

## Benthic Macroinvertebrates

### *Why Do We Monitor Them?*

**Benthic** means creatures that live at least part of their lives in or on the bottom of a body of water. **Macro** means they are large enough to see without a microscope. And **Invertebrate** means they lack a backbone. So benthic macroinvertebrates are all those aquatic insects, snails, worms, freshwater clams, mussels and crayfish you can see living below the water. Some may be very, very small—but you should be able to see them all without using special equipment. If you need a microscope or magnifying glass to see one you are looking at a **Micro-invertebrate**.

Some are really cool to collect, some are kind of weird looking and some are downright creepy. In an aquatic ecosystem they are a very important part of the food chain. **But biologists are really interested in macroinvertebrates because they can tell us a lot about the health of our rivers, streams and other bodies of water.**

Different species of macroinvertebrates react to pollution in different ways. Some are very sensitive to pollution. If these **pollution-intolerant** species are not found in the water or there are very few of them, it means the water is polluted in some way. This would be something a biologist would want to investigate. He or she would want to find out what is causing the pollution so steps could be taken to clean the water. Every living thing needs clean water in order to live.

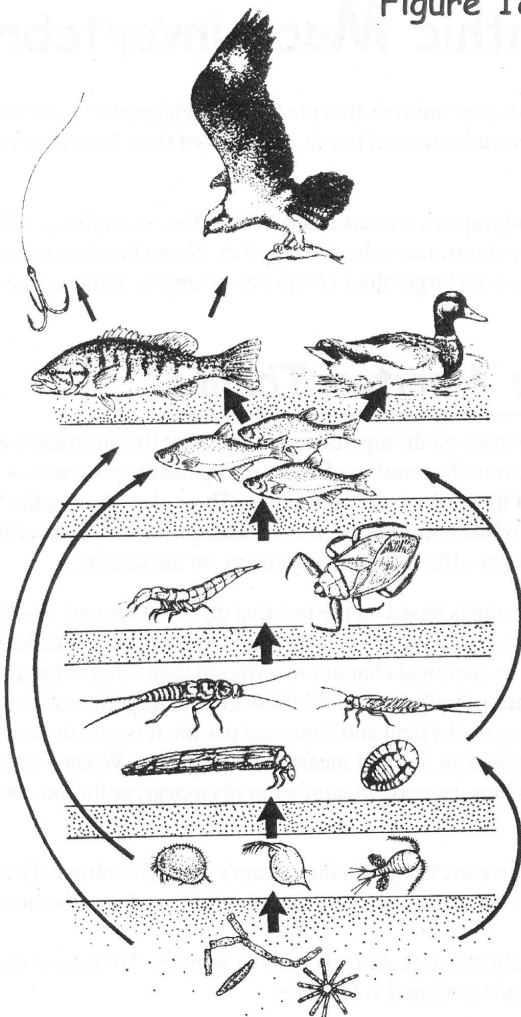
Why can't creatures like turtles or beavers or herons be used to help us test the quality of our river and streams? Let's explore those reasons and learn more about some different macroinvertebrates species.

## Some of the Reasons Macroinvertebrates are used to Study Water Quality:

1. Macroinvertebrates are easy to sample: They are found in pretty large numbers and can be easily collected and identified by most people.
2. Macroinvertebrates cannot easily escape pollution. While fish can swim away, birds can fly away & mammals can walk away.
3. Most invertebrates live most of their lives in the same part of a stream or river, clinging to objects like rocks, plant stems and underwater branches to keep from being swept away in the current. We know where to find them.



Figure 18



from Pond & Stream Safari, Cornell Cooperative Extension

### Aquatic Food Web

Macroinvertebrates (macros) are an important part of the food web, especially for fish.

Many of them feed on algae and bacteria at the lower end of the food web.

Some macros shred and eat leaves that enter the water.

Macros have large populations and play an important role as the “middle-men” in the aquatic food web.

This means they help with the flow of nutrients (or food) in the water.

When macros die and decay, their bodies leave behind nutrients that are re-used by plants and other animals in that same food web!