WISCONSIN TRIBAL CONSERVATION ADVISORY COUNCIL NEWSLETTER

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INSIDE THIS ISSUE

UP COMING EVENTS SAVE THE DATE!

Northeast Climate Adaptation Science Center

Register now for the 2021 Northeast Regional Climate Adaptation Science Symposium! Join us for two days of presentations detailing NE CASC research panel discussions focusing on resource management perspectives and needs, workshops supporting climate adaptation, breakout sessions, and networking opportunities. Don't miss this opportunity to learn more about NE CASC, be part of the regional climate adaptation science community, and help shape the future of climate adaptation science in the Northeast.

October 26th& 27th, 2021

Online Via Zoom

Please sigh up before October 15th https://necasc.umass.edu/symposium

Wisconsin Wetland Association:

Fall is one of my favorite times in wetlands with all the glorious colors and the sounds of migrating waterfowl. I hope you're continuing to get out to explore Wisconsin's wetlands to see and hear these fall wonders. Check out part two of our two-part series on identifying Wisconsin's common wetland types to help you know what kinds of wetlands you're exploring!

I also love WWA's annual Wetland Science Conference -- and I am excited by the prospect of being back in person for the conference in 2022. Help make it one of our best conferences yet by encouraging businesses and organizations you work for or are connected with to become a conference sponsor. Past sponsors tell us it's a terrific opportunity to reach wetland and water professionals. We rely on sponsor support to keep event fees low, so the conference is accessible to all. Check out the details below and share them with anyone you think may be interested.

October 1-2, 12-14, 15, 29, 31 November 10 February 15-17

Register now: https://www.wisconsinwetlands.org/wetland-coffee-break/

JOB OPENING: WTCAC Outreach and Education Coordinator

Check the website for more information: https://www.wtcac.org

E-MAIL APPLICATION MATERIALS TO: jmears@wtcac.org

DEADLINE: October 23, 2021

MEET OUR INTERNS OF 2021

Thank you to the summer interns of 2021. Here are some of the fun and exciting opportunities that they have gained over the summer while working with our Wisconsin Tribes. WTCAC will be looking for students that would like to gain experience and career building opportunities next year. If you are interested, please check out the website at www.wtcac.org.

> *"Unless someone like you cares a whole awful lot, Nothing is going to get better. It's not."* — ***Dr. Seuss, The Lorax***

KEMP RESEARCH STATION:

Osiyo! My name is Avery Tilley, and I am one of the summer interns this year with WTCAC.

I work with the United States Forest Service (USFS), one of many USDA agencies, but I don't work with trees! My primary work is with DNA. To be more specific, I am utilizing eDNA, or environmental DNA, to help monitor endangered and threatened fish species in National Forests. Did you know all animals (including humans) shed DNA in the environment every day? It could be from hair, skin, saliva, or waste. This eDNA can be found all over the environment, but when looking at the eDNA of fishes we look in water bodies. Pictured above you can see me operating an eDNA backpack unit. This machine sucks water through a very small filter and then dries it out, leaving eDNA from many species in the filter. After collecting samples, I bring them back to our lab at the Northern Research station in Rhinelander, WI and begin to extract the DNA. It is a simple process involving the addition of several buffers and other reagents that remove contaminants and isolate the DNA as seen above. Once we have DNA, I utilize a Spectrophotometer and Fluorometer to assess the quantity and quality of the DNA. If we have got a good yield from our filter, I then utilize qPCR to look for specific genes. This allows me to determine if the species of interest's DNA was found from our sample. Currently, I am implementing this process for several species including Redside Dace, Brook Trout, and Wood Turtles. I bet you didn't expect that kind of work from a USFS intern! With this new technology, biodiversity and species monitoring can be a lot easier and more cost effective compared to electroshocking or seining. It is critical for tribal natural resource management to understand where species are present to better manage the environment for their needs. My hope is this work will reveal new insights about some of these species' habitats and ranges in order that we might better protect them for future generations.

LAC COURTE OREILLES CONSERVATION APPRENTICESHIP PROGRAM:

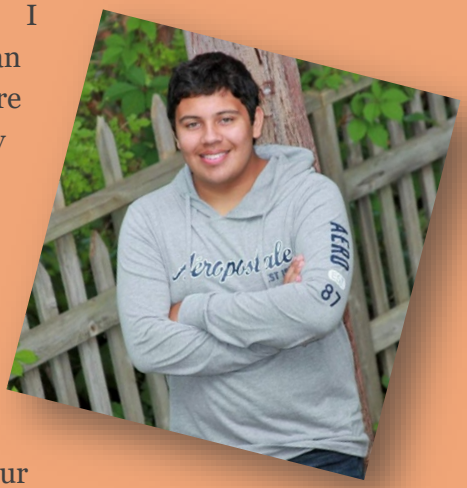
Boozhoo! My name is William Nebel and throughout the summer of 2021, I participated in the Lac Courte Oreilles Apprenticeship Program that was funded by the WTCAC organization. Last year, I participated in the same program, and I was stationed out at our reservation fish hatchery. It was an eye-opening experience, and I learned a lot more than I knew about the stages of producing walleye for our local lakes. This year, I participated in a couple more projects outside of just being at the hatchery.

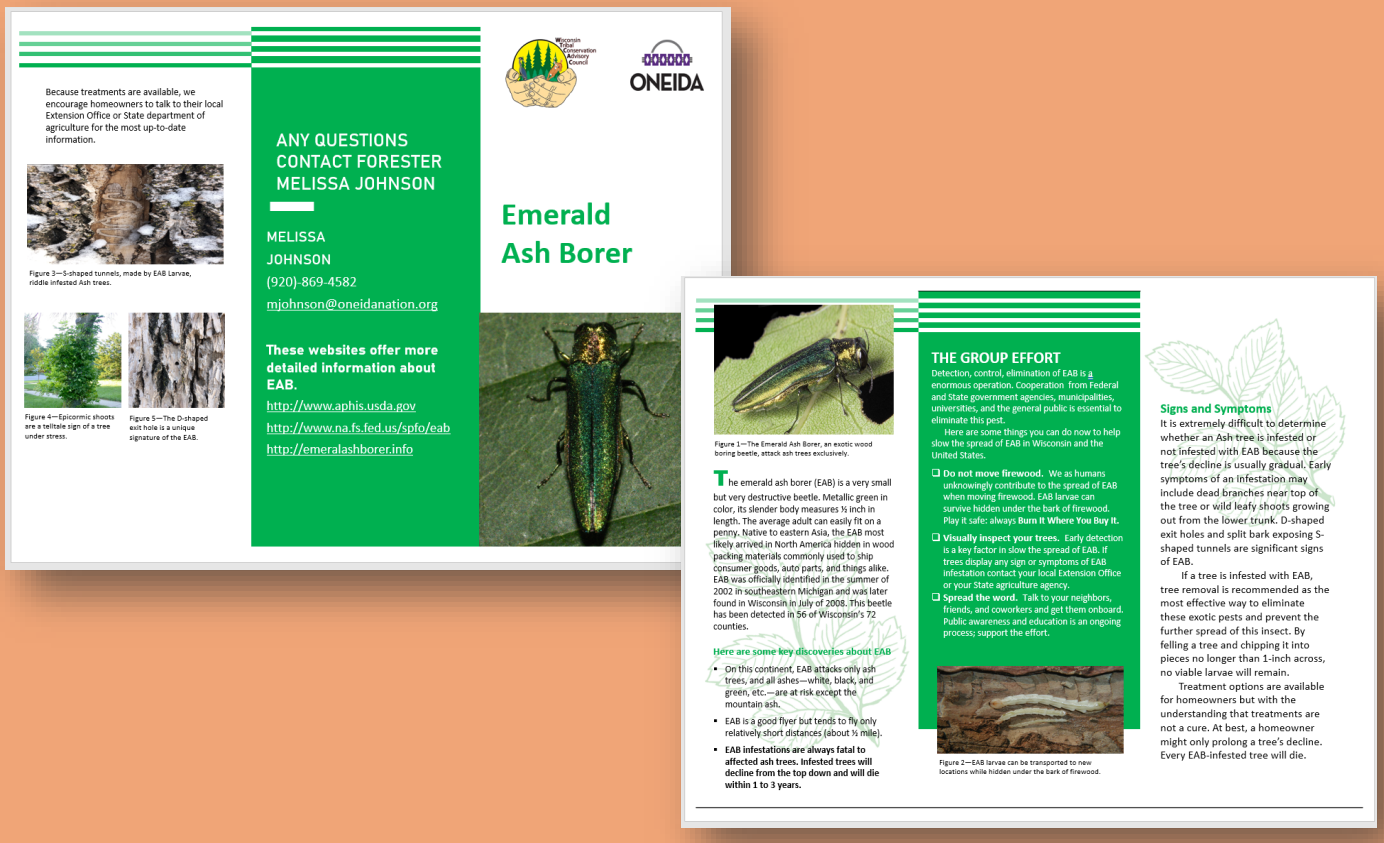
One of the first projects I worked on was our hemp field project. I helped with the initial set-up and I also helped with the process of sending samples out to get tested at a lab. The project was started as an effort to produce CBD based products locally. Another project I was involved in is our cedar tree project. We obtained 750 cedar seedlings that we are currently in the process of getting planted in one of our clear cuts on the reservation in hopes to resupply the tree population in that area. Lastly, the other project was the fish hatchery. It was the second year that we had the new ponds up and running. The difference with this year, was that we had every one of our four new ponds operating instead of just the one last year. We had a successful fish harvest so far this year and we're down to just one more pond to harvest.

All in all, I had another great year learning about local job opportunities. I was able to expand my knowledge about multiple fields of work. I'm still debating on what I want to do in the future of selecting an occupation, but being in this program definitely opened up new doors to look through. I appreciate everyone that presented me with these opportunities, and I look forward to the future and what path I decide to follow.

ONEIDA NATION FORESTRY PROGRAM:

Hello, my name is Deven Metoxen-Hamilton, a member of the Oneida Nation. I am the middle child of 13 kids, and I enjoy fishing on my free time. I am currently an enrolled sophomore at the University of Wisconsin-Stevens Point in the Natural Resources department. I am also one of the 2021 summer interns with the Wisconsin Tribal Conservation Advisory Council (WTCAC). I work with the Oneida nation's forester at the Little Bear Development Center helping monitor invasive pests such as Gypsy Moths, the Emerald Ash Borer (EAB), and Oak Ambrosia Beetles (OAB). We use traps that utilize a lure which releases pheromones to attract the insects to said traps. Did you know Oak Wilt is a destructive and infectious fungal disease that can be and will be transmitted from the Oak Ambrosia Beetle? This is why early detection is important. Additionally, I met with staff from the Wisconsin DNR to release brook trout in two separate locations along Trout Creek. I have met with a crew from Green Bay Botanical Garden to release the *G. Pusilla* beetle species that seriously inhibits the growth of Purple Loosestrife, an invasive species. I had also made an outreach brochure for the community so the residents understand what these invasive pests are capable of and what they can do to reduce the spread to keep our trees and forest healthy for generations to come.





Because treatments are available, we encourage homeowners to talk to their local Extension Office or State department of agriculture for the most up-to-date information.

Figure 3—S-shaped tunnels, made by EAB Larvae, riddle infested Ash trees.

Figure 4—Epicormic shoots are a telltale sign of a tree under stress.

Figure 5—The D-shaped exit hole is a unique signature of the EAB.

ANY QUESTIONS CONTACT FORESTER MELISSA JOHNSON

MELISSA JOHNSON
(920)-869-4582
mjohnson@oneidanation.org

These websites offer more detailed information about EAB.

http://www.aphis.usda.gov
http://www.na.fs.fed.us/spfo/eab
http://emeralashborer.info

ONEIDA

Emerald Ash Borer

Figure 1—The Emerald Ash Borer, an exotic wood boring beetle, attack ash trees exclusively.

The emerald ash borer (EAB) is a very small but very destructive beetle. Metallic green in color, its slender body measures ½ inch in length. The average adult can easily fit on a penny. Native to eastern Asia, the EAB most likely arrived in North America hidden in wood packing materials commonly used to ship consumer goods, auto parts, and things alike. EAB was officially identified in the summer of 2002 in southeastern Michigan and was later found in Wisconsin in July of 2008. This beetle has been detected in 56 of Wisconsin's 72 counties.

Here are some key discoveries about EAB

- On this continent, EAB attacks only ash trees, and all ashes—white, black, and green, etc.—are at risk except the mountain ash.
- EAB is a good flyer but tends to fly only relatively short distances (about ½ mile).
- **EAB infestations are always fatal to affected ash trees. Infested trees will decline from the top down and will die within 1 to 3 years.**

THE GROUP EFFORT

Detection, control, elimination of EAB is a enormous operation. Cooperation from federal and State government agencies, municipalities, universities, and the general public is essential to eliminate this pest.

Here are some things you can do now to help slow the spread of EAB in Wisconsin and the United States.

- ❑ **Do not move firewood.** We as humans unknowingly contribute to the spread of EAB when moving firewood. EAB larvae can survive hidden under the bark of firewood. Play it safe: always **Burn It Where You Buy It.**
- ❑ **Visually inspect your trees.** Early detection is a key factor in slow the spread of EAB. If trees display any sign or symptoms of EAB infestation contact your local Extension Office or your State agriculture agency.
- ❑ **Spread the word.** Talk to your neighbors, friends, and coworkers and get them onboard. Public awareness and education is an ongoing process; support the effort.

Figure 2—EAB larvae can be transported to new locations while hidden under the bark of firewood.

Signs and Symptoms

It is extremely difficult to determine whether an Ash tree is infested or not infested with EAB because the tree's decline is usually gradual. Early symptoms of an infestation may include dead branches near top of the tree or wild leafy shoots growing out from the lower trunk. D-shaped exit holes and split bark exposing S-shaped tunnels are significant signs of EAB.

If a tree is infested with EAB, tree removal is recommended as the most effective way to eliminate these exotic pests and prevent the further spread of this insect. By felling a tree and chipping it into pieces no longer than 1-inch across, no viable larvae will remain.

Treatment options are available for homeowners but with the understanding that treatments are not a cure. At best, a homeowner might only prolong a tree's decline. Every EAB-infested tree will die.

TSYUNHEHKW^ FARM AT ONEIDA NATION:

Shekoli! My name is Elena Hill, and I am the second-year food sovereignty apprentice for Tsyunhéhkw^ Oneida. I am a Senior at UW-Madison studying Management and Human Resources. Last year, my summer was spent learning about what it meant to be an organic, indigenous farm. This year, I shifted gears and worked more on learning the managerial processes behind operating an indigenous farm in effort to correlate my apprentice and collegiate experiences.

The highlight of my summer was my presentation of the farm tour. I planned and gave a 2-hour tour to 14 WTCAC guests about the programs and systems we have developed at Tsyunhéhkw^. This was the first official farm tour we have held since 2019 due to COVID, so it truly was an incredibly special event for the staff and me. It was also great to finally meet my fellow WTCAC interns and apprentices in person. As part of the managerial processes of a farm, I developed a training manual to aid in the training of new team members. This was a much bigger project than I had first expected; it was difficult to break down every single task into descriptive step by step instructions. Early on, I realized that using pictures to help describe equipment and tasks worked the best. Since we happened to have a new hire for our Community Outreach Coordinator, I also received valuable training experience. This year, we were fortunate to be able to invite youth workers back to the farm! This related to my WTCAC managerial goals perfectly! They both were so much fun to work with and I learned a lot about team management from the experience.

Our spring community programs consist of the Seed and Plant Distribution and Community Tilling Program. Both programs are efforts to support community members in their own path towards self-sufficiency. In order to participate in either program, community members were required to fill out a Seed Census Survey that we developed with the Native American Food Sovereignty Alliance (NAFSA). When I returned from college, I was given the task to analyze all the raw survey data. I was able to quantify each question, enter all 144 surveys into excel, analyze the data, and develop a data report based on our findings and possible biases. The most exciting finding from these surveys was that 100% of the participants answered in favor of the question, “Is it important to you to help Indigenous Farmers create safe seed zones on reservation lands?” Regardless of the possible biases, we still were ecstatic to learn about the community support we had in banning GMOs, insecticides, pesticides, herbicides, and chemical fertilizers from all activities done on our Tribal Lands. Finally, I continued work on organizing and recording our seed bank and started developing the outline for our Indigenous Organic Certification. These are two projects that will follow me into this upcoming summer when I return.

RHINELANDER USDA SERVICES:

By: Tom Melnarik

Tom Melnarik from the WTCAC staff, along with WTCAC summer intern Sagen Lily Quale provided career training for 22 high school students at Trees for Tomorrow in Eagle River. Trees for Tomorrow is a natural resources specialty school providing young students with skills needed to understand and make informed decisions regarding the management and wise use of natural resources. Five of the students represented the Menominee Nation.

Tom worked with the students on a pacing exercise and awareness of grade changes; encouraging students to study the terrain and landscape before making decisions. “The best conservation practices are those that fit the landscape and yet are functional. Many of those planning decisions are made very early in the process but are integral to the overall success of the project,” said Tom. Students were also given a brief tutorial in soils by members of the Rhinelander Natural Resources Conservation Service staff, with a hands-on lesson regarding soil textures, soil fertility, and engineering properties.

Sagen Lily Quale spent her summer internship working out of the Rhinelander USDA Service Center. The Natural Resources Conservation Service partnered with WTCAC for her experience. She spent much of her time visiting with and interviewing Tribal agriculture producers, with the goal to increase awareness of, and interest in, USDA programs. Sagen also had the opportunity to visit several the Tribal farms during her internship and increased her understanding of the different agricultural enterprises that Tribes across the state undertake. While at “Trees”, Sagen described her post high school education experience thus far (UW Madison), her areas of interest, how she learned of the WTCAC intern program, and possible directions she might take for her career. She is excited about the opportunities that her WTCAC internship provided toward a better understanding of that direction.

OTTAWA NATIONAL FOREST VISITOR CENTER:

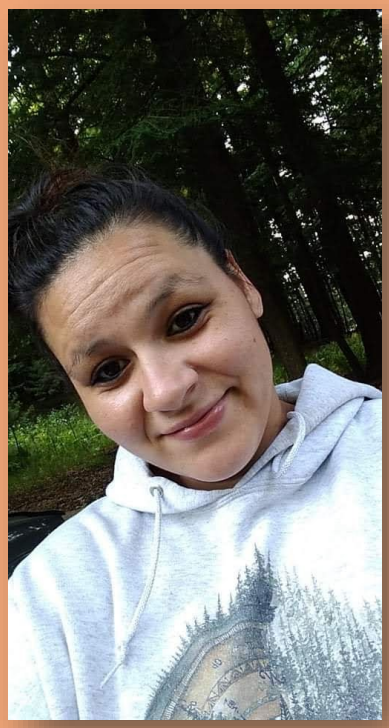
Hello! My name is Shyanne Eustace, and I am from the Pueblo of Cochiti located in New Mexico. I am a Senior at Northland College where I will receive my bachelors in Natural Resources with an emphasis in Ecological Restoration and a minor in Biology this December. This summer I had the opportunity to intern with the Wisconsin Tribal Conservation Advisory Council also known as WTCAC. I am hosted at the Ottawa National Forest Visitor Center in Watersmeet, Michigan. My primary role is education and public outreach, and I have had the opportunity to work with youth and guests that come into the visitor center. This includes the Girl Scouts of Iron River, Ewen-Trout Creek School, and an open-to-the-public pop-up program hosted every Friday. With the Girl Scouts, we built bat boxes, talked about the importance of pollinators, and why we should protect wildlife. The most recent program was a Smokey the Bear reading at the Ewen-Trout School with ages ranging from 5-13.

I love working with people but my favorite project at the Visitor Center is integrating more local indigenous language into the forest. I have had the opportunity to learn the names of the trees on the visitor center trail and in the near future we plan to have the Anishinaabe name along with the English on the trail.

I'm extremely thankful for this amazing summer opportunity to work with WTCAC and the USFS. Both have expanded my knowledge and resources to ensure I am successful in my career path.

LAC COURTE OREILLES CONSERVATION DEPT:

Boozhoo! Its me again! This is my last year with WTCAC and I couldn't be more grateful to experience this great opportunity and the wonderful people that I have met while being with WTCAC. I have really grown with them and am still pursuing my career. One project I got the opportunity to work on was a system called EDDMapS. What is EDDMapS you ask? It is an Early Detection & Distribution Mapping System. It's a web-based mapping system for documenting invasive species and pest distribution. It is fast, easy to use, and doesn't require Geographic Information Systems experience. Launched in 2005 by the Center for Invasive Species and Ecosystem Health at the University of Georgia, it was originally designed as a tool for state Exotic Pest Plant Councils to develop more complete distribution data of invasive species. EDDMapS goal is to maximize the effectiveness and accessibility of the massive numbers of invasive species and pest observations recorded each year. As of July 2021, EDDMapS has over 5.7 million records. EDDMapS collects data from other databases, organizations, and volunteer observations. This creates a national network of invasive species and pest distribution information that is shared with educators, land managers, conservation biologists, and beyond. This data will become the foundation for a better understanding of invasive species and pest distribution around the world. How dose it work? EDDMapS serves as a platform to document invasive species and pests. Through EDDMapS, participants can submit their observations or view results through interactive queries into the EDDMapS database. Participants can maintain their personal records and visualize data with interactive maps. All data is reviewed by verifiers prior to appearing on maps, and in data queries to ensure all data is accurate. The data is made freely available to everyone, including scientists, researchers, land managers, landowners, educators, conservationists, ecologists, farmers, foresters, state and national parks, etc. EDDMapS is free and can be used in the field. The app helps identify the invasive species and records the location in the report. This system has been around for about 10 years now. Getting it out to organizations, college students, interns, seasonal workers, and the general public is more important now than ever. Major outbreaks need to be recorded and managed. These tools give our Tribe the power of knowledge about these invasive species and allows us to give back and help our Mother Earth.



MEET OUR NEW PEST SURVEY SPECIALIST:

Hello! My name is Melissa Johnson. I'm a member of the Oneida Nation, and I was recently hired on as the new WTCAC Pest Survey Specialist. My educational experiences include an A.A.S in Landscape Horticulture from Northeast Wisconsin Technical College, a B.S. in Agriculture with an emphasis in Horticulture from University of Hawaii at Hilo, and a M.S. in Forestry from Purdue University, where I worked as a research assistant. My graduate research focused on agrobacterium-mediated genetic transformation of green ash for resistance to emerald ash borer. As you can see, pests have consistently played a role in my educational career.

In my last position, I served as the forester for Oneida Nation. As forester, I participated in the pest survey program, supervised a few WTCAC interns, and attended as many in WTCAC forestry subcommittee meetings as possible. In my new position, I look forward to managing and supporting these programs with the unique perspective of having participated in them as a tribal staff member (and even as a former WTCAC intern).

Thank you to the hiring committee for giving me this opportunity to support Tribal Nations and their important conservation efforts. A special thank you to the first WTCAC pest survey specialist, Lacey Hill-Kastern. Working with Lacey on pest surveys over the last couple of years was a great learning experience. Lacey has left some big shoes to fill, and I can only hope to come close to filling them!

A few quick updates:

- I recently attended an Invasive Plants Association of Wisconsin (IPAW) meeting. They are looking for a tribal representative to join their board. **If you are interested in joining the IPAW board, please contact me.**
- Trapping season is over! I have received many messages that traps have been taken down and samples are being sent in. Thank you to those who have updated me so far. If anyone out there needs help, please contact me ASAP!
- A live population of the spotted lantern fly (SLF) has recently been identified in Switzerland County, Indiana. APHIS will not be regulating this pest at a federal level but will support education and outreach for states who have not yet detected SLF.

Feel free to contact me with any questions! mjohnson@wtcac.org

Photos to the left:

A demonstration by Tillia, the conservation dog at the IPAW meeting. Tillia can sniff out invasive species such as garlic mustard and wild parsnip!

Contact Us

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