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Japanese knotweed, which can grow to 5 feet tall, has found fertile ground along the Muddy River in the Back Bay Fens. Alexandra Almonacid walked by a thatch of the weed. (Globe Staff Photo / Justine Hunt)

These weeds won't be uprooted

The Boston Globe

A bamboo-like perennial is winning a race for space in local parks

By Cristina Silva, Globe Correspondent | July 12, 2005

If you try to pull it out, it can splinter and spread. If you mow it, it grows back within days. If you spray it with plant poison, the herbicide can harm the soil and damage other plant species.

It's the weed that cannot be whacked, and it's spreading through historic parks in Boston and Brookline.

Japanese knotweed, a bamboo-like perennial that forms dense thickets, has been in Massachusetts and much of North America since the early 1900s, when it was first brought here as a decorative plant. Now, officials are worried that the invasive species is pushing out native plants and is altering the original landscape of the Emerald Necklace, Boston's beloved park system created by famed landscape architect Frederick Law Olmsted.

Erin Chute Gallentine, the Brookline parks director, calls knotweed "the terminator of weeds," adding that "it keeps coming back."

The weed has become so troublesome that some Beacon Hill lawmakers are calling for new state aid to battle its spread.

Knotweed can now be found in areas where native plants once thrived, along the edges of the Arnold Arboretum in Jamaica Plain, in parts of the woodland in Franklin Park, near Jamaica Pond and the Riverway, in the Back Bay Fens, and in Olmsted Park in Brookline. Among the native shrubs and flowers that have been displaced by knotweed, said Chute Gallentine, are rhododendrons and beech trees.

She said her department has tried varied approaches to attack the weed, including mowing, uprooting, seeding over it, and manually applying herbicide to each plant stem. But the plant still grows rampant, especially in parts of Olmsted Park, a stretch of green near the Boston-Brookline line just south of Route 9.

"We are trying to re-create the historical landscape that Olmsted designed so meticulously," Chute Gallentine said. "So when other plants come in and change that intended landscape, it's a problem."

Invasive plants can weaken biological diversity and transform the look of the land.

Japanese knotweed, or Fallopia japonica, is one of the more nightmarish members of this group, botanists say, because it is hard to get rid of and it spreads quickly.

Even a piece of stem can start a colony, and the roots can spread 7 feet into the ground, while the plants grow as high as 5 feet tall.

Knotweed thrives in areas that have been disturbed, such as land used by people, who trample plant beds and create trails, causing native plants to wither, said Peter Del Tredici, a senior research scientist at the Arnold Arboretum.

"These plants aren't intrinsically evil," Del Tredici said. "They are just taking advantage of the disturbance humans create."

Park officials started listing knotweed as a problem plant about 20 years ago, but the movement to ban the weed gained momentum only about five years ago, Del Tredici said. "Before, people used to see weeds as harmless," he said. "Now, there is a real awareness about the effects they have on the environment."

Many park officials and conservationists are struggling to find a way to eradicate or contain knotweed growth in the Emerald Necklace. While some advise constant mowing of the weed and careful disposal of the stems, such care requires staffing that the parks department lacks, officials said.

Margaret Dyson, director of historic parks in Boston, says that mowing hasn't wiped out the weed.

"We haven't found a technique that is environmentally sensitive, cost-effective, and just plain effective," she said. "We experiment with different things in different places, but we haven't found an answer yet."

Though herbicide has been touted as the most effective way of getting rid of knotweed, park officials said it is too expensive and can be toxic to soil and other plants. Boston stopped using herbicide about three years ago, Dyson said. Brookline uses it sparingly, Chute Gallentine said.

Because of limited staff, both Boston and Brookline depend on volunteers to maintain the parks. But that poses its own challenge: To the untrained eye, knotweed can be hard to identify. With its heart-shaped leaves and small, ivory flowers, it looks like an attractive shrub.

Parks around the nation face the same problem. Central Park and Riverside Park in New York City are clogged with the weed, and city officials have yet to come up with a successful method of eradication. Seattle and parts of Oregon report their own invasions.

In Boston, the issue is especially pressing because of the historical significance of the Emerald Necklace, park officials say.

Olmsted, who is considered by many as the father of landscape architecture, created the six parks, now known as the necklace, in the late 19th century.

The parks were designed to be quiet refuges from urban life. Olmsted's master plans provided for greenery and open spaces, rivers and ponds, and an array of diverse trees, shrubs, flowers, and wildlife habitat.

Like many urban parks across the nation, the Emerald Necklace was overrun by growth over the years, because plants and trees were not regularly cared for. After New York began restoring Central Park in 1980, a park revitalization movement took hold.

Boston was a little slow to catch the trend. The private Emerald Necklace Conservancy was created in 2000. Working with park departments in Brookline and Boston, the Conservancy tries to restore the park to Olmsted's original plan.

Overwhelmed park officials are hoping for state help. Several state legislators, including Senator Susan C. Fargo of Lincoln, have filed bills that would create a grant program to combat invasive species, said Del Tredici, who worked with other scientists to develop a list of harmful plants for the state.

The program would relieve residents, as well as parks, since knotweed has also invaded driveways and yards, particularly in Jamaica Plain and Roxbury. ■

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