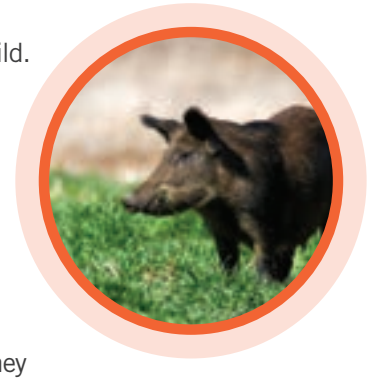
STUDENT PAGE

Space Invaders

An invasive species is an organism that is not native to an area and that has the potential to spread at an unhealthy rate. Invasives often take over, making it difficult for native species to thrive, and sometimes causing environmental or economic damage. Here are some invasive species found in the United States that are particularly harmful.

FERAL SWINE



These wild pigs are descendants of domesticated pigs that either escaped or were released into the wild. They are sometimes called wild boars, wild hogs, and piney woods rooters. Although they look similar to domestic pigs, they are generally thinner with coarse bristly hair and longer tusks.

These animals arrived in North America in the 1500s, when colonists brought them from Europe for food. But since the 1980s, their populations have nearly tripled and they are now found in at least 35 states. They are also quickly spreading across Canada. In North America, they have relatively few natural predators—except humans—to keep their numbers in check.

They use their snouts to dig or root in the soil for food, pulling up wild plants and destroying crops. They eat just about anything and actively hunt and eat small mammals, reptiles, amphibians, and insects. Their rooting, trampling, and feeding can do extensive damage to natural ecosystems. In the United States, feral swine cause millions of dollars in crop damage every year. They also carry diseases that threaten humans, pets, and safe meat production.

KUDZU (KUUD-ZOO)

This plant is nicknamed the "vine that ate the South." It is native to Asia and was brought to the United States from Japan in 1876 for the Centennial Exposition in Philadelphia. Gardeners were attracted to the kudzu's large leaves and sweet-smelling blossoms. In the southern United States, it became a popular plant for shading porches. Today, it covers extensive areas in 23 states and the District of Columbia, particularly in Georgia, Alabama, and Mississippi.

This climbing vine can grow up to a foot a day and reach 100 feet long. A single root crown may produce as many as 30 vines, which become hairy and woody and expand in all directions. It can also thrive in drought conditions and poor soil.

Kudzu can kill native trees and other plants by completely covering them, smothering them with its leaves and blocking out light for photosynthesis. The weight of its vines can break or uproot trees, bring down power lines, and damage buildings. Because it is difficult to get rid of it once it takes hold, a kudzu infestation can make land unusable for growing trees or crops.

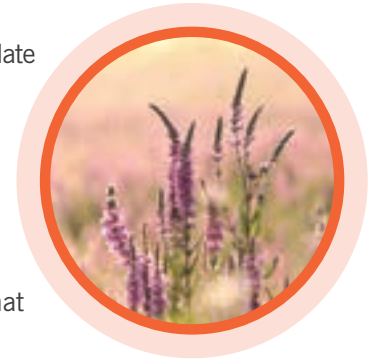
ZEBRA MUSSELS

These invertebrates first came to North America in the 1980s as stowaways in cargo ships from western Asia. If a large ship is only partially loaded, people pump water into it to stabilize it for long ocean voyages. This ballast water is then pumped out at the destination. Scientists believe this is how zebra mussels first came to North America.

Zebra mussels begin their lives as tiny larvae carried by water currents. As they mature, they attach themselves to hard substances like rocks, other mussels, boat hulls, and even the interiors of pipes. They are a major problem for power plants and public water systems because they grow in thick masses. In Lake Erie, 700,000 mussels per square yard have been found in some utility water pipes.

One adult zebra mussel may release up to a million eggs each year! Adults can also reattach themselves if they break off and can survive out of water for days. Zebra mussels can move to new locations as larvae and attach to boats, anchors, or ropes when they are adults. Mussels feed by filtering water and removing plankton (tiny plants and animals) from it. The problem is that they can filter out all the plankton from a lake or stream, leaving nothing for native animals to eat.

PURPLE LOOSESTRIFE



This is a lovely plant—or so it first seems. It has a tall stalk of pinkish-purple flowers that bloom in the late summer. But ever since it was brought to North America in the early 1800s as an ornamental garden plant, this plant has earned the nicknames of beautiful killer, marsh monster, and purple plague.

Soon after coming to the United States, purple loosestrife started spreading into natural areas. By 1830, it could be found all along the New England coast. The construction of the Erie Canal and other canals in the 1880s allowed it to spread farther inland. Today it is found in wetlands throughout all the lower 48 states except Florida. In some areas, it grows so densely that scientists have counted up to 20,000 seedlings in one square meter.

In Europe, where it is a native plant, purple loosestrife is not invasive because a variety of insects feed on it and keep it in check. None of these insects occur naturally in North America. This, and the fact that a single plant grows very quickly and can produce more than 2.5 million seeds annually, has allowed purple loosestrife to spread uncontrollably.

When purple loosestrife invades a wetland area, it crowds out native plants, reduces the food and cover available to wildlife, and chokes waterways.

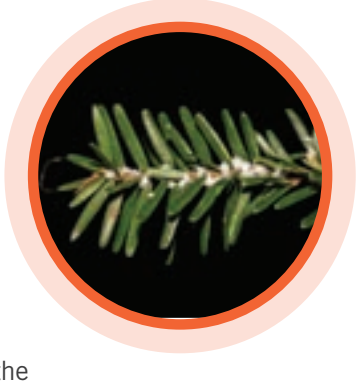
NUTRIA (NEW-TREE-UH)

These water-loving animals from South America have big front teeth and dense, warm fur, like their cousin the beaver. People brought nutria to the United States in the 1930s to raise them for their fur. But nutria fur never became popular, so some people released their nutria into the wild. They are now found in 22 states.

Nutria are herbivores with very large appetites. They eat about one-fourth of their body weight every day. While they will eat any almost any plant, their favorite food is the roots of marsh plants. They dig under the plants and turn them over to eat the root mat, often killing the plants. Nutria breed year-round and reproduce very quickly. An adult female can have two or three litters a year, with up to 11 young per litter.

As there are few predators to keep them in check, nutria have destroyed thousands of acres of marsh plants in the United States. This harms nesting water birds and songbirds, as well as fish and crabs, that depend on the marsh to live.

HEMLOCK WOOLLY ADELGID (UH-DEL-JID)



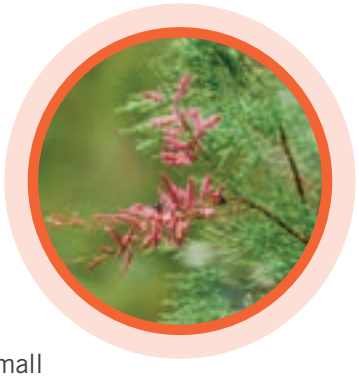
This tiny, sucking insect has killed many hemlock trees in the eastern United States. (Hemlocks are tall trees with evergreen needles.) It feeds on the sap at the base of the hemlock needles, causing them to fall off. Without needles, the tree starves to death, usually within a few years of the first attack.

The hemlock woolly adelgid was accidentally brought from Japan to the western United States in 1924 through wood shipments. Western hemlocks are naturally able to resist the insect. But when the adelgid traveled to the eastern United States in the 1950s, it became clear that eastern hemlocks could not resist it.

The adelgid now threatens entire hemlock forests in the eastern United States. As the trees die, the plants and animals that depend on the forest may also die. Because eastern hemlock trees are an important in forests along streams in the Appalachians, their loss can lead to drier soils and higher stream temperatures in that environment.

Hemlock woolly adelgids are spread by wind or carried by birds, mammals, and humans. They reproduce rapidly; one individual can produce up to 90,000 new adelgids in a year.

TAMARISK



These trees guzzle up tons of water in the dry southwestern United States. Tamarisk roots grow deep into the desert earth, sucking springs dry. And as its nickname— salt cedar—suggests, tamarisk oozes salt from its leaves, making the soil around it unsuitable for native plants.

Western settlers in the 1800s brought this Eurasian tree to the region as a source of wood and shade. It has now spread all over the Southwest.

Tamarisk thrives because it has no natural predators or known diseases. It is also very quick to multiply. Each plant produces up to a half million seeds, and some varieties can grow as much as 10 feet in height each year. When tamarisk replaces native plant species, the numbers of birds, small mammals, and other animals in the area may decrease.

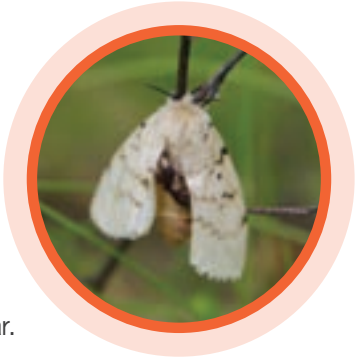
EUROPEAN STARLINGS

Starlings came to the United States in 1890 when a man named Eugene Schieffelin released 40 pairs of them in New York's Central Park. He said he wanted to bring all the birds mentioned by William Shakespeare to America.

By 1930, European starlings had spread all the way to the western states. Two hundred million starlings are now found over most of North America, Mexico, and parts of the Caribbean.

Starlings are intelligent and interesting birds, but they are bad news for native birds such as woodpeckers, bluebirds, and swallows. Starlings compete with these birds for nest cavities in trees, often destroying eggs and young birds in the process. Also, because they form large wintering flocks, they are considered pests by people.

GYPSY MOTHS



These moths have lived in Europe and Asia for thousands of years. They were first brought to the United States in 1869 by a scientist who wanted to try using them to produce silk. By accident, several of the caterpillars blew off the windowsill of his home in Massachusetts and escaped.

Twenty years later, there was a gypsy moth outbreak in the surrounding areas. Today, the gypsy moth is one of the most damaging forest pests in the northeastern United States. The caterpillars emerge from their eggs beginning in early spring. They are not fussy eaters. While they prefer oak, maple, and elm tree leaves, they will feed on approximately 500 different plants. When food is scarce, the caterpillars will eat almost any vegetation. They destroy the leaves of millions of acres of trees each year.

Gypsy moths are spread in two different ways. Newly hatched caterpillars spin short lengths of silken thread, which allow them to be carried by the wind. More often, they spread when people move their outdoor belongings—like cars, RVs, firewood, or lawn furniture—to new places, not knowing that they harbor gypsy moth eggs.

I LOVE MY GREEN JOB!

CAREER CORNER

ENVIRONMENTAL EDUCATORS lead school and community groups in learning activities that focus on trees and forest ecosystems. They may conduct field trips where learners can experience nature firsthand.