

# **invasive species**

An invasive species is any nonnative species that disturbs the ecosystems in which it has been introduced. These species may harm other living things and the environment and may affect the economy or the health of humans. Invasive species include plants, animals, bacteria, and other organisms. Invasive species can grow and spread quickly. They are also called introduced species, alien species, or exotic species.

## **Spread of Invasive Species**

Invasive species may arrive in new areas through natural migration. However, other species often introduce them. Human activities are one of the most common ways invasive species are transported to new habitats. The activities can be either accidental or intentional. For example, people involved in the pet trade often import nonnative species. Insects may get in the wood of shipping crates and then be released in a new part of the world. Likewise, some marine species attach themselves to ship propellers and get transported when the ship travels to new places. Once released into the new environment, any of these species may become invasive. (See also animal migration; human migration.)

Most introduced species have trouble adjusting to their new surroundings. Therefore, they do not survive for long. However, some introduced species can establish breeding populations and thrive. In many cases the new ecosystem lacks natural predators to prey on the introduced species. In other cases invasive predators gradually capture and reduce the natural prey population. Other invasive species may prevent native species from obtaining food, living space, or other resources. Over time, invading species can totally replace native ones, causing the extinction of native species in that area. Invasive plants and animals may also spread parasites and germs that may further disrupt invaded areas. (See also endangered species.)

Modern humans (*Homo sapiens*) are among the most successful invasive species. Humans have transformed natural environments into agricultural and urban landscapes. However, humans also contribute substantially to the introduction of different species to new areas. Thousands of years ago migratory humans spread diseases. They also brought domesticated animals with them as they traveled. As civilization expanded, people introduced exotic plants and animals from distant lands. They brought these species with them to use as food or to serve as curiosities in gardens and circuses.

## **Examples of Invasive Species**

### **Australia and the Pacific Islands**

Invasive species occur on all continents. The Norway, or brown, rat (*Rattus norvegicus*) probably originated in northeastern China. Explorers accidentally introduced the rodent to the Pacific Islands between the late 18th and 19th centuries. The rat preys on many native birds, small reptiles, and amphibians. People also deliberately introduced some other species during that time. They took dogs, cats, pigs, and other domesticated animals to new lands. There the animals caused the extinction of many other species, including the dodo from Mauritius by 1681.

Settlers deliberately introduced the European wild rabbit (*Oryctolagus cuniculus*) to Australia in 1827. Originally inhabiting southern Europe and North Africa, the rabbit served as a familiar object in a new land. It multiplied significantly in Australia, however, and harmed native trees and shrubs. In the 1850s people introduced the predatory red fox (*Vulpes vulpes*) to help control the European wild rabbits. Instead, the red fox preyed on marsupials and native rodents.

The brown tree snake (*Boiga irregularis*) is a native of Australia and Indonesia. It was introduced to Guam, Saipan, and several other Pacific Islands in the 1950s. It has caused the extinction of several birds, reptiles, and amphibians and two of Guam's three native bat species. The snake may have been brought to the islands to control native rodent populations. However, it is more likely that the original invaders were stowaways aboard military aircraft and cargo ships.

# North America

In the 1980s the zebra mussel (*Dreissena polymorpha*) created ecological and economic disruption to North America's Great Lakes. This species is native to the Black, Aral, and Caspian seas. Zebra mussels traveled in the ballast water in oceangoing ships. They were subsequently released when this water was dumped into the Great Lakes. Large numbers of zebra mussels clog water-intake pipes. They also remove much of the algae from the ecosystems they inhabit.

Fish farmers introduced Asian carp into the United States from Eurasia in the 1970s. The fish were supposed to help control algae on catfish farms in the South. The Asian carp escaped into the Mississippi River system during flooding in the early 1990s. The fish consumes large amounts of algae and zooplankton and often pushes aside native fish to feed. Their populations grow rapidly. Scientists feared that Asian carp might enter the Great Lakes ecosystem, where they could seriously disrupt the food chain. To try to prevent this, a series of electric fish barriers were built in the Chicago Sanitary and Ship Canal, among other measures.

By 2010 the Burmese python (*Python molurus bivittatus*), a native of Southeast Asia, was a problem for the wetlands of southern Florida. Some people who kept them as pets decided they did not want the snakes anymore and released them into the wild. Other snakes escaped after Hurricane Andrew damaged pet stores in 1992. The Burmese pythons soon established breeding populations in the state. Growing to nearly 20 feet (6 meters) long, these giant constrictor snakes became significant predators in the area.

Kudzu (*Pueraria montana*) is a fast-growing vine native to southern and eastern Asia. People introduced it into North America in the late 19th century for erosion control and decorative purposes. However, it readily spread over trees and shrubs, depriving native plants of sunlight.

## Global Reach

Some introduced species have a global distribution. Most notable examples in this category are disease-causing microbes. Early European colonists brought organisms that caused the common cold, smallpox, and other illnesses to the native peoples of the Western Hemisphere and the Pacific. Beginning in the late 1960s, people who were infected with HIV—which causes AIDS—inadvertently carried the virus from Africa to Haiti. Later AIDS would spread to populations across the globe.

## Solutions for Invasive Species

Most scientists agree that invasive species should be stopped before they are introduced to a new area. Port officials should more closely inspect materials being shipped internationally to uncover insects, seeds, and other stowaway organisms. Some officials believe that buyers, sellers, and transporters of illegal exotic pets should face tougher punishments.

Some ecologists focus on preventing invasive species from prospering in new habitats. They have called for aggressive monitoring and eradication programs. Many habitat restoration efforts concentrate on replanting and reintroducing native species while simultaneously removing invasive species. In addition, effective education programs give citizens the knowledge and resources to deal with invasive species in their regions.

## Cite

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school.eb.com/levels/middle/article/invasive-species/631812. Accessed 16 Dec. 2019.