



Monitoring the Spread of Chinese Tallow Tree

This past spring, I visited Sapelo Island, a barrier island off the Georgia coast, with Dr. Evans's Coastal Ecology course. The purpose of this course was to practice field work techniques, apply concepts we'd learned in the classroom back at Sewanee in the field at Sapelo, and conduct independent research. For my project, I decided to follow up on some of Dr. Evans's research on the spread of the invasive Chinese tallow tree (*Triadica sebifera*) in the damp troughs of dunes called swales.

Historically, the inner dunes of Sapelo's coastline were populated predominantly by wax myrtle, (*Morella cerifera*) but in the 1970s the invasive Chinese tallow had spread up the coast from where it was introduced in Texas and become part of the Sapelo coastal ecosystem. Dr. Evans had conducted surveys to map the species composition of these dunes in previous years to track the spread of the invasive tallow and had found that hurricanes in 2016 and 2017 had inundated the dunes with salt water and exacerbated the spread of tallow.

I inherited Dr. Evans's data and he oversaw a follow-up survey that I conducted. By comparing the two data sets, we were able to verify that tallow is spreading, and it appears to be due to an increase

in the frequency of disturbances by hurricanes and saltwater overwash. This past September, Hurricane Dorian, a category 3 hurricane, hit Sapelo, possibly affecting the spread of tallow. I hope to revisit the island this coming spring.

This summer, I encountered tallow trees again, this time in their native range in China. I was there as part of a



research group studying water pollution and environmental policy in Chinese civil society. I came across tallow stands while we were visiting a restored wetland in the city of Wuxi in Jiangsu province. A friend in the group pointed them out to me and referred to them as "popcorn trees," a common name I was unfamiliar with. The name is apparently very common in Texas, Alabama, and Mississippi where these trees are more prevalent. The epithet "popcorn tree" comes from the seed pods of Tallow that burst open radially into three parts,

exposing clusters of fleshy white seeds that resemble popped popcorn. Other characteristic features of tallow include leaves that range from cordate (heart-shaped) to ovate and clusters of white to yellow inflorescences that bloom in mid-spring.

It's pretty rare to be able to see an invasive exotic species in its native range, so I was excited to come across tallow when in China. I hope that by observing it in its natural state I will be able to gain insight into what role tallow will play in American coastal ecosystems as I continue my research. The role of invasive species in the American landscape is growing, and without an exhaustive management plan that involves countrywide removal of them over several years, these invasives are here to stay. I highly doubt that such a movement to remove these species will ever occur, which is all the more reason to research and understand how they will play a role in the American ecosystem in the future.

—George Burruss, C'21,
Undergraduate herbarium fellow, majoring in biology
with a concentration in ecology/biodiversity

All Things Bright and Beautiful Exhibit

For the third consecutive year, the Sewanee Herbarium's *All Things Bright and Beautiful* exhibit ushers in the University's spring semester. On display in Stirling's Coffee House, the show celebrates this spring's 50th



anniversary of Earth Day. The display includes botanical illustrations by Dr. Jon Evans's Plant Evolution and Systematics class and works by the herbarium-sponsored nature journaling group.

The students' precise botanical illustrations are the result of careful observation of herbarium specimens, combined with research on the plants themselves—their ecology, morphology, interactions with humans, and so forth. The nature journalers' more informal works are displayed with the quotations from poets, artists, and environmentalists that inspired them.

In Sewanee, as around the world, Earth Day, April 22, 2020, will be

an action day in which everyone can participate. This year, we are more aware than ever of the beauty and fragility of this planet on which we and all other species—and our descendants—depend. As we look forward to celebrating 50 years of Earth Day, this exhibit is a reminder of our connections with the natural world around us. The exhibit, which includes some pieces that are for sale, will be on display until Feb. 15. Stirling's is located at 241 Georgia Ave. in Sewanee.

—Mary Priestley

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Winter Calendar of Events

Greenhouse Tour

Sun. Feb. 23, 1 p.m., Woods Labs Greenhouse, Jon Evans

The greenhouse has received a fabulous collection of plants. It's like a conservatory now! Professor Jon Evans will lead a tour and give the fascinating history of some of the specimens. Please email Yolande Gottfried at ygottfri@sewanee.edu so we can have some idea of numbers, but come anyway even if you haven't emailed.

Earth Day Posters

Sat., Feb. 29, Spencer Hall, Room 173, Mary Priestley

Spend some time this "extra" day doing good for the Earth! Drop in any time 9:30 a.m. to noon. Plants have been taking care of us people for as long as we've been around, and it's time to say thanks! The herbarium is sponsoring a family-friendly poster-making event with the theme of "Thank You, Plants!" for an exhibit at Stirling's Coffee House honoring the 50th anniversary of Earth Day. We will have some materials on hand, but if you have any cool ones to share, please bring.

All times are CST or CDT. Wear appropriate shoes on all of these walks. Risks involved in hiking include physical exertion, rough terrain, forces of nature, and other hazards not present in everyday life. Picking flowers and digging plants are prohibited in all of the above-mentioned natural areas.

For more information on these or other Sewanee Herbarium events, please contact Yolande Gottfried at the Herbarium (931.598.3346) or by email at ygottfri@sewanee.edu.

Botanical Illustration

Sat., March 7, 9:30 a.m.–noon, Spencer Hall, Room 173, Mary Priestley

Very little drawing is involved in this easy technique. Participants will photocopy then trace a herbarium specimen of their choice, and use information from published sources to modify and enhance the image before transferring it to acid-free paper and going over it with ink and adding optional color. This newsletter includes some examples. Space is limited. Email mpriestley0150@gmail.com with questions or to reserve a space and so Mary can have the materials ready for each participant.

Nature Journaling

A group meets for nature journaling Thursday mornings 9–11. Come try it out—stick with it if you like. Bring an unlined journal (or a few sheets of unlined paper) and a pen or pencil. No experience needed. Meet in Woods Labs, Room G-10.

THE SEWANEE PLANT PRESS

The Sewanee Herbarium
Dr. Jon Evans, Director
Department of Biology
The University of the South
735 University Avenue
Sewanee, TN 37383

WEBSITE

sewanee.edu/offices/herbarium

EDITOR

Mary Priestley
mpriestley0150@gmail.com

CONTRIBUTOR

George Burruss
burrugw0@sewanee.edu

CALENDAR

Yolande Gottfried
ygottfri@sewanee.edu

COMPOSITOR

Tammy Elliott

Botanical illustrations by Emmy Feitler, Lillian Fulgham, Reed Middendorf, and Elyse Harris. Drawings of Chinese tallow tree by Mary Priestley.

HERBARIUM PUBLICATIONS

Fiery Gizzard: Voices from the Wilderness
What If Trees Could Walk?
Trail Guide to Shakerag Hollow
Sewanee Wildflowers in Watercolor

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Heard of Chinese Tallow Tree?

Chinese tallow tree, *Triadica sebifera*, the subject of George Burruss's ongoing research (see p. 1) piqued my curiosity. I have never seen it. The tree was imported to the United States in the late 18th century, possibly by Benjamin Franklin, but more probably by French botanist André Michaux, as a source of oil for use in making soap. Currently its range spreads from the Carolinas to Texas and California.

As is true of too many invasives, this is a pretty tree and popular in home landscaping. The broad leaves turn bright red in the fall. In the spring, separate male and female flowers develop on yellow-green catkins, with a few female flowers at the base of each catkin, and male flowers covering the rest. The fruit is a capsule, which splits and falls away, exposing three or four waxy white seeds. One tree can produce up to 100,000 seeds, which stay on the tree through winter, giving the plant one of its common names, "popcorn tree." Birds disperse the seeds, as do waterways and floods, as Burruss describes. They can remain viable for up to five years.

Chinese tallow has all the hallmarks of an invasive plant. Besides being a prolific producer of viable seeds, the plant is resistant to herbivory and disease, uses its long taproot to utilize

scarce water sources, and sprouts easily from stumps. This aggressive tree has replaced several species of native plants throughout its range, including the wax myrtle mentioned in Burruss's article.

Tennessee State Natural Heritage Botanist Todd Crabtree has seen it only once so far in this state: planted next door by a previous neighbor. He hasn't noticed it since the current neighbor "cleared out the fence row. ... It could be lurking in there as a small plant. So ... it will persist if planted in middle Tennessee but under present climate will not likely produce fruit." The University of Tennessee Herbarium website shows no record of it in Tennessee ... yet.

—Mary Priestley

