



Biogas is produced when organic materials (plant and animal products) are broken down by bacteria in an oxygen-free environment, a process called anaerobic digestion. Biogas systems use anaerobic digestion to recycle these organic materials, turning them into biogas, which contains both energy (gas), and valuable soil products known as digestate (liquids and solids). Photo Credit: John Grieg



BIOGAS: Producing renewable and clean resources from raw materials

By Lynn Moreau

Biogas can be produced from raw materials such as agricultural waste, manure, municipal waste, plant material, and sewage and food waste, which reduces the amount of organic waste being sent to landfills. Biogas can be used to produce electricity or can be processed into Renewable Natural Gas (RNG) and transportation fuel.

Farm-based anaerobic digesters (*a process through which bacteria break down organic matter*) are sealed, heated containers, in which organic waste materials are broken down to produce biogas and solid and liquid digestate effluent (*outflowing of water or gas to a natural body of water from a structure such as a waste water treatment plant*). Anaerobic digestion already occurs in nature, landfills, and some livestock manure management systems, but can be optimized, controlled, and contained using an anaerobic digester. Biogas contains roughly 50-

70 percent methane, 30-40 percent carbon dioxide, and trace amounts of other gases. The liquid and solid digested material, called digestate, is frequently used as a soil amendment.

Replacing natural gas or diesel fuel with RNG results in significant greenhouse gas emission reduction, reduced emissions from landfills and manure storages, and reduced reliance on conventional fertilizer.

Ontario has the largest biogas industry in Canada, with 34 on-farm and 8 commercial facilities in the province. Food waste, fats, oils and greases are the easiest organic wastes to break down, while livestock waste tends to be more difficult. By mixing multiple wastes in the same digester (referred to as co-digestion) yields of biogas can be increased. Waste can break down more quickly in a warmer digester which is typically kept between 30 and 38 degrees Celcius (86-100 degrees Fahrenheit).

Biogas can be stored and used in the place of coal and as a reliable

source of baseload power which is needed on a consistent basis to meet minimum power demands, and which can complement more intermittent renewable power. It can also be used as a source of power during peak demand periods. Using stored biogas can limit the amount of methane released into the atmosphere and reduce dependence on fossil fuels.

Anaerobic digestion of livestock waste also reduces odours, pathogens and the risk of water pollution and nitrogen pollution of waterways. The digestate produced after the digestion process can be used as a soil amendment. Under the *Nutrient Management Act* (2002), the Ministry of Agriculture, Food and Rural Affairs are proposing changes to anaerobic digestion facility rules. These include changes to design and construction requirements, permitted feedstocks and operational requirements.

To learn more about these changes, please feel free to contact me.



RESOURCES: Agriculture Programs

 <p>Honey Bee Research Centre</p>	<p>INTRODUCTORY BEEKEEPING COURSE</p> <p>If you are interested in taking our live, virtual, 2-day beekeeping course in 2021, please email infohbrc@uoguelph.ca to be put on a list of people who will be contacted with course and registration information. Later in the winter, we will send an update to this list with more information. Also, please check our website for updates.</p> <p>LIVE VIRTUAL COURSE UPDATE: Registration (and payment) will be online, through Eventbrite. When it is all set up and ready to go, the registration link will be sent out by email and posted on our website.</p> <p>DATE: Saturday May 1st and Sunday May 2nd, 2021</p> <p>COST: \$100.00 per person, before tax and registration fees</p> <p>https://honeybee.uoguelph.ca/education-events/introductory-beekeeping-course/</p>
<p>NORTHERN ONTARIO INDIGENOUS FOOD SOVEREIGNTY COLLABRATIVE</p> <p>SOVEREIGN HOUSEHOLD GRANT</p>	<p>Increase your household's income through food related activities. This could include, but is not limited to:</p> <ul style="list-style-type: none"> • Equipment and supplies that will enable the selling, bartering and/or trading of food and food related items grown, raised or harvested by a household. • Food safety, food processing, or other training that will enable household food-economic activity <p>Apply by clicking this link: https://survey.spno.ca/index.php/352222?lang=en</p> <p>For a printable version, talk to a NOIFSC Co-Lead via foodsovnoront@gmail.com; Facebook Msg, or call 807-355-1986 or 289-697-2248</p> <p>Deadline: April 16, 2021</p>



Greenhouse Production & Vertical Farming Webinars



HOLD THE DATE

May 6: Greenhouse Production
May 13: Vertical Farming

As technology becomes available, new crops and production methods are expanding opportunities in northern Ontario.

Learn from the experts about some of the key things to consider when starting a project, what resources are available to help you on your way, and how municipalities can play a role in supporting sector growth.



NORTHERN FOOD
DISTRIBUTION
NETWORK



NORTHERN ONTARIO
NOFIA
FARM INNOVATION ALLIANCE



BIOENTERPRISE
CANADA'S FOOD & AGRI-TECH ENGINE



SAULT STE. MARIE
INNOVATION
CENTRE



RAIN
RURAL INNOVATION NETWORK



Ontario

ADVISORY

Smelt Consumption for Goulais Bay, Lake Superior

Rainbow smelt are a small silver fish that are non-native to the Great Lakes. Two US states, Wisconsin and Minnesota, have recently issued a fish consumption advisory for these fish after testing at two locations in Lake Superior at the Apostle Islands and Port Wing. Fish from both of these locations were found to be contaminated with a chemical known as PFAS (PerFluoroAlkyl and PolyFluoroAlkyl Substances). PFAS are a family of chemicals that make materials water, stain and oil repellent and have been in a wide array of consumer products since the 1950s. PFAS do not break down easily. The U.S. advisory recommended consuming no more than one meal per month from the affected area.

The Canadian advisory, the Ministry of Natural Resources and Forestry, recommends that 0 smelt be consumed in the Goulais Bay area, from south of Batchewana Bay to the St. Mary's River (Guide to Eating Ontario Sport Fish). These fish are contaminated with toxaphene in this area. Toxaphene is an extremely persistent insecticide in the aquatic environment. It was removed from general use in Canada in 1974 and restricted in the United States in 1982.

The guide also recommends that Lake Whitefish over 20 inches in this area not be consumed by the sensitive population (women of child-bearing age and children under 15) as these fish contain dioxins and furans.

Lake herring (cisco) from this area should also not be consumed at all by the sensitive population.

Food security assessment underway

The Anishinabek Nation will be undertaking a Food Security Vulnerability Assessment. The project involves research and community engagement to understand and respond to the impacts of climate change on food security in our communities.

Specific objectives set are:

- to identify how climate change is impacting on food security;
- to research and collate local traditional knowledge relating to food security;
- to understand both the risks and the opportunities that may arise from climate change;
- The long-term objective is to create an Anishinabek Nation Food Security Strategy.

Activities will include:

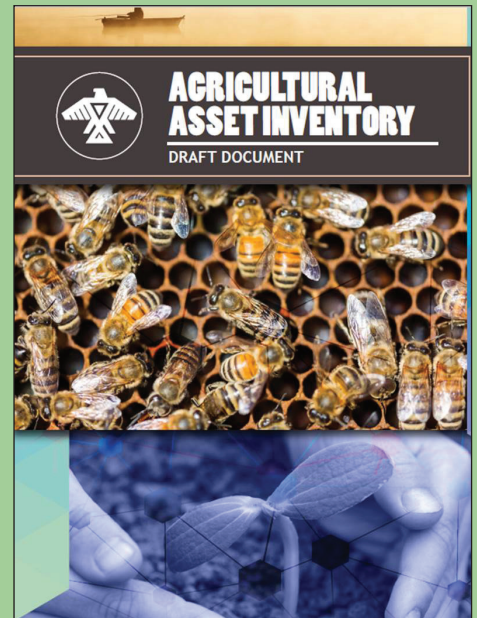
- maintain and promote the resilience of food systems and hunting/fishing/

gathering by sharing traditional knowledge.

- conduct community surveys, interviewing traditional knowledge holders and hosting regional forums in a virtual format.
- conduct a literature review and community knowledge review
- report results through community presentations, newsletter articles and communication materials.

Are you a hunter, gatherer, trapper or a person active on the land? If so, we would like to contact you for an interview to discuss the climate changes you may have observed in your community or on your traditional lands.

Interviews will be virtual or telephone interview. Please submit your name and contact information to me by email lynn.moreau@anishinabek.ca.



DRAFT AGRICULTURAL ASSET INVENTORY REPORT

The Anishinabek Nation has completed the Agriculture Asset Inventory Report and invite you to provide your input and comments on this report.

Are you aware of other First Nation businesses, social enterprises and community-based initiatives that have not been included in the document?

AGRICULTURAL STRATEGIC PLANNING

The Anishinabek Nation is currently developing an agriculture strategic plan. We would like your input.

To obtain a copy and share any comments contact Lynn Moreau, Lands and Resources Coordinator, Agriculture and Food, at her email: lynn.moreau@anishinabek.ca

EVENTS



ALL ABOUT BEES CLASS FOR KIDS:

Girl Next Door Honey is offering a free online class for kids to learn about bees!

Our presentations incorporate fun games plus visual and hands-on learning tools (including part of a living bee colony) to keep the kids engaged and learning! The focus of the presentation can be tailored to suit different age groups and/or curriculum requirements such as the common core.

Our Standard Presentation Covers:

- What a beekeeper does
- Pollination (interactive game)
- Honey – What's in the hive?
- Types of bees (interactive game)
- Bee lifecycle – Bee Jobs (interactive game)
- How to help bees at home!
- Q & A

It will be held on April 10th via zoom.

Beekeeping Classes For Kids - Girl Next Door Honey

<https://girlnextdoorhoney.com/beekeeping-classes-for-kids/>



LYNN MOREAU is a Lands and Resources Program Coordinator with the Anishinabek Nation where she is responsible for the Agriculture Portfolio. Originally from Callander, Ontario, Lynn now lives in Bonfield where she is co-owner of Green Legacy Farm with her husband Dean. Lynn holds an Environmental Science degree from Trent University and a Fish and Wildlife Technician Diploma from Sault College. Lynn can assist with funding application processes and has agricultural experience in vegetable and perennial growing, chicken farming, maple syrup production and aquaculture.

Namebine Giizis (Sucker Moon)

The fourth moon of Creation is Sucker Moon, when sucker goes to the Spirit World in order to receive cleansing techniques for this world. When it returns to this realm, it purifies a path for the Spirits and cleanses all our water beings. During this time, we can learn to become healed healers. Another teaching is that the sucker gave up his life for the Ojibwe in the month of February. The previous month, January, is the hardest time of year to get food because of the scarceness of game. In February it is easier to net these fish and it is believed that the sucker is giving his life for the Anishinaabe.

JOB OPPORTUNITIES

CLICK FORK - NORTHEASTERN ONLINE FARMER'S MARKET is looking for a Permanent Assistant Manager

Location: Lavigne, ON

Click Fork is an online Farmer's Market purchasing and selling local farm products in order to make local food more accessible to locavores (a person whose diet consists only or principally of locally grown or produced food).

We are looking for candidates with a strong sense of social and environmental responsibility, interest in joining our team and family of dedicated farmers and artisans whose unique talents will help shape Click Fork's continued development in a positive way.

Job Description: The type and scope of work for this position is very broad and will vary on a weekly basis. This position will provide an opportunity for us to grow and learn from each other along the way.

Important details:

- 5 days/week approx 40 hours per week (will vary up or down), weekdays, some evenings
- Start time: April 12th 2021 or as soon as possible
- Pay starting at \$17-20/hour. + staff discount on local food products. Room for wage and position to grow
- This is NOT a summer job, we are looking for someone to work year-round with more hours from April to December and reduced hours from Jan to March.

To apply:

Please email an introduction of yourself, why you think you would be a good fit with us, along with your resume to: info@clickfork.ca, att: Chantal Lewington. At least 2 recent references will also be requested if you are selected for an interview.

Please indicate you saw this posting at GoodWork.ca.



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LANDS AND RESOURCES

OVERVIEW

The Lands and Resources Department was established within the Anishinabek Nation in the spring of 2007. Currently, there are four program areas with staffing capabilities. These include: Water Resources, Minerals and Mining, Trapping, and Canada Ontario Resource Development Agreement.

MISSION

The Lands and Resources mission is to foster a better quality of life by ensuring access to natural resources by supporting the goals, values and aspirations of the Anishinabek Nation.



Lynn Moreau
Program Coordinator,
Agriculture and Food
Lands and Resources Department

Anishinabek Nation
1 Migizii Miikan
Nipissing First Nation
P.O. Box 711, 1 Migizii Miikan

North Bay, Ontario PIB 8J8
Tel: (705) 497-9127 ext. 2334
Toll Free: 1-877-702-5200
Website: www.anishinabek.ca