

AIS Grant: Education, Prevention & Planning

Project Scope/Description

a) Description of Project Area

The Milwaukee County Department of Parks, Recreation, and Culture (DPRC) seeks funding opportunities to monitor, map, and assess **50** of the Milwaukee County Parks System's lagoons/ponds and 10.6 miles of Lake Michigan shoreline within our parks for the presence of AIS (**C2**). All ponds/lagoons and portions of shoreline are heavily used and fully accessible by the public; however, county ordinances prohibit the use of all watercraft on all ponds/lagoons (**B1d**).

b) Problem Addressed by Project

The 2010-2012 Wisconsin Aquatic Invasive Species Progress Report states that southern lakes in Wisconsin are "more likely to have AIS and to host a great number of invasives per lake" compared to northern lakes within the state. Currently, within the Milwaukee County Parks System, there is little to no presence/absence baseline data available for AIS (**I1**). The Park System's ponds/lagoons are a valuable resource for Milwaukee County's 900,000+ residents and provide essential habitat for a variety of wildlife species. These water bodies also serve as urban, public fishing waters and are the only outlet for a subset of Milwaukee County's recreational fisherman that lack the resources and/or opportunities to utilize the lakes in other regions Wisconsin (**F2**). These urban ponds/lagoons have also become a location for individuals to discard the contents of their household aquariums and water gardens, making these locations potential hot spots for new AIS introductions. With these issues at hand, monitoring and control of AIS within these areas is necessary to prevent species from becoming well established and spreading to the rest of the state. This is especially a concern in Milwaukee County because a number of these ponds/lagoons are directly connected to tributaries that drain into Lake Michigan. Although measures of control have been undertaken in several of the Park System's ponds and lagoons in order to enhance recreational benefits, such as the treatment/removal of curly-leaf pondweed and Eurasian water milfoil (**E1, H2**), there has been no assessment and monitoring conducted in order to fully understand the extent of AIS in the Milwaukee County Parks.

c) Project Goals & Objectives

This project aims to prevent the spread of aquatic invasive species by acquiring the necessary baseline data on the presence/absence and abundance of AIS populations in **50** of the Milwaukee County Park System's ponds/lagoons (176.7 acres) and 10.6 miles of Lake Michigan Shoreline. Implementing an AIS monitoring project within these ponds/lagoons would compliment management efforts that the DPRC has already put forth over the last three years such as bank

stabilization, native vegetation buffers, and educational signs at Washington, Jacobus, Dineen, Humbolt, Jackson, and Mitchell Park ponds/lagoons (G2). The data collected via this project will aid in understanding the full extent of AIS infestations within the Park System and provide the essential information needed to formulate a an effective, feasible, prevention and control strategy.

With the assistance of funding through the WDNR AIS Education, Prevention and Planning Grant, the DPRC will be able to hire a seasonal staff member to survey the 50 ponds/lagoons and 10.6 miles of shoreline over two consecutive field seasons. This project staff member will work in conjunction with the DPRC's Natural Areas Staff and Natural Areas Interns. In addition to collecting field inventories and specimens of AIS the data will be mapped on ArcGIS, which will be used at the completion of the project to formulate final reports. If small populations of AIS are found during the duration of this monitoring project, the DPRC will apply for an Early Detection & Rapid Response (ED&RR) grant to control them. If well established populations of AIS are found then the DPRC will apply for a Controlling Established Populations Grant. Natural Areas Staff recently documented and removed small populations of water hyacinth and water lettuce under County funds in several ponds/lagoons (H2).

This project will engage and educate volunteers through the Natural Areas Internship program. The DPRC's Natural Areas Program offers a credited, unpaid internship to local colleges and universities within Milwaukee County each year from March-December. Natural Areas Interns will attend an AIS monitoring training workshop offered by the Citizen Lake Monitoring Network (CLMN) and a Project RED training for Lake Michigan shoreline meander surveys as part of this project. After which Natural Areas Interns will directly assist the project staff member and Natural Areas Staff in all aspects of AIS identification, mapping, and monitoring (A2).

d) Description of Methods & Activities

Sampling efforts will focus on surveying for any AIS that might exist within the ponds/lagoons or Lake Michigan shoreline. Species of priority to Milwaukee County water bodies include water hyacinth (*Eichhornia crassipes*), water lettuce (*Pistia stratiotes*), purple loosestrife (*Lythrum salicaria*), flowering rush (*Butomus umbellatus*), yellow floating heart (*Nymphoides peltata*), phragmites (*Phragmites australis*), Eurasian water-milfoil (*Myriophyllum spicatum*), curly leaf pondweed (*Potamogeton crispus*), Brazilian waterweed (*Egeria densa*), Hydrilla (*Hydrilla verticillata*), rusty crayfish (*Orconectes rusticus*), and red swamp crayfish (*Procambarus clarkia*) (B2). Species such as Brazilian waterweed and Hydrilla are popular in the aquarium and water garden trade and there is a strong possibility that they may be introduced within the ponds/lagoons due to aquarium release. Invasives such as Eurasian water milfoil and curly leaf pondweed have already been found and controlled in the following ponds/lagoons: Veteran's

Park, Greenfield Park, Scout Lake Park, Holler Park, Brown Deer Park, and Humbolt Park.

Methods will follow the protocols outlined in the WDNR Early Detection Standard Operating Procedures (SOP) adapted for **Lake Michigan shoreline segments** and **Kelly Wagner's protocol Invasive Species Detection Survey Method (ISDSM) for Ponds modified by Anna Moyer for this particular project**. These include a visual meander survey of the entire Lake Michigan shoreline segment **and an extra 30-minute search at each boat landing, in waders instead of snorkeling; and the use of a boat, rake, and dip net in ponds/lagoons instead of snorkeling**. At each pond/lagoon and length of Lake Michigan shoreline the appropriate survey technique will be used. Although the Early Detection SOP calls for conducting only one survey per site, this project will need to adjust that condition and survey each site a total of **two times per field season**. This will be done to ensure that the preliminary data gathered on infestation levels is accurate, and that certain AIS are not overlooked because a site was surveyed at a time of year at which a species was either not blooming or at its densest growth.

During year one of the project, the project staff member along with other Natural Areas Staff & Interns will monitor **25 of the 50** ponds/lagoons and 5 miles of Lake Michigan shoreline, including boat landings. After completion of early spring (May 2013) AIS identification and control training through CLMN and Project RED, staff and interns will conduct **two pond** surveys at **25** of the ponds/lagoons and two visual meander surveys on 5 miles of Lake Michigan shoreline during the field season (May-September). After completion of each survey staff will ensure that all equipment has been decontaminated according to protocols outline in the Early Detection SOP to prevent spreading AIS from sample locations. The visual meander surveys along Lake Michigan shoreline will be done according to **adapted Early Detection SOP**, in which staff will walk along the shoreline. When boat landings are encountered during shoreline surveys of Lake Michigan, the landing will be searched for 30 minutes (Early Detection SOP). In the ponds/lagoons, shoreline will be surveyed using a **boat, taking samples with** a rake to collect any rooted AIS along the bottom of the pond/lagoon such as Curly-leafed pondweed, Hydrilla, Brazilian waterweed, or Eurasian water milfoil; **a dip net will be used to collect any invertebrates including invasive snails and crayfish according to ISDSM for Ponds**. Each species becomes densest at different times from spring to early fall depending upon its' life cycle. Therefore, both meander surveys and **pond surveys** will be done **two times** at each location from May until September in order to accurately assess the magnitude of AIS infestation. From late June through mid-August aquatic funnel trapping will be done in ponds/lagoons to survey for invasive crayfish species such as the rusty crayfish and red swamp crayfish. Ponds/lagoons will only be surveyed one time per year for crayfish and if after several days of sampling effort no crayfish are found staff and interns will stop collection. Staff and interns that are participating in the crayfish trapping surveys will be required

to obtain a fishing license through the WDNR. The 5 miles of Lake Michigan shoreline and boat landings will be visually surveyed twice (spring and summer) following **adapted Early Detection SOP**. An annual report will be submitted to the AIS Coordinator upon completion of year one of the project. Additionally, all data will be entered on the Surface Water Integrated Monitoring System's (SWIMS) database and stored in the DPRC's database.

During year two of the project (2014) staff and interns will survey the remaining **25** ponds/lagoons and 5.6 miles of Lake Michigan shoreline. Staff will follow the same methods and activity timeline as year one. At the completion of year two a final report will be prepared by the project staff member, along with GIS map files that will all be submitted to the **WDNR** AIS Coordinator. Additionally, all data will be entered on the SWIMS database and stored in the DPRC's database

e) Project Deliverables

The project staff member will submit a final report along with periodic reports in word format on a CD with GIS maps in PDF or shape files to the regional **WDNR** AIS Coordinator (**A3**). Data for aquatic invasive monitoring will be entered on the SWIMS database. Voucher specimens will also be collected according to Appendix 3 of the Early Detection SOP and submitted to a local DNR CLMN contact. If prohibited species such as hydrilla, yellow floating heart, or red swamp crayfish are encountered during surveys staff will send specimens to Heidi Bunk (WDNR). If species labeled as restricted species are encountered during surveys, specimens will be collected and sent to Christina Wolbers (WDNR) and Anna Moyer (WDNR). The project staff member will also give informational presentations on the AIS monitoring and results at each park in which a Park Friends group exists. The data collected via this project will also be incorporated into existing Restoration and Management Plans for the natural areas in which the ponds/lagoons are located (**G1**).

f) Data to be Collected

Presence/absence data on priority aquatic invasive species of interest, density of populations rated on a scale of 1-5, aquatic funnel trapping for invasive crayfish species, and specimen collection for vouchering by an expert. Data will then be used to prevent further spread or introduction of AIS and to provide justification for further control of pioneer populations.

g) Existing and Proposed Partnerships

The DPRC Natural Areas Program has a long-standing partnership with local colleges and universities through Natural Areas Internships and service learning opportunities. The direct involvement that Natural Areas Interns will have on this

project will significantly improve their AIS knowledge base and better prepare them for successful careers in the natural resources and/or environmental education career fields.

h) Role of Project in Planning and Management of Lake

This project will allow the DPRC to adjust existing and future AIS management techniques in order to better prevent the spread and establishment of AIS in Milwaukee County Park ponds/lagoons. Since there is currently no comprehensive database for the ponds/lagoons in the Park System on AIS, this project would enable the DPRC to take action on AIS populations when they not yet well established by providing the data resources necessary to do so.

i) Timetable for Implementation of Key Activities
(Two-year Project Plan)

YEAR ONE – Monitor 25 of the 50 ponds/lagoons & 5 miles of Lake Michigan shoreline

March-April 2013: Hire seasonal project employee, acquire monitoring equipment, all staff and interns attend CLMN AIS training workshop, all staff and interns attend Project RED training, and obtain a Wisconsin fishing license.

May-September 2013: Following the adapted Early Detection SOP, **and Invasive Species Detection Survey Method for Ponds**: (1) Conduct **pond** surveys, at each of the **25** ponds **two** separate times **according to ISDSM for ponds**; (2) Conduct visual meander surveys and boat launch site searches along 5 miles of Lake Michigan shoreline twice (spring and summer) during the field season, **according to adapted SOP**. Additionally, implement aquatic funnel trapping for rusty crayfish and red swamp crayfish. All AIS will be mapped and the appropriate specimens will be collected.

Late September 2013: Data analysis, data entry on SWIMS database, presentation to Park Friends groups, and annual report writing.

YEAR TWO – Monitor remaining 25 ponds & 5.6 miles of Lake Michigan shoreline

March-April 2014: Hire seasonal project employee, acquire monitoring equipment, all staff and interns attend CLMN AIS training workshop, all staff and interns attend Project RED training, and obtain a Wisconsin fishing license.

May-September 2014: Following the adapted Early Detection SOP, **and Invasive Species Detection Survey Method for Ponds**: (1) Conduct **pond** surveys, at each of the **25** ponds **two** separate times **according to ISDSM for ponds**; (2) Conduct

visual meander surveys and boat launch site searches along 5 miles of Lake Michigan shoreline twice (spring and summer) during the field season, **according to adapted SOP**. Additionally, implement aquatic funnel trapping for rusty crayfish and red swamp crayfish. All AIS will be mapped and the appropriate specimens will be collected.

Late September 2014: Data analysis, data entry on SWIMS database, presentation to Park Friends groups, and final report writing.

j) Plan for Sharing Project Results

Project results and final reports will be stored within the DPRC's database and submitted to the WDNR via periodic reports, the final report, Excel spreadsheets, and GIS files. Presentations will be done periodically throughout the project duration to inform and increase public awareness of the AIS monitoring project along with the negative impacts of AIS and how the public can help prevent the spread. The project results will also aid the DPRC in selecting and controlling small AIS populations via ED&RP grants.

k) Other Information in Support of Project

The DPRC Natural Areas Coordinator, Brian Russart, had a pre-application consolidation with WDNR AIS Coordinator Heidi Bunk on 1-9-2013 in order to ensure that project methods and goals were eligible and could benefit statewide AIS monitoring programs progress (**E2**). Additionally, the Assistant Natural Areas Coordinator, Julia Robson, spoke with AIS Specialist Christina Wolbers and AIS Outreach Specialist Anna Moyer to discuss and review project goals and methods.

The County Board will sign and approve a letter of project resolution on 1-29-2013. The resolution will then be sent after approval separately from the rest of the project application (Walt Ebersohl has okayed and been made aware of this).

Boldface, blue highlight: 2013 approved amendments.