

KENTUCKY WATER WATCH BIOLOGICAL MONITORING ASSESSMENT REPORT

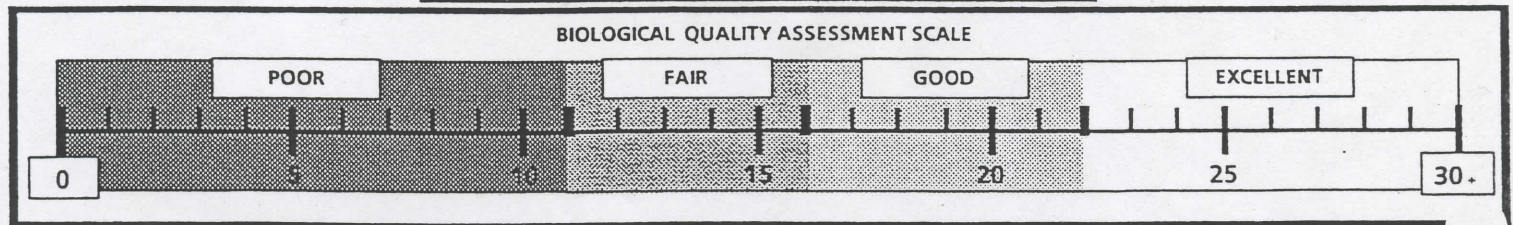
RIVER BASIN		DATE	TIME
STREAM NAME		SUPERVISING SAMPLER	
SAMPLING SITE		ORGANIZATION	
FLOW RATE 1. <input type="checkbox"/> Ponded 2. <input type="checkbox"/> Low 3. <input type="checkbox"/> Normal 4. <input type="checkbox"/> Bank Full 5. <input type="checkbox"/> In Flood		MAILING ADDRESS	
AREA SAMPLED IN SQUARE FEET	NUMBER OF PARTICIPANTS	TELEPHONE #	

GENERAL DESCRIPTION OF WATER CONDITIONS

MACROINVERTEBRATE TALLY

GROUP 1 TAXA	CODE	GROUP 2 TAXA	CODE	GROUP 3 TAXA	CODE
WATER PENNY LARVAE		DAMSELFLY NYMPHS		BLACKFLY LARVAE	
MAYFLY NYMPHS		DRAGONFLY NYMPHS		AQUATIC WORMS	
STONEFLY NYMPHS		CRANE FLY LARVAE		MIDGE LARVAE	
DOBSONFLY LARVE		BEEBLE LARVAE		POUCH SNAILS	
CADDISFLY LARVAE		CRAYFISH		LEECHES	
RIFFLE BEETLE ADULTS		SCUDS			
OTHER SNAILS		CLAMS			
		SOW BUGS / ISOPODS			
Number of taxa present		Number of taxa present		Number of taxa present	
Times index value of (3) =		Times index value of (2) =		Times index value of (1) =	

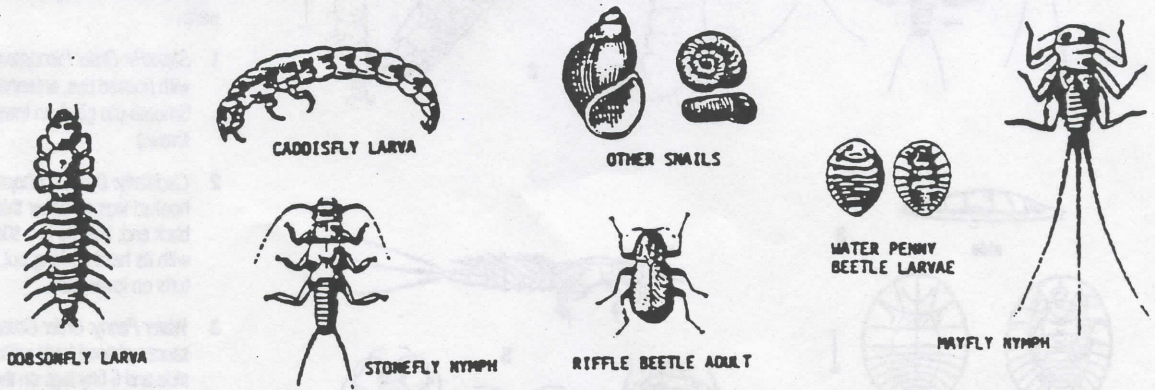
Cumulative Index Value



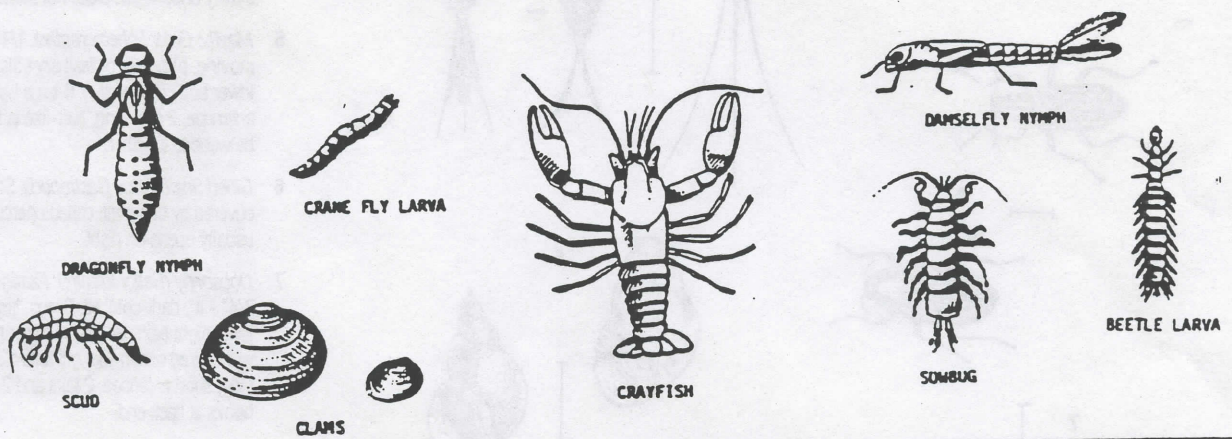
SEND REPORT FORM TO: WATER WATCH BIOLOGICAL STREAM ASSESSMENT TEAM
 KENTUCKY DIVISION OF WATER
 14 REILLY ROAD
 FRANKFORT, KY 40601
 502-564-3410 ATT: Ken Cooke

MACROINVERTEBRATE TAXA GROUPS

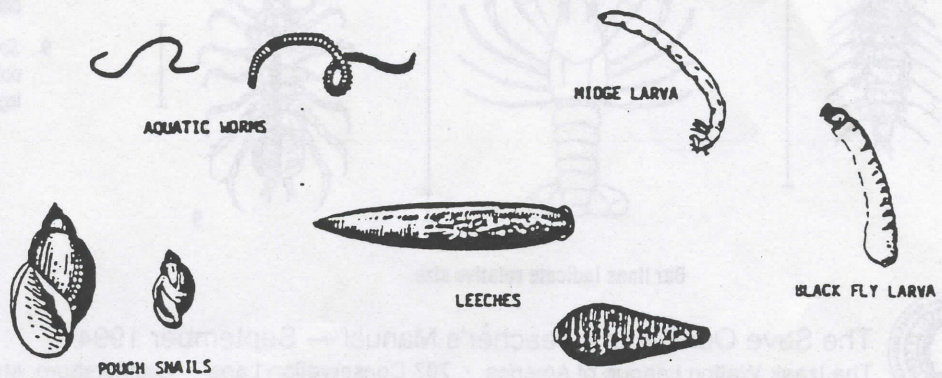
GROUP 1 (These organisms are generally pollution-intolerant. Their dominance generally signifies GOOD WATER QUALITY)



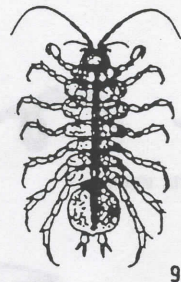
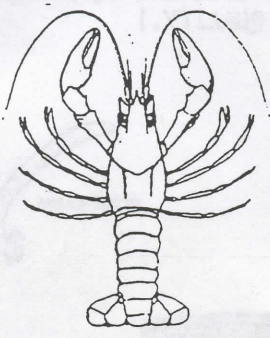
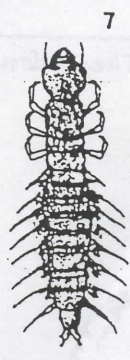
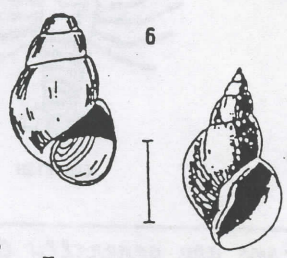
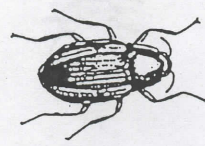
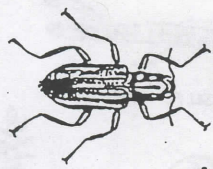
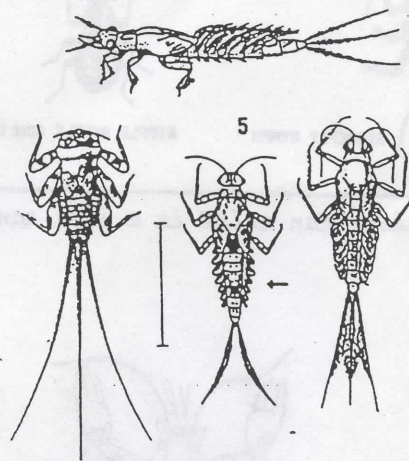
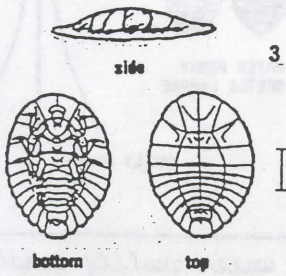
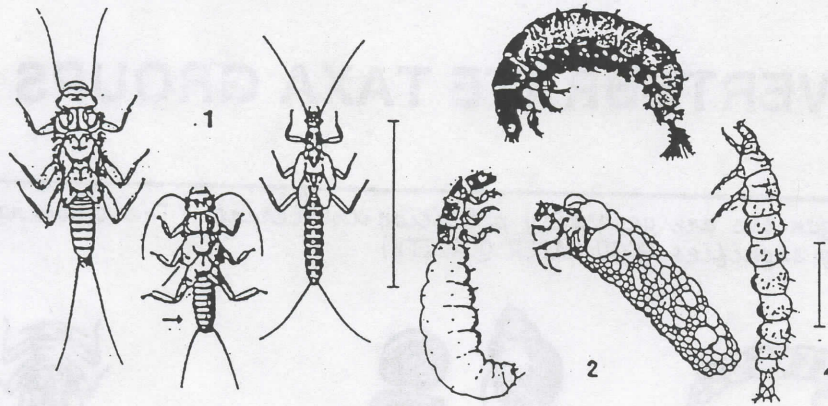
GROUP 2 (These organisms can exist in a wide range of water quality conditions.)



GROUP 3 (These organisms are generally tolerant of pollution. Their dominance usually signifies POOR WATER QUALITY.)



Stream Insects & Crustaceans



GROUP ONE TAXA

Pollution sensitive organisms found in good quality water.

- 1 **Stonefly:** 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.

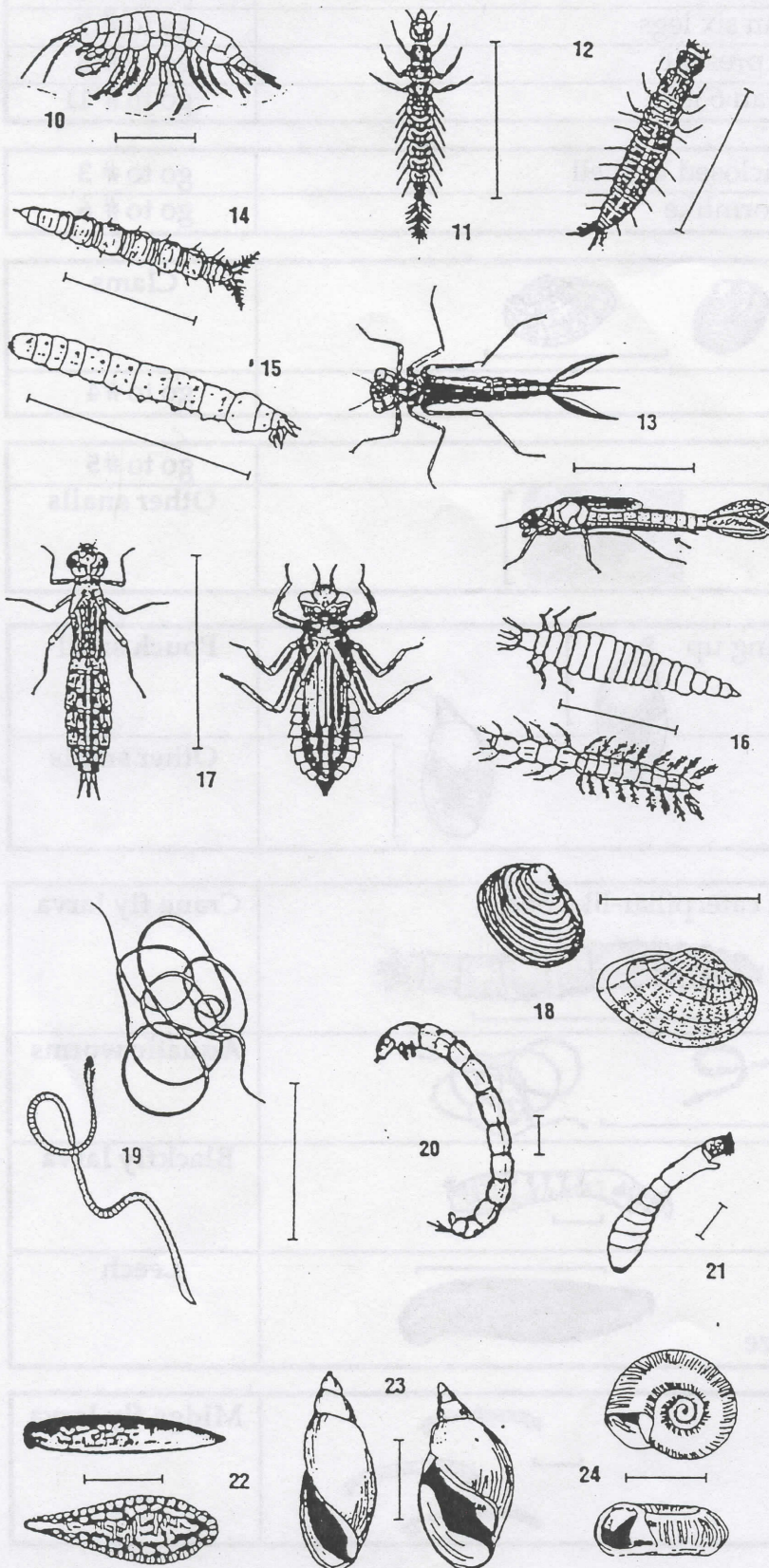
- 8 **Crayfish:** Order Decapoda. Up to 6", 2 large claws, 8 legs, resembles small lobster.
- 9 **Sowbug:** Order Isopoda. 1/4" - 3/4", gray oblong body wider than it is high, more than 6 legs, long antennae.

Bar lines indicate relative size



The Save Our Streams Teacher's Manual — September 1994

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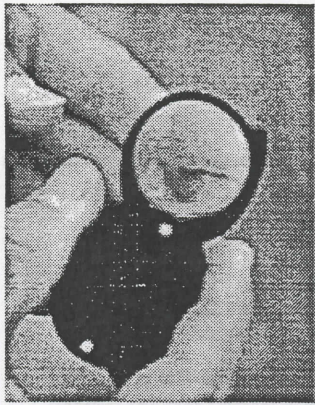
GROUP TWO TAXA continued

- 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 hellgrammite 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 hellgrammite 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



KENTUCKY WATER WATCH MACROINVERTEBRATE IDENTIFICATION KEY

1.	No legs	go to # 2
	Less than six legs	go to # 7
	Six legs present	go to # 8
	More than 6 legs	go to # 11

2.	Body enclosed in shell	go to # 3
	Body wormlike	go to # 6

3.	Shell has two halves		Clams
	Shell all one piece		go to #4

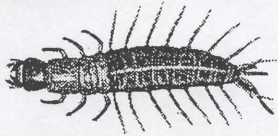

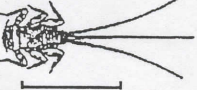
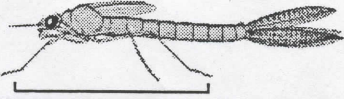
4.	Snails - shell spirals down		go to #5
	shell spirals on itself		Other snails



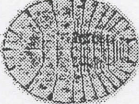

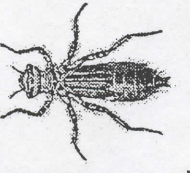
5.	Hold with top of shell pointing up opening on left		Pouch snail
	opening on right		Other snails




6.	Large white, green or brown caterpillar-like body		Crane fly larva
	Thin wormlike body		Aquatic worms
	Body wider at one end Black head Suction cup at one end		Blackfly larva
	Brown body Suction cups at both ends Body stretches to twice its size		Leech

7.	Four tiny legs		Midge fly larva
	Wormlike body		
	Dark head		
	Sometimes red colored		

8.	Tail present	go to # 9
	No tail	go to #10

9.	Two short tails Eight pairs of feelers and gill tufts on lower half of body Large pinching jaws		Dobson fly (hellgrammite)
	Two hairlike tails No gills on lower half of body		Stonefly
	Two or three long hairlike tails Gills on sides of body		Mayfly
	Three short, broad paddle-shaped tails Gills on lower half of body		Damselfly

10.	Gray, green or white soft body May have fluffy gills on body; Lives in stick, rock or leaf case stuck to underside of rocks			Caddisfly
	Flat, saucer- or disc-shaped body Found stuck to rocks			Water penny
	Tiny black beetle Walks on stream bottom			Riffle beetle
	Large body Round to oval abdomen Large eyes			Dragonfly

11.	More than 6 legs Oblong body Resembles terrestrial pillbug		Sowbug
	More than 6 legs Swims sideways Resembles shrimp		Scud
	Eight legs One or two large claws Resembles lobster		Crayfish