Bug Picking – Is Your Creek Polluted?

Have you ever noticed the many small animals such as crayfish, snails, and insects living under the rocks, around plant roots, and in the sediment at the bottom of creeks, rivers, ponds, and lakes? Some of these small aquatic animals (benthic invertebrates) are very sensitive to changes in the water and will die if there is not enough water or if the water becomes polluted. By looking for and recognizing the different types of aquatic animals living in aquatic environments, you can begin investigating the ability of those environments to support aquatic animals such as fish and amphibians and whether it is suitable for other human uses, too.

Equipment: safe footwear for wading, forceps (tweezers), magnifiers, Bug Picking Data Sheet, pencils and shallow pans for holding specimens.

Directions:

1. Wade into shallow water, turning over rocks, looking carefully on the under sides of the rocks for aquatic benthic invertebrates. If you are in an area with a sandy or muddy bottom, use a fine mesh net, holding it so that the net is pulled upstream along the bottom, catching leaf litter. Use magnifiers to find the tiny animals in the leaf litter and on the rocks. Use forceps to gently pick up the invertebrates and place them in the shallow pans with water. Replace rocks in their original positions.
2. Begin to divide the invertebrates according to different types or groups based on similar physical features. (Water in the pans will keep them alive while you take data.)
3. On the data sheet, put a tally mark next to the picture that matches each aquatic animal you find. Gently return the aquatic animals to the water.
4. Look at the data you gathered. To determine if your water **might** be polluted, answer these questions or circle the correct response.

    - Did you find animals that are pollution sensitive (Group 1)?

      None 1-3 species More than 3 species

    - Did you find animals that are somewhat sensitive (Group 2)?

      None 1-3 species More than 3 species

    - Did you find animals that are tolerant of pollution (Group 3)?

      None 1-3 species More than 3 species

Conclusions: (Remember that the data you are taking will not give conclusive evidence of clean or polluted water, but might indicate the need for further investigation.)

1. What conclusion can you draw if you found species in Group3, but not in Groups 1 or 2?

2. What conclusion can you draw if you found several different species in each of the groups?

3. What could be happening upstream, on land around the water upstream, or in your present location to affect the water quality where you are sampling?

This water appears to be: Not Polluted OK Polluted