



WORKING 4U & CONSERVATION NEWSLETTER

VOLUME 4 | ISSUE 1

OCTOBER 2023

DID YOU KNOW?

Since 1951, annual average air temperatures have increased by 2.3°F (1.3°C) in the U.S. Great Lakes region.

Since 1951, total annual precipitation has increased by 14% in the U.S. Great Lakes region.

Summer lake surface temperatures have been increasing faster than the surrounding air temperatures, with Lake Superior increasing by 4.5°F between 1979 and 2006

Stronger storms, warmer temperatures, and nutrient loading contribute to the formation of harmful algal blooms and hypoxic dead zones.

The frost-free season lengthened by 16 days in the Great Lakes region from 1951-2017, and may extend up to 50 days longer by 2100.

As temperatures rise, the distribution and composition of tree species will change and shift northward.

Winter recreation and tourism are likely to suffer due to reduced snow cover and shorter winters.

From GLISA



Phil Kaatz from MSU extension speaking on soil health at Farm Day at Indigo Farms sponsored by Lapeer CD and partners.

CLIMATE LINGO ...WHAT?

GLISA (Great Lakes Integrated Sciences + Assessment) is a collaboration between the University of Michigan and Michigan State University supported by the National Oceanic and Atmospheric Administration (NOAA). Established in 2010, GLISA serves Illinois, Indiana, Michigan, Minnesota, New York, Ohio, Pennsylvania, Wisconsin in the U.S., and the Province of Ontario in Canada. GLISA works at the boundary between climate science and decision-makers, striving to enhance Great Lakes communities' capacity to understand, plan for, and respond to climate impacts now and in the future.

Carbon Sink A carbon sink is **anything that absorbs more carbon from the atmosphere than it releases** – for example, plants, the ocean and soil. In contrast, a carbon source is anything that releases more carbon into the atmosphere than it absorbs – for example, the burning of fossil fuels or volcanic eruptions.

Carbon sequestration is the capturing, removal and storage of carbon dioxide (CO₂) from the earth's atmosphere. It's recognized as a key method for removing carbon from the earth's atmosphere. This is important, as around 45% of the CO₂ emitted by humans remains in the atmosphere, which is a significant factor behind global warming. Carbon sequestration can prevent further emissions from contributing to the heating of the planet.

Carbon intensity is a measure of how clean our electricity is. It refers to how many grams of carbon dioxide (CO₂) are released to produce a kilowatt hour (kWh) of electricity. Electricity that's generated using fossil fuels is more carbon intensive, as the process by which it's generated creates CO₂ emissions.

Renewable energy sources, such as wind, hydro or solar power, produce next to no CO₂ emissions, so their carbon intensity value is much lower and often zero. Using electricity with a low carbon intensity value will reduce carbon emissions overall, especially if we use it during times when the largest amounts of clean electricity are being generated.

Net Zero means consuming only as much energy as produced, achieving a sustainable balance between water availability and demand, and eliminating solid waste sent to landfills.

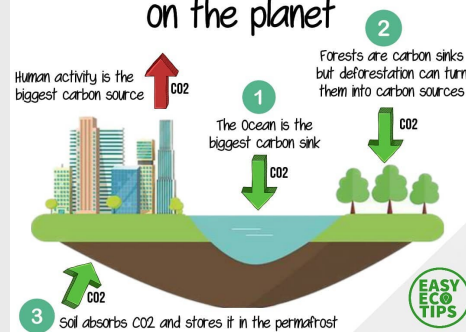
Net Zero refers to the amount of greenhouse gases (GHGs) – such as carbon dioxide (CO₂), methane or sulphur dioxide – that are removed from the atmosphere being equal to those emitted by human activity. Emissions reductions would generally follow a certain trajectory, e.g. 1.5°C (34.7°F). Any residual emissions would generally focus on GHG (Green House Gases) sequestration from the atmosphere.

Carbon neutrality is something such as an organization or activity that is carbon neutral, as it removes the same amount of carbon dioxide from the environment as it releases into the environment:

***Net zero is similar in principle to carbon neutrality**, but is expanded in scale. To achieve net zero means to go beyond the removal of just carbon emissions. Net zero refers to **ALL** greenhouse gases being emitted into the atmos-*

DID YOU KNOW?

TOP 3 carbon sinks on the planet



Food and Agriculture businesses contribute \$104 BILLION to Michigan's economy and supports 805,000 jobs.

Michigan Agribusiness has an impressive impact on Michigan's economy. Because of Michigan's unique geography and climate, Michigan provides an ideal environment for a wide range of agricultural products.

*There are 2000+ food processors

*400 Craft Breweries with a \$2.6 Billion economic impact

*224 wineries with an economic impact of \$5.4 Billion

*300+ commodities produced in Michigan agricultural economy

*9.7 million acres of farmland and 46,000 farms

*250+ Farmers Markets in communities statewide

From MDARD (Michigan Department of Agriculture and Rural Development)

AGRICULTURE and MODERN TECHNOLOGY

>**Agricultural drones** allow farmers to monitor crop and livestock conditions from the air to keep watch for potential problems and optimize field management.

>**Sensors** are integrated into irrigation systems in agriculture to help utilize water supply efficiently so there is less waste, evaporation etc.

>**GPS tracking technology** can be used to map out fields, allowing farmers to plant crops in a precise and efficient manner. This can result in a more efficient use of resources, such as fertilizer and water, and can help to improve crop yields.

>**Aeroponics, Hydroponics, Aquaponics** are somewhat past the experimental phases and into the refinement phases.

Aeroponics is a system that grows plants without the use of a growing medium and with very little water – instead, it essentially relies on oxygen, mist and LED light to produce plants.

Hydroponics is a system which uses growing mediums in place of large plots of soil. The root system of the plant emerges in an oxygen-rich nutrient solution. While it can be technology- and capital-intensive, it provides a high yield when used in addition to or in conjunction with a greenhouse.

Aquaponics takes hydroponics one step further. Aquaponics is a closed-loop system that uses fish, prawns, snails, or crayfish as a symbiotic addition to the hydroponic cycle. The aquatic animals supply nitrogen for the plants and, in return, the plants feed the aquatic animals.

>**Vertical farming** is the practice of growing crops in vertically stacked layers. It often incorporates controlled-environment agriculture. Large buildings are used.

>**Liquid trees** represent a biotechnological innovation that has been developed by scientists in Serbia to tackle air pollution. The liquid tree structure consists of a 600-liter water tank filled with microalgae, which bind with carbon dioxide in the environment through photosynthesis, converting it into oxygen. Liquid3 is placed in areas where trees cannot be planted, like shopping malls, highways, and busy areas, with limited space.



Great Lakes AIS
Landing Blitz—July



Project R.E.D. 2023



Please Welcome Our New District Conservationist, Haley Dukes

Haley is the new District Conservationist for the Natural Resources Conservation Service in Lapeer, servicing both Lapeer and Oakland Counties. She has her bachelor's degree in Wildlife Biology from the University of Michigan – Flint. Her career started as a consulting utility forester, where she identified trees and growth rates and recommended trimming or removal to maintain the powerline right of ways. After two and a half years she took the leap into a new path in soil and water conservation with the Genesee Conservation District. She spent almost three years working as a partner employee, assisting with conservation planning for NRCS programs before being hired on with NRCS as a Soil Conservationist in 2021. She joined our team this past April as the District Conservationist. All in all, she has a little over 5 years of experience with assisting landowners and farmers in installing and maintaining conservation practices to protect their soil and water resources on their operations and is excited for the opportunity to provide quality conservation planning to the community.

Please Welcome Our New CRP Specialist, Stephanie Vickers

I was hired as the Lapeer & Oakland County Conservation Reserve Program Specialist in 2021. I was born and raised in Southeast Michigan and I spent many of my younger years gardening with my father in our suburban backyard. I graduated from Oakland University with a degree in Environmental Science in 2017 and volunteered at a local horse rescue for the following three years. While stuck at home during the COVID epidemic I started learning about native plants and their importance to our native pollinators and other beneficial insects. I am very excited to be a part of the team here in Lapeer and I look forward to helping landowners explore alternative avenues when faced with unprofitable and environmentally sensitive areas on farmland.

For more info call 810-272-9149



“Of all the paths you take in
life, make sure a few of
them are dirt.”
-John Muir

LAPEER
CONSERVATION DISTRICT

700 South Main Street
Suite 120-C
Lapeer, MI 48446
(West end of the Marketplace on
M-24 and Demille Blvd.)
810-664-0895 ext. 5
admin@lapeercd.org www.lapeercd.org



Like us on
Facebook

Our mission is to deliver
information and technical assistance
through educational programs
and
professional services in order to
conserve and enhance the natural resources of
Lapeer County now and for future generations.