

Dear Volunteer,

Thanks so much for agreeing to help with our Pennsylvania headwater trout stream study. This project ought to be fun, and it ought to better inform us about the health of headwater streams.

Contact information:

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Brian is working on this project for his senior thesis. He will be off-campus until around the week of May 23 or at the latest May 30. Carl is supervising the thesis, which is a follow-up on another student's thesis.

**Necessary volunteer qualifications:**

- Must possess and display valid **fishing license and trout stamp**.
- **Experienced small-stream brook trout angler** who, under average summer conditions on a small stream with a healthy trout population, regularly catches several brook trout using flies or lures almost every time out fishing for at least an hour or two.
- Willing and able to participate for one or more days during the period **June 1-14, 2005**.
- Able to provide own transportation and fishing gear.
- Willing to record data requested and transmit data back to us.
- Willing to tear oneself away from one stream and move to the next stream in the interest of sampling as many streams as possible.
- Able to read topographic maps well enough to locate a specific stream reach (Note: We expect some telephone or email exchanges with us may be needed to confirm sampling locations.)
- Willingness to consider working with a fishing partner who will share fishing and data recording.

**Characteristics of stream reaches to be sampled:**

- Most streams will flow only through the Tuscarora or Shawangunk geologic formations, which appear not to be able to neutralize acidic atmospheric deposition well.
- We ask that you be very confident that the reach of stream that you fish is the one that we have targeted for the study. In most cases, streams will be located in the Tuscarora formation. We will provide copies of USGS topographic map section with the boundaries of this formation, the stream name, and the targeted stream reach.
- Most of the streams will small. We expect many, but not all, to have no trout.

- Many streams will be on public land. If land is posted, avoid it. If you suspect land is private or are uncomfortable about fishing a certain stream reach, feel free to skip that reach. Some reaches are relatively remote – please stay within your comfort level regarding rugged terrain. Safety first.

### **Sampling approach**

- Avoid very high flow conditions for safety. However, fishing after a good rain, when the stream is somewhat colored and somewhat high, can be very good.
- The exact length of the reach is up to your judgment. The goal is to establish the “fish/no fish” condition. 100 yards may not be enough to establish the “no fish” condition; 300 yards of good water with no strikes is probably enough to establish the “no fish” condition. If you have several strikes or catch a few trout in 100 yards, it would be best to tear yourself away to sample another stream.
- Anglers should not concentrate just on fishing pools, but should also fish the riffles and pocket-water. Many trout live in these places, too, and are often more easily caught in the fast, broken currents than in the smooth, slow waters of the pools.
- If the morning is chilly, fishing in headwater streams can be slower for flyfishers; they should focus sampling after 10-11 am. Those fishing spinners can likely start earlier.
- Use only artificial flies or lures.
- In most cases, one should move on after 2-4 casts in a particular lie. As you wily fishers know, except in deep pools, the brook trout in such infertile streams usually will strike quickly at anything that resembles food unless spooked. Usually, in shallow water after 2-4 casts, either there is no fish present or the fish has been spooked.
- Record data requested on the “Bucknell Geology Headwaters Stream Fish Data Sheet,” which is under development and will be sent later.
- When recording strikes, please designate whether you think the strike might have come from the same fish. Sometimes brookies strike only once, but sometime a single hungry trout will strike several times in succession.
- Please handle fish as little as possible. Please carry and use forceps for gentle release as soon after measuring length as possible. If attempting to measure length will endanger the fish, just estimate the length and focus on releasing the fish instead.

### **Locations of targeted streams**

- A list of target streams with county, US Geological Survey 7.5” topographic quadrangle name, Pennsylvania Gazetteer page and section number is found in the attached file “HWTARGETSTREAMS.”