Wisconsin Wetland Invasive Species Strategy (WWIS)
January 2012

Purpose of the Strategy:
The strategy identifies the goals, objectives, needs, and short-term actions necessary to address the impacts of wetland invasive species (IS) in the state, and establish long-term funding priorities to protect native biodiversity in Wisconsin's wetlands.

The WWIS Strategy supports "Reversing the Loss" Goal 7: Develop Wetland Science and Address Research Needs – Develop Research and Monitoring for Invasive Species and Other Related Areas. It has also been specifically identified as a team priority in the 2011-2012 Action Plan under priority 5: Prevent and Control Wetland Invasive Species; item c: Develop a Comprehensive Wetland Invasive Species Strategy.

Introduction:
The spread of IS into wetlands reduces local biodiversity and may also impair the functions and values of infested wetlands. Infestation of one wetland often leads to compromising other wetlands nearby. Some of these losses are preventable, and with more research and resources they may be reversible in areas that are currently heavily altered by IS. Any strategy for addressing this threat to wetlands will be more successful when linked to an increased understanding of the value of wetlands by all citizens, as well as better wetland, aquatic and terrestrial IS management and policy efforts.

Currently, thirty-two plant species are identified in the guide to Common and Early Detection wetland invasive plants, and four animal species are recognized as invasive in wetlands. NR 40 identifies other species, with more species being considered during the current revision process (to be completed in the next 2-3 years). Most of the actions listed below to address these species are relatively short term and could be accomplished in less than 2 years with adequate funding and staffing, but would have long-term beneficial effects. These actions are being developed to focus current efforts and funding priorities with long-term ramifications to protect the native biodiversity in Wisconsin's wetlands.

Strategic Goals

I. Prevent Establishment of Wetland IS:
The most cost effective way to reduce the harm caused by IS is preventing their establishment. This includes both preventing the importation of IS into the state as well as stopping the spread of these species already established in part of Wisconsin to other parts of the state.

Objectives/Actions Needed:

1. Identify the species, pathways, and vectors that together pose the greatest threat to wetlands.

2. Develop a prioritized "watch list" of species based on their risk of establishing in Wisconsin and becoming invasive, but are not currently listed as prohibited or restricted in NR 40.
3. Provide data support for understanding where priority IS currently exist to identify likely pathways.
4. Continue listing wetland IS under NR40 as prohibited or restricted to provide a legal mechanism to restrict their sale, introduction and spread. Wetlands partners should ensure that the plants, animals and diseases that threaten wetlands are listed through participating in updates of the NR 40 rule making process and the Department (DNR) Invasive Species Team meetings.
5. Develop Best Management Practices (BMPs) to define the procedures that all partners working in and near wetlands can follow to prevent spreading IS through their actions. Wetland partners can develop and promote specific BMPs for their work, practices, and particular species of concern.
6. Support a variety of outreach efforts about species, their vectors and pathways to increase awareness and identification of wetland IS, and encourage actions to prevent their introduction and spread.
7. Incorporate effective enforcement (of NR40) into prevention efforts.

II. Early Detection of and Rapid Response to Wetland IS:

Once a new species has been introduced into the state the next most successful strategy is identifying it and its location(s) as quickly as possible, assessing its potential to become invasive, and depending on its degree of threat, mobilizing resources to eradicate all known individuals. Known IS in the state that spread to new locations require the same mobilization as new IS when detected in new places. This takes expertise, time, resources and excellent data support, all critical to successful IS management.

Both new introductions to the state and spread of existing IS may occur in areas where biologists rarely work, including constructed urban ponds, transportation corridors, agricultural areas, new construction sites, and many small, private wetlands. Thus, early detection requires both focused efforts in high risk areas, including urban areas, as well as a robust network that covers all wetlands to capture newly establishing IS.

Having more people involved in detection, and even elimination of small infestations, is critical for covering all areas, and funding alone is not the answer. This may require training a large group of people, which may be very time and labor intensive, and require creativity. Citizens, in particular, need to be trained to identify, report, and eliminate IS establishing in their local wetland areas, often located entirely within private lands. The amount of effort dedicated to early detection should be balanced against the capacity for responding to newly establishing IS, and the need to reduce established IS.

Objectives/Actions Needed:

1. Develop effective surveillance, identification, and reporting protocols to improve detection capacity. While some species will remain top priorities for detection, the protocol itself should not be species specific.
2. Identify areas of the state or habitats more likely to experience "first line" invasions. These areas should be closely monitored.
3. Increase detection capacity by increasing the number of people involved in detection. (Actions may include requiring regulatory agencies to search for and report on IS on project sites, encouraging more citizen participation in coordination with other activities, and training related professionals.)
4. Allocate more resources to conducting surveys.
5. Develop a citizen detection and monitoring program for new IS, possibly by coordinating with other wetland monitoring efforts such as the Wisconsin Frog and Toad Survey, Marsh Monitoring or other surveys.
6. Identify community leaders and others to facilitate a train the trainer approach.
7. Build a suite of tools and have annual trainings to build capacity to introduce people to wetland IS, and stay engaged in the detection effort.
8. For specific taxa, evaluate who is currently looking for a species and where it is known to exist in wetlands. Develop recommendations to fill in gaps in location data and capacity to conduct monitoring surveys.
9. Develop data support and resources to accept wetland IS location data, use these and other data to identify potential areas or species for rapid response, and alert appropriate workers about eradication opportunities. (Both managers and citizens need to know about new invasions, as well as outlying populations of current Wisconsin IS, to be able to act on them. (Adding layers to the Surface Water Data Viewer may fill this role.) Use SWIMS or other local or regional databases to make actionable information generally available.
10. Develop a team to assess the value of new detections for eradication because an eradication plan (interesting New Zealand example) is usually very time sensitive and may need to be very specific for particular species. The team should consider the invasive potential of the new find, whether or not control tools are available, address registration issues for pesticides, gather resources to improve species delimitation surveys, work to develop landowner permissions, facilitate regulatory controls on eradication methods, and identify the resources needed to conduct eradications.
11. Assess policy support, such as the Invasive Species Rule NR40, to determine if additional authority is needed to quarantine areas to facilitate possible containment and control efforts.
12. Develop tools and resources to support wetland IS eradication efforts, including providing training on eradication methods and opportunities for anyone to help.
13. Decide how to incorporate enforcement into early eradication efforts.

14. Support outreach efforts to attract and train as many people as possible to identify and report local wetland IS, including all unknown species.

III. Control All Established Wetland IS:

This includes both widely established species and those with small areal coverage. The species that are the most widely established are often the most well recognized because they are causing the most harm. This may make it easier to solicit help, map their ranges, and build support for their control. Unfortunately, the tools and resources that managers have available for treating widespread species are often inadequate. Reducing established IS, restoring wetlands and protecting un-infested wetlands from these more widespread species requires integrated and responsible plans. Over the long term, restoration may be possible at more sites with the development of better tools for suppressing widespread species. This should include supporting research on new biocontrols, such as has been so successful at reducing purple loosestrife. Species of limited areal extent should be controlled early to reduce their likelihood of spreading, which may require plans different from widely established species.

Objectives/Actions Needed:

1. Develop a data system that effectively catalogs spatial data of established wetland IS and outputs useful maps of locations for control efforts.
2. Consolidate spatial data about wetland IS from multiple partners to support decision making, and coordinate it at a landscape scale. Share information across jurisdictions to improve decision making for control projects.
3. Develop a team to evaluate sites according to clear criteria which will help focus limited resources. Prioritize control efforts by identifying the areas most likely to allow wetland IS spread to new areas and/or that will respond best to restoration efforts. Focus on invaded sites that have a greater potential than others for restoration or improved function when wetland IS are suppressed. This team should advocate for resources for priority sites with the AIS grants program and other funding sources.
4. Develop and follow guidelines for making decisions about which wetland IS to prioritize for control efforts.
5. Recognize and capitalize on the potential usefulness of biocontrol, especially for reducing widespread IS with limited effort, by supporting research (even out of state). Dedicate staff time to building a priority list for developing biocontrol, acquiring necessary state permits for testing, and identifying resources to increase the use of biocontrol. Build local capacity through partners to help conduct testing and implementation.
6. Increase resources for full wetland IS control—tools, chemicals, etc.
7. Include private lands and land owners to facilitate larger scale conservation efforts.
8. Support outreach education on the need and process for control of established wetland IS.

IV. Provide Outreach on Wetland IS:

Communicating the values of wetlands, the impact of wetland IS, as well as the many solutions that exist to stop their spread, to both managers and the public is a crucial and ongoing process. A successful outreach program will help improve awareness and increase participation in all areas of wetland conservation.

Matching targeted outreach messages to key audiences and wetlands user groups will more effectively encourage actions that support conservation goals. Because work is on-going, future outreach efforts should build on what audiences already know. Determining which audiences to prioritize will make the most of limited resources. Priority user groups and decision makers should be identified through identifying which groups have the greatest potential for achieving conservation goals.

Increasing awareness of wetland IS concerns among priority groups should increase their efforts to reduce the impact of all invasive species and support restoration efforts. However, there is an underlying need to first educate many landowners, decision makers and user groups about the value of wetlands as a resource. Messages about wetland IS are not the same as emphasizing the qualities of wetlands that IS compromise, and that make wetlands irreplaceable.

Objectives/Actions:

1. Identify key audiences who interact with wetlands
2. Focus on core messages that can be used by all partners with emphasis on correcting misconceptions about wetlands and wetland IS.
3. Build resources to support outreach efforts.
4. Clearly articulate the problems and costs to society created by wetland IS, as well as the costs to reduce the effects of these species.
5. Present continuing educational programs to inform the public of wetland IS control programs and how they can assist with the work, including timely information about local appearance of new species for which elimination is possible.
6. Develop interactive maps to demonstrate the annual spread of wetland IS, as well as any successes in reducing these species.
7. Create a reward component as part of all educational efforts with citizens that makes them feel good about caring for their local environment.

V. Conduct and Support Research on Wetland IS and their Control:

We must build successful, affordable control of wetland IS on a thorough understanding of each species and its interactions with all other wetland species present, as well as possible control methods. As the wetlands partnerships increase capacity to manage invasive species, gaps in our understanding of the ecological impact of invasive species, effective control strategies and limits to our ability to detect invasive species will hamper control efforts and must be filled. Communicating these research needs in a coordinated, prioritized way to partner science agencies (both in state and out) will help focus research.

Objectives/Actions:

1. Identify a protocol for determining priority invasive species research.
2. Identify current control methods and needs for developing improved control tools for priority invasive species.
3. Develop an index of control tools used elsewhere and identify gaps in available control options.
4. Work with managers and regional scientists to review management options and develop long-term studies which will identify the control strategies most likely to achieve conservation goals for priority species.
5. Determine which species characteristics are likely to result in significant problems.
6. Use a research-through-management approach on experimental efforts such as the cost reduction of shifting control work to isolated populations.
7. Work with researchers to identify and prioritize goals for long-term studies on the effects of management. Begin compiling data on the rate of discovery for species regulated under the Invasive Species Rule.
8. Pay particular attention to biocontrol research beginning or underway elsewhere and help support it if it's likely to be of use in Wisconsin.
9. Support the publication of "non-scientific" studies that describe local conservation and invasive species control efforts. Managers often have a backlog of unpublished data that can provide critical insight for other projects.

For more information about the WWIS, please contact:
Brock Woods Brock.Woods@Wisconsin.gov (608-221-6349) or
Pat Trochlell Patricia.Trochlell@Wisconsin.gov (608-267-2453)

2011-2012 Priorities and Actions Planned by WDNR and Partners

Wisconsin Wetland Invasive Species Strategy

Finish a current version of the strategy and make it available on WDNR's wetlands website. Anticipated Completion Date – Winter, 2012. (No funding needed.)

Develop Best Management Practices for Wetland Invasive Plants in Wisconsin

BMP's already exist for several other areas activities which potentially would apply to wetlands. A small team will compile and develop of the Wetland Invasive Species BMP's. Some or all of the BMPs may also be included in the field guide. The BMPs will focus on specific professionals and other wetland users and will be posted on WDNR's wetland website. If future funding becomes available a color BMP Manual could be created for audience and/or activity that could be used for training of professionals or other target audiences.
Anticipated Completion Date – Spring, 2012. (No funding needed)

Develop a Field Guide to Wetland Invasive Plants in Wisconsin

Develop a field guide to assist with invasive plant species identification with basic control methods. The guide would be similar to the existing "Field Guide to Terrestrial Invasive Plants in Wisconsin" with fewer species, or may be integrated into it. Contents must be amendable for use with specific audiences. This document would be a colorful resource that could be useful for training people in identifying and locating these wetland invasive species, as well as providing an overview of the wetland invasive species strategy, basic control methods and NR 40. We will utilize the existing information for each invasive species from our current web pages, but additional input and review from the Wetland Team and DNR staff experts will be needed to condense content for the field guide. An optional addition would be to include invasive wetland animals.
Anticipated Completion Date – Spring, 2012. (Funding Requested)

Finalize SWIMS Database Reporting Mechanism for Wetland Invasive Plants

The work utilizing the SWIMS database is already significantly underway and a surveillance/monitoring form for invasive wetland plants is almost ready for release (pending approval by DNR Forms personnel), though data quality control needs to be worked out. The form needs to be tested and the database needs to be modified to allow all potential wetland invasive species to be tracked and reported out. Modifications may be needed to geolocate the wetland invasive species, including those species that are prohibited and restricted to help us determine if we should be in the prevention, elimination, or control and containment mode. Additional funding may be needed to make the database modifications.
Anticipated Completion Date - ???? (Funding Requested.)

Develop and Conduct Wetland Invasive Plants Training for Targeted Professionals (Train-the-Trainers)

After the Field Guide, BMP's, and data base support are developed we will develop and conduct targeted training for the three GLRI AIS Specialists, the 48 AIS County Coordinators, agency staff, and partners as funding allows. The concept would be to "train the trainers" so they can also go out and train volunteers and others to raise awareness of invasive species to locate new infestations and new species, help track their locations, and increase control efforts. If future funding becomes available, additional training could be held for target audiences that work in wetlands, such as wetland restorationists, regulators, utilities, consultants, and invested citizens..
Anticipated Training - 2012 Field Season. (Funding Requested)