



## Unwelcome Guests



Purple loosestrife (Ohio State Weed Lab Archive, The Ohio State University, Bugwood.org)



Invasive plant patrol at Acadia



Buckthorn (James H. Miller, USDA Forest Service, Bugwood.org)



Asian shore crab (U.S. Geological Survey)



European fire ant (Gary Alpert, Harvard University, Bugwood.org)

The spread of non-native plants and animals is one of the biggest threats facing natural areas. Non-native species, especially those considered invasive, threaten rich communities of native plants and animals across the United States. In national parks, more than 2.6 million acres of park lands are affected by invasive plant species, and 234 National Park Service areas have invasive animals in need of management. It's no surprise that Acadia National Park faces both these issues. We work hard to manage invasive species, but we can use your help!

### Non-native plants

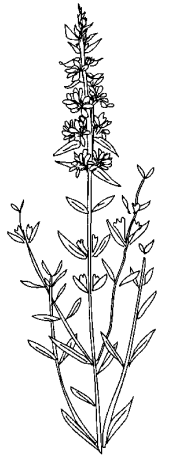
Non-native species are introduced by humans—intentionally or otherwise—into areas where they did not previously exist. Some have escaped from gardens. Others have traveled via ship ballast, car and truck tires, and boats. They can also be spread in fill and road salt or sand.

Non-native plants include both terrestrial and aquatic species. If invasive, they pose serious threats to natural environments.

At Acadia National Park, non-native plant species are a pressing issue. Nearly one-quarter of the 1,135 vascular plant species found in Acadia are non-native; about two dozen species are highly invasive and threaten native communities. Some threaten highly productive wetland habitats.

Purple loosestrife (*Lythrum salicaria*) is one such plant. Despite its attractive appearance, purple loosestrife chokes out native vegetation

such as cattails (*Typha latifolia*). Many species of mammals, fish, insects, and waterfowl—including mallards, muskrats, and red-winged blackbirds—depend on the aquatic plants that purple loosestrife pushes out. Other invasives in Acadia include buckthorn (*Frangula alnus*), Japanese and common barberry (*Berberis* spp.), Oriental bittersweet (*Celastrus orbiculatus*), and Japanese knotweed (*Polygonum cuspidatum*).



Purple loosestrife (*Lythrum salicaria*)

Not all non-native species are harmful. Some, such as domestic apple trees (*Pyrus malus*) and lilacs (*Syringa* spp.) that grow in former homesites within Acadia, are not invasive and do not directly threaten other plants or wildlife.

### Managing invasive plants

National parks were set aside to protect and preserve natural, cultural, and scenic resources for the future. Since invasives threaten these resources, park staff work to control them and thereby protect native species.

Acadia National Park staff use an integrated pest management approach to manage invasive plant species. This includes determining whether a particular plant poses a serious threat to native resources and whether control

is feasible; identifying and monitoring areas where they grow; and using the latest research to decide what treatments will be effective.

Purple loosestrife, for example, is managed by detecting new populations early, before they spread, carefully using herbicide on individual plants, and educating park neighbors and local nurseries about this invasive ornamental to discourage its use in home gardens.

### Help fight invasive plants!

You can help reduce the spread of invasive plants and enhance the survival of native plants in the park and at home by following these tips:

- Garden with natives. Local agricultural extension services and garden clubs can often assist you with identifying native plants. Many states have organizations that promote the use of native plants. Remember, plant species native to Acadia may not be suited to other regions.

- Check your home and garden. Remove plants you know to be invasive.
- Take a stand against invaders. Avoid purchasing plants known to be invasive, such as purple loosestrife, Japanese or common barberry, Oriental bittersweet, or multi-flora rose.
- Volunteer to help remove invasive species from parks in your area.

- Clean your boat before you float. Remember to watch out for hitchhiking plants on boats and equipment (trailers, paddles, and fishing gear). Avoid giving a ride to ANY aquatic vegetation. A single invasive aquatic plant or plant fragment can infest an entire lake or stream.
- Watch your step. While exploring natural areas, stay on designated trails to avoid crushing

tiny plants underfoot and disturbing fragile habitats. Remember, plants grow by the inch and die by the foot.

- Leave it be. In Acadia National Park, collecting plants or other natural or historic objects degrades the park and threatens species survival. Collecting is prohibited.

## Invasive animal species

Some non-native animal species have been around for many years and do not threaten native plants and wildlife. Others are invasive and pose serious threats to plants and animals in both aquatic and terrestrial environments.

The Asian shore crab (*Hemigrapsus sanguineus*) is a relatively new visitor to Acadia's rocky intertidal zone; researchers discovered one pregnant female along the Schoodic Peninsula in 2005. Since its introduction along the New Jersey coast in 1988, this omnivorous crab has steadily expanded its range and is now often a dominant crab in many shallow and intertidal rocky habitats from Maine to North Carolina. A voracious eater that reproduces quickly and tolerates a wide range of environmental conditions, the Asian shore crab threatens native intertidal species, like common periwinkles, blue mussels, and rock crabs, and could affect Maine's mussel-harvesting industry. Intertidal monitoring projects may help the park determine if the Asian shore crab has established itself in this area.

Invasive animal species also affect park resources on land. The European red fire ant (*Myrmica rubra*), which was likely transported to the area in garden plants, is spreading aggressively within the park. Its painful sting harms humans and wildlife, and it threatens native species of ants and other ground-dwelling animals by outcompeting them for food and shelter.

Park staff are on the lookout for three other invasive insect species that are not yet here but could seriously damage Acadia's trees.

Asian longhorned beetle larvae (*Anoplophora glabripennis*) tunnel into many species of

deciduous trees, damaging and eventually killing them. The closest infestation has required the removal of more than 21,000 trees in a 64-square-mile area in Worcester, Massachusetts—nearly every deciduous tree in some neighborhoods.

The emerald ash borer (*Agrilus planipennis*), another exotic wood-boring beetle, has killed tens of millions of ash trees in 10 states. This beetle is unintentionally transported by people to new areas via firewood. To prevent the infestation from spreading to other areas, the USDA has established quarantines that prohibit the movement of ash materials and hardwood firewood out of infested areas.

Unlike the Asian longhorned beetle and emerald ash borer, which are relatively newcomers, the hemlock woolly adelgid (*Adelges tsugae*) is established in many eastern states. In the Blue Ridge Parkway and Shenandoah National Park, up to 80 percent of eastern hemlocks have died due to infestations, affecting trout streams and entire terrestrial and aquatic plant communities. Acadia's eastern hemlocks are vulnerable to an infestation.



## Help contain invasive animals!

You have an important role to play in restricting the spread of exotic animals.

- Learn to recognize exotic species and report them if you find them. The Worcester infestation of Asian longhorned beetles was discovered by a local homeowner.

- Leave your firewood at home.

- Learn more. Visit the links below to learn more about how these species affect our environment.

## Additional Resources

Acadia National Park  
[www.nps.gov/acad](http://www.nps.gov/acad)

National Invasive Species Information Center  
[www.invasivespeciesinfo.gov](http://www.invasivespeciesinfo.gov)

Center for Invasive Species and Ecosystem Health  
[www.invasive.org](http://www.invasive.org)

Invasive Plant Atlas of New England  
<http://nbii-nin.ciesin.columbia.edu/ipane>

U.S. Department of Agriculture – Natural Resource Conservation Service Plants Database  
<http://plants.usda.gov>

U.S. Forest Service Invasive Species Program  
[www.fs.fed.us/invasivespecies/index.shtml](http://www.fs.fed.us/invasivespecies/index.shtml)

U.S. Forest Service Pest Alerts  
<http://na.fs.fed.us/pubs/palerts.shtml>