



# Plants out of Place

The newsletter of the  
INVASIVE PLANTS ASSOCIATION OF WISCONSIN

Issue 24, February 2009

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*Through Awareness  
Comes Positive Change!*

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## **Riverine Early Detectors:**

### **A new frontier in the fight against invasive species**

Laura MacFarland, AIS Project Coordinator, River Alliance of Wisconsin

Aquatic invasive species (AIS) threaten all aquatic ecosystems, however, the vast majority of funding (nearly \$9 million) and human resources in Wisconsin have gone toward protecting lakes. Until recently, many eligible applicants did not even realize that Wisconsin Department of Natural Resources AIS grant funding <http://dnr.wi.gov/org/caer/cfa/Grants/Lakes/invasivespecies.html> could be used to protect rivers. Meanwhile invasive species spread through our riverine corridors, degrading the health of our rivers while they use the rivers as dispersal corridors. Aquatic invasives such as Japanese knotweed, curly-leaf pondweed, purple loosestrife, and others are slipping undetected through the blue cracks in our maps.

### **Project "Riverine Early Detectors" (RED): A paddle with a purpose**

In 2007, the River Alliance of Wisconsin, a statewide nonprofit organization that has been the voice for Wisconsin's rivers for over 15 years, joined the fight against invasives. We obtained funding from the Wisconsin DNR AIS grant program and spent a year exploring the potential roles of the River Alliance and our over 130 member organizations throughout the state. It became evident that there is a volunteer base in these member organizations that is concerned about invasives in their rivers; however, few were aware of what was encroaching on their rivers or how they could help.

Our first step was a one-year pilot project to test whether paddlers in canoes and kayaks could detect four easily identified invasive plant species along the banks of a river. The four pilot species were all wetland plants: purple loosestrife, Japanese hops, Japanese knotweed, and common reed grass. We worked with several volunteer groups such as the Sheboygan County Master Gardeners and the Friends of Badfish Creek. The volunteers monitored over 50 miles of stream bank and detected several new infestations. As a result these two groups have applied for WDNR AIS funding to eradicate isolated stands of knotweed.

From this successful pilot, **Project RED** emerged with an objective of early detection and rapid response. We have expanded the number of invasive species to 15 plants and animals along the stream bank or in the water. In partnership with WDNR and the National Institute for Invasive Species Science (NISS), River Alliance has begun offering free workshops to train volunteers throughout the state to identify and report these invasives that threaten our rivers.

We believe that with **Project RED** the River Alliance is breaking new ground. Several existing river monitoring groups include invasive plant surveys as part of general riparian vegetation mapping efforts. **Project RED** is taking a different approach by focusing specifically on early detection and rapid response. Our goal is to cover a lot of area longitudinally beginning at the headwaters, in an effort to stop the spread of invasives at the source.

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### Plan of attack

During the pilot project, we quickly discovered that timing is everything; a small patch of knotweed that could easily go undetected in June was hard to miss in late August while blooming. **Project RED** volunteers will be encouraged to float their river at different times throughout the paddling season to monitor for species based upon the timeline below.

Common Name	Scientific Name	May	June	July	Aug	Sept
purple loosestrife	<i>Lythrum salicaria</i>			x	x	x
Japanese knotweed	<i>Polygonum cuspidatum</i>				x	x
Japanese hops	<i>Humulus japonicus</i>		x	x	x	x
common reed	<i>Phragmites australis</i>			x	x	x
flowering rush	<i>Butomus umbellatus</i>		x	x	x	
hydrilla	<i>Hydrilla verticillata</i>			x	x	x
curly-leaf pondweed	<i>Potamogeton crispus</i>	x	x			
Eurasian water milfoil	<i>Myriophyllum spicatum</i>		x	x	x	
Brazilian waterweed	<i>Egeria densa</i>			x	x	x
didymo	<i>Didymosphenia geminata</i>	x	x	x	x	x
zebra mussel	<i>Dreissena polymorpha</i>	x	x	x	x	x
quagga mussel	<i>Dreissena rostriformis bugensis</i>	x	x	x	x	x
New Zealand mudsnail	<i>Potamopyrgus antipodarum</i>	x	x	x	x	x
Chinese mystery snail	<i>Cipangopaludina chinensis</i>	x	x	x	x	x
banded mystery snail	<i>Viviparus georgianus</i>	x	x	x	x	x

Volunteers will use GPS units stored at technology libraries throughout the state. These GPS units are provided by the Citizen Based Monitoring Network of Wisconsin and can be checked-out by citizen monitors. The species name, location coordinates, and estimated size of the infestation will be recorded on waterproof field data sheets provided by **Project RED**.

### Sharing the data

Volunteers will receive training from NIISS on entering their data into the CitSci.org web site ([www.citsci.org](http://www.citsci.org)), an online tool created by NIISS. The web site allows volunteer organizations to tailor online data reporting sheets and maps to meet their specific needs. Through CitSci.org, **Project RED** data will be shared with other project members, the Wisconsin DNR, the River Alliance, and anyone else who wants to view it.

### Foreseen challenges and limitations

Project RED is intentionally designed to be simple, not to serve as a census; we will not achieve a 100% detection rate. In the pilot project, with four species that were relatively easy to identify from a distance, the volunteers detected invasives as efficiently as did the quality control teams. However, the expanded list of species of concern includes some that will be harder to find, such as the mussels and snails.

Misidentification is a concern as well. Volunteers will be given a list of experts who can verify their findings the first time they detect a species in their watershed. We will also provide numerous descriptions and photographs, both in print and online, but still expect a few false positives.

### Nipping them in the bud

There are two possible endings to each monitoring season. **Project RED** monitors either, 1) do not find what they are looking for, or 2) find that their river is under invasion.

Although the happier ending of the two, the first scenario presents a challenge with volunteer retention. It remains to be seen whether the combination of not finding anything and having a great excuse to be on the water is rewarding enough to keep monitors returning year after year. With each year there are certain to be new threats on the horizon to keep things interesting.

## Got Invasive Plant Species Data?

Staff from the University of Wisconsin-Madison, the Wisconsin Department of Natural Resources, and the Great Lakes Fish and Wildlife Commission (GLIFWC) are working together to integrate all the invasive plant species data currently available for the state of Wisconsin. This effort will benefit the state in a number of ways:

- 1) Current invasive species distribution maps will be available for use in management;
- 2) These distribution maps will expose sampling gaps where additional monitoring is required; and
- 3) Using the best available data, we can make predictions of where new invaders are likely to spread.

Many datasets have already been consolidated into the herbaria database or GLIFWC's database, but there is a need to consolidate smaller, isolated datasets. Even if you have already sent your data to the UW herbarium, their data are not currently in a format that can utilize all the information you may have provided, so please send us your observations.

Therefore, if your data are still sitting in your field notebook or on your computer, we would like to request that they be sent to Alycia Crall for consolidation.

Data can be sent in a number of ways:

- 1) For small files, you can email them to [crall@wisc.edu](mailto:crall@wisc.edu);
- 2) For larger files, data can be burned to a CD or DVD. These and paper copies can be mailed to **Alycia Crall, 868 Manchester Ct. Geneva, IL 60134**; or
- 3) We will **pick up** a CD, DVD or paper copies from any location in or around the Madison area.

Field notebooks, paper reports or other formats will be returned upon request. The format of the data is not an issue. Data can be sent as spreadsheets, databases, shapefiles, or as a hard copy. However, accompanying metadata (i.e. what the fields mean, who collected it, when collected, etc.) will be needed.

If you have any questions or concerns related to data privacy, please feel free to contact **Alycia Crall, [crall@wisc.edu](mailto:crall@wisc.edu), (970) 227-3310**.

We appreciate your help and hope this will provide you with information to better manage and control these species across the state.

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### RED, concluded

The objective of **Project RED**, of course, is that if an invasion is detected, volunteers -- in partnership with the WDNR and local resource managers -- will work to contain or eradicate the invasive. After all, our aim is early detection *and* rapid response. The Friends of Badfish Creek in southern Wisconsin offer a great example of what we hope for. Last fall, during a pilot paddle, the group found a pioneer stand of Japanese knotweed in Badfish Creek; apparently introduced in fill used during the building of a bridge abutment. Since the discovery, the Friends have taken steps to protect their riparian habitat from certain invasion. They have obtained the landowners' consent and the necessary volunteer labor and are seeking support from the WDNR AIS grant program for chemical treatment to eradicate the stand.

There are still plenty of opportunities to detect invasive species in our rivers before it is too late to contain or eradicate them. The River Alliance of Wisconsin is depending on volunteer monitors to grab their paddles and hit the water!

For more information: email [lmacfarland@wisconsinrivers.org](mailto:lmacfarland@wisconsinrivers.org); (608)257-2424, ext. 110; or visit [www.wisconsinrivers.org](http://www.wisconsinrivers.org)

## Recent Postings on the IPAW List server – TOPIC: “Brush Mowing Buckthorn”

### *A great example of an active exchange on the IPAW list server started with a simple question –*

*I have heard that using a carbide-toothed rotary drum "brush mower" attached to the front of a skid steer chews up the buckthorn to a point that it will not resprout. Therefore, follow up treatments with herbicide are not necessary.*

*Does anyone have any experience with this?*

**Erik Anthonisen**, Land Steward, The Nature Conservancy

I am skeptical about the idea of a brush mower preventing buckthorn resprouting. I have not tried a front mounted drum mower, but have tried small to large rotaries, and they set back the buckthorn for a while, but end up creating a buckthorn groundcover of resprouts. Really digging into the ground and chipping up the buckthorn, roots and all, doesn't seem to totally kill it either if there's enough moisture, which thus far there always has been. To really eradicate buckthorn seems to require herbicide treatment of each stem. After they die, I can mow them if their removal is desired.

I tend to approach the control of buckthorn as a war of attrition, in which I use every weapon available at different times, figuring anything I can do to set it back helps. I do still mow it in some spots, setting it back awhile until I can come back and eliminate it. Hand-treating each stem is labor intensive, but it really does kill it until new seedlings establish. By that time I hope I have some other vegetation in place that can compete effectively.

The most effective (and satisfying) control method I have found is fire. We have run controlled burns through our woods, savanna, and prairie with great effectiveness. A fire of the right temperature top-kills the buckthorn without much damage to the species that are more fire-tolerant. The larger buckthorns (1" - 4") do resprout the following year, but with greatly reduced vigor and seed production. Smaller stems are killed. Obviously fire is not suitable everywhere, but for us it's worked well.

**Jay Young**, Cross Plains, Wisconsin

We have used a PECO Brush Blazer. It chews the buckthorn up close to the ground and the buckthorn resprouts pretty well afterwards. We have to use foliar spray on the resprouts.

**Chuck Pearson**, Land Steward, The Nature Conservancy

I have found that all stumps have to be sprayed unless they're removed from the ground. The Drum cutter does a good job though of clearing a site quickly, and by immediate reseeding with grass species that provide a quick fuel

load, a fire in the following year will kill off most 1 and 2 year-old seedlings of Buckthorn.

**Frank**, Natural Images

Another consideration is the condition of the ground-layer and the level of soil disturbance and compaction anticipated by using mechanical brushing implements. If there is any evidence of a shade-suppressed native seedbank, a more conservative brushing technique in combination with fire may be more cost effective in the long run, given the high cost of native seed and plant materials. Testing one or more techniques in small on-site plots can be very useful where there is uncertainty about site response.

**Susan M. Lehnhardt**, Consulting Ecologist,  
Applied Ecological Services, Inc., Brodhead, WI

Our successes and lessons learned from managing buckthorn have been a few years in the making. Our current approach for managing dense stands does employ the use of an ASV skid steer with a FECON Bullhog head (carbide toothed, rotating drum cutter). I have heard that if you cut the buckthorn low enough (i.e. below root collar) it will not re-sprout, but we have never tried that approach because it would produce a tremendous amount of soil disturbance. Avoidance of soil disturbance is also why we use the shredder during winter conditions with frozen soil or snow cover.

We try to shred the stems off as low as possible without disturbing the ground layer. We follow up with a foliar treatment of Triclopyr during mid to late summer 1 to 2 years after shredding. We have also done some treatments of the re-sprouts using a tractor mounted wick applicator during both the dormant (oil) and actively growing (water carrier) season. The wick applicator was used in an attempt to spare any of the native vegetation that might be hanging on under the buckthorn, which would be damaged if a foliar spray was used. We are also closely watching another program's use of a wet-blade mower that may prove beneficial for treating re-sprouts after an initial knock down with the FECON. (Both the wick and wet-blade are in the exploratory phase of operation since technique, rate, and operator finesse seem to play a part in determining success.)

We have been having notable success and a substantial kill of buckthorn (common and glossy) using traditional basal and thin line basal applications in areas where stem densities are moderate to light. We sometimes notice a small "kill zone" around treated stems, but not more than a couple of inches from the base if at all. This method allows for a small group of people to move through an area relatively quickly as compared to cut-stump treatments. Bark or Thin Line Basal Oil treatments with both ester and amine (if in high water table areas) formulations of

Triclopyr are used primarily during the dormant season. There seems to be an initial leaf flush in the spring, but the treated plants die off in a week or two.

A long winded response regarding mowing buckthorn without follow-up treatment but I can't help to think that the beneficial control you may get would be outweighed by the amount of soil disturbance produced.

**David L. Texley**, Invasive Species Coordinator (CSU/CEMML), Fort McCoy Wildlife Team

After forestry mowing buckthorn, no matter what type of mower you use, you'll get resprouting. Not only do you get the resprouts, you get a huge response of buckthorn seedlings. Even if you hand cut and treated every stump, you'll have a crop of buckthorn seedlings in the years thereafter. Thus, the resprouts and seedlings obviously require attention. Fire is a great resource, but most times in heavily infested areas you have little to no fuel load (except the "mulch" from forestry mowing). If the site is really degraded with no native herbaceous layer, I typically foliar spray the resprouts the first year with a brush killing herbicide such as Garlon 3A or Escort, while at the same time planting native grasses. The site can then be mowed and sprayed until you have enough grass to manage the site with fire.

Where there is a good probability of a native seed bank or remnant populations of herbaceous species, you may want to go the hand-cutting route, treat the stumps, then manage the seedlings with mowing until you get some grasses established. Forbs can be inter-seeded following a good burn in the fall after the grasses are established.

**Shawn G. Papon**, Wildlife Biologist, Wisconsin Private Lands Office, U.S. Fish and Wildlife Service, Madison, WI

We've had a forestry mower since 2003. Even after running it for a couple years I hadn't really considered the possibility of shredded stems (cut at/above ground level) having a different rate of survivorship than cut stems.

Why would they; it is the same root reserves?

While talking about forestry mowing with a Minnesota DNR ecologist (who oversees a fair amount of mowing) it was brought to my attention that they observed/expected shredded stems to have less ability to resprout. After watching closely I believe that I am seeing that shredded stems are less likely to resprout than those cut with a chainsaw. There is by no means a large difference, most stems resprout prolifically, but it does seem like there is a little bit of a difference.

**Jesse Bennett**, Driftless Land Stewardship LLC, Bagley, WI

One of the urban woods where I often walk is a bit of unimproved parkland overrun with buckthorn. Several years ago I started breaking off the buckthorn by hand a couple feet above the ground. I was thinking I would stop that particular bush from shading out the native seedlings nearby. Knowing they would resprout, I was thinking of giving the neighbors a break, hoping they would get a chance to grow past the buckthorn.

As I frequent the place, I keep breaking off more, and have noticed that many of them do not resprout. On those that do, the sprouts are easily removed and after a few removals they give up too. I also found that I could break larger buckthorn with a little more effort by just reaching up and tearing off all the branches I can. It leaves rather ugly broken buckthorns, but it seems to be killing them. This is a small woods and I have had to explain that I am not just taking out my rage on the trees to more than a few people who have noticed my odd behavior. I also tried fairly deep girdling, but they didn't seem to mind that at all.

**Henry Fieldseth**, Minneapolis, Minnesota

## Through Awareness...

### Citizen Monitoring Technology Libraries

The Invasive Plants Association of Wisconsin has received a grant from the Department of Natural Resource's citizen-based monitoring program to set up technology libraries throughout the state. These libraries will house global positioning system (GPS) receivers and personal digital assistants (PDAs) that can be checked out by citizen-based monitoring groups or individuals in need of this technology. 30 Garmin Etrex Legends and 3 PDAs will likely be purchased, creating approximately 15 libraries. Although the facilities that will house the equipment have not been determined, areas that already have local citizen-based monitoring programs established will be targeted. If you feel your program or area is in need of this equipment and has the capacity to manage one of these libraries, please contact:

**Alycia Crall**, [crall@wisc.edu](mailto:crall@wisc.edu); (970) 227-3310. Groups that participate in the Citizen Science Training and Monitoring Event (*see related article in this issue, p.6*) will receive priority for library placement.

## Joint Meeting of Midwest Invasive Plant Network and North Central Weed Science Society

by Roger Becker, University of Minnesota

The North Central Weed Science Society (NCWSS) and the Midwest Invasive Plant Network (MIPN) held a combined meeting in Indianapolis, Indiana, 8-11 December 2008. More than 349 NCWSS members attended and 170 others registered for the MIPN Symposium.

Tom Stohlgren, an ecologist with the US Geological Survey, gave the keynote address and discussed invasive species and climate change. A well-known researcher in the field of invasive species, Dr. Stohlgren presented information on the impact of invasives on our environment and society and provided a broad, thought provoking overview of the future implications of invasive species in the United States and worldwide.

Dr. Roger Anderson with the Illinois State University gave another keynote presentation on the issue of invasive species and biofuels. He provided insights into the evolving research on cellulosic plant based biofuels and the implications and potential for the development and spread of plant invasions as biofuels become a commercial enterprise.

Lee Van Wychen, Science Policy Director for the Weed Science Society of America, presented information on public policy and potential funding for invasive plants and provided perspective on future directions for public policy. Dr. Van Wychen is one of the organizers of the National Invasive Weeds Awareness Week in Washington, DC, to be held 22-27 February 2009.

Debbie Maurer, Lake County Forest Preserve District, described the invasive vines spreading in the Midwest, and Scott Meiners of Eastern Illinois Uni-

versity presented research examining the impacts of these vines and other woody invaders on tree seedling growth, seed predation by rodents and mature tree growth. Susan Kalisz of the University of Pittsburgh discussed research on how deer browsing suppresses native forbs while facilitating the spread of invasives.

Poster sessions presented information on a wide variety of topics, from eradication of *Miscanthus x giganteus* to allelopathic effects of Amur honeysuckle. Papers were presented on various invasive plant management issues ranging from specific management of target species such as wild parsnip, Canada thistle, reed canary grass, garlic mustard, Japanese stilt grass, and bush honeysuckle to issues of research policy through efforts such as scientific risk assessment. A session on rights-of-way management provided insight into efforts by some state departments of transportation. A panel representing a range of ecosystems described the role of fire on plant invasions. Discussions were held on developing research management collaborations with individuals, groups, and associations in attendance.

This meeting successfully brought researchers, policy makers, non-government organizations, and land managers together in a collaborative learning environment where research, policy, and management knowledge could be shared.

The next MIPN annual meeting and invasive plants symposium will be held in conjunction with the Stewardship Network Conference, 22-23 January 2010 in East Lansing, Michigan.

### Citizen Science Training and Monitoring Event

(concluded on the facing page →)

Staff from the National Institute of Invasive Species Science (NIISS; [www.niiss.org](http://www.niiss.org)) are developing a national citizen science program that focuses on the collection and integration of data on invasive species among local citizen science and environmental education programs. A website, [www.citsci.org](http://www.citsci.org), has been created to facilitate with this effort. NIISS is partnering with the University of Wisconsin-Madison Arboretum, the Wisconsin Department of Natural Resources, and the Rivers Alliance of Wisconsin to provide trainings that include an introduction to invasive species, invasive species monitoring protocols, global positioning systems (GPS), and use of the website for local data management needs. These trainings are free and NIISS staff can travel to your location to conduct these trainings.

As part of this program, we plan to conduct an experiment to test the ability of these trainings to provide citizen scientists with the knowledge and skills they need to monitor invasive species and to conduct scientific

## Wild Rivers Invasive Species Cooperative is up-and-running!

The Wild Rivers Invasive Species Cooperative (WRISC) is active in Wisconsin's Florence and Forest Counties, and in Dickinson County, Michigan. WRISC is currently developing a Memorandum of Understanding among cooperators and though brand new, the cooperative has already completed two projects. In July, WRISC volunteers manually removed a large population of European Swamp Thistle at a main highway intersection. This project provided an excellent opportunity to eliminate an eyesore and to gain some public recognition. WRISC also had a display at the Florence County Fair in August, featuring each cooperating organization. In the near future, WRISC plans to implement a project to rear beetles for Purple Loosestrife biological control as a means of education and control. To contact WRISC please email them at:

[wildriverscwma@gmail.com](mailto:wildriverscwma@gmail.com).



### Citizen Science Training, concluded from page 6

research independently. Therefore, we have planned a two-day event at the University of Wisconsin Arboretum in Madison on 30-31 May to conduct this experiment. Rain dates have been scheduled for 6-7 June. The first day, 30 May (6 June), will include a full day of training. A morning component will consist of indoor presentations and an afternoon component will consist of hands-on experience in the field. The training will include:

- An introduction to the scientific method and how the knowledge and skills learned in the training apply to that method.
- An introduction to invasive species including what they are, why they are a problem, and what personal actions can be taken to prevent their spread.
- Introduction to global positioning systems including what they are, how they work, and applications.
- How to use global positioning systems to take a waypoint and to navigate.
- An introduction to sampling design and monitoring protocols.
- An introduction to the program's website ([www.citsci.org](http://www.citsci.org)) including joining a project, uploading data, and viewing uploaded data.

On the second day, 31 May (7 June), citizen scientists will have the opportunity to test their skills against those of experts by performing tasks at a series of monitoring stations. The individual results of these studies will remain anonymous, but we will provide the citizens and programs with final group results to see how the citizen science groups performed. At least 160 people are needed to attend the training. We would love to have you or your group participate in this event, and are planning additional activities to make it an exciting and fun weekend for all participants. Meals will be provided during the workshop and we can help to arrange for housing with locals for people attending from out of the Madison area. If you are interested in participating as a citizen monitor or as an invasive plant expert, please **contact Alycia Crall ([crall@wisc.edu](mailto:crall@wisc.edu); (970) 227-3310)**. The data collected from this effort will be extremely beneficial for setting up a statewide monitoring program, so we need all the help we can get.

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**Plants out of Place**

is a periodic newsletter distributed to the members of IPAW.

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Check out what IPAW is working on!  
go to [www.ipaw.org](http://www.ipaw.org)

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