

Invasive Species Profile: Kudzu (*Pueraria montana* var. *lobata*)

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Native Range: Japan and southeastern China

U.S. Introduction: 1876, in Philadelphia, PA

Life Cycle: semi-woody perennial

Means of Spreading: seeds; rapid vine growth

Commercially Available: no

Control Method: remove crowns

Good Alternative Species: grape (*Vitis* sp.), common moonseed (*Menispermum canadense*), pipevine (*Aristolochia macrophylla*)

Comments:

Kudzu debuted in the United States at the 1876 Philadelphia Centennial Exposition, where promoters hailed it as both an ornamental plant and a forage crop. Fifty years later, soil conservation groups advocated kudzu to control erosion. In its Asian homeland, people use kudzu fibers in products such as baskets and paper; blossoms, leaves, and starchy roots are prepared in human-consumed foods and traditional medicines. Like beans and all other legumes, nitrogen-fixing bacteria living within root nodules provide kudzu with an internal fertilizer factory. This nitrogen enriches the soil when farmers employ kudzu as a cover crop. Some researchers investigate this speedily growing vine as a potential ethanol crop.

By the 1950s, American scientists realized that despite its utilitarian properties, kudzu has become an unleashed monster without the natural predators and diseases to keep it adequately controlled. Most notably, *Pueraria*'s foot-a-day growth rate under optimal conditions enabled the vine to engulf anything from groundcover to trees and anything else in its path. Government subsidies for farmers cultivating kudzu ceased, the USDA prohibited using kudzu as a cover crop, and biologists explored ways to control this invasive weed. Although it can still overtake unchecked patches in Northern Virginia's climate, kudzu grows less aggressively here than in the Deep South. Locally, it is often found smothering trees near roads, such as the southwest corner of Braddock Road and Rolling Road, along Roberts Road near Burke Commons, Ox Road north of Burke Center Parkway, and by Prosperity Avenue south of Route 50. Kudzu's low germination rate is partially due to the seed's tough outer coat, which must be broken for sprouting. The coating breach usually occurs through weathering—often for years—in the soil.



Figure 1. This kudzu patch was blooming in Merrifield, VA, on private land and was later eradicated. Seen here in late September, the small fruits toward the bottom are unripe porcelain berries (*Ampelopsis brevipedunculata*), another non-native invasive species in this weedy thicket. Kudzu seed pods form in October and November. Photo by Greg Sykes.

Anyone searching for ways to kill kudzu will find many proposed methods: repeated cutting, burning, foraging livestock, herbicidal treatments, and experimental fungal inoculations and insect biological controls. Despite its fearsome reputation, kudzu is more easily controlled than many non-native invasive species. Lake Accotink Park’s site leader of the then newly formed Invasive Management (IMA) program [created by the Fairfax County Park Authority (FCPA) in 2006], had his first assigned plot eradicating kudzu from a half acre plot (Figure 2). After some trial and error using hand tools, cutting the crown of the root, which is found at or just below the surface, is the easiest way to efficiently kill vines. A description of this method is at <http://www.kokudzu.com/SurgicalRemoval.html>. Without the crown, the rest of the root, often as large as a man's leg, invariably dies; view pictures of the team with kudzu roots, before adopting the crown removal technique, at <http://www.accotink.org/RemovingKudzuSep2006.htm>. With kudzu accounting for around 50 percent of the site’s vegetation, volunteers worked for hundreds of hours before the plot was sufficiently cleared for native restoration saplings.



Figure 2. Kudzu tangled the Lake Accotink Park IMA site (A). Once volunteers cleared the weed (B), the habitat began its healing process. Photos by Philip Latasa.

Successful kudzu eradication requires dedicated people. Monitoring continues at Lake Accotink Park, removing newly germinating kudzu, whose seedlings resemble a native legume, the hog peanut (*Amphicarpaea bracteata*). Some folks mistake another native, poison ivy (*Toxicodendron radicans*), for kudzu; Table 1 highlights key distinctions and Figure 3 illustrates the difference between the leaves.

Table 1. This table lists helpful characteristics when identifying kudzu and poison ivy.

Feature	Kudzu	Poison Ivy
Blossoms	Long, purple, tight cluster in late summer and early autumn	Small, pale yellow to yellow-green, loose clusters in late spring and early summer
Foliage	Three leaflets: bluish green, deeply lobed, hairy; generally larger leaves	Three leaflets: emerald green, smooth and shiny; generally mid-sized leaves
Fruits	Hairy seed pods	Smooth ocher berries

Since grape climbs up trees, it too is sometimes mistaken for kudzu. However, grape leaves are simple and lack leaflets. When controlled, grape can be a good native alternative to kudzu. Many insect and bird species benefit from Virginia creeper (*Parthenocissus quinquefolia*). People looking for a slower growing native substitute might consider smaller, ornamental native vines including common moonseed (*Menispermum canadense*, widespread) and pipevine (*Aristolochia macrophylla*, found in western Virginia counties).

To join in habitat restoration led by Philip Latasa (Lake Accotink watershed, steward@accotink.org), Suzanne Doherty (co-site leader, Royal Lake Park, jewelboxgardensbysuzanne@gmail.com), or me (co-site leader parks connecting to and including Royal Lake), send an e-mail asking for future workday notification. Volunteering through FCPA is a superb way to help the environment, get exercise, and learn

about the local flora and fauna! For more information about the IMA program including other sites throughout Fairfax County, visit <https://www.fairfaxcounty.gov/parks/invasive-management-area>.

A big “thank you” goes to Philip for sharing his kudzu insight and experience. Find more kudzu facts at:

<http://www.fs.fed.us/database/feis/plants/vine/puemonl/all.html>

<http://www.invasive.org/browse/subinfo.cfm?sub=2425>

<https://www.invasivespeciesinfo.gov/plants/kudzu.shtml>

<http://www.invasivespeciesinitiative.com/kudzu>

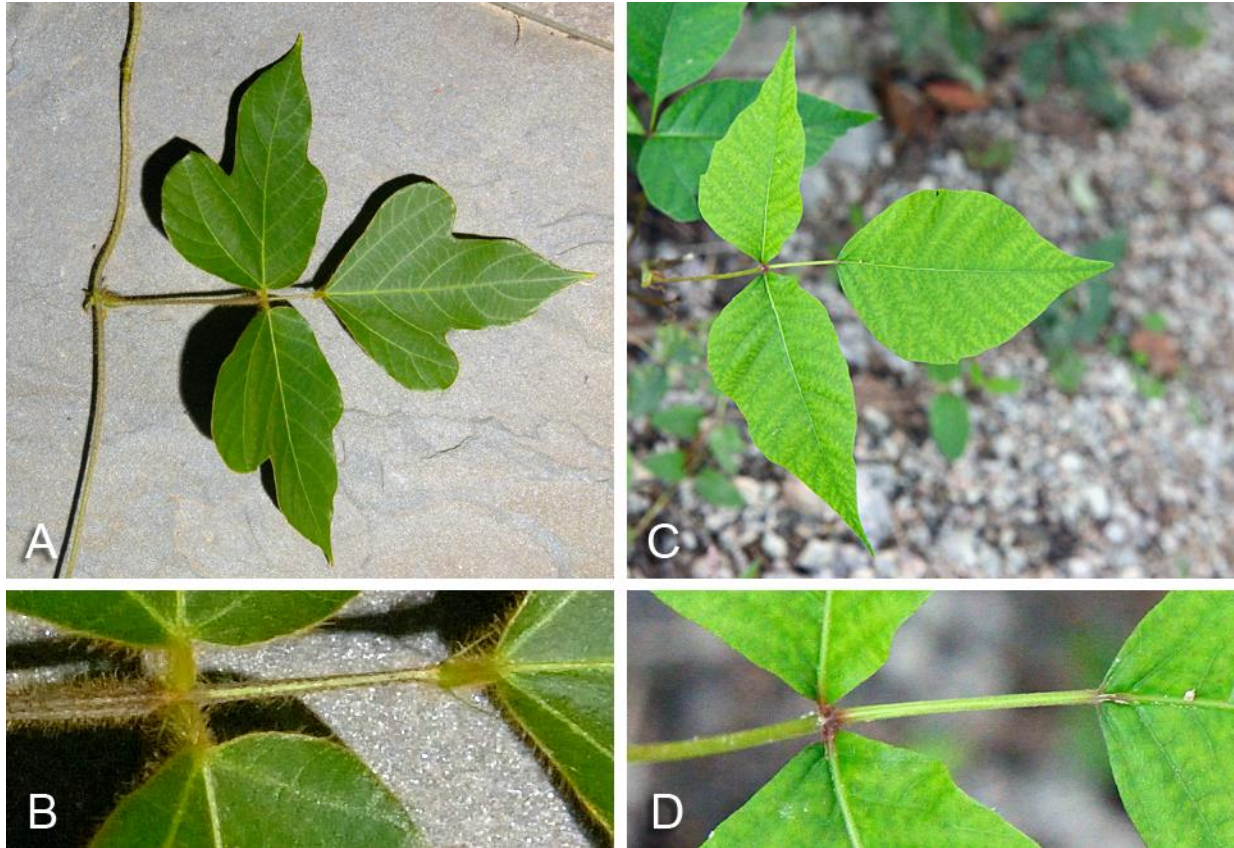


Figure 3. These images compare the leaf anatomies of kudzu (A, with close-up B) and poison ivy (C and D). Kudzu's fuzzy leaf opposed to poison ivy's smooth foliage is an easily recognizable character. Photos by Greg Sykes.

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