



Oakland County Cooperative Invasive Species Management Area (Oakland County CISMA) 2020 Annual Report

Executive Summary

A pause in Michigan Invasive Species Grant Program funding in April 2020 caused a significant impact on Oakland County CISMA's work. Though the pause was eventually lifted, the reduced staff capacity over the survey and treatment season caused a reduction in acres surveyed and treated. Despite these challenges, Oakland County CISMA embraced new technology in 2020, transitioning our partner and public meetings to webinars, maintaining the county right-of-way *Phragmites* treatments and continuing to follow-up on watch list species reports.

Oakland County CISMA reached several hundred thousand Oakland County residents to educate them about invasive species through Facebook posts, newspaper articles and at public events and webinars. The Steering Committee met eleven times and partners were educated about invasive species topics such as reducing plant and pet escapes, prescribed fires and invasive species ordinances. The second joint Oakland County CISMA and Lake St. Clair CISMA meeting was held remotely, with invited speaker Sarah LeSage on the topic of the state's invasive species prioritization.

Oakland County CISMA staff surveyed 95.5 acres and discovered 84 occurrences of priority invasive species including knotweed, swallow-wort and *Phragmites*, 4 watch list species detections (European frog-bit, Chinese yam, and European water clover) as well as 208 occurrences of non-priority invasive species. Hundreds of acres of county road right-of-ways were also surveyed resulting in thousands of additional survey line segments. Oakland County CISMA staff and partners conducted limited surveys for the emerging invasive European frog-bit, and discovered one new location where a hand pull was later conducted. In addition, we launched an expanded frog-bit survey project with partners the Clinton River Watershed Council, Friends of the Rouge and the Huron River Watershed Council. We designed postcards to mail to private landowners at proposed survey locations as well as a brochure about European frog-bit, and hosted our first virtual public meeting about the project.

During 2020, Six Rivers Land Conservancy, on behalf of the Oakland County CISMA held four grants from the Michigan Invasive Species Grant Program—IS18-6006 funding the Director's position through July 2020, IS19-7008 funding the Director's position beginning in August 2020, IS17-1209 funding Technician Emily Messick's position, and IS19-3003 funding an expanded frog-bit survey project. The Road Commission for Oakland County provided an additional \$25,000 for treatment of non-native *Phragmites* along county roads, with many municipalities matching their local costs as three contractors treated 70 miles of right-of-ways.



Six Rivers Land Conservancy continues to serve as fiduciary for the Oakland County CISMA, though that will transition to Oakland County Parks and Recreation in 2021. There were 45 CISMA member organizations and four active subcommittees at the end of 2020.



Invasive Species Survey and Treatment

Surveys

Oakland County CISMA staff surveyed 409 miles (744 acres) of RCOC ROWs in Brandon, Holly and Orion townships. This represented the first ArcGIS online map data available for Brandon and Orion townships. CISMA staff also surveyed 90.5 acres of Holly Township Parks as part of a paid project and 5 acres of partner sites in preparation for chemical treatment. CISMA staff discovered 84 occurrences of priority species including knotweed, swallow-wort and *Phragmites*, 4 watch list species detections (European frog-bit, Chinese yam, European water clover) as well as 208 occurrences of non-priority invasive species. CISMA staff recorded survey data on the CISMA ArcGIS online survey layers.

In 2020, CISMA staff visited 13 private properties in 13 different communities at the request of homeowners and/or the state of Michigan. Common invasive species were identified and homeowners were provided with information about invasive species management. CISMA staff also helped diagnose one instance of oak wilt in the county. In addition, CISMA staff visited partner and potential partner properties to provide invasive species identification, control and mapping.

CISMA partners collected 39 survey occurrences. Ryan Dividock added older CISMA survey data onto the current CISMA ArcGIS online map (923 occurrences). iNaturalist data for CISMA priority and watch list species from 2020 was reviewed and added to our ArcGIS online layers (27 occurrences). Some of the iNaturalist reported sites included swallow-wort and wild parsnip along the Clinton River Trail in Rochester Hills.

Treatment

Six Rivers Land Conservancy continues to maintain an Aquatic Nuisance Control Certificate of Coverage (ANC COC) and National Pollution Discharge Elimination System (NPDES) permit on behalf of Oakland County CISMA from the Michigan Department of Environment, Great Lakes and Energy. Those permits covered CISMA projects as well as some partner projects.

Phragmites treatment along county road rights-of-ways

The Road Commission for Oakland County (RCOC) provided an additional \$25,000 for treatment of *Phragmites* in county road rights-of-way (ROW). This was combined with a fund balance from 2019, to bring the total funding available to \$35,500. Local cities, villages, and townships (CVTs) provided 50% match of RCOC funds whenever possible, bringing total potential treatment funding to \$58,447.89. Erica Clites managed the ROW contract on behalf of the CISMA. RCOC handled questions and complaints from county residents through their customer service department. Oakland County CISMA posted a legal notice of the upcoming ROW treatment in the Oakland Press, as required. Many municipalities also included a notice about the road right-of-way treatments in their newsletters or on social media.



Clites solicited and received bids from current county contractors, contracts were reviewed and signed by Six Rivers, and virtual pre-treatment meetings were held with contractors. Fall treatments were completed along county ROWs across Oakland County. PLM Lake and Land Management Corp. performed ROW treatments in Addison, Brandon, Commerce, Groveland, Milford, Oakland and Orion townships, as well as in Wixom. PLM performed treatments in September.

Cardno Inc. performed ROW treatments in Highland, Holly, Independence, Oxford, Rose, Waterford, West Bloomfield and White Lake townships as well as in Auburn Hills, Village of Holly, Lake Angelus, Orchard Lake Village, and Pontiac. Clarkston road rights-of-ways were treated under a separate contract with the village of Clarkston. Cardno performed treatments in September and October. Some *Phragmites* senesced before treatment took place. Next year treatments will need to be completed by 10/1.

GEI Consultants performed ROW treatments in Bloomfield, Lyon and Springfield townships, as well as the cities of Birmingham, Bloomfield Hills, Farmington, Farmington Hills, Madison Heights, Novi, Rochester, Rochester Hills, South Lyon, Southfield and Troy as well as the villages of Beverly Hills and Franklin. GEI performed treatments in September and October. Some *Phragmites* senesced before treatment. Next year treatments will need to be completed by 10/1. Contractors delivered treatment data as polygons in ArcGIS online, which has been added the 2020 Chemical Control Treatments layer. Acreage and mileage estimates provided were derived from ArcGIS online layers.

Contractors treated 70 linear miles of county road right-of-ways to control *Phragmites*. This represented 100% of *Phragmites* infestations currently mapped in county road right of ways.

Demonstration treatment projects

The Tier 2 MISGP grant funded treatment of Cisma priority species at demonstration projects at locations with high visibility or high quality natural areas. Cisma partners nominated nine locations. Because of the timing of the funding pause, we were unable to complete treatments of swallow-wort or knotweed (5 sites). Oakland County Cisma staff decided to complete the flowering rush treatment in Oakland Township near Adams and Silverbell roads. This treatment was mostly limited to the county road right-of-way due to poor access conditions. Two of the nominated sites were withdrawn due to lack of owner permission to proceed. Erica Clites bid out the final *Phragmites* project and PLM Lake and Land Management Corp. was chosen to complete the treatment. Emily Messick conducted a field visit with project partners and PLM prior to the treatment at a North Oakland Headwaters Land Conservancy property.

Oakland County Cisma also facilitated the treatment of *Phragmites* at the RCOC Waterford office by surveying the area, soliciting bids and ensuring payment (2.5 acres). The 2020 National Pollutant



Discharge Elimination System (NPDES) and Aquatic Nuisance Control (ANC) permits treatment reports were successfully submitted to EGLE before the November 30 deadline. CISMA staff also did pre-treatment monitoring for 17 sites where *Phragmites* or flowering rush will be treated to track treatment effectiveness.

Steering Committee Meetings

Eleven Steering Committee meetings took place during 2020. Special guest speakers included:

- Paige Filice from MSU Extension on preventing invasive species introductions through research based outreach to hobbyists and retailers in the pet and garden trade
- Sarah LeSage from the Michigan department of Environment, Great Lakes and Energy on watch list species prioritization (joint meeting with Lake St. Clair CISMA)
- Mike Hahn of the City of Ann Arbor Natural Area Preservation on prescribed burning
- McKenzi Waliczek from the Lake St. Clair CISMA on *Phragmites* treatment techniques including cut and drown
- Paul Sniadecki from Michigan Lakes and Streams Association on Invasive species ordinances and funding mechanisms
- Dr. Marianna Szűcs and Brianna Foster from Michigan State University on field releases of a biocontrol moth for swallow-wort

In addition, there was a workshop on treating invasive species on private lands for municipalities (led by Erica Clites), various funding and staffing updates, as well as explanations of the proposed fiduciary transition to Oakland County Parks and Recreation.

Public Education and Outreach

The Oakland County CISMA hosted three public events and five webinars in 2020. These included:

- Managing invasive species treatment contracts workshop; January 29; 9 attendees
- Farmer's market manager training on invasive species; February 26; 3 attendees (snow); This training was a collaboration with surrounding CISMAs, as well as the Michigan Department of Agriculture and Rural Development. Flyers were also created and distributed.
- Learn to identify and report invasive species webinar; September 29; 36 attendees
- Invasive Species Paddling event with Slow Row Lake Orion; October 11; 15 attendees; 1 kayak washed
- Oakland County's next invaders: watch list invasive species webinar; November 10; 14 attendees
- Invasive Species Summit; November 14; 122 attendees! See speakers below.
- Protect your oak trees: Oak wilt: an invasive fungus webinar with Julie Stachecki; November 18; 22 attendees
- European frog-bit public meeting webinar; December 10; 24 attendees



Oakland County CISMA rescheduled the Spring Invasive Species Summit from March to a virtual event co-hosted with the Lake St. Clair CISMA November 14. Presentations were given by: Erica Clites, McKenzi Waliczek (Lake St. Clair CISMA Coordinator), Sue Tangora (DNR Forestry Division), Erick Elgin (MSU Extension), Keith Salowich (City of Novi), and Emily Messick. There was also a brief presentation by Eric Diesing (Clinton River Watershed Council) and vendor talks by GEI and Natural Community Services. MSU Extension and Paige Filice hosted the Summit as a Zoom webinar and feedback was positive. The Summit will be expanded to additional CISMAs in 2021.

Erica Clites also presented to the following groups:

- mParks conference; January 30; est. 20 attendees
- Oakland Audubon Society; February 11; 40 attendees
- Milford Rotary; February 27; 9 attendees
- Clarkston Planning Commission meeting; November 2; 6 attendees
- UMISC CISMA session; November 4; unknown attendees

Outreach tabling was conducted at:

- DNR Outdoor Adventure Center's Meet Michigan's Great Lakes Invaders event; February 29; 101 contacts
- West Bloomfield Parks and Recreation Earth Day Every Day; September 10; 24 contacts

Oakland County CISMA purchased pens and boot cleaners, which were distributed at events. Clites posted the public version of the Oakland County CISMA brochure on the website and made contractor lists available. Clites continued to add contacts to the friends email list and send messages there about upcoming events.

Other outreach videos

- We posted video of CISMA webinars on the CISMA [YouTube page](#) (see more below on these efforts).
- A revised version of the frog-bit survey video was created by Erica Clites that included footage of a rake toss to look for submerged species.

Media coverage (newspaper)

All links to newspaper articles are found on the Oakland County CISMA website:

<https://oaklandinvasivespecies.org/news-and-events/>



Date	News outlet	Topic	Circulation
March 3	Huron Daily Tribune	State-wide CISMA efforts	Unknown
March 4	Spinal Column	Frog-bit grant and survey efforts	51,516
March 13	Detroit News	CISMAs and red swamp crayfish	unknown
August	The Villager, Beverly Hills newsletter	Reporting invasive species including <i>Phragmites</i> and buckthorn	~4000
September	Oakland County Conservation Connections newsletter	Featuring CISMA invasive species in your backyard graphic	~500
December 1	Rochester Media	Frog-bit public meeting notice	unknown
TOTAL			56,000

Partner statistics

In addition to these efforts, many CISMA partner organizations shared our Facebook posts, added invasive species content on their webpages, included invasive species content in their newsletters, got articles included in their local paper, led hikes with focus on invasive species, completed invasive species surveys, removal and control, distributed brochures from their offices and many other efforts! We appreciate everyone's dedication to spreading the message! These efforts reached at least 50 people in person and 21,100 online!

Oakland County CISMA website

The Oakland County CISMA standalone webpage (<https://oaklandinvasivespecies.org/>) continued to be updated with feedback from partners in the early part of 2020. We added a page on the frog-bit survey project, as well as about invasive species on private land. We updated resources such as the contractor list, and events pages. The webpage was viewed by 2,334 users in 2020, and 90% of those were new visitors. Emily Messick created a [Flickr page](#) to help people identify invasive species.



Oakland County Cisma YouTube page

In 2020 due to the pandemic, we shifted many events online and began to record and post the videos on our [YouTube page](#). Our page now has 12 videos with 205 views and 19 subscribers. We expect to continue to add video offerings in 2021.

Oakland County Cisma Facebook page

In 2020, 179 Facebook posts reached at least 42,700 people! In addition to Erica Clites and Emily Messick, Amy Hillman created and shared posts, including reaching out to local community groups through Facebook. The posts with the highest number of impressions discussed: European frog-bit in Novi (1,806), garlic mustard (1,718 and 1,214), purple loosestrife ID and control (3,117), Asian bittersweet (1,591), red swamp crayfish webinar recording (1,376), spotted lanternfly alert (2,937), invasive honeysuckles (4,165) and citizen science detection of dead spotted lanternflies (3,340). Most of these posts are a photo of an invasive species with some brief information on identification or control, timed with what people are seeing outside. Most of the reach was through Cisma partners and others sharing our posts. In addition, eight event pages were created on Facebook to promote Cisma activities. The event pages reached 56,600 people. The total reach from our Facebook page in 2020 was 100,400 impressions! The OC Cisma Facebook page had 673 followers as of 12/31/2020.

Early Detection and Response (EDR)

European frog-bit

In December 2019, Oakland County Cisma received Michigan Invasive Species Grant Program funding for an expanded European frog-bit survey project in southwestern Oakland County. Oakland County Cisma is the lead organization. Friends of the Rouge and the Huron River Watershed Council staff will be conducting surveys on public and private land. Clinton River Watershed Council staff are assisting with limited surveys and the development of frog-bit outreach materials. This grant was executed in March, then paused in April. The grant resumed in August and limited activities took place in the fall.

In 2020, only limited surveying for frog-bit took place. Oakland County Cisma staff and survey project partners conducted surveys of 31 sites for European frog-bit in the Novi, Wixom and Milford Township, discovering one new location with frog-bit (a city of Novi retention pond). This brings the total number of small water bodies with frog-bit to 17. Erica Clites and Emily Messick assisted Blake Cahill of Central Michigan University with identifying water bodies to conduct pre- and post- treatment monitoring. Oakland County Cisma also followed up on reports received from the public through MISIN or iNaturalist reporting suspected frog-bit. All survey data was added to the ArcGIS online Survey_Pt layer.



A city of Novi retention pond near 11 Mile and Taft roads was chosen for a hand pull, which was completed by Clites, Messick, Tom Alwin, Billy Keiper and two interns from Michigan's Department of Environment, Great Lakes and Energy (EGLE). The small retention pond across from Island Lake was treated with EGLE funds and permit. Both treatments were effective based on Blake Cahill's data collection, with a reduction from 15% to 1% frog-bit at the Novi retention pond and a reduction to 0% of frog-bit in the Island Lake retention pond.

In February 2020, Erica Clites and Emily Messick participated in a two-day European Frog-bit Collaborative meeting at Central Michigan University. Clites offered to help lead a work group that was designing a state-wide survey data collection layer and has remained active in providing feedback on a draft Survey123 app.

Other species

Erica Clites discovered the first instance of Chinese yam in Oakland County, in a yard in Madison Heights. The homeowner was educated about Chinese yam and monitoring will continue in future years. Limited surveys of Pontiac and Clarkston were completed and no Chinese yam was observed.

Kegan Schildberg of Huron-Clinton Metroparks reported the aggressive invader porcelainberry (*Ampelopsis brevipedunculata*) in the Detroit area. Emily Messick subsequently followed up on MISIN and iNaturalist reports of porcelainberry, confirming it in two locations on the Cranbrook Schools campus. Cranbrook plans to control the plant in future years.

Erica Clites identified wine raspberry (*Rubus phoenicolasius*) in one location on the Oakland University Preserve.

Erica Clites and frog-bit survey project partners assisted Michigan DNR Fisheries Division with checking red swamp crayfish traps in retention ponds and removing the red swamp crayfish present. Oakland County Cisma staff follow-up on crayfish reports received from the public as well.

Erica Clites continues to receive and review MISIN and iNaturalist reports received from Oakland County and follow up on any reports that may be watch list species. We continue presenting a watch list minute feature at Steering Committee meetings to ensure partners can spot watch list species. Emily Messick presented on Himalayan balsam and Japanese stiltgrass. Erica Clites presented on Asian longhorned beetle, Chinese yam, European frog-bit, Water lettuce and spotted lanternfly in 2020.



Funding / Revenue

Michigan Invasive Species Grant Program

The pause in the state's discretionary spending in April required that changes be made to all of Oakland County CISMA's grants once funding was resumed in July or August. Funds in the IS18-6006 grant were successfully spent out by November, and a final report will be submitted early in 2021. The 2017 MISGP Tier 2 grant (IS17-1209) was extended through 12/31/2021, with \$15,000 of additional treatment work to be completed in 2021, as well as salary for surveys and prioritization work. The new frog-bit survey grant (IS19-3003) will be extended through January 2023, with the bulk of field work beginning in 2021.

Generally, Oakland County CISMA, through Six Rivers Land Conservancy (SRLC), requests reimbursements from the state of Michigan every three to four months. SRLC applied for a new core grant on behalf of Oakland County CISMA in December. Awards for 2020 have yet to be announced.

Oakland County Cares Act grant

Oakland County CISMA received a \$30,000 grant through an Oakland County grant program for environmental stewardship non-profits. A portion of the funds were used to obtain equipment to create CISMA videos and enhance videoconferencing, in order to reach more people remotely. In addition to a few other supplies including PPE and equipment for socially distant work days, the remainder of the funds were used toward CISMA staff salaries in 2020. These salary savings will be used to hire a temporary full-time employee to create brochures, videos and other outreach materials in 2021.

Additional Funding

The Road Commission for Oakland County (RCOC) provided \$25,000 for treatment of *Phragmites* in county road rights-of-way (ROW), which was combined with a balance from 2019 treatments. Local cities, villages, and townships (CVTs) provided 50% match of RCOC funds whenever possible, bringing total treatment funding to \$58,447.89.

A voluntary CISMA membership contribution of \$250 was again requested in 2020 to support operating expenses not covered by the current MISGP grants. In 2020, \$5000 in operating contributions were received from 20 municipalities. These funds were used for pesticide insurance and permit fees, outreach supplies including CISMA pens and boot cleaners, staff professional development and web hosting fees. Holly Township provided additional PEG funds for invasive species outreach (\$2000) and funding for survey work and private land letters during the funding pause (\$2300). Additional funds were received from Springfield Township to cover speaker fees of Julie Stachecki for a virtual oak wilt lecture (November). Contributions were received from several sponsors and partners for the Spring Invasive Species Summit, totaling \$1300.



Future funding

With the help and support of our municipal partners, funding for Oakland County CISMA was included in a millage renewal for Oakland County Parks and Recreation that was passed by voters in November. These funds will begin being assessed in 2021. In addition to supporting CISMA staff, funds will be available for invasive species treatment, with criteria for use of these funds to be announced.

Organizational Structure and Function

Six Rivers Land Conservancy (SRLC) continued to serve as fiduciary for the Oakland County and Lake St. Clair CISMAs in order to advance their overall conservation mission. SRLC holds the MISGP grants on behalf of Oakland County CISMA, employs CISMA staff, holds required permits and receives and pays out funds as appropriate. SRLC maintains a separate banking account for CISMA funding and maintains invoices and payment records in QuickBooks.

OC CISMA Technician Emily Messick transitioned to full-time in January 2020 by combining CISMA-funded work with contract work from SRLC. Erica Clites and Messick were laid off for a month due to the funding pause in April, then worked part-time for three months, before resuming full-time work in mid-July. Messick primarily worked on contract projects after the funding pause but gradually transitioned back to CISMA work.

Oakland County Parks and Recreation continued to generously offer the CISMA Coordinator and Technician housing at their administrative headquarters at 2800 Watkins Lake Road in Waterford Township. Providing offices for CISMA staff continues to be used as match funds for the IS17-1209 grant.



2020 CISMA Executive Committee Members

Executive Committee Chair: Amy Hillman, Assistant Supervisor, Holly Township

Executive Committee Vice Chair: Sarah Cook-Maylen, Natural Resources Coordinator, Oakland County Parks and Recreation

Oakland County CISMA Secretary: Leslie Clark, Parks and Recreation Commissioner, Keego Harbor

Executive Committee Member-at-Large: Ryan Dividock, Principal Planner, Oakland County Economic Development and Community Affairs

Executive Committee Member-at-Large: Matt Einheuser, Natural Resources Manager, City of Rochester Hills

Oakland County CISMA Data Management Subcommittee Members

Erica Clites, Oakland County CISMA; Chair

Ryan Dividock, Oakland County Economic Development and Community Affairs

Erin Lavender, Oakland County Parks and Recreation

Emily Messick, Oakland County CISMA

Oakland County CISMA Education/Outreach Subcommittee Members (mostly inactive)

Amy Hillman, Holly Township; Chair

Erica Clites, Oakland County CISMA

Ryan Dividock, Oakland County Economic Development and Community Affairs

Oakland County CISMA Summit Planning Subcommittee Members

Erica Clites, Oakland County CISMA; co-Chair

Emily Messick, Oakland County CISMA; co-Chair

Sarah Cook-Maylen, Oakland County Parks and Recreation

Eric Diesing, Clinton River Watershed Council

Ryan Dividock, Oakland County Economic Development and Community Affairs

Amy Hillman, Assistant Supervisor, Holly Township

Ben VanderWeide, Oakland Township Parks and Recreation

Oakland County CISMA Treatment Subcommittee Members

Erica Clites, Oakland County CISMA; Chair

Sarah Cook-Maylen, Oakland County Parks and Recreation

Mike Losey, Springfield Township

Emily Messick, Oakland County CISMA

Kegan Schildberg, Huron Clinton Metroparks

Ben VanderWeide, Oakland Township Parks and Recreation



Oakland County Cisma Members as of 12/31/2020

Addison Township
Village of Beverly Hills
Charter Township of Bloomfield
City of Birmingham Parks and Recreation
Charter Township of Brandon
City of Village of Clarkston
City of Clawson
Township of Commerce
City of Farmington Hills
Township of Groveland
Township of Holly
Charter Township of Highland
Charter Township of Independence
City of Keego Harbor
Charter Township of Milford
Village of Milford
City of Novi
Oakland Township Parks and Recreation Commission
Charter Township of Orion
Village of Ortonville
Charter Township of Oxford
City of Rochester
City of Rochester Hills
Rose Township
Charter Township of Springfield
Charter Township of Waterford
West Bloomfield Township Parks and Recreation Commission
Charter Township of White Lake
City of Wixom
Village of Wolverine Lake
Total Cities, Village and Townships (CVTs): 30

Oakland County Conservation District
Oakland County Economic Development and Community Affairs (EDCA)
Oakland County Parks and Recreation Commission
Oakland County Water Resources Commission
Road Commission for Oakland County
Total Oakland County organizations: 5



Clinton River Watershed Council
Friends of the Rouge
Huron River Watershed Council
Michigan Nature Association
North Oakland Headwaters Land Conservancy
Oakland University
Royal Oak Nature Society
Six Rivers Land Conservancy, Highland Chapter
Six Rivers Land Conservancy
Southeast Michigan Land Conservancy
Total Non-profit partners: 10

Total Oakland County Cisma partners: 45



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Executive Summary

Oakland County CISMA efforts reached nearly half a million Oakland County residents to educate them about invasive species through Facebook posts, newspaper articles and at public events and webinars. The Steering Committee met eleven times and partners were educated about invasive species topics such Red swamp crayfish surveillance, living with *Lymantria dispar* (formerly gypsy moth), and winter mowing of woody invasive species. Steering Committee meetings remain primarily remote, with one in-person meeting held in September at Springfield Township Hall, followed by a field trip. Oakland County CISMA gained two new partners in 2021, with several other municipalities considering membership as well. Oakland County CISMA partners approved a new list of priority species and early detection species.

Oakland County CISMA staff surveyed nearly 2400 acres and discovered 762 occurrences of priority species including knotweed, swallow-wort and *Phragmites*, bittersweet, common & glossy buckthorn, garlic mustard, invasive honeysuckles, Japanese barberry, wild parsnip, and tree of heaven, as well as 444 occurrences of non-priority invasive species. Additionally, there was 1 watch-list species detection (Chinese yam) and 7 occurrences of early detection species including butterbur and porcelain berry. Thousands of acres of county road right-of-ways were also surveyed, resulting in thousands of additional survey line segments throughout the county. This data revealed that the density and amount of *Phragmites* on county primary, secondary and natural beauty roads continues to decrease with yearly treatments. The expanded European frog-bit project launched its first full year in the field with 238 acres surveyed by partners at the Clinton River Watershed Council, Friends of the Rouge, and the Huron River Watershed Council. European frog-bit was managed via hand pulls or chemical treatments, totaling 4.25 acres. No new sites with frog-bit were discovered, which is good news for Oakland County's lakes!

Oakland County CISMA hired a temporary Outreach Technician, Madelaine Corbin, an artist who designed four brochures, four rack cards, a treatment calendar graphic, a who-to-contact graphic, and five short videos. These materials were well-received and provided information for the public and partners, most of which were printed and could be distributed at events. We also continued to host webinars, present at partner events, and host our own events- reaching over 1100 individuals!

During 2021, Six Rivers Land Conservancy, on behalf of the Oakland County CISMA, held four grants from the Michigan Invasive Species Grant Program— IS19-7008 funding the Director's position through June 2020, IS20-8007 funding the Director's position beginning in June 2021, IS17-1209 funding Technician Emily Messick's position, and IS19-3003 funding an expanded European frog-bit survey project. The Road Commission for Oakland County provided an additional \$25,000 for treatment of non-native *Phragmites* along county roads, with many



municipalities matching their local costs. Three contractors treated 55 miles of right-of-ways throughout the county.

Six Rivers Land Conservancy continues to serve as fiduciary for the Oakland County CISMA, though that will transition to Oakland County Parks and Recreation in 2022. There were 47 CISMA member organizations and four active subcommittees at the end of 2021.



Steering Committee Meetings

Eleven Steering Committee meetings took place during 2021. Topics and speakers included:

- Red swamp crayfish surveillance and response (Dr. Lucas Nathan, DNR Fisheries Division)
- Frass frass everywhere: ‘gypsy moth’ history, impacts and tips for surviving an outbreak (Dr. Deb McCullough, Michigan State University)
- Invasive species control along the Polly Ann Trail (Linda Moran, Trail Manager)
- Winter mowing (Erica Clites, Sarah Cook Maylen and Luke Murchie)
- Utilizing the Oakland County CISMA ArcGIS mapping layers (Erica Clites)
- Combining methods for invasive species control (Dr. Ben VanderWeide)
- Controlling garlic mustard and other hand pull species (Erica Clites)
- Emerging invasive species (Erica Clites)
- Oakland County CISMA’s new outreach products (Erica Clites)
- Call for millage demonstration projects (Erica Clites, Sarah Cook Maylen)

Invasive Species Survey and Treatment

Oakland County CISMA staff with help several days from Oakland County Parks and Recreation staff surveyed 1288 miles (2341 acres) of RCOC ROWs in Commerce, Groveland, Highland, Independence, Milford, Oakland, Rose, Springfield, Waterford and White Lake townships as well as the city of Auburn Hills. CISMA staff also surveyed 18 acres of White Lake Township parks and 34.71 acres of trails. CISMA staff discovered 762 occurrences of priority species including knotweed, swallow-wort and *Phragmites*, bittersweet, common & glossy buckthorn, garlic mustard, invasive honeysuckles, Japanese barberry, wild parsnip, and tree of heaven, as well as 444 occurrences of non-priority invasive species. Additionally, there was 1 watch list species detection (Chinese yam) and 7 occurrences of early detection species including butterbur and porcelain berry. CISMA staff recorded survey data on the CISMA ArcGIS online survey layers.

In 2021, CISMA staff visited 22 private properties in 16 different communities at the request of homeowners. Common invasive species were identified and homeowners were provided with information about invasive species management. In addition, CISMA staff visited partner and potential partner properties to provide invasive species identification, mapping, and advice on control and management.

CISMA partners collected 20 survey occurrences. No CISMA watch list species were reported via iNaturalist in Oakland County in 2021.

Invasive species treatments in 2021 included the continuation of right-of-way treatments for *Phragmites*, as well as demonstration projects funded by the Tier 2 project to treat swallowwort, knotweed, and *Phragmites*. Six Rivers Land Conservancy (SRLC) staff renewed their county-wide Aquatic Nuisance Control Certificate of Coverage (ANC COC) and National Pollution Discharge Elimination System (NPDES) permit for 2021 from Michigan Department of Environment, Great



Lakes and Energy. Clites requested CISMA demonstration projects as well as some partner projects be added to our pesticide permit as needed prior to the start of work.

Clites held virtual or in-person pre-treatment meetings with right-of-way treatment contractors, during which the delivery of treatment data via ArcGIS online and policies and procedures were discussed. Contractors were given a copy of the Oakland County CISMA/Six Rivers Land Conservancy policies for adverse incidents, spill response, etc. and signed their acknowledgement of these policies. The 2021 National Pollutant Discharge Elimination System (NPDES) and Aquatic Nuisance Control (ANC) permits treatment reports were successfully submitted to EGLE before the November 30 deadline and submissions acknowledged by EGLE staff.

Phragmites treatment along county road rights-of-ways

The Road Commission for Oakland County (RCOC) provided an additional \$25,000 for treatment of *Phragmites* in county road rights-of-way (ROW). This was combined with a fund balance from 2019, to bring the total funding available to \$36,491. Local cities, villages, and townships (CVTs) provided 50% match of RCOC funds when possible, bringing total potential treatment funding to \$56,632. Erica Clites managed the ROW contracts on behalf of the CISMA. RCOC handled questions and complaints from county residents through their customer service department. Oakland County CISMA posted a legal notice of the upcoming ROW treatment in the Oakland Press, as required. Many municipalities also included a notice about the road right-of-way treatments in their newsletters or on social media.

Clites solicited and received bids from current county contractors, contracts were reviewed and signed by Six Rivers, and fall treatments were completed along county ROWs across Oakland County. PLM Lake and Land Management Corp. performed ROW *Phragmites* treatments in Addison, Brandon, Commerce, Groveland, Milford, Oakland, and Orion townships, as well as in Wixom. PLM performed treatments in September.

Cardno Inc. performed ROW *Phragmites* treatments in Highland, Holly, Independence, Oxford, Rose, Waterford, West Bloomfield, and White Lake townships, as well as in Auburn Hills, Village of Holly, Lake Angelus, Orchard Lake Village, and Pontiac. Cardno performed treatments in September and October.

GEI Consultants performed ROW treatments in Bloomfield, Lyon, and Springfield townships, as well as the cities of Birmingham, Bloomfield Hills, Farmington, Farmington Hills, Madison Heights, Novi, Rochester, Rochester Hills, South Lyon, Southfield, and Troy, as well as the villages of Beverly Hills and Franklin. GEI performed treatments in September and October.

Contractors delivered treatment data as polygons in ArcGIS online, which has been added to the 2021 Chemical Control Treatments layer. Acreage and mileage estimates provided were derived



from ArcGIS online layers. Due to the earlier deadline, no treatment issues with senesced *Phragmites* were observed. There continues to be some problems with *Phragmites* cut down immediately before treatment, meaning it cannot be treated that year.

Contractors treated 55 linear miles of county road right-of-ways to control *Phragmites*. This represented all of the *Phragmites* infestations currently mapped in county road right of ways.

Demonstration treatment projects

The Tier 2 MISGP grant funded treatment of CISMA priority species at demonstration projects at locations with high visibility or high quality natural areas. CISMA partners nominated thirty projects. Erica Clites and Emily Messick bid out approved swallow-wort, knotweed and *Phragmites* projects under two separate bids. Wildlife and Wetland Solutions (WWS) was chosen to complete all of the MISGP-funded treatment. Erica Clites and Emily Messick conducted field visits with partners and WWS prior to the treatment.

Millage-funded projects

Millage funding was used for partner treatment projects that did not qualify for MISGP-funding in 2021. This included treatment of crown vetch at Golden Preserve, treatment of multiple species at Fran Leaf Park for the city of Keego Harbor, treatment of *Phragmites* for West Bloomfield Parks and Recreation and Addison Township, and buckthorn control for the village of Beverly Hills.

Knotweed treatment along county road rights-of-ways

In 2021, knotweed was also treated in county road right-of-ways using Oakland County Parks and Recreation millage funds. Erica Clites managed and Sarah Cook Maylen had oversight for millage-funded projects. Cardno Inc. performed ROW knotweed treatments throughout the county in August. Eighty-nine locations were treated for a total of approximately 5 acres.

Oakland County CISMA also facilitated the treatment of *Phragmites* at the RCOC Waterford office. We also continued pre- and post-treatment monitoring to track treatment effectiveness. Treatment monitoring indicates that treatments have been effective. This data is found on the MISIN monitoring layer.

Oakland County CISMA created a new list of priority invasive species and early detection species. These were voted on by the treatment subcommittee and the top choices were confirmed by the Steering Committee at our December meeting. The list of priority and early detection species can be found at the end of this report.



Public Education and Outreach

The Oakland County Cisma hosted twelve public events and five webinars in 2021. These included:

- Woody invasive species identification and management webinar; February 9; 50 attendees
- Invasive species training for field staff webinar (with other Cismas); February 24; 87 attendees
- Invasive Species Summit; March 20; 382 attendees! See speakers below.
- Preventing the spread of invasive jumping worms webinar; April 13; 12 attendees
- Spring invasive species identification and management webinar; May 11; 10 attendees
- Garlic mustard pull, Polly Ann Trail; May 15, 51 attendees
- Cass Lake boat wash; July 9; 25 contacts; 3 boats washed
- European frog-bit virtual public meeting; July 14; 7 attendees
- Phragmites management webinar; July 20; 16 attendees
- Maceday Lake boat wash; August 7; 11 contacts; 3 boats washed
- Knotweed management workshops; August 10 and 11; 15 attendees
- Kent Lake boat wash; August 27; 7 contacts
- Phragmites management workshops; Sept. 14 and 21; 5 attendees
- Plant identification walk; October 12; 19 attendees
- Woody invasive species removal work day; October 19; 12 attendees

Oakland County Cisma hosted the Spring Invasive Species Summit in March in collaboration with all of the southeast Michigan region Cismas (Central Michigan Cisma, Detroit River and Western Lake Erie CWMA, GiLLS Cisma, JLW Cisma, Lake St. Clair Cisma, Saginaw Bay Cisma). Presentations were given by: Eric Diesing (Clinton River Watershed Council), Jessie Fletcher (Detroit River International Wildlife Refuge), Megan Garrett (Central MI Cisma Coordinator), Mike Hahn (City of Ann Arbor Natural Area Preservation), Shikha Singh (JLW Cisma Coordinator), Patrick Scanlon (GiLLS Cisma Coordinator) and McKenzi Waliczek (Lake St. Clair Cisma Coordinator). Erica Clites was the emcee for the event. MSU Extension and Paige Filice hosted the Summit as a Zoom webinar and feedback was positive.

Cisma staff also assisted with three garlic mustard pulls organized by: the city of Rochester Hills, Oakland Township Parks and Recreation and Waterford Township Parks and Recreation (24 total attendees). Erica Clites presented at three Trail Blazer walks organized by Oakland County Parks and Recreation (16 total attendees). Erica Clites presented Clean Drain Dry material and talked about invasive species at a Slow Row Lake Orion event (Sept. 15, 12 attendees).

Erica Clites also presented to the following groups:

- MISC conference; January 19; 30 attendees
- Trails, Water and Land Alliance meeting; February 18; 60 attendees



- European frog-bit Collaborative meeting; March 11; est. 30 attendees
- The Nature Conservancy webinar on Plants, prairies and pollinators; 115 attendees
- Beverly Hills Village Council; August 3; 12 attendees
- South Lyon Garden Club; September 7; 7 attendees
- City of Clawson Planning Commission; September 14; 9 attendees

Outreach tabling was conducted at:

- West Bloomfield Parks and Recreation Earth Day event; April 20; 60 contacts
- Farmington Farmer's Market; September 4; 53 contacts
- Metro Boat Show; September 18; 40 contacts

Clites continued to add contacts to the CISMA friends' email list and send messages about upcoming events.

Other outreach videos

- We post recordings of CISMA webinars on the CISMA [YouTube page](#) (see more below on these efforts).

Media coverage (newspaper)

All links to newspaper articles are found on the Oakland County CISMA website:

<https://oaklandinvasivespecies.org/news-and-events/>

Date	News outlet	Topic	Circulation
March 18	Oakland Press, Macomb Daily	Invasive Species Summit	41,227
April 9	Oakland County Times	New CISMA MISGP grant	unknown
July 2	Oakland Press	Frog-bit	20,912
July 8, 17	WHMI 93.5 FM	Frog-bit public meeting	unknown
August 23	Oakland County Times	European frog-bit	unknown
September 3	Farmington Voice	Farmer's market tabling	unknown
September 30	Metromode	Clinton River trail invasive survey	unknown
TOTAL			62,139



Partner statistics

In addition to these efforts, many CISMA partner organizations shared our Facebook posts, added invasive species content on their webpages, included invasive species content in their newsletters, got articles included in their local paper, led hikes with focus on invasive species, completed invasive species surveys, removal and control, distributed brochures from their offices and many other efforts! We appreciate everyone's dedication to spreading the message! These efforts reached at least 43 people in person and several thousand online!

Oakland County CISMA outreach materials

Oakland County CISMA hired a temporary Outreach Technician, Madelaine Corbin, an artist who designed multiple materials during her four-month position. Madelaine used Canva for many of the materials, which made printing, editing and sharing our items much easier than working in Publisher or Adobe InDesign. We were able to print copies of most of the materials to hand out at events and make available to partners. A European frog-bit door hanger was also created for the frog-bit survey project.

- [Brochure](#): Working with contractors to treat Phragmites
- [Brochure](#): Working with contractors to treat knotweed
- [Brochure](#): Invasive Forest pests
- [Brochure](#): A homeowner's guide to invasive bittersweet
- [Rack card](#): Are these [invasive species] in your farmer's market?
- [Rack card](#): Watch list invasive species
- [Rack card](#): How to identify giant hogweed, cow parsnip, wild parsnip and poison hemlock
- [Rack card](#): Invasives you can hand pull
- [Graphic](#): Oakland County CISMA treatment planning calendar
- [Graphic](#): Who to contact with your lawn and gardening questions

Oakland County CISMA website

The Oakland County CISMA standalone webpage (<https://oaklandinvasivespecies.org/>) was updated by Outreach Technician Madelaine Corbin to be more visual. We added a page on invasive species treatment and permitting. We made all of the new educational resources available via species pages or the Resources page (<https://oaklandinvasivespecies.org/resources/#literature>). There were 11,434 views and 5,657 visitors to the webpage in 2021. Most people found our website via search engines as well as by Facebook. A few dozen people found the CISMA webpage via our partner's webpages.

Oakland County CISMA YouTube page

Our [YouTube page](#) now has 25 videos with 2,520 views and 88 subscribers. The most popular videos are a presentation by Dr. Deb McCullough about the insect formerly known as gypsy moth (458 views), garlic mustard removal (373 views), jumping worm presentation by Holly Greiner-Hallman (291 views), Identifying woody invasive species-short video (282 views), woody invasive



species identification and management presentation (231 views) and the 2021 Invasive Species Summit recordings (183 views). If we reach 100 subscribers, we will be able to create our own customized web link. Madelaine Corbin created 5 new videos while working for Oakland County CISMA. We have enabled comments and also indexed some videos to make it easier to find content of interest.

Oakland County CISMA Facebook page

In 2021, 326 Facebook posts reached at least 160,127 people! In addition to Erica Clites and Emily Messick, Amy Hillman created and shared posts, including reaching out to local community groups through Facebook. The posts with the highest number of impressions discussed: fall native plant sales (9,500), invasive dame's rocket identification and removal advice (8,400), treatment calendar planning tool (4,500 and 4,200), the Spring Invasive Species Summit (3,800), photos from our garlic mustard removal event (3,100) and photo describing an early spring invasive species emergence (3,100). Most of the reach was through partners sharing our posts and us sharing our posts to community groups. In addition, CISMA created 15 event pages and were co-hosts on two additional event pages. The event pages reached 212,538 people! The total reach from our Facebook page in 2021 was 372,665 impressions (over three times as many as in 2020)! The OC CISMA Facebook page had 1,101 followers as of 12/31/2021.

Early Detection and Response (EDR)

European frog-bit

The Michigan Invasive Species Grant Program funded expanded European frog-bit surveys and treatment. This grant funded surveys of 320 locations (150 acres) and chemical treatment/hand removal of 4.25 acres of frog-bit. In addition, 38,848 people were reached through social media, email newsletters and similar sources. No new frog-bit or other watch list species were discovered in 2021! Our partners at the Clinton River Watershed Council, Friends of the Rouge, and the Huron River Watershed Council completed project surveys in their respective watersheds. Oakland County CISMA managed treatment and removal projects.

Erica Clites, Emily Messick, and CISMA intern Nathan Veres were trained in pre- and post-treatment monitoring by EGLE staff and completed post-treatment monitoring for multiple control locations. Chemical control was completed by PLM Lake and Land Management at one city of Novi retention pond and four Suburban Collection retention ponds. Post-treatment monitoring revealed no live frog-bit plants. Hand pulls were conducted at the three small ponds at Mandalay Circle. Partners helped remove frog-bit, which was dried out at a nearby city of Novi facility. After the initial hand pull in July, subsequent removals were conducted every 2-4 weeks through October.



In March and December, Erica Clites and Emily Messick participated in virtual European Frog-bit Collaborative meetings. Clites continued to help lead the delimitation survey work group, as well as helping to plan the December meeting.

Other species

Erica Clites verified another instance of Chinese yam in a yard in Oak Park. The homeowner reported the observation via MISIN. Cisma staff verified the identification and the plants were hand removed. Chinese yam was present before the homeowner arrived, but she encouraged it to grow until she realized what it was.

Oakland County Cisma co-hosted a porcelain berry removal event with the Cranbrook Educational Community. Volunteers removed a dumpster full of the vines and berries of plant. This work was in preparation for a future funding proposal to continue porcelain berry control. Porcelainberry is spreading on the Cranbrook campus—multiple single plants were observed separate from the core infestation.

Emily Messick and frog-bit survey project partners assisted the Michigan DNR Fisheries Division with checking red swamp crayfish traps in retention ponds and removing the red swamp crayfish present. Oakland County Cisma staff follow-up on crayfish reports received from the public as well.

Erica Clites continues to receive and review MISIN and iNaturalist reports received from Oakland County and follow up on any reports that may be watch list species. We continue presenting a watch list minute feature at Steering Committee meetings to ensure partners can spot watch list species. Emily Messick presented on mile-a-minute, parrot feather milfoil, hydrilla, water lettuce, water hyacinth, didymo and balsam woolly adelgid. Erica Clites presented on beech leaf disease.

Funding / Revenue

Michigan Invasive Species Grant Program

The IS18-6006 and IS19-7008 core grants were successfully closed out with all funds spent. The 2017 MISGP Tier 2 grant (IS17-1209) was spent out by 12/31/2021. An extension was received for the frog-bit survey grant (IS19-3003) through January 2023, in order to accommodate an additional year of fieldwork and treatment.

Generally, Oakland County Cisma, through Six Rivers Land Conservancy (SRLC), requests reimbursements from the state of Michigan every three to four months. Oakland County Cisma did not apply for MISGP funds in 2021.



Millage Funding

Millage funding was used for several partner treatment projects described above. In addition, nine boot brush stations were purchased through the North American Invasive Species Management Association (NAISMA) for installation at parks and natural areas throughout Oakland County. The boot brush stations will encourage hikers to clean their boots before and after hiking to prevent the spread of invasive species. The total amount of millage funds used was \$28,411. Unused funds will be allocated to the 2022 fiscal year.

Additional Funding

The Road Commission for Oakland County (RCOC) provided \$25,000 for treatment of *Phragmites* in county road rights-of-way (ROW), which was combined with a balance from 2019 treatments. Local cities, villages, and townships (CVTs) provided 50% match of RCOC funds whenever possible, bringing total treatment funding to \$56,632.

Voluntary Cisma membership contributions were not requested in 2021. Sponsorships were not offered for the 2021 virtual Invasive Species Summit.

Oakland County Cisma is requesting pass-through funding from the Michigan Department of Environment, Great Lakes, and Energy to supplement European frog-bit survey and treatment work. This grant would be a sub-award to Oakland County through Oakland County Parks and Recreation.

Organizational Structure and Function

Six Rivers Land Conservancy (SRLC) continued to serve as fiduciary for the Oakland County and Lake St. Clair Cismas in order to advance their overall conservation mission. SRLC holds the MISGP grants on behalf of Oakland County Cisma, employs Cisma staff, holds required permits and receives and pays out funds as appropriate. SRLC maintains a separate banking account for Cisma funding and maintains invoices and payment records in QuickBooks.

Emily Messick was promoted to Field Coordinator in June 2021 based on increased responsibilities with Cisma data management and also intern/volunteer supervision.

Oakland County Parks and Recreation continued to generously offer the Cisma Director and Field Coordinator housing at their administrative headquarters at 2800 Watkins Lake Road in Waterford Township.



2021 CISMA Executive Committee Members

Executive Committee Chair: Amy Hillman, Assistant Supervisor, Holly Township

Executive Committee Vice Chair: Matt Einheuser, Natural Resources Manager, City of Rochester Hills

Oakland County CISMA Member-at-Large: Leslie Clark, Parks and Recreation Commissioner, Keego Harbor

Executive Committee Member-at-Large: Ryan Dividock, Supervisor – Planning, Zoning & Land Use, Oakland County Economic Development

Executive Committee Member-at-Large: Kristin Rutkowski, Assistant Village Manager, Village of Beverly Hills

Oakland County CISMA Data Management Subcommittee Members

Erica Clites, Oakland County CISMA; Chair

Ryan Dividock, Oakland County Economic Development

Erin Lavender, Oakland County Parks and Recreation (Erin left her position 10/2021)

Emily Messick, Oakland County CISMA

Oakland County CISMA Education/Outreach Subcommittee Members (mostly inactive)

Amy Hillman, Holly Township; Chair

Erica Clites, Oakland County CISMA

Oakland County CISMA Summit Planning Subcommittee Members

Erica Clites, Oakland County CISMA; co-Chair

Emily Messick, Oakland County CISMA; co-Chair

Eric Diesing, Clinton River Watershed Council

Amy Hillman, Assistant Supervisor, Holly Township

Ben VanderWeide, Oakland Township Parks and Recreation

Oakland County CISMA Treatment Subcommittee Members

Erica Clites, Oakland County CISMA; Chair

Sarah Cook-Maylen, Oakland County Parks and Recreation

Matt Einheuser, City of Rochester Hills

Mike Losey, Springfield Township

Emily Messick, Oakland County CISMA

Kegan Schildberg, Huron Clinton Metroparks [as of 11/21 affiliation is with Oakland County Parks and Recreation]

Ben VanderWeide, Oakland Township Parks and Recreation



Oakland County CISMA Members as of 12/31/2021

Addison Township
Village of Beverly Hills
Village of Bingham Farms
Charter Township of Bloomfield
City of Birmingham Parks and Recreation
Charter Township of Brandon
City of Village of Clarkston
City of Clawson
Township of Commerce
City of Farmington Hills
Township of Groveland
Township of Holly
Charter Township of Highland
Charter Township of Independence
City of Keego Harbor
City of Lathrup Village
Charter Township of Milford
Village of Milford
City of Novi
Oakland Township Parks and Recreation Commission
Charter Township of Orion
Village of Ortonville
Charter Township of Oxford
City of Rochester
City of Rochester Hills
Rose Township
Charter Township of Springfield
Charter Township of Waterford
West Bloomfield Township Parks and Recreation Commission
Charter Township of White Lake
City of Wixom
Village of Wolverine Lake
Total Cities, Village and Townships (CVTs): 32



Oakland County Conservation District
Oakland County Economic Development
Oakland County Parks and Recreation Commission
Oakland County Water Resources Commission
Road Commission for Oakland County
Total Oakland County organizations: 5

Clinton River Watershed Council
Friends of the Rouge
Huron River Watershed Council
Michigan Nature Association
North Oakland Headwaters Land Conservancy
Oakland University
Royal Oak Nature Society
Six Rivers Land Conservancy, Highland Chapter
Six Rivers Land Conservancy
Southeast Michigan Land Conservancy
Total Non-profit partners: 10

Total Oakland County CISMA partners: 47



Priority species are plants that are already established in our region which are at a higher risk to harm our regional ecology.

Oakland County CISMA 2022 Priority Species

Bittersweet (*Celastrus orbiculatus*)

Buckthorns, common and glossy (*Rhamnus cathartica*, *Frangula alnus*)

Common reed (*Phragmites australis*)

Garlic mustard (*Alliaria petiolata*)

Invasive honeysuckles (*Lonicera sp.*)

Japanese barberry (*Berberis thunbergii*)

Knotweeds, Japanese, giant and Bohemian (*Fallopia sp.*)

Parsnip, wild (*Pastinaca sativa*)

Swallowworts, black and pale (*Cynanchum sp.*)

Tree of heaven (*Ailanthus altissima*)



Early detection species are either not found in Oakland County or found in low numbers (indicated by *), but are likely to cause harm if they become established.

Oakland County CISMA 2022 Early Detection Species

Asian longhorned beetle (*Anoplophora glabripennis*)

Butterbur* (*Petasites hybridus*)

Chinese bush clover* (*Sericea lespedeza*)

Chinese yam* (*Dioscorea oppositifolia*)

European frog-bit* (*Hydrocharis morsus-ranae*)

Giant hogweed (*Heracleum mantegazzianum*)

Himalayan balsam (*Impatiens glandulifera*)

Japanese stiltgrass (*Microstegium vimineum*)

Kudzu (*Pueraria montana* var. *lobate*)

Lesser celandine* (*Ficaria verna*)

Marbled crayfish (*Procambarus virginalis*)

Mile a minute weed (*Persicaria perfoliata*)

New Zealand mud snail (*Potamopyrgus antipodarum*)

Parrotfeather milfoil (*Myriophyllum aquaticum*)

Porcelainberry* (*Ampelopsis glandulosa* var. *brevipendunculata*)

Red swamp crayfish* (*Procambus clarkia*)

Spotted lanternfly (*Lycorma delicatula*)

Water lettuce* (*Pistia stratiotes*)

Water hyacinth (*Eichhornia crassipes*)

Yellow floating heart* (*Nymphoides peltata*)