



United States Department of Agriculture
Forest Service
Eastern Region

NON-NATIVE INVASIVE SPECIES

Eastern Region Program Accomplishments 2012



Japanese knotweed (Fallopia japonica)



Purple loosestrife (Lythrum salicaria)



Eurasian watermilfoil (Myriophyllum spicatum)



Garlic mustard (Alliaria petiolata)
photo: Bill Johnson



Feral pigs (Sus scrofa)



Allegheny National Forest

2012 Invasive Species Accomplishments

Non-native Invasive Plant Treatments

A total of 215 acres of non-native invasive plants were treated across the Allegheny National Forest (ANF). Treatments were accomplished via stewardship contracts, ANF staff, Federal Correctional Institute McKean prison crew, Youth Conservation Corps (YCC), and student interns. Some of the species treated included: garlic mustard (*Alliaria petiolata*), goatsrue (*Galega officinalis*), multiflora rose (*Rosa multiflora*), Japanese barberry (*Berberis thunbergii*), Exotic bush honeysuckles (*Lonicera* sp.), glossy buckthorn (*Frangula alnus*), and purple loosestrife (*Lythrum salicaria*). Three outreach/education sessions on invasive plant identification and their impacts were given to ANF staff and a local garden club. A non-native invasive plant brochure (see below) was also developed using ENFIA (Eastern National Forests Interpretive Association) funds in FY12.

Forest Pest Outreach

Forest pest panels were developed by State & Private Forestry (S&PF) for display in the visitor area the ANF's three administrative buildings. The panels will rotate through each office highlighting Emerald ash borer, Asian longhorned beetle, and gypsy moth. Pending funding, additional panels may address non-native invasive plants and aquatic invasive species.



Zebra Mussel Monitoring

To prevent introduction of zebra mussels into the Allegheny River, 685 boaters were randomly screened at two Forest Service boat launches using a pre-determined set of questions developed to ensure boats with a high risk of harboring the species were not launched. Also, for boats that were launched without being screened, their trailers (1,897) were inspected in parking lots for evidence of aquatic vegetation that might harbor zebra mussels. No evidence of the species was detected.

Hemlock Woolly Adelgid Monitoring

Using existing hemlock classification and hemlock woolly adelgid (HWA) risk (susceptibility and vulnerability) maps, surveys started in the southeast corner of the ANF (portion of the ANF in closest proximity to nearest known HWA site in Pennsylvania) and moved northwest assigning priority to stands with large influxes of recreation users. In total, 19 sites and nearly 700 hemlocks were surveyed and no evidence of HWA was detected.

Hemlock Conservation Strategy

Using Forest Health Protection (FHP) funds awarded by State & Private Forestry (S&PF), the ANF entered into a Challenge Cost Share Agreement (CCSA) with the Pennsylvania Chapter of The Nature Conservancy (PA TNC) to develop a hemlock conservation strategy for subsection 212Ga, the unglaciated Allegheny high plateau. The strategy will use existing data to develop a model to map unmapped hemlock stands within subsection 212Ga. Hemlock stands will then be evaluated for their conservation value, including ecological, social and economic factors, as well as their suitability for available and emerging HWA control strategies. A series of workshops will allow partners (e.g., state and federal agencies, Seneca Nation of Indians, forest products industry, conservation groups, etc.) to provide input on the strategy, particularly the evaluation of hemlock stand conservation value.

Species Targeted	Accomplishment	Funding	Fund Code
NNIPs	215 acres	\$93,400	NFVW, NFWF, CMRD, NFRW, GSRV, NFTM, NFND
HWA	19 sites, 696 hemlocks	\$3,000	NFVW
Hemlock conservation strategy	CCSA with PA TNC	\$80,000	FHP funds (S&PF)
Zebra mussel	685 boats, 1,897 trailers	\$4,000	NFIM, NFWF, NFRW

Allegheny National Forest

4 Farm Colony Drive
Warren, PA 16365-5206



Chequamegon-Nicolet National Forest

2012 Invasive Species Accomplishments

Partnerships, public involvement, prevention, and control work were emphasis areas for the Chequamegon-Nicolet National Forest (CNNF) invasive species program in 2012. Over 1500 acres were treated, new partnerships were formed, and volunteers gave it their all!

NNIS Inventory and Control Work

The day to day work of managing invasive species is tough work, but our seasonal invasive species summer crews managed to do exceptional work, including:

- Treatment of 23 acres of Canada thistle in critical habitat of the federally threatened plant Fassett’s locoweed (along with Lac Courte Oreilles Youth Conservation Crew)
- Inventory and treatment of all known NNIS sites along 25 miles of the North Country National Trail system.
- Treated eleven acres of invasive plants in the Blackjack Springs and Whisker Lake Wilderness Area.
- Spotted knapweed was treated at numerous gravel pits, a common source for this species.
- Aquatic plant surveys at 10 lakes

Public Involvement: National Public Lands Day

The Forest co-sponsored several hands-on invasive species control events for National Public Lands Day:

Proud of our Partnerships!

100% of the Forest is now covered in a CWMA

The Timberland Invasive Species Partnership (TIP) was formed in 2012, covering four counties in the southeast corner of the CNNF. As a result, 100% of the CNNF is now covered by one of five cooperative weed management areas (CWMAs).

Following are some CWMA highlights of the year:

- Melissa Simpson and Steve Janke, two district Plant Ecologists, were instrumental in getting the Timberland Invasive Species Partnership launched.
- The Wisconsin Headwaters Invasives Partnership (WHIP) is the first CWMA in state to have the Wisconsin Department of Transportation signed on as a partner
- The Wild Rivers Invasive Species Coalition (WRISC) received a grant from the Boat U.S. Foundation titled “Earthworm Education for Anglers” to teach fisherman the importance or properly disposing of bait. WRISC also operated two portable boat washing stations.
- The Northwoods CWMA made huge strides in public awareness by visiting farmer’s markets, local schools, and the county fair.

Contact: Linda R. Parker, Forest Ecologist, 715-762-5169 or Lrparker@fs.fed.us



The Eagle River-Florence District installed two boot brushes at the Anvil National Recreation Trail where volunteers removed 30 pounds of garlic mustard as part of National Public Lands Day.



The CNNF teamed with the Ottawa to hand-pull Eurasian water mifoil on Lac View Desert



Cutting buckthorn with tools loaned from the Upper Chippewa Invasives Cooperative and the CNNF

CNNF Invasive Species treatments		
Fund Code	Acres Treated	
CWKV	200	
NFVW	1053	\$262,814
NFMG	26	
SSCC	258	
Total	1537	

Chequamegon-Nicolet National Forest
1170 4th Ave, S.
Park Falls, WI 54555



Chippewa National Forest

2012 Invasive Species Accomplishments

The Chippewa National Forest (CNF) Invasive species program focus on prevention and control of high priority invasive species that uses threaten ecosystems. Most of the lands managed in the CNF are part of the Leech Lake Indian Reservation. The **Leech Lake Band of Ojibwe** (LLBO) is our primary partner in all invasive species management efforts.

Holding the line on garlic mustard

We are working to contain an isolated population of garlic mustard with potential to spread to millions of acres of surrounding hardwood forest. The CNF worked with the LLBO and the Conservation Corps of Minnesota (CMMI) to hand-pull 87 acres of garlic mustard. The project was funded through a combination of USFS funding and a gift from the **Josephine Roberts** and **McDanel Family** Foundations. This effort also benefits local communities through tribal employment.

Getting Gravel Under Control

Gravel pits are a notorious source of invasive and noxious weeds such as common tansy, spotted knapweed, and creeping thistle. These weeds establish readily in the nutrient poor soil of a gravel pit, seeds accumulate in the soil, then are spread to road maintenance and construction sites throughout the Forest. While it isn't usually feasible for us to treat the thousands of acres infested with these weeds, we can prevent further spread by going after the source.



CNF Noma Gravel pit just after treatment with herbicide Blue dye is used to assure good coverage and prevent accidental contact with treated plants

In 2012 the CNF invasive species specialist worked with the Forest Minerals, Engineering, and Silviculture Programs to begin developing a comprehensive management plan for twenty gravel pits on the forest. Many of our gravel pits will be restored to forest and those remaining open will be treated with herbicide or biocontrol insects to control weeds.

Protecting and Restoring Forests from Invasive Insects and Diseases

The black ash research project is coming along as scheduled. The harvests were all accomplished last winter. Half the trees were planted in the experiment last fall prior to harvest and the balance was planted this spring after harvest. Monitoring of many variables has been on going through the growing season.

The Ash Diversification EA has been moving along VERY SLOWLY. It's still considered a viable project, but may be delayed now with the blow down and a shift in priorities for the Forest. The Forest has been tending the American elm restoration plantings and Jim Slavicek, the lead research from Northern Research Station in Delaware, OH, will be here the week of September 17 to review the plantings and help us take measurements on all the trees.



CMMI workers pulling garlic mustard in maple stand

Biocontrol Control of Knapweed

While it isn't feasible to treat thousands of acres of knapweed with herbicides, we added a new tool for management of knapweed. A new program of biocontrol for spotted knapweed began in 2011. We released insects at five sites in a pilot study. We ramped up this effort up in 2012, releasing 8,000 knapweed seedhead weevils knapweed root-boring weevils at twenty sites.

Loosestrife Partnership Yields Added Benefits

We continued our partnership with Itasca Waters Legacy Partnership (IWLP) in 2012 to perform survey and control actions on hundreds of purple loosestrife sites. In 2012, the partnership was able to field 2 crews and release 52,900 Galerucella beetles to control purple loosestrife populations.

Our partnership with IWLP is the basis for a new **Cooperative Invasive Species Management Area (CISMA)**, a partnership between Federal, State, Local Tribal and nongovernmental agencies to manage invasive species across boundaries in Itasca County. The CISMA is in the process of forming in the Winter of FY 2013.

Earthworms-Managing the Menace

Invasive earthworms are widespread on the CNF and have caused untold harm to soil and native plant communities. In July 2012 Researchers and students from Gustavus Adolphus College of St. Paul Minnesota conducted evaluations of earthworm impacts on the species of concern Goblin Fern (*Botrychium mormo*). It is anticipated that information gleaned from this study will help guide management of forests to preserve intact goblin fern habitats for the future.

But wait...There's more...In order to ensure that pesticide applications by the forest, contractors and partners are compliant with state and federal law, the CNF sponsored Pesticide Applicator Licensing training attended by twenty four CNF staff in June 2012. Training was conducted by the staff of the University of Minnesota Extension Agency.

Estimated Acres of Invasive Species Controlled in 2012

Biocontrol **170**
Hand pulling **87**
Herbicide **10**



IWLP Workers ready to release loosestrife biocontrol insects



Nursery planting of Dutch elm disease tolerant elm trees

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NNIPs	215 acres	\$93,400	NFWW, NFWF, CMRD, NFRW, GSRV, NFTM, NFND
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Hemlock conservation strategy	CCSA with PA TNC	\$80,000	FHP funds (S&PF)
Zebra mussel	685 boats, 1,897 trailers	\$4,000	NFIM, NFWF, NFRW

Chippewa National Forest
200 Ash Avenue
Cass Lake, MN 5633-8929



Green Mountain & Finger Lakes National Forests

2012 Invasive Species Accomplishments

Program highlights on the Green Mountains NF:

- Contractors treated shrubby NNIP at the Middlebury District Office, a highly visible public site.
- Retained receipts funded Vermont YCC to manually control wild chervil along 4.7 miles of road in the Natural Turnpike and Upper White River project areas
- The Upper White River CWMA received two grants that funded 1) a coordinator for education, outreach, and EDRR; 2) interns to survey 65 miles of roads and trails; 3) a contractor to treat 4 high priority Japanese knotweed infestations
- Coordinated invasive insect surveys and control efforts through "Don't Move" firewood program and with forest health experts from SPF.
- Participated in a practice Emerald Ash Borer "Disaster Drill" with VT Depts. of Forest, Parks, and Recreation; Agriculture; AHPIS; and SPF.
- Helped VT Forest health staff look for potential infestation of Hemlock wooly Adelgid on NF lands in Pownal.

Program highlights on the Finger Lakes NF:

- Great Lakes Restoration Initiative funds covered the majority of the cost to:
 - Treat knapweeds and thistles on > 905 acres of grasslands with broadcast herbicide
 - Treat riparian > 77 acres within grasslands with foliar spot spraying of herbicide
- Other BLI paid for 894 acres inventory for future treatments.



Figure 2: Volunteers (Isadora and Ezra Marks) removed fruit from Morrow honeysuckle shrubs before shrubs were treated by cut-stump herbicide application (photo by Donna Marks)



Figure 1: A typical FLNF grassland, where a mix of rare plants, common grassland plants, and NNIP resides (photo by Elisabeth McLane)

Project	Fund Code	Dollars	Acres/ Sites
Finger Lakes Grassland Restoration			
Broadcast spray for thistles & knapweeds	NFVW	\$15,027	905.3 acres
	NFWF	\$ 2,486	
	NFXFF6*	\$25,000	
	Sum	\$42,514	
Riparian area hand spraying for thistles & knapweeds	NFWF	\$13,256	77.99 acres
	NFVW	\$4,558	
	NFXFF6*	\$4,558	
	Sum	\$22,372	
Botanical inventory in preparation for FY13 treatment	NFIM	\$18,026	894 acres
	NFWF	\$ 1,803	
	Sum	\$19,829	
Green Mountain NNIP Control			
Manual & herbicide treatments of high risk sites**	NFVW	\$1,121	<1 acre, highly visible
Natural Turnpike and Upper White River Project NNIP Control	Retained receipts (stewardship contracts)	\$5,400	12+ acres along 4.7 miles of roads

Green Mountain & Finger Lakes National Forests

231 North Main Street
Rutland, Vermont 05701-2417



Hiawatha National Forest

2012 Invasive Species Accomplishments

The Hiawatha National Forest (HNF) continued a progressive non-native invasive species (NNIS) program in 2012. The focus was treatment of garlic mustard, St. John’s wort, spotted knapweed, purple loosestrife, Eurasian water milfoil (EWM), wild parsnip, invasive thistles, and Scotch pine. Other activities were directed toward control of zebra mussels and sea lampreys. Valuable projects continued, such as removing invasive plants from T&E species sites, controlling non-native invasive plants (NNIP) in gravel pits and along roads, releasing bio-control insects in spotted knapweed and EWM infestations and restoring priority sites, such as Sandtown, Mather Lodge (Figure 1), and the North Country Trail. New programs began, such as the Round Island Rendezvous that provided NNIP control near dwarf lake iris (federal threatened) populations.

The NNIS program expanded by coordinating with 2 cooperative weed management areas (CWMA’s), volunteers, and other HNF resource programs. The Eastern UP CWMA and volunteers helped remove NNIP from piping plover (federal endangered), Pitcher’s thistle, and Houghton’s goldenrod (both federal threatened) areas. Youth Conservation Corps removed NNIP impacting piping plover habitat along Lake Michigan. Volunteers assisted with NNIP removal from high priority locations, such as Grand Island NRA and garlic mustard sites. The Central UP CWMA weed crew removed NNIP and conducted mapping and monitoring in Big Island Lake and Rock River Canyon wilderness areas. The Round Island Rendezvous included 18 volunteers from several HNF program areas and the Huron-Manistee National Forest who removed 48 bags of NNIP from the island (Figure 2). The main NNIP pulled were spotted knapweed, non-native thistles, and St. John’s wort. NNIP in timber sale areas were treated with herbicide and manual removal methods prior to seeding with native species.



Figure 1. CUPCWMA NNIP crew pulling spotted knapweed from the slope at Mather Lodge on Grand Island, Lake Superior

Through a program supported by various resource areas, Scotch pine was removed along several major travel corridors on both sides of the forest. NNIP in gravel pits across the HNF were treated through herbicide contracts. Other projects highlighted the North Country Trail and Whitefish Bay Scenic Byway by removing NNIP from trailheads, parking areas, campgrounds, and other popular visitor sites. Bio-control methods were used on spotted knapweed in wildlife openings and to treat EWM at Steuben Lake. The first use of a portable boat cleaning unit occurred in 2012. The equipment was used to clean over 90 boats of NNIS, such as zebra mussel and EWM, and educate anglers about aquatic invasive species at the Escanaba Walleye Tournament on Lake Michigan. The USFWS treated approximately 25 miles of streams with lampricide to control invasive sea lampreys on the HNF. The long standing program benefits native fish populations in the Great Lakes region.

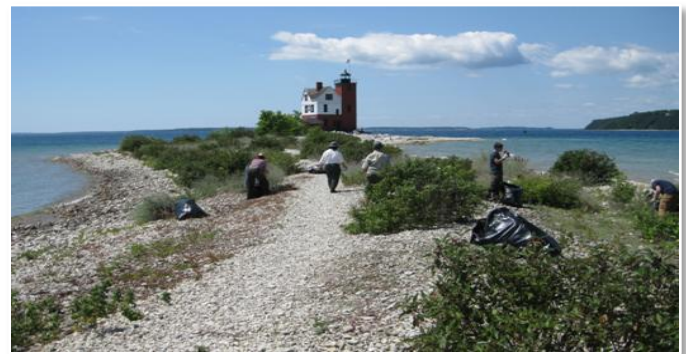


Figure 2. “Round Island Rendezvous” NNIP removal project

Fund code	Funding	Acr es	Sites/Comments
NFVW	\$112,000	180	39/Main Program
NFMG, SSCC, CWKV, CMRD, NFWF, WFHF		193	68/also funded outreach, inventory, NEPA, etc
Partners/Cooperators: Eastern Upper Peninsula Cooperative Weed Management Area (EUPCWMA), Central Upper Peninsula Cooperative Weed Management Area (CUPCWMA), USFS-Northern Research, HNF Native Plant Program Volunteers, Grand Island Association, Grand Island Marathon, US Fish & Wildlife Service			

Hiawatha National Forest
 820 Rains Drive
 Gladstone, MI 49837



Hoosier National Forest

2012 Invasive Species Accomplishments

As in prior years, the Hoosier National Forest emphasized the treatment of non-native invasive species (NNIS) in areas near rare barrens plant communities in Forest designated Special Areas (SAs). Much of the work involved herbicide treatments using IDIQ Task Orders (TOs) along trails, old roads, wildlife openings, or other disturbance corridors, and along streams. Other priority treatment highlights involved control of water milfoil (Celina Lake – 17 acres); Fecon brush cutter and herbicide control on autumn olive and other shrubs/vines (43.2 acres), bushhogging in wildlife openings, and prescribed burning projects. Volunteers assisted with hand-pulling garlic mustard. Forest Service staff conducted herbicide treatments primarily on new invaders such as Japanese chaff flower (7.2 acres), and smaller sites of stilt grass or tree of heaven.

Priority Treatments near Barrens Communities

- Japanese stilt grass – 169.8 acres
- Autumn olive – 45.6 acres
- Garlic mustard – 17.7 acres
- Tree of heaven – 3.5 acres
- Sericea lespedeza – 4.5 acres
- Johnson grass – 2.5 acres



NNIS-IDIQ contractor performing selective herbicide treatment to non-native invasive shrubs

The Forest continued its program to enhance early successional habitat (ESH) and pollinator resource areas. At these sites, the Forest conducted clearing by bushhogging, used herbicide to spray dense infestations of tall fescue and other exotic pasture grasses then seeded these old fields with native seed using a no-till seed drill.

These actions promote native plant diversity and provide a wide variety of plants for native pollinator species. Volunteers from local chapters of the National Wild Turkey Federation assisted with seeding and planting.

Treatments and Seeding in ESH/Pollinator Areas

- New Project Areas – 63.8 acres
- Established Projects – 37.7 acres



Nat. Wild Turkey Federation volunteers & Forest Service personnel applying native seed in a wildlife opening

Fund Code	Funding	Acres	Comments
CWK2	\$18,373	43.5	Native seed purchase, NNIS-IDIQ TO, Wildlife IDIQ TOs for clearing/seeding
NFVW	\$111,782	437.2	NNIS-IDIQ TOs, Wildlife IDIQ TOs, native seed purchase, USFS labor cost - herbicide, hand/mechanical control
NFRW	\$4,000	4.4	Aquatic NNIS plant control
NFWF	\$63,012	220.0	NNIS-IDIQ TOs, Wildlife IDIQ TOs, native seed purchase, prescribed burning, aquatic NNIS plant control, USFS labor cost – hand/mechanical
CONT	\$3,074	33.8	Volunteer Labor Contribution
Total		738.9	

Partners/Cooperators: Indiana Dept. of Natural Resources Fish & Wildlife, National Wild Turkey Federation, Indiana University Volunteers, and the Southern Indiana Cooperative Weed Management Area.

Hoosier National Forest
811 Constitution Avenue
Bedford, IN 47421



Huron-Manistee National Forests

2012 Invasive Species Accomplishments

In FY 2012, non-native invasive plant treatment emphasized garlic mustard, Japanese barberry, spotted knapweed, hoary alyssum, common mullein, St. Johnswort, tree-of-heaven, leafy and cypress sparges, phragmites, Lombardy poplar, houndstongue, autumn-olive, Lyme grass, and purple loosestrife. Priority treatment areas included the Piping plover and Pitcher's thistle habitats in the Nordhouse Dunes Wilderness, Karner blue butterfly habitat, and Indiana bat habitat.

The Forests' three botanists work in collaboration with the following Partnerships and with funds from the Great Lakes Restoration Initiative. We appreciate their participation in the following activities.

Great Lakes Restoration Initiative actions:

78 acres of purple loosestrife treatment using manual and biological control (*Galerucella* beetles). 400 ac of garlic mustard, 14 ac each of common mullein and spotted knapweed, and 34 ac of St. Johnswort. 414 acres of Lyme grass, Lombardy poplar, spotted knapweed and houndstongue treatment.

Consumers Energy Cost Share Agreement actions:

Garlic mustard treatment along the Au Sable River

Early Detection, Rapid Response group in Newaygo Co:

Garlic mustard treatment and finds

Northeast MI Huron Pines CWMA:

50 acres Phragmites treatment



Hand swiping Purple loosestrife with herbicide along the Au Sable River

The Forests' Botanists also provided presentations to interested and affiliated groups, including the Lake Bluff Audubon Society, Plant It Wild, the Lions Club, CasMan Academy, the Rotary Club, and Huron Pines.

Cooperating Partners are the Northwest Michigan Invasive Species Network, the Northeast Michigan Huron Pines Americorp, Consumers Energy, and the West Michigan Cluster of the Stewardship Network.

A new cooperative for the Pere Marquette River in Lake County was founded.

Contact: Carol Young, Forest Sivilculturst, 231-775-5023 ext. 8760 or cayoung@fs.fed.us



Spot spraying Lyme grass along the Lake Michigan shoreline

Fund Code	Treatment Acres	Monitorin g Acres	Comment
CWKV	28	16.7	
NFVW	695.6		RFSS/ETS
NFXF	903.2		ETS
NFWF	9		
ALL			
TOTALS	1635.8	16.7	

Huron-Manistee National Forests

1755 S. Mitchell St.
Cadillac, MI 49601



Mark Twain National Forest

2012 Invasive Species Accomplishments

Missouri, much like the majority of the Midwest suffered the worst drought in fifty years coupled with the hottest summer on record. Despite these adverse conditions the Mark Twain NF was able to make significant strides in invasive species control efforts.

The Forest completed a Forest wide NEPA analysis and successful decision for an integrated pest management approach to treating non-native and invasive plants. The decision allows the use of variety of mechanical methods, eleven different herbicides and the use of six biological agents on all inventoried and future infestations.

The Forest will be able to effectively focus its effort on early detection and rapid response as well concentrates its resources in eradication of priority non-native and invasive plant infestations.

Non-Native and Invasive Plants

Due to the 2012 Drought; planned targets were not able to be met. The Forest required Livestock Grazing Permittees to reduce or totally remove permitted livestock from NFS lands due to poor pasture conditions. This resulted in little or no conservation practices performed by the permittees which often includes noxious weed treatments.

The drought and accompanying high fire danger also prevented the Forest from conducting our usually noxious weed mowing due to fire risk and herbicide treatment due to drought and excessive heat which generally makes herbicide use less effective.

Despite the drought, the Forest treated over 800 acres of infestation. Approximately 15 acres of herbicide treatments were completed on Kudzu and Sericea Lespedeza and spotted knapweed. Approximately 738 acres of mechanical treatments were completed.

Aquatic Invasives

The Forest in cooperation with the Department of Conservation continues to post educational and prevention signs at all major fishing and river access points for Zebra mussels, Asian carp species and for Didymo. To date, Didymo has not been documented in any of the stream reaches located on the Forest.

Feral Hogs

The Forest executed a new Interagency Agreement with APHIS in 2012. APHIS trapped and removed over a 102 feral hogs from six active trap sites reducing impacts and improving habitat on over 25,000 acres of NFS lands. In addition the Missouri Department of Conservation stepped up its efforts on State and private lands and assisted the Forest in targeting and trapping several hogs on Houston/Rolla and Eleven Point Ranger Districts.



Figure 1. Trapped feral hogs

Fund Code	Acres	Comments
PTNR	58	Invasive - Mechanical/Physical
WFSU	9.4	Invasive - Mech, Physical, Herbicide
NFVW	802	Invasive - Livestock, Mechanical/Physical
NFWF	1.5	Invasive – Mechanical/Physical
Total	871	

Mark Twain National Forest
 401 Fairgrounds Road
 Rolla, Missouri



Midewin National Tallgrass Prairie

2012 Invasive Species Accomplishments

Accomplished Highlights Include:

Target plant species included: cattails, reed canary grass, phragmites, garlic mustard, teasel, autumn olive, willows, multiflora rose and honeysuckles

Volunteer hours for invasive control totaled 795 plus 54 herbicide application hours. 12 staff members and 16 volunteers are licensed pesticide applicators for Midewin invasive plant treatments

Environmental education and invasive weed control with Youth Conservation Corps (YCC), Mighty Acorns, North Lawndale Prep, Lewis University and other local schools
 New record set for removing 1,155 pounds of garlic mustard during one amazing spring volunteer workday!
 Continued monitoring for gypsy moth infestation for future treatment

Also in 2012, Midewin hosted an extremely successful backpack sprayer training provided by SOLO, Inc. 4 staff members, 9 seasonals, 8 volunteers and one very knowledgeable SOLO representative were able to attend.

Topics covered included: backpack sprayer features, troubleshooting and repair, and user specific questions. The training was set up to provide each user hands on opportunities. Everyone got to completely dismantle a sprayer, troubleshoot and successfully put all the parts back together. It was a very productive morning!

The main purpose of this training was to provide a “hands on” experience that would allow folks to become familiar and comfortable with using, maintaining and troubleshooting backpack sprayers. The knowledge gained from this training also increases safety awareness. All present at the training are now extremely comfortable in these areas; equating to well maintained, safer equipment as well as more productive time taking care of those invasives!



North Lawndale Prep School and YCC managed to clip over 700 pounds of cattail heads this summer despite the daunting heat!



SOLO Representative, Thornton, showing volunteers various components of backpack sprayers

Contact: Delane M. Strohmeyer, 815-423-6370 x 251 or dmstrhmeyer@fs.fed.us

Activity	Acres	Comments
Mowing	1624	Used to control encroachment of non-native shrubs into grassland habitats
Hand Pulling	10	Used to control invasive plants in sensitive habitats (native woodlands, TES plant populations)
Herbicide	997	Used to control large infestations that threaten restored native habitats, either as propagule sources or active invading infestations



A very successful garlic mustard workday with a crew of 49 volunteers!

Midewin National Tallgrass Prairie
 30239 S. State Route 53
 Wilmington, IL 60481



Monongahela National Forest

2012 Invasive Species Accomplishments

Invasive species management on the Monongahela in 2012 focused on treatment of NNIS to protect high-value resources, such as TES species, facilities, and range allotments. Our treatment work was accomplished through our partnerships with the Potomac Highlands Cooperative Weed and Pest Management Area and the West Virginia Division of Forestry, as well as through in-house efforts. Our partnership with the Potomac Highlands CWPMA also led to several noteworthy accomplishments in education and outreach.

Potomac Highlands Cooperative Weed and Pest Management Area treatment projects:

- Treated 445 acres of invasive plant infestations to reduce threats to nearby populations of threatened, endangered, and sensitive plants, including running buffalo clover, yellow nailwort, Smoke Hole bergamot, Kate's Mountain clover, Bartram's serviceberry, and limestone adder's tongue.
- Treated 466 acres of infestations to reduce competition to regenerating trees in old harvest units and ecosystem restoration areas. Species treated included spotted knapweed, tree of heaven, autumn olive, and Japanese barberry.
- Treated two small emerging infestations (2 acres) of mile-a-minute vine to prevent further spread.
- Treated 11 acres of garlic mustard to shield an adjacent backcountry area from invasion.
- Treated 40 acres each of autumn olive and tree of heaven around the Seneca Rocks Discovery Center.
- The CWPMA-sponsored Garlic Mustard Challenge leveraged 5,335 volunteer hours to pull 160,665 pounds of garlic mustard across Indiana, Illinois, Ohio, Virginia, and West Virginia. The GMC removed garlic mustard from 52 acres of Monongahela NF land.

Cooperative treatment projects with WV Division of Forestry:

- Treated 59 acres of infestations that threatened FS facilities and resource management projects. Species treated included garlic mustard, Morrow's honeysuckle, multiflora rose, Japanese stiltgrass, and autumn olive.
- Treated 3 acres of garlic mustard, reed canary grass, and crown vetch that directly threatened habitat for sensitive plants, including Allegheny onion, long-stalked holly, Bartram's serviceberry, and others.
- Treated 46 acres of garlic mustard and Japanese stiltgrass that threaten to invade nearby Wilderness areas.

In-house treatment projects:

- Treated 103 acres of garlic mustard, tree of heaven, and Japanese stiltgrass to prevent further spread by timber harvest activities.
- Removed tree of heaven from 1.4 acres of habitat for shale barren rockcress.
- Treated nodding thistle and meadow knapweed on 150 acres of range allotment land.



Hack & squirt treatment for tree of heaven

Potomac Highlands CWPMA education and outreach efforts:

- Conducted outreach to 274 school children from Petersburg elementary, who pulled 11,000 pounds of garlic mustard and helped inventory 30 acres for invasive species.
- Hosted “Discover Invasive Species Day” at the Seneca Rocks Discovery Center. The event featured a garlic mustard pull, seven activity booths for children, and a hands-on demonstration to instruct adults in using herbicides to treat tree of heaven and Japanese knotweed.
- Partnered with the mayor of Elkins to proclaim May 15, 2012 as the second annual “Invasive Species Awareness Day.” CWPMA partners spoke to area students about the threat that invasive species pose to their natural heritage, and the students created alien species banners that adorned the streetlights of Elkins for two months.
- Installed a display titled “Invasive Species Threats to Our Forest” at the Seneca Rocks Discovery Center. The display includes three-dimensional depictions of some of West Virginia’s worst invaders, including Japanese stiltgrass, garlic mustard, tree of heaven, Japanese knotweed, purple loosestrife, hemlock wooly adelgid, emerald ash borer, Asian longhorned beetle, Gypsy moth, beech bark disease, and didymo.



Petersburg Elementary students with their haul of garlic mustard

Cooperative treatment projects with WV Division of Forestry:

- Treated 59 acres of infestations that threatened FS facilities and resource management projects. Species treated included garlic mustard, Morrow’s honeysuckle, multiflora rose, Japanese stiltgrass, and autumn olive.
- Treated 3 acres of garlic mustard, reed canary grass, and crown vetch that directly threatened habitat for sensitive plants, including Allegheny onion, long-stalked holly, Bartram’s serviceberry, and others.
- Treated 46 acres of garlic mustard and Japanese stiltgrass that threaten to invade nearby Wilderness areas.



Ribbon cutting for the invasive species display at Seneca Rocks

Contact: Kent Karriker, 304-636-1800 x 169.

Fund Code	Funding*	Acres	Comments
NFV W	\$42,800	1,200	CWPMA, DOF, and FS crews
NFV W	\$78,653	--	Program mgt, educ & outreach, inv. & mont.
NFW F	\$1,700	116	FS crew
NFT M	\$3,600	103	FS crew
Total		1,419	

Partners/Cooperators: The Nature Conservancy, Potomac Highlands Cooperative Weed and Pest Management Area, West Virginia Division of Forestry, Appalachian Forest Heritage Area, volunteers from the local community.

Monongahela National Forest
 200 Sycamore Street
 Elkins, WV 26241



Ottawa National Forest

2012 Invasive Species Accomplishments

Control emphasized garlic mustard, Japanese barberry, exotic honeysuckles, glossy buckthorn, Eurasian watermilfoil, and purple loosestrife. Work was accomplished by a seasonal crew, partners, contractors, and volunteers. 167 new invasive plant sites were mapped.

Great Lakes Restoration Initiative projects:

- Four portable pressure washers staffed at boat launches across the Western Upper Peninsula. 4,279 people received "Clean Boats/Clean Waters" education; 805 boats washed.
- Self-service boat washer constructed at Hagerman Lake.
- Contracted surveys in 32 lakes for AIS.
- A coordinator was hired for the Keweenaw Invasive Species Management Area (KISMA).
- Contracts with Conservation Districts to manage invasive plants in Gogebic, Iron, and Ontonagon Counties.
- Helped Lake Associations treat infestations of Eurasian watermilfoil in four lakes.



New boat washing station at Hagerman Lake

Title II Resource Advisory Committees funded six ongoing invasive plant projects: Friends of Sylvania again hired three seasonals to survey and control invasive plants in Sylvania Wilderness. Gogebic Conservation District treated garlic mustard. Invasive Species Control Coalition of Watersmeet (ISCCW) did boater education. Duck Lake treated 5 acres of Eurasian watermilfoil. An additional seasonal FS employee was funded for invasive plant work. New aquatic invasive boat launch signs were installed in Ontonagon County. Seven new invasive species RAC proposals were awarded for work in the coming years.



Gogebic Conservation District & USFS treating glossy buckthorn at Sunday Lake in Wakefield

Contact: Ian Shackelford at 906-932-1330 x331 or ishackelford@fs.fed.us

Acres of invasive species treated			
Fund Code	Funding	Acres	Comments
CWK V	\$1,507	4.2	Honeysuckle.
NFN D	\$0	19.7	Partner contributions.
NFR W	\$377	0.1	Crown vetch, rec survey.
NFT M	\$377	0.7	Sites during project survey.
NFV W	\$143,013	865.8	Main program; 2 seasonals
NFXF	\$52,738	36	Great Lakes Restoration Init.
SRS2	\$10,054	230.7	RAC grant funded 1 seasonal
Total	\$208,066	1157.2	
Partners/Cooperators: Gogebic Cons. District, Iron County Cons. District, Upper Peninsula Resource Conservation & Development Council, Western UP Invasives Coalition, Keweenaw Invasive Species Management Area, ISCCW, Friends of Sylvania.			

Ottawa National Forest
E6248 US 2
Ironwood, MI 49938



Shawnee National Forest

2012 Invasive Species Accomplishments

ACCOMPLISHMENTS

Despite the adverse effects of the Midwest drought this year, the Forest staff was able to target invasives in high priority areas as well as accomplish our target for the year. We continued to emphasize the control of garlic mustard, Japanese stiltgrass and Asian honeysuckle. We treated 100 acres manually or mechanically and 545 acres with prescribed fire.

In addition to target-specific burning, we accomplished an additional 3,200 acres of prescribed fire. Fire sets back many invasive species, including Japanese honeysuckle and multiflora rose, as well as undesirable grasses. On the whole, fire has a net beneficial effect on native plants and adverse effects on unwanted invasives.

INVASIVE SPECIES PROGRAM

In addition to target-accomplishment, we also published a revised environmental assessment of our proposed invasive species management program. We expect to publish the decision notice early in 2013.



RIVER-TO-RIVER

COOPERATIVE WEED MANAGEMENT AREA

The River-to-River Cooperative Weed Management Area (CWMA) is a partnership of 12 federal and state agencies, organizations and universities that coordinates efforts and programs for addressing the threat of invasive plant species in southern Illinois. The CWMA was established in 2006 and addresses both terrestrial and aquatic invasive plant species through collaborative projects and activities that focus on the following areas:

- Education / Public Awareness
- Early Detection and Rapid Response
- Prevention
- Control and Management
- Research

The Shawnee works closely with the CWMA and the Illinois Invasive Species Plant Council to educate people and increase the general knowledge of invasives in the landscaping industry. We also have three native pollinator plant gardens that highlight the importance and usefulness of native plants, including their use in the landscape.

Shawnee National Forest

50 Hwy 145 South
Harrisburg, IL 62946





Superior National Forest

2012 Invasive Species Accomplishments

Seasonal crews accomplished 385 acres of non-native invasive plant treatments across the Superior NF in 2012 with approximately 85% treatment effectiveness. Additionally, a draft EIS was completed for the BWCAW Non-native Invasive Plant Management Project, which proposes to treat invasive plants in the BWCAW using a combination of herbicides and pulling. Lastly, 8 agencies signed an MOU establishing the St. Louis County CWMA.

American Recovery and Reinvestment Act funding: During the third year of a three year agreement funded by ARRA, the Student Conservation Association manually treated 36 acres of NNIP at priority sites in the BWCAW.

Aquatic Invasive Species: Forest staff participated in several AIS education events for kids including RiverQuest and Lake Superior Day. Other accomplishments by our partners include a survey of all landowners in the Kawishiwi River watershed to determine attitudes towards AIS and as well as operation of a boatwashing station and surveys for rusty crayfish conducted by the 1854 Treaty Authority.

Great Lakes Restoration Initiative projects: Secured GLRI funding to partner with MN SeaGrant for AIS education and outreach. GLRI funding to the Cook County Invasives Team was used for:

- Weed pulls at Cook County High School, Pincushion Mountain trailhead, Artist Point.
- Invasive species education at events in Cook County.
- Over 1500 hours of NNIP control



Volunteers helping at a public weed pulling day at Pincushion Mountain trailhead. (Photo: Michael Lynch)

Secure Rural Schools: City of Ely, MN, received SRS funding and treated 15 acres of buckthorn as well as educating residents about buckthorn control.

Earthworms: Approximately 500 acres involving 1,017 sample points were inventoried for presence/absence and severity of earthworm impacts in 2012.



SCA crew pulling NNIP in Pagami Creek Fire burned area

Contact: Jack Greenlee, Plant Ecologist, 218-229-8817 or jackgreenlee@fs.fed.us

Fund Code	Funding	Acres	Comments
SPFH	\$146,000	9,748	Gypsy Moth treatments
NFVW	\$125,000	287	Main program; 6 seasonals
NFWF	\$11,000	37	Purple loosestrife treatments
SRS2	\$24,475	15	Ely Buckthorn Control Project
NFXF	\$50,000	370	GLRI projects
WFSU	\$46,000	52	Pagami Creek Fire restoration
WRHR	\$92,000	36	BWCAW treatments, count toward 2010 treatment accomplishment
Partner	\$3,000	10	1854 Treaty Authority

Partners/Cooperators: Cook County, Cook County Soil and Water, MN Dept. of Transportation, Grand Portage National Monument, Grand Portage Band of Lake Superior Chippewa, MN Dept. of Natural Resources, Gunflint Trail Scenic Byway Committee, Sugarloaf: The North Shore Stewardship Association, Ely Naturalists, Cook County Invasives Team, Friends of the Boundary Waters, 1854 Treaty Authority, Student Conservation Association.

Superior National Forest
8901 Grand Ave. Place
Duluth, MN 55808



Wayne Mountain National Forest

2012 Invasive Species Accomplishments

Invasive plant treatments occurred across 1,177 acres of the Wayne National Forest (WNF) in 2012. Invasive species treatments were prioritized to maintain species diversity in designated Special Areas, and mitigate invasive plant infestations and introductions around management activities (e.g. timber harvest, prescribed fire). Invasives treated included: garlic mustard, Japanese stiltgrass, Ailanthus, Japanese hops, kudzu, princess tree, Japanese knotweed, multiflora rose, Oriental bittersweet, and exotic honeysuckles. The WNF also mapped 1,744 acres of non-native, invasive species (NNIS) as part of Early Detection and Rapid Response efforts.

WNF worked with various partners to combat invasives. A primary partner was Eric Boyda, the Appalachian Ohio Weed Control Partnership (AOWCP) coordinator. 2012 partner events included:

- Invasive plant workshop for right-of-way managers (e.g. Buckeye Rural, Columbia Gas, ODOT, AEP Lawrence County Engineers)
- Garlic Mustard Pull with Lawrence County Juvenile Center. The 4th Annual Garlic Mustard Pulling Contest for Wayne National Forest employees.
- Wetland restoration through NNIS removal and native plantings by Hocking College interns.
- National Public Lands Day (NPLD) event.
- Invasive plant workshop for local landowners.
- Ailanthus workshop for public land managers.



Volunteer removes autumn olive at wetland during National Public Lands Day event.

Contact: Cheryl Coon, Forest Botanist, 740-753-0558 or ccocon@fs.fed.us; or Aurora Roemmich, District Botanist, 740-534-6535 or aurorarroemmich@fs.fed.us

Fund Code	Funding	Acres	Comments
NFWF	\$23,850	48	
NFLE	\$322	1.4	
NFLM	\$72	0.1	
NFMG	\$1,032	2.4	
NFRW	\$382	1.1	
NFRG	\$2,716	25	
NFTM	\$29,455	95	
NFVW	\$76,895	979	NNIS and TSI funds
NFIM	\$14,000	0	1,744 ac mapped
Volunteers	\$0	25	375 hrs of NNIS work
Total	\$148,724	1177 ac	

Partners/Cooperators: Appalachian Ohio Weed Control Partnership, Ohio Division of Forestry, USFS Northern Research Station, Buckeye Hills RC&D, OSU Extension, Hocking College, Ohio Invasive Plant Council, contractors, volunteers.



AOWCP coordinator, Eric Boyda, teaches NNIS identification to WNF volunteers.



College interns plant native tick-seed & milkweed to restore NNIS control sites

Wayne National Forest
13700 US Hwy 33
Nelsonville, OH 45764



White Mountain National Forest

2012 Invasive Species Accomplishments

White Mountain National Forest wildlife and botany staff finished the 2012 field season with a total of 73.2 acres of NNIS treatment on the Forest, exceeding the target by 55%. For the first time, agreements with the New Hampshire Department of Resources and Economic Development and New Hampshire Department of Transportation allowed us to partner on NNIS treatment at Franconia Notch State Park, a “hole in the doughnut” surrounded by the WMNF and bisected by an interstate highway. A number of expanding roadside infestations of Japanese knotweed (*Polygonum cuspidatum*) were treated before they could become an overwhelming source of spread onto adjacent Forest lands.

Monitoring of treated sites on the WMNF continues to demonstrate the effectiveness of past treatments. Most treatment sites this year were easily handled by small teams. Anticipated stretched budgets and reduced staffing levels, in conjunction with other high priority work like Tropical Storm Irene recovery, means other employees may have less flexibility to help with NNIS treatment in the future. This makes it imperative that we stay on top of infestations while they’re small and more easily managed.

covers part of a seasonal botanist’s salary, as well as paying for permanent WMNF staff to help with eradication projects. This experience has proven useful for our staff, as they are exposed to NNIS infestations much different than what we see on the Forest. Not only are infestations much more extensive, but a number of species occur at New Boston that are not yet present on the Forest. This has allowed our employees to develop an ‘eye’ for these species, both close-up and at a distance, which should prove to be useful in our early detection efforts.



Shooting Field at New Boston Air Station infested with Oriental bittersweet (*Celastrus orbiculatus*)

Control efforts also continued at the New Boston Air Station via an inter-departmental agreement with the Department of Defense. Although a much smaller land base than the Forest, New Boston is heavily infested with a Variety of NNIS. Funding from the Department of Defense



Brown knapweed (*Centaurea jacea*) treatment site along Skoookumchuck Bike Path

Contact: Leighlan Prout, Wildlife Program Leader, 603-536-6223 or lprout@fs.fed.us

Fund Code	Funding	Acres	Comments
NFVW	\$58,190	73.2	Main program; 1 seasonal New Boston Air Force Station
NFXF	\$23,107	46	--does not count towards target
Total		119.2	

Partners/Cooperators: New Boston Air Force Station, NH Department of Resources and Economic Development, NH Department of Transportation, Appalachian Mountain Club, NH Botanical Club, New England Wild Flower Society, Invasive Plant Atlas of New England, EDDMaps, and iMapInvasives

White Mountain National Forest
 71 White Mountain Drive
 Campton, NH 03223

For more information on the Forest Service, Eastern Region's Non-Native Invasive Species program visit:
http://www.fs.usda.gov/detail/r9/forest-grasslandhealth/invasivespecies/?cid=fsm91_054674



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