



| Quarterly Newsletter

October 1 - December 31, 2019



Featured: *“Eastern Hemlocks in Trouble: CAKE CISMA’s Efforts to Protect a Northern Michigan Evergreen.”*

“The mission of the CAKE CISMA is to protect the natural resources, economy, and human health in Northern Lower Michigan through collaborative outreach and management of invasive species.”

Note from the Program Coordinator



As unbelievable as it may seem, 2019 has come and gone in the blink of an eye and is officially in the books. This year has not been without its challenges (as is always the case with invasive species management), but all in all 2019 has been a year of productivity and rewarding work.

In 2019, the CAKE Cisma received 4 grants and two grant extensions to fund invasive species related projects in our four county service area. In February, we received an extension from the Michigan Invasive Species Grant Program to continue our cost-sharing and strike team program. In May, we received funding from the Dole Family Foundation to survey the Elk River Chain of Lakes' 90 miles of shoreline for invasive phragmites and purple loosestrife, with treatment to follow next year. In July, we were awarded funding from the USDA's National Forest Service through the Great Lakes Restoration Initiative to conduct survey and treatment for invasive shoreline species on Beaver and Hog Islands. In September, we received an extension to an MISGP grant to fund invasive species interns on Beaver Island for the summer of 2020. In November, we were awarded funding for Black-swallow wort control and education in the City of Petoskey by the Petoskey and Harbor Springs Area Community Foundation. In December, we were awarded continued Cisma funding by the Michigan Invasive Species Grant Program. Thanks to these funders, we have been and continue to be a public resource for the counties of Charlevoix, Antrim, Kalkaska and Emmet.



These ongoing projects, while diverse in scope and geography, all have one commonality: they were designed at their core to preserve the ecological integrity of Northern Michigan's native habitats. Whether it be a public education event on the shores of Lake Michigan on the value of the eastern hemlock tree, a phragmites treatment on some remote kettle lake in Kalkaska, or spot spraying knapweed on Beaver Island to protect Pitcher's thistle habitat, CAKE is dedicated to the protection of Northern Michigan's native ecology and the preservation of its natural heritage. CAKE will carry this conviction into the New Year, and we are grateful for all our partners who assist us in our mission to protect the natural resources, economy, and human health in Northern Lower Michigan through collaborative outreach and management of invasive species. Thank you all!



~ Benjamin

In the Rear view: This Quarter's Notables



Strike Team Lead Ed DeRosha navigating Crooked Lake, Emmet County for an invasive phragmites (*Phragmites australis*) treatment.

- **October:** cost-shared treatments for invasive phragmites throughout the CAKE service area.
- **October 29:** Michigan Association of Conservation Districts Fall Convention in Bellaire. CAKE Program Coordinator facilitated a field trip to Antrim Creek Natural Area to discuss the importance of CISMA's and current CAKE CISMA work to protect hemlocks from the invasive hemlock woolly adelgid.
- **November - December:** the CISMA has been actively canvassing for eastern hemlock property surveys to monitor for hemlock woolly adelgid. To date, over 7,600 letters have been distributed to request property access for hemlock surveys.
- **December 10-11th:** Annual Michigan Invasive Species Coalition Meeting. CAKE Coordinator presented on island work.

Coming Up: Next Quarter

- **Free Hemlock Surveys** on private and public properties for hemlock woolly adelgid, an invasive parasitic insect that causes hemlock mortality if left untreated. Surveys will be prioritized based upon proximity to the lakeshore (preference of 5 miles or less). Please contact the CAKE CISMA if you have hemlocks and are in close proximity to Lake Michigan.
- **Hemlock Woolly Adelgid Identification Workshop** in Petoskey, date and details to be announced.
- **Now Receiving Applications:** Beaver Island Invasive Species Internship, Central Michigan Biological Station for May - August, 2020.





Eastern Hemlocks in Trouble: CAKE CISMA's Efforts to Protect a Northern Michigan Evergreen

Between the snowy months of December and March, a survey crew from the Charlevoix, Antrim, Kalkaska and Emmet Cooperative Invasive Species Management Area is bundling up against the cold Michigan winter to survey Northern Michigan's eastern hemlock population. The eastern hemlock (*Tsuga canadensis*) is one of Northern Michigan's native evergreen trees. Hemlocks are characterized by their dark green, flat needles with silvery undertones, their deeply grooved bark and their long, drooping branches. Often found along rivers and streams, hemlocks are a valuable provider of shade and oxygen for aquatic macroinvertebrates and fish.

However, this tree is now under attack by a harmful invasive species, the hemlock woolly adelgid, or HWA (*Adelges tsugae*). This species is included on Michigan's watch list, and is the reason for the CAKE CISMA's diligent winter survey efforts. Hemlock woolly adelgid (HWA) is an invasive insect that exclusively feeds on hemlock trees. It preys upon a hemlock's stored starches, at the base of the needles. While normally a long-lived tree, hemlocks infested with HWA may die in just 4-10 years after infestation if no treatment action is taken. HWA was introduced to North America in the mid-1920's. While natural predators keep it in check in its native range of eastern Asia, this is not the case in North America. As a result, hemlock populations have seen massive die offs in the eastern United States. This invasive pest has spread across the hemlock's range and has now been documented to have a limited presence in Allegan, Ottawa, Muskegon and Oceana counties in Michigan. The primary ways that HWA is moved from place to place are believed to be people and birds, especially in lakeshore areas. Adult insects, called 'crawlers,' are capable of movement and may hitch a ride from one hemlock to the next.

To protect Michigan's hemlock population from rapid decline, The Nature Conservancy is overseeing an HWA survey project along the Lower Peninsula's Lake Michigan coastline, a high-priority area for HWA infestation. Cooperative Invasive Species Management Areas along the lakeshore are carrying out these surveys with support from the Michigan Invasive Species Grant Program.



The Nature Conservancy

Photo: close up of an Eastern Hemlock infested with Hemlock Woolly Adelgid (HWA) ovisacs at the base of the needles. HWA is inactive in the winter months, making November through March the ideal time to survey in order to avoid accidental spread by surveyors.

The CAKE Cisma is an active participant in the 500-mile shoreline effort, surveying from Antrim to Emmet counties. This winter marks the CAKE Cisma's second season participating in the survey project. Surveying is ideal at this time of year as HWA have constructed ovisacs to protect their eggs. These ovisacs, identifiable as white, fluffy masses at the base of hemlock needles, are much more noticeable than the tiny adult crawlers. In this dormant phase, the risk of any accidental transport of any crawlers by surveyors is mitigated.

We strongly encourages anyone with land within five miles of the Lake Michigan shoreline to have their hemlock trees surveyed for this invasive pest. CAKE is offering surveys free of charge for both public and private properties. If you are interested in having your hemlocks surveyed and live within five miles of the Lake Michigan coast, please fill out the hemlock survey form found on the CAKE Cisma's website, at <https://cakecisma.wixsite.com/mysite/hemlock-surveys> and mail it to 4820 Stover Road, Bellaire MI - 49615. Alternatively, those requesting a survey can email the form to cakeisst@gmail.com



For more information about hemlock woolly adelgid, including how to identify and report this invasive pest, visit Michigan.gov/HWA.

If you have any questions about hemlock woolly adelgid or the survey program, or if you think you have found a hemlock tree infested with HWA, contact the CAKE Cisma program coordinator Benjamin VanDyke at cakeisst@gmail.com or at (231)-533-8363 ext. 5.

Landowner Consent for Hemlock Woolly Adelgid Survey

Landowner Information:

Survey for Eastern Hemlock Trees, Hemlock Woolly Adelgid and Elongate Hemlock Scale

Landowner Name(s): _____

Mailing Address: _____

Property Address(s): _____

Property Legal Description (See Deed or Tax Form): _____

Daytime Phone(s): _____

Email Address: _____

Tenant Name (if applicable): _____

Tenant Telephone: _____

Special Instructions Regarding Property Access (landscape features, animals, gates, preferred access times, etc.)

The undersigned ("Landowner"):

1. Authorizes CAKE Cisma, The Nature Conservancy ("TNC"), and their respective authorized agents and contractors, to enter and cross the above-described property ("Property"), during the period from _____ to _____, for the purposes of surveying the Property for eastern hemlock trees, the presence of hemlock woolly adelgid and elongate hemlock scale, and for evaluating and inspecting this surveying work (collectively, "Survey Work").
2. Agrees that the information collected from the Survey Work on the Property may be used by CAKE Cisma, TNC, and the Michigan Department of Natural Resources ("DNR") for any non-commercial purposes and will be public information.
3. Release TNC and the DNR from all claims, damages, liabilities, losses and costs to the Landowner that may arise or result from the presence of CAKE Cisma and their authorized agents and contractors on the Property, and their performance.
4. Represents, for the benefit of CAKE Cisma, TNC and DNR, that the undersigned owns the Property, and has the requisite authority to grant the authorizations provided in this document and to sign this document without the need for approval from any other party, or if any such approvals are needed they have already been obtained.

Landowner acknowledges that it has read the terms of this document and agrees to the stated terms.

Printed Name of Landowner

Signature of Landowner

Date

Printed Name of Landowner

Signature of Landowner

Date



Fighting Swallow-wort in Petoskey: \$9,000 Grant Awarded from the Petoskey and Harbor Springs Area Community Foundation

Invasive species are often quite resilient to outside factors, including human control efforts. This means that management must be an ongoing, continuous fight for positive control to result. This especially applies to Black-swallow wort, a toxic invasive species that has plagued the city of Petoskey for several years.

Black swallow wort (*Vincetoxicum nigrum*) is a noxious invasive plant with a limited distribution in Northern Michigan; unfortunately it is primarily found in the Petoskey area. This species is toxic to mammals as well as insect pollinators, such as monarch butterflies which mistake it for milkweed. Over the years, it has established itself in several of the public areas in Petoskey, such as Bayfront Park and Bear River Valley Recreation Area. These areas are often visited by Petoskey residents and visitors alike, often with pets.



Black swallow-wort is identifiable by its twining nature, long opposite leaves and small purple flowers with five points.

In November of 2019, the CAKE Cisma was awarded a \$9,000 grant from the Petoskey and Harbor Springs Area Community Foundation, whose mission it is to *'serve as a connector, partner, collaborator and resource to fuel the power of community for the greater good,'* with the goal to *'improve the quality of life in Emmet County.'* The CAKE Cisma is extremely grateful to the foundation for the opportunity to partner with them in this endeavor. Throughout this project, the CAKE Cisma will:

- Work with the City of Petoskey's Department of Parks and Recreation to seek bids and contract chemical control work for three City properties with known swallow-wort infestations: Bear River Valley Recreation Area, Bayfront Park, and Petoskey Winter Sports Park. These properties will receive two rounds of treatment. If sufficient funds remain, the CAKE Cisma and city parks department may work jointly to address other public spaces of concern.
- Provide three public educational presentations to heighten city awareness. Events will focus on species identification, reporting protocol, treatment options and preventative methods to reduce spread.
- Provide treatment through the CAKE Cisma's strike team to residents of Petoskey seeking control measures for this species.
- Produce and distribute public education materials and media highlighting species identification, management practices and ways to reduce spread.

Thank you, Petoskey and Harbor Springs Area Community Foundation, for making this project possible and helping us to raise the quality of life and environment in Emmet County!

CAKE CISMA NEWS

CAKE CISMA Strike Team Accomplishments 2019

The CAKE CISMA strike team implements CAKE's cost-sharing program for partners and private landowners seeking assistance with invasive plant control. Invasive plants are prioritized for management based upon their detrimental effects to environment, economy, and human health. In 2019, the CAKE CISMA accomplished the following:

- **Visited 378 properties**
- **Surveyed a total of 410 acres for invasive plant species**, including knotweed (Bohemian, giant and Japanese), black swallow-wort, invasive phragmites, purple loosestrife, garlic mustard, Japanese barberry and oriental bittersweet.
- **Surveyed the Upper Chain of Lakes** for purple loosestrife and invasive phragmites, including Beals Lake, Scotts Lake, Six Mile Lake, Saint Clair Lake, Ellsworth Lake, Wilson Lake, Ben-way Lake, Hanley Lake, Intermediate Lake, Intermediate River, Lake Bellaire, Grass River and Clam Lake.
- **Surveyed 85 miles of Lake Michigan shoreline** in Antrim, Charlevoix and Emmet Counties for baby's breath and lyme grass.
- **Treated a total of 104 acres for invasive plant species** by providing cost-sharing:
 - *55 acres of knotweed*
 - *24 acres of garlic mustard*
 - *18 acres of swallow wort*
 - *7 acres of phragmites*
 - *4 acres of Japanese barberry*



CMU Beaver Island Internship 2020

Looking for in-field survey and treatment experience? Do you enjoy public education? The CAKE CISMA is excited to announce that the Michigan Department of Natural Resources has approved funding for the purpose of invasive species management, control and education on Beaver Island. The CAKE CISMA is partnering with Central Michigan University to recruit two invasive species interns from CMU for the summer of 2020. For more information on this project and how to apply, contact the CAKE CISMA at 231-533-8363 or benjamin.vandyke@macd.org. This project is funded by the Michigan Invasive Species Grant Program.



Beaver Island Invasive Species Internship

The Charlevoix, Antrim, Kalkaska and Emmet Cooperative Invasive Species Management Area (CAKE Cisma) is seeking two passionate individuals from Central Michigan University interested in expanding their experience in invasive species management, control and public education to fulfill a 13- week paid internship on Beaver Island. Beaver Island is Lake Michigan's largest island and an ecological jewel that requires protective management and public outreach against invasive species. This position reports to the CAKE Cisma Program Coordinator.

Position Start Date: May 18th, 2020

Position End Date: August 14th, 2020

Compensation: \$9.65 per hour for 36-40 hours per week, with room and board provided free of cost at the CMU Beaver Island Biological Station.

Program Objectives and Expectations:

- Survey forty acres, public and private, for priority species and create maps of infested areas.
- Obtain herbicide applicator certification from the Michigan Department of Agriculture and Rural Development.
- Treat priority species on public and private lands using approved techniques; solicit treatment for private landowners when necessary. Keep record of treatments and inventory of herbicide supplies on Beaver Island. All permissions for state land will be secured from MDNR.
- Plan and implement three invasive species education events on Beaver Island, with help and guidance from the CAKE Cisma Program Coordinator and the Beaver Island Association as appropriate. These can take the form of species identification trainings, invasive species awareness events, and information on the services that the CAKE Cisma provides.
- Implement an invasive species training identification and reporting system for the newly formed Beaver Island Trails Association.
- With oversight from the CAKE program coordinator, produce short public service announcements on invasive species for the Preservation Association of Beaver Island's digital signage system that runs through island, ferry dock, and airports.
- Log all work hours, and submitting work reports to the CAKE Cisma program coordinator every two weeks. Work will average 36-40 hours per week.
- Report all invasive species sightings to MISIN (the Midwest Invasive Species Information Network) by species and geographic location.
- Assist the CAKE Cisma Program Coordinator and CAKE Cisma strike team on island related projects (outreach events, management projects, etc.) as necessary.
- Develop a long-term management plan for at least one species on the island, to be submitted to the CAKE Cisma steering committee and the Beaver Island Association.

The following expense items will be covered by the CAKE Cisma during the internship:

- 2 Round Trips for Ferry Fare to and from Beaver Island per intern
- \$75.00 fee for pesticide examination
- GPS Unit
- Work Vehicle
- Room and board

Desired Applicants: in order to successfully accomplish the project objectives and to be considered as a potential investment for future natural resources work in the Northern Michigan region, ideal candidates for this position must meet the following requirements:

- 18 years of age or older
- Ability to lift 50 pounds and hike long distances
- Able and willing to work in outdoor conditions and adverse weather
- Have or be willing to obtain an herbicide applicators license for the State of Michigan, which will include time spent studying through study manuals and testing in Traverse City.
- Excellent data entry and organizational skills.
- Familiarity with GPS units and ArcGIS.
- Ability to work as a team.
- Able to work independently and to be self motivated.
- Willingness to learn how to identify key invasive species via in person and web-based training.
- Preferably pursuing a B.S degree in one of the following focus areas:
 - Biology
 - Chemistry
 - Environmental Health and Safety
 - Environmental Science
 - Environmental Studies
 - Geography

To Apply: Please email a resume, three references and a cover letter stating your suitability for this position based on required knowledge and skills to the CAKE Cisma Coordinator Benjamin VanDyke at cakeisst@gmail.com. The deadline for applications is **March 1st, 2020**.

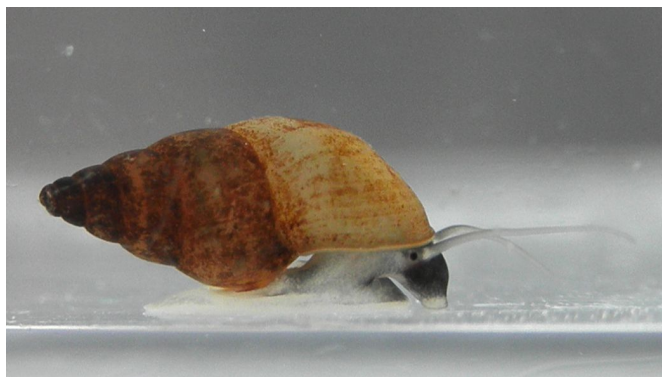
This project is funded by the Michigan Invasive Species Grant Program.

The CAKE Cisma and its fiduciary Antrim Conservation District is an equal opportunity employer and does not discriminate in employment on the basis of race, color, religion, sex (including pregnancy and gender identity), national origin, political affiliation, sexual orientation, marital status, military service, or other non-merit factor.

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Species in Focus: New Zealand Mudsail

Did you know? The New Zealand Mudsail is an invasive species of snail that disrupts food chains and threatens native fish. A single female snail can produce a colony of 40 million clones in one year. Snails average 1/8" long, have a cone shaped shell with 5-6 whorls, and have an opening on the right side of the shell when held upright. For more information on invasive phragmites and other aquatic invasive species, contact the CAKE Cisma at 231-533-8363, or benjamin.vandyke@macd.org.



Partner Spotlight: Au Sable Institute of Environmental Studies



The Au Sable Institute of Environmental Studies (Great Lakes Campus) is located on Twin Lake in Mancelona and offers environmental science programs for students and adults of all ages: primary and secondary school, college, and graduate school. Our college academic program offers field-based, university-level classes in environmental studies and environmental science at campuses in five locations with academic credit offered by more than 50 colleges and universities.

Recently, the Institute has launched a new campus in Chicago. As one of the world's megacities, the Greater Chicago Area is home to nearly 10 million people and has a long history of conservation efforts with leadership from the Lincoln Park and Brookfield Zoos, Shedd Aquarium, Forest Preserve System, Chicago Wilderness Program, other non-governmental conservation organizations, and federal natural resource agencies. Just like Au Sable's courses in the Great Lakes or Pacific Rim, Au Sable – Chicago will intentionally partner with local institutions, organizations and community groups to offer students a unique place-based learning experience.

Welcome, Keegan!

Keegan is a Michigan native and a graduate of Grand Valley State University in Grand Rapids, where he earned his Bachelor of Science in Natural Resource Management and a minor in Biology. Keegan has an interest in invasive species management and prevention, and will be assisting the CAKE Cisma with hemlock woolly adelgid surveys throughout the CAKE service area. Prior to joining the CAKE Cisma staff, Keegan worked as an ecological monitoring technician in Nevada for the Great Basin Institute, where he monitored invasive species populations and the ecological quality of native habitats. Keegan is also a Scuba Schools International certified divemaster. He worked in Honduras for the summer of 2018 as a science divemaster and led groups and performed captures, dissections and analysis of invasive lionfish. Welcome aboard, Keegan!



Do you have questions on invasive species control, management or education? Use any of the following contact information to get in touch with us, we'd love the opportunity to help in any way we can:

Program Coordinator email: benjamin.vandyke@macd.org

Strike Team email: cakeisst@gmail.com

Office Phone Number: (231)-533-8363 (extension 5)

Or, drop in for a visit! We are located in the Antrim Conservation District at 4820 Stover Road, Bellaire, MI 49615 Our office hours are 9:00am - 4:00pm, Monday through Friday.

You can also follow us on Facebook for regular posts about invasive species control and identification, partner updates and news on invasive species.

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