

The Outside Story

Smooth Slender Crabgrass: A Quiet Engineer to Remember

By Patrick Kuklinski

For all the adventures I've had in New Hampshire, I've spent few of them looking at the ground. The plants I pay the most attention to are closest to eye level, such as the gorgeous draping branches of spruce trees and the pale bark of white birches. However, when I started a job as a fishways operator at Amoskeag Fishways, I did a deep dive into the flora and fauna of the state and learned about a fascinating little plant: smooth slender crabgrass (*Digitaria laeviglumis*).

Smooth slender crabgrass is often described as “drab,” and I can't say that I disagree, though I've never seen a living specimen myself; the species was officially declared extinct by the New Hampshire Natural Heritage Bureau in 2022. The only representations of its time on Earth are the preserved specimens housed in herbaria; the final collection was made in 1931.

New Hampshire is home to many native grasses, so why did this one diminutive plant capture my attention? Endemic to Rock Rimmon Park in Manchester, New Hampshire, this annual grass once occupied rocky ledges and cliffs, its fibrous roots anchored in crevices and cracks. Over time, soil degradation and soil erosion led to a decline in the population. Ironically, the later efforts to learn more about this plant may have also played a role in its extinction; heavy collection of smooth slender crabgrass specimens may have depleted its overall population. With long, spindly green stems branching off into tufts of thin green leaves, this crabgrass was mostly viewed as a weed, but beauty is in the eye of the beholder.

It's unclear why the species specifically thrived in Rock Rimmon Park and nowhere else, especially given that crabgrasses typically have a high rate of seed dispersal. Now declared globally extinct, smooth slender crabgrass still leaves behind questions about its role in the ecosystem. The loss of one small species may seem unimportant, but I asked the New Hampshire Division of Forests and Lands' Natural Heritage Bureau for more information on smooth slender crabgrass's ecological role. “This little tufted species likely helped



stitch together tiny pockets of soil with its fibrous roots, slowing down erosion on exposed rock where every bit of soil counts. Its modest growth and seed production would have contributed small but meaningful food to insects, birds, and small mammals. Its root secretions and leaf litter fed microbial and fungal associates, supporting nutrient cycles in a place where nutrients don't come easy," a spokesperson said. "In a habitat defined by harsh conditions – little soil, harsh sun, and frequent disturbance – even a humble grass can act as a quiet engineer, holding together small patches of stability in an otherwise craggy, stressful environment."

Despite the loss of this "quiet engineer," there are other threatened plants that still grace the Northeast and need protection. Native Plant Trust notes that of 389 imperiled species across New England, 62 are globally rare, and 10 occur nowhere else on Earth.

"Conservation is ultimately a local challenge, as most of our rarest plants have extremely narrow geographic distributions and should be sources of pride for the states or regions in which they are found," said Wes Knapp, CEO of the Center for Plant Conservation. "There is hope and time to intervene now on behalf of thousands of plants that are critically imperiled or imperiled and facing extinction. There is rarely a functional reason for a plant species to become extinct; it is merely a challenge of funding or will to act."

Though it is too late for smooth slender crabgrass, it's important not to let these losses push us to lose hope. Instead, we must push to fight harder to conserve the habitats and species we treasure. The Northeast is a hub of gorgeous flora and fauna, some of which can't be found anywhere else in the world. I think every plant and animal, no matter how homely or seemingly unremarkable, is a neighbor whose presence should be treasured.

Patrick Kuklinski is a longtime writer and naturalist from Durham, North Carolina who has spent time living in, loving, and exploring New Hampshire. Illustration by Adelaide Murphy Tyrol. The Outside Story is assigned and edited by Northern Woodlands magazine and sponsored by the Wellborn Ecology Fund of New Hampshire Charitable Foundation: nhcf.org.

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PO Box 270, Lyme, New Hampshire 03768
mail@northernwoodlands.org / 603-795-0660
www.northernwoodlands.org

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