

Invasive Species Profile: Japanese Stiltgrass (*Microstegium vimineum*)

By Greg Sykes (greg@grsykes.com)

Native Range: throughout eastern Asia, Malaysia, and parts of India

U.S. Introduction: 1919 near Knoxville, TN

Life Cycle: annual

Means of Spreading: seeds

Commercially Available: no

Control Method: hand-pull is the easiest; herbicidal treatments may be used for large infestations

Good Alternative Native Species (gardens and woodlands): for emerald greenery, use New York fern (*Thelypteris noveboracensis*), sensitive fern (*Onoclea sensibilis*), netted chain fern (*Woodwardia areolata*), Pennsylvania sedge (*Carex pensylvanica*), or deer-tongue (*Dichanthelium clandestinum*)

Good Alternative Native Species (lawns): buffalo grass (*Buchloe dactyloides*)

Comments: Whether you are a gardener, landscaper, environmentalist, farmer, or a land owner cultivating nothing but lawn, Japanese stiltgrass is one species *everybody* can rally around eliminating. Nobody invited this plant—it came to America as dried packing material for Asian porcelain. A hundred years ago, shipments were packed in wooden crates with gaps between the slats. Loaded onto rail cars, wind tore between the slats, spreading the dried grass and its seeds throughout the new environment where it took root. Any packing material dumped into the environment further contributed to this alien's invasion. Now, Japanese stiltgrass grows in diverse habitats, from deep shade to sunny lawns—from moist, rich soil to poor clay. It is less abundant in extreme habitats, such as parched-dry regions or semi-aquatic zones but will proliferate along stream banks. This annual plant has a huge mid-spring emergence with additional seeds germinating throughout the growing season. The seedlings look like crabgrass except crabgrass has a bluish hue compared to stiltgrass' chartreuse foliage. Stiltgrass gets its name because the mature plant's stems extend several inches before coming to a bend or joint; this combination resembles stilts. Its appearance also reminds some people of bamboo, which is perfectly reasonable since bamboo is a gigantic grass. At summer's end, Japanese stiltgrass fruits; by late October, the weed is finished producing seeds and dies shortly afterward. The seeds can last at least three years in the ground.

One might think that this life cycle sounds like any other annual species—and it does. The problems with Japanese stiltgrass are high proliferation, rapid distribution, and absence of natural controls. Even white-tailed deer hate this stuff! As a result, the 1-to-2-foot-tall weed forms a dense mat smothering any nearby small plants or seedlings. With one of the weakest root systems in the Plant Kingdom, this good-for-nothing weed is even poor at erosion control! Fortunately, the feeble roots enable Invasive Management Area (IMA) volunteers to eradicate Japanese stiltgrass through hand-pulling. In fact, stiltgrass is an excellent weed to introduce children to removing invasive species. During the past three years, Royal Lake Park hosted workdays targeting Japanese stiltgrass (a big "thanks" goes to deputy IMA site leader, Diana Shannon, for leading those events). The efforts finally paid off this year in a significantly decreased stiltgrass emergence within the target zones. Besides removing stiltgrass near waterways where seeds readily disperse, special eradication efforts along trails help prevent human and pet traffic from dispersing seeds. This weed may be pulled and left on the ground from early spring germination until late August, but the ideal time is early to mid-summer when enough stem makes for an easy grab. Once seeds form, the weeds must be bagged and sent to either the landfill or incinerator. Never mulch seeding stiltgrass! After late October, much of the seed already has fallen from the drying husks, ending the stiltgrass removal season. Good news: scientists might have found yet-to-be-classified fungus that may be pathogenic to stiltgrass. We can hope a fast, efficient, and economical agent affecting only stiltgrass can nail this pest!

Lawns also suffer from Japanese stiltgrass' aggressive growth as it overtakes preferred grasses. The light green blades make patches look pale and sick compared to the deeper hues of preferred turf species. After dying back in the fall and winter, husks shrivel to near nothing leaving exposed soil and mud. To control stiltgrass, hand-pulling works best, applying the above guidelines. For large infestations, crabgrass control measures prove to be successful, too, such as a late winter treatment of corn gluten-

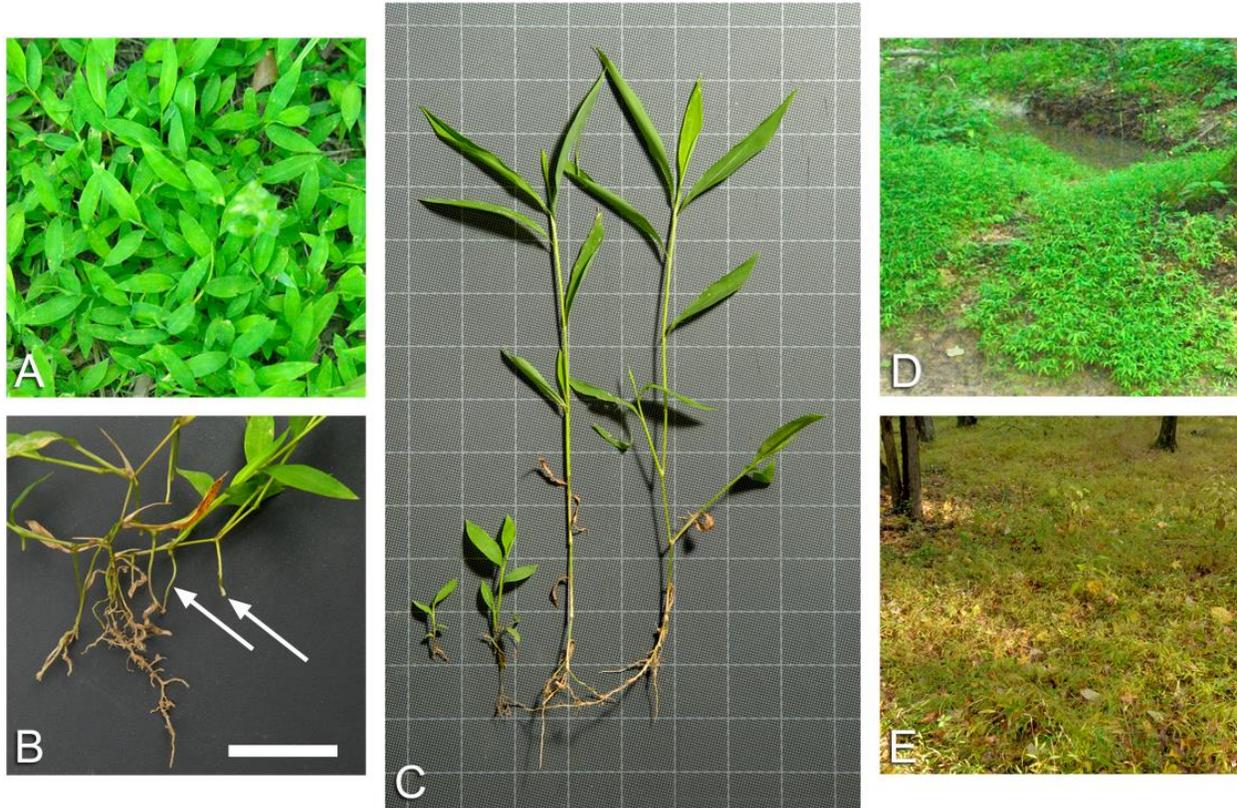


Figure 1. Japanese stiltgrass is easy to recognize by various features. **A)** Dense carpets of stiltgrass emerge in spring. **B)** In addition to shallow primary roots, Japanese stiltgrass sends roots from ground-level joints, indicated here by arrows. The bar is a one-inch scale. **C)** This weed is easily identified by stilt-like stems, short blades, shallow roots, and light green coloration. The grids are one-inch squares. **D)** By June, stiltgrass forms dense clusters, seen here at Royal Lake Park. **E)** By late October, stiltgrass yellows and readily loses seeds. This image shows the forest floor of Huntley Meadows Park completely overrun by this weed.

based pre-emergent suppressor. **To protect desired plants from accidental death, limit chemical treatments to lawns and not in gardens or woodlands.** In extreme cases, grass-specific herbicides work but must be applied before the weed fruits; seeds often survive chemical treatments. When mowing, always compost within your property, let grass clippings drop, or bag for curbside pick-up. Areas of parkland were contaminated by people spreading yard debris tainted with Japanese stiltgrass seeds that have since sprouted and reproduced!

Since folks cannot buy Japanese stiltgrass, a good substitute is open to any native plant that will grow on that plot. For simple greenery, ferns with rhizomes impart an appealing verdant groundcover. Lady's fern (*Athyrium filix-femina*) is another option that clumps, but splitting it every couple of years fills an area quickly. Lawns have a limited choice; most turf species are exotic. The only turf grass native to North America is buffalo grass (*Buchloe dactyloides*). Whereas its dominant range stretches across the Great Plains, outlying populations extended eastward into Virginia. Drought-resistant and spreading via runners and seed, buffalo grass should gain fame over cooler European species as summers become increasingly oppressive. This forage turf supports wildlife.

If you would like to help remove non-native invasive weeds around Royal Lake Park, consider becoming an IMA volunteer. If you find any sort of disease attacking Japanese stiltgrass, please send a message about it to greg@grsykes.com.

For more information on Japanese stiltgrass:

<https://www.fs.fed.us/database/feis/plants/graminoid/micvim/all.html>

<https://www.invasive.org/browse/subinfo.cfm?sub=3051>

<https://ohioline.osu.edu/factsheet/F-70-11>

<https://www.rtrcwma.org/stiltgrass/>

<http://www.dcr.virginia.gov/state-parks/blog/invasive-japanese-stiltgrass-how-you-can-help-virginia-state-parks>

For more information on buffalo grass:

http://www.blueplanetbiomes.org/buffalo_grass.htm

<http://www.nativeturf.com/>

* * * * *