

# Jackson-Lenawee-Washtenaw Cooperative Invasive Species Management Area: Strategic Plan 2018-2022

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## I. Introduction

According to International Union for Conservation of Nature (IUCN), invasive alien species are on the rise worldwide and more than a third of initial introductions have been recorded between 1979 and 2014<sup>1</sup>. Within the United States, invasive species have contributed to the decline of 42% of threatened and endangered species<sup>2</sup>, costing the country approximately \$120 billion a year. Prevention is an integral part of invasive species management; however, a coordinated early detection, rapid response and eradication program is needed if managers and stakeholders want to reduce negative impacts stemming from new invasions in both aquatic and forested areas<sup>3,4</sup>. In many cases, costly short-term eradication efforts might be preferable to long-term damage and control costs<sup>3</sup>.

In order to address invasive species in this area, a collaborative group of stakeholders from the Jackson, Lenawee and Washtenaw Counties applied for, and received a grant to establish the "Jackson, Lenawee and Washtenaw Cooperative Invasive Species Management Area (JLW CISMA)". The JLW CISMA's purpose is to prevent, detect, eradicate and control invasive species in the area, create a strategic plan for reducing the threat of invasive species, and provide outreach/educational opportunities for local citizens and stakeholder groups. The organization would also like to coordinate and support partner efforts to survey and develop a protocol for early detection and a rapid response eradication plan.

This plan is intended to identify goals, management actions and future direction of invasive species management in the Jackson, Lenawee and Washtenaw region as over seen by the JLW CISMA. It is also intended to be a guideline that the CISMA and partners can use to coordinate management actions on the topic of invasive species.

## II. Goal

The JLW CISMA strives to increase community awareness regarding invasive species, promote measures to increase the resiliency of our terrestrial and aquatic

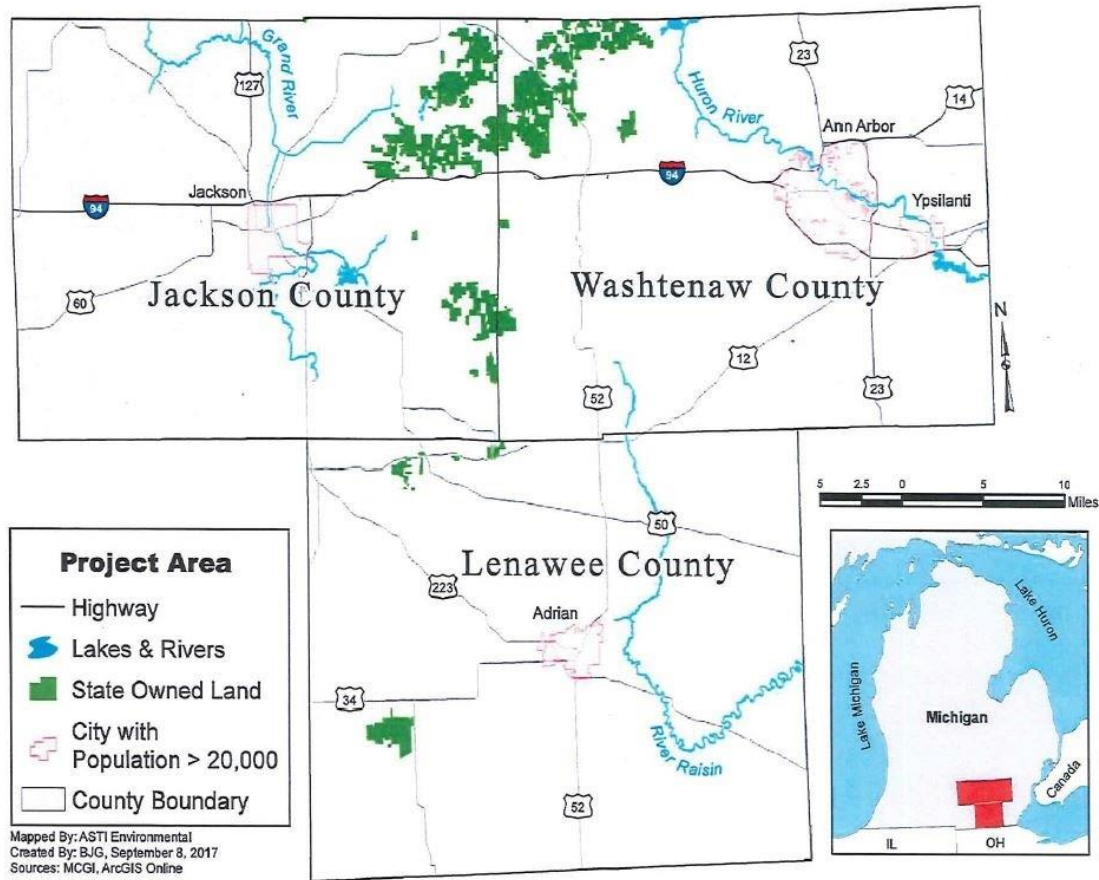
ecosystems in the face of invasive species, and to increase the capacity to manage invasive species by providing resources and assistance to partners and tri-county residents to prevent, detect and perform early detection-rapid response. The JLW CISMA has five overarching objectives in achieving this goal.

- Objective 1: Maintain the functioning of the JLW CISMA.
- Objective 2: Organize and provide invasive species education, outreach and Engagement.
- Objective 3: Inventory priority areas or areas of concern within the tri-county region for invasive species (as determined by the steering committee, CISMA coordinator and partners). Respond to community reports of tier 1 and tier 2 species, and perform early detection.
- Objective 4: Rapid response and strategic management of invasive species.
- Objective 5: Ensure the long-term sustainability and function of the JLW CISMA.

### III. Scope

#### *Geographic Scope*

The geographical jurisdiction of the JLW CISMA includes Jackson, Lenawee and Washtenaw counties (Figure 1). Our three counties are diverse from a land use/cover and demographic prospective. For example, Jackson, Washtenaw, and Lenawee counties each have 19.8%, 9.8% and 7.13% wetland cover<sup>5</sup>. There are also population differences with the total population for each county being 158640, 367627 and 98623 respectively. Several major highways run through our region and serve as potential invasive species corridors. Highway 127 crosses Jackson and Lenawee county (a north/south point of dispersal and arrival of invasive species) and Interstate 94 that crosses Jackson and Washtenaw counties from an east/west direction. US 23 (Washtenaw County) and US 223 (Lenawee) is a major travel corridor into the region from Ohio and other southern locations. US 12 (Washtenaw and Lenawee) is another busy route that connects the southwest part of the State of Michigan.



**Figure 1.** Map of the three counties (Jackson, Lenawee and Washtenaw) located within the JLW CISMA boundaries.

### *Strategic Scope*

The JLW CISMA’s over-arching goal is to maintain a sustainable and healthy environment which benefits native species and the communities of Jackson, Lenawee and Washtenaw County. We want to protect natural areas from being overrun by invasive species, and promote biodiversity in rural, urban and protected areas in the tri-county region. We recognize that invasive species can negatively impact both the natural environment and reduce ecosystem services critical to residents (water filtration, clear roads and stormwater management). The JLW CISMA uses the definition of “invasive species” as defined by the Michigan Department of Natural Resources (MDNR): *“An invasive species is one that is **not native** and*

*whose introduction causes harm, or is likely to **cause harm** to Michigan's economy, environment or human health.”*

We seek to increase capacity for invasive species management via education, outreach, and building partnerships with a variety of organizations. Partners may be, but are not limited to, units of government, non-profit organizations, businesses, and various citizen groups/associations who are interested in the management of invasive species within the tri-county region. In order to be a partner, organizations must submit an official and signed letter indicating a willingness to support Cisma goals and objectives and promote Cisma activities and initiatives. Partner benefits include an opportunity to serve on various Cisma committees, an opportunity to provide input into the direction of the Cisma and shaping of future management decisions and goals, provide input on Cisma training and activities, be notified of new and emerging invasive threats facing the tri-county region, opportunities to apply for small grants for management/eradication when available, attend Cisma partner meetings, receive outreach materials, request training and informational seminars for your members. We will actively seek out opportunities to work with our partners to increase the number of outreach/educational opportunities and reach out to underserved communities that are not traditionally targeted for invasive species outreach/education. Underserved communities could include (but are not limited to) visible minorities, immigrants and ESL (English as a second language) groups, commercial businesses such as construction, landscaping, nurseries (aquatic and terrestrial), bait fish and aquaculture companies.

The Cisma wants to carry out its goals and present information in an unbiased and non-confrontational manner as to build trust within the community and conduct activities in a transparent and open manner. In addition to outreach and education, the Cisma wants to work towards increasing its capacity to survey terrestrial and aquatic environments within the tri-county region, and to offer treatment and training opportunities.

Forming strong partnerships across the region is imperative in managing invasive species, especially across political boundaries. The Cisma seeks to bring together partners to address invasive species issues in the region, and will strive to seek out new partnerships, work with partners to refine, adapt and update local goals and objectives to meet the changing environmental landscape. We will continue to rely on our partners for their expertise and man power and keep them apprised of opportunities to participate in public engagement, survey and treatment activities.

The Jackson County Conservation District Manager and the JLW Cisma Coordinator currently administer the MISGP grant funds and day-to-day grant activities. Under the 2018 to 2022 Strategic Plan, each of the conservation districts will manage their respective funds and activities (with respect to promised “match”) and help in the

promotion of the JLW CISMA, including tasks such as sharing Facebook posts, disseminating JLW CISMA information in newsletters, handing out printed materials at local events and within their offices when appropriate. The JLW CISMA will also encourage partner organizations to coordinate or attend CISMA activities.

In order to move forward and improve our future efforts and outcomes, summarization of past activities and reflection on outcomes is needed. We will create an annual report for our funding agencies, share findings/outcomes with our partners, and track our progress.

#### IV. Objectives and Their Outcomes

##### Objective 1: Maintain the functioning of the JLW CISMA

- Recruit partners and ensure responsibilities and expectations (e.g. volunteer recruitment, requests for match when applying for grants, etc.) are clear and being met
- Maintain regular meetings and transparent communication to promote collaboration and sharing of information regarding invasive species between partner organizations

<b>Outcome</b>	<b>Frequency</b>
Steering committee meets in-person and makes decisions by majority vote (must be from a partner organization to be eligible to serve)	Every other month on the last Monday. Meetings held in Jackson County (ongoing)
Partner meetings occur in-person, and precede the steering committee meeting	Every other month on the last Monday. Meetings held in Jackson County (ongoing)
Partner organizations are identified, contacted and recruited to increase the capacity of CISMA, and to share in the exchange of knowledge and expertise	Ongoing
Partners sign or submit a letter (Memorandum of Understanding) to document agreement and commitments made between partner organizations and the CISMA	Every four years
Partners will be periodically solicited for match/support letters when the CISMA is applying for grants	As needed
Create and maintain organizational chart showing structure of the CISMA	As needed
Creation of a governance document	Updated at the same time of Strategic Plan

Maintain and update invasive species resources for partner organizations	Ongoing
Yearly survey to assess needs of partner organizations (via survey monkey or google forms)	Yearly (spring-prior to summer field work)
Keep track of survey and outreach activities	Ongoing
Produce an annual report of work done	Yearly
Participation in Michigan Invasive Species coalition (MISC) annual meetings and conference calls	Yearly, or as needed
Seek out funding for coordination, research and restoration in conjunction with invasive species	Ongoing

Periodically, the CISMA will be applying for various grants that require partner match and support letters. Partners who submit match letters (e.g. committing time, space and resources) for those grants will be given priority when implementing grant objectives and activities. In instances where partners joined on post grant application, or the CISMA is approached by community members and non-partner organizations, the steering committee will provide guidance on how to include these groups in meeting those grant objectives if appropriate and if funding permits.

Objective 2: Organize and provide invasive species education, outreach and engagement

- The three county Conservation Districts will serve as the primary education outlets for the JLW CISMA
- Identification of invasive species, understanding of factors leading to their spread, and acting to manage infestations are key components to our educational programs

Outcome	Frequency
Create and distribute educational materials about JLW CISMA priority invasive species (including but not limited to post cards, brochures, alert flyers)	Ongoing
Incorporate and use partner and governmental educational materials when appropriate	Ongoing
Maintain an online presence for the JLW CISMA (MISC website, Facebook, Twitter and Instagram-responsibility of the coordinator)	Ongoing

and sharing information from partner organization	
Attend local and regional outreach with table display and educational materials	Ongoing
Organize Aquatic Invasive Species (AIS) education and outreach events and training such as Landing Blitz, Boat Wash, Clean Boats Clean Waters etc. (in the absence of funding, promote events on website)	Ongoing
Promote established statewide and national outreach campaigns and invasive species programs such as: PlayCleanGo, Eyes on the Forest, Exotic Aquatic Plant Watch, RIPPLE etc.	Ongoing
Focus on decontamination and AIS/Terrestrial pathways	Ongoing
Identify other opportunities for passive outreach campaigns	Ongoing
Identify opportunities for active outreach with students and youth (colleges, university, K-12...)	Ongoing
Target key groups such as, but not limited to local private land owners, municipalities (drain, road and park agencies), government entities, local businesses of concern including nurseries, pet stores, bait shops, lawn services, logging companies, agricultural entities, wildlife organizations and constructions companies...	Ongoing

Objective 3: Inventory priority areas or areas of concern within the tri-county region for invasive species (as determined by the steering committee, CISMA coordinator and partners). Respond to community reports of tier 1 and tier 2 species, and perform early detection.

- Surveying for invasive infestations will be important to the planning process for JLW CISMA, and will include surveying priority areas for new infestations, sites of concern, and areas of concern that are identified by partners
- Priority areas for early detection survey includes high traffic areas, public access sites, and general areas where the threat of new invasive species being brought in or transferred to other areas exists if it is a new species

Outcome	Frequency
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Identify an Early Detection and Response (EDR) watch list (based on our priority list)	Ongoing
Identify a list of priority species for the tri-county area	Updated at the same time as the strategic plan (and as needed)
Promote the use MISIN for detection, reporting and mapping of established and new invasive species to partner organizations	Ongoing
Host identification field survey events within the JLW CISMA boundaries, prioritize regions that are in high use/traffic areas, and have public access points	Three a year (one in each county)
Track new reports of Tier 1 species, and maintain a database of where sites are, if they have been verified.	As they are reported/called in
Include new sightings of Tier 1 species in the DNR grant “deliverables” excel file	As they are reported/called in
Host training seminars on ID and treatment techniques for commonly encountered invasive species (work with partners to identify those prior to each seminar)	At least three a year (one in each county)

Objective 4: Rapid response and strategic management of invasive species

- Invasive species treatment by the CISMA and sites treated will be determined by the steering committee based on the tier system and prioritization protocol listed below.
- Treatments will be conducted in a proper manner, following best practices for individual species, obtaining correct permits as needed, and following decontamination guidelines to prevent the spread of invasive species to other areas
- To encourage invasive species control and eradication, and if funding is available, offer small grants to residents and partner organizations

Before conducting work (survey or treatments) on public or private lands, a consent letter signed by a CISMA representative and an authorized governmental unit (or private landowner) that owns the land will be obtained	Ongoing
Treat priority invasive species at locations chosen by the Steering Committee	Ongoing
Report JLW CISMA sites to MISIN treatment tracker as well as treatments being	Ongoing



conducted by partner organizations (See Appendix B)	
Monitoring of treatment sites is conducted by partner organization/homeowner with results being reported to the JLW CISMA.	Ongoing
Develop and distribute management resource information packets for property owners for species treated	Ongoing
Purchase treatment equipment for use by Strike Team	As needed
Develop a strike team, including a team leader to treat, monitor and document invasive species within the CISMA	Ongoing (Year two)
If funding permits, have a small grants program geared towards residents ( <i>cont'd</i> ) and partner organizations to aid in the treatment of priority species	Yearly call for grants. If funds are not available, seek out grants on a continual basis
If funding permits, encourage or participate in efforts to restore habitat post removal of invasive species (e.g. seeding, planting etc...)	If funding permits

To control and eradicate invasive species within Jackson, Lenawee and Washtenaw Counties, small grants may be applied for by private residents and partner organizations for projects in line with the JLW CISMA's goals and objectives. Small grants may be applied for based on the tier system and prioritization list below. In extenuating circumstances, or regions with multiple landowner collaborations, larger grants may be applied for at the discretion of the steering committee and if funding permits. The Steering Committee will determine what grants get funded using the tier system and prioritization list.

Tier System: Species chosen as a reflection of what community needs have been, and those that have newly detected and that we feel we can contain the spread of that species

Tier 1 species have limited distribution or are localized, where early detection and timely reporting is integral for stopping their spread and minimizing the negative ecological and economic impacts. A "Tier 1" species reporting would result in a site visit, notification of the steering committee, working with the steering committee, state and affected partners/stakeholders to create a strategic "early detection rapid response plan-of-action", with input by the broader CISMA partners. Subsequent tiers of species may or may not be localized or have limited distribution. Tier 2 species would involve a site visit at the discretion of the CISMA coordinator or steering committee, potential treatment or management effort (with guidance from the steering committee using the prioritization ranking system below) and include distribution of education materials if requested by affected stakeholders. Tier 3 species

would involve a site visit at the discretion of the Cisma coordinator, notification of the MISGP technical liaison (Christina Baugher, if terrestrial, then also Greg Norwood from the DNR to determine if it is still a species of concern to the state). Tier 3 species will be included in various outreach/educational activities, may be considered for treatment or management at the discretion of the steering committee if funding permits, and/or located in one of the prioritization areas listed below. Tier 4 species would be included in various education and outreach efforts, with distribution of educational materials to partners and affected residents if they request information. Any action taken at each tier is contingent upon availability of funds and resources. Efforts will be made to document and upload information on to the MISIN platform if it hasn't already been documented for species, regardless of what tier they are assigned.

Tier 1 : Japanese stilt grass, Parrot feather\*, and possible future DNR/DEQ new species of interest\*\*

Tier 2: Japanese knotweed, Giant hogweed and Phragmites

Tier 3: Existing populations of DNR invasive species of specific interest (as listed on the DNR watch list)

Tier 4: All other existing invasive species

Prioritization (one point for each condition):

- I. Site is prioritized in a conservation plan\*\*\* as determined by the JLW Cisma
- II. Site is considered a high traffic/activity area with a potential for spread
- III. Strong partner support and resource availability
- IV. Site is publicly accessible/visible
- V. Site is privately owned but contiguous to a prioritized site
- VI. Site is privately owned but protected by a conservation easement
- VII. Site is privately owned but owner is willing to provide financial match for treatment

*Sites with higher scores will be treated first. Ultimate decisions will be made by majority vote of the Steering Committee.*

\*Parrot feather is a tier 1 species for monitoring and education

*\*\*If any populations of "Watch List Species or MDNR species of specific interest" are detected that are new to the region, that species will become the tier 1 species, and each subsequent tier will be adjusted accordingly*

*\*\*\* Conservation plans may include but are not limited to the watershed conservation plans, county/municipal planning documents, multi-jurisdictional conservational plans that identify*

*high priority areas etc.. For individual sites/residential properties, a conservation plan can be a management plan created for that site.*

**Objective 5: Ensure the long-term sustainability and function of the JLW CISMA**

- Continue to seek funding to support CISMA activities, funding that:
  - Allows adequate staffing
  - Ability to produce and disseminate educational materials
  - Attend meetings, trainings and conferences and be updated on emerging issues
- Maintain and reaffirm partnerships and collaborative opportunities, seek out new partners

<b>Outcome</b>	<b>Frequency</b>
JLW CISMA staff will seek out funding from a variety of sources to support and enhance CISMA activities (e.g. seasonal employees, field crew, new outreach initiatives etc.)	Ongoing
JLW CISMA partners organizations will seek out funding and additional grants to benefit the CISMA mission and activities (e.g. treatment and outreach)	Ongoing
Maintain partner and collaborator engagement invasive species management	Ongoing
Seek out new partners	Ongoing
Survey partner needs and determine what activities are needed moving forward	Yearly
Update priority species list and tiers, taking into account local needs and State priority species	Every two years, or as needed
Continue to use and promote invasive species reporting sight MISIN, and explore new programs at regional, state and federal levels	Ongoing
Continue the development and distribution of outreach materials to stakeholder groups (and ensure that funding exists for staffing and material development)	Ongoing
Continue to hold partner and steering committee meetings	Ongoing

<p>Develop a formal contingency plan to address how the JLW CISMA will operate if no external funding is received</p>	
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## VIII. Strategies

### Objective 1: Maintain the functioning of the JLW CISMA

- a) Jackson, Lenawee and Washtenaw Conservation Districts will work closely together to carry out the outreach activities, and to coordinate activities located within their respective counties
- b) A steering committee will consist of three to seven members. The core team will consist of three to four permanent (one representative from each of the conservation districts plus the JLW Coordinator if funding permits). One additional representative from each county will be asked to serve on the committee and will be pulled from partner organizations. The committee will meet once every two months to discuss the progress of the JLW CISMA and to make decisions regarding activities of the CISMA with input from partner organizations. Any decisions made at the steering committee meeting will occur through voting and must pass by majority. Opportunities to serve on the steering committee will be announced via JLW CISMA communications and will be on a volunteer basis. In the event many individuals volunteer, the core steering committee members will select members to diversify the background, knowledge and interests of the committee to best serve the JLW CISMA. The expectation is that core members will be able to track the diversity of previous members, their affiliations, thus balance both long and short term needs and objectives of the JLW CISMA.
- c) A governance document will be created to guide meetings and decision-making process. This will be reviewed every year in conjunction with the strategic plan.
- d) A yearly anniversary meeting (March of each year) will be held to celebrate and reflect on the activities of the JLW CISMA, and provide input to the future development of CISMA activities

### Objective 2: Organize and provide invasive species education, outreach and engagement.

- a) The JLW CISMA and its partner organizations will seek out opportunities to increase awareness about the CISMA and the invasive species within and threatening its borders. These opportunities will include, but are not limited to outreach focused programs, county fairs, AIS landing blitz's, adopt a stream events, partner events and classrooms.
- b) JLW CISMA staff will recruit experts on various topics associated with invasive species that are of concern to residents within the JLW CISMA boundary and speak at CISMA sponsored events such as seminars and training events.

- c) Collaborate, assist and/or promote partner training activities and programs that increase community awareness on the topic of invasive species and to increase identification skills
- d) Partner organizations will provide input to future CISMA activities (through emails and at meetings) and help seek out or provide opportunities at their events for outreach/education activities.
- e) Educational materials will be developed and distributed as needed.

Objective 3: Inventory priority areas or areas of concern within the tri-county region for invasive species (as determined by the steering committee, CISMA coordinator and partners), respond to community reports of tier 1 and tier 2 species, and perform early detection.

- a) The JLW CISMA will encourage and train partners and citizens to report invasive species to MISIN
- b) Conduct surveys and public ID training events within the region to monitor for priority invasive species. Surveys should follow proper decontamination procedures as outlined by the State of Michigan<sup>7</sup>. These trainings will support the CISMA's efforts to increase awareness and increase accuracy of field identification of invasive species.
- c) Support partner efforts in surveying for invasive species
- d) Priority species will be determined by the CISMA Steering Committee with input by partners, and consider species listed on the State of Michigan's invasive species watch list (see Appendix A).
- e) In order to track new occurrences of "Tier 1" species, a log will be created with information that allows the JLW CISMA to record if the site has been visited, species verified and the date of both occurrence and verification.
- f) If contacted by partners or members of the community regarding help identifying a tier 1 or tier 2 species, photos and written descriptions will be requested. Based on the prioritization model identified in section 4 objective 4, the coordinator and/or CISMA staff will perform field visits to identify, document and assess scale of infestation
- g) If rapid response is needed, follow through with objective 4 "rapid response and strategic management of invasive species" as directed by steering committee

Objective 4: Rapid response and strategic management of invasive species

- a) The JLW CISMA will provide treatments of local populations of invasive species as determined by the direction of the steering committee and available funding.
- b) Treatment site selection will be determined using a tiered points system (as outlined in section IV, objective 4). The ranking system will be reviewed every two years (or earlier if needed) to incorporate new species and changing circumstances.

- c) Established best management practices and protocols will be followed during any treatment and survey efforts. In the absence of established protocols, expertise and treatment experience by our partners and the DNR/DEQ will be used to develop a protocol for treatment. Treatment will be conducted by partner organizations, contracted labor (after receiving at least 3 bids) or the CISMA strike team (when established and licensed).
- d) Annual monitoring of treatment sites will be the responsibility of the respective land owner. The CISMA will perform a site visit post treatment, and monitor treatment sites post treatment as needed.
- e) The JLW CISMA will provide information and resources about invasive species management and treatment as requested by residents and partner organizations.
- f) To encourage treatment of invasive species, and if funding permits, the JLW CISMA will have a small grants program. This program will allow for partners and private citizens to apply for funds for treatment of invasive species as specified in section IV, objective 4.
- g) To encourage habitat restoration post invasive species removal. If funding exists, encourage efforts to re-plant, re-seed or generally support initiatives to manage resources that promote native species and increase biodiversity.

Objective 5: Ensure the long-term sustainability and function of the JLW CISMA

- a) Funding will be identified and pursued by the Steering Committee, the coordinator and partners to support JLW CISMA activities.
- b) A yearly survey to partners will be performed to determine partner needs, questions and requests. In the absence of funding, the survey will serve to update the partners on CISMA activities.
- c) It is important to continue seeking out new partners across the region. The JLW CISMA will organize a yearly county partner recruitment/showcasing meeting. Partners and representatives of potential partners will be invited by the JLW CISMA in conjunction with the respective county conservation district. The CISMA will provide an overview of CISMA events, and area partners will be invited to update their activities/treatment. Potential partners can learn about the CISMA and leave with information on how their organization can be a CISMA partner.
- d) If no funding is available, essential roles will be designated to partner organizations.
- e) Appendix C shows the organizational structure of the JLW CISMA

IX. List of Current Partners

Jackson Conservation District (fiduciary organization)  
Lenawee Conservation District (core member)  
Washtenaw Conservation District (core member)  
Jackson County  
Jackson County Department of Transportation

Jackson County Drain Commissioner  
Jackson County Parks  
Lenawee County Road Commission  
Men's Garden Club (Jackson)  
Michigan Autobahn Society  
Michigan Lake & Stream Associations, Inc.  
Michigan Nature Association  
MSU-Extension (Jackson)  
Natural Resources Conservation Service  
River Raisin Watershed Council  
The Nature Conservancy (Michigan)  
The Stewardship Network  
Upper Grand River Watershed Alliance  
Washtenaw County Road Commission  
Washtenaw County Water Resources

X. Appendices

**Appendix A. Michigan's Watch List Species**

*Insects and Tree Diseases* (Tree diseases list the scientific name for the pathogen or fungus associated with the disease)

- Asian longhorned beetle (*Anoplophora glabripennis*)
- Balsam wooly adelgid (*Adelges piceae*)
- Hemlock wooly adelgid (*Adelges tsugae*)
- Thousand cankers disease (*Geosmithia morbida*)

*Mammals*

- Nutria (*Myocastor coypus*)

*Terrestrial Plants*

- Asiatic sand sedge (*Carex kobomugi* Ohwi)
- Chinese yam (*Dioscorea oppositifolia* L.)
- Himalayan balsam (*Impatiens glandulifera*)
- Japanese stiltgrass (*Microstegium vimineum* (Trin.) A. Camus)
- Kudzu (*Pueraria montana* var. *lobata*)
- Mile-a-minute weed (*Persicaria perfoliata*)

*Aquatic Plants*

- Parrot feather (*Myriophyllum aquaticum*)
- Yellow Floating Heart (*Nymphoides peltata*)
- European frog-bit (*Hydrocharis morsus-ranae*)
- European Water-clover (*Marsilea quadrifolia*) – This species is currently allowable for sale and possession. Please contact the DEQ if these plants are observed outside of cultivation.
- Brazilian elodea (*Egeria densa*)
- Hydrilla (*Hydrilla verticillata*)
- Water chestnut (*Trapa natans*)
- Water hyacinth (*Eichhornia crassipes*) – This species is currently allowable for sale and possession. Please contact the DEQ if these plants are observed outside of cultivation.
- Water lettuce (*Pistia stratiotes*) – This species is currently allowable for sale and possession. Please contact the DEQ if these plants are observed outside of cultivation.
- Water soldier (*Stratiotes aloides*)

#### *Fish and other Aquatic Animals*

- Invasive carps
  - Silver carp (*Hypophthalmichthys molitrix*)
  - Bighead carp (*Hypophthalmichthys nobilis*)
  - Grass carp (*Ctenopharyngodon idella*)
  - Black carp (*Mylopharyngodon piceus*)
- Northern snakehead (*Channa argus*)
- Red swamp crayfish (*Procambarus clarkii*)
- New Zealand mud snail (*Potamopyrgus antipodarum*)

#### **Appendix B: Treatment tracker links**

Coordinated by Claire Peterson (MISIN) Tel: (517) 355-5965):

<https://portal.aset.msu.edu/arcgis/apps/webappviewer/index.html?id=a7cce199d7d64fe68c5368fc3b436300>

<https://www.misin.msu.edu/files/maps/treatmenttracking/>

Help document: [http://www.misin.msu.edu/files/docs/treatment\\_help.pdf](http://www.misin.msu.edu/files/docs/treatment_help.pdf)

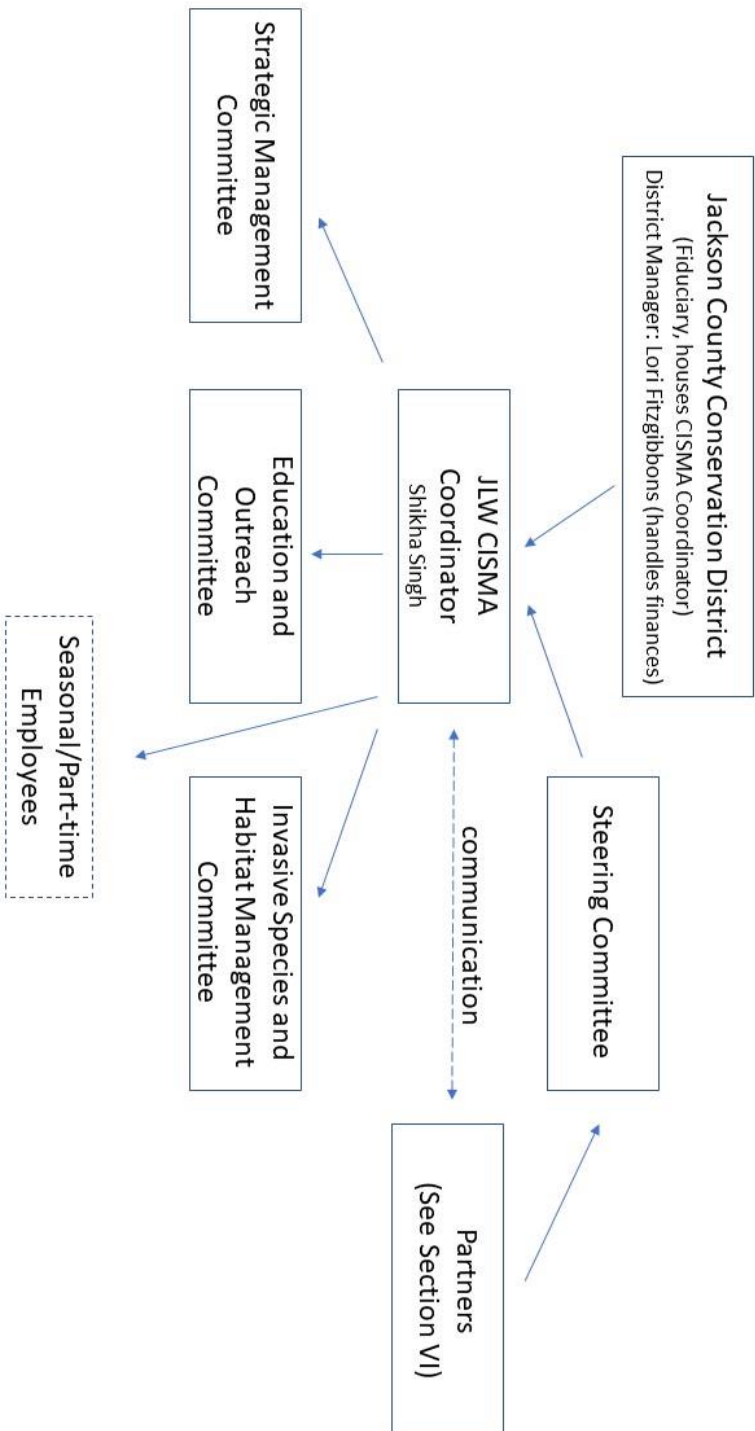
Data Dictionary:

[http://www.misin.msu.edu/files/docs/2018\\_Data\\_Dictionary.pdf](http://www.misin.msu.edu/files/docs/2018_Data_Dictionary.pdf)



Appendix C: Organization structure

Jackson-Lenawee-Washtenaw Cooperative Invasive Species Management Area  
Organizational Chart (2018)



## References

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