

# A Bloomin' Problem

Algal blooms are not the delicate flowers their name might suggest. In fact, they are just the opposite. Algal blooms can contain cyanobacteria, which not only turns water green, but may release a toxin that contaminates water and causes skin irritation. Blooms stretch great distances; a toxic algal bloom in 2015 covered more than 650 miles of the Ohio River.

Bill Ford, University of Kentucky assistant professor of bioenvironmental engineering, in conjunction with professors at UK, Murray State University, and Marshall University in West Virginia, is studying ways to prevent the formation of these harmful blooms. The research is funded by a \$4 million National Science Foundation grant.

Ford has built sensor platforms and models to determine the role of nutrient runoff in bloom development. He is particularly focused on watersheds spanning from Central Kentucky to West Virginia that ultimately flow into the Ohio River.

He hopes to understand how nutrient runoff varies in different types of landscapes and in urban and agricultural areas with the changing of the seasons and with different amounts of rainfall.

“Currently, water treatment plants are able to remove the harmful



Photo provided by Bill Ford

Bill Ford teaches students at his study site in West Virginia.

bacteria and toxins using treatment techniques such as activated carbon additions; however, these procedures are costly,” Ford said. “Instead of placing the burden on the water treatment plants and consumers, we are building toward an understanding of how these systems behave and, ultimately, towards remediation strategies that limit bloom formation.”

In addition to water quality research, the project is educating local young people throughout Kentucky and West Virginia about the work and inviting them to participate in monitoring and undergraduate research experiences. The hope is to spur their interest in their local environment so they pursue careers in water-related fields.

—Katie Pratt

## Tough Turf Talk

Because Kentucky is situated between the North and the South, with hot summers and cool winters, no single grass is suitable for all situations and locations. The majority of the turfgrasses that are appropriate for use here are cool-season grasses.

Tall fescue is an excellent choice for home lawns as well as utility areas and golf course roughs. It has excellent heat and drought tolerances compared to other cool-season grasses. It will also tolerate moderate amounts of shade. Kentucky bluegrass, on the other hand, prefers full sun. While it is frequently used as a turfgrass in Kentucky, it does not possess tall fescue's heat tolerance and

struggles during a hot, dry summer if irrigation is not provided.

Perennial ryegrass is occasionally used on lawns, golf courses, and athletic fields in Kentucky. Due to the shiny appearance of this species, it stripes very easily when mowed. Because of that, as well as its wear tolerance and rapid germination rate, it is sometimes used on athletic fields.

For more information about turfgrasses of Kentucky, visit <http://www2.ca.uky.edu/agcomm/pubs/AGR/AGR216/AGR216.pdf>

—Gregg Munshaw