

Lakeshore Invasive Species Management Area Five Year Strategic Plan 2015-2019



Introduction

The Lakeshore Invasive Species Management Area (LISMA) is a broad-based coalition that promotes efficient and effective management of invasive plant and animal species throughout a four county region including Kewaunee, Manitowoc, Calumet, and Fond du Lac. LISMA provides the opportunity for partners to share and leverage limited resources, raise awareness about invasive species problems, and collaboratively reduce the impact of invasive species on both public and private lands.

Mission Statement

The mission of LISMA is to educate the public and protect biodiversity and ecological function throughout the region.

Brief Organizational History

LISMA was formed in July 2013, utilizing Lakeshore Natural Resource Partnership (LNRP) as the fiscal agent. The original steering committee consisted of the aquatic invasive species coordinators for Kewaunee, Manitowoc, Calumet, and Fond du Lac County, LNRP staff, Woodland Dunes Nature Center and Preserve executive director, and a private, native landscaper from Fond Du Lac County. Initial funding for LISMA came from the Wisconsin Private Forest Grant Program. Following the Cooperative Weed Management Area (CWMA) Development Program designed by the Midwest Invasive Plant Network (MIPN) (CWMA Cookbook: A Recipe for Success), the initial steering committee developed and finalized their mission statement and hired a contractor to develop the logo and website. A part-time coordinator was hired. A partner kick off meeting was held in November 2013 and approximately 55 people attended.

Need for Strategic Planning

The most cost-effective way to address invasive species is to prevent them from reaching the LISMA region. If, despite prevention efforts, new invasive species spread to the LISMA region, early detection programs can help locate and eradicate populations before they become widely established. For invasive species already established within the LISMA region, management programs to monitor and minimize their negative impacts to the economy and environment are necessary, but with the understanding that these efforts will be relatively costly. The sooner LISMA can act to prevent or control new infestations, the more effective our efforts will be. This LISMA Five Year Strategic Plan has been developed with the goal of reducing the environmental, economic and human health impacts of invasive species in northeastern Wisconsin by emphasizing public awareness, rapid response to new invasive species threats and building long-term organizational capacity. Obtaining funding for our programs is crucial to long-term success. Achievement of the goals put forth in this strategic plan is dependent on obtaining and maintaining adequate funding and volunteer resources.

Funding for the Strategic Planning Process

LISMA's 2015-2019 strategic plan was developed with funding from the Wisconsin Private Forest Grant Program.

Abbreviations and Acronyms

LISMA – Lakeshore Invasive Species Management Area

LNRP – Lakeshore Natural Resource Partnership

CWMA – Cooperative Weed Management Area

MIPN – Midwest Invasive Plant Network

BMPs – Best Management Practices

GPS – Global Positioning System

GIS – Geographic Information System

IPM – Integrated Pest Management

GOC – Grant Oversight Committee

WDNR-Wisconsin Department of Natural Resources

GOALS and OBJECTIVES

The primary goals of LISMA are: to raise public awareness about invasive species in Kewaunee, Manitowoc, Calumet, and Fond du Lac Counties; prevent their introduction and spread through early detection and rapid response; address known populations of invasive species utilizing Integrated Invasive Species Management methods where appropriate; consider invasive species during restoration projects; and continually work to enhance collaboration among all stakeholders involved with LISMA.

Goal 1: Organizational Collaboration

Objective 1.1: Developing the organization

- 1.1.1 Maintain the Steering Committee structure.
- 1.1.2 Establish committees, such as strategic planning, education and awareness, development, grant oversight, technical (control and restoration), and mapping.
- 1.1.3 Determine what role partners will have in the organization.
- 1.1.4 Create an annual work plan.
- 1.1.5 Actively recruit and retain volunteer base.

Objective 1.2: Work across jurisdictional and geographical boundaries to strengthen the coordination among current and potential partners.

- 1.2.1 Actively recruit new partners and cooperators for inclusion in its activities.
- 1.2.1 Continually work to strengthen existing partnerships. See Appendix A for a list of partners.

Objective 1.3: Seek funding opportunities to support LISMA partnership activity.

- 1.3.1 Funding opportunities will be reviewed on a regular basis with proposals being drafted and reviewed openly by LISMA steering committee members.
- 1.3.2 Funding is anticipated to be primarily through competitive grants and gifts.
- 1.3.3 The type and availability of funding opportunities is constantly changing and will be monitored.
- 1.3.4 Funds will be administered through the Lakeshore Natural Resource Partnership (LNRP), the fiscal manager for the LISMA. For each grant LISMA is awarded, a copy of the approved grant application and a list of contacts for the grant will be sent to:

Lakeshore Natural Resource Partnership
P.O. Box 62

Sturgeon Bay, WI 54235

- 1.3.5 A primary contact and at least two alternative contacts will serve as the Grant Oversight Committee (GOC) to oversee activities and insure that grant criteria are being met.
- 1.3.6 All technical and fiscal reporting materials (progress reports, copies of receipts, in-kind & match tracking) will be the responsibility of the GOC. A copy of all these materials shall be placed on file with both the LNRP and Woodland Dunes Nature Center and Preserve, Inc.
- 1.3.7 All reports and deliverables required by the grant will be the responsibility of the GOC.
- 1.3.8 The steering committee will be notified of any project proposal and any award received and will receive a copy of progress reports pertaining to that award.

Goal 2: Prevention. Reduce the number of invasive species introduced into and slow the spread of invasive species within the LISMA.

Objective 2.1: Prevent the introduction and spread of invasive species through new and existing pathways.

- 2.1.1 Increase attention toward efforts to identify and manage likely pathways.

Objective 2.2: Engage the public and partners in managing invasive species pathways, potential impacts, and preventing the introduction of invasive species into terrestrial, wetland, and aquatic systems.

LISMA will work with partners to promote educational and training activities to:

- 2.2.1 Increase public awareness and adoption of non-native invasive species best management practices (BMPs).
- 2.2.2 Work with partners to leverage existing information packets on invasive species. When available, set the timing of the media releases to coincide with particular events such as the opening of fishing season and park events.
- 2.2.3 Provide a list of invasive species of concern.
- 2.2.4 Schedule volunteer trainings, media events, and educational programs in cooperation with invasive species partnership members, cooperative invasive species management areas, county, state, and federal partners, and other regional organizations.
- 2.2.5 Assist with control projects and get schools, scouts and other community service groups involved in community service invasive species control efforts.
- 2.2.6 Provide representation at meetings, conferences, and other natural resource related functions.

Objective 2.3: LISMA will develop and distribute information in many forms to target audiences such as pipeline companies, transmission companies, right of way managers,

park personnel and attendees, hunters, boaters, contractors, gardeners, highway personnel, plant industry persons, landowners, etc.

- 2.3.1 Develop additional publications.
- 2.3.2 Provide accurate, detailed and updated information on the LISMA website www.lisma.net.
- 2.3.3 Plan trainings, demonstrations, workshops, and field days.
- 2.3.4 Provide training and materials.

Objective 2.4: Reduce the number of organisms in trade through cooperation with WDNR and DATCP

- 2.4.1 Work cooperatively with the pet, plant, and seed industries, and others to prevent the sale of invasive species.
- 2.4.2 Strengthen partnerships with the nursery industry to provide educational resources at the point-of-sale about alternatives to invasive species for gardeners.
- 2.4.3 Educate the public about selecting non-invasive plants and pets and to properly dispose of unwanted plants and animals.
- 2.4.5 Support current efforts such as Habitatitude.

Objective 2.5: Focus local prevention efforts on those ecosystems most vulnerable to invasion.

- 2.5.1 Assess the vulnerability of ecosystems and develop site-based prioritization or triage for invasive plants, pests, and pathogens for guiding LISMA's efforts.

Goal 3: Early Detection. Increase the likelihood that invasive species in the LISMA will be found and reported to those responsible for taking action.

Objective 3.1: Develop and enhance the capacity to identify and effectively respond to newly discovered/localized invasive species throughout the LISMA.

- 3.1.1 Increase reports of priority species by training the public on identification of priority targets and taking notice of newly established species.
- 3.1.2 Identify problem invasive species areas within the LISMA and have those sites mapped or linked to an existing or new database.
- 3.1.3 Cooperate with landowners concerning problem invasive species areas and assist with development of appropriate control strategies.
- 3.1.4 Develop a system of cooperative use of control tools (i.e. a "community tool shed") such that individual landowners and land managers won't have to purchase equipment.
- 3.1.5 Work with local governments who develop and enforce weed ordinances and prevention regulations.

Objective 3.2: Develop a practical, convenient and consistent invasives reporting and monitoring system. Share knowledge on discoveries of newly established species in LISMA to allow an appropriate response.

- 3.2.1 Development of new and different inventory and mapping protocols which will be tested for usability and accuracy on the properties of the Participating Persons who own 500 acres or less of Non-Industrial Private Forest Landowners
- 3.2.2 Conduct Surveys: Invasive species survey efforts will be recorded to help document where invasive species are located, where they are absent.
- 3.2.3 Mapping: Invasive species in the LISMA will be mapped in order to document existing populations, reveal new populations, prioritize management efforts, track progress of control efforts, and to facilitate data sharing and regional planning efforts. Each partner will be responsible for collecting and maintaining their respective data.

Goal 4: Rapid Response. Identify, detect, and respond to high priority invasive species early enough to prevent harm that would otherwise be caused by them becoming established widely.

Objective 4.1: Strategically focus rapid responses on species that are the most likely to cause harm.

- 4.1.1 Develop prioritization methods to determine the risk posed by nonnative species.
- 4.1.2 Utilize regional risk assessments to identify a prioritized list of species, including regulated invasive species, which should be addressed first.
- 4.1.3 Rank new finds for follow-up action such as monitoring, further research, eradication, watch, or control.

Goal 5: Control and Management. Reduce the impact of widespread invasive species to avoid loss of native biological diversity, harm to agriculture and habitats, and damage to other valuable resources.

Objective 5.1: Improve education and outreach about the impacts of invasive species and what citizens and lawmakers can do to make a difference.

- 5.1.1 Share information on the likelihood of eradication, cost of control, and methods to prevent spread for individual species to provide a realistic picture of what control work can accomplish.

Objective 5.2: Foster partnerships across jurisdictions to manage invasive species more effectively regionally and engage fully all local parties in decision making for invasive species control.

- 5.2.1 Address barriers for effective partnerships including solutions to liability regarding the reasonable use of herbicides and protecting landowners who allow access to private lands by volunteers.

Objective 5.3: Work to contain widespread species recognizing that preventing local spread supports management goals.

- 5.3.1 Improve regional mapping for widespread invasive species allowing improved targeting of control efforts.

Objective 5.4: Prioritize species based on species' potential ecological and economic impacts, management objectives of infested areas, available resources, and landowner/land manager support. See Appendix B for a list of selected priority nonnative invasive species in the LISMA management area.

Objective 5.5: Use an integrated approach to manage current invasive species populations. A general overview of methods that may be employed is given below and in greater detail in Appendix C.

- **Manual and Mechanical:** Manual and mechanical techniques such as pulling, cutting, or otherwise stressing plants can be used to control some invasive plants, particularly if the population is relatively small.
- **Chemical:** In some instances, herbicide application is the only practical way to control an invasive species due to the physiology of the plant or the extent of population.
- **Biocontrol:** Biological control ("biocontrol" for short) is the use of animals, fungi, or other microbes to feed upon, parasitize or otherwise stress a targeted pest species. Successful biocontrol programs significantly reduce the abundance of the pest or prevent the damage caused by the pest (e.g. by preventing it from feeding on valued crops).
- **Cultural:** Cultural control involves the use of methods such as flooding, smothering (covering with light barrier), controlled by wild land fires, or the use of cover vegetation to reduce the impact of invasive species.

Goal 6: Restoration

Objective 6.1: Include invasive species considerations in guidance for restoration and rehabilitation projects.

6.1.1 Advise land management agencies, townships, highway departments, landowners, and other interested parties on best management practices and appropriate restoration methods using native species.

6.1.2 Include a restoration component in control efforts when and where appropriate.

Appendix A. Lakeshore Invasive Species Management Area Partners

Pheasants Forever

USDA- Natural Resources Conservation Service (NRCS)

Wisconsin Department of Natural Resources

UW-Sea Grant

WI Maritime Museum

Friends of the Manitowoc River Watershed

Brillion Nature Center

Ledgeview Nature Center

Bay-Lake Regional Planning Commission

City of Two Rivers

Stantec

Glacial Lakes

Manitowoc County Master Gardeners

Manitowoc County Parks

East Central WI Regional Planning Commission

Fond du Lac Land and Water Conservation Department

Town of Schleiswig-San. District #1

City of Manitowoc

Gottfried Prairie Arboretum

Fond du Lac County Audubon Society

Appendix B. Selected priority non-native invasive species in the Lakeshore Invasive Species Management Area. (This is the WRISC table, we will have to modify it for our needs).

Common Name	Scientific Name	WI NR40 Classification
Early Detection/Rapid Response		
Hemlock woolly adelgid	<i>Adelges tsugae</i>	P
Emerald Ash Borer	<i>Agrilus planipennis</i>	P
Tree of Heaven	<i>Ailanthus altissima</i>	R
Garlic mustard	<i>Alliaria petiolata</i>	R
Porcelain berry	<i>Ampelopsis brevipedunculata</i>	P
Asian Longhorn Beetle	<i>Anoplophora glabripennis</i>	P
Wild chervil	<i>Anthriscus sylvestris</i>	P/R
Chinese Mystery Snail	<i>Cipangopaludina chinensis</i>	P
Japanese barberry	<i>Berberis thunbergii</i>	
Hill Mustard	<i>Bunias orientalis</i>	P/R
Flowering Rush	<i>Butomus umbellatus</i>	R
Spiny Waterflea	<i>Bythotrephes cederstroemi</i>	P
Plumeless thistle	<i>Carduus acanthoides</i>	R
Musk thistle	<i>Carduus nutans</i>	R
Oriental bittersweet	<i>Celastrus orbiculatus</i>	R
Yellow Star Thistle	<i>Centaurea solstitialis</i>	P
Poison Hemlock	<i>Conium maculatum</i>	P/R
Asian clam	<i>Corbicula fluminea</i>	P
Black swallow-wort	<i>Cynanchum louiseae</i>	P/R
Pale Swallow-wort	<i>Cynanchum rossicum</i>	R
Chinese yam	<i>Dioscorea oppositifolia</i>	
Common Teasel	<i>Dipsacus fullonum subsp. sylvestris</i>	R
Cut Leaved Teasel	<i>Dipsacus laciniatus</i>	R
Quagga Mussel	<i>Dreissena bugensis</i>	P
Zebra Mussel	<i>Dreissena polymorpha</i>	R
Brazilian waterweed	<i>Egeria densa</i>	P
Leafy Spurge, Cypress Spurge	<i>Euphorbia esula, E. cyparissias</i>	R
Three-spine stickleback	<i>Gasterosteus aculeatus</i>	R
Tall manna grass	<i>Glyceria maxima</i>	P/R
Ruffe	<i>Gymnocephalus cernuus</i>	R
Giant Hogweed	<i>Heracleum mantegazzianum</i>	P
Dame's rocket	<i>Hesperis matronalis</i>	R
Japanese Hops	<i>Humulus japonicus</i>	P/R
Hydrilla	<i>Hydrilla verticillata</i>	P
European Frogbit	<i>Hydrocharis morsus-ranae</i>	P
Lespedeza	<i>Lespedeza cuneata</i>	P
Purple Loosestrife	<i>Lythrum salicaria</i>	R
Japanese stiltgrass	<i>Microstegium vimineum</i>	P

Common Name	Scientific Name	WI NR40 Classification
Parrot Feather	<i>Myriophyllum aquaticum</i>	P
Watercress	<i>Nasturtium officinale</i>	C
Round goby	<i>Neogobius melanostomus</i>	R
Yellow Floating Heart	<i>Nymphoides peltata</i>	P
Rainbow smelt	<i>Osmerus mordax</i>	R
Sea lamprey	<i>Petromyzon marinus</i>	R
Common Reed	<i>Phragmites australis</i>	R
Japanese Knotweed	<i>Polygonum cuspidatum</i>	R
Giant Knotweed	<i>Polygonum sachalinensis</i>	P
Curly-leaf Pondweed	<i>Potamogeton crispus</i>	R
New Zealand Mudsnail	<i>Potamopyrgus antipodarum</i>	P
Kudzu	<i>Pueraria lobata</i>	P
Multiflora rose	<i>Rosa multiflora</i>	R
Hedgeparsley	<i>Torilis arvensis</i>	P
Manageable		
Common Burdock	<i>Arctium minus</i>	
Creeping bellflower	<i>Campanula rapunculoides</i>	R
Siberian pea	<i>Caragana arborescens</i>	
Oriental bittersweet	<i>Celastrus orbiculata</i>	R
Spotted knapweed	<i>Centaurea biebersteinii</i>	R
Canada Thistle	<i>Cirsium arvense</i>	R
European Marsh thistle	<i>Cirsium palustre</i>	P/R
Bull Thistle	<i>Cirsium vulgare</i>	
Crown vetch	<i>Coronilla varia</i>	
Russian olive	<i>Elaeagnus angustifolia</i>	R
Autumn olive	<i>Elaeagnus umbellata</i>	R
Dame's rocket	<i>Hesperis matronalis</i>	R
Asiatic honeysuckles	<i>Lonicera tatarica, L. morrowii and L. x bella</i>	R (all)
White sweet clover	<i>Melilotus alba</i>	
Forget-me-not	<i>Myosotis arvensis, M. scorpioides, M. sylvatica</i>	
Eurasian water milfoil	<i>Myriophyllum spicatum</i>	R
Wild parsnip	<i>Pastinaca sativa</i>	R
Reed canary grass	<i>Phalaris arundinacea</i>	
Common Buckthorn	<i>Rhamnus cathartica</i>	R
Glossy Buckthorn	<i>Rhamnus frangula</i>	R
Black locust	<i>Robinia pseudoacacia</i>	
Common Tansy	<i>Tanacetum vulgare</i>	R
Siberian elm	<i>Ulmus pumila</i>	
Common mullein	<i>Verbascum thapsus</i>	
Widespread		
Bishop's Gout-weed	<i>Aegopodium podagraria</i>	
Hill Mustard	<i>Bunias orientalis</i>	P/R
Chinese mystery snail	<i>Cipangopaludina chinensis</i>	
Sweet William	<i>Dianthus barbatus</i>	

Common Name	Scientific Name	WI NR40 Classification
Brittle-stem hemp-nettle	<i>Galeopsis tetrahit</i>	R
St. John's-wort	<i>Hypericum perforatum</i>	
Yellow flag iris	<i>Iris pseudoacorus</i>	
Butter-and-eggs	<i>Linaria vulgaris</i>	
Gypsy moth	<i>Lymantria dispar</i>	R
Watercress	<i>Nasturtium officinale</i>	C
Rusty Crayfish (Rivers)	<i>Orconectes rusticus</i>	
Phragmites, Common Reed (shoreline)	<i>Phragmites australis</i>	R
Narrow-leaved cattail	<i>Typha angustifolia</i>	R
Cattail hybrid	<i>Typha x glauca</i>	R
Garden valerian	<i>Valeriana officinalis</i>	
Hairy vetch	<i>Vicia villosa</i>	
Banded mystery snail	<i>Viviparus georgianus</i>	

Appendix C. Integrated pest management techniques that may be utilized by LISMA.

LISMA will adhere to all legal requirements regarding the application of herbicides and equipment use. LISMA will require the appropriate use of all manufacturer recommended personal protective equipment in all its collective activities. To ensure that herbicides and tools are used safely, a short safety session will be given prior to any on the ground control work. Work leaders will insure that appropriate liability insurance, product documentation, state licensure, required certification, and accident and first aid equipment are available at all cooperative events. LISMA will monitor and document the results of control work and follow-up with monitoring. LISMA will also schedule maintenance treatments or advise landowners of how and when to apply follow-up treatments.

Manual and Mechanical: Manual and mechanical techniques such as pulling, cutting, or otherwise stressing plants can be used to control some invasive plants, particularly if the population is relatively small. In some cases, this may be the only effective control technique. These techniques can be extremely specific, minimizing damage to desirable plants and animals, but they are generally very laborious and time intensive. Manual treatments must typically be administered several times to prevent a weed from re-establishing. During the course of treatment, laborers and equipment may severely trample vegetation and disturb the soil, providing suitable conditions for re-invasion of the same or other invasive species. Manual and mechanical techniques are generally favored if the population is small or if a large pool of volunteer labor is available. Manual control is also frequently used in combination with other techniques. For example, shrubs may be pulled and cut (manual treatment) and re-sprouts and seedlings may be treated with herbicides (chemical treatment) or fire (cultural alternative) several weeks or months later.

Chemical: In some instances, herbicide application is the only practical way to control an invasive species due to the physiology of the plant or the extent of population. Although chemical controls (i.e., herbicides) are an effective means of controlling unwanted vegetation, they may also have the most adverse consequences. The risk of using an herbicide must be weighed against the negative impact of the invasive species on the area of concern, and the effectiveness of chemical control should be compared to other control methods. Many herbicides contain the same active ingredients but are designed for either terrestrial or aquatic applications. Prior to using an herbicide, it is critical to research product effectiveness against the target plant, product guidelines and legal constraints for its use. An herbicide must be registered for use in the state where plant control will take place. It is also important to read the entire label prior to mixing and application. Information on the proper use of an herbicide, including procedures related to the rate and timing of application, transportation, storage, cleanup, and emergency situations, must be followed at all times. Only a state-certified pesticide applicator with the appropriate licensing for the given habitat will apply chemical treatments on site.

Biocontrol: Biological control (“biocontrol” for short) is the use of animals, fungi, or other microbes to feed upon, parasitize or otherwise stress a targeted pest species. Successful biocontrol programs significantly reduce the abundance of the pest or prevent the damage caused by the pest (e.g. by preventing it from feeding on valued crops). Biocontrol is often seen as a progressive and environmentally friendly way to control pest organisms. Biocontrol leaves no chemical residues that might harm humans or other organisms and, when successful, can provide essentially permanent, widespread control with a very favorable cost-benefit ratio. Any pest control method has the potential to harm non-target native species, therefore, before releasing a biocontrol agent (or using other methods) it is important to balance its potential benefit to conservation targets and management goals against its potential to cause harm. Only state approved and accepted bio-control methods will be utilized.

Cultural: Cultural control involves the use of methods such as flooding, smothering (covering with light barrier), controlled by wild land fires, or the use of cover vegetation to reduce the impact of invasive species. The feasibility of such methods is related to the size of the population, the location and the regulatory and permitting processes for flooding and burning. The use of cultural methods is best suited to small scale applications, such as local homeowners or small businesses through the use of noninvasive plantings and mulch.