

COMMUNITY CONSERVATION: STRENGTHENING COMMUNITIES THROUGH LAND CONSERVATION

LAND TRUST FOR THE LITTLE TENNESSEE

Citizen Science Makes a Difference



Photos courtesy of Land Trust for the Little Tennessee

Every year from May to August you'll find volunteers from the Land Trust for the Little Tennessee (LTLT) with nets and waders in the middle of the Little Tennessee River in North Carolina. What began as academic research 25 years ago has now become citizen science biomonitoring programs, reaching over 1,600 individuals annually.

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These innovative programs are part of LTLT's Education and Engagement initiative, which reaches more than 2,500 people annually.

FROM RESEARCH TO COMMUNITY EDUCATION

Beginning in 1990, before the Land Trust for the Little Tennessee existed, Bill McLarney, PhD, now senior scientist and aquatic program specialist at the land trust, received a research grant through the Tennessee Valley Authority to assess stream health in the watershed of the Little Tennessee River.

Today the original aquatic bio-monitoring program has evolved into multiple programs and opportunities for community members to get in and learn about their streams.

"It was research driven; it was 'we need this data.' Now it's turned into such a volunteer and education opportunity," said Citizen Science Program Manager Jason Meador.

CITIZEN SCIENCE

Citizen science, scientific data collected by amateurs or nonprofessional scientists, has unintended benefits.



“Undoubtedly, the greatest impact of LTLT’s Citizen Science programs is that people, both young and old, are learning to appreciate their natural resources. That appreciation will have countless benefits for conservation in the years to come.”

—Sharon Fouts Taylor, Deputy Director, Land Trust for the Little Tennessee

Three times each week volunteers from school-age groups to retirees join LTLT for the morning. Community members sample insects and fish, measure water chemistry and calculate the overall health of the streams.

“We have a lot of education and engagement that blends itself into this citizen science,” said Meador. The LTLT staff members explain each species caught and its role in the ecosystem so volunteers learn as they participate.

STREAM ASSESSMENT

The program closest to citizen science in its truest sense is the Southern Appalachian Stream Assessment Protocol. Developed through a partnership with the University of Georgia, this tool complements the aquatic

biomonitoring program that focuses on the biological aspects of the stream, by concentrating instead on the physical aspects, which can be readily assessed by the average person.

“It is something that we can put into anyone’s hands and it doesn’t require equipment other than a piece of paper and a pencil,” said Meador. “Anyone can go out there and evaluate their stream.”

Community members are asked to assess how much plant life is along the stream banks, what riparian zones look like, what debris is in the area and “whether there is enough food and habitat to support a healthy aquatic community,” Meador explains.

With a catchy new name, “Grade your Stream”—accessed through www.CitiSci.org—will soon allow

community members to directly upload the data they collect. Data from the aquatic biomonitoring already are on the LTLT website, available to all.

KIDS IN THE CREEK

Middle school students from four surrounding counties are getting in the streams as biologists for a day through LTLT’s “Kids in the Creek” program. Although it is not a full-fledged monitoring event, the students collect fish and microvertebrates, measure nitrate and phosphate levels, and do a fish dance to herd fish toward a net.

“We tie it back into the land,” Meador explains. “Even a lot of the adults don’t grasp it: The water quality is directly affected by what you do on your land and whether you practice good stewardship. That is the connection we are trying to make with the kids and with the adults,” said Meador.

DATA TALK

Once the community has helped collect the data, the data help the community by advocating for streams. When the Needmore Tract, described by Meador as the “gemstone of the

region" with the best water quality in the watershed, was going to be sold, making it inaccessible, rural residents, local governments, sportsmen and environmentalists came together to purchase the land for preservation, protection and public use.

"The data showed just how special the section was; it was the most intact section of free-flowing water anywhere around," said Meador.

The group was successful, and today the state of North Carolina owns and protects the tract so it can be enjoyed by all.

Similarly, when in 2006 a proposal to turn a former, and now idle, Fruit of the Loom plant into a wastewater treatment plant came up, LTLT took the data to the county commissioner. The data showed that the previous load coming from the plant was too large, which resulted in a reduction of the allowable input permitted for the new use.

IMPACT ON PEOPLE AND FISH

When asked about the biggest impact of the programs on the community, Meador believes it is the awareness volunteers gain. He said people gain appreciation for where they live.

"When we are out sampling fish, the volunteers realize how what-ever is done on the land impacts the water, not necessarily miles down-stream, but immediately right where they are. What they do there on their property can impact where fish are."

This shift in thinking may be hard to measure, but it surely makes a difference.



BY THE NUMBERS: AQUATIC BIOMONITORING PROGRAM

25 – Years of programming with thousands of volunteer participants

30 – Sites sampled each summer

100 – Individuals reached annually

50% – Approximate percentage of volunteers who are children, counting school groups, summer camps and clubs

FIND MORE

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