
Wisconsin Department of Natural Resources

Invasive Species Report

Prepared by the Department's Invasive Species Team

July 1, 2018 – June 30, 2019



Cover Photo. DNR employee Holly Stegemann works to collect water hyacinth in the East River, a tributary of the Fox River, in September 2019. This effort resulted in the collection of 11 large black garbage bags of water hyacinth.



Introduction

Purpose of This Report

[Wisconsin Statutes require](#) the Department of Natural Resources (department) to submit an interim performance report to the legislature, governor and Wisconsin Invasive Species Council on the progress of invasive species control. The report is due by October 1 in odd numbered years. This report meets that reporting requirement and covers the period of July 1, 2018 through June 30, 2019.

What Are Invasive Species?

The legislature defines invasive species in [Wisconsin Statutes](#) as “nonindigenous species whose introduction causes or is likely to cause economic or environmental harm or harm to human health.” These species can be aquatic or terrestrial weeds, insect pests, nuisance animals, or disease-causing organisms. They can occur in all types of habitats and affect urban and rural areas throughout the state.

Invasive Species and Wisconsin’s Economy

Invasive species have a wide range of adverse effects on Wisconsin’s environment and citizens including negative impacts to natural resources, costs to control damaging species, alteration of aesthetic values, and harm to wildlife and human health. Unfortunately, the costs to manage and control invasive species once they are established represent money that could be spent on something else, or not spent at all, if invasions were prevented in the first place. The following are examples from recent years, including estimates of the economic scope of what is at stake.

- Aquatic invasive species such as the zebra mussel financially impact industries that use water for cooling and municipalities that rely on lakes for drinking water. Zebra and quagga mussels cost the U.S. economy up to \$1 billion annually. The \$7 billion Great Lakes fishery has been adversely impacted by pathogens including viral hemorrhagic septicemia (VHS) and invasive fish species like white perch, round goby, and sea lamprey. Costs

from invasive species that originate in the ballast water of ocean-going vessels visiting the Great Lakes have been estimated at \$138 million annually but could be as much as \$800 million annually.

- Invasive species, including weeds, pests, and diseases, also negatively impact Wisconsin's \$105 billion agriculture industry (437,700 jobs) by increasing production costs and reducing crop yields. For example, Canada thistle, a major agricultural pest, costs tens of millions of dollars in direct crop losses annually and additional millions in control costs.
- Wisconsin's forestry industry, a \$25 billion industry (64,000 jobs), is impacted by oak wilt, gypsy moth, and more recently, the emerald ash borer and beech bark disease, all which damage and kill trees. Costs to respond to the emerald ash borer in our region, including treatment, removal, and replacement of millions of ash trees, has a current annual effect of \$280.5 million on municipal budgets, a figure that does not include the value of trees on private property. This insect also negatively affects electrical utility budgets with the removal of dead trees that could fall onto utility lines.
- Natural regrowth of tree seedlings, especially of the sugar maple, our state tree, is being limited by invasive plants and non-native earthworms. Over the long term, this will change the composition of our forests and the economic benefits they provide.
- Terrestrial invasive species, such as garlic mustard and wild parsnip, invade and degrade our forests and grasslands and reduce enjoyment of our trails and parks. Eurasian water milfoil and other invasive aquatic plants may harm our lakes and rivers. Chemical herbicides used to control Eurasian water milfoil can cost from \$200 to \$2,000 per acre. Mechanical control methods range from \$300 to \$600 per acre and must be repeated all summer.
- Outdoor recreation is one of the top reasons visitors come to our state. In 2018, Wisconsin visitor numbers reached 112 million and visitor spending created an estimated \$21 billion impact on the state's economy. As invasive species continue to change our environment and negatively impact the use and beauty of our lakes, forests, and hiking trails, Wisconsin may lose valuable visitor spending.

Program Administration

Invasive species impact Wisconsin citizens and habitats of every type—from power companies to municipal foresters to holiday boaters, from meandering rivers to state parks to citizens’ back-yards and gardens. As a result, invasive species management has grown as a state priority over recent decades. Working with numerous partners, the department has worked to prevent the arrival of new invasive species, detect new infestations, respond to invasions, and control established invasive species populations. During the recent reporting period, the department and its partners have continued to make progress across the state.

Department Invasive Species Team

The department Invasive Species Team ensures a cohesive response by bringing together staff from the divisions of Fish, Wildlife and Parks, Forestry, and Environmental Management, as well as the Law Enforcement program and legal staff. This interdisciplinary team works to identify common priorities, establish consistent policies, coordinate the department’s outreach on invasive species, and ensure uniform enforcement of the [Invasive Species Identification, Classification, and Control](#) rule (Ch. NR 40, Wis. Adm. Code). The team is coordinated by the Invasive Species Coordinator in the Bureau of Natural Heritage Conservation. During the current reporting period, the team has focused efforts on engaging partners in invasive species early detection, management, and control, and providing training and outreach for businesses and other stakeholders. This work supports and supplements the ongoing, on-the-ground and in-the-water work by the department and its partners.

Wisconsin Invasive Species Council

The department works closely with the [Wisconsin Invasive Species Council](#) (Council), which provides guidance and recommendations to the department regarding invasive species programs and regulations. Created by the legislature in 2001, the Council includes governor-appointed representatives from state agencies, industry, academia, and nongovernmental organizations. The department’s Statewide Invasive Species

Coordinator provides staff support to the Council, and the director of the Bureau of Natural Heritage Conservation serves as the department's representative as one of the [twelve members](#) of the Council.

[Wisconsin Statutes](#) charge the Council with making recommendations to the department regarding:

- A system for classifying invasive species.
- A procedure for awarding cost-sharing grants to control invasive species.

The Council also conducts studies of issues related to controlling invasive species, including:

- The effect of the state's bait industry on the introduction and spread of invasive species.
- The effect of the state's pet industry on the introduction and spread of invasive species.
- The acquisition of invasive species through mail order and Internet sales.
- Other issues as determined by the Council.

Finally, the Council serves as a resource to the public and interested stakeholders by making information available through its website and recognizing significant efforts to prevent and control invasive species. The Council also works to honor Wisconsin citizens and organizations—both volunteer and professional—for their significant contributions to the prevention, management, education, or research related to invasive species through its annual Invader Crusader Awards (see page 24). Additional information is available on the Council's website at <http://invasivespecies.wi.gov/>.

Strategic Plans

In the spring of 2013, the department published [Looking Forward: A Statewide Strategic Plan for Invasive Species](#) to guide Wisconsin state agencies and partners in responding to the threat of invasive species. The strategic plan was developed by the Council in cooperation with the department and numerous stakeholders across the state. The full plan, an executive summary, and supporting appendices can be found on the [Wisconsin Invasive Species Council website](#). Over the past biennium, the department Invasive Species Team has used the statewide strategic plan to help guide its work.

New statewide AIS management plan approved and available for public use

After being approved by the national Aquatic Nuisance Species Task Force in May 2019, Wisconsin's recently revised AIS management plan is now final and available for use by the public. Wisconsin's last AIS management plan was revised in 2002.

"Since the original version of the plan was approved, we have new species that we are concerned with, new pathways of invasion in Wisconsin and new tools to help us manage the undesirable impacts of aquatic invasive species," says Bob Wakeman, AIS Program Coordinator for the DNR. "The new plan incorporates these approaches and concerns into our management plan so that we will be using the most effective methods possible to manage AIS."

The plan can be accessed at dnr.wi.gov, keywords "aquatic invasive species efforts." The plan is linked on that page. Printed copies are also available upon request by emailing DNRAISinfo@wisconsin.gov.

Invasive Species Rule (Chapter NR 40)

In 2009, Wisconsin established a comprehensive [Invasive Species Identification, Classification, and Control](#) rule (Ch. NR 40, Wis. Adm. Code) to regulate some of the most threatening invasive species. The rule establishes a comprehensive, science-based system to classify invasive species into "Prohibited" and "Restricted" categories. With certain exceptions, the possession, transport, transfer and introduction of Prohibited species is banned. Restricted species are also subject to bans on transport, transfer and introduction, but possession is allowed, with the exceptions of fish and crayfish. The department may issue permits for research or public display of any listed invasive species. For species other than invasive fish and crayfish, permits may also be issued for other purposes. The Natural Resources Board adopted updates and revisions to NR 40 in December 2014. The revised rule took effect May 1, 2015 after review and approval by the governor and several legislative committees. The revised rule and a complete list of regulated invasive species is available on the [department's website](#).

The department's Invasive Species Team has worked with businesses and other partners to ensure voluntary compliance with the rule when feasible and stepped enforcement when appropriate. The team has conducted extensive outreach and provided numerous training sessions for stakeholders and the public to ensure that each citizen in Wisconsin is aware of what they can do on their own land, lake, or park.

For example, the team collaborated with DATCP to provide registered nurseries, nursery suppliers, and seed distributors with information about regulated species, phase-out periods included in the rule, and steps these businesses can take to ensure compliance. Staff also conducted outreach to biological supply houses and K-12 and university educators to ensure compliance and provide alternatives to regulated species.

The Invasive Species Coordinator serves as the single public point of contact for permitting and enforcement under NR 40. The department's Invasive Species Team members and program staff draft NR 40 permits, monitor compliance, and carry out enforcement when needed. During this reporting period, five new permits were issued covering four species. All permits were issued for educational or research purposes.

Response Framework

During this reporting period, the department hired a response coordinator to coordinate and implement response efforts. The coordinator uses the department's comprehensive response framework as an internal protocol for responding to newly detected populations of suspected invasive species. This framework assists agency managers in responding thoroughly, professionally, and effectively to the many challenges that result from new invasions. This framework is used when: 1) an invasive species is found in a county where it is listed as Prohibited, or 2) an invasive species is discovered in an area of the state where it has not been previously documented and legal access is granted for entry onto the property on which the species is found. This framework is not used in cases of white nose syndrome, emerald ash borer or gypsy moth as Wisconsin already has designated, specific plans for these individual species.

The department purposefully did not prepare detailed response plans for individual species that have not yet invaded the state since responses must be guided by case-specific facts. Factors that determine how a species invades, including their initial number, population density and distribution, proximity to other known invasions, time of year, land or water use, etc. determine what actions are possible or useful. Some pre-planning efforts for future invasions can be very valuable, but there is a limit to the level of response planning that is useful until an invasion occurs. For example, an understanding of the species' biology, habitats invaded, possible actions and real constraints is very helpful in advance of an invasion. Similarly, establishing

communication networks with potential partners and stakeholders ahead of an invasion can be useful.

Active and Coordinated Partnerships

Partnerships with other agencies and citizens' groups throughout the state leverage our efforts, help coordinate statewide responses and allow for greater communication among groups. In the world of aquatic invasive species (AIS), the Wisconsin Lakes Partnership, River Alliance of Wisconsin, and regional and county AIS coordinators provide a foundation of cooperation across the state. There are counties, hundreds of lake organizations, and thousands of volunteers actively participating in AIS prevention, detection, containment, and control efforts. For terrestrial species, regional Cooperative Invasive Species Management Areas (CISMAs, also called Cooperative Weed Management Areas or CWMA) provide local focal points for invasive species work.

As of March 2019, there are fourteen larger established CISMAs ranging in size from one to nine counties (Figure 2). There are many more Weed Management Areas (WMAs) that focus on smaller regions such as Madeline Island and the Mukwonago River watershed. Planning is underway to establish more CISMAs which would cover additional counties. In total, CISMAs encompass 57 counties and include thousands of volunteers. The department provides information and technical support to these partnerships.

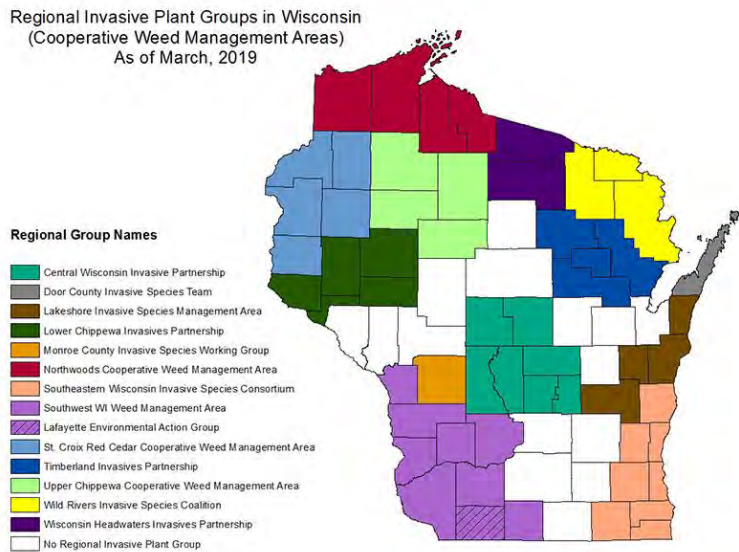


Figure 2. Cooperative Invasive Species Management Areas in Wisconsin.

Funds from the Weed Management Area grant, a part of the Wisconsin Forest Landowner Grant Program, have allowed the department to provide small amounts of funding to several existing and start-up CISMAs.

AIS coordinators and CISMAs are critical partners for locating, reporting and curtailing the spread of high priority invasive species before they become widespread and abundant. Both provide local outreach about invasive plants, animals and pests to landowners, local units of governments, and interested individuals and organizations in their counties. CISMA volunteers provide invaluable on-the-ground support, often leading control efforts of new or expanding invasive species populations (see the Program Highlights, beginning on page 12). Twice each year, the department and members of the UW-Extension coordinate an in-person meeting of all county and regional AIS coordinators. Annually, the AIS coordinators meet jointly with representatives of the CISMAs. The joint meetings provide opportunities for these partners to meet others working on invasive species issues in their region, share information and resources, and plan for cooperative efforts.

The department also works closely with other state and federal agencies and tribal organizations on invasive species issues to ensure a coordinated statewide approach without overlapping regulatory pressure. Throughout this reporting period, the department partnered extensively with the Wisconsin Department of Transportation

and Agriculture, Trade and Consumer Protection and the U.S. Department of Agriculture, U.S. Fish and Wildlife Service, U.S. Environmental Protection Agency, and the U.S. Army Corps of Engineers on invasive species prevention and control efforts (see the Program Highlights, beginning on page 12).

Organisms in Trade

Focusing on invasive species in the marketplace, the department's Organisms in Trade (OIT) efforts provide outreach and education to the distributors, wholesalers, and retailers most likely to be selling and distributing species that are regulated under NR 40. These education and outreach efforts constitute a critical part of the department's efforts in early detection, rapid response, and control: they help ensure that invasive species are prevented from entering Wisconsin's environment, found quickly if present, and controlled effectively when located.

Preventing the sale of invasive species through the sale of live organisms

Wisconsin's comprehensive invasive species rule, NR40 restricts the sale of prohibited and restricted invasive species. While an established mechanism exists through DATCP to help licensed plant nurseries to comply with this rule, a similar program does not exist for pet stores and low volume plant distributors. With the help of the GLRI, DNR hired OIT pathway outreach specialist to interact with these unlicensed retailers.

This OIT pathway outreach specialist visited stores and sent mail packets to retailers. Previous DNR research that shows that these methods are effective at helping retailers come into compliance. The OIT pathway outreach specialist has also advanced compliance with NR 40 by responding to reports of violations, including with red swamp crayfish and Quaker parrots. The OIT pathway outreach specialist has also been working to understand the sale of NR40 species on the internet and has been contacting retailers to educate them on DNR regulations.

During the reporting period, approximately 70 retail establishments were visited in person by department OIT staff to spread the NR 40 message concerning invasive species in the marketplace.

Using a stepped enforcement approach, department staff responded to several complaints about regulated species in the marketplace. Compliance was achieved in each occurrence.

Outreach efforts to explain the NR 40 rules and regulations also targeted various large audiences. Letters were sent to arboreta and botanical gardens, and to nursery suppliers known to conduct business in Wisconsin. Department staff continue to maintain a list of distributors who ship regulated species into Wisconsin for future outreach. Nurseries that were documented by DATCP in 2018 as selling Prohibited species were sent follow-up letters early in 2019, reminding them of the regulation and thanking them for their efforts to gain compliance.



Figure 3. Nursery inspection at Northern Family Farms – a Wisconsin grower.

Outreach efforts to community Farmers Markets continue. Coordinators of the markets are contacted when department staff identify regulated plants offered for sale at the markets.

Aquatic Invasive Species Grants

Sustaining an effective AIS program in Wisconsin largely depends upon our partners, who help implement statewide campaigns and programs. To date, this partnership has been supported by grants that have effectively provided funding for implementing local programs to prevent, contain and control AIS.

The AIS grants program has been oversubscribed each year. Since available funding may never meet the demand, prioritization must be carefully applied in selection of worthy projects. The federal funding available for AIS (Great Lakes Restoration Initiative and AIS Plan Implementation) has been a tremendous asset to the state, especially the Great Lakes Basin; however, these funding sources may diminish or disappear. To ensure consistent messaging, continued collaboration with neighboring states has continued to be a programmatic need. Continued support for regional planning and partnerships will increase efficiency and effectiveness.

Invasive Species Program Highlights

Invasive Species Archive

The Invasive Species Archive (Archive) is a compilation of records from a variety of databases (e.g. EDDMapS, MISIN, iNaturalist, herbaria, etc.) containing reported locations of invasive species throughout Wisconsin. During this reporting year, the Archive was updated with newly collected data. This novel information generated new reports previously unavailable to department staff. This facilitated additional field surveys and allowed the department to confirm new occurrences of invasive species throughout the state. Since its initial creation, distribution and use of the Archive has increased. Many CISMAs use the Archive to conduct additional reconnaissance, develop management plans, and create proposals for invasive species control work. Updates to the Archive are planned for regular six-month intervals, making the most of support from our work study students.

WisFIRS

All land divisions (Division of Forestry and Division of Fish, Wildlife & Parks) are now using the Wisconsin Field Inventory & Reporting System (WisFIRS) to document on-the-ground cover types and report habitat management work. In this system, staff have the capability of recording invasive species present and assigning invasive species control treatments in one database. These data will be used to complement the Archive and will be connected to DNR pesticide use reporting. In the future, we will have additional reports that will provide a statewide perspective, and property-by-property, on the invasive species control work load and management success.

Grants

Weed Management Areas (WMAs)

The DNR's Forest Health Team awarded WMA grants to six CISMAs and WMAs for work on private non-industrial forested lands. These groups participate in a wide variety of invasive species projects throughout their geographical areas. These awards empower the groups and the surrounding landowners to make the right decision when it comes to dealing with invasive plants in forests. In addition to the WMA grants, invasive plant suppression funds were used to control a variety of invasive plants throughout the state.

Hunter education and outreach

The DNR is partnering with several CISMAs to install signs on DNR properties to reduce the spread of invasive species on public hunting lands. Signs and boot brushes will be placed at high visibility areas at property entrances, and CISMAs will sponsor the installments' upkeep and maintenance. Extensive outreach specific to waterfowl hunters, including signage/boot brushes at their access points is described on page 23.

Pittman-Robertson Special Projects

In 2018, DNR property managers were awarded \$774,480 funding from the Pittman-Robertson (P-R) Act for invasive species management. A total of 54 projects were funded to purchase equipment and to control NR40 prohibited and restricted aquatic, wetland and terrestrial invasive species. These management projects are funded for two consecutive years and are focused on 125 state public lands where hunting is permitted.

Cost Share Program to Control Lesser Celandine

The DNR was awarded a forest service grant to work with private landowners in the Lake Geneva area to control lesser celandine. By partnering with the Geneva Lake Conservancy, the DNR was able to connect with landowners who had reported populations of this invasive plant on their properties. Control work started in the spring of 2019 and will continue for two more years.



Figure 4. Lesser celandine bulbils. Milwaukee River, Wisconsin. Photo by Mike Putnam.



Figure 5. Lesser celandine infestation.

Great Lakes Restoration Initiative (GLRI)

The DNR is in its 10th consecutive year of GLRI funding to support monitoring and response staff in the Great Lakes basin and prevention/outreach statewide. This also makes the 5th consecutive year to control non-native Phragmites in the Lake Michigan basin using GLRI funding from the EPA. Target areas for control include the locations treated in prior years in the Lake Michigan basin as well as new locations in the Winnebago chain-of-lakes watershed up to the De Pere dam.

Invasive Species Prevention, Monitoring, Control, and Research

Golden creeper monitoring

Golden creeper is an invasive vine with verified records in Polk and Grant counties. This species prefers disturbed areas, fencerows and moist forested streamside habitats. It spreads by producing new tubers that may be swept downstream from eroded streambanks during heavy rains. The DNR partnered with Southwest Badger RC&D and Grant County Soil and Water Conservation District to survey for golden creeper along the Big Green river. Additional monitoring is planned in nearby watersheds downstream to the Mississippi River.



Figure 6. Golden creeper in flower at the Big Green River, Wisconsin. Photo by E. Shea.

Golden creeper herbicide control experiments



Figure 7. Golden creeper infestation along Wisconsin's Big Green River. Photo by E. Shea.

Dr. Mark Renz of the UW-Madison has been conducting herbicide trials on golden creeper specimens grown under greenhouse conditions. The results of these initial trials will inform which chemicals to use during upcoming field trials to target stream corridor populations discovered in Grant County.

Porcelain berry control in Dane County

Porcelain berry is a prohibited species first discovered in Wisconsin in 1999. This species is not widespread in the state, and most records are within Dane and Milwaukee counties. Using funding from the (P-R) Act, the DNR has partnered with the City of Madison to control this species on private properties in Dane County communities and along the Badger State Trail. To date, 196 populations covering 1.3 acres have been treated across 93 properties. The DNR continues to find and treat new sites.



Figure 8. Porcelain berry plant in fruit. Photo Michelle Jasik.

Monitoring of Prohibited and Early Detection Invasive Plants

Using Pittman-Robertson funding, additional support was provided to Cooperative Invasive Species Management Areas (CISMAs) for the monitoring and control of prohibited and early detection invasive plants. Other recipients include the Door County Invasive Species Team for the monitoring and control of black swallow-wort within The Ridges Sanctuary and surrounding areas and the Southeast Wisconsin Invasive Species Consortium for the monitoring of NR40 prohibited species and golden creeper. Funding has also been provided to control populations of wild chervil and garden valerian.

Amur Cork Tree

A large population of Amur cork tree was found growing at a private camp in the middle of the Northern Highland-American Legion (NHAL) State Forest in Oneida County. DNR Forest Health staff worked with the private landowner and a contractor to control and remove trees. Future work includes surveying and monitoring throughout the NHAL surrounding the camp. Additional smaller populations of Amur cork tree have been reported throughout the state. Funding from PEDIP and DNR Forest Health have been used to begin control.



Figure 9. The distinctive yellow bark of an amur cork tree in Adams County, Wisconsin. Photo by T. Wilson.



Figure 10. Amur cork tree infestation in Dunn County, Wisconsin. Photo by Lower Chippewa Invasives Partnership.

Forest Health

The Forest Health Team focuses on the prevention and management of invasive insects, diseases and plants that threaten Wisconsin’s trees. Forest Health specialists and their team work with landowners and property managers to identify forest health concerns and provide suitable management options. To reduce the impacts of forest health threats on the state’s valuable resources, Forest Health partners with the forest industry, government agencies and the citizens of Wisconsin.

Emerald Ash Borer

EAB continues to impact ash trees and stands in Wisconsin, causing tree decline and mortality in areas of southern Wisconsin where it has been established for several years. The DNR partnered with internal and external stakeholders to review and revise guidelines for silvicultural practices in Wisconsin, both in stands not yet infested by EAB and those already impacted by this tree-killing beetle. The guidelines, which were approved on January 1, 2019, reflect the latest science as well as stakeholder input to better serve Wisconsin constituents that will be impacted by the spread of EAB and subsequent damage to trees and forests. The revised guidelines can be found here and more information on this insect is at [dnr.wi.gov](https://p.widencdn.net/u5atgo/EABWIMManagementGuidelines), keywords “emerald ash borer.”

Link: <https://p.widencdn.net/u5atgo/EABWIMManagementGuidelines>



Figure 11. EAB causes widespread ecologic and economic disruption. Silviculture guidelines are available to help prepare for and mitigate the damages caused by this insect, including the mortality of ash along river corridors such as the one above in Racine County.

Jumping worms

Jumping worms, first observed in Wisconsin in 2013, continue to be on the move. Concerns about their long-term impact both within urban and natural environments are being evaluated by Brad Herrick and Marie Johnson at the UW-Madison Arboretum

Aquatic Invasive Species

Ducks Unlimited Cattails and Phragmites control project

In collaboration with Ducks Unlimited, the DNR developed plans to improve waterfowl and wildlife habitat by controlling invasive wetland plants. The project, which began in August 2019, includes conducting aerial herbicide applications on non-native Phragmites and cattails covering over 1,950 acres across 23 wildlife areas and 13 counties.

Early Detection and Response

A total of 11 Early Detection and Response grants have been awarded since July 1, 2018 for prohibited and restricted species which include starry stonewort (5), Eurasian watermilfoil (2), yellow floating heart (1), faucet snail and banded mystery snail (1), Japanese knotweed (1) and yellow iris (1). The DNR is collaborating with federal, state and local partners for control efforts and to increase outreach and education.

Successful Response Actions, July 2018 - July 2019

Red Swamp Crayfish

On Friday June 21st of 2019, DNR Conservation Wardens received reports of a large number of crayfish in the parking area of the Sauk Prairie canoe launch on the Wisconsin River. The crayfish were identified as the invasive red swamp crayfish.

Wardens responded quickly by capturing 75 pounds of crayfish and installing several hundred feet of trench and silt fencing in the area for containment. DNR staff began monitoring the Wisconsin River, its upstream tributaries, and the nearby Sauk Prairie Wastewater Treatment Facility for red swamp crayfish shortly after the initial incident. No red swamp crayfish have been detected in these locations.



Figure 14. Red swamp crayfish. Photo by U.S.G.S.

Water Hyacinth in Mississippi River – Pool 8

The presence of Water hyacinth was reported to DNR staff in the fall of 2018 along the Mississippi River (Pool 8) near La Crosse, Wisconsin. These two populations were observed in backwater lagoons, sloughs, and channels. DNR, River Alliance of Wisconsin and U.S. Fish and Wildlife staff responded to the report of water hyacinth being present in Pettibone Lagoon and Black River Channel. The response team removed approximately 120 45-gallon bags of plant material removed from the river. Follow-up monitoring will continue in the future.



Figure 15. Scott Caven (At the time – River Alliance of Wisconsin) holding the single flowering individual of water hyacinth found in Mississippi



Figure 16. Volunteer Fritz Funk holding a net full of water hyacinth.



Figure 17. DNR boat filled with Water hyacinth after a day of response and removal efforts. This was repeated several times throughout the response effort.



Figure 18. DNR boat partially filled with water hyacinth.

Yellow Floating Heart

In the fall of 2017, the DNR was notified of a yellow floating heart population thriving in a northern Dane County private pond. This is a prohibited species that has historically been extremely difficult and costly to eradicate. A response team, made up of DNR and Dane County staff, utilized a newly registered herbicide in the state and conducted a single treatment in midsummer of 2018. To date, minimal regrowth has been observed and a very small number of re-emerging plants have been hand-removed by the landowners.



Figure 19. Pre-treatment, July 24th, 2018. Yellow Floating Heart covered the entire surface of the pond besides in the middle portion where it was too deep to grow.



Figure 20. Post-treatment, July 3rd, 2019. Filamentous algae and aquatic moss exist in the pond 1 year after treatment with very minimal signs of Yellow Floating Heart regrowth.

Starry Stonewort

The DNR has continued to intensify its efforts on understanding the distribution, ecology and management of SSW since this NR40 prohibited macroalgae species was

first verified in Wisconsin back in 2014. In addition to continuing annual lake-wide point-intercept surveys of verified SSW populations, the DNR has also embarked upon several collaborative research efforts with other regional and national partners (i.e. US Army Corps Engineer Research and Development Center, University of Minnesota, University of Indiana, New York Botanical Garden, etc.) to understand how the potential impacts of this new invasive species can best be prevented and managed in the Midwest.

Asian Carp

Bighead carp, black carp, grass carp and jumping silver carp all make up a group of fish commonly referred to as Asian carp. They often make headlines because of their tendency to leap out of the water at the sound of an outboard motor. They also eliminate our valued native sport fish and consume native mussels, some of which are threatened or endangered species. Asian carp have been caught in the Mississippi River and Lower Wisconsin River since 1996 but have never been found in high numbers. The potential for them to become a greater threat to Wisconsin's valued sport fishery and mussel populations is significant and demands the attention of every angler and boater that enjoys using these waters. It's a simple fix - buy your bait fish from licensed bait shops, don't move live fish in water and dump unused bait in the trash instead of releasing it. Asian carp can be kept from spreading to our inland waters by following these simple prevention steps.



Figure 21. Asian carp in Wisconsin Waters.

Education and Outreach

Drain Campaign and Landing Blitz

Engaging volunteers statewide to help boaters and anglers Stop Aquatic Hitchhikers! Each summer, hundreds of partner groups dedicate thousands of hours at boat landings to educate boaters and anglers on the steps required to stop aquatic invasive species. The Clean Boats Clean Waters program, coordinated by the DNR and the University of Wisconsin Extension Lakes program, is the main way this is done. This program routinely inspects more than 140,000 watercrafts and reaches 300,000 people annually.

Two special efforts during the boating season – the Drain Campaign and the 4th of July Landing Blitz – bring a special emphasis to these prevention efforts. The Drain Campaign focuses on an often-misunderstood prevention behavior regarding draining livewells, while the Landing Blitz focuses on reaching infrequent and out-of-state boaters with the prevention message. Both efforts use community-based social marketing techniques to help boaters adopt more sustainable boater behaviors and have been shown to be effective through evaluation efforts.

Aquatic Invasive Species Outreach to Waterfowl Hunters

Wisconsin has an estimated 65,000 to 75,000 waterfowl hunters who widely utilize both public and private access points during the hunting season. Although hunting takes place statewide, large numbers of hunters concentrate in just a few areas while others are scattered. Compared to summer anglers and boaters, this scattered distribution presents a unique challenge when trying to spread the Stop Aquatic Hitchhikers! message. Research has shown that even if the hunter is a summer boater, they may not associate their fall hunting activities with needed AIS prevention steps. Specific talking points, brochures, a Clean Boats Clean Waters survey and items to remind hunters to inspect, remove and drain their boats and gear have been created to carry the message to them. These items are available through our Wisconsin Aquatic Invasive Species Partnership to share with hunting groups at meetings and events and for use during duck hunting season boat inspections, primarily the season opener in

late September. Waterfowl hunter AIS outreach at boat launches has grown each year since a pilot program, based on the Clean Boats, Clean Waters program, began in 2016. In 2018, at least 12,000 hunters were also reached through the Wisconsin Waterfowl Association newsletter and a statewide news release. Social media for the statewide opening weekend event was provided through the DNR Office of Communications. The Wisconsin Waterfowl Association and the River Alliance of Wisconsin have also been important partners, helping to build and place boot cleaning stations at access points for hunters.



Figure 22. Wisconsin waterfowl hunters.

Invader Crusader Awards

Each year, the Wisconsin Invasive Species Council requests nominations for individuals, groups, or organizations to be recognized for their exemplary efforts at addressing issues surrounding terrestrial and aquatic invasive species, including plants, pests, animals and disease-causing organisms. The 15th annual Invader Crusader Awards were presented on June 5, 2018 at Olbrich Gardens in Madison, WI following the Invasive Species Council’s summer meeting.

Professional Individual Category Winners

- **Maureen Ferry** is a knowledgeable and dedicated aquatic invasive species monitoring specialist with the DNR. She has addressed one of the greatest risks of spread for aquatic invasive species by leading the development of a decontamination manual code. She has also developed new monitoring protocols and works with database managers to better monitor invasive species. Because of Maureen’s expertise, Wisconsin has a better understanding of where invasives are located and how to monitor their spread.
- **Emily Heald** is the water program coordinator at North Lakeland Discovery Center in Manitowish Waters. For three years, Emily has managed lake and river protection programs in Vilas County townships. Emily engages people of all ages and backgrounds using creative approaches, like the place-based “Float

Your Boat” trivia contest she helped develop where contestants answered trivia questions about aquatic invasive species and lake history from their pontoon boats.

Professional Group Category Winners

- The **Aldo Leopold Foundation** is recognized for its role in establishing and managing the Leopold-Pine Island Important Bird Area near Baraboo. Using active management techniques, such as timber harvesting, prescribed burning and forestry mowing, the Aldo Leopold Foundation has helped create critical habitat for 24 high priority bird species. The Foundation also plays a critical role in developing young leaders in conservation and educating landowners, professionals and college students.
- The **Red Cliff Band of Lake Superior Chippewa** is recognized for a highly ambitious invasive species project to eradicate and replace non-native Phragmites from three wastewater treatment plants in northern Wisconsin. To accomplish this work, project leaders Chad Abel and Gabrielle VanBergen secured funding in the multi-million-dollar range and worked with diverse partners across jurisdictional and tribal boundaries. As the leaders of this initiative, the Red Cliff Band of Lake Superior Chippewa has taken steps to improve the health of Lake Superior’s coastal wetlands and watersheds.
- **DATCP’s Nursery Inspector Team** works on the front line of invasive species detection and regulation. Nursery inspectors monitor over 1,000 plant growers and dealers with the goal of detecting and halting the sale of regulated invasive species. Their work helps prevent the introduction of invasive species to Wisconsin’s natural areas and the subsequent efforts that would be needed to manage them. The nursery inspectors go above and beyond to stay abreast of activities within their territories and are incredibly knowledgeable about invasive species issues.

Volunteer Individual Category Winners

- **Rod Sharka’s** personal mission as the volunteer land manager at Tenderfoot Reserve is to eradicate honeysuckle from the property, and he has succeeded over most of the 900+ acre reserve. Rod has also built partnerships with neighboring landowners, like the Natural Lakes landowner group who he trained to survey, map and manage honeysuckle infestations. He is a tireless advocate for native habitats and is passionate about sharing this knowledge so people can not only manage their lands for health but enjoy those healthy lands

- **Douglas H. Frazer** is Village President and Weed Commissioner for the Village of Fox Point. Douglas has substantially influenced citizen understanding of invasive species and has led the way in removal and eradication of noxious weeds and plants. In 2018, Douglas created the No Grow Cooperative, a program through which residents can borrow buckthorn removal equipment free of charge. Douglas also spearheaded the enactment of a new Village ordinance banning garlic mustard and buckthorn. These innovative techniques have been warmly received by Fox Point residents, helping to elevate community support for invasive species management.
- For the last two years, **Michael Vahldieck** has been a dedicated and hardworking volunteer for Dane County Parks. He works diligently to detect, map and remove invasive species and keeps careful records of his work. His mapping and control work at Walking Iron County Park helped save a high-quality remnant sand prairie from brush encroachment, increasing habitat for many prized prairie species. While he does not seek out recognition, other volunteers notice his dedication and strong work ethic. He has been a reliable volunteer who helps to foster a friendly atmosphere for other participants, especially new volunteers.
- **Donna VanBuecken** has worked with invasive species for over forty years, beginning as an at-large member of the Wild Ones and then as a founding member of the Fox Valley chapter, where she has served on the board of directors for over 20 years. She was also a founding member of the Invasive Plants Association of Wisconsin and was on the board for the first five years. Donna's work with the Wild Ones focuses on native habitat restoration while recognizing the necessity of controlling invasive plants as a vital first step. She also does outreach to hunting and fishing groups and reaches countless students through the Wild Ones Seeds for Education program.

Volunteer Individual Category Winners

- The **Woodland Dunes Barberrians** is a dedicated volunteer group at the Woodland Dunes Nature Center and Preserve in Two Rivers. They have contributed thousands of hours of volunteer match in an ongoing emerald ash borer mitigation project that includes planting 3,000 trees annually over four years and building an understory of diverse native plants. The Barberrians also engage hundreds of school-age children, college interns and adult peers in habitat restoration and land management projects. With limited funding, the Barberrians put their boots on the ground with the best-known practices of today and make things happen.

- The **Franciscan Sisters of Perpetual Adoration** is a religious congregation in La Crosse. Through the creation of a land management plan, the FSPA committed to vigorous control of invasive species on their 200-acre property. After 8 years of work, nearly all mature invasives have been removed. Their hard work has helped them restore oak habitat and reduce invasive seed from washing into a trout stream watershed. The FSPA views invasive species control as part of a larger land ethic that also includes efforts on the property to farm organically, restore waterways and oak habitat, and plant prairies to help pollinators and reduce agricultural runoff.

Wisconsin owes these individuals and groups a great debt for their important work on invasive species.



Figure 23. Invader Crusader Award Winners 2019

Who to Contact:

General questions on invasive species: tara.bergeson@wisconsin.gov

Terrestrial invasive plants: kelly.kearns@wi.gov or mary.bartkowiak@wisconsin.gov

Aquatic invasive species – find your local AIS coordinator:
https://dnr.wi.gov/lakes/invasives/Contacts.aspx?role=AIS_RE_COORD

Forest insect or diseases – find your regional forest health specialist:
<https://dnr.wi.gov/topic/ForestHealth/staff.html>

How you can help:

Found an invasive species that may be new to your area? Send photos and details of its location, abundance and habitat to: Invasive.Species@wi.gov

Reporting an aquatic invasive species? Check out this page:
<https://dnr.wi.gov/topic/Invasives/report.html>

Want to work with others on invasive species in your area? Join your local Cooperative Invasive Species Management Area (CISMA):
<http://ipaw.org/Home/RegionalGroupsCISMAS.aspx>

Want to control specific invasive species on your land? You can find more info at these sites:

<https://dnr.wi.gov> ; <https://dnr.wi.gov/topic/Invasives/control.html> ;
<https://mipncontroldatabase.wisc.edu/>