

Student Section

Aquatic Invertebrate Survey

Name _____

River or Creek _____ Date _____

KEEP A RECORD OF EACH TYPE OF ORGANISM YOU FIND IN YOUR SEARCH.

- Observe and record the descriptive features of the invertebrate you are investigating.
- Determine if they are tolerant or intolerant to pollution; note the number of each found and its habitat (pool, riffle, glide).
- Note the stage of development of the macroinvertebrate you find: adult, nymph or larva.
- To what functional feeding group does it belong? Shredder, collector, scraper, or predator? Look closely at anatomical adaptations for clues.
- Use the handouts provided by your teacher to help with some of the answers.

COMMON NAME	TOLERANT/INTOLERANT & Habitat Each was Found	STAGE OF DEVELOPMENT	FUNCTIONAL FEEDING GROUP
Total _____	Totals Intolerant: Intolerant habitats: Tolerant: Tolerant habitats:	Totals Nymphs: Larvae: Adults:	Totals Scrapers: Shredders: Collectors: Predators:

Adapted from: *A Look at the Salmon's Environment*, Bonneville Power Administration.

The Case of the Skink River

Catkin Creek, tributary to the meandering and slow Skink River, has a steeply graded watershed at the upper end, and a large wood processing plant and several retail farm and garden chemical stores at the lower end. In August, there was a partial kill of fish and aquatic insects in the Skink River. When investigators arrived at 11:00 a.m., many carp were seen swimming about at the surface, but all other fish seen were dead. Closer observation revealed live black fly larvae and aquatic beetles, but no other macroinvertebrates. The water had been dark green earlier in the week, but had suddenly turned dark and odorous. On the preceding day, a heavy rain fell in the area. The city, whose drinking water comes partially from the river, was concerned that a toxic substance might have washed into the waterway from the chemical companies or the wood processing plant. They hired water specialists to take steps necessary to identify the compound. At 1:00 p.m., the dissolved oxygen was 2 ppm. The river level had risen after the rain and there was a strong odor of rotten eggs.

What initial conclusions can be reached after reading the above scenario?

What steps should an investigator take to learn what happened?

What tests should be taken to ascertain how the aquatic ecosystem was affected (remember what you learned at Kids in the Creek)?

The lab and field work produced these results:

- When the carp were picked up, aneurysms were evident on the gills. In many fish, the gills were chocolate brown instead of bright red.
- Water samples showed high levels of hydrogen sulfide, CO₂, nitrites, and nitrates.
- Blood samples were highly acidic.
- Upper reaches of the tributary had caddisflies and mayflies, while lower areas did not.

What are your final conclusions? Use the back of the page if necessary.