KEY

Student Data Sheet for Mud Creek Case Study:
Biological Measurement of Stream Health

1. Total number of taxa found (add up the right hand column for the entire data sheet):

   Upper Mud Creek: 14 *Lower Mud Creek: 16* *Mud Tributary: 21*

2. Total number of EPT taxa found (add up the right hand column for mayflies, stoneflies, and caddisflies only):

   Upper Mud Creek: 0 *Lower Mud Creek: 4* *Mud Tributary: 13*

1. Why does counting the total number of types macroinvertebrates (total number of taxa) at a site provide information about stream health?

   The total number of taxa tells us about the diversity of organisms that the stream can support.

2. Why does counting the total number of types of mayflies, stoneflies, and caddisflies (total number of EPT taxa) at a site provide information about stream health?

   The total number of EPT taxa tells us about how well the stream can support organisms that are particularly oxygen demanding and pollution intolerant.

3. Based on these biological measurements, how does stream health compare between the three Mud Creek sites?

   These data suggest that the health of Lower Mud Creek is intermediate between Upper Mud Creek and Mud Tributary.

4. What do these results tell us about the ability of Mud Creek to recover from urbanization? Explain your answer.

   Lower Mud Creek is able to support a greater diversity of benthic macroinvertebrates and contains more EPT taxa than Upper Mud Creek, so Mud Creek recovers from urbanization to some extent as it travels through 1 km of protected forest. Mud Creek clearly does not fully recover from urbanization, because total number of taxa and total number of EPT taxa are substantially lower for Lower Mud Creek than for Mud Tributary.