

NATIONAL FORESTS EASTERN REGION

THE MISSION OF THE USDA FOREST SERVICE IS to "Sustain the health, diversity and productivity of the Nations forests and grasslands to meet the needs of present and future generations."



Emerald ashborer
David Cappaert www.forestryimages.org

EASTERN REGION NATIONAL FORESTS



LEGEND

- NATIONAL FOREST
- ★ RESEARCH STATION and STATE AND PRIVATE FORESTRY
- STATE AND PRIVATE FORESTRY

Invasive species are recognized as one of the most significant threats to aquatic and terrestrial ecosystems. The Forest Service is committed to implementing its National Invasive Species Strategy and the Eastern Region Non-native Invasive Species Framework.

Common buckthorn

J.S. Peterson
USDA-NRCS PLANTS Database

Spotted knapweed

USDA APHIS Archives

Kudzu growing on tree of heaven



NON-NATIVE INVASIVE SPECIES MANAGEMENT: Lake States National Forests



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PREVENTION: The first line of defense for invasive species is prevention. The most cost-effective approach to combating invasive species is to keep them from being established in the first place. Surely these boaters on the Chippewa National Forest cleaned their boat to prevent the spread of Eurasian watermilfoil in Leech Lake.



RESEARCH: Successful invasive species programs are based on sound science. National Forests work with Research Stations and universities to learn more about non-native invasive species including the rusty crayfish Study on the Ottawa National Forest with then University of Notre Dame. Rusty crayfish essentially clearcuts lake bottoms removing structure and food for native species.

CONTROL/ RESTORATION: Restoring native plant communities can reduce the risk of future invasions in areas where control has reduced or eliminated invasive species. The Hiawatha and several other National Forests have native plant programs to meet this need.



EARLY DETECTION AND RAPID RESPONSE: When prevention fails, non-native invasive species must be detected early and dealt with before they become established and spread. Volunteers on the Chequamegon National Forest help control leafy spurge and purple loosestrife before they become more widespread.



PARTNERSHIPS: Across the Eastern Region, national forests collaborate with tribes, state agencies, landowners, local governments, universities and other Federal agencies to coordinate programs for the prevention and control of non-native invasive species. Here, Nature Conservancy volunteers work to control barberry on the Ottawa National Forest.



Kudzu growing on tree of heaven

Purple loosestrife
Bernd Blosssey, Cornell University
www.forestryimages.org

Autumn olive



YOU CAN MAKE A DIFFERENCE



Learn the difference between native and non-native invasive plants in your backyard and neighborhood.



STOP AQUATIC HITCHHIKERS!

Prevent the transport of nuisance species. Clean all recreational equipment.

www.ProtectYourWaters.net

Vehicles, boats, ATV's, bicycles, horses, even your hiking boots can spread seeds and spores of non-native invasive species. Firewood can also spread spores and seeds so avoid bringing firewood with you when camping.

These volunteers on the Chequamegon-Nicolet National Forest are helping to restore important habitats.



Native gardens like this one on the Hiawatha National Forest are beautiful and can provide seed sources for restoration projects.

Many of the non-native invasive species today were spread by careless or uninformed individuals in the past—but you can make a difference today!



Autumn olive

Purple loosestrife
Bernd Blosser, Cornell University
www.forestryimages.org

Kudzu



Asian longhorn beetle

Kenneth R. Law
USDA APHIS PPO
www.forestryimages.org

NON-NATIVE INVASIVE SPECIES PREVENTION CHECKLIST

- ✓ Learn to identify locally invasive plants and animals.
- ✓ Clean equipment, clothing, animals to prevent the spread of NNIS.
- ✓ Do not choose invasive species for gardening and landscaping — use native species when possible.
- ✓ Dispose of yard waste, fishing bait and unwanted pets properly so they do not become problems in natural areas.
- ✓ Get involved—volunteer to control non-native invasive species



NON-NATIVE INVASIVE SPECIES ADAPTATIONS AND THREATS



Round Goby
Dave Jude
Michigan Sea Grant

Spotted knapweed and baby's breath crowd open sand dune habitats on Great Lakes shorelines which serve as critical habitat for the threatened piping plover.



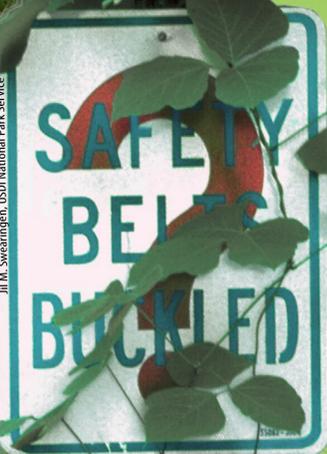
Mt. DNR photo David Kenyon

WHY SHOULD YOU CARE?

Non-native Invasive Species:

- ✓ Are second only to habitat loss in reducing the biodiversity of Federally listed Threatened and Endangered Species.
- ✓ Cost Americans more than \$137 billion per year.
- ✓ Cover more than 133 million acres and are spreading at a rate of at least 1.7 million acres per year.
- ✓ Have been introduced unintentionally as food, fiber, for landscaping, to stabilize soils or to "improve" habitat only later to be found harmful.
- ✓ Produce large numbers of offspring and are faster growing than native species.
- ✓ Tolerate many environmental conditions and have few natural predators or diseases.
- ✓ Spread easily, usually by wind, water, animals or equipment.
- ✓ Have no regard for geographic or political boundaries.
- ✓ Require tremendous cooperation across all landscapes for public and private land stewards to effectively control their spread.

Round goby and Eurasian ruffe compete for spawning areas with native fish such as perch and shiners affecting walleye and other native fish. The round goby accumulates contaminants making it a "toxic lunch" for loons and walleyes.



Kudzu



Species such as Norway maple, buckthorn, garlic mustard, and earthworms out-compete and displace native wildflowers and tree regeneration. The shrub layer in this photo is solid buckthorn, native species cannot compete with this invader.

Spotted knapweed produces a chemical "catechin" that works as an anti-bacterial agent and natural herbicide that prohibits native plants from growing in the same area.

Garlic mustard displaces the spring wildflowers of hardwood forests and is toxic to the rare West Virginia white butterfly.

Photo: Leslie J. Mehrhoff
Invasive Plant Atlas of New England
University of Connecticut

Garlic mustard



Spotted knapweed
Norman E. Rees, USDA ARS

Tree of heaven



RESTORATION— MAKING A DIFFERENCE



The primary management objective of Midewin National Tallgrass Prairie, located just outside of Chicago, is restoration of native prairie that once dominated the state.

The Huron Manistee is working with local farmers to increase the availability of local native seed of four native grasses—big bluestem, littlebluestem, switch grass and Indian grass to restore barren habitats.



Many volunteers help gather seeds with Forest Plant Ecologists on the Hiawatha National Forest. The forest also uses native shrubs to restore watersheds and wetlands.



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HAT IS BEING DONE?

Native plants are valued for their aesthetic, economic and ecologic qualities. Use of native plants for restoration and landscaping can reverse the trend of species loss. The Eastern Region of the Forest Service is implementing its Native Plant Framework aimed to promote use of native plants on national forests and prairies.



Cardinal flower

Thomas G. Barnes
USDA-NRCS PLANTS Database



Prescribed burning on the Hoosier National Forest along a Texas Gas Pipeline is helping to promote native species.



Wild bergamot

Big bluestem

Jennifer Anderson
USDA-NRCS PLANTS Database

Coreopsis



NON-NATIVE INVASIVE SPECIES MANAGEMENT: Northeastern National Forests



PARTNERSHIPS: Cooperative efforts of the New England Wildflower Society, the Appalachian Mountain Club and the White Mountain National Forest restored the Robbins cinquefoil allowing it to be removed from the Endangered Species List.

RESEARCH: Researchers at the Northeast Research Station are studying the effects non-native invasive species on native species, seed banks as well as fire management.



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Hemlock woolly adelgid damage



Oriental bittersweet

PREVENTION: Clean hitchhikers such as this Eurasian watermilfoil from boats, trailers, and fishing equipment to prevent their spread.



Photo by Elizabeth Z. Czarnopata

Glossy buckthorn
Gil Wojciech
Polish Forest Research Institute
www.forestryimages.org

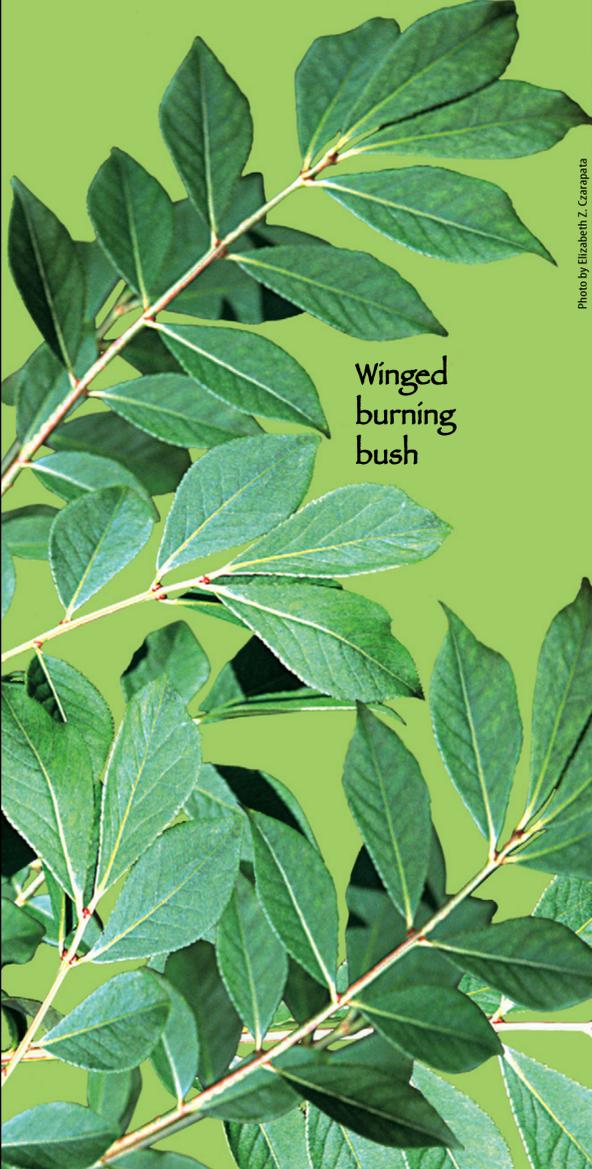


EARLY DETECTION AND RAPID RESPONSE: By treating non-native invasive species like this purple loosestrife when first detected, managers have a much better chance of maintaining local biodiversity.



CONTROL AND MANAGEMENT: Highways and road corridors can be a major source of spread of invasive species such as Japanese knotweed. Support your local transportation department efforts to control invasive species along roadways near you.

RESTORATION: Landowners should use native or non-invasive alternatives to species such as barberry, burning bush, bittersweet, and Norway maple that are invasive in native forests.



Winged burning bush

Japanese barberry

Norway maple seed pods
Paul Wray
Iowa State University

