

## Wisconsin Department of Natural Resources

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### Invasive Species Report

Prepared by the Department's Invasive Species Team

July 1, 2016 – June 30, 2018



*Cover Photo. Adult emerald ash borer in Wisconsin. See page 17 for information on this invasive species.*



## Introduction

### Purpose of This Report

The Department of Natural Resources (department) is required by [Wisconsin Statutes](#) to submit a biennial report to the legislature, governor, and Wisconsin Invasive Species Council detailing Wisconsin's invasive species programs, the state's progress in controlling invasive species, current expenditures, and future needs. The report is due by October 1 in even numbered years. This report meets that reporting requirement and covers the period of July 1, 2016 through June 30, 2018.

### What Are Invasive Species?

The legislature has officially defined 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 \$59 billion agriculture industry (350,000 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 \$28 billion industry (66,000 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 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 2016, Wisconsin visitor numbers reached 107.7 million and visitor spending created an estimated \$20 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 been engaged in work 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 “one DNR” response by bringing together staff from the divisions of Fish, Wildlife and Parks, Forestry, and Environmental Management, as well as the Law Enforcement program. 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 under the sponsorship and direction of agency administration. During the current reporting period, the team has focused efforts on engaging partners in invasive species early detection, management, and control, implementing a coordinated response framework, updating the state’s aquatic invasive species (AIS) strategic plan, 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. During this reporting period, the Council's website was updated to include a [page listing government agencies and private foundations](#) that provide funding to control and prevent the spread of invasive species (Figure 1). Drop-down boxes help users find grants for which they are eligible. Once assistance opportunities are identified, users are provided with website links for additional information or are given an email address for the appropriate contact person.

[Wisconsin Statutes](#) allow local units of government to annually require the destruction of all noxious weeds within their jurisdictions. The Council's website now includes a [Local Ordinances](#) page that provides example ordinances adopted by Wisconsin municipalities (Figure 1). 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 32](#)). 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.

Wisconsin's Aquatic Invasive Species Management Plan guides the department's actions to prevent, contain and control AIS. Originally written and approved by the US Fish and Wildlife Service in 2003, it has been updated and is currently being reviewed for approval. The revised plan is sensitive to new AIS, new technologies and new approaches to preventing, containing and controlling AIS. The plan now targets pathways which are known to support the movement of AIS into and around the state. While recreational activities have long been known to move AIS between waterbodies, the realization that the internet enables the shipment of AIS across the country presents a new challenge unforeseen in the original plan. A core team of stakeholders worked together to draft the updated plan and brought key insights into the process which will help to make the plan a blueprint for continued success.

## 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 with criteria 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 the department of Agriculture, Trade and Consumer Protection 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, four new permits were issued covering four species. All permits were issued for educational or research purposes.

## Rapid Response Framework

The department's Invasive Species Team developed a 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 which 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 and keep us all moving forward. The department's work on invasive species is greatly enhanced by collaborative work of our many partners. 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 (Figure 2). 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 CWMAs) provide local focal points for invasive species work.

As of June 2018, there are thirteen larger established CISMAs ranging in size from one to nine counties (Figure 3). There are many more CISMAs that focus on smaller regions



Figure 2. County and Regional Aquatic Invasive Species (AIS) Partners.

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 54 counties and include thousands of volunteers. The department provides information and technical support to these partnerships.

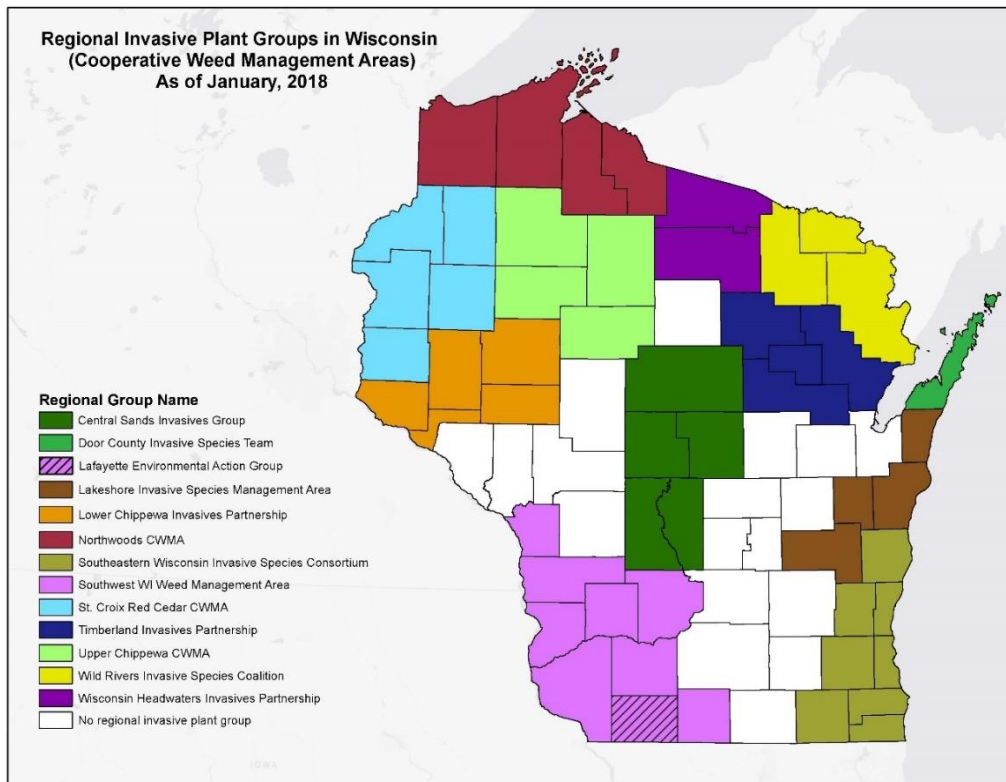


Figure 3. Cooperative Invasive Species Management Areas in Wisconsin.

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. During the reporting period, approximately 150 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 biological supply companies and nursery suppliers known to conduct business in Wisconsin, and to seed labelers and licensed nurseries throughout Wisconsin. Department staff continue to maintain a list of distributors who

ship regulated species into Wisconsin for future outreach. Nurseries that were documented by the Department of Agriculture, Trade and Consumer Protection (DATCP) in 2017 as selling Prohibited species were sent follow-up letters early in 2018, reminding them of the regulation and thanking them for their efforts to gain compliance.

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.



*Figure 4. Nursery inspection at Northern Family Farms – a Wisconsin grower.*

## 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 demand for the grants, however, has exceeded funding capacity, causing a “now you see it now you don’t” phenomenon which results in the rise and fall of state-wide efforts. To counterbalance the discrepancies in funding, the department hopes to move to a contract or agreement-based system that enables its partners to provide a core list of services.

The AIS grants program has been oversubscribed by approximately one million dollars 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 boon 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 database containing records of 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.

## Terrestrial Invasive Species

### *Suppression Grant Program*

The suppression grant program is used to control especially troublesome invasive plants on private and public lands throughout Wisconsin. These plants include those listed as 1) Prohibited under NR 40, 2) split-listed under NR 40, which are Prohibited in some counties and Restricted in others, 3) Restricted species under NR 40 that are found in new areas, and 4) early detection species, which are species known to be invasive in neighboring states, and are not yet listed under NR 40.

The suppression grant program helps landowners with Prohibited species on their property comply with NR 40, as the rule prohibits possession, transfer or introduction of those species. In contrast, possession of Restricted species is allowed but transfer and introduction are not.

The department's Division of Forestry and Bureau of Natural Heritage Conservation (NHC) awarded grants to private ecological restoration companies and Cooperative Invasive Species Management Areas to control invasive plants in Wisconsin. Forestry funding is used to control invasive plants in forests while NHC funding is used to control

these species in other terrestrial ecosystems. Each year, Forestry and NHC commit approximately \$20,000 and \$5,000 to the program, respectively. These grants are used for a variety of purposes that contribute to the control and eradication of invasive plants. The bulk of the funds pays for control measures for invasive plants. In addition, small grants are used for outreach to landowners to explain NR 40, provide information about suitable control measures and available assistance, and secure their cooperation.

During this reporting period, the following suppression grant funds were dispersed:

- \$5000 from Natural Heritage Conservation for the control of three different species primarily in Dunn, Chippewa, Columbia, Milwaukee and Waukesha counties.
- \$60,000 from the Weed Management Area Private Forest Grant Program (WMA-PFGP) to six different Weed Management Area Groups who are using volunteers to do invasive species surveys, control, monitoring and outreach on private forested lands in their regions.
- \$7,000 in Forestry Suppression Grants for the control of six invasive plant species in eight different municipalities.

The control and eradication of invasive plants is a multi-year endeavor which involves many partnerships. Because of these vital partnerships, several invasive species have been successfully controlled or eradicated, and plans for additional cooperation are underway for 2019.

### ***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.

### ***Giant Hogweed***

Giant hogweed is an Asian plant that has severely invaded parts of the eastern United States and Europe. Reaching up to 15 feet tall, with flower clusters over 1 foot in width and leaves up to 3 feet in width, this distinctive plant can inflict dermal burns upon

those who touch it (Figure 5). Over the last few years, the department has received hundreds of reports of this plant. Fortunately, most of these reports are of smaller, less toxic, native look-alike species. So far, we are aware of populations in only four counties (Iron, Portage, Manitowoc, Sheboygan), and all are being controlled annually. Landowners are responsible for some management, but the bulk is coordinated by our partner organizations, with the federal Great Lakes Restoration Initiative funding this year's efforts.



*Figure 5. Giant hogweed worker in personal protective equipment.*

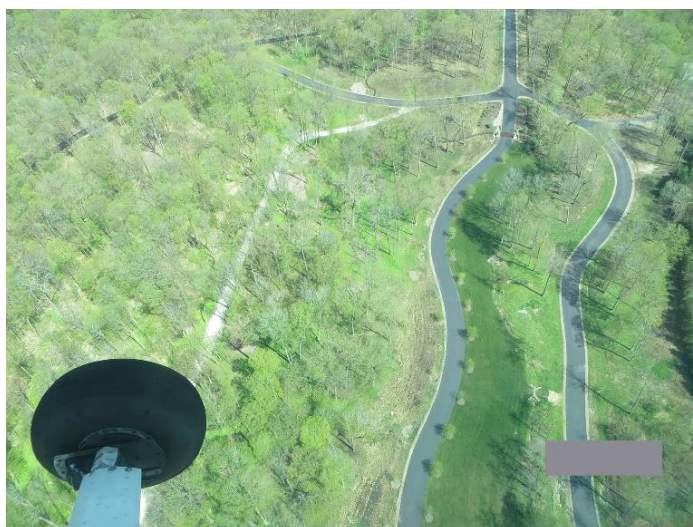
### ***Wild Chervil and Amur Cork Tree***

The Lower Chippewa Invasives Partnership (LCIP) engages diverse members, conducts training sessions and hosts volunteer work days in western Wisconsin. Unfortunately, the region is infested with the prohibited amur cork tree and the restricted wild chervil. The amur cork tree was planted years ago and has since become abundant within the area's rural and urban forests. LCIP has conducted surveys and extensive outreach to landowners with infestations and has procured grants to help landowners cost-share the species' removal and control. Wild chervil began as a roadside weed in Chippewa County and was unintentionally spread by roadside mowers into pastures, prairies, and forest edges. To prevent further spread of the two species, LCIP has used department funding to train local officials, roadside managers and landowners, and has provided supplies for local control. To support ongoing efforts, several local partners have committed their own funding.

### ***New survey methods for Lesser Celandine***

An experimental aerial survey was conducted in early May 2018 to search for lesser celandine in southeastern Wisconsin. The survey showed that this spring ephemeral plant, which forms large dense monospecific mats, is visible from a low-flying plane (Figure 5) before the tree canopy becomes leafed out. Two previously non-surveyed river corridors were inspected, and no lesser celandine was found.

Outreach efforts through local partners, such as the Geneva Lake Conservancy, and letters to landowners have helped better define the extent of a lesser celandine infestation near Lake Geneva. The plant is more widespread than previously known and is now documented north and south of the lake. A small grant from the Southeastern Wisconsin Invasive Species Consortium to the Geneva Lake Conservancy was implemented to control lesser celandine at the Covenant Harbor camp. Control efforts which started in 2016 continued in the Great Lakes Basin (Milwaukee, Kenosha and Racine counties) with funding from the Great Lakes Restoration Initiative to the department's Lakes and Rivers section. In addition, the Forest Health Program received a grant for \$20,500 from the U.S. Forest Service to assist landowners with control of lesser celandine in Lake Geneva.



*Figure 6. Aerial survey of lesser celandine in southeastern Wisconsin.*

### ***Oak Wilt***

In spring 2018, the team launched a successful campaign to increase awareness of oak wilt, a devastating fungal disease that rapidly kills red oak trees and damages white oak trees. The campaign targeted northern Wisconsin, where the disease is not yet widespread but is becoming less rare. If oak wilt establishes in northern forests, the resulting ecological and economic damage would be significant. The outreach campaign placed advertisements in local newspapers and featured a new video, which has since reached over 50,000 people on YouTube, Facebook and Twitter. The video may be viewed at <https://www.youtube.com/watch?v=CLvSgKr5uY4>.

### ***Emerald Ash Borer***

The state was placed under quarantine for the emerald ash borer on March 30, 2018. Before then, quarantines had been imposed on a county-by-county basis as the insect

was discovered. A statewide quarantine allows businesses to move wood freely between counties, although USDA regulations must be followed when moving regulated items. While the new quarantine allows movement of firewood within the state, the Forest Health Team continues to work with its partners, UW-Extension and the DATCP, in urging the public not to move firewood long distances.

### *Gypsy moth*

On August 8, 2018, the department's gypsy moth suppression program was deactivated by the Natural Resources Board. The program had helped suppress localized gypsy moth outbreaks with aerial insecticide treatments at the request of a participating county. It was ended after requests lessened from local communities and as private-sector alternatives to federally subsidized spraying emerged. A DATCP program called Slow The Spread (STS) seeks to control emerging, isolated gypsy moth populations in non-quarantined counties within western Wisconsin. The STS program is not voluntary and DATCP does not take landowner or municipal requests for sprays. The Forest Health Team continues to play a major role in providing news, advice, information and ideas to Wisconsin residents who are affected by gypsy moths.



*Figure 7. Aerial gypsy moth treatment. Photo courtesy of UW-Extension.*

### **Asian jumping worm**

Jumping worms were first observed in Wisconsin in 2013. Native to eastern Asia, these invasive earthworms present challenges to homeowners, gardeners, and forest managers. In comparison to other earthworms in the state, jumping worms grow and reproduce more rapidly, consuming more nutrients. Once established, they quickly transform soil into dry, granular pellets, a soil structure which is inhospitable to many native species but allows invasive plants to thrive. Jumping worms are considered a special threat to Wisconsin forests as they could significantly reduce species diversity and regeneration. The Forest Health Team manages information about jumping worms, tracking where the pest is found in the state.



*Figure 8. Adult jumping worm.*

### **Beech Leaf Disease**

Although not yet found in Wisconsin, The Forest Health Team has urged forest owners and managers to monitor for this devastating fungal disease on American and, to a lesser extent, European beech trees. Beech leaf disease is becoming a serious issue in parts of Ohio, West Virginia, Pennsylvania, New York and Ontario. Its cause is unknown, although an invasive nematode is a suspected culprit. In areas where beech leaf disease is established, nearly 100% of American beech trees eventually display symptoms. Affected trees are vulnerable to attack by a wide variety of insects and pathogens, including beech blight aphid, European beech scale, erineum patches produced by eriophyid mites, and leaf fungi.



*Figure 9. Beech leaf disease. Photo courtesy of The Ohio State University.*

### **Asian Longhorned Beetles**

The Asian longhorned beetle is a threat to Wisconsin's hardwood trees. As it is not currently found in Wisconsin, early detection and eradication are critical to its control. It currently infests areas in Massachusetts, New York and Ohio, where it threatens recreation and forest resources valued at billions of dollars. The Asian longhorned beetle has the potential to cause more damage than Dutch elm disease, chestnut blight and gypsy moths combined, destroying millions of acres of America's treasured hardwoods. The damage could affect national forests and backyard trees, alike.



*Figure 10. Adult Asian longhorned beetle. Photo courtesy of The Ohio State University.*

### **Southern Pine Beetle**

The southern pine beetle is a species of tiny bark beetle native to the southern U.S., Mexico and Central America. It has been found in New Jersey, New York, Massachusetts, Rhode Island and Pennsylvania; the insect's northward expansion exemplifies how steadily warming temperatures can advance rapid range expansions. The beetles are usually attracted to weakened mature pine trees, those more than 15 years old or with a trunk diameter of less than 6 inches. Even normally resistant pine species such as eastern white pine can be killed when beetle populations surge. The ecological and economic impact of the beetle's establishment in the state would be significant.



*Figure 11. An example of damage from southern pine beetles in New York State.*

### **Feral Pig Response**

The department continues to maintain an online reporting system that the public can use to report any feral pig sightings or activity. Reported sightings are shared with the local department county biologist as well as the USDA-Wildlife Services Feral Swine Specialist. The USDA-WS specialist takes the lead in investigating any reported sightings.

USDA-Wildlife Services has been involved in more than a dozen feral swine investigations over the past year. The USDA-WS personnel work closely with department personnel as well as other state, local and federal agencies to thoroughly investigate all reports. Most of these reports have been about pet potbelly pigs that likely outgrew their home or an escaped/released domestic pig. If the owner can be located, they are provided information about fencing requirements and options for removal.

An Inter-Agency Feral Pig Task Force comprised of representatives from the DNR, USDA APHIS, DATCP, and the domestic swine industry monitors for feral pigs on the landscape as well as management activities.

### **White-Nose Syndrome**

White-nose syndrome (WNS) is a disease that develops in bats infected with the cold-loving fungus *Pseudogymnoascus destructans* (*Pd*). Infected bats display a white fungal growth on their face, arms, legs, wings, and/or tail membrane. Infected bats exhibit atypical behavior such as daytime activity during winter hibernation, which rapidly depletes stored energy reserves. Wing damage and emaciation are also common effects of the disease.

Since the discovery of WNS in 2006 in New York, at least six million bats have died. The disease has been found in 31 states and five Canadian provinces.

Bats play an important role in Wisconsin's ecosystems and economy: our state has one of the highest concentrations of hibernating bats in the Midwest. Bats feed voraciously on insects, and a [2011 North American study](#) estimated that bats save Wisconsin's agriculture industry between \$658 million to \$1.5 billion annually in pesticide costs.

The results of the 2017 winter bat survey indicate that white-nose syndrome has spread to nearly all the known bat hibernating sites in Wisconsin. Visual surveys and genetic tests conducted this past winter found that white-nose syndrome, or the fungus that causes it, is present in 24 of 28 counties that have known bat hibernacula. Numbers of bats declined 40 to 60 percent at two of the state's largest sites, which combined

accounted for two-thirds of Wisconsin's known bat population only a few years back. Some sites have declined even more. Department surveyors found only 16 bats compared to a previous population of 1,200 at a Grant County site where the fungus was first detected.

Over the last decade, Wisconsin has undertaken several actions that have helped delay the arrival of the disease and may have slowed its spread:

- Added four cave bat species to the state's threatened species list in 2011.
- Worked with private landowners to keep the disease out of caves and mines.
- Required cave users to decontaminate their gear between caves.
- Enlisted volunteers to help track bat populations.
- Established volunteer agreements with hibernacula owners.
- Conducted research concerning the transmission and prevention of WNS.
- Developed statewide roost and acoustic monitoring projects.
- Consulted with the U.S. Geological Survey and U.S. Fish and Wildlife Service.
- Implemented an education and outreach program.

## Aquatic Invasive Species

### *Partner Programs*

Through the Surface Water Grants Program this year, the department has awarded over \$8 million to local organizations to address AIS issues. These funds support programs within 28 counties to train volunteers, develop AIS management plans, and engage citizens in AIS prevention. The grants allow for our different partners to run the AIS programs that best fit their needs.

### *Golden Sands Resource Conservation & Development (RC&D) Agency*

The department is currently collaborating with Golden Sands RC&D and the UW-Extension Lakes program, as well as seven Central Wisconsin counties to implement region-wide AIS prevention programs. Golden Sands RC&D works with individual lake management groups to prevent the spread of AIS and create new control plans, empowering homeowners and all who use the lake to help address this problem.

### *Washington County*

Providing an AIS Coordinator at the county level of government allows local implementation of AIS prevention, containment and control activities. Working individually with lake volunteers and their supportive lake organizations is an

opportunity to provide hands on training of monitoring and control techniques, which increases overall effectiveness.

### *St. Croix River Association (SCRA)*

As the friends group for the St. Croix National Scenic Riverway, the SCRA supports and complements the National Park Service's work within the Riverway. Core AIS services include boat inspections, decontamination services, monitoring and control work. In addition to funding from the US Fish and Wildlife Service, the department has funded the SCRA to sustain an AIS outreach and education program to help protect this national treasure. These programs are coordinated in partnership with the department, UW-Extension, and UW-Sea Grant. The department provides guidance at a statewide level, as well as technical guidance at the local level. UW-Extension and UW-Sea Grant provide training and coordination for the AIS partners. These strong partnerships will ensure that local AIS programs facilitate successful management.

### *Regional AIS Collaboration*

Many AIS issues need to be addressed at a scale beyond Wisconsin. To help facilitate these efforts, Wisconsin participates in several regional working groups that help develop and implement regional solutions. Department representatives have recently chaired two of the main working groups – the Great Lakes Panel (GLP) and the Mississippi River Basin Panel (MRBP), which are both part of the national Aquatic Nuisance Species Task Force.

Through this leadership and engagement, the GLP and MRBP have:

- Compiled species risk assessments to better identify future invaders.
- Developed a report and response plan for grass carp in both basins.
- Hosted a symposium for state attorney generals on the live bait trade to better manage invasion risk from the industry.
- Planned the first international Invasive Snakehead Symposium to address the threat of the species in the two basins.
- Developed an early-detection-rapid-response plan for the Great Lakes.

Additionally, Wisconsin has been active in the Invasive Mussel Collaborative and the Great Lakes Phragmites Collaborative. Both groups help managers and researchers in the Great Lakes basin share resources to improve AIS prevention and control. The department has helped guide the development and implementation of action plans

that have helped the state, region and nation prevent the arrival of AIS, contain their spread, and reduce their impact.

### *Decontamination/Disinfection Manual Code*

AIS move between bodies of water on boats, trailers and a wide variety of equipment. Department staff are aware of the role that everyday monitoring and management actions may play in moving invasive species. To ensure that department staff are not transporting AIS, the department updated its Decontamination/Disinfection Manual Code to reflect changes in AIS present and available technology. The updated code demonstrates the department's commitment to being part of the solution, not part of the problem. The code is significantly more demanding than the required prevention steps for the public, which is appropriate due to the wide variety of department actions and equipment used every day.

### *Aquatic Invasive Species Monitoring*

AIS monitoring was integrated with routine water quality sampling in 2016 and continues today. AIS-specific monitoring targets suitable, proximal and high traffic waters to detect pioneer populations early in their establishment. Table 1 shows new AIS detected through monitoring during this reporting period. We have also expanded citizen monitoring efforts to include a joint AIS Snapshot Day for rivers, lakes, and wetlands – it has proven to be the most successful citizen reporting effort for AIS.

**Table 1.** New aquatic invasive species detected each year.

Species	NR40	2016	2017	2018*
Asian clam	Prohibited	0	3	1
Banded mystery snail	Restricted	16	15	1
Bighead carp	Prohibited	4	1	0
Chinese mystery snail	Restricted	17	13	9
Curly leaf pondweed	Restricted	32	24	3
Eurasian water milfoil	Restricted	22	25	4
Faucet snail	Prohibited	5	0	0
Flowering rush	Restricted	8	5	3
Grass carp	Restricted	0	0	1
Hybrid Eurasian/northern water milfoil	Restricted	7	5	2
Japanese hop	Restricted	5	3	10
Japanese knotweed	Restricted	6	24	64
Japanese mystery snail	Restricted	2	0	0
Java waterdrop	Restricted	2	0	0
New Zealand mudsnail	Prohibited	6	2	1

Ornamental water lilies	Watch	2	1	2
Phragmites	Restricted	25	94	34
Purple loosestrife	Restricted	48	41	12
Quagga mussel	Prohibited	0	1	0
Queen of the meadow	Restricted	0	1	0
Reed manna grass	Restricted	9	5	0
Round goby	Restricted	12	1	1
Rusty crayfish	Restricted	42	28	4
Seaside goldenrod	Prohibited	1	0	0
Spiny naiad	Restricted	0	1	0
Starry stonewort	Prohibited	8	1	2
Yellow floating heart	Prohibited	0	0	1
Yellow iris	Restricted	12	8	4
Zebra mussel	Restricted	6	14	5

*\*2018 data is not complete – it is still being entered.*

## Aquatic Invasive Species Funding

### Federal Funding

The U.S. Fish and Wildlife Service (USFWS) and the U.S. Environmental Protection Agency (USEPA) awarded funding to the department for AIS prevention, containment and control activities. The department applied for and received grants through the Great Lakes Restoration Initiative (GLRI) in 2016 and 2017. In addition, the department was awarded federal grants from the USFWS for the implementation of its AIS Management Plan for this reporting period. The GLRI website summarizes the various grants provided through the program and can be found at: <https://www.glri.us/>

**Table 2.** Federal grants awarded to the department for AIS work.

Year	Funding Source	Activities	Amount Awarded
2016	USFWS – ANS Plan Implementation	Implement state ANS Management Plan	\$48,895
2017	USFWS – ANS Plan Implementation	Implement state ANS Management Plan	\$46,715
2018	USFWS – ANS Plan Implementation	Implement state ANS Management Plan	\$47,695
2016	USFWS – Great Lakes Restoration Initiative	Wisconsin's AIS Prevention, Containment and Control Campaign	\$900,000

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2017	USFWS – Great Lakes Restoration Initiative	Aquatic Invasive Species Protection	\$800,000
2017	USEPA – Great Lakes Restoration Initiative	Wisconsin Invasive Species Control	\$551,669
		<b>Total</b>	<b>\$2,394,974</b>

### *State Funding*

The department has an annual budget of \$4.5 million for AIS prevention, containment and control work. Four million dollars are provided to state partners through competitive grants, to be used for planning, education, monitoring and control. Approximately \$500,000 is used for program administration and technical assistance contracts to aid in program implementation. An estimated \$1 million is needed to meet the demand for AIS grant dollars in the state. A description of the department's grants can be found at: <https://dnr.wi.gov/lakes/grants/>

## Successful Response Actions, July 2016 - July 2018

### *Eradication of Red Swamp Crayfish in Germantown and Kenosha Ponds*

The department implemented a successful eradication effort in response to the discovery of red swamp crayfish in three ponds in southeast Wisconsin: two in Germantown, and one in Kenosha. Red swamp crayfish is a prohibited species with the potential to be highly detrimental to the state's aquatic resources. Due to the species' ability to travel over land to new waters, aggressive control strategies were used to prevent the crayfish from colonizing waterbodies where eradication would be more difficult.

Following initial detection in 2009, control efforts persisted for several years. The department constructed fencing around ponds to contain the crayfish and utilized intensive trapping, shoreline chemical treatment, water level drawdown, and installed barriers to prevent burrowing. The chemical treatments required EPA approval and collaboration. Ultimately, the two smaller ponds were filled in and the bottom of the larger Germantown pond was lined with fabric and stone. The department has continued to regularly survey the ponds since eradication efforts began in 2009. No red swamp crayfish were detected in the ponds during this reporting period.

### *Water Hyacinth in Lake Winneconne*

Water hyacinth, a prohibited non-native plant with the potential to be highly invasive, was reported by a citizen volunteer in Lake Winneconne (Winnebago County) in October 2015. The department and our partners conducted monitoring and hand-removal efforts that autumn to remove as many plants as possible. As water hyacinth originates from the Amazon basin in South America, it was hoped that the cold Wisconsin



*Figure 12. Water hyacinth. Courtesy of Paul Skawinski, UW-Extension*

winter would freeze out any plants which were inadvertently missed. Monitoring has persisted in recent years, with some plants detected in 2016 and 2017, despite further hand-removal efforts. Encouragingly, monitoring in early 2018 did not locate any water hyacinth, and additional efforts are planned for fall 2018. The successful response and removal of water hyacinth in Lake Winneconne points to the value of AIS monitoring efforts to inform prompt removal of an invasive species before it may spread.



*Figure 13. Volunteers who conducted hand-removal of water hyacinth in Lake Winneconne.*

### *Water Lettuce in Lake Mendota*

Water lettuce, another NR40 prohibited non-native aquatic plant species, was discovered in Lake Mendota (Dane County) in 2015. The department promptly assessed and coordinated a volunteer group to manually hand removed the water lettuce. Water lettuce was not observed on Lake Mendota in monitoring efforts conducted during the reporting period.

### *Yellow Floating Heart in Lake Gordon*

Yellow floating heart is a prohibited species which was initially detected in Lake Gordon (Forest County) in 2013. Yellow floating heart is not widespread in Wisconsin and has historically been absent from the state's natural waterbodies. Following its discovery, this population has been monitored and repeatedly hand-removed. Surveys conducted during this period have yielded no further detections of yellow floating heart in Lake Gordon, indicating a successful response and removal.

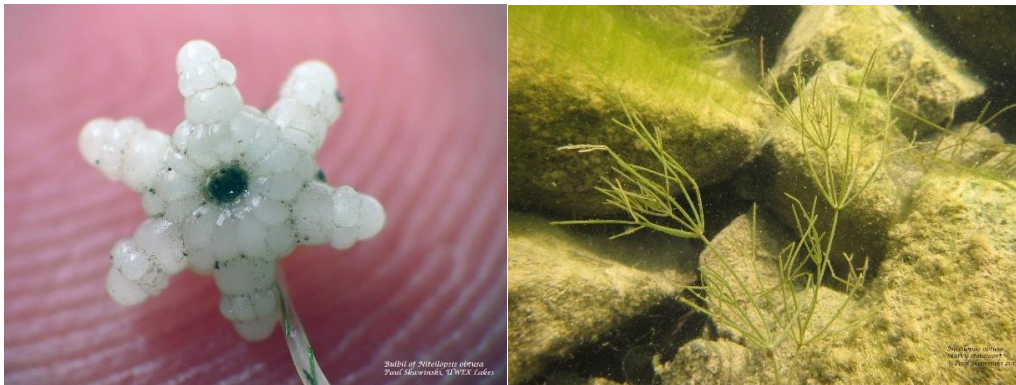


*Figure 14. Yellow floating heart in Lake Gordon.  
Courtesy of Chris Hamerla, Golden Sands RC&D.*

### *Starry Stonewort in Wisconsin*

Starry stonewort (SSW) is a prohibited, plant-like macroalgae that was first discovered in Wisconsin in 2014 in Little Muskego Lake (Waukesha County). Like other AIS, this species has the potential to outcompete native vegetation and clog waterways. Work to prevent its spread is important because the species is only known to be present in a handful of inland lakes in southeast Wisconsin. Department staff and partners throughout the state have continued to conduct reconnaissance since the discovery. Extensive outreach has been conducted to inform the public about this species, describe how to monitor it, and provide methods for its control. Targeted audiences include early-season anglers, mid-summer recreational boaters, and late-season waterfowl hunters. Local stakeholders can get involved in outreach activities such as Clean Boats, Clean Waters and the Drain Campaign.

Various attempts have been made to control this species, including physical removal and copper-based herbicide treatments. No control strategy implemented to date has showed long-term efficacy in achieving SSW control, with most control efforts resulting only in localized or short-term reduction. Several research initiatives, either funded by or in collaboration with the department, have been conducted. Only two new populations of SSW have been discovered in 2018, suggesting that outreach strategies to help prevent the spread of AIS are working.



*Figures 15 and 16. Left: A starry stonewort bulbil, the macroalgae's distinguishing reproductive structure. Right: Starry stonewort in the water. Photos courtesy of Paul Skawinski, UW-Extension Lakes.*

## Future Threats and Needs

Wisconsin has a variety of organizations that are eager to participate in invasive species prevention, containment and control work but are limited by available funding. **These local organizations need sustainable financial support to be truly impactful.** Both terrestrial, and aquatic work is best completed at the local level, but it may take statewide or regional coordination. For Wisconsin to protect its economic engine which depends upon the quality of its natural resources (e.g. forests products, tourism, agriculture), the state needs to take a comprehensive approach to invasive species prevention, containment and control. Beyond this state, Wisconsin must be a **regional partner** with our neighboring states. Wisconsin should actively help to stop the upstream and downstream movement of invasive species through the Chicago Area Waterway System (CAWS). Cooperation with key businesses and other stakeholders to stop the movement of invasive species through internet shipment and other pathways is important to protecting the region from new invasive species.

### ***New Zealand Mudsnaills in South Central Wisconsin***

Department stream biologists discovered New Zealand mudsnails in Mount Vernon Creek, Rowan Creek, and Badger Mill Creek in 2016 during routine water quality sampling. Another proximal population on Mount Vernon was also discovered while testing new citizen-based sampling protocols for New Zealand mudsnails. In summer 2018, department stream biologists deployed a new project: eDNA and benthic sampling to identify the extent of the mudsnail population.



*Figure 17. New Zealand mudsnail samplers.*

### ***Zebra Mussels in Northwest Wisconsin***

Zebra mussels were discovered in Big McKenzie Lake in 2016 and downstream Middle McKenzie Lake in 2017. Following discovery, a zebra mussel management team developed a plan for monitoring, prevention and outreach. Local biologists deployed eDNA and benthic sampling in summer 2018.

## **Wisconsin's AIS Management Plan**

Wisconsin's Aquatic Invasive Species Management Plan guides the department of Natural Resource's actions to prevent, contain and control AIS. Originally written and approved by the US Fish and Wildlife Service in 2003, it has been updated and is currently being reviewed for approval. The revised plan is sensitive to new AIS, new technologies and new approaches to preventing, containing and controlling AIS. The plan now targets pathways which are known to support the movement of AIS into and around the state. While recreational activities have long been known to move AIS between waterbodies, the realization that the internet enables the shipment of AIS across the country presents a new challenge unforeseen in the original plan. A core team of stakeholders worked together to draft the updated plan and brought key insights into the process which will help to make the plan a blueprint for continued success.

## Education and Outreach

### *Landing Blitz and Drain Campaign*

The department continues its partnership with the UW-Extension. The two agencies lead coordinated statewide efforts to educate boaters about how to prevent the spread of AIS in Wisconsin. The Drain Campaign, which is targeted at anglers, takes place in early June.



Figure 18. Ice pack with AIS prevention message for anglers.

Surveys have suggested that anglers do not fully understand laws related to draining water for AIS prevention. One persistent problem is of anglers transporting live fish home, even though Wisconsin's invasive species law prohibits both the transport of water and live fish. To address these incidents, the department has purchased reusable ice packs (Figure 18) to distribute to anglers on the Drain Campaign weekend. The ice packs provide an alternative method to transporting live fish in water and serve as a reminder to the angler on every subsequent fishing trip.

While the Drain Campaign focuses on a specific behavior, the Fourth of July Landing Blitz targets recreational boaters in general. The Fourth of July is always one of the busiest boating weekends of the summer, enticing not only regular boaters to get on the water but infrequent boaters and out-of-state visitors, as well. To connect with this large number of boaters, the department coordinated the 8th annual Landing Blitz. Clean Boat, Clean Waters volunteers across the state spent the Fourth of July weekend educating boaters on AIS laws and how they can help prevent the spread of AIS.

These examples show how the department works effectively with partners across the state to help protect Wisconsin's waters from the threats of AIS. Through these efforts, Wisconsin has proven itself to be a leader in AIS prevention across the Great Lakes region.

### *Waterfowl Hunter Campaign*

Identifying, understanding, and addressing invasion pathways in addition to addressing the issues presented by traditional boaters and anglers are key to protecting Wisconsin

from new invasions. Waterfowl hunters are another concern, especially since their boating season falls outside of when many watercraft inspectors are active. Since the waterfowl hunters are a group that has not been previously targeted by AIS staff, the department, UW-Extension, and local partners worked together to create surveys and develop outreach materials to pilot throughout the state.

The statewide survey of waterfowl hunters revealed that most (92%) of waterfowl hunters have heard of AIS, but a smaller percentage (70%) knew that hunting gear can transport AIS. Waterfowl hunters also appear to be at least as transient as the general boating community, with 50% of waterfowl hunters using multiple waters within a five-day period.

Based on the survey, UW-Extension and department staff created a pilot waterfowl outreach campaign modeled after Clean Boats, Clean Waters. Led by the department Water Guards and local teams consisting of county AIS coordinators and Department wildlife staff, the campaign targeted five well-known waterfowl hunting areas on opening weekends. Reports from pilot campaign participants suggested that the effort was well received by waterfowl hunters and that useful contacts were made during the event.

### ***Habitattitude***

The Department has begun efforts to prevent new AIS introductions resulting from pet release and aquarium dumping. The Habitattitude campaign provides general advice on responsible pet ownership while outlining alternatives to pet release to owners and potential owners. The Habitattitude campaign is a national program developed through partnerships with industry, government, and academia that has been shown to raise awareness of invasive species issues to pet owners.

The Department partners with UW-Extension and the University of Wisconsin Sea Grant Institute to better utilize the Habitattitude campaign in Wisconsin. Two pet amnesty events were hosted through the Green Bay Habitattitude Surrender Network during this reporting period, through which nearly 50 animals were rehomed. Educational booths were hosted by two pet expos where nearly 2,000 contacts were made. Habitattitude outreach materials are made available to the Wisconsin AIS Partnership thanks to a GLRI grant through Wisconsin Sea Grant. An online Habitattitude teacher training module will soon be available to educate teachers on invasive species and alternatives to using invasive species in the classroom. Lastly, work is currently being done to complete an online Habitattitude teacher training module that will educate

teachers on invasive species and alternatives to using invasive species in the classroom. This will be completed during the next reporting period.

### ***Arboreta and Botanical Gardens***

As key partners in promoting botanical awareness, arboreta and botanical gardens throughout the state have received letters introducing them to NR 40 and providing contact information for further correspondence. Department staff have started visiting key gardens which are targeted for additional outreach.

### ***Other Outreach Activities***

Department staff delivered outreach presentations focused on NR 40 and invasive species in the marketplace at the Lakes Convention, Northern Great Lakes Visitor Center (as part of ISAM), UW-Stevens Point Invasive Species course (guest lecture), and Forest Industry Safety Training Association (FISTA) trainings.

UW-Extension Master Gardeners are viewed as strong partners in spreading information about NR40 to the public. To facilitate this effort, a newsletter article and online blog were provided to the UW-Extension Master Gardeners state-wide program.

### ***Invasive Species Action Month***

For the past 14 years in Wisconsin, June has been recognized as Invasive Species Awareness Month (ISAM). This is a way to promote the involvement and education of the public on invasive species issues and prevention. In 2018, the Invasive Species Council made a shift and re-coined June “Invasive Species Action Month.” Now that many Wisconsin residents and visitors are aware of the problems with invasive species, the Council wanted to shift the focus of the month to move people from awareness to action.

### ***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 14th annual Invader Crusader Awards were presented on June 6, 2018 at Olbrich Gardens in Madison, WI following the Invasive Species Council’s summer meeting.

### ***Professional Individual Category Winners:***

Katelin Anderson, Information and Education Coordinator and Water Quality Specialist for the Polk County Land and Water Resources Department

Tim Gerber, Professor of Biology at the University of Wisconsin-La Crosse

Brad Herrick, Ecologist and Research Program Manager for the University of Wisconsin-Madison's Arboretum

Professional Group Category Winner:

Johnson's Nursery in Menomonee Falls

Volunteer Individual Category Winners:

Ruth Marshall, Village Weed Commissioner of the Village of Nashotah in Waukesha County

Milly Thissen of northwest Wisconsin

Jim Reinartz and Jill Hapner from Saukville

Volunteer Group Category Winner:

Friends of Festge

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



*Figure 19. Invader Crusader Award Winners 2018*

### **Video Challenge**

As part of Invasive Species Action Month, the Council hosts a video challenge called, “Protect the Places Where You Play – Keep Invasives Out!” This video challenge is open to anyone and provides citizens with an opportunity to let their inner directors out, showcase their acting skills, and create a short video illustrating why they care about invasive species and how easy, and even fun, invasive species prevention can be.

The goal of the video challenge is to increase awareness of invasive species that occupy our favorite areas, and to teach people how to prevent the spread of invasive species in these habitats. People enjoy these outdoor areas by boat and canoe, while hunting, by walking the trails and shorelines, and in many more ways. With these enjoyments comes the responsibility of everyone to protect our natural areas from invasive species.

Participants submitted a short (less than two minutes) video showing how to “protect the places they play” to the Wisconsin Department of Natural Resources Facebook page in spring 2018. Visitors to the Facebook page voted on their favorite video, and the video with the most votes was selected as the winner. The first-place winner’s video was shown at the Invader Crusader Award Ceremony and the winner was presented with a buckthorn plaque.

The winning video for the 2018 Video Challenge was created by Brad Steckart and the Washington and Waukesha County Aquatic Invasive Species Teams. Their submission “Boatbusters,” an amusing take on the movie “Ghostbusters,” can be viewed on the Wisconsin Invasive Species Council website at <http://invasivespecies.wi.gov/awareness-month/video-contest/>. The video is an entertaining way to learn about preventing aquatic species when boating.

## Who to Contact:

General questions on invasive species: [tara.bergeson@wisconsin.gov](mailto:tara.bergeson@wisconsin.gov)

Terrestrial invasive plants: [kelly.kearns@wi.gov](mailto:kelly.kearns@wi.gov) or [mary.bartkowiak@wisconsin.gov](mailto:mary.bartkowiak@wisconsin.gov)

Aquatic invasive species – find your local AIS coordinator:  
[https://dnr.wi.gov/lakes/invasives/Contacts.aspx?role=AIS\\_RE\\_COORD](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](mailto: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/>