

## Why are aquatic bugs important?

### THEY'RE PART OF THE FOOD CHAIN:

Aquatic insects are important food for many creatures. Fish face upstream and eat bugs that come floating towards them. They also rise to the surface to eat emerging bugs. Waterfowl pick bugs out of the water with their beaks. Other birds fly above bodies of water and eat adult bugs that have emerged and flown out of the water.

### THEY'RE PART OF A FUNCTIONING ECOSYSTEM:

Aquatic insects keep river and stream ecosystems working well. Some bugs break up larger bits of vegetation, much like worms in soil. Other bugs scrape algae off of rocks to eat. Bugs that burrow into the sediment help speed up the break-down of river-clogging material. There are even bugs that collect plant material in nets they spin.

### THEY TELL YOU ABOUT RIVER HEALTH:

Many aquatic insects are important "indicator species". In other words, some bugs tell us water is clean simply because they live there. An easy way to keep tabs on water quality is to take a look at the types of bugs you can find in a water body. If you find a wide variety of insect types, and if sensitive species like mayflies and stoneflies are present, then your river is probably in pretty good shape. On the other hand, finding just a few types of bugs that are tolerant of pollution might be cause for concern or further study.

## CREDITS:

Insect drawings were created by Ophir students (names in parentheses). Bullet points for each species were written by groups of students as well.

Stonefly, Mayfly, and Caddisfly adult photos are courtesy of the Worley Bugger Fly Co., Yakima, WA.  
<http://www.worleybuggerflyco.com/>

Crane fly adult photo is from "CityBugs", a project of the UC Berkeley College of Natural Resources.  
<http://www.cnr.berkeley.edu/citybugs/>



Interesting facts  
about some important  
aquatic insects of the  
Gallatin River

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THE '04-'05  
5<sup>TH</sup> GRADERS  
OPHIR SCHOOL, BIG SKY

& THE BLUE WATER  
TASK FORCE

A SERVICE LEARNING PROJECT  
(Thanks Sue Barton!)

For more information, please contact:



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## Caddisfly Larva (& house)

Hannah Mauri

Adult



Dylan Gorishek

## Caddisflies:

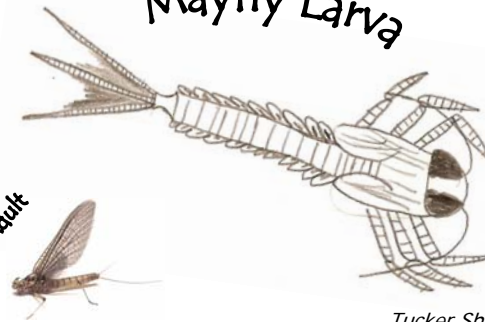
- ◆ Carry their homes around with them
- ◆ Have silk glands in their mouth
- ◆ Use silk to spin nets to catch food or to attach themselves to rocks
- ◆ Important food source for trout

## Mayflies:

- ◆ If it has three tails, it's a mayfly
- ◆ Very sensitive to pollution and easiest bug to use as an indicator of clean water
- ◆ Got their name because they typically emerge from water as adults in May
- ◆ Eat algae and decomposing plant material

## Mayfly Larva

Adult



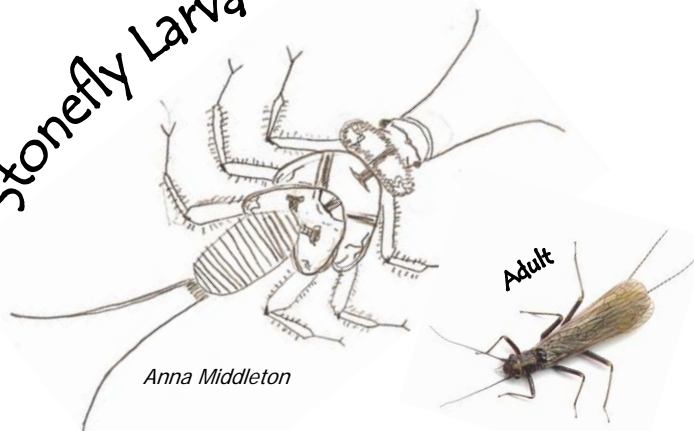
Tucker Shea

## Stoneflies:

- ◆ Most sensitive to pollution
- ◆ Not very abundant and only found in clean, cool riffle habitats
- ◆ Most move around by crawling
- ◆ Do "push-ups" to move water past gills to get more oxygen

## Stonefly Larva

Anna Middleton



Adult

## True Flies:

- ◆ Includes Midges, Crane Flies, Black Flies, Mosquitoes, and Horse Flies
- ◆ Look like maggots (maggots are simply fly larvae on land)
- ◆ Some are sensitive to pollution (Crane Flies) but most are not (Black Flies & Midges)
- ◆ Don't have true legs

## Crane Fly Larva

Adult



Cody Green



## Black Fly Larva

Adult



Maegan Lewey



## Midge Larva

Adult



Cade Cattrell