

Ten Invasive Species Not Yet Established in the United

Invasive species are a relentless problem—there will always be more species that can arrive on our shores and whose impact on our economy and environment is difficult to predict. However, there are some dangerous species whose establishment we know would disrupt natural ecosystems and cause tremendous damage to resource-dependent economies like agriculture, forestry, and fishing. The ten species described below are ones we definitely do not want and are prime examples of why we must increase efforts to prevent new introductions. We must take immediate precautions now to ensure that in 10 years we can report the good news that these looming arrivals, and many others like them, have been kept at bay.

Brown tree snake (*Boiga irregularis*) caused an alarming number of bird extinctions when it was introduced to the once snakeless island of Guam after



World War II. If brown tree snakes become established in Hawaii, many endemic birds will likely disappear. And snakes don't just cause ecological destruction—damage to Guam's economy is

estimated at millions of dollars every year. The snake is particularly adept at stowing away on planes—a number have been found hidden away in landing gear after trans-Pacific flights. Ongoing efforts to prevent snakes from leaving Guam and from entering Hawaii have so far been successful.

Rinderpest virus, or cattle plague, is caused by a virus related to dog distemper and human measles and is highly contagious among cattle, bison, and many cloven-footed mammals. The virus is largely untreatable and in the United States, where animals have no immunity to the virus, mortality may approach 100 percent. The federal government restricts animal imports from countries with Rinderpest and requires U.S. ranchers and veterinarians to report any suspected cases.

Citrus long-horned beetle (*Anoplophora chinensis*) may be a greater threat to agriculture and U.S. forests than the better-known Asian long-horned beetle because it attacks a very wide diversity of trees. Two introductions have already occurred when beetles arrived on live trees



Washington State Dept. of
Agriculture

imported from Korea and China. In both Georgia and Washington State, immediate and apparently successful eradication efforts were made and demonstrate the extreme but worthwhile efforts that are sometimes necessary to exterminate a new invader while its invasion is still very localized.

Oxygen weed (*Lagarosiphon major*), an aquatic species of South Africa, has filled lakes in New Zealand and Great Britain, reaching a biomass of up to 225 tons/acre. At such high densities, light and oxygen levels decline to the detriment of biodiversity and water quality. It also has blocked water intake at nuclear and hydroelectric power plants. If established in the United States, it would likely add to the panoply of weeds that now crowd out native species on freshwater bodies across the country.

Khapra beetle (*Trogoderma granarium*) is widely established in the Middle East and Africa. It is one of the world's most destructive grain and seed pests. In the United States, more than 100 infestations have been documented and eliminated since the 1950s and hundreds of beetles have been found in arriving airport luggage and ship cargo. Were it to become established in the United States, it could affect billions of dollars worth of grain shipments we make to countries in which the beetle is not yet established.

Nile perch (*Lates niloticus*) are voracious predatory fish that were responsible for causing the extinction of more than 100 endemic fish species in Africa's Lake Victoria in less than 30 years. The species could have similar effects on the species-rich waters of many U.S. lakes and rivers if introduced here. Its value as a commercial species makes deliberate introduction an enduring possibility.

Common brushtail possum (*Trichosurus vulpecula*) is one of New Zealand's worst forest pests, defoliating thousands of acres every year. Hawaii's forests, like New Zealand's, evolved without arboreal mammals and many plants would likely meet the same fate if the possum were introduced into the ecosystem. Accidental importation is unlikely and already regulated, but thoughtless travelers could illegally bring individuals to Hawaii. Potential impacts on mainland forests are completely unknown.

Meadow fleabane (*Inula Britannica*) is an annual plant native to Europe and Asia and is a serious problem on bulb farms. Root fragments may hitchhike to the United States on imported bulbs and then grow into flowering adult plants. Infestations have been documented in Canada, Michigan, and Oregon (2002), but prompt action has been successful in eradicating it.

Nun moth (*Lymantria monacha*) could cause damage similar to that inflicted on East Coast forests by the gypsy moth—a species to which it is related—if it reaches the United States. The nun moth is native to Europe and Asia where it causes significant economic and ecological damage to conifer and deciduous species—outbreaks have caused the defoliation of up to one million acres of forest. Females are attracted to artificial lights and may readily deposit egg masses on containers and freight vessels traveling from foreign to U.S. ports.

“Killer” shrimp

(*Dikerogammarus villosus*) gets its name from its voracious predatory behavior, attacking almost any small organism it comes across. Having recently spread through western Europe, it is poised to invade the Great Lakes, courtesy of dirty ballast water discharges. If it reaches the Great Lakes, it will likely consume both fish eggs and the invertebrates



Dirk Platvoet & Jaimie Dick

upon which many fish depend. Immediate prevention of dirty ballast water discharge is the only action likely to prevent the invasion of this insatiable amphipod.