



Vines

Resource Brief



Photo: NPS

Rock Creek Park is one of the largest natural parks in an urban center. At approximately 2,000 acres, it is twice as big as New York’s Central Park and is 81% forested. The park was established in 1890 to protect the natural resources of what was then a rural retreat at the edge of a growing city.

To protect this treasure, National Park Service staff from the Inventory and Monitoring (I&M) program monitors forests in Rock Creek Park, tracking the growth of park vegetation including trees and vines.

Monitoring takes place at nineteen plots in Rock Creek where every tree is inspected for the presence of vines and the species of each vine is recorded. This brief presents the most recent data on vines found in I&M forest plots in Rock Creek.

What is a Non-Native Invasive Vine?

A vine is a weak-stemmed plant that requires other plants

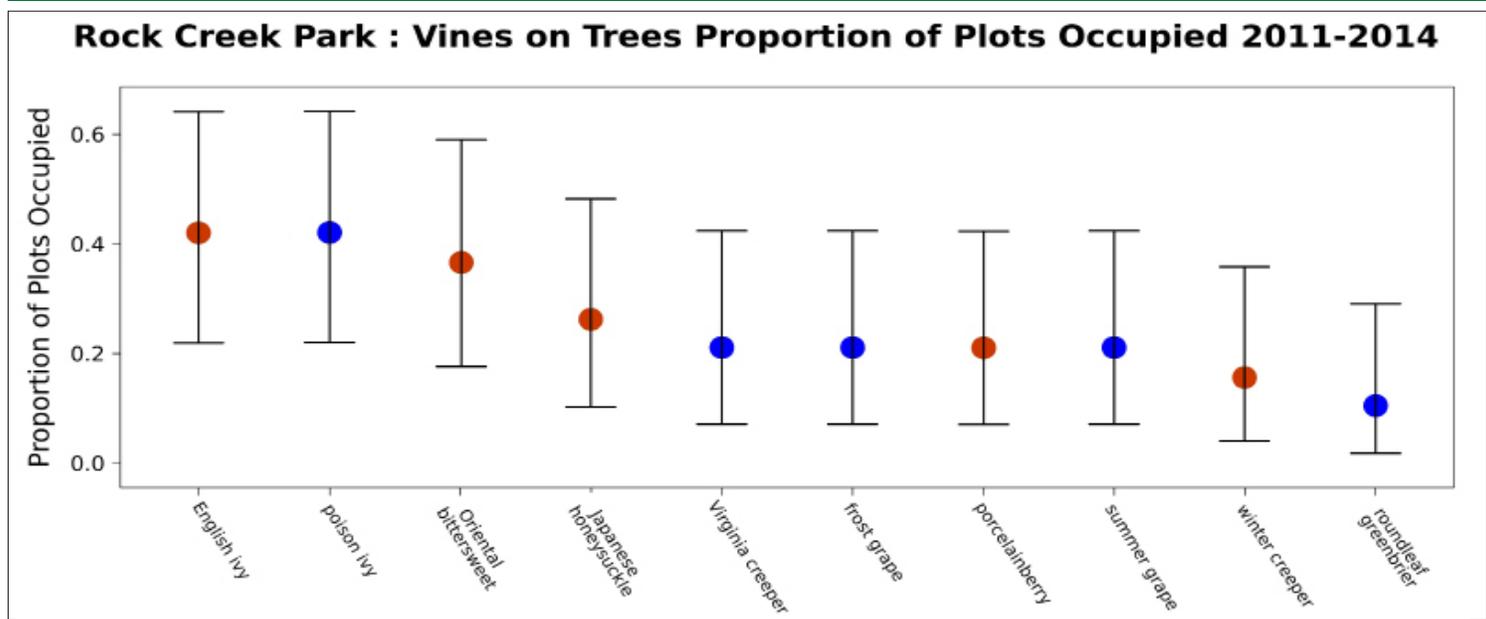
or structures to support itself and grow upward.

Non-native plants are plants introduced from other regions or habitats. They’re sometimes called weeds, exotics, or invasives. Non-native invasives can disrupt naturally-balanced plant and animal communities by growing aggressively, adapting quickly to new habitats, and multiplying. Wildlife that is dependent on native plants is often unable to adapt and is forced to migrate to the ever shrinking suitable habitat that remains.

Vines and Wildlife

Vines provide an important food resource for birds, deer, and native moth species. Some vines, such as the native frost grape (*Vitis vulpina*), can be one of the only food sources for resident birds during the cold winter months. Vines can also offer nesting material for birds from their shredded bark and they provide shelter for many mammals.

Rock Creek’s Top 10 Vines: This graph shows the ten most widespread vine species in Rock Creek Park. Half are natives (in blue) and half are non-native, invasive (in red). Overall, vine numbers are increasing across the National Capital Region, with non-native, invasives like Japanese honeysuckle, oriental bittersweet, and winter creeper spreading faster than native vine species. This image was produced using the NCRN forest vegetation visualizer.



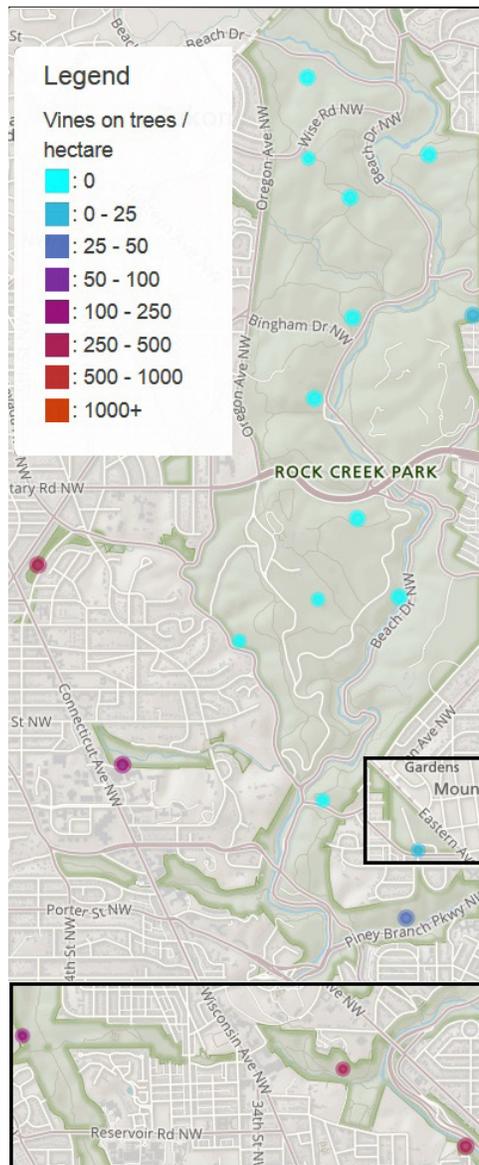
Embracing Poison Ivy

Typically, poison ivy (*Toxicodendron radicans*) gets a bad reputation for being a nuisance that causes itchy rashes in humans. However, it is actually an important food source for many wildlife species. Eastern cottontail rabbits, white-tailed deer, and muskrats have been known to eat the leaves and stems. Poison ivy's fruit is an especially important food source for many animals such as crows, bluebirds, and turkeys. Birds, such as northern cardinals and American goldfinches use the vine's thread-like hairs to build their nests. Poison ivy's leaves can also provide shelter for a variety of small animals and provides food for many insect species as well. Despite all of the negative attention it receives, poison ivy is a welcome native. For these reasons, Rock Creek Park only manages poison ivy on trails and in areas where it is directly affecting park visitors.

Twining and Clinging

Many non-native, invasive vines such as Oriental bittersweet (*Celastrus orbiculatus*) and Japanese honeysuckle (*Lonicera japonica*) are twining vines known to strangle and kill trees. They do so by twining tightly around parts of the tree, cutting through the bark, and blocking the tree's internal flow of water and nutrients. This twining trait is generally more common for non-native, invasive species and can stunt tree growth, as well as increase tree mortality.

Other methods of climbing are less destructive. Native vines like Virginia creeper (*Parthenocissus quinquefolia*) will climb high into the tree canopy by adhesively clinging to the bark. Native grape vines will climb trees using tendrils that grasp onto branches and other supporting objects. Unlike strangling, twining vines, grapes will hang loosely from the trees and normally do not choke their host tree.



English ivy, Rock Creek's most common non-native, invasive vine, is found mostly in the smaller satellite areas of Rock Creek that extend into residential neighborhoods. Dots show rate of English ivy vines on trees in NCRN forest monitoring plots. (Map produced using NCRN Forest Vegetation Visualizer.)

Effects of Vines

All vines have the potential to spread out and cover branches, blocking needed sunlight and eventually killing a tree. An infested tree can show signs of decline for several years before it dies. Although the death of a tree can allow for more sunlight to reach the forest floor, that sunlight can fuel both native vine species and harmful non-native, invasives. Non-native invasives have successfully exploited these opportunities and are increasing at a faster rate than their native competitors.

As vines grow higher onto tree branches and stems, their sheer weight is capable of snapping large limbs. The loss of these branches means a loss of leaves and reduces the ability of the tree to gain energy from the sun. Resulting tree death can lead to a less biodiverse forest and an unhealthy mature tree canopy. Additionally, large falling branches can pose a safety and financial hazard for the park and its visitors.

Help Lend a Hand

We welcome you to join us as a volunteer to help control these non-native, invasive vines. You can join Rock Creek Park staff or one of the park's partner groups (e.g. Dumbarton Oaks Park Conservancy or Rock Creek Conservancy) to assist on removals. But remember, removing vines in Rock Creek without authorization is illegal and poor methods or mis-identification of species can cause great harm.

Forest Vegetation Visualizer

The Forest Vegetation Visualizer shares NCRN I&M forest monitoring results with NPS staff and the public. It was used to create the graph and map in this brief.

Any user can create maps, graphs, and species lists from forest data for the eleven National Parks in the greater Washington, DC area using the visualizer (<http://irmadev.nps.gov/r-reports/NCRN/ForestVeg/>). To learn more about NCRN forest monitoring, visit: <http://science.nature.nps.gov/im/units/ncrn/monitor/forest/index.cfm>.



National Capital Region Network
<http://science.nature.nps.gov/im/units/ncrn>
202-339-8314

NCRN I&M Forest Monitoring Webpage:
More information and full reports may be found at <http://science.nature.nps.gov/im/units/ncrn/monitor/forest/index.cfm>

Common Vines of Rock Creek Park

Non-Native, Invasive Species

English Ivy

(*Hedera helix*)

- Leaves: dark green & waxy, palmate, alternate. Darken with age.
 - very visible in winter
 - common in landscapes
 - hairy aerial root climber
 - Bark: pale and hairy.
- Look-alikes: Poison ivy bark is burgundy color.



Poison Ivy

(*Toxicodendron radicans*)

- Leaves: compound leaves of three, ovate shiny leaflets, alternate
- Bark: burgundy colored with hairy aerial roots.
- green drooping fruit

Look-alikes: Box elder tree is not a vine. English ivy bark is pale colored when mature. Virginia creeper has 5 leaflets attached to center point.



Oriental Bittersweet

(*Celastrus orbiculatus*)

- Leaves: rounded and serrated, usually glossy, alternate.
- leafless in winter
- twining, strangling vine
- Bark: when young brown with distinct lenticels. Grayish when mature.

Look-alikes: Roundleaf greenbrier has spines and green stems while bittersweet is spineless with brown to gray stems.



Virginia Creeper

(*Parthenocissus quinquefolia*)

- Leaves: 5 leaflets attached to center point
- often grows as groundcover
- adhesive clinging vine
- Bark: blocky, brown with thick adhesive hairs.

Look-alikes: Poison ivy has 3 leaflets. Oriental bittersweet bark has distinct lenticels when young.



Mile-a-Minute

(*Persicaria perfoliata*)

- Leaves: pale green and equilateral (equal sided) triangle-shaped, alternate.
- thin barbs on stem and under-surface of the leaves
- stem goes through the center of some leaves
- Fruits: berry-like deep blue and arranged in upright clusters.

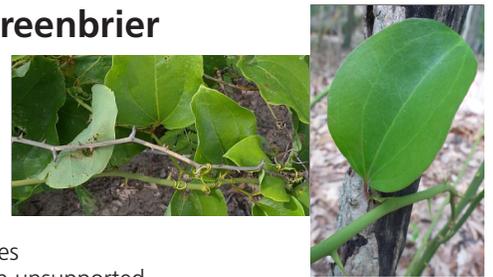


Roundleaf Greenbrier

(*Smilax rotundifolia*)

- Leaves: glossy, nearly circular, alternate.
- leaves present in winter
- stems round with sharp, straight spines
- forms tangles when unsupported

Look-alikes: Multiflora rose has hooked thorns. Oriental bittersweet has serrated leaf edges.



Chinese Wisteria

(*Wisteria sinensis*)

- Leaves: compound with egg-shaped leaflets with wavy-margins, alternate.
- strangling vine when mature
- Flowers: lavender to purple, in clusters.
- smooth, gray-brown stems
- can spread by stolons

Look-a-likes: Trumpet creeper has opposite leaves with toothed margins and red to orange flowers.



All photos are credit NPS except: Oriental bittersweet leaves- Bill Johnson; Roundleaf Greenbrier stem- John Hilty.



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Common Vines of Rock Creek Park

Non-Native, Invasive Species

Native Species

Porcelainberry

(*Ampelopsis brevipedunculata*)

- Leaves: simple, variably lobed, and alternate
- leafless in winter
- tendrils climber
- Fruit: speckled berry in colors of aqua to pink to purple.
- Bark: blocky texture when mature, with white pith inside.

Look-alikes: frost and summer grape have stringy bark and dark or no pith inside vine.



Frost Grape

(*Vitis vulpina*)

- Leaves: heart-shaped, smooth, alternate.
- leafless in winter
- burgundy color stringy bark with dark pith inside.
- tendrils climber

Look-alikes: Porcelainberry bark has blocky texture when mature, with white pith inside vine.



Winter Creeper

(*Euonymus fortunei*)

- Leaves: broad ovate-elliptic with serrated margins, opposite.
- leaves and red fruits visible in winter
- aerial rootlets
- hairy greenish-brown stems grow up unsupported when young and attach to tree when mature

Look-alikes: Poison ivy has compound leaves of three that drop in winter. English ivy fruits are black.



Summer Grape

(*Vitis aestivalis*)

- Leaves: variable from unlobed to deeply 3 & 5 lobed. green above, very fuzzy and pale below
- burgundy color stringy bark with dark pith inside.
- tendrils climber

Look-alikes: Porcelainberry bark has blocky texture when mature, with white pith inside vine.



Japanese honeysuckle

(*Lonicera japonica*)

- Leaves: simple, ovate, opposite.
- leafless in winter
- white & yellow double-tongued flowers with sweet aroma
- twining, strangling vine
- Bark: khaki color and shredding.

Look-alikes: Trumpet creeper vine hangs loose from tree and has red to orange trumpet-shaped flowers.



Trumpet Creeper

(*Campsis radicans*)

- Leaves: compound with 5-13 leaflets, very serrated margins, dark green, opposite.
- leafless in winter
- hangs loosely from tree
- orange to red trumpet-shaped flowers
- Bark: pale tan and shreddy

Look-alikes: Japanese honeysuckle twines around trees.



All photos are credit NPS except: Winter creeper fruit- D.L. Nickrent/Phytolimages; frost grape leaf- J.K. Marlow; and summer grape leaf- D. Profant.

Additional References:

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