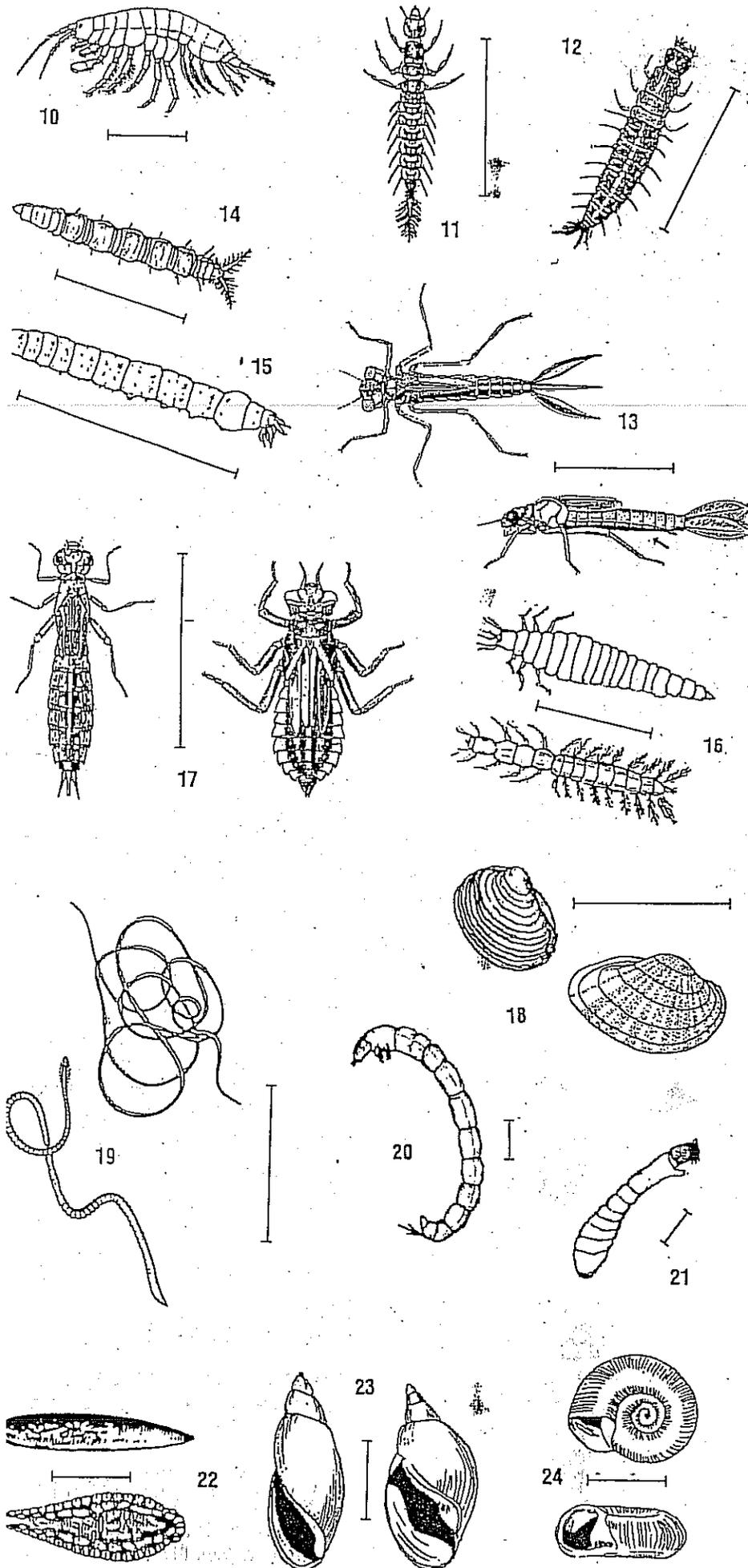
20 *Midge Fly Larva: Suborder Nematocera*. Up to 1/4", dark head, worm-like segmented body, 2 tiny legs on each side.

21 *Blackfly Larva: Family Simuliidae*. Up to 1/4", one end of body wider. Black head, suction pad on end.

22 *Leech: Order Hirudinea*. 1/4" - 2", brown, slimy body, ends with suction pads.

23 *Pouch Snail and Pond Snails: Class Gastropoda*. No operculum. Breathe air. Shell usually opens on left.

24 *Other snails: Class Gastropoda*. No operculum. Breathe air. Snail shell coils in one plane.



Bar lines indicate relative size



## LOUISIANA MACROINVERTEBRATE STREAM SURVEY FORM

Water body \_\_\_\_\_ Station # \_\_\_\_\_ Sample # \_\_\_\_\_

Location (Hwy, etc.) \_\_\_\_\_ City/Town \_\_\_\_\_ Parish \_\_\_\_\_

Group or Individual \_\_\_\_\_ # of Participants \_\_\_\_\_ Date \_\_\_\_\_ Time \_\_\_\_\_

Weather Conditions (recent rainfall, etc.) \_\_\_\_\_

Average Stream Width \_\_\_\_\_ ft. Average Stream Depth \_\_\_\_\_ ft. Water Temperature \_\_\_\_\_ °F

Flow: fast \_\_\_\_\_ moderate \_\_\_\_\_ slow \_\_\_\_\_ "negligible" \_\_\_\_\_

Other \_\_\_\_\_

### MACROINVERTEBRATE COUNT

HABITAT (S) SAMPLED (Write the number of scoops taken with the dip net):

Steep Banks/vegetated margin                       Silty bottom with organic material  
 Sand/gravel/rock substrates                       Woody debris with organic material

**IMPORTANT:** Be sure you sample the same station each time you conduct a survey. Take 10 scoops from the vegetated margins/banks, 4 scoops from the woody debris, 3 scoops from the silty substrate and 3 scoops from the sand/gravel/rock substrates. Remember, one scoop is equal to one square foot.

Use the following letter codes to indicate organism abundance:    A = 1-9                      B = 10-99                      C = 100 or more  
Place letter code in block to left of organism name.

Sensitive*	Somewhat Sensitive*	Tolerant*
stonefly nymphs (1)	crawfish (8)	aquatic worms (19)
caddisfly larvae (2)	sowbugs (9)	midge larvae (20)
water penny larvae (3)	scuds (10)	blackfly larvae (21)
riffle beetle adult (4)	alderfly larvae (11)	leeches (22)
mayfly larvae (5)	fishfly larvae (12)	pouch & pond snails(23)
gilled snails (6)	damsel fly nymphs (13)	other snails (24)
dobsonfly larvae (7)	watersnipe (atherix) (14)	
	crane fly larvae (15)	
	beetle larvae (16)	
	dragonfly nymphs (17)	
	clams (18)	
<b>Index = # of letters x 3 =</b>	<b>Index = # of letter x 2 =</b>	<b>Index = # of letters x 1 =</b>
<b>TOTAL INDEX VALUE =</b>	Excellent (> 22)	Good (17-22)
	Fair (11-16)	Poor (<11)

\* Numbers in parenthesis correspond with "Bug Sheet" numbers.

**Comments:**

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**Fish Water Quality Indicators:**

- scattered individuals
- scattered schools
- darters (intolerant to pollution)
- bass (somewhat tolerant to pollution)
- catfish (tolerant to pollution)
- carp (tolerant to pollution)

**Record the numbers and types of any fish caught during sampling:**

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**Barriers to Fish Movement:**

- beaver dams
- man-made dams, weirs, etc.
- waterfalls
- other \_\_\_\_\_
- none

**Surface Water Appearance:**

- clear
- clear/tea color
- colored sheen (oily)
- foamy
- milky
- muddy
- brown
- black
- grey
- green
- other \_\_\_\_\_

**Substrate Composition:**

- % clay (stick mud)
- % silt (mud)
- % sand (1/16"-1/4" grains, gritty)
- % gravel (1/10"-2.5" stones)
- % cobble (2.5"-10" stones)
- % boulders (> 10" stones)
- % bedrock
- % organic material (sticks, wood, coarse, and fine plant material, etc.)

**Substrate Deposits:**

- sludge
- sand
- silt
- other \_\_\_\_\_

**Substrate Colors:**

- grey
- orange/red
- yellow
- black
- brown
- other \_\_\_\_\_

**Substrate Odors:**

- sewage
- petroleum/oil
- chemical
- rotten eggs (sulfur)
- musky
- none
- other \_\_\_\_\_

**% Bank covered by plants, trees, rocks, logs, etc. (no exposed soil):**

- Stream bank (sides)
- Top of bank (slope and floodplain)

Good (> 70%)

Fair (30%-70%)

Poor (<30%)

**Stream Bank Vegetation Composition:**

- % shrubs
- % grasses
- % trees

**Stream Bank Erosion:**

- >80% severe
- 50%-80% high
- 20%-49% moderate
- <20% slight

**Algae Color:**

- light green
- dark green
- brown coated
- matted on stream bed
- hairy

**Algae Location:**

- everywhere
- in spots
- % bed cover

**Land Uses in watershed:** Record all and uses observed in the watershed area upstream and surround your sampling site. Indicate whether the following potential land uses have a high (H), moderate (M), or slight (S) potential for impact. Refer to the survey instructions to determine how to assess H, M, or S impacts.

- |   |   |   |  |
|---|---|---|--|
| <input type="checkbox"/> Oil & Gas Fields | <input type="checkbox"/> Sanitary Landfill    | <input type="checkbox"/> Fields         | <input type="checkbox"/> Livestock Pasture |
| <input type="checkbox"/> Industrial       | <input type="checkbox"/> Refuse Dump          | <input type="checkbox"/> Logging        | <input type="checkbox"/> Croplands (types) |
| <input type="checkbox"/> Other Commercial | <input type="checkbox"/> Construction         | <input type="checkbox"/> Forest (types) | <input type="checkbox"/> Mining (types)    |
| <input type="checkbox"/> Urban Uses       | <input type="checkbox"/> Housing Developments | _____                                   | _____                                      |
| <input type="checkbox"/> Other (types)    | _____   | _____                                   | _____                                      |

Are there any discharge pipes?  yes  no How many? \_\_\_\_\_ What types?  sewage treatment

industrial (types: \_\_\_\_\_)  runoff (field or stormwater) other \_\_\_\_\_

Did you test up and downstream of any pipes and other potential impacts to determine changes in water quality?  yes  no

If yes, were any changes noticed? \_\_\_\_\_

Comments: (litter, etc.) \_\_\_\_\_