Lake Keowee Watershed Monitoring

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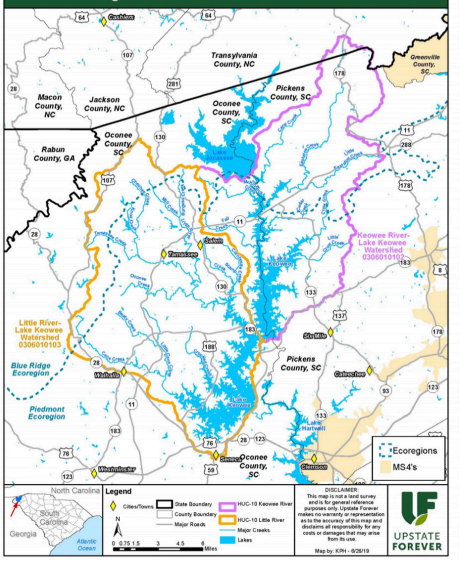
A watershed is an area of land that drains all streams and rainfall to a common outlet, such as a reservoir. The Lake Keowee Watershed, encompassing 184,000 acres, is located in the upper portion of the Savannah River Basin in Oconee and Pickens Counties, South Carolina, with a small northern portion extending into Transylvania County, North Carolina. The watershed drains to Lake Keowee, which serves as a drinking water supply for Greenville Water and Seneca Light & Water, serving over 250,000 residents in Oconee, Pickens, Anderson, Laurens, and Greenville Counties.

Figure 1: Lake Keowee Watersheds



The Watershed-Based Plan (WBP) for the Little River–Lake Keowee and Keowee River–Lake Keowee Watersheds, dated May 2020, addresses nonpoint sources (NPS) of bacteria, nutrients, and sediment pollution and identifies critical areas for protection and restoration. NPS are diffuse sources of pollution that generally result from land runoff, precipitation, drainage, or seepage, which cannot be traced back to a single source. WBPs enhance source water protection planning efforts by evaluating all anticipated potential NPS impacts to waters throughout an entire watershed. Through a variety of strategies (e.g., land protection, agricultural best management practices (BMPs), septic system repairs, and improved riparian buffers) it is possible to efficiently reduce and/or prevent nonpoint source pollutants from running off lands and contaminating waterways and drinking water resources. WBPs outline specific actions and strategies for water quality protections and improvements that will help to ensure sustainable and safe drinking water supplies for local communities.

An important component of monitoring the health of the watershed, and ultimately, Lake Keowee, is volunteer water quality monitoring. Water quality monitoring includes assessing habitat conditions, physical and chemical parameters such as dissolved oxygen (DO), pH, and conductivity, bacteria, and macroinvertebrate diversity, quantity, and habitat in streams that feed into Lake Keowee. As part of this effort, FOLKS actively monitored *E. coli* levels at 11 locations within Cane and Little Cane Creek subwatersheds from 2016–2018. *E. coli* is a bacterium of the intestines of warm-blooded organisms that is used as an indicator of water pollution for disease-causing organisms.

The South Carolina (SC) Adopt-a-Stream (AAS) program is led in partnership by the SC Department of Health and Environmental Control (DHEC) and The Clemson University Center for Watershed Excellence. Water quality data are collected by certified citizen scientist volunteers and submitted into an online database. Data collected by volunteers provide a vital baseline that complements data collected by local and state agencies.

Although screening data collected by volunteers do not meet the rigorous data quality requirements for SCDHEC regulatory decisions, these data are useful for assessing the overall health of the watershed, including identifying areas in need of more detailed monitoring, identifying potential pollution sources, prioritizing areas for implementation of BMPs, and assessing BMP performance.

FOLKS recently purchased a chemical and bacteria monitoring kit through the SC AAS program and four members have been trained and certified for data collection. The team has identified two streams—Cedar Creek and Taylors Branch—for monthly monitoring, which began in September 2020. Stream assessments, data, and photographs are uploaded to the SC AAS database. To date, no indications of water quality issues in these two streams has been observed.

Water monitoring kits are available for use by volunteers through the Clemson Center for Watershed Excellence and FOLKS. FOLKS has recently been informed that through funding by Duke Energy, as many as eight to 10 additional kits will be purchased and educational outreach programs will be scheduled to inform the community of volunteer opportunities and how to become a certified volunteer. FOLKS encourages you to become a citizen scientist and adopt a stream for monitoring; your data will have a direct impact to enhance the overall water quality of Lake Keowee.

For more information on the SC AAS program, visit https://www.clemson.edu/public/water/watershed/scaas/index.html

Sources:

Watershed-Based Plan for the Little River–Lake Keowee and Keowee River–Lake Keowee Watersheds, May 2020, available at: https://scdhec.gov/sites/default/files/media/document/WBP_for_Lake_Keowee_Watersheds_2020.pdf

SC Adopt-A-Stream Volunteer Freshwater Monitoring Handbook, Edition 2, April 2019, available at: https://www.clemson.edu/public/water/watershed/scaas/materials.html ❖