Invader Investigation!

Rosaryville State Park
Do-It-Yourself Park Quest 2020

Learn more about what Rosaryville State Park has to offer by completing this year's Park Quest - **Invader Investigation**. We will introduce questers to using a *dichotomous key* as a tool to identify invasive plants along the **Agriculture Heritage Trail**.

Native plants play an important role in our ecosystem. They provide food and shelter for every animal from fish to birds, insects to deer. When plants grow in places outside of their normal range, they have the potential to take over and become invasive. This means that they are growing faster and bigger, taking all of the nutrients and sunlight from native plants. When this happens, the invasive plants slowly start to take over the forest, reducing the amount of food and shelter that is available for our native wildlife!

The best thing we can do to help our wildlife is understand what invasive plants are and identify them so that we don't continue to allow them to spread!

Getting started: This Quest begins at the Agriculture Heritage Trail across the field from the Rosaryville Pavilion. You will notice a Park Quest kiosk placed near the entrance of the pavilion parking lot, which includes the information you will need to complete this quest. To begin this quest, follow the tobacco sticks (thin, three-feet high wooden stakes) across the field to find the beginning of the trail. When you meet up with the Agriculture Heritage Trail, turn left and look for the first station. The Quest has markers along it to assure that you are on the right track. There are six stations to stop at along the trail. Each one is a specific invasive plant that needs to be identified using the Invasive Plant Dichotomous Key and the Invasive Plant Guide, which is found online. Once you have keyed out all six plants, you will be able to solve the puzzle.
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The Quest trail is 0.7 miles from the kiosk to station six. When you reach station six and solve your puzzle, turn around and go back the way you came to return to the parking lot. In total, this Quest is **1.4 miles.**

Please note that parking may be limited at the pavilion lot during summer weekends when the pavilions are rented.

For your quest, bring bug spray, sunscreen, and plenty of water, and make sure you are wearing comfortable walking shoes. Some optional items to bring along are: an invasive plant guide, binoculars, and a notebook.

What is a dichotomous key?

A dichotomous key is a tool that allows the user to determine the identity of items in the natural world based on their characteristics.

Dichotomous means "divided into two parts." In every step, there are two different choices, describing a characteristic. Keep following the steps until you are able to identify the unknown item!

Here is a sample of a dichotomous key:

1. A. Dog ……..go to 2
   B. Duck ……go to 3

2. A. Wears clothes ……..……...Goofy
   B. No clothes ……..Pluto

3. A. Wears clothes ……..……Donald Duck
   B. No clothes ……..…Daffy Duck

Dichotomous keys use the process of elimination to help you find the answer to your question!

*To identify the six invasive plants on your Quest today, you can use both the **Invasive Plant Dichotomous Key** and the **Invasive Plant Guide** in this packet.*

The Invasive Plant Guide contains descriptions of the six plants in the Quest, as well as their Latin, or scientific, names.

Example:
Black-eyed Susan – common name
Rudbeckia hirta – Latin or scientific name

Rudbeckia is the Black-eyed Susan's genus name, *hirta* the species name.

Invasive Plant Dichotomous Key

1. A. Plant is a vine ……..……go to 2
   B. Not a vine ……..……go to 3

2. A. Leaves are ovate ……..……Japanese honeysuckle
   B. Leaves are dark and waxy ……..……..English ivy

3. A. Plant is a tree ……..……Tree of Heaven
   B. Not a tree ……..……go to 4

4. A. Plant is a grass ……..……Japanese stiltgrass
   B. Not a grass ……..……go to 5

5. A. Leaf is pinnate ……..……..Multiflora rose
   B. Leaf is elliptical ……..……Autumn olive

Invasive Plant Guide

Autumn Olive
Elaeagnus umbellate

Autumn olive is a fast growing shrub that can reach up to 20 feet tall. It has elliptical leaves, with a dark green top and a silvery bottom. It has small, light yellow flowers that bloom in mid to late spring, before it produces an abundance of small fleshy fruits that range in color from pink to red. Autumn olive is easily seen in the spring since it leafs out when most native vegetation is still dormant.

Autumn olive was introduced as an ornamental plant in 1830. It is native to Asia, but has been used for wildlife habitat and erosion control since its introduction to North America. Although birds love autumn olive, there are several better native plant choices for providing wildlife habitat and reducing erosion. Winterberry (*Ilex verticillata*), highbush blueberry (*Vaccinium corymbosum*), inkberry (*Ilex glabra*), bayberry (*Myrica pensylvanica*), and many other attractive native shrubs can offer both food and cover for songbirds.

English Ivy
Hedera helix

English ivy is an evergreen, perennial, climbing vine. Like native poison ivy, it has a hairy stem that helps it attach to surfaces. It can be found growing in a variety of habitats including: forest openings and edges, fields, cliffs, steep slopes, and disturbed areas. The leaves are dark green, waxy, and can sometimes be lobed. Small, greenish-yellow flowers appear in late summer to early fall, followed by small, black fruits with stone-like seeds.

English ivy was introduced by European colonists as early as 1727. It was planted around homes and in gardens for its evergreen foliage, and low maintenance required to keep a year-round groundcover. It is an aggressive invader that threatens all levels of the forest – shading out the ground level vegetation, and covering trees and branches, weighing them down and preventing photosynthesis

Japanese Honeysuckle
Lonicera japonica

Japanese honeysuckle is an evergreen vine with ovate leaves, roughly 1 ½ to 3 inches long, that grow in an opposite pattern on brownish stems. Honeysuckle has fragrant, white flowers from late April through July, sometimes into October.

In 1906 Japanese honeysuckle was introduced to the United States from Japan for use in flower gardens. It grows primarily in disturbed habitats including fields, roadsides, forest edges, and fence rows. *Lonicera* quickly takes over areas, climbing on top of small trees and shrubs, often causing them to collapse.

Japanese Stiltgrass
Microstegium vimineum

Japanese stiltgrass is bright green, with leaves are one to three inches long, and arranged alternately on a branched stalk. It looks a lot like a smaller, more delicate version of bamboo. Stiltgrass grows one to three feet tall before producing seeds in late August to September.

Native to Asia, this invader was introduced to the United States about 100 years ago, probably as packing material in shipments from China. It can be found along roads and ditches, in pastures and farm fields, and in moist woodlands. A single plant may produce between 100 and 1,000 seeds! These small seeds can be carried by animal fur, water during heavy rains, and even soil or mud stuck to the bottom of hikers' shoes.

Multiflora Rose
Rosa multiflora

Multiflora rose is a multi-stemmed, very thorny, perennial shrub that grows up to 15 feet tall. The stems are green to red, and have stiff, curved thorns. The leaves are pinnately compound, with 7-9 leaflets. The leaflets are 1-1.5 inches long and have serrated edges. When the plant flowers, it produces small white to pinkish, 5-petaled flowers that occur abundantly in clusters in the spring.

Multiflora rose was introduced to the United States in the late 1700s from Eastern Asia. It was cultivated as an ornamental, for erosion control, and used as a living fence. It forms thick, impenetrable thickets in pastures, fields, and forest edges. This restricts human, livestock, and wildlife movement, and displaces native vegetation. There are five types of native roses that grow in Maryland that support wildlife, produce beautiful flowers, and don't take over ecosystems. These roses include: smooth rose (*Rosa blanda*), Carolina rose (*Rosa carolina*), swamp rose (*Rosa palustris*), climbing rose (*Rosa setigera*), and Virginia rose (*Rosa virginiana*).

Tree of Heaven
Ailanthus altissima

Tree of Heaven is a rapidly growing deciduous tree that can reach heights of 80 to 100 feet! The bark is smooth, and light brown to gray – resembling the skin of a cantaloupe. It has pinnately compound leaves that can be up to 4 feet long!

Ailanthus altissima is from China, and was introduced to the United States in 1784. It grows quickly from seeds and by sending up root suckers. It was planted in cities to provide pretty vegetation and shade in places like Baltimore and Washington, D.C.

Glossary of Terms

Alternate – a pattern of leave arrangement in which each leaf arises at a different point along the stem

Compound – a leaf whose leaflets are attached to the middle vein but have their own stalks

Elliptic/elliptical – elliptic leaves are about twice as long as broad. The broadest part is in the middle and the two ends narrow equally.

Evergreen – a plant that retains green leaves throughout the year

Grass – a plant, typically low growing, that has long, narrow leaves and jointed stems

Leaflet – a leaf-like part of a compound leaf

Lobed – leaves with distinct protrusions, rounded or pointy

Opposite – a pair of leaves are attached at the same points along the stem

Ovate – leaves are shaped like an egg, with the broader end of the leaf nearest the petiole

Palmate – having a shape similar to that of a hand with fingers extended

Perennial – a plant that lives more than two years

Pinnate – resembling a feather in construction

Shrub – a woody plant which is smaller than a tree and has several main stems arising at or near the ground

Simple – a leaf that is never divided into smaller leaflet units

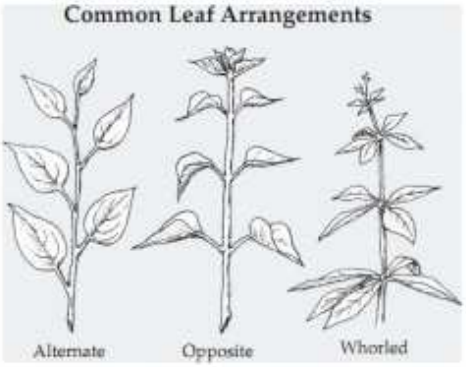
Sinuses – a space or indentation between two lobes

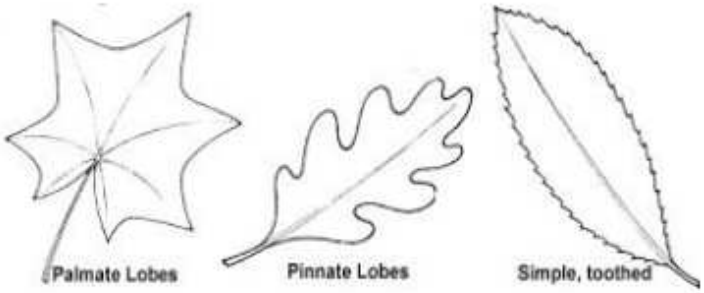
Toothed – edges of leaves are not smooth. Can be relatively fine, continuous toothing, as well as widely, spaced, and lobe-like teeth

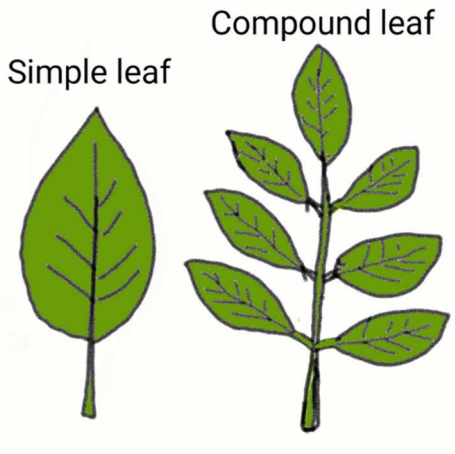
Tree – a woody perennial plant, typically having a single stem or trunk growing to a considerable height and bearing lateral branches at some distance from the ground

Vine – a climbing or trailing woody-stemmed plant

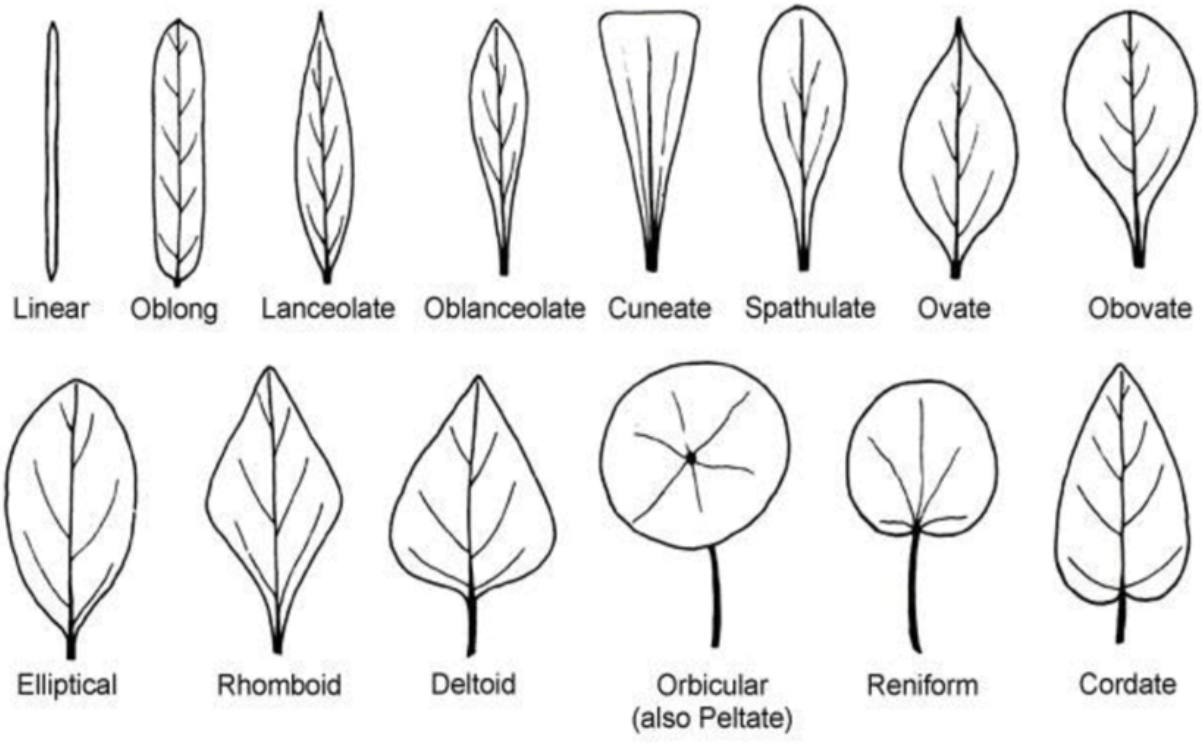
Whorled – leaves attached to the stem in groups of three or more at the same level







Shape of Leaf Blade



Answer Sheet

At each station, identify the invasive plant and fill in the blanks! Use common names.

1. _ _ _ _ _ _ _ _ _ _ _
2. _
3. _ _ _ _ _ _ _ _ _ _ _ _ _ _
4. _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
5. _
6. _

Invader ID Trivia:

Once used as a "living fence", this thorny, invasive plant now creates dense thickets that restrict the movement of wildlife. _____ (number from answer sheet)

This invasive plant produces a large volume of fruits loved by birds. A good native alternative for it that you could plant, and also produces a lot of berries loved by birds, is bayberry (*Myrica pensylvanica*). _____

This is an invasive vine that has fragrant, white flowers that can bloom from April all the way until October. While it smells really nice, it can hurt native plants by climbing over them and causing them to fall over. _____

Hikers can prevent the spread of this low growing plant by cleaning their boots before and after enjoying a day at the park! _____

Make up your own **Invader ID Trivia Question** based on something you learned today:

_____

_____

Email your trivia to Ranger Melissa Boyle Acuti at melissa.boyle@maryland.gov to see if you can stump a Park Ranger! Your Question may also make it into the Park Quest Newsletter!