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GRNA's Riverfest Flows On

Help preserve our beautiful river and have some fun!



You may have received an invitation by mail to this year's annual Riverfest fundraiser; but in case you did not, we want to make sure you know that the event is taking place in a properly physically distanced way and you are invited to be part of the fun!

On Thursday, August 13th, GRNA is hosting a picnic-themed online Happy Hour. The Steve Stargardt Trio musicians, that normally entertains our Riverfest attendees, will be present to provide live music, Executive Director Jenn Wright will give us a summary of our 51st year at GRNA, we will highlight some of the online auction items that will be available for purchase beginning that evening, and we will award fun prizes to those attending virtually.

There are two ways to participate on the 13th. You can register to have a Picnic on a Blanket for free or you can pay to have a Picnic in a Basket. The latter includes light snacks from Shanty Creek and drinks from either Short's Brewing Co. or Northwoods Soda delivered to you in a specially designed GRNA picnic cooler that is yours to keep. You can enjoy your picnic by yourselves or with friends as you take part in our Happy Hour. You can even choose your favorite Grass River picnic spot by uploading one of the available backgrounds we will provide for the Zoom call.

Whichever "picnic" you choose, you will need to pre-register on the GRNA website, so we can send you the link to the Happy Hour and, if applicable, get your picnic packed.

We have some exciting auction items that include an air tour of the area in a private plane; a Torch Lake day cruise on an antique wooden Chris Craft motorboat, with a stop in Alden for lunch and shopping; original artwork; an Italian dinner in a private home; get-aways to Petoskey and Mackinac Island; and a stay in La Jolla, CA that includes a private sail on the America's Cup yacht Stars and Stripes. These items will be described further at the Happy Hour and bidding will begin online at 6:30 that night and continue through 11:00 pm on September 3rd. There will also be an opportunity to virtually "raise your paddle" to give funds to GRNA without buying anything. Watch for further information on how to login to the auction and paddle raise in the next few days.

REGISTER FOR RIVERFEST NOW

THE CONVERSATION HAPPENING BENEATH OUR FEET: How Trees Talk

by

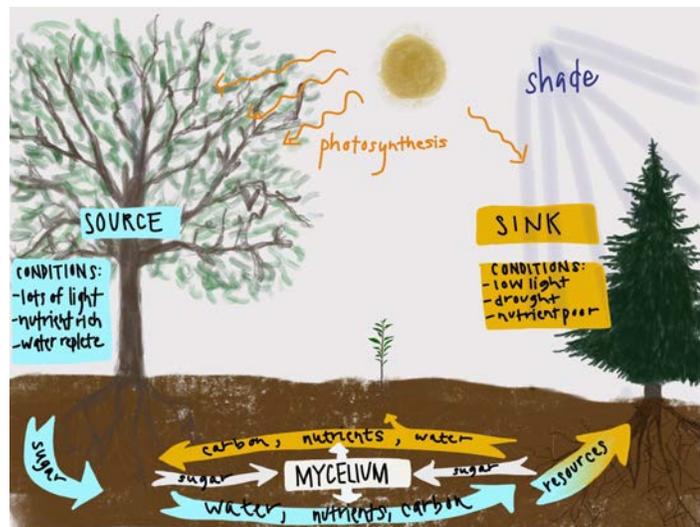
Kyla Foley, GRNA intern



Perhaps Spielberg got it wrong. If we want to communicate with alien life forces we need not look to the stars, but instead examine the soil beneath our feet. Mycorrhizae (mahy-kuh-rah-y-zee), stemming from the Greek words *mycos*, meaning fungus, and *rhiza*, meaning root, describes the intricate symbioses between the roots of plants and soil fungus, identified in 95% of plant families. The fungal bodies are comprised of a bundle of threads known as hyphae that penetrate between the cells of the root and through soil grains, interconnecting in webs known as *mycelium*. These mycelium branch out and connect with other roots and mycelium, forming complex connections known as mycorrhizal networks. These links connect plants of the same species, different species, trees to trees, or even trees to shrubs and grasses, and have been found in environments around the world, from tropical forests to arctic tundras. Researchers in British Columbia, Canada, using genetic tracing^[1] to study this fungal-plant web found that this connectivity super highway can link one tree to as many as 47 others!

But why should trees and fungi have this partnership? At the basic level of symbiosis, it is a story of mutualism. Hub trees, those that are the oldest and tallest in the forest, have the greatest access to sunlight, and thus end up producing a surplus of sugar via photosynthesis. This sets up a source-sink network where the hub tree is plentiful in resources and serves as source, donating to neighbors that are poorer in nutrients, and thus are sinks (receivers). Fungi requires sugar for survival and will utilize the excess photosynthate (sugar), and in exchange

provide the tree with soil nutrients such as nitrogen, potassium, and phosphate which they can more easily acquire. In addition, the fast-growing mycelium benefit the plants by assisting in carbon, nutrient, and water cycling. Mycorrhizal networks thereby form an underground communication network that nurtures seedlings and understory growth, and this connection between overstory and understory species can influence plant establishment, resource competition, as well as species diversity. Further research has revealed that trees under distress, such as from an insect attack, can release stress hormones which may travel through the network and can be perceived by others in time for them to put up their own defenses or send supporting nutrients. In fact, without their fungal partner, the majority of plants could not acquire the resources needed for survival, growth, nor reproduction.



For a long time it was thought that the forest was a battleground for the theory of survival of the fittest to play out upon – a fight for access to light and other resources. However, this new research on mycorrhizal networks is shedding light on the hidden life of trees, suggesting that our forests may be far more communal and cooperative than we ever thought possible. The death of a neighboring tree may mean better access to light for photosynthesis, but it also leaves the soil vulnerable to drying out, becoming more unstable, and leaving other trees at risk



of uprooting due to heavy winds that can now penetrate. Mycorrhizal networks not only allow trees to help support their kin (their saplings) it helps them build the community that will support them in turn. While we may not be able to communicate with trees, it seems that they are networking with each other. Growing our understanding of this strange and alien form of connection is vital for ensuring we have resilient forests in the future.

[1] Beiler, K. J., Durall, D. M., Simard, S. W., Maxwell, S. A., & Kretzer, A. M. (2010). Architecture of the wood-wide web: *Rhizopogon* spp. genets link multiple Douglas-fir cohorts. *New Phytologist*, 185(2), 543-553.

ROVING NATURALIST PROGRAMS CONTINUE AT GRNA



Our Roving Naturalists continue to present drop by programs from 10:30 am - 1:30 pm every Tuesday and Thursday. Topics can be mammals, birds, plants, insects, geology, art, and fun games. The Roving Naturalist can be found near the cabin on Finch Creek. Please observe physical distancing as you interact with the naturalist and others.

Watch the newsletter and calendar on the website for added programs.

THANK YOU TO CHERRY REPUBLIC FOR YOUR SUPPORT



On Friday, July 24th, Cherry Republic in Glen Arbor hosted our first Grass River Gathering since the pandemic closed everything down. It was a beautiful night to be outside on the patio as we played "Do You Know Your Scat?", drew forms from nature based on our favorite number, talked with some old friends about GRNA, and made lots of new friends. Cherry Republic donated a portion of sales that night to Grass River Natural Area. We are most grateful for the opportunity to once again share our mission while having some fun! Thank you to all who attended and to Cherry Republic for the opportunity and the donation!



LAST CHANCE TO MAKE YOUR OPINION COUNT

ANTRIM COUNTY WANTS YOUR INPUT!

Antrim County is updating its *Community Park and Recreation Plan* and they need your help. If you care about the future of the parks and recreation

facilities in Antrim County, please share your thoughts with them. Take the survey directly by [clicking here](#), or visit www.antrimcounty.org before July 31, 2020.

WHERE THE WILDFLOWERS GROW

You can now register for a group **Blooms and Birds; Wildflower Walk** with Julie and Phil to view GRNA wildflowers and watch for our birds. The cost per person is \$5 and you must reserve in advance. The group needs to be comfortable physical distancing with each other and is required to wear masks throughout the walk. Please call the Grass River Center at 231.533.8576 if you have questions or wish to reserve.

CONSIDER A DONATION

Our financial well being is dependent on programming dollars and donations, and with the former sidelined for the most part at the moment, donations are of paramount importance. Your generous support is always greatly appreciated, but in these difficult days, your willingness to help us continue our mission with a personal donation promotes you to Nature Warrior status at GRNA.

Grass River Natural Area is a nonprofit organization that has flourished for fifty-one years because of the generous support of people who value our mission "to manage the Grass River Natural Area, conserve and protect its watershed, and provide opportunities that increase knowledge, appreciation and community-wide stewardship of the natural environment".

If you believe in our mission and want to help us fulfill it for many years to come, please click on the Donate button below. Your support is greatly appreciated.

D O N A T E



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