

Microstegium vimineum, Japanese Stiltgrass



Close up of Japanese stiltgrass. Richard Gardner, Bugwood.org



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Common Name:	Japanese stiltgrass
Scientific Name:	<i>Microstegium vimineum</i>
ID Description:	Japanese stiltgrass resembles a small, delicate bamboo and has a sprawling habit. It grows up to 3.5 feet tall. The leaves are 1-3 inches long, asymmetrical with an off-center mid-rib, and are alternately arranged on the stalk. Each lance-shaped leaf has a noticeable stripe of silvery, reflective hairs down the length of the upper leaf surface. In late summer and early fall, one or two delicate flower spikes form at the top of each stem; each plant produces up to 1000 seeds. Stiltgrass may form stolons but is an annual and these runners die off during winter.
Current Distribution in US and VT:	Occurs across the eastern US, from southern Maine (where it was first reported in 2021) south to Florida and Texas. In Vermont, this species is currently localized and restricted to the Champlain and Connecticut River Valleys. Populations are known from Addison County (Middlebury), Rutland County (Benson, Poultney), Bennington County (North Pownal), and Windham County (Brattleboro, Rockingham). First reported from Vermont in 2020 and actively spreading north (Gilman, 2023).
Habitat:	This annual grass is adapted to shaded forest environments. It also occurs on forest edges, ditches, floodplain forests, and roadsides.
Regulated/restricted in these Northeastern states:	NH, CT, NY, ME, MA
Concern:	Japanese stiltgrass forms extensive carpets that can outcompete native vegetation. It rapidly colonizes forest habitats and disturbed areas.
Means of Introduction and Spread:	Native to Japan, India, Malaysia, and China, this species was likely introduced accidentally to the US around 1918. It spreads primarily by seed (individual plants can produce up to 1000 seeds) through roads and waterways (Hunt, 1992). Seeds can remain viable in the soil for over five years.

Plant Pest Designation Rationale

Ecological Threat:

Japanese stiltgrass (*Microstegium vimineum*) is considered a significant ecological threat in the northeastern United States due to its invasive nature and ability to outcompete native plant species. Japanese stiltgrass grows aggressively, which allows it to form dense mats that choke out native vegetation and inhibit tree regeneration. This leads to reduced biodiversity and alters ecosystem functions, impacting wildlife habitat and food sources. Additionally, Japanese stiltgrass thrives in a wide range of environmental conditions, from full sun to deep shade, enabling it to colonize diverse habitats.

Japanese stiltgrass alters soil chemistry and nutrient cycling, which can further disrupt native plant communities and affect ecosystem health. Its shallow root system contributes to soil erosion and destabilization, exacerbating the degradation of natural habitats.

Economic Impact:

The economic impacts related to Japanese stiltgrass in the northeastern United States are multifaceted and include costs associated with ecosystem restoration, loss of agricultural productivity, and impacts on recreational activities such as hunting, fishing, and hiking.

One significant economic consequence of Japanese stiltgrass invasion is the expense of controlling and managing infestations. Land managers, including federal, state, and local agencies, as well as private landowners, incur costs for labor, equipment, and herbicides to mitigate the spread of this invasive species. These expenditures can be substantial, especially in areas where Japanese stiltgrass has established dense populations.

Japanese stiltgrass infestations can lead to reduced agricultural productivity in affected areas. This invasive grass may compete with desirable forage species and agricultural crops, decreasing yields and potentially necessitating additional inputs to maintain productivity. Farmers may face increased costs for weed control measures and experience diminished profits because of reduced crop yields. This species has also been implicated in reducing growth of timber species in the Southeast.

Feasibility of control and spread prevention:

Japanese stiltgrass is a late-flowering annual, and small populations can be controlled by hand-pulling, which is most effective in late summer. Prescribed fire and mowing have been shown to cause significant reductions in Japanese stiltgrass biomass. While controlling and preventing the spread of Japanese stiltgrass presents challenges, a combination of management strategies, community involvement, research, and monitoring can enhance the feasibility and effectiveness of control measures.

Japanese stiltgrass infestation



Photo Credit: Chris Evans, University of Illinois, Bugwood.org

Access road and clearing invaded with Japanese Stiltgrass



Photo credit: John M. Randall, The Nature Conservancy, Bugwood.org

Reported US distribution of *Microstegium vimineum* EDDMaps



EDDMapS. 2024. *Early Detection & Distribution Mapping System*. The University of Georgia - Center for Invasive Species and Ecosystem Health. Available online at <http://www.eddmaps.org/>; last accessed February 16, 2024.

References:

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Fryer, J.L. 2011. *Microstegium vimineum*. In: Fire Effects Information System. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory.

Gilman, A.V. 2023. Additions to the New Flora of Vermont — III. *Phytoneuron* 2023-33: 1–18. Published 6 September 2023. ISSN 2153 733X

Hunt, David M.; Zaremba, Robert E. 1992. The northeastward spread of *Microstegium vimineum* (Poaceae) into New York and adjacent states. *Rhodora*. 94(878): 167-170. [44638]

[USDA National Invasive Species Information Center](#)

[NH Department of Agriculture: Japanese Stiltgrass](#)

[ME Department of Agriculture: Japanese Stiltgrass Fact Sheet](#)

*This content was edited with the assistance of a generative artificial intelligence, ChatGPT. The content has been reviewed and verified to be accurate and complete and represents the intent of the Plant Health Section of the VT Agency of Agriculture, Food and Markets.

Other Resources:

[VTinvasives.org](#)

[Penn State Fact Sheet](#)

[Rutgers Ag Experiment Station \(NJ\)](#)

[WI Department of Environmental Conservation](#)