

## **Science of Freshwater Streams: Ecosystems of flow and change**

Jennifer Merrill, Ph.D.

A series of lectures presented by the research team of Stroud Water Research Center (Avondale, PA) will share how streams function and support the life within them. Learn about the dynamic environments in your backyard, from the banks to the bottom. How do the seasons change the habitat? Who lives there? How do we know? Why should we care? Stroud Water Research Center is a global leader in freshwater science. A visit to our field station will be arranged at the conclusion of the class.

There will be no readings assigned for this class but supplemental sources of information will be shared for those interested in learning more.

### **Schedule**

Week 1 – Introduction to Freshwater Science. Freshwaters systems are dynamic, some are ephemeral, many are threatened by pollution and development. Let's explore the environmental context for the science of freshwater systems.

Week 2 – Chemistry of freshwater streams. What does the chemistry of the water tell us about the source, supply, and changes over time?

Week 3 – Who lives here? From the microbes to fish, freshwater inhabitants are unique in their life histories and adaptations.

Week 4 – Mayflies. Why these aquatic insects (macroinvertebrates) are canaries in coal mines. What they tell us about the health of our fresh water.

Week 5 – Watersheds: Fish grow on trees. Why streams are influenced by their surroundings and what that means for our land use.