

INVASIVE SPECIES TEAM - 2018 REPORT



**CRAYFISH & HOGWEED
OVERTHROWN**

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PURPOSE OF THIS REPORT

This biennial report provides updates on the Department of Natural Resources' invasive species programs, progress in controlling invasive species, and future needs from July 1, 2017 through June 30, 2018. During this time, the department has engaged partners in early detection, management, and control, implemented a coordinated response framework, updated the state's aquatic invasive species (AIS) strategic plan, and provided training and outreach for businesses and other stakeholders.

The Invasive Species Identification, Classification, and Control Rule (Chapter NR 40, Wis. Adm. Code) classifies invasive species in Wisconsin as *Prohibited* or *Restricted* and regulates their transportation, possession, transfer and introduction. It also establishes "Preventative Measures" to slow the spread of invasive species. This rule applies to over 245 species and affects everyone in Wisconsin.

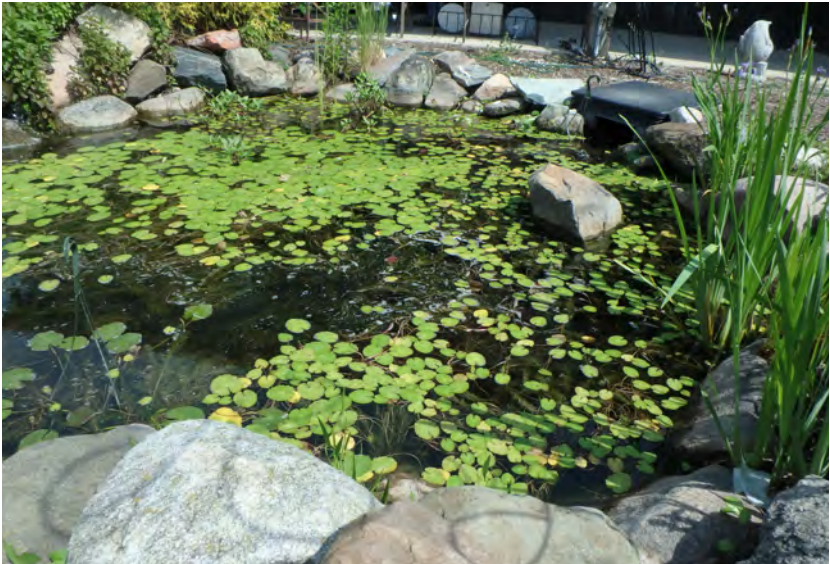


Photo: Yellow floating heart at a retail nursery (DNR files).

What are invasive species?

The legislature has defined invasive species 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.

Why does this matter?

Invasive species can occur in all types of habitats and affect urban and rural areas throughout Wisconsin. The adverse effects on our environment and citizens include damage to natural resources, alteration of aesthetic values, harm to wildlife and human health, and a strain on our economy. The costs to manage and control invasive species can be reduced or avoided if invasions are prevented in the first place.

SUCCESSFUL CONTROL ACTIONS

ERADICATION OF RED SWAMP CRAYFISH IN GERMANTOWN AND KENOSHA PONDS

The department successfully eradicated red swamp crayfish that were found 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 its ability to travel over land to new waters, aggressive control strategies were used to prevent the crayfish from colonizing other waterbodies.

Following initial detection in 2009, control efforts persisted for several years, and the department has continued to regularly survey the ponds. No red swamp crayfish were detected in the ponds during this reporting period.



*Photo: (A) Applying pesticide to control red swamp crayfish (DNR files).
(B) A mostly eradicated stand of giant hogweed (Kelly Kearns, DNR).*



GIANT HOGWEED

Giant hogweed 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. The department is aware of populations in Iron, Portage, Manitowoc and Sheboygan counties, and all are being controlled annually.

SUCCESSFUL CONTROL ACTIONS

WATER HYACINTH IN LAKE WINNECONNE

Water hyacinth, a prohibited non-native plant with the potential to be highly invasive, was reported in Lake Winneconne in 2015. The department has conducted monitoring and hand-removal efforts since the initial report, and the species was not detected in 2018. This successful response and removal points to the value of monitoring efforts to inform prompt removal of an invasive species before it may spread.

Photos: (A) Water hyacinth (Paul Skawinski, UW-Extension). (B) Volunteers who conducted hand-removal of water hyacinth in Lake Winneconne (DNR files). (C) Yellow floating heart in Lake Gordon (Chris Hamerla, Golden Sands RC&D). (D) Water Lettuce (DNR files).



YELLOW FLOATING HEART IN LAKE GORDON

Yellow floating heart is a prohibited species which was first detected in Lake Gordon in 2013. It is not widespread in the state and was historically absent from our natural waters. Since its discovery, the population has been monitored and repeatedly hand-removed. Surveys conducted during this period have yielded no further detection of yellow floating heart in Lake Gordon.



WATER LETTUCE IN LAKE MENDOTA

Water lettuce, another NR40 prohibited non-native aquatic plant species, was discovered in Lake Mendota in 2015. The department promptly coordinated a volunteer group to manually remove the water lettuce. As a result, water lettuce was not observed on Lake Mendota in monitoring efforts conducted during the reporting period.

AQUATIC MONITORING EFFORTS

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. Through these efforts, many new AIS were detected 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.



Photo: Spiny water flea monitoring efforts (Maureen Ferry, DNR).

DECONTAMINATION/ DISINFECTION MANUAL CODE

AIS move between bodies of water on boats, trailers and various equipment; everyday monitoring and management actions may play in moving invasive species. To ensure that our staff are not transporting AIS, the department updated its Decontamination/Disinfection Manual Code to reflect changes in observed AIS and available technology. The code is more demanding than the prevention steps required of the public, due to the variety of department actions and equipment used daily.

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.

AQUATIC SURVEYS



A

STARRY STONEWORT IN WISCONSIN

Starry stonewort is a prohibited, plant-like macroalgae, first observed in 2014 in Little Muskego Lake. Work to prevent its spread is important because the species has not yet become widespread within Wisconsin. Extensive outreach has been conducted to inform the public about this species, describe how to monitor it, and provide methods for control. Only two new populations have been discovered in 2018, suggesting that outreach strategies to help prevent the spread of AIS are working.



B

NEW ZEALAND MUDSNAILS IN SOUTH CENTRAL WISCONSIN

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



C

Photos: (A) Starry stonewort in the water, and (B) A starry stonewort bulbil, the macroalgae's distinguishing reproductive structure (Paul Skawinski, UW-Extension Lakes). (C) New Zealand mudsnail samplers (Maureen Ferry, DNR). (D) Zebra mussels (DNR files).

ZEBRA MUSSELS IN NORTHWEST WISCONSIN

Zebra mussels were discovered in Big McKenzie Lake in 2016. 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.



D

INVASIVE PLANT CONTROL PROJECTS

Several department programs work on invasive plant control, including Natural Heritage Conservation, Forestry, Wildlife, and Water. The Forest Health Team focuses on the prevention and management of invasive insects, diseases and plants that threaten Wisconsin's trees. Forest Health specialists 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.



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 found that this plant, which forms large dense mats, is visible from a low-flying plane. Two previously non-surveyed river corridors were inspected, and no lesser celandine was found.

Photos: (A) Aerial survey of lesser celandine in southeastern Wisconsin (DNR files). (B) Wild Chervil at Pigeon River in Sheboygan, WI (DNR files).

WILD CHERVIL AND AMUR CORK TREE TARGETED IN WESTERN WI

The Lower Chippewa Invasives Partnership (LCIP) engages diverse members, conducts training sessions and hosts volunteer work days in western Wisconsin. Chippewa county has been infested by the prohibited amur cork tree and restricted wild chervil. The department has supported the LCIP with funding to train officials, roadside managers and landowners to address infestations, and has also provided supplies for local control.



FOREST PESTS

SLOWING GYPSY MOTH SPREAD

In August 2018, the department's former gypsy moth suppression program, which involved aerial spraying, was replaced by the DATCP program, Slow The Spread. This program seeks to control emerging, isolated gypsy moth populations in non-quarantined western WI counties. The Forest Health team continues to advise residents affected by gypsy moths.



ASIAN JUMPING WORM

Jumping worms were first observed in Wisconsin in 2013. These invasive earthworms quickly transform soil into a structure that is inhospitable to many native species but allows invasive plants to thrive. This is a challenge for homeowners, gardeners, and forest managers. The Forest Health Team manages information about the species, tracking where they are found within the state.



EMERALD ASH BORER

Wisconsin was placed under quarantine for the emerald ash borer in March, 2018. A statewide quarantine allows businesses to move wood freely between counties, although USDA regulations must be followed when moving regulated items. While this allows movement of firewood within the state, the Forest Health Team continues to work with UW-Extension and the DATCP, urging the public not to move firewood long distances.

WHITE NOSE SYNDROME IN BATS

White-nose syndrome (WNS) is a deadly disease that develops in bats infected with the fungus *Pseudogymnoascus destructans* (Pd). Bats play an important role in Wisconsin's ecosystems and economy: they feed voraciously on insects which saves our agriculture industry \$658 mil. to \$1.5 bil. annually in pesticide costs. The 2017 winter bat survey indicated that WNS has spread to nearly all the known bat hibernating sites in Wisconsin. 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.



Photos: (A) Aerial gypsy moth treatment (UW-Extension). (B) Adult Jumping Worm (DNR files). (C) Adult emerald ash borer in Wisconsin (DNR files). (D) Bat infected with White-nose syndrome (Heather Kaarakka, DNR).

WE'RE ON THE LOOKOUT FOR...



A

SOUTHERN PINE BEETLE

This tiny bark beetle is native to the southern U.S., Mexico and Central America. It has expanded into New England, perhaps due to warming temperatures. The beetles are attracted to weakened mature pine trees.

ASIAN LONGHORNED BEETLE

This beetle is a threat to Wisconsin's hardwood trees. It currently infests parts of Massachusetts, New York and Ohio, where it threatens recreation and high-value forest resources.



B

BEECH LEAF DISEASE

This disease is a serious issue in parts of Ohio, West Virginia, Pennsylvania, New York and Ontario. Its suspected cause is an invasive nematode. Affected trees are vulnerable to attack by myriad insects and pathogens.



C

EUROPEAN FROG-BIT

This troublesome plant is present in Washington, New York, Vermont, and Michigan. Thick mats impede movement of boats and wildlife. Mats block light from submerged vegetation, and when they die, decreased oxygen kills other species.

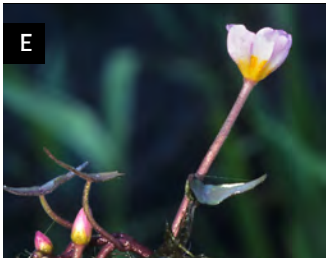


D

E

CAROLINA FANWORT

Taking root in freshwater, this plant has been a nuisance in New York, Michigan, and Oregon. It spreads on recreational equipment and through the aquarium trade. Its dense mats, harm other species, clog streams and canals, and impede recreation and agricultural water use.



Photos: (A) An example of damage from southern pine beetles in New York State (DNR files). (B) Adult Asian longhorned beetle (The Ohio State University). (C) Beech leaf disease (DNR files). (D) European Frog-bit (DNR files). (E) Carolina Fanwort (Ann Murray, University of Florida).

EDUCATION & OUTREACH

DRAIN CAMPAIGN & LANDING BLITZ

The department partners with the UW-Extension to educate boaters about how to prevent the spread of AIS. A persistent issue is anglers' transport of live fish, even though Wisconsin law prohibits both the transport of water and live fish. To address this, the department distributed reusable ice packs to anglers on the Drain Campaign weekend in June. The ice packs provide an alternative to transporting live fish in water. Additionally, The 8th annual Landing Blitz, on July 4th, was an opportunity for volunteers to educate boaters about AIS laws and how they can help prevent the spread of AIS.



WATERFOWL HUNTER CAMPAIGN

This year, AIS staff, the department, UW-Extension, and local partners worked together to develop surveys and outreach materials to pilot throughout the state. The survey revealed that most waterfowl hunters have heard of AIS, but fewer knew that hunting gear can transport them. In response, the team created an outreach campaign that targeted five well-known waterfowl hunting areas.

HABITATTITUDE

The department has begun efforts to prevent AIS introductions resulting from pet release and aquarium dumping. The Habitattitude campaign provides advice on responsible pet ownership and provides pet release alternatives to owners. This national program, developed through partnerships with industry, government, and academia, has been found effective in raising awareness of invasive species issues to pet owners.



Photos: (A) Ice pack with AIS prevention message for anglers (DNR files). (B) AIS monitoring at a 2018 outreach event, AIS Snapshot Day (Maureen Ferry, DNR).

EDUCATION & OUTREACH

ORGANISMS IN TRADE: EDUCATION & MONITORING OF RETAILERS WHO MAY SELL INVASIVE SPECIES

The department provides outreach and education to the distributors, wholesalers, and retailers most likely to sell and move species regulated under NR 40. The outreach coordinator speaks at regional conferences and meetings, and responds to reports of regulated species for sale. The team collaborates extensively with the Department of Agriculture, Trade and Consumer Protection inspectors to inform nurseries, nursery suppliers, and seed distributors about regulated species. Staff visited more than 150 retail establishments last year to explain the ecological and socioeconomic impacts of invasive species, describe the plant phase-out periods included in NR 40, best management practices, and provide guidance for invasive species control. Staff also engaged with aquatic plant and animal vendors, pet stores, florists, farmers markets, educators and many others to ensure compliance and discuss alternatives to regulated species.



Photo: Nursery inspection at Northern Family Farms – a Wisconsin grower (DNR files).

INVASIVE SPECIES ACTION MONTH

For the past 14 years, June has been recognized as Invasive Species Awareness Month in Wisconsin, to promote the involvement and education of the public on invasive species issues and prevention. In 2018, the Invasive Species Council renamed the effort “Invasive Species Action Month.” Now that more residents and visitors are aware of the problems with invasive species, the Council wants to shift from awareness to action.

ARBORETA & BOTANICAL GARDENS

As key partners in promoting botanical awareness, arboreta and botanical gardens throughout Wisconsin have been sent letters that introduce them to NR 40 and provide contact information for further correspondence. Department staff have begun visiting key gardens which are targeted for additional outreach.

PARTNERSHIPS

The department works with numerous partners to prevent the arrival of invasive species, detect and respond to new infestations, and control established populations. The following are a few of our many partners in combatting invasive species.

IN-STATE PARTNERS

Wisconsin has a strong network of Cooperative Invasive Species Management Areas (CISMAs); fourteen CISMAs cover 56 of our 72 counties. These coalitions of private, public and non-profit organizations, volunteers and landowners work together to identify and address local needs. In coordinating AIS efforts, the Wisconsin Lakes Partnership, River Alliance of Wisconsin, and regional and county AIS staff provide a foundation of statewide cooperation. Counties, myriad lake organizations, and thousands of volunteers actively participate in AIS prevention, detection, containment, and control.

Regional Invasive Plant Groups in Wisconsin
(Cooperative Weed Management Areas)
As of March, 2019

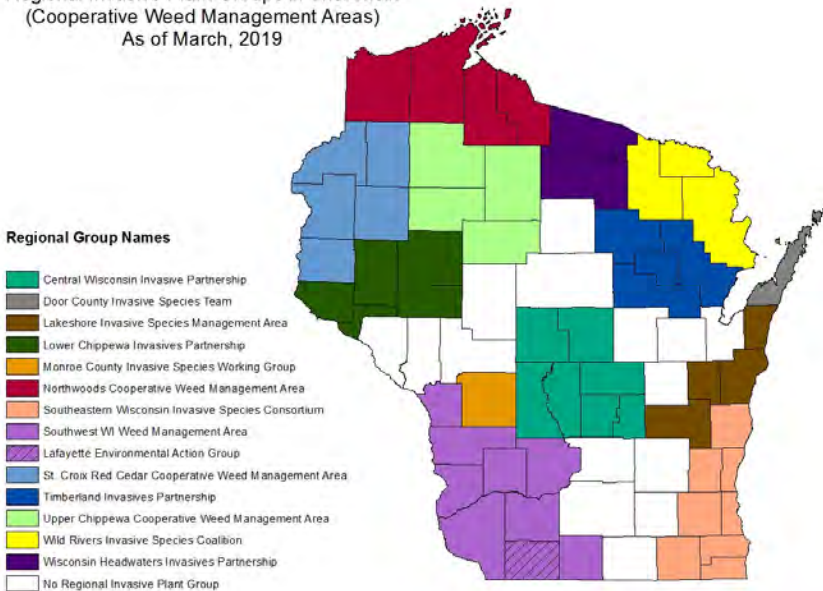


Photo: Map of Wisconsin CISMAs, updated March 2019 (Sabrina Scull, DNR).

REGIONAL PARTNERS

The department partners with our counterparts in nearby states, especially Minnesota. In 2018 Wisconsin and Minnesota co-hosted the biennial Upper Midwest Invasive Species Conference, the largest of its kind in North America. Department staff have recently chaired two of the region's main AIS working groups – the Great Lakes Panel and the Mississippi River Basin Panel, which are both part of the national Aquatic Nuisance Species Task Force. Wisconsin has also been active in the Invasive Mussel Collaborative and the Great Lakes Phragmites Collaborative, which share resources with managers and researchers to improve AIS prevention and control.

INVADER CRUSADER AWARDS

Each year, individuals are nominated by the public 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 following the Invasive Species Council's summer meeting. Wisconsin owes these individuals and groups a great debt for their important work on invasive species.



Photo: Invader Crusader Award Winners 2018 (DNR files).

– 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 UW-Madison 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, Waukesha County

Milly Thissen of northwest Wisconsin

Jim Reinartz and Jill Hapner from Saukville

– Volunteer Group Category Winner –

Friends of Festge

WHO TO CONTACT

General questions on invasive species:

Tara Bergeson – tara.bergeson@wisconsin.gov

Terrestrial invasive plants:

Kelly Kearns – 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/>



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