FLORIDA NATIVE PLANT SOCIETY
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Florida Native Plant Society publishes research on Endangered Florida Torreya Tree

Work documenting the condition of 40 trees on public land is just a subset of our conservation work

Tallahassee, FL, July 9, 2026.-- We are pleased to announce that our collaborative research with the Atlanta Botanical Garden (ABG) on Florida Torreya (*Torreya taxifolia*) recovery from Hurricane Michael has been published in the American Journal of Botany.

The Florida Torreya, locally known as just Torreya, is one of the rarest and most imperiled trees in the world, endemic to a small region of the Upper Apalachicola River in the central Florida Panhandle and South Georgia. Once common in the mid-story, only scattered trees remain in the form of root sprouts due to an introduced systemic fungal pathogen, *Fusarium torreyae*. Torreya saplings that have resprouted from persistent root systems still exist in the wild, but remain infected, and are prone to canker outbreaks if stressed. Deer rubbing, extreme heat, drought, and other stressors the trees experience in the wild, give the fungus an opportunity to flourish, resulting in die-back of above ground growth, or complete mortality. Due to the many stressors our wild trees are facing, wild trees typically decline before they reach sexual maturity, meaning there is no sustained reproduction in the wild.

This project followed forty Florida Torreya trees for five years following Hurricane Michael's landfall in the panhandle in October 2018. ABG and FNPS visited each of the forty trees yearly to record measurements and data on the trees and their habitat. The work addressed an important question: how does one of North America's rarest conifers respond to a major hurricane? Because so few wild Torreya remain, every individual tree is important, and understanding how these rare trees respond to major disturbances is critical for their conservation.

One encouraging finding was that many surviving Torreya trees showed increased branch growth after the hurricane. When neighboring trees were knocked down, some Torreya appeared to benefit from the temporary reduction in competition and greater access to light. At the same time, the study reminds us that these short-term gains do not eliminate the species' larger challenges or continued overall mortality.

Loss of canopy results in warmer conditions in their typically cooler ravine habitat, which is a threat to Florida Torreya. Torreya is a glacial relict, which relies on the cool microclimate created by these densely canopied steephead ravines. Warmer conditions created by loss of canopy were associated with increased disease symptoms, which are correlated to higher mortality. As forests recover after the storm, new competitors such as vines and fast-growing pioneer species may also reduce the temporary reduction in competition created by the hurricane. Many trees we visited had been completely swallowed by vines and dense new growth.

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Florida Torreya appears capable of benefiting from small-scale forest disturbance after hurricanes, but those gains are temporary, and do not overcome the larger threats of disease, climate change, invasive species, and long-term habitat degradation.

The Florida Native Plant Society recognized the plight of the Torreya in early 2018. Our Magnolia Chapter, in partnership with the Friends of Torreya State Park, formed TorreyaKeepers to inventory trees on private ravines. In 2019 we formally took the program over as one of our core conservation projects and hired Lilly Anderson-Messec as TorreyaKeepers coordinator to continue this critical work.

FNPS has led and collaborated on many other projects aiding the conservation of this endangered tree.

In 2018, the vast majority of documented trees were on publicly owned land. Only approximately 200 Florida Torreya trees had been documented on privately owned land; approximately 15% of the known wild population at the time. Lilly led surveys covering over 2,000 acres of privately owned land from 2019 to 2025 to find undocumented Torreya trees. We have now more than tripled the documented population of Florida Torreya on private lands to 614. Thus, more trees are now known on private land than public lands.

Each new tree was given a metal identification at its base, with a unique identification number. That number ties it to its exact location in the ABG database, and the data and samples we collect at each tree. DNA samples were taken from every tree to aid in the genetic sequencing of the species done by ABG. Cuttings were carefully taken from healthy trees and sent to the ABG ex-situ conservation nursery, which now houses 428 genetically distinct living Torreya specimens. This makes Torreya one of the best represented plant species in ex-situ conservation collections on the east coast.

On these surveys, we also documented more than 100 locations of the equally rare *Taxus floridana*, Florida Yew, as well as many other rare and listed plant species. Rare plant locations, as well as locations of documented invasive species, were shared with the landowners. Lilly worked with landowners to advise them on best management practices for protecting their Torreya and other rare plants, as well as management of invasive species found on their property.

FNPS also set up, and continues to monitor, 22 Torreya seed trial sites on three separate properties, as well as a few restoration outplantings of Torreya saplings on privately owned properties within its native range. While all current wild populations only occur on the eastern side of the Apalachicola River, there was one historic site on the western side of the river, which had been extirpated. FNPS worked with the private landowner of this site and reintroduced several trees to the exact location they once occurred on.

We collaborated with ABG, researchers at the University of Florida, and USDA Forest Pathology in collecting hundreds of fungal samples of both the pathogen implicated in the decline of Florida Torreya (*Fusarium torreyae*) as well as a novel pathogen, *Parvodontia relampaga*, that we found in our surveys.

The Florida Native Plant Society is committed to the recovery of this iconic Florida species. Unfortunately, cuts to federal Endangered Species Recovery Plan funding mean we can no longer rely on federal grants to fund this effort. To support this important work, become a sustaining member of the Florida Native Plant Society at fnps.org/join or donate to our Conservation fund at https://fnps.app.neoncrm.com/forms/donate-to-our-conservation-fund.

Loy, X., A. Smith, L. Anderson-Messec, I. Sabo, J. Evans, J. Stockert, L. Blackmore, and E. E. D. Coffey. 2026. Hurricane disturbance and local temperature are associated with growth and disease patterns in the endangeredFlorida torreya. American Journal of Botany 113:e70222. https://doi.org/10.1002/ajb2.70222

The Florida Native Plant Society (FNPS) preserves, conserves and restores the native plants and native plant communities of Florida. Since the 1980s, this organization has been advocating for increased protection for threatened and endangered plants and plant communities. FNPS encourages the planting of native plants in home, commercial, and institutional landscapes. It is a 501(c)(3) nonprofit membership organization with over 5,000 members in 33 chapters statewide. To learn more, please visit us at https://www.fnps.org//

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