



WINTER 2023 NEWSLETTER

2022 Land Conservation Highlights

Ensuring that interested land-owners can conserve their beloved woods, fields and streams continues to be the core of East Quabbin Land Trust's mission. It's a privilege to assist landowners through the process, which usually takes multiple years and plenty of paperwork. The end result is always worth it! Read on to learn about three of the seven conservation efforts from 2022.

1. A conservation restriction was donated on 35-acres in Oakham and New Braintree. The land includes hay fields, another field used for winter pasture, woods that are part of a maple sugaring operation, and a long stretch of an intermittent stream to Bell Brook – a cold-water fishery. There are two building envelope areas identified which encompass the house, garage, barn, and solar panel array. The building envelope allows the residential uses of the property to continue on the 35 acres without future pressure to develop the remaining acreage.



Mark Mattson with a large American chestnut in his woods

Hannah Orwig was instrumental in completing the baseline documentation report (see her article below).

2. In partnership with the West Brookfield Historical Commission, a one-acre parcel just east of the town common was purchased with the goal of creating a small park space dedicat-

ed to the inhabitants of the region. The new preserve is called Little Marshy Meadow, translated from the native American "Massaquockummis", which is their name for the stream currently called Coy's Brook. After multiple volunteer sessions the site is on its way to becoming a gathering spot to imagine, explore nature, and play for the young and young at heart. Opportunities for birdwatching on the Marsh, walking the labyrinth maze, and sitting under the shade trees, while enjoying gardens bursting with drought tolerant, native plants are part of the dream.

3. The Ware River is a favorite place for canoeing or kayaking in central Massachusetts. Getting to and from the water will get a little easier as a new access point along River Run in Hardwick can begin the planning stages after the recent donation of land below the Creamery Road bridge. This stretch of river also provides good fishing and bird watching. ■

In the field with Hannah Orwig

This fall I started an internship with the East Quabbin Land Trust to explore aspects of environmental science. I am a senior at Narragansett Regional High School in Baldwinville and plan on pursuing Environmental Science with a concentration in Conservation Biology in college. Last school year, I co-founded an Environmental Awareness Club which participates in trash cleanups around the school, guides hikes with students, and fosters understanding and enjoyment of local forests.

Beyond school, I have a passion for the outdoors. As an avid hiker, snowboarder, and cross-country skier I deeply appreciate the lands surrounding us especially here in Massachusetts.

My favorite place to snowboard is Wachusett Mountain and hiking out in Western MA exploring many waterfalls such as Chapel Falls, and Tannery Falls in Savoy Mountain State Forest.

As an intern, I worked with CR donor, Mark Mattson, who provided detailed information about the property. I also enjoyed working along with Cynthia who taught me various aspects of land protection. I participated in boundary walks observing forest types, the flora and fauna present, and photographing the boundaries of properties. All of this information gathered is written into a Baseline Documentation Report which describes the condition of the property, reserved rights and

terms to which the landowner agrees. Along with the report, I also got to experience working with GIS and found that this tool is very interesting and important to map making. I was glad to be able to be a part of this invaluable experience with the land trust. Helping to preserve land and protecting biodiversity is key in providing open space, forests, and agriculture that continues to thrive and can be enjoyed for decades. ■



Hannah Orwig at the Mattson property during a field visit for the baseline documentation report

MESSAGE FROM THE Executive Director

Cynthia Henshaw



Happy new year! We are expecting another year full of excellent land conservation and opportunities to be outdoors with family, friends and neighbors as we care for the land that sustains us. I do hope to connect with you soon!

We are pleased to announce a new grant program targeted at promoting farming in our region. This opportunity is available because of a generous multi-year commitment from an anonymous foundation. We expect to raise additional grant funds to expand the amount and number of grants awarded in the coming years.

The East Quabbin Farm Grants will be awarded in two categories:

1. Farm succession planning and farmland conservation; and
2. Regenerative farming practices focused on fruits, vegetables and meats directly consumed by residents of our region.

We expect to award between two to four small grants each year for the next five years – between \$2,500 and \$10,000 each. These funds can be paid to the farmer or directly to the service provider. That might mean paying a surveyor or lawyer assisting with transferring the farm to the next generation, or the contractor installing fencing or a well to enhance farming practices that build soil health.

A small committee of local farmers will review the applications and recommend the grant awards. The grant application information will be posted at <https://EQLT.org>.

The goal is to inspire our local farmers to continue doing their great work in sustaining our communities and improving the quality of life in the East Quabbin region. ■

THE EAST QUABBIN LAND TRUST

works to foster the sustainable use of our natural and historic resources for the benefit of all through the conservation and stewardship of the farms, woods and waters in our region of Massachusetts.

For more information about the land trust, to become a member, or request a change of address, please contact us at:

East Quabbin Land Trust

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Farming at the Frohloff Farm

By Rachael McGarr

The East Quabbin Land Trust purchased the Frohloff Farm a decade ago to provide farmers relatively new to the profession the space and opportunity to build their farming business before having to buy their own land. Leasing the house, barn and land at an affordable rate gives the farmers the chance to test their skills, build their markets, and save money for a down-payment. We are pleased to introduce Rachael and Luke McGarr, who recently moved to the Frohloff Farm. Here are their words.

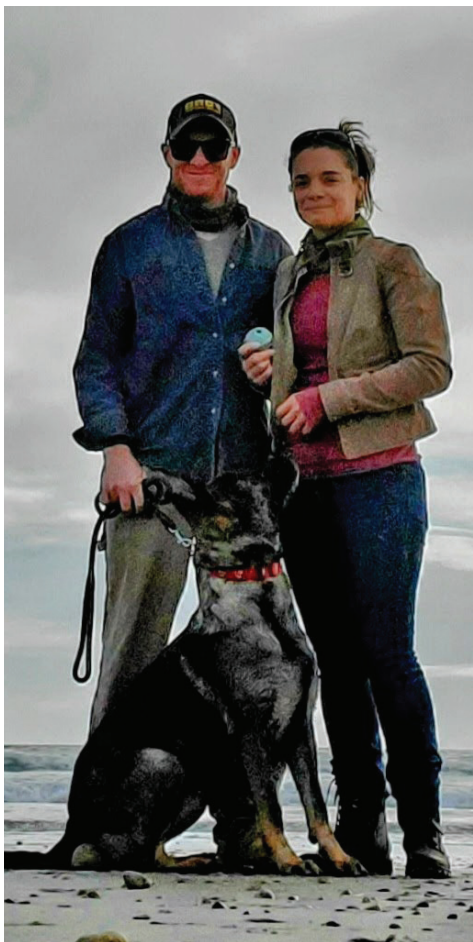
We are so excited to be farming at Frohloff farm for 2023! We are a small, diversified farm working towards healthy soils and nutritive foods. We are Homegrown by Heroes certified and proud to be Veteran and Woman owned.

The first 3 months on the farm were spent getting to know the rhythm of the land. We've been busy inside and out, planning, cleaning, and building for our new little farmstand. We hope to have fresh chicken and duck eggs available fresh daily as well as seasonal goose eggs from our free-range poultry and waterfowl. We will also be raising our pastured broiler chickens on our new fields this year. Happy birds are healthy birds. We believe strongly in FACT's (Food Animal Concern Trust) humane animal-raising standards. We believe all animals deserve adequate space, access to the outdoors, clean water and air, the opportunity to express natural behaviors and healthful food.

We hope to install new fencing in Spring of 2023 to allow us to rotate our small herd of dairy goats around the property. We strongly believe that healthy soil creates healthy animals and nutritious food. Soil is a living entity, an entire ecosystem in itself. As Wendell Berry said "The soil is the

great connector of lives, the source and destination of all. It is the healer and restorer and resurrector, by which disease passes into health, age into youth, death into life. Without proper care for it we can have no community, because without proper care for it we can have no life." We are looking forward to working with our livestock to improve the soils of Frohloff farm. Our combination of goats and hogs are excellent for bringing back pasture from invasive plants and shrubs.

We introduced three heritage breeds of pigs to our farming operations this year. We are now raising



Luke and Rachael with one of their dogs enjoying a day away from the farm.

mule foot, mangalitsa and American guinea hogs as well as a variety of conventional and mixed heritage breeds for our customers. We are consistently keeping our USDA smoked pork kielbasa in stock and will have more pork chops, ham steaks and other cuts soon. Hogs allowed to range, root and graze create the best tasting pork in our humble opinion!

We should have goat kids beginning in March through the summer. Look for postings for farm snuggle and bottle-feeding days where you can get your goat kid fix! We look forward to introducing our farm animals to the EQLT community. We will also be hosting some "so you wish you were a farmer" activities for any interested children or adults. If you have ever wished to milk a goat, collect chicken eggs or bottle feed a goat kid, we will be hosting small group gatherings on Saturday mornings. We really appreciate all the pumpkins and fall veggies everyone has been so kindly leaving for our animals -- the pigs and chickens especially love their pumpkin treats!

Plans for this Spring in the farmstand currently include pork, goat milk soap, beeswax candles, herbal salves, local honey, potted herbs, chicken eggs, duck eggs, goose eggs and pasture-raised chicken. We will also have some compost available for small plot garden improvements. We will be available to assist with any beginner chicken, duck or goose questions as well as raising rabbits, backyard goat projects and first-time hog raisers. American guinea hogs are the perfect starter pigs for smaller properties. We also will occasionally have broiler chicks or laying chicks and hens available for sale.

The best way to reach us is at golden-goosegeoponics@gmail.com.

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The Wonder of the Small Water Cycle

By Ann Hicks

The importance of water is clear. It sustains life. And it is life, working within natural systems, that sustains the cycling of water throughout the environment.

The water cycle accomplishes two vital functions on earth: providing water to living things, and temperature regulation. Water cycles in two ways. One, known as the large water cycle, takes about three months to complete. The other, the small water cycle, is local, and can continue to provide water to an area for many months, even years.

The large water cycle is the one we hear about in the national weather report. It is the exchange of water between the ocean and the land. In general, the water evaporates from the Pacific Ocean and the Gulf of Mexico, then moves across the country by way of atmospheric thermodynamic flows, dropping rain when the clouds get heavy enough. Part of this rainfall eventually makes its way to rivers, which take the water back to the ocean to begin the cycle again.

The small water cycle, the one we don't hear about, is just as important. It is accomplished by a miracle of plant biology: Evapotranspiration.

In her book, *Water in Plain Sight*, Judith D. Schwartz describes evapotranspiration as "the upward movement of moisture through living plants." By drawing water up from the soil and releasing it as vapor through stomata (tiny openings on the underside of leaves), plants are able to regulate their temperature. "You can think of it as the plant "breathing," or more precisely, "sweating," says Schwartz. This "sweating" creates humidity in the air.

The humidity rises high into the atmosphere during the day. At night it condenses into rain, dew, fog or snow. The movement of the transpired humidity is vertical--up and down through the atmosphere--so it stays in the area. (This is opposed to large water cycle humidity, which moves horizontally to a new area.) The precipitation then percolates into the ground--as long as the soil is healthy--and is able to be used by the plants again the next day, completing the cycle.

Trees play a major role. Half the rain

that falls on a healthy forest becomes part of the small water cycle, staying in the local area for use by the plants again. Trees are more than 50% water, and are like fountains that put vast amounts of water back into the atmosphere as vapor. A 2013 study by Scott Jasechko, assistant professor at the Bren School of Environmental Science and Management at UC Santa Barbara, concluded that 80-90% of continental atmospheric moisture is provided by transpiration through plants. Only a little more than 10% is supplied by evaporation from water bodies such as lakes and rivers.

Brock Dolman, co-director of the WATER Institute in Sonoma County, CA, sums it up this way: "In a healthy ecosystem, a raindrop that formed in a cloud in January might not get back to the ocean in ten years, a hundred years, or as part of an old-growth forest, a thousand years."

Evapotranspiration requires a large amount of energy, energy that would otherwise be felt as heat. Trees bring water up through their roots as a liquid, and release it in gaseous form--a change of the water's state. This requires energy, which plants get from the sun, and which would otherwise heat the earth. The trees turn the sun's energy into latent heat during the warmest part of the day. As the air temperature cools, the water vapor high in the atmosphere changes state again. The vapor condenses into liquid, and the stored energy is released as heat. "The repetition of this process is a mechanism for the elimination of surplus thermal energy," says Slovakian hydrologist Michal Kravčík. It cools the earth and reduces the occurrence of strong storms. In this way, trees moderate local temperatures.

Trees have another important water cycle function. They produce what's known as biogenic volatile organic compounds. These give the forest its lovely scent, and act as condensation nuclei around which the water vapor can condense. The resulting precipitation percolates into the ground, thanks to all the organisms (fungi, earthworms, nematodes and friends) that create air pockets in the soil. The small water cycle is ready

to begin again.

The small water cycle deserves our understanding and respect. Deforestation, urbanization and unsound agricultural practices interfere with small water cycle function, and we lose the benefits of local cycling of water, while losing much of it to runoff. When water flows too quickly into rivers and the ocean, the moisture of the soil decreases, the groundwater table falls, vegetation suffers, and less evaporation takes place. Then we don't have the water we need to foster life.

Since the small water cycle is so localized, the importance of preserving forests in our own communities is clear. Life, working within natural systems, sustains itself.

Sources:

Water for the Recovery of the Climate-A New Water Paradigm, by Michal Kravčík, Jan Pokorný, Juraj Kohutiar, Martin Kováč, and Eugen Tóth, © 2007. http://www.waterparadigm.org/download/Water_for_the_Recovery_of_the_Climate_A_New_Water_Paradigm.pdf

Water in Plain Sight, Hope for a Thirsty World, by Judith D. Schwartz, © 2019.

Scott Jasechko and colleagues, "Terrestrial Water Fluxes Dominated by Transpiration", *Nature*, 2013, <https://www.nature.com/articles/nature11983>

Quote Brock Dolman © 2021. Dolman co-directs the WATER Institute, Permaculture Design Program, and Wildlands Program at the Occidental Arts and Ecology Center (www.OAEC.org) in Sonoma County, CA. ■

Illustration key

1. Water rises through tree roots to the leaves.
2. Mycorrhizal Fungi bring additional water to the roots.
3. Water vapor is released through the pores (stomata) in the leaves.
4. The change in state from liquid to gas uses energy from the sun that would otherwise be felt as heat.
5. Increased humidity causes rain, fog and dew, nourishing plants and recharging the groundwater. The stored heat energy is released high in the atmosphere or during the cool of the night.
6. Cows, dung beetles, earthworms, and a host of other critters break up the soil, allowing water to filter into the ground. Beavers create infiltrating wetlands. The cycle begins again.

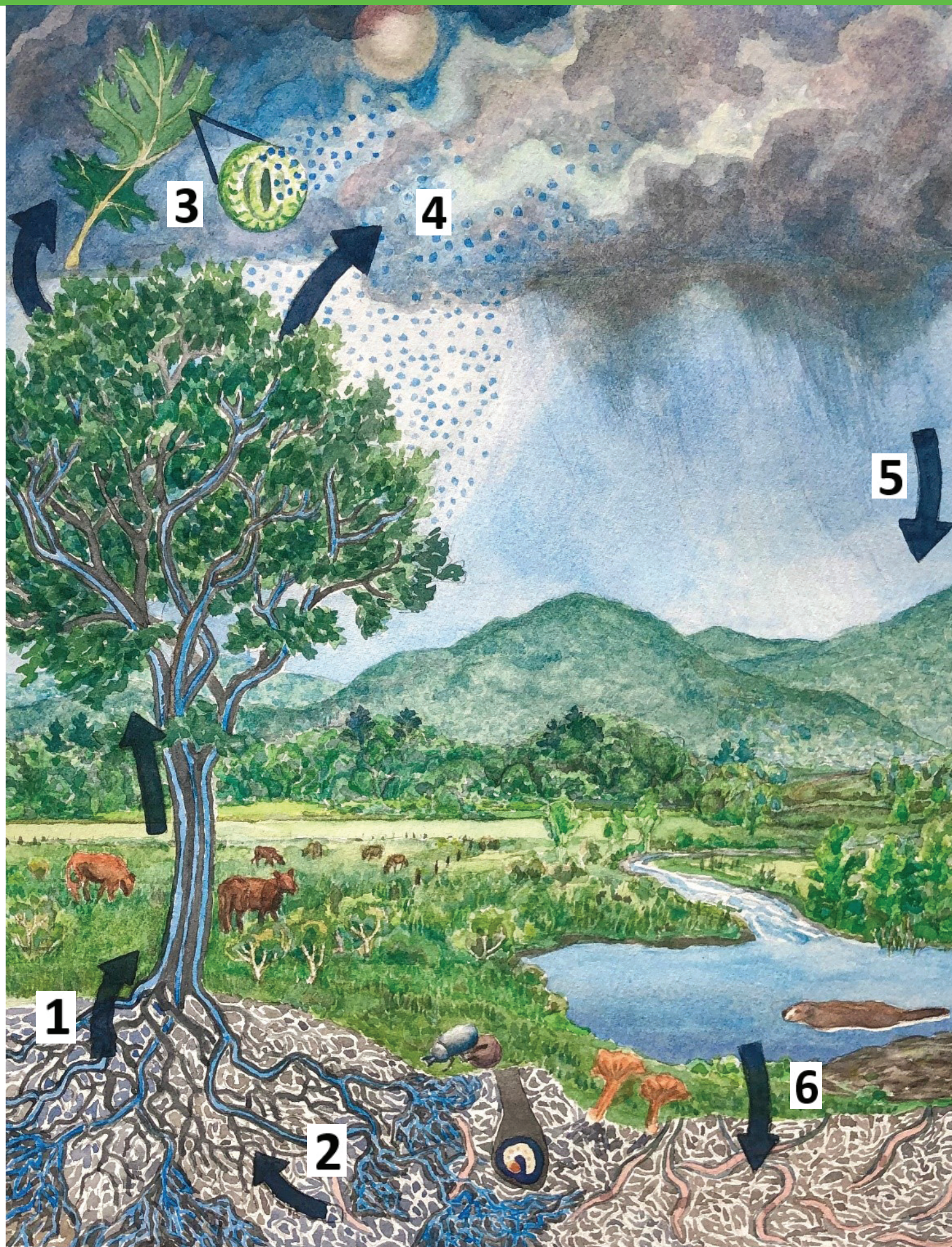


Illustration by Ann Hicks



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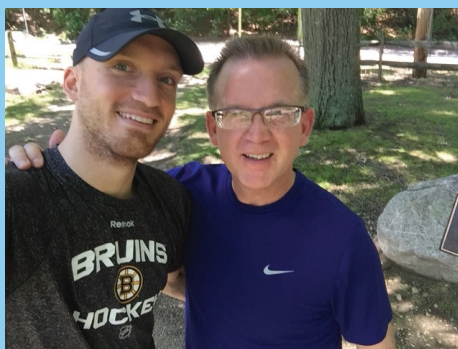
By Rich Cavanaugh

The East Quabbin Land Trust's programming is free and open to all. That's possible because of your generous support! For instance, there is no charge to landowners interested in learning more about how to conserve their land and our expertise in guiding them through the process that often takes a year or more. Also, there is no charge to recreate on EQLT's conservation lands or participate in the indoor and outdoor educational activities hosted throughout the year.

We encourage YOU to become a Sustainer and make sure that you are supporting the land conservation and programming that makes a difference in your community. EQLT Sustainers are those who make automatic monthly gifts to the East Quabbin Land Trust. These charitable contributions can be made through credit card transactions or bank payments (also known as ETFs through Bill Pay). Being a Sustainer is easy and you'll feel great knowing that

you are supporting land conservation and your community.

"Being an EQLT Sustainer is a convenient way for me to easily budget my support for an organization I care deeply about," explains Brian Jette of Hubbardston, who became a Sustainer in 2021. Brian's business, SFS of New England, Inc., also sponsored the 2022 Online Challenge and 11th Annual Station Loop Ramble.



*Brian Jette of Hubbardston and his son
preparing for the Boston Marathon.*

At our Donation webpage <https://eqlt.org/support>, enter your credit card information and check-off "I would like this donation to repeat each month." Alternatively, to set up a Sustainer ETF contact your bank or access your Bill Pay function at your bank's online portal. Donations made through ETFs go further for programming because fees do not apply. Plus, you'll never worry about updating expired or compromised credit cards. Being a Sustainer means that you won't ever miss supporting a great organization! ■