



The  
**NATURALISTS' CLUB**  
 NEWSLETTER  
 Springfield Science Museum at the Quadrangle, Springfield, Massachusetts

*October to December 2024*  
**Calendar of Events**

**OCTOBER**

6	Sunday	<b>Preparing For Winter: Plants &amp; Animals, Westfield</b>
12	Saturday	<b>Northwest Park, Windsor, Connecticut</b>
16	Wednesday	<b>OCTOBER MEETING: In Search of Very Old Things</b>
19	Saturday	<b>Bartholomew's Cobble, Sheffield</b>
20	Sunday	<b>Quabbin Hike, New Salem</b>
26	Saturday	<b>Bright Water Bog Nature Retreat, Shutesbury</b>

**NOVEMBER**

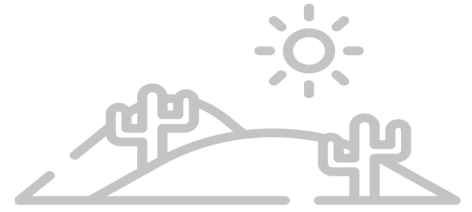
9	Saturday	<b>Bear Den, New Salem</b>
16	Saturday	<b>Purgatory Chasm, Sutton</b>
20	Wednesday	<b>NOVEMBER MEETING: Holey Basalt! The Amazing Origins of the Holyoke Range</b>
23	Saturday	<b>Hiking at Fannie Stebbins Wildlife Memorial Refuge, Longmeadow</b>
30	Saturday	<b>Hike Away your Thanksgiving Meal (Say goodbye to the pie), Monson</b>

**DECEMBER**

8	Sunday	<b>Annual Late Fall Hike at the Quabbin, Belchertown</b>
14	Saturday	<b>Reed Conservation Area, Belchertown</b>
14	Saturday	<b>An Evening with Naturalists, Wilbraham</b>
15	Sunday	<b>Black Brook Reservoir Hike, Russell</b>
18	Wednesday	<b>DECEMBER HOLIDAY MEETING</b>



# NATURALIST'S CORNER



## The Desert Underground

Recent novels and nonfiction publications that discuss the role of trees in our ecosystems emphasize that there is a lot more going on underground than there is above. We have been awakened to the awesomeness of things not visible to us.

By contrast, we still know little about the amazing processes that occur in the soils of the world's deserts. A good number of us have walked or hiked in the deserts of Utah, New Mexico, Nevada, Arizona and California without much thought about what is going on underground.

Did you know that the plants you see in the desert are some of the longest-lived plants on the planet? Desert plants have adapted to long periods of drought, punishing heat, intense sun, desiccating winds, and nutrient-poor soils by growing slowly and deliberately, conserving energy by many special methods. They invest most of their growth efforts downward into the soil, favoring a strong foundation over lush foliage that would squander their precious water and resources.

Mojave Yuccas can live up to several thousand years. Creosote bushes are the oldest of desert plants. The average age of creosotes across the present-day Mojave Desert is likely 600-1000 years. One of the oldest creosote bushes, named the King Clone, can be found in a valley near Twentynine Palms in the Mojave Desert. It is estimated to be at least 10,000 years old!

Over centuries, these plants have developed extensive root systems, high concentrations of chemical defenses in their tissues, as well as dense stems that endure pathogens, herbivores, droughts, freezes, and most other threats. One thing they cannot survive? Bulldozers.

Unseen events in each stratum of desert soil shape the world above. At the surface, a living layer of microscopic algae, fungi, and bacteria binds the soil together. This layer is known by various names, including biological soil crust, cryptogamic crust, cryptobiotic crust, and macrobiotic crust.

When we gaze across the desert landscape, the dwarf-looking plants may appear to be small, but their roots can reach surprising depths. For example, a six-inch-tall Desert Primrose has roots about five to six feet deep, almost twelve times longer than the plant is tall! These deep plant roots grow down to soils still retaining moisture from rainfall many years earlier, providing a lifeline to plants during long intervals of drought. These deep roots also transfer carbon from the air down to the soil. Chunks or layers of cemented soil, called caliche, capture and hold carbon underground. Succulent plants, such as cacti and yuccas, have a different strategy. They have shallow roots, relying on other means to absorb water from the soil.

Our desert plants and soil microbes join forces by making a living glue that binds soil grains tightly together so wind can't pick up dust and soil. The soil also holds on to dangerous small particulate matter—as a result, we don't inhale these particles. This living glue captures and stores carbon underground in living systems for thousands of years—even after they die, so long as the soil isn't disturbed.

When living desert soil crusts are disturbed, though, storm winds readily pick up dust. In addition to blowing harmful particulate matter, desert storms can lift dangerous fungal spores that cause Valley fever from the soil into the air, raising the risk of serious lung infections.

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Deeper into the soil, plant roots are interconnected through their partnerships with special fungi. Plants need help to absorb water and nutrients from desert soils. In turn, fungi are powerful sponges, absorbing moisture and nutrients, but they can't make food. Plants will share carbohydrates they have synthesized, and fungi share the resources they have gathered—a good trade for all involved.

How does this work? The root systems of fungi are made up of thread-like mycelia that connect fungi to plant roots and plant roots to plant roots. These fungal connections serve as nature's underground internet, enabling plants to communicate with their neighbors. The fungal hyphae below ground inform the whole community of dangers like insect attacks and initiate the production of pest-repelling compounds in all plants connected to this network. This entire system is destroyed when bulldozers scrape the soil surface.

There are two different types of fungi. One grows around plant roots and produces mushrooms. The other grows inside plant roots and does not produce mushrooms. An entire essay would be needed to describe the different types of fungi and their functions.

Let's review a part of the carbon cycle. Humans and other animals utilize oxygen (O<sub>2</sub>) that plants produce; plants utilize carbon dioxide (CO<sub>2</sub>) that humans and other animals produce. Plants are crucial to combatting the serious problem of too much carbon in our atmosphere. They take in massive amounts of CO<sub>2</sub> and reassemble that carbon into support structures and sugar: Some carbon is stored in their stems and roots as lignin and cellulose; some of the carbon is integrated into sugars. This carbon is transported underground where it serves to grow more roots and becomes a part of the soil.

Our desert soils store carbon underground in a variety of ways. By-products from growth above ground become locked in hidden carbon storage vaults, both living and non-living—in the caliche, for example—for hundreds to thousands of years! Our long-lived native plants across desert landscapes are valuable ancient assets to our ecosystem and to us because individual plants can capture carbon out of thin air for multiple centuries or millennia and deposit it underground. This entire kingdom of incredible creatures works 24 hours per day, year after year, unseen and mostly unappreciated by us.

We once thought that carbon was held in meaningful amounts only in ocean creatures, in forest habitats and in humus (the dark organic material that forms in soil when dead plant and animal matter decays). Now we know that soils, including desert soils, are also a significant storage facility for carbon.

When desert soil is scraped and plants removed, as for example, across the tens of thousands of acres currently being scraped for industrial-scale wind and solar projects on desert public lands, the community of ancient plants is disrupted, and their connected underground fungal partners die. As a result, significant amounts of carbon are released from the soil back into the atmosphere, and no additional carbon can be sequestered in the soil. Recovery of plants to pre-disturbance cover may take 50-300 years. Complete ecosystem recovery may require over 3,000 years!

As we contemplate how to transition from fossil fuels to so-called “renewable” resources, we need to realize that the undisturbed functioning desert ecosystem is not a renewable resource. Scientific evidence suggests that the choices we make today to disturb desert ecosystems could continue to negatively impact these systems for thousands of years, even after the impacted area is mechanically restored upon site decommissioning.

Let's not destroy the best carbon sink we have in our beautiful southwestern deserts. Let's leave our hidden soil magicians alone to do their work. Undisturbed, deserts will continue to protect our atmosphere and protect us as they have for millennia.

*~Terry Weiner*

What makes the desert beautiful is that  
somewhere it hides a well.  
-Antoine de Saint-Exupéry

### **Preparing For Winter: Plants & Animals, *Westfield***

Sunday, October 6, from 9 to 11 a.m.

Leaders: Nancy & Tom Condon

Registration: Please contact Tom (413 454-2331; or science@condon.net)

Meeting Place: Grandmother's Garden, Smith Avenue

Join us for a captivating guided walk through the enchanting landscapes of Chauncey Allen Park as we explore how plants and animals prepare for the winter. This informative journey will unveil the intricate strategies that species employ to endure the cold season. Discover how trees and shrubs conserve energy and protect themselves, while learning about the fascinating behaviors and adaptations of local wildlife. From the vibrant colors of autumn foliage to the subtle signs of animals preparing for hibernation, this walk offers a unique perspective on seasonal transformations in New England's diverse ecosystems. Whether you're a nature enthusiast or just curious about changing seasons, this guided experience will surely deepen your appreciation of the natural world.

This program is offered as part of Grandmother's Garden's 90th Anniversary Celebration. Members of the Grandmother's Garden facility will be available to answer questions, and light refreshments will be provided.

### **Northwest Park, *Windsor, Connecticut***

Saturday, October 12, starting with carpool meetup at 10 a.m.

Leader: Dori Dittmer

Registration: Please contact Dori (917-346-0969; or dordittmer@gmail.com)

Meeting place: We will carpool from the parking lot of Stop & Shop, Route 5 in West Springfield.

This municipal park spans 473 acres of a former tobacco farm along the Farmington River. It offers 12 miles of hiking trails. We'll choose a route and explore meadows, woods, and water, being sure to stop by the Nature Center to enjoy its exhibits and barn animals. Bring bug spray, hiking poles, binoculars, and a camera—and dress for the weather.



### **In Search of Very Old Things**

Wednesday, October 16, starting at 7 p.m.

Tolman Auditorium, Springfield Science Museum

Speaker: Sonya Vickers

Scotland and New England were once connected. When the Atlantic Ocean separated us, Scotland got some of the older parts of the things we shared. Some essential insights into how geology works came from the efforts of early Scottish scientists in unraveling the mystery of how rock layers and mountains move. Join us as we escape to the Highlands for an evening, propelled by Sonya's description of the fascinating geology of Scotland.

Sonya first spoke with us about the geology of Scotland, by Zoom, in 2020, when gatherings were paused due to Covid. Many members were unable to join us, so we've decided to offer this program again!

A stone is ingrained with geological and historical memories.

-Andy Goldsworthy

### **Bartholomew's Cobble, *Sheffield***

Saturday, October 19, starting with our carpool meetup at 9:30 a.m.

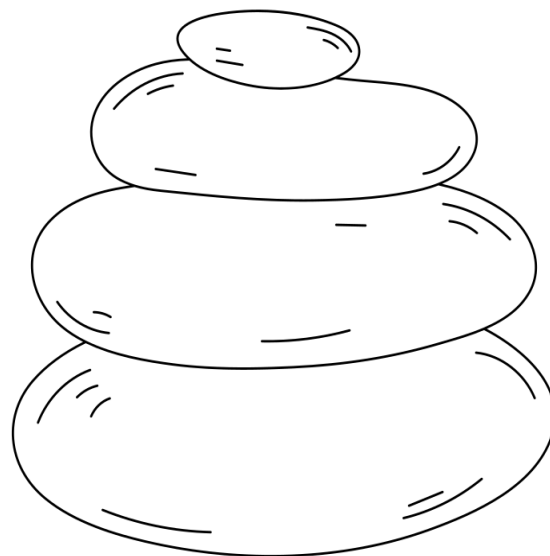
Leader: Sonya Vickers

Registration: Please contact Sonya (413-218-7742)

Meeting Place: We will carpool from the parking lot of the Table and Vine store in West Springfield

This incredible area of Sheffield has been recognized as a National Natural Landmark. Its two cobbles—rocky knolls, one marble, the other quartzite—support over 800 species of plants, including the most diverse set of fern species in all of North America. The area is also home to the oldest cottonwood tree in Massachusetts.

The cobbles are at 1,000 foot elevation, so we will get views of the Housatonic Valley, even from our level walking trail. Along the way, we will search for clues to past land use and venture even farther back in geologic time to understand how the rock cobbles got here in the first place. Bring a lunch or a snack. Please note that there is a \$5 fee for anyone who is not a member of the Trustees of Reservations; please call Sonya to clarify. Dogs are not allowed.



**Quabbin Hike, *New Salem***

Saturday, October 20, starting at 10 a.m.

Leaders: Dave and Suzy Gallup.

Registration: Please call if you plan to attend (413-525-4697)

Meeting Place: CVS Plaza near junction of Routes 9 and 202, Belchertown

Join us for a wonderful October hike at the northwestern side of Quabbin (Gates 25-26), one of the area’s most beautiful locations. From our route, we will be able to spot a string of small islands across the calm water. Each year we’ve done this hike, we have been lucky to see loons and hear their calls. Our route will loop along an old road through mixed hardwood forest, offering wonderful views of the October foliage. After hiking about three miles, we will visit the town of New Salem—a little village that looks just as it did in the nineteenth century. From the town, we will have the option to take a short walk to a beautiful vista that you will love! Then we will visit a farm and orchard in town for some wonderful hot apple cider. Rain cancels. Bring a lunch or snack.

**Bright Water Bog Nature Retreat, *Shutesbury***

Saturday, October 26, starting with carpool meetup at 10 a.m.

Leader: Dori Dittmer

Registration: Contact Dori (917-346-0969; or dordittmer@gmail.com)

Meeting place: We will carpool from the parking lot of Stop & Shop on Route 5 in West Springfield.

The newest Kestrel Land Trust retreat comprises 140 acres of wetlands and wild forest. A new boardwalk crossing a rare natural bog has just been completed as part of a loop trail that encompasses Ames Pond. In addition to this boardwalk, where we can see cranberry bushes and marsh grasses, we will encounter a beaver dam and pond, and whimsical sculptures created by Julian Janowitz. If time permits, we will also visit the steep stone staircase leading to a cliffside view. Wear comfortable shoes/sneakers, dress for the weather and bring hiking poles, insect repellent, binoculars, camera, water, and snack/lunch.

**Bear Den, *New Salem***

Saturday, November 9, starting with our carpool meetup at 10 a.m.

Leader: Dori Dittmer

Registration: Contact Dori (917-346-0969; or dordittmer@gmail.com)

Meeting place: We will carpool from the parking lot of Stop & Shop on Route 5 in W. Springfield

Back by popular demand! This hike was so great last time that we are repeating it, this year a little later in the season. The short, easy-but-rocky trail leads to the Swift River, passing through 70-foot granite cliffs. Expect some steep drops here as we explore the gorge and lovely cascades with a small pool. Behind the cascades, we will follow a beautiful flat and well-maintained trail.

This Trustees of Reservations’ property includes sites where local Native people celebrated victories against white settlers in the late 1600s, and where Metacomet (King Philip) and other area chiefs met to plan attacks on local towns that threatened their safety and way of life. This was also, later on, the location of pastures and a mill, ruins of which can still be seen. And of course we can’t forget the caves. Wear sturdy hiking boots, dress for the weather and bring hiking poles, insect repellent, binoculars, camera, water and snack/lunch.



**NOVEMBER MEETING: Holey Basalt! The Amazing Origins of the Holyoke Range**

Wednesday, November 20, starting at 7 p.m.  
Tolman Auditorium, Springfield Science Museum  
Speaker: Richard Little

Many mysteries will be addressed in this program! What are the origins of this mysterious dark rock that forms such a linear mountain ridge from Amherst to New Haven? Sometimes the ridge has columns, sometimes pillows—what does that tell us? How did the Holyoke Range develop? How did the Connecticut River cut through it? Why does it turn east/west in the Amherst area? Come and find out!

About the speaker: Richard Little is Professor Emeritus at Greenfield Community College and has written two books about the wonderful geology displayed in the Connecticut River Valley. He will bring unique Jurassic Armored Mud Ball specimens for display, some books, and even Jurassic Armored Mud Ball hats. Learn more at <https://armoredmudballs.rocks>

### **Purgatory Chasm, Sutton**

Saturday, November 16, starting with our carpool meetup at 10 a.m.

Leader: Dori Dittmer

Registration: Please contact Dori (917-346-0969; or dordittmer@gmail.com)

Meeting place: We will carpool from the parking lot of Stop & Shop on Route 5 in West Springfield

In the middle of gentle woodlands we will come across “New England’s Grand Canyon.” It is full of nooks and crannies, small caves, odd rock formations, sheer 70-foot rock walls, and large boulders. Hiking is strenuous, so we will go slowly! Wear sturdy hiking boots and make sure to bring hiking poles along with the usual insect repellent, binoculars, camera, water and snack/lunch.

### **Hiking at Fannie Stebbins Memorial Wildlife Refuge,**

*Longmeadow*

Saturday, November 23

Leader: Carole Dupont

Registration: Please text, call, or email Carole (413-896-0124; or carole0136@gmail.com) for meeting place and time.

The Fannie Stebbins Memorial Wildlife Refuge was established in 1951 by the Allen Bird Club, which named it after Stebbins, co-founder of the Club and former science teacher in Springfield. Since then, the Refuge has grown to its current size of 330 acres. In 1972, the refuge was named a National Natural Landmark. It became part of the Silvio O. Conte National Fish and Wildlife Refuge of the U.S. Fish and Wildlife Service in 2013.

According to the Natural Heritage and Endangered Species Program, floodplain forests are considered to be among the rarest and most threatened natural communities in Massachusetts. They make up a tiny fraction of the forests that line the river, about 0.1 percent. Most forests along the river are upland forests that don’t flood. But the rare floodplain forests get their feet wet yearly. As a result, they provide a specialized habitat for wildlife. We will hike along several easy trails, including one down to the Connecticut River, where we can observe 6 Flags amusement park across the water. Bring your binoculars, water, snacks, good hiking boots, hiking poles and dress according to the weather.

### **Hike Away Your Thanksgiving Meal (Say goodbye to the Pie), Monson**

Sunday, November 30, starting at 10 a.m.

Meeting Place: Burlington Store in the shopping mall at Allen and Cooley Streets, Springfield

Leaders: Dave and Suzy Gallup

Registration: Please call Dave and Suzy (413-525-4697)

It’s that time again! Join us for this popular annual hike and walk off those calories from Thanksgiving dinner. We will hike to the summit of Peaked Mountain, which offers incredible vistas of the valley below. From the summit, we will be able to see all the way to Mount Monadnock in New Hampshire! Our hike will traverse a few different trails. This is a moderately strenuous hike. Bring lunch and plenty of water. Sturdy hiking shoes are recommended, and don’t forget your binoculars!



### **Annual Late Fall Hike at the Quabbin, Belchertown**

Sunday, December 8, starting at 10 a.m.

Leaders: Dave and Suzy Gallup

Registration: Please call if you are planning to attend (413-525-4697)

Meeting Place: CVS Plaza, near junction of Routes 9 and 202 in Belchertown

Late fall is a great time to get together and share the day. Setting out from Gate 15, we’ll enjoy a wonderful hike with great views of the northern section of the Quabbin. We’ll spot lots of stone walls, farm sites, and the remnants of an old grist mill. There is a chance we will even see eagles and hear loons! In past years, we have seen moose tracks on the Quabbin’s sandy beaches. Bring a lunch, hot drink, and binoculars. Dress for the weather and wear sturdy hiking boots. Rain cancels.



Autumn was coming; the evergreens might not have noticed, but the sycamores did.  
They flashed thousands of golden leaves across slate-gray skies.

-Delia Owens, *Where the Crawdads Sing*

**Reed Conservation Area, Belchertown**

Saturday, December 14, starting with our carpool at 10 a.m.  
Leader: Dori Dittmer 917-346-0969  
Registration: Please contact Dori (dordittmer@gmail.com; or 917-346-0969 )  
Meeting place: We will carpool from the parking lot of the Stop & Shop on Route 5 in West Springfield

This 93-acre woodland has a scenic trail system that traverses varied and picturesque woods and wetlands and offers a unique view of Knights Pond, which provides drinking water for the region. The town of Belchertown acquired this area in 2002. Wear sturdy hiking boots, dress for the weather and bring hiking poles, binoculars, camera, water and snack/lunch.

**An Evening with Naturalists, Wilbraham**

Saturday December 14, starting at 7 p.m.  
Host: Sonya Vickers  
Registration: RSVP to Sonya (413-218-7742)

For many years now, we have been getting together in December to celebrate—join us this December as we continue the tradition! Sonya lives in Wilbraham and invites you to her home to share stories of our encounters in nature through the past year. Bring a holiday treat to share. Please be sure to call Sonya to RSVP for this festive event—that way if there is a big snowstorm (that’s happened in years past!), she can call you back to cancel. Sonya will also provide directions to her home.

For a list of events offered through MassAudubon, please visit [www.massaudubon.org](http://www.massaudubon.org) or call 781-259-9500

**Black Brook Reservoir Hike, Russell**

Sunday, December 15, from 10 a.m. to 1 p.m.  
Leaders: Tom & Nancy Condon  
Registration: Please contact Tom (413 454-2331; or [science@condon.net](mailto:science@condon.net))  
Meeting Place: We will carpool from the Russell Post Office at 58 Main Street in Russell

Join Tom and Nancy for a hike to the secluded Black Brook Reservoir in Russell. This tranquil escape will take us along a quiet forest road, where the path is framed by frosted trees and, sometimes, a soft blanket of snow. As we approach the water, the world seems to hold its breath in the crisp air, revealing a mirror-like surface undisturbed by time. Robert Frost’s words—”The woods are lovely, dark and deep”—capture the serene and introspective nature of this winter journey.

We’ll meet at the Russell Post Office and carpool to the trail head. Parking is very limited. Watch the weather, as mid-December can be a challenging time. Spikes may be necessary, though much of this trail is along a road. We’ll travel 3 to 4 miles, with a moderate incline. If we get a blast of heavy snow, we’ll make this a snowshoe adventure. We have plenty of snowshoes to share! Pack a lunch and perhaps something hot to drink.



**DECEMBER HOLIDAY MEETING**

Wednesday, December 18, starting at 7 p.m.  
Springfield Science Museum, Tolman Auditorium  
Presenters: You!  
Emcee: Nancy Condon (413-297-0778)



Did your summer travels include a destination you would recommend to others? Do you have photos of Naturalists’ Club events from this year? We want to hear from you. Our annual holiday meeting is an opportunity to share memorable and inspiring nature and travel experiences with other Club members. Show us some highlights, by way of slides, PowerPoint, or photo album. Presentations should be no longer than 10 minutes. This year we will once again have the “Good Read” table, so if you have enjoyed a good book that you would recommend to other Naturalists’ Club readers, bring it along. For those willing to loan a book out, identification tags will be supplied, and loaner and borrower can swap contact information. You may also just display a book without the option to loan. Either way, look through your library — please try to bring at least one title. If you are able, please also bring a holiday dessert to share during the social hour. We can discuss books with other club members while we enjoy delicious holiday treats. Let’s celebrate the eve of the Winter Solstice together. Please call Nancy to get on the roster for presentations.

**FROM THE TREASURER**

Those receiving the electronic newsletter will find membership status listed in an upcoming email. For those receiving the paper newsletter, '24-25 (or later) on the mailing label indicates that membership is paid for this year; '23-24 indicates that renewal is due. To establish or renew membership, please send information/ payment to:

**Tom Condon**  
80 General Knox Road  
Russell, MA 01071

If your address and contact information have not changed, the form below need not be completed, but please do email us to add your electronic address to our list and to indicate whether you'd like to switch from print to electronic newsletter, which helps us save both paper and postage.

**MEMBERSHIP LEVELS**

- \$20 per year for Individual or Family Membership
- \$30 per year for Supporting Membership
- \$50 per year for Sustaining Membership
- \$300 for Lifetime Membership

**RENEW YOUR MEMBERSHIP**

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Name

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Address

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Do you opt for electronic delivery of the Naturalists' Club Newsletter?    Yes \_\_\_\_\_ No \_\_\_\_\_

Please send information per the above to:  
Club Treasurer, Tom Condon, 80 General Knox Road, Russell, MA 01071



The NATURALISTS' CLUB was founded in 1969 for the purpose of actively promoting knowledge, appreciation, and preservation of our natural environment.

It is an all-volunteer non-profit organization.

Education is a main focus of The NATURALISTS' CLUB.

Programming, with an emphasis on local natural history, is designed to create camaraderie among people of diverse interests through experiences deepening their appreciation of nature.

Activities are geared to acquaint the layperson with the natural world, mostly through field trips. Monthly meetings are held at the Science Museum at the Quadrangle in Springfield, Mass. Most field trips and programs are free.

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*The layout of this newsletter is based on a design by Loren Hoffman.*