

2011-2012

Wisconsin Department of Natural Resources

Report to the Legislature October 1, 2012

Invasive Species Programs



Invasive species are nonindigenous species whose introduction causes or is likely to cause economic or environmental harm or harm to human health. Wisconsin Statute Chapter 23.22 (1)(c).

Invasive species negatively alter our environment, cost billions of dollars annually, and threaten core business sectors including agriculture, tourism, forestry, and energy. The list of invasive species “knocking at our door” continues to grow – Asian carp are moving towards Wisconsin from both the east and west up the Mississippi River watershed; forest pests such as the emerald ash borer are threatening our urban and rural forests; and white-nose syndrome (caused by a fungus) has the potential to eliminate most of our cave dwelling native bats is quickly approaching our state.

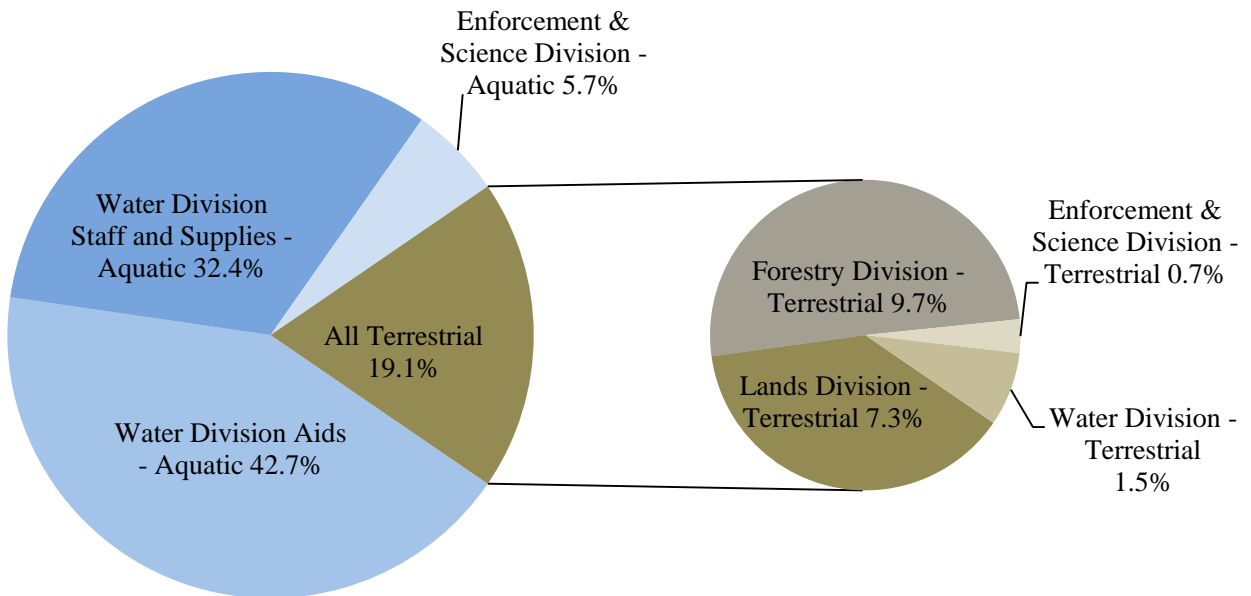
- Aquatic invasive species are a threat to Wisconsin’s 15,000 lakes, 42,000 miles of streams and rivers, and a \$2.75 billion dollar fishing industry. Zebra mussels financially impact industries that use water for cooling and energy production and municipalities utilizing water for potable purposes. Wisconsin’s fishery is threatened by pathogens including viral hemorrhagic septicemia (VHS) and invasive fish species (white perch, round goby, Eurasian ruffe, sea lamprey, etc.). The cost to manage these invaders once they are in our waters is substantially higher than preventing their invasion.
- Wisconsin’s forestry industry, a \$28 billion industry with 66,000 jobs, is impacted by Dutch elm disease, gypsy moth, emerald ash borer, and beech bark disease, all of which damage and kill trees.
- Invasive species including weeds, pests, and diseases harm Wisconsin’s \$59 billion agriculture industry and its 350,000 jobs by increasing production costs and reducing crop yields.
- Terrestrial invasives, such as garlic mustard and wild parsnip, invade and degrade our forests and grasslands and negatively impact enjoyment of our trails, parks, and open space as well as important wildlife habitat. Outdoor recreation is one of the top reasons people visit our great state.

Across the state the Department of Natural Resources (DNR) is working hard against invasive species. We have made progress to slow the spread of invasive species across both waterways and forests. Planning and cooperation are underway to identify and continue to fill current gaps.

Current DNR investment invasive species management

The \$7.6 million spent on invasive species management in 2011 increased to \$9.3 million in 2012 based on preliminary spending estimates. Of this investment, about 82% was spent on aquatic invasive species. The source of funds was largely State Segregated Funds, providing 76% of all aquatic invasive species funding for 2011-2012, and 73% of terrestrial invasive species funding.

DNR Invasive Species Spending 2011 & 2012



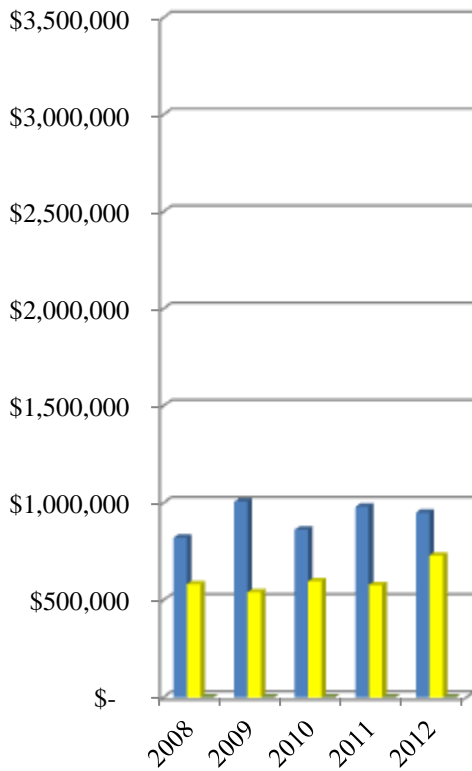
	2011	2012
Enforcement & Science Division – Aquatic	\$448,518.18	\$517,252.82
Water Division – Staff and Supplies - Aquatic	\$2,253,706.51	\$3,241,601.63
Water Division – Assistance to Communities (Water Quality Aids, CAES) - Aquatic	\$3,344,710.46	\$3,896,023.73
Lands Division - Terrestrial**	\$517,697.79	\$721,114.67
Forestry Division – Terrestrial	\$924,636.00	\$711,874.39
Enforcement & Science Division - Terrestrial	\$39,433.79	\$73,826.88
Water Division - Terrestrial	\$75,976.72	\$173,064.76

**The draft budget analysis showed that Forestry spent \$1,807 on aquatic invasive species management. This was removed as it is much less than 1%.

How does the DNR spend invasive species funds?

Staff salary and grants are the largest categories. The increase in spending since 2008 is the result of growing local assistance/aids to local partners in the aquatic program supporting successful projects. Terrestrial funding has been stable or decreasing due to lower federal funds for gypsy moth and emerald ash borer management.

Terrestrial expenditures



Aquatic expenditures



* In addition to Local Assistance/Aids, the Supplies and Services category includes contracts that also provide local assistance but are administered separately.

What was the amount of funding expended by source?

Funding Source	Aquatic Invasive Species		Terrestrial Invasive Species	
	2011	2012	2011	2012
FED	\$ 435,352	\$1,304,293	\$ 282,270	\$ 547,692
GPR	\$ 305,292	\$ 589,180	\$ 3,549	\$ 3,983
PR	\$ 330,775	\$ 276,837	\$ 8,545	\$ 29,142
STATE-SEG	\$ 4,976,865	\$5,485,027	\$1,263,380	\$1,099,064
Total	\$ 6,048,284	\$7,655,336	\$1,557,744	\$1,679,881

Funding sources:

FED- Federal Funds: Sources of federal funds for invasive species include U.S. Fish and Wildlife (USFWS), U.S. Forest Service, Dingell-Johnson and Pittman-Robertson funds to restore habitat for fish and game respectively, and recently EPA and USFWS Great Lakes Restoration Initiative funding.

GPR- General Purpose Revenue: Monies raised by the state via taxes: individual income taxes, excise taxes (consumption tax), corporate franchise and income tax, and public utility and insurance company taxes.

PR- Program Revenue: Revenues which are paid into the general fund and are credited by law to an appropriation to finance a specified program or state agency. Often this revenue is associated with “fees.”

SEG- Segregated – State: Revenues which by law, are deposited into funds other than the general fund and are available for the purposes for which such funds are created. In the case of aquatic species segregated funds are from the Water Resources Account of the Conservation Fund. Revenue for the fund comes from the portion of the excise tax on gasoline sales that is estimated to be used in motorboats.

The Department Invasive Species Team

The **Department Invasive Species Team** brings together the Divisions of Land, Forestry, Water, and Enforcement & Science with support from Legal Services to identify common priorities, coordinate the Department’s outreach on invasive species, and ensure uniform enforcement of the Invasive Species Rule (Chapter NR 40).

2011 – 2012 Accomplishments

- ❖ Trained staff in all Department divisions about NR 40
- ❖ Conducted outreach and training to thousands of Wisconsin residents in targeted stakeholder groups about NR 40 and associated Best Management Practices
- ❖ Initiated a study on how to improve communication with businesses selling potentially restricted species
- ❖ Began a systematic survey of lakes across the state to improve our ability to detect new invasive species
- ❖ Expanded the use of the important “Don’t Move Firewood” message
- ❖ Increased the number of boats inspected and people educated every year to a new record of over 164,744 people contacted

Prevention Efforts

Preventing the introduction of non-native invasive species is the most efficient, economical and effective option and is a high priority. The greatest prevention benefit can come from identifying pathways or vectors that lead to the introduction of multiple species. Examples of pathways that have been identified and are being managed include the transport of firewood, logging equipment that is moved between sites, shipping ballast water discharges, and transient boaters using multiple lakes and rivers.



Forestry – Forest Pests: Don't move firewood

Firewood easily transports harmful pests and other problems to trees in your backyard, along your street, or at your favorite campsite. Firewood that looks clean may actually be hiding insects like [emerald ash borer](#) or [gypsy moth](#), or the tiny spores of a tree-killing fungus like [oak wilt](#). The DNR is closing this pathway by educating visitors to state properties and working with wood suppliers.

Forestry – Forest Pests: Earthworms

Non-native earthworms are causing significant changes in the soils and organic matter layer of forests. This in turn affects tree seedling survival, wildflowers, and the suite of microorganisms, invertebrates, larger animals and plants that are critical to a healthy forest. Research is being done to determine the extent of European earthworms in Wisconsin's forests. Preventing worms from being dumped into forests is an important way to prevent new infestations. One effort involves "Contain Your Crawlers" stickers that are distributed to licensed bait dealers to put on their bait containers to inform anglers of proper disposal methods.

Water – Lakes: Stop aquatic hitchhikers!

It's everyone's job to help prevent the spread of aquatic invasive species (AIS) to Wisconsin lakes, rivers, and wetlands. Whether you are a boater, angler, paddler, seaplane pilot, water gardener/pond owner, nursery owner, aquarium enthusiast, or teacher, you have a very important role to play in keeping Wisconsin's waters free of aquatic invasive species. The main way aquatic invasive species like zebra mussels and Eurasian water milfoil spread to new waters is by hitching a ride on the boats and trailers of the very people who enjoy the water the most. The AIS prevention campaign educates boaters and anglers on required prevention steps through a variety of methods including: signage at boat landings, a very successful watercraft inspection program and a new initiative to engage bait dealers to share the AIS message with their customers.



“Are we slowing the spread of AIS in Wisconsin? This question is a research priority for DNR staff who have been increasing efforts to monitor for AIS since 2011. This has used both a new statewide monitoring effort by DNR biologists and continued volunteer efforts in the Citizen Lake Monitoring Network to cover more waterways over a greater area. The data will help us determine if our outreach and education programs and the AIS laws in Wisconsin are sufficient to stop the spread of AIS.

To learn more about how DNR is working through the Wisconsin AIS Partnership to prevent the spread of AIS see the **2010-2012 Wisconsin Aquatic Invasive Species Progress Report:**

<http://dnr.wi.gov/topic/Invasives/documents/WI-AISReport2012.pdf>

Water – Fisheries: Keeping fisheries healthy

Fish diseases like VHS are transported by live fish or water on boats and equipment. To keep Wisconsin’s fish communities healthy, the DNR is stepping up its outreach efforts on the message to drain bilges, livewells, and buckets and comply with bait regulations in a 2013 “Ice Your Catch” campaign. Introduced fish have changed the fish assemblages of the Great Lakes and Wisconsin’s rivers. Asian carp are a growing threat. The DNR is working to stop the movement of Asian carp and identify locations where these unwanted species may have been accidentally stocked through monitoring and by supporting control research by DNR partners.

Water – Ballast Water: By the numbers.

More than 180 invasive aquatic species have been introduced to the Great Lakes since the 1800s, mostly arriving through ballast water. In the past, one new non-native species entered the Great Lakes on average every 28 weeks. In one example, zebra mussels originated in the Great Lakes and are now in 120 inland lakes in Wisconsin. Estimates are that \$1-5 billion is spent annually due to zebra mussels in our region. Fortunately, no new invasive species have been found in the Great Lakes since the ballast water regulations adopted in 2006 required ballast water exchange or saltwater flushing. Effective February 1, 2010, the DNR started regulating large oceangoing ships to prevent them from accidentally introducing harmful new invasive species to Wisconsin's Great Lakes waters, and in turn, our inland lakes and rivers. The DNR permit supplements the current federal general permit that scientists have concluded does not provide significant protection to the Great Lakes. Another concern is that the federal requirements for ballast water exchange may be removed before an alternative treatment for ballast water can be installed on arriving ships. For more: http://dnr.wi.gov/news/mediakits/mk_ballast.asp

Detection, Response, and Control Efforts

Invasive species control is most likely to succeed when an established population is relatively small. Land managers on DNR properties and our partners work to find populations of invasive species early and if possible keep them from spreading. Even when a species is widespread in a region, management plans for individual DNR properties include addressing invasive species as soon as possible.

Land – Endangered Resources: Early Detection Program

There are many species of known invasives that are in nearby states but not yet spreading in Wisconsin, or only in a few spots in the state. Many of these species are regulated as “Prohibited Species” under the Invasive Species Rule (Chapter NR 40). Education

Regulated Terrestrial Invasive Plants in WI



materials have been developed and extensive outreach has been done to create a network of partners who can recognize and report these new invaders as soon as they appear. Once identified, DNR staff work with landowners and other partners to eliminate or contain these incipient populations. By learning to recognize new invasive species everyone has a role to play in keeping them in check.

***Land – Wildlife:* Injurious animals**

Managing introduced animals is a challenge shared across agencies. Wildlife managers are responsible for managing both DNR properties and introduced animals where they are discovered. The rules and responsibilities that apply are shared with the Department of Agriculture, Trade and Consumer Protection regarding inspection of fish and wildlife imports and farms for diseases. Feral swine and other wild animals that harm Wisconsin's natural resources or threaten agriculture are a top priority.

***Land – Parks:* Showcasing Wisconsin's ecosystems and cultural resources**

Invasive species are a threat to the natural communities and cultural resources within state parks. Property managers often find that their ability to meet management goals and users' needs is adversely impacted by the presence of invasive species. For example, thorny shrubs or wild parsnip may limit access by hikers, bikers, and hunters. Within the resources available, park staff prioritize their efforts on invasive species management but many properties have trouble keeping up. Invasive species management in a number of parks is supported by "Friends' groups" who help reduce the impact of invasive species through labor and funding.

***Water – Wetlands:* Research and Control**

Our Purple Loosestrife Biocontrol Project continues to recruit new citizen cooperators and engage veteran cooperators who raise and release *Galerucella* biocontrol beetles to eat purple loosestrife in their local wetlands. Over the past two years, over 4,600,000 beetles have been raised and released into approximately 200 wetland sites throughout Wisconsin, causing large declines in loosestrife plants. Future monitoring will attempt to better understand long-term beetle population variations. The DNR also began an effort to better track purple loosestrife populations and control success with a new Wetland Invasive Plant Reporting project. To address the expansion of an aggressive wetland weed, non-native *Phragmites australis*, the DNR's Science program received a grant to study the re-growth of stem fragments and better understand how this invasive plant is spreading through Wisconsin. An EPA Great Lakes Restoration Initiative project along the Lake Michigan coast has controlled 3600 acres of phragmites along private and public shoreline. See the 2010-2012 Aquatic Invasive Species Progress Report:

<http://dnr.wi.gov/topic/Invasives/documents/WI-AISReport2012.pdf>

***Land – State Natural Areas:* Protecting biological diversity**

Over 600 designated State Natural Areas across the state have been protected to safeguard the best remaining examples of natural communities and rare species. All of these sites are vulnerable to having invasive plants out-compete the native vegetation in the landscape and replace diverse plant communities with a single dominant species. Invasive species can take over habitat that otherwise supports native wildlife and plants, including rare species. A small crew of dedicated DNR staff and volunteers manage these precious areas, primarily by controlling the invasive plants that would otherwise eliminate the resources these areas were set aside to protect.

Working Together

***Forestry – Invasive Plants:* Best Management Practices**

To minimize the introduction and spread of invasive species, interested stakeholders worked with the DNR to develop voluntary [Best Management Practices](#) for invasive species. These guidelines will help Wisconsin residents, visitors, and industries to limit the likelihood of moving invasive species around.

***Enforcement and Science– Water Guard & Wardens:* Presence on the landscape**

Protecting Wisconsin's riverways, lakes and wetlands from aquatic invasive species is high on the priority list for Wisconsin Conservation Wardens. The Water Guards and the Warden Service are committed to working with the public to protect them for both current and future generations. Wardens organized and participated in more than 20 focused education and enforcement events in 2012 dedicated to educating the public about the aquatic invasive species problem and prevention steps, and increasing enforcement of laws designed to prevent the spread of aquatic invasive species (AIS). Known as AIS Warden Team Events, these efforts were held from May through September statewide. See the Aquatic Invasive Species Partner's Report: <http://dnr.wi.gov/topic/Invasives/documents/WI-AISReport2012.pdf>

***Enforcement and Science– Environmental Enforcement:* Stepped enforcement**

While the highly successful Water Guard program has been in place for several years, the DNR's Environmental Enforcement (EE) program has begun offering its assistance as well. This is a new endeavor, as part of the EE Program's reorganization, to provide liaisons to the various environmental protection programs. For the Invasive Species Program, encouraging compliance with the regulations through education and informal contacts is an important step in stopping the spread of invasive species. However, in some cases, especially for repeated instances of non-compliance or egregious violations, enforcement actions and penalties may be warranted.

***Enforcement and Science– Science Services:* The science behind management**

Good management of invasive species relies on understanding the biology of these species and finding tools that will reduce the harm they cause. The Aquatic Plant group is equally skilled in relating to both professional and lay audiences. This lab has a research presence in the Wisconsin Lakes Partnership, which consists of UW-Extension staff, citizen members of Wisconsin Lakes, county staff, and DNR staff. Ongoing work to monitor Wisconsin's waters and explain the distribution of the worst aquatic invasive plants including Eurasian water milfoil.

***Science and Enforcement – Science Services:* Coordination and Outreach**

The Department Invasive Species Team is supported by a full time coordinator and a half time outreach specialist hired through Science Services and made possible by federal funds. These staff work with all of the DNR Divisions to increase knowledge about invasive species, coordinate efforts, improve compliance with the rule, and provide a point of contact on invasive species policies. These staff help ensure consistency between programs throughout DNR.

Partnerships

The **Wisconsin Invasive Species Council (Council)** engages industry stakeholders and provides interagency coordination. The Council was created in 2001, to bring together state agencies working to control invasive species (Chapter 15.347(18) & 23.22, Wisconsin Statutes). Members include the Departments of Natural Resources, Administration, Agriculture, Trade and Consumer Protection, Tourism, Transportation and seven private members that come from NGOs the university system and industry. The Council's accomplishments include guidance for the development of the 2009 Wisconsin's Invasive Species Rule (Chapter NR 40) that regulates a list of invasive species that cause harm in Wisconsin. The Council, working through the Research and Regulations Committees has directed Species Advisory Groups to meet and review species proposed for regulation under the Invasive Species Rule starting in 2011. The process of rule revision was approved by the Governor and the Natural Resources Board in 2012 and the process of drafting the changes and gathering public input is underway.

In mid-2011, the Council began the process of developing a Statewide Strategic Plan for invasive species. The purpose of this plan is to identify priority actions that will minimize the harm caused by invasive species to our natural resources and human health and address the financial impact of invasive species on our economy. The core of the plan is a set of priority objectives that the Council recommends be taken up by agencies and partners working in Wisconsin to develop cost effective improvements to invasive species management. The plan is organized around the four primary actions: Prevention, Detection, Rapid Response and Control and will be completed by the end of 2012.

The growth of the **Aquatic Invasive Species Partnership** has been significant with 47 counties now providing AIS support. New organizations such as the Southeast Wisconsin Invasive Species Consortium are joining the existing effort of partners like Wisconsin Lakes, Wisconsin Sea Grant, Wisconsin Wetlands Association and River Alliance of Wisconsin. Wisconsin's AIS Partnership is highly regarded by neighboring states and our federal partners. Volunteers, college students, Boy and Girl Scouts, teachers, Chamber of Commerce representatives, bait shop owners, lake organization members, fishing and hunting clubs, Master Gardeners and many more all help make the Partnership work.

Volunteers are critical to invasive species work and we now have many volunteer-run regional and county-based **Cooperative Weed Management Areas** that coordinate public outreach, prevention, early detection and some control efforts in their region. A few of these groups on the coasts that have received short-term federal funding have shown the successes that can come with small grants to help with coordination including mapping invasive species across jurisdictions, involving local towns and cities, and helping volunteers target their efforts to make the greatest possible impact.





Filling the Gaps

The following needs were identified in a gap-analysis developed as a companion to the Statewide Strategic Plan developed by the Wisconsin Invasive Species Council members along with subject-matter experts from state agencies and universities. This gap analysis identified areas where additional human and financial resources are needed to improve Wisconsin's efforts to combat invasive species. Preliminary areas where additional resources are needed include:

- **Stewardship support for state lands and local partnerships**
Most of the highest quality natural areas, fish and wildlife habitat, and habitat sheltering rare species are on state lands. Invasive species are moving into many of these properties, going unchecked, and degrading the resources that the lands were purchased to protect. Most state lands, however have little or no funding designated for invasive species management.
- **Cooperative regional and county level coordinators**
Sometimes all it takes is one person to make the calls, get the access permissions, and line the tools up to take out invasive species that threaten the resources for a community. By hiring dedicated invasive species coordinators who can pull together many individuals and groups to accomplish high priority terrestrial invasive species prevention and control projects, a little investment can go a long way. This model has had demonstrated success with funded county and regional aquatic invasive species coordinators who develop and support local action.
- **Build Capacity**
In order to provide the training necessary for state agencies, Wisconsin businesses, community organizations, and the general public, the DNR needs more focused resources in education and public engagement. There currently exists one half-time LTE position devoted to Invasive Species Rule (NR 40) education, outreach, and training within the DNR that will expire in June 2013. Though the Invasive Species Rule has been in effect since 2009, a deficit of devoted resources means that there are still numerous audiences that need to be reached. The continuation of the invasive species outreach position would greatly increase the DNR's capacity to meet business and public needs. The DNR relies almost entirely upon volunteers to detect and report new invasive species populations. To support these partners the DNR also needs capacity for conducting and coordinating invasive species project planning, reporting, and data management for terrestrial species and monitoring and rapid response for aquatic invasive species.