November 17, 2026, 12 p.m. ET, 11 a.m. CT, 10 a.m. MT, 9 a.m. PT

Beyond Deer Exclusion: 25 years of Integrative Research on Natives, Fungal Mutualists, Invasive Plants Responses in Trillium Trail Forest

In addition to long-term demographic and physiological data collected in deer exclusion/access and invasive removal treatments, Dr. Kalisz and collaborators have conducted complementary research exploring possible mechanisms underlying responses of native plant species to abundant deer and invasion by garlic mustard. In a common garden study, they found that garlic mustard reduced AM fungal (AM fungi) root colonization and changed AM fungal community composition within mycorrhizal species roots, that in turn depressed the nutritional function of the plant-AM fungal mutualism. Further, individual native plants from our long-term study were collected and grown in growth chambers. From this N15 labeling study, we found that garlic mustard reduces the nutritional benefit of AM fungi to native plants, which in turn reduces photosynthetic capacity and whole-plant photosynthesis. These and results from other studies that will be presented help to explain the declines in native plants in forest understories and shifts in forest communities.

Susan Kalisz, Ph.D., Research Professor, Department of Ecology & Evolutionary Biology, University of Tennessee Knoxville

Susan Kalisz received her Bachelor of Science degree in Botany from the University of Michigan and her master's and Ph.D. degrees in Ecology and Evolutionary Biology from the University of Chicago. Her research focuses on the evolution and ecology of plants, including stressors that influence native plant species' population dynamics, and the effects of overabundant deer and exotic invasion on the composition of understory plant communities. Over her career Susan was a faculty member at Michigan State University, the University of Pittsburgh, and the University of Tennessee, Knoxville (UTK), where she served as Professor and Department Head of Ecology and Evolutionary Biology from 2015-2022. She is currently a Research Professor at UTK and continues her long-term research at Trillium Trail. Susan is an elected Member of the American

Academy of Arts and Sciences, and an elected Fellow of the American Association for the Advancement of Science. She served as President of The American Society of Naturalists, a Co-Leader of two working groups at National Evolution Synthesis Center at Duke University, Editor of the American Naturalist, Program Director in the Division of Environmental Biology at the National Science Foundation, and on the Editorial Boards of the journals Evolution, The American Naturalist and Journal of Ecology.