

Environmental Institute

November 2019

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Report Card

**The Environmental Institute houses our
Tribal College Extension programs.**

Mission Statement:

To promote the education and cultural growth of the community in natural resources and the environment. The Environmental Institute supports and coordinates education, research, and outreach that serve our greater community.

Future Directions

The Environmental Institute is a leader and catalyst for a sustainable and culturally relevant use of natural resources. We connect our students and greater community with empowering opportunities and partnerships through culturally relevant research and programming.

Thirteen Moons

A turtle's shell has a unique pattern of thirteen large scales in the center representing the thirteen moons of the lunar calendar. The circle of twenty-eight scales, circling the edge of the shell, corresponds to the number of days comprising the lunar cycle.



GICHI-MANIDOO GIIZIS

January
Great Spirit Moon

NAMEBINI GIIZIS

February
Sucker Fish Moon

ONAABANI GIIZIS

March
Hard Crust on Snow Moon

ISKIGAMIZIGE GIIZIS

April
Maple Sap Boiling Moon

WAABIGWANII GIIZIS

May
Flowering Moon

ODE'IMINI GIIZIS

June
Strawberry Moon

AABITA-NIIBINO GIIZIS

July
Mid Summer Moons (2)

MANIDOO GIIZISOONS

December
Little Spirit Moon

GASHKADINO GIIZIS

November
Freezing Moon

BINAAKWII GIIZIS

October
Falling Leaves Moon

WAATEBAGAA GIIZIS

September
Leaves Changing Colors Moon

MANOOMINIKE GIIZIS

August
Ricing Moon

Ashi-Niswi Giizisoog

Thirteen Moons

Mission Statement:

To increase awareness of natural resources, provide new opportunities, for social interaction and increase knowledge of Ojibwe culture.

Thirteen Moons is a Tribal Extension program that will fulfill the mission by publishing monthly features in the Fond du Lac Newspaper on traditional resource ecology, management, and culture.

Future Focus

The Thirteen Moons program is designed to use the progression of the seasons to highlight the traditional uses, current issues, and economic opportunities of natural resources. The next four years will expand that scope to include programming that views harvest in both the traditional ways practiced by the Ojibwe people and local more conventional agricultural harvest. This programming will continue to build upon the outreach and partnerships built during our previous Extension activities and support the Food Sovereignty Initiatives (FSI) strategic plan goals to promote community resiliency through economic, health, and healing programming around fresh foods. Out of this Food Sovereignty Initiatives strategic plan the Fond du Lac Bimaaji'idiwin Local Foods Commission was formed, and it has created a vision statement of sovereign, holistic, food systems rooted in Anishinaabe values that are environmentally responsible and empowers a thriving, resilient community. Our programming will feature agricultural workshops, events, and activities to help realize the Fond du Lac vision.

Workshops

- Seasonal Decorations using Natural Resources
- Herbal Products
- Snowsnakes & Snowshoes
- Sugar Bush
- Manoomin (wild rice) Camp
- 13 Moons Pow Wow– *Gichi Manidoo Giizis*
- Wild Foods Sampling
- We Are Water exhibit

Partners

- FDL Ojibwe School
- FDL Resources Management
- Bimaaji'idiwin Garden Program
- University of Minnesota
- Great Lakes Indian Fish and Wildlife Commission (GLIFWC)
- USDA/NRCS
- NOAA *Climate Strong!* Camp

Participants and Outreach

- Nearly 5,000 community members served by 13 Moons programming
- Monthly pages in FDL newspaper *Nahgahchiwanong*
- FDL Radio



Thirteen Moons webpage <http://www.fdlrez.com/RM/13moons.htm>

Facebook <https://www.facebook.com/13-Moons-Ashiniswi-giizisoog-118178048248982/>

Sustainable Agriculture



Bimaaji'idiwin Ojibwe Garden Program

Translated from Ojibwe, Bimaaji'idiwin means “saving each others’ lives.” This is a heavy name to live up to and the Ojibwe Garden Program attempts to do so through education, outreach, and preservation. An important objective for the research and demonstration garden is to develop, expand, and maintain a collection of Anishinaabe and Native American heirloom crop seeds through a miinikaanag agindaasoowigamig (seed library), which is a point of connection between a growing network of dedicated seed savers and our local gardeners.

Workshops

- Food Preservation-Canning
- Business Ag Training
- Growing Season Extension
- Garden to Table Feast
- Food Sovereignty Initiative Strategic Planning

Projects

- Seed saving
- Farm Tours
- Demonstration Garden
- Garden Intern Support
- Farmers Markets
- 2501 Agricultural Outreach for Small Producers
- Restoring Fruit Trees and Bushes to Fond du Lac Community

Partners

- First Nations Development Institute
- Gitigaan
- Thirteen Moons
- Nahgahchiwanong Dibahjimowinnan
- MN SARE
- USDA OAO
- Fond du Lac Planning Department

Producer Training Program

FDL community members commit to several hours a week to learn about sustainable and organic food production which allows them to be successful in growing a farm business. Community members turned producers establish connections with other producers, marketing, service providers and USDA programs, food safety, pest management techniques, and sustainable agriculture practices. The participants complete a business plan based on their goals for a future growing enterprise.

Food Sovereignty Initiative: *Vision for a sovereign holistic food system rooted in Anishinaabe values that is environmentally responsible and empowers a thriving, resilient community.*

The initiative aims to balance social and ecological needs and desires of the band while providing food in a sustainable manner, strengthening community resilience to natural resource vulnerabilities and risks. The Food

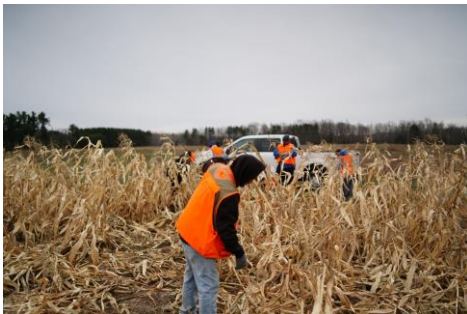


Sovereignty Initiative will reduce the area's dependency on external food systems and enhance Tribal members' abilities to adapt to anticipated changes in food resources.

Bimaaji'idiwin

New Sustainable Food Systems (SFS) Certificate Program – established by the SEEDS project

Development of a new certificate program links faculty and regional community professionals such as Elders, experienced farmers, and natural resource harvesters. Semi-annual workshops will focus on sustainably grown foods, harvested foods and medicines important to the region, as well as local food systems. Workshops will help build skills, knowledge and resources for classroom teaching with a specific focus on methodologies for the northeastern Minnesota region such as cold weather crop farming, season extension, and soil amendments.



SFS Certificate Outcomes

- Development of a certificate in sustainable food systems that complements FDLTCC's current Environmental Science degree
- Support regional and Fond du Lac community members in their pursuit to become sustainable agricultural producers
- Provide internships to Fond du Lac Tribal and Community College students to pursue sustainability and agricultural based programs at Fond du Lac Reservation and other locations
- Provide professional development opportunities to educate Fond du Lac Tribal and Community College faculty on latest research and issues with sustainable agriculture and resource harvest

4rd Annual Bee Symposium – February 2019

This one day, annual event featured a beginning beekeeping morning course and presentations by the renowned University of Minnesota Bee Squad, the national organization Xerces Society, as well as added value product demonstrations by regional beekeepers. Over 180 participants attended from Minnesota and Wisconsin. In February of 2020 the 5th Annual Bee Symposium will continue the tradition of pollinator education.



Check out a video of our bees arriving:

<https://www.facebook.com/wdse.wrpt.pbs/videos/2268286690166274/>

Serving Our Youth

USDA APHIS: Agricultural and Natural Resources Knowledge Immersion Camp

The APHIS summer camp program connects youth ages 14-17 years with agriculture and natural resource career pathways in an experiential setting. The series of three camps focuses on how these subjects connect to Ojibwe culture and natural heritage. The fundamentals of the camp incorporate scientific training in understanding the relationship of plants to the soil, air, water and other organisms, with immersion into the fields of biology and environmental science. The Camp series exposes youth to the field of agribusiness while they help to manage a local garden and experience running a profitable agricultural operation.

The establishment of this camp enhances Fond du Lac's 10-year-old Journey Garden Program which offers youth summer employment working in a garden, gaining professional skills while learning about agriculture. The camp series expands this program to include natural resource careers.

Miinigoowiziwinan

Ezhi-ganawendamang Manidoo
Ogitigaanan

"Our Gifts: As we take care of the Creator's garden"

Harvest Day Camp
Fond du Lac Tribal and Community College (FDLTCC)
June 10 - 14, 2019
 • Career and college exploration
 • Rope course, canoeing, field trips!
 • Meals included

Harvest Overnight Camp
Dropoff at FDLTCC, Overnight at Lake Vermillion – Soudan State Park
June 17 - 21, 2019
 • Career and college exploration
 • Camping, hiking, canoeing and more!
 • Meals and lodging included

Pre-applications due May 20th!



For Youth
Ages 12-17



For an app or more info, contact:
 Nikki Crowe
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Judy Tan
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 218-878-7142







USDA RHSE: Cultural Responses to Healing Trauma, Fighting Opioids and Unlocking the Potential of Native Youth

This new program engages Fond du Lac tribal youth with Ojibwe culture through regional resources, social networks, and generations of tradition to prevent and combat substance abuse.

Addressing wellness in a holistic sense, the program integrates multiple community-level and culture-based practices such as mind-body medicine, circle keeping, and lacrosse.

The activities hope to build on strengths to inspire and motivate youth toward healthier lifestyles for themselves, their families, and their communities.

Gidakiimanaaniwigamig

Climate Strong! – Building Tribal Youth Leadership for Climate Resiliency

Climate Strong is an immersions camp for middle and high school youth to gain awareness of how climate change impacts cultural and community systems. The youth will gain leadership skills by understanding various climate change models and how to contribute to community resiliency strategies. Over the next three years, the program outcomes include:

- 10,800 student hours of training
- 4,200 educator hours of training
- 6,600 community members served, highlighting community resiliency issues facing our region
- Reflecting on and sharing climate resiliency projects and outcomes through G-WOW website's interactive blogs
- Sharing of project results with partners
- Increasing community resiliency through adaptation of culturally relevant stewardship strategies that reduce climate change impacts on natural resources that support cultural practices
- Demonstrating leadership by tribal youth
- Increasing community resiliency teaching skills by middle to high school teachers tribal community educators within the Ojibwe Ceded Territories
- Increasing the number of community-based climate resiliency projects that reduce extreme weather impacts



Program Impacts

- 30-45 Native American K-12 students participating yearly.
- 8 Native American College Mentors participating in all camps
- 3 Native American students were placed in REU positions in partner research facilities
- 30-60 teachers working in schools that serve Native American students. These teachers are trained on the online G-WOW curriculum that increases climate change literacy by looking at climate change in the context of effects on Ojibwe lifeways

Partners

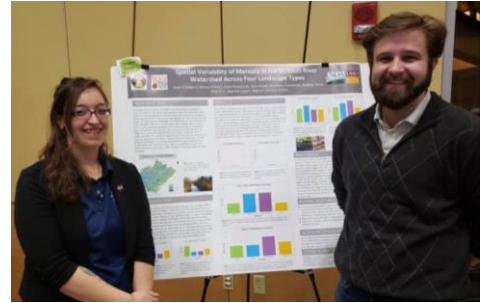
- University of Wisconsin Extension
- Great Lakes Indian Fish and Wildlife Commission
- NOAA
- Lake Superior National Estuarine Research Reserve
- 1854 Treaty Authority
- Fond du Lac Resource Management

Fond du Lac Research

Tracking Mercury across the Watershed

The St. Louis River watershed is facing historical and future mining pressures which have affected subsistence lifeways and health of the Ojibwe people. Mining discharges, especially sulfates, are a major concern. Sulfates in mining discharge convert mercury to methylated mercury, a form of mercury easily assimilated by biological organisms. As methylated mercury becomes available to the aquatic food web the mercury accumulates in the tissue of plants, animals, and eventually the humans that consume the fish. In light of these health issues, Fond du Lac tribal researchers are looking at ways to track mercury in the St. Louis River watershed and in this case in particular, to understand mercury loading in the region.

Research will continue in a new direction for the following two years concentrating on how landscapes and ecotypes impact mercury levels in water, left litter, and odonates.



Research Objectives

1. Give college students a hands-on opportunity to increase their skills, knowledge, and confidence in environmental science by conducting, analyzing, and reporting back on research that is critically important to the tribe
2. Provide networking opportunities where students connect with current research partners in the region
3. Create a final poster of research findings and present them to the science community sharing ideas as well as attend outreach events

Partners

- Fond du Lac Resources Management Air Quality and Water Divisions
- UMD Civil Engineering Department
- USDA Tribal Research
- Cloquet Forestry Center



Current Research Projects

- **Gardening Project** - accomplishing sustainable food initiatives
- **Greenhouse** - innovating with solar energy
- **Mercury** - understanding the variability of mercury in the St. Louis River Watershed
- **Bee Project** - understanding how pollinators work and sustaining a year-round hive

Current Collaborative Research Projects

- White Spruce Regeneration
- Superior National Forest Rare Owl Survey
- Lynx Population Tracking through DNA
- Oak Blueberry Monitoring
- NASA SnowEx Satellite Mapping Strategies
- Monitoring Snow

Possible Future Directions

- Using eDNA to monitor rusty crayfish and zebra mussels in wild rice watersheds.
- Wetland research on monitoring black ash stand and tree mortality

Campus Sustainability

The Sustainability project transforms FDLTCC into a space that supports our educational efforts on sustainability. By managing our campus to support sustainability we impact our students and greater community by providing hands-on opportunities to learn about agricultural, natural resources, and alternative energy issues, opportunities, and skills.

As a Tribal College, our mission encompasses the vision of sustainability as we seek to become more conscientious stewards of resources while promoting the language, culture, and history of the Anishinaabeg.

Sustainable development is a pattern of resource use that aims to meet human needs while preserving the environment so that these needs can be met not only in the present but also in the future. Fond du Lac Tribal & Community College faculty, staff, and students implement changes on our campus that increase the ability of our college to be a leader in sustainability.

Earth Week 2019: “Chasing Ice”

- **Solastalgia** – The emotional and cultural distress of a loss of a place value or community identity caused by environmental change (Guest speaker: Phil Defoe)
- **Pollination** - A presentation on great diversity of native pollinators, the threats of monarchs and other pollinators are facing and how to make more room for essential animals (Guest Speaker: Sarah Foltz Jordan)
- **Research Day** - Student led research on mercury in the St. Louis River watershed, white spruce forestry management, solar energy greenhouses, pollinator ecology, larch beetle infestation of tamarack, and recycling sustainability
- **Recycling** - Discussing the work done for the Bag It Duluth campaign as well as climate emergency and the plastic waste problem (Guest Speaker: Jamie Harvey)
- **Film Day** - *Chasing Ice*- a documentary on the evidence of the changing planet due to climate change

Indigenous Visionaries: Native Women Leadership Fellowship

The goal of the Fellowship is to support Native women leaders who have a foundation in Indigenous knowledge, culture, and history, and who will bring visionary leadership to Native communities in the future. The goal of the Fellowship is to support Native women leaders who have a foundation in Indigenous knowledge, culture, and history, and who will bring visionary leadership to Native communities in the future. Emily Lockling (bottom) and Kelli Ross (top) will bring their expertise to the positions this year. Emily and Kelli are focusing on preparations for Earth Week 2020 which will include topics such as the effects of mercury in raptors/birds, sustainable traveling meal kits to minimize the use of plastics, and sustaining tree saplings. Emily brings her experience in working in the bee yard and on methylmercury research into continued work with the Environmental Institute this year. Kelli is a first-year student at FDLTCC working towards an A.A. in American Indian Studies, with an added interest in Ecology and Botany. She brings valuable and varied experience to the fellowship and will focus on beekeeping and gardening.



VISTA Partnership

Two *AmeriCorps VISTA (Volunteer in Service to America)* currently serve at Fond du Lac Tribal College. The VISTAs are funded by the American Indian Higher Education Consortium (AIHEC).

Food Sovereignty VISTA

The role of the Food Sovereignty VISTA is to focus on food sovereignty to encourage a community that is resilient to natural resource vulnerabilities and risks.

Goals of the Food Sovereignty VISTA program at Fond du Lac include:

- Researching and writing an agricultural resource management plan
- Demonstrating a long-term commitment to food initiatives
- Providing outreach to the Fond du Lac and larger community
- And in general building capacity for programming for a project with at least a 3-year vision

Research VISTA

The Research VISTA builds capacity for underrepresented students to pursue STEM fields by creating networks, processes, and opportunities that gets Fond du Lac Tribal and Community College students involved in research projects.

Major functions of the role include:

- Coordination of student research program
- Development of research partnership network
- Creation of a student recruitment and retention plan to build a strong research program that serves our students and community research needs

The Research VISTA member will develop important professional abilities, such as resource development, project management, and community outreach.

Sean Danieli (left) 2019-20 Food Sovereignty VISTA and Arianna Northbird (right) 2019-20 Research VISTA



In the course of his schooling at Elizabethtown College, Sean Danieli (2019-20 Food Sovereignty VISTA) developed a vested interest in issues relating to indigeneity, resilience, and community well-being. He graduated with a degree in Psychology & Religious

Studies and plans to continue on to graduate school after serving with AmeriCorps. Having come from New Jersey, he is looking forward to uncovering more about northern Minnesota's ecology and wild food availability.

Arianna Northbird (2019-20 Research VISTA) is currently in her senior year majoring in Environment, Sustainability, and Geography. She was previously involved with research on mercury variability in the St. Louis River watershed through



REU SLAWR. She also worked as an aquatic invasive species campaign promoter for *Habitattitude* and *Stop Aquatic Hitchhikers* through a MN Sea Grant internship.





The Environmental Institute is dedicated to providing the education, skills, and research that will help our communities connect with Ojibwe culture, our natural resources, and knowledge on living a sustainable lifestyle.

Environmental Institute Catalyst for Change

The Environmental Institute is determined to be a catalyst for positive change in our community. Our programming concentrates on:

- Sustainable Food
- Sustainable Natural Resources
- Encourage students interest in Science Technology Engineering & Math (STEM)
- Connection with Ojibwe culture
- Community outreach



Upcoming Workshops

- Manoomin (wild rice) Camp
- Seasonal Decorations using Natural Resources
- Seed Saving and Food Preservation
- 13 Moons Pow Wow
- 5th Annual Bee Symposium
- Sugar Bush
- Food Sovereignty Initiative Strategic Planning
- FDLTCC Earth Week

Contact us!

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Facebook: <https://www.facebook.com/Environmental-Institute-at-Fond-du-Lac-Tribal-and-Community-College-278478008887826/>

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Thirteen Moons

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