

ATTLEBORO LAND TRUST NEWS

June 2021

A Monthly Newsletter on Outdoor Adventure, Conservation and History

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Your Attleboro Land Trust News

Why do we say, "Your Land Trust"? The Attleboro Land Trust was formed 31 years ago to benefit ALL citizens of Attleboro and the surrounding communities. We are an all-volunteer organization, and our volunteers work tirelessly (well maybe we do get tired) to continually maintain and improve our properties to make them better for the public to enjoy.

Though the Pandemic is not over, the Land Trust can start operations again thanks to vaccinations, following proper current restrictions, and working outside. Work is being done on the new Joseph and Margaret O'Donnell Nature Preserve, Richardson Nature Preserve, and other properties. You will see new stairs and handrails on the bridge by the vernal pool plus a new walkway coming from the parking lot (still under construction) at the Richardson Preserve, as well as newly cleared and marked trails at the O'Donnell Preserve. Removing invasives and replacing them with native species is always an ongoing concern and project on many of our properties. The Land Trust always needs volunteers to help with our many projects or you could become a Land Steward for a particular property.

We were able to conduct Conservation Restriction Assessments on our properties as well as other properties we monitor with Mass Audubon and the City of Attleboro Conservation Officer. Conservation Restriction Assessments, which are normally conducted twice a year, are necessary to ensure the proper upkeep of properties and ensure there are no encroachments or unauthorized modifications.

The Hike Attleboro program is planning a Grand Opening this summer on July 17 as they continue to put up signs and make more trails accessible for walking. Their goal is to make trails available in every area of the city to allow people to take advantage of the benefits of being outdoors, getting some exercise, and experiencing nature. See their website at Hikeattleboro.org and their article on page three.


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A Green New Deal by Jay Burby

Growing up I was fortunate enough to live in a house abutting a small state forest in Connecticut. This land was dotted with cellar holes, crushed stone roads and mysterious stone chimneys sprouting from bare ground. These structures, hidden amidst the dense woods, provided the ideal playground for me and my brothers vivid imaginations.

Not the remains of fallen castles or military foxholes, this was in actuality, the location of Camp Hadley. The site had contained housing for 200 men in the Civilian Conservation Corps (CCC) during the Great Depression who were tasked with creating parks and roads in the area. FDR's "New Deal" program provided jobs and housing at a time it was much needed. Nationally over 3 million people were employed planting over 3.5 billion trees on deforested land and establishing over 700 new state parks over a period of 10 years.

Last month, Senator Ed Markey and other sponsors reintroduced the "Green New Deal", a series of programs and resolutions addressing climate changes and other socio-economic needs such as job creation and economic equality. Cited is the creation of a new CCC to confront the employment needs for a post COVID future while tackling environment concerns.



Madison Land Trust

While campaigning, Bernie Sanders outlined a more detailed plan to reauthorize a CCC to provide good paying jobs for such purposes as building green infrastructure, planting billions of trees, preventing erosion, rebuilding wetlands and eradicating invasive species.

Creation of any new program will face

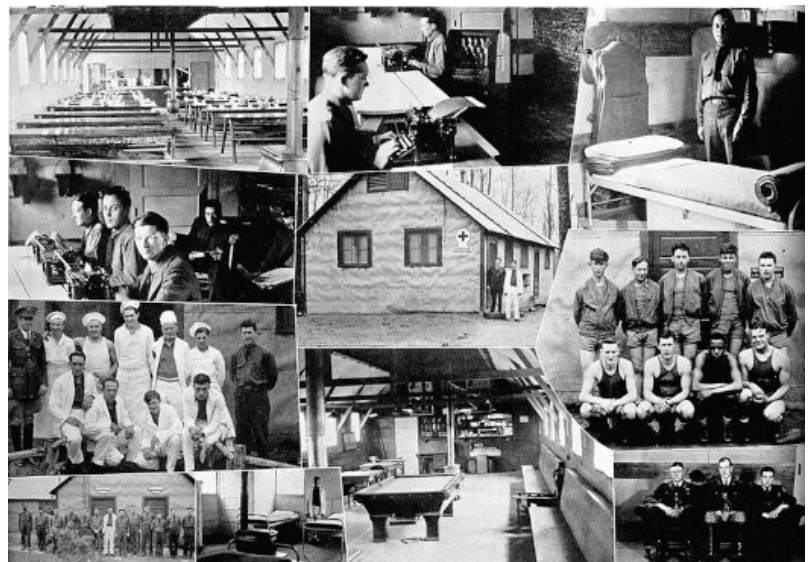
significant hurdles and care should be taken to ensure the program reproduces the long-lasting benefits of the relief program from over 80 years ago while learning from its mistakes. It is the opinion of this writer that the time could be right for the creation of another Civilian Conservation Corps to create much needed jobs post COVID while simultaneously taking actions to address conservation and environmental issues. Hopefully children generations to come will be able to enjoy the open space created or revitalized by such an initiatives and benefit from the hard work put forth by individuals in a previous generation to ensure there was land and trees still left to enjoy.



Wikiwand



Madison Land Trust



2101st Company at Madison, Conn.,

Connecticutmag

Come Celebrate Hike Attleboro Day July 17th!

The celebration of the newly coordinated Hike Attleboro network of the Attleboro Land Trust, Mass Audubon and City of Attleboro open space and hiking properties will take place on July 17th as Hike Attleboro Day! Attleboro is fortunate to have a great many open-air wonders. All those who want to enjoy these wonders are invited to the Attleboro Land Trust's Richardson Preserve on Wilmarth Street from 9 am to 3 pm, which will be the hub for the day's activities. Participants will be offered the opportunity to see the uniqueness of each of the eleven properties that are now part of the trail network. The Land Trust's Richardson Preserve, Colman Reservation, Vaughan Memorial Forest, O'Donnell Preserve, Lawrence Preserve, Nickerson Preserve, Leach Wildlife Sanctuary and Larson Woodland will be on display. Mass Audubon's Attleboro Springs Wildlife Sanctuary and Oak Knoll Wildlife Sanctuary on Park Street will be open for hikers. The City of Attleboro will contribute not only the Handy Street Conservation Area, but the downtown walkways along the Ten Mile River connecting Judy Robbins Park and Balfour Park, with an additional short walk to Highland Park.



about the fascinating history of the eighteenth-century Barrows House at the entrance to the Richardson Preserve? Those are just a few of the mysteries that lie in wait for adventurous hikers on that day and afterward.

We'll make sure to have goodies to satisfy your taste buds at the main location at Richardson Preserve, as well as other fun activities throughout the day. Educational displays on conservation, plants, history, wildlife and other aspects of the City will be put on by various organizations like the Audubon Society, the Land Trust, the Historical Commission and the Garden Club. Mayor Paul Heroux is excited about the event and will say a few words around 10:30 am.

So come and bring your friends and family to enjoy a breath of the fresh air that outdoor enthusiasts have been appreciating at Attleboro conservation preserves during the past several years on Hike Attleboro Day on July 17th!



Mayor Paul Heroux

The Attleboro Land Trust is looking for Supporters by becoming a member, making a Tax-Deductible Contribution and/or as a Conservation Volunteer. Membership, contributions or volunteering can be done securely at Attleborolandtrust.org or by mail at Attleboro Land Trust, P.O. Box 453, Attleboro, MA 02703. Thank you for your support.

TERROIR by Phil Boucher

Having been in agriculture most of my life, I am a huge fan of agro-tourism. Visiting farms, orchards, vineyards or aquaculture businesses is a frequent activity that always leads to learning and appreciation of their particular craft. The basic products or value-added wares are the bright joys of these visits that come with valuable information and an interesting pitch.

The word of the moment or perhaps the last decade for many agricultural products is terroir. When I first heard it used with such gusto to convey an essence or character of a product, I leaned in and accepted it as something good but not sure of the meaning. French-English dictionaries were no help and though it felt like cheating, I asked Siri for help. It even stumped her. With the further reading of trade magazines and additional farm visits, the accepted vernacular meaning became clearer. It is what each growing space contributes to the basic earthy products that in turn contribute to a unique and individual flavor profile.

Simple, right? Who does not enjoy a single word that can convey a mood, a reason or in this case a pleasing complexity that sets a product apart? So terroir is used to explain the nuances of what agricultural products derive from the soil and water of their various origins. A finished product like wine or cider can be a blend of different fruits from the land and has the signature of the maker and its soil. The quality of the water or its salinity does affect the flavor of products grown in aquaculture operations as well. So along with the specific production medium, it is the winemaker, the shellfish harvester or fruit and vegetable growers that affect terroir. People are as big a part of the equation as the earth itself.

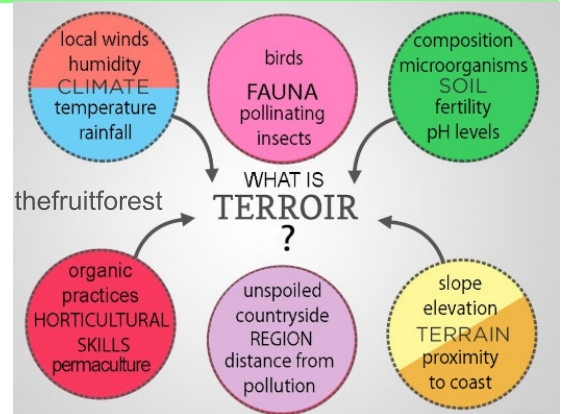
I always have ideas in my mind of how we can expand the work and the basic curb appeal of the Attleboro Land Trust (ALT). On a cool April walk checking trails after a high wind and rain storm, I was enjoying the smells and sounds of the two properties I wanted to check. Red maples were in bloom and bright green foliage popping when I realized that there was a sameness to each place even though both were very different ecotypes. Was this terroir? So I asked myself why and then wondered how we could claim the word terroir for ourselves. Perhaps using the word as a lens to examine each property as a manifold of nature's work may be the visual I needed. After all, terroir should not be a difficult truth to grasp.



Farm one side only due to terroir

We have nothing to bottle or harvest to present for a claim to steal this word except the people that factor into all good products. It is our volunteers. As ALT contributes to the cultural bounty of the Attleboro area it is these individuals that safeguard our named areas and bring an experience and conversation for our users in the unhewn works of nature. As we open up the new O'Donnell property, celebrate the kick-off of the Hike Attleboro initiative and showcase our various properties, we hope to pique the interest of new members. Attracting families and young members that have fresh ideas and a desire to help in our work is the key to our future. Perhaps the use of just one word can be the hook we need to show the honest and authentic aspects of our community outreach. It would surely differentiate our holdings from the mown grass of so many of the municipal recreation lands.

Being in the spotlight will improve every aspect of our A-game as we present ourselves with ideas that allow us the freedom to grow and flourish. The preserved outdoors certainly provides the fertile environment for the next generations to focus their abilities and creativity on enhancing our future. Even though I carry her in my pocket, I can't show Siri the wonderments of the trees, small animals or wildflowers that I see as she exclaims to a query, "This is what I have found." When you are out on a walk you cannot see terroir, but you can smell it and feel the changes underfoot. Breathe deeply and enjoy.



Attleboro Community Garden

“The Seed & Plant Swap, along with the kids seed pod activity, were a great success! We were so happy to see both our gardeners and members of the community partake in this eventful day! -Danielle Cournoyer, Attleboro Community Garden Coordinator”



Photos by Anna Garcia-Ipina



Upcoming Events

Garden Workday - Saturday, June 12th, 10am-12pm. This is a day to clean up the garden (and get in some volunteer hours.)

Ladybug Release - Friday, June 25th, 6pm-7pm. Join us for a quick informational on Good bugs/Bad Bugs and help us release 9000 ladybugs into the garden.

Annual Garden Party - Saturday, June 26th. (Details TBD. Please stay tuned.)

Meat vs Vegetable Production use of Land and Resources by Troy Pleau

During our daily lives, we go day to day eating foods we enjoy feeding our hunger. For example, for dinner, your family may ask what you would like for dinner. You may respond by saying something that first comes to mind, maybe your favorite type of meal. We go to the grocery store and see a bunch of diverse types of new foods that just keep getting created and made in factories and distributed to stores all around the world. It is amazing how fast people make new types of food these days and how fast they get distributed and finally arrive on people's plates in their homes. Most people just grab the food and go, and then some people check the calories and ingredients. But 95% of people never really do the full research of where the certain food came from or how it was made. Some reasons for people not researching products that they bought at a grocery store are due to being lazy, they do not really want to know the truth because it might make them lose their appetite, or they just do not care and will eat anything.



Worldwide, an estimated 2 billion people live primarily on a meat-based diet, while an estimated 4 billion live primarily on a plant-based diet. The shortages of cropland, freshwater, and energy resources require most of the 4 billion people to live on a plant-based diet. The World Health Organization recently reported that more than 3 billion people are malnourished. This is the largest number and proportion of malnourished people ever recorded in history. In large measure, the food shortage and malnourishment problems are primarily related to rapid population growth in the world, plus the declining per capita availability of land, water, and energy resources.

The US food production system uses about 50% of the total US land area, approximately 80% of the freshwater, and 17% of the fossil energy used in the country. The heavy dependence on fossil energy suggests that the US food system, whether meat-based or plant-based, is not sustainable. The use of land and energy resources devoted to an average meat-based diet compared with a Lacto-Ovo vegetarian diet is analyzed in this report. In both diets, the daily quantity of calories consumed was kept constant at about 3533 kcal per person. If you were to drive in Massachusetts and look for farms, it is more of a 25 - 100 % chance of finding one, because Massachusetts is so populated with new houses and buildings being built everywhere. If you were to drive around in Ohio, or Missouri you could be driving along farms that could be over 2 miles long. The reason is that these states have the best land to grow and farm the crops. They are then sent to a factory or building of some sort to be delivered to stores all around the globe to feed the population. If you were to drive along a farm, and then right after that another farm, there would be one right behind it and next to it and across and so forth in those states. A lot of people in those states usually buy their crops and vegetables from local farms near their houses instead of going to a grocery store. That is because some people like to know that their fruit, vegetables, etc. are freshly picked. Many people, who are picky, like to know where their food originated so they know it is safe to eat and feed their family.

The meat-based diet differs from the vegetarian diet in that 124 kg of meat and 20.3 kg of fish are consumed per year. Note that most calories were food grains and sugar and sweeteners like the Lacto-Ovo vegetarian diet. In the United States, more than 9 billion livestock are maintained to supply the animal protein consumed each year. This livestock population on average outweighs the US human population by about 5 times. Some livestock, such as poultry and hogs, consume only grains, whereas dairy cattle, beef cattle, and lambs consume both grains and forage. It is more common to find people using a meat-based diet due to people loving types of food that are meat-related like cheeseburgers, or steak.

The Lacto-Ovo vegetarian diet was selected for this analysis because most vegetarians are on this or some modified version of this diet. In addition, the American Heart Association reported that the Lacto-Ovo vegetarian diet enables individuals to meet basic nutrient needs. The meat-based diet requires more energy, land, and water resources than the Lacto-Ovo vegetarian diet. In this limited sense, the Lacto-Ovo vegetarian diet is more sustainable than the average American meat-based diet.

All in all, both the meat-based average American diet and the Lacto-Ovo vegetarian diet require significant quantities of nonrenewable fossil energy to produce. Thus, both food systems are not sustainable in the long term based on heavy fossil energy requirements.



Vertical Farming by Alex Vieira

Vertical Farming is a type of agriculture where plants or crops are grown in a controlled environment, mostly indoors, in a vertical manner, meaning that the crops are placed on racks attached to a wall or other tall structures. This agricultural technique is attributed to Dickson Despommier, a professor at Public and Environmental Health at Columbia University when he and his students decided to grow crops in skyscrapers in 1999. Since then, other types of structures have been used for these types of crops like empty mineshafts, shipping containers and tunnels. New agricultural technologies are usually used for this type of farming, such as hydroponic, aquaponic, and aeroponic. New tools also help in controlling the environment needed for the successful growth of the plants/crops, like specialized LED lights.



One might ask if vertical farming yields better results than traditional methods of farming. A 2017 survey by Agrylist concluded that vertical farming produced almost 8 times more lettuce than traditional farming. Similarly, a 2014 study conducted by the Journal of Agricultural Studies confirmed that vertical farming outputs 5.16 times more tons of produce per 100 square feet than other field farming. Another example of higher yields is Aero Farms in New Jersey and Bright Farms in Pennsylvania. Bright Farms is a hydroponic greenhouse that yields 2 million pounds of produce per year with a 280,000 square foot (6.43 acres) farm. Aero Farms is a vertical farm that produces that same amount of crops but only has a 70,000 square foot (1.6 acres) farm.

There are other benefits to vertical farming other than higher yields. Since most of this type of farming is indoors and under controlled conditions, it is less susceptible to weather-related disruptions/destruction of crops (floods, hurricanes, tornadoes, droughts, snow, etc.) therefore crops can be grown in all seasons and year-round. Obviously due to the nature of vertical farming requiring little or no soil that is an advantage given that arable land is becoming scarce as the population grows. Since not much land is being used as a resource, this type of farming could be beneficial to the growing deforestation/desertification problem. Another benefit is the ability to grow different and varied crops in individual plots. In addition, vertical farming is environmentally friendly because it requires less water and reduced emissions. Moreover, given the controlled environment of this type of agriculture, it is easier to grow organic produce and pest control is easily managed.

Considering these advantages, you would think more people should be converting from traditional field farming to vertical farming. However, this is not the case because the startup costs are very high. This type of farming takes advantage of abandoned buildings or structures that are mostly inside major cities or towns where these properties are very inexpensive to buy or lease. Because operation costs are so high, opponents of this type of farming suggest that only high profitable crops should be grown. For example, a loaf of bread made from wheat grown in a vertical farm would cost \$27 versus the average cost of \$1.30 sold in September 2019. This demonstrates that produce from this type of farming is not competitive in today's market. Costs



will need to come down for this type of farming to be more common. There is an organization called TerraFarm that has been successful in reducing costs and becoming more profitable by using 40-foot-long shipping containers. Other considerations when adopting this type of farming are the high energy costs needed. Supplemental light will be needed as most of these structures are not open to sunlight. Likewise, there will be additional costs associated with air filtration, purification and disposing of contaminated water that is difficult in city settings.

Although vertical farming looks promising for the future as it produces higher yields than traditional farming, it still has its disadvantages. However, if costs are reduced and pollution is minimized through new technologies, then it will become a profitable and environmentally friendly solution to farming.

Colonial Garden

The Colonial Garden is coming along. The first five rows of "New England Corn", now called "Otto File Corn", have been planted in the style of the colonists. There will be one more row and then there will be Native American "Three Sisters" mounds. The planting is being filmed to make an educational film to explain the two methods. Native Americans taught the colonists the planting of the "Three Sisters" method after the wheat the colonists brought from England failed. The "New England Corn" was wiped out during the "Year without a Summer" (Feb 2021 newsletter) but luckily some had been exported to Italy. Now we have been able to find two farms, one in New York and one in California, that are currently producing the corn.



Phil Boucher and Bruce Ingram rototilling the garden

Bruce Ingram trenching for the fence

First five rows of New England Corn planted

What's Happening on the Barrows' Farm in 1721

Not only is the farm now running at full, but the demands on the saw/shingle/cooper's mill are heavy due to the warmer weather. Everything has to be balanced. The corn is planted now that the soil is warm enough, and the beans will be planted mid-month. The squash will not be planted until next month, so it is not shielding the corn and beans from animals or preventing weeds from growing. The children must be constantly weeding and monitoring the ducks, geese, and chickens in the fields. The poultry help in removing insects and weeds, but they must be removed from the fields whenever there are new seedlings that they might eat. They must also be protected from predators.

At the mill, the demand for building lumber, shakes and shingles is at its peak. Now is building and repairing season. The coopering high demand is usually right before harvest in the fall, but they had made up a supply of casks, buckets, tubs, and churns during the winter to take care of any minor purchases. Benajah's brother-in-law, Joseph Bucklin, who like his father did fine carpentry work on churches and other public building around Providence and Pawtucket, would be looking for the best hardwoods during the beginning of the building season. The land he owned was mostly cedar which was best for shingles and there was probably some bartering for the wood. Because of the high demand for the sawmill, the use of the water from Chartley Brook had to be managed carefully or there might be a lack of water for the



Taylor's sawmill



animals during the drier months of the summer. Some customers, instead of buying already prepared wood, would bring their own wood to be milled. They would then leave 10 – 20% of the wood as payment.

Summertime was the busiest time of the year for the colonial farmers which is why there was summer vacation so the children could help.

Updates, Comments, and Interesting Reading

Pizza Hut, working with the company Zume, has developed an industrially compostable round pizza box that uses less material, has no plastic or wax coatings, and keeps your pizza warmer. It does require special composting procedures.

Plankton numbers, which feed the ocean seafood populations, are decreasing off the East coast of the U.S. causing fish stocks to move north to follow them to colder waters but even there they are decreasing due to the slowing of some ocean currents such as the Gulf Stream and the speeding up of others such as the Beaufort Current. Also, the increasing freshwater ice melt is decreasing the salinity of the ocean waters necessary for sea life to survive. These same ocean current changes preceded previous sea level rises and ice ages.

Another seaweed grown in Australia, called *Asparagopsis*, contains bromoform that when added to cattle feed can reduce methane emissions by up to 98%. This is a warm-water seaweed in contrast to the cold-water seaweed from Scotland that does the same thing. *Asparagopsis* could be farmed off California.

Tasmania has suffered the loss of 95% of its kelp forests due to rising ocean temperatures from climate change and the acidification of the oceans due to CO₂ increases. Kelp can grow two feet a day and greatly absorbs CO₂ at rates up to 50 times greater than land forests. This absorption also acts to deacidify the ocean promoting the growth of shellfish and coral.

As the Midwest climate gets dryer due to climate change, the Ogallala Aquifer, encompassing eight states, is getting depleted. One-sixth of the world's grain is grown here. Rivers and streams in the area are also getting depleted as water is drawn from them killing off the native species of fish.

The journal *Diversity and Distributions* is reporting that lobsters, scallops, black sea bass, and surf clams are all moving north or to deeper waters as the Atlantic Ocean warms. The southern lobster fishery has collapsed. Soon they will only be available in Canada. Blue crabs from the Chesapeake are also moving north and are now appearing as far north as Nova Scotia.

A report published by the World Meteorological Organization (WMO) says by 2025 the world has a 40% chance of one year reaching 1.5 degrees C increase set by the Paris Climate Accord as the maximum they wanted to allow. Some scientists are already saying we are past the tipping point for climate change being irreversible unless we start pulling CO₂ out of the atmosphere and not allowing any more.

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