



CONNECTICUT

Woodlands

SUMMER 2018

The Bees' Needs

A MAGAZINE OF THE CONNECTICUT FOREST & PARK ASSOCIATION



On the Cover: Ted Jones inspects a hive at Massaro Community Farm, page 8



Artist James Prosek questions the boundaries we place on nature, page 14



Friends groups enhance Connecticut's state parks, page 18



Deb Field explores the wonders of our native orchids, page 20

Summer 2018 Volume 83/No. 3

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CONTRIBUTOR'S Spotlight



Hanna Holcomb, who wrote *The Bees' Needs*, is a first semester senior at Wesleyan University. In addition to being a frequent contributor to *Woodlands*, the Woodstock native is also the coordinator for WesCFPA, a student-run partnership between the university and CFPA.

We caught up with Hanna to learn more about her studies, future goals, and her love of the outdoors.

Woodlands: What was it like growing up in one of the most rural and wooded areas of the state?

Hanna: There is some protected land right behind our house with trails, and my parents were always taking my younger brother and me on hikes. Skiing was also a family thing. I've gotten more into backpacking and trail work on my own. It was so nice to have open space growing up, but I really didn't appreciate it until I came to school. I think if my parents hadn't gotten me outside as much as they did when I was little, I wouldn't appreciate it as much as I do now.

What are some of the more memorable backpacking trips you've taken?

I did a NOLS (National Outdoor Leadership School) semester a couple of years ago. I was in the Rockies for 90 days, mostly in the Wind River Range and Bears Ears National Monument. I've also hiked about a third of Vermont's Long Trail and a few sections of the Appalachian Trail.

How did you end up double-majoring in the sciences and the humanities?

I started school thinking I was going to study biology and chemistry, but I realized I hated being in a lab and I really missed writing. And I would've missed out on a lot of ecology and environmental science courses. It's pretty easy to double major at Wesleyan, so I switched to biology and English. A lot of people try to separate out sciences and the humanities, but it's so important that they work together, especially in the environmental field, because we need to be able to communicate about the changes that are happening, and the changes we need to make.

Have you started to think about post-college plans?

I want to do seasonal jobs or trail work out West for a bit. This summer I'm working with an ecology professor doing research on forest fragmentation and caterpillar populations, and I'm volunteering with the New England Wildflower Society. If I like fieldwork, I might go in that direction. Or maybe I'll do science writing, or write for an outdoors magazine. That would be cool. I can go in a lot of different directions.

What message do you have for other college students about volunteering with CFPA?

It's worth investing in Connecticut's trails. Working with CFPA, I've noticed that most of their volunteers are older and have been in this community for a long time. It's often harder for a young person to feel really attached to the land, especially if they're going to leave [the state] in a few years. But every little bit helps. Connecticut gets a bad rap for having nothing going on, but we have so much great hiking and really accessible trails. It's nice to get off campus, and there are many places to go that are only 20 minutes from here.

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Bumble bees can average 450 flower visits per hour—more than seven flowers per minute, page 10



The Connecticut Forest & Park Association (CFPA) is a 501c3 nonprofit organization that protects forests, parks, walking trails, and open spaces for future generations by connecting people to the land. Since 1895, CFPA has enhanced and defended Connecticut's rich natural heritage through advocacy, conservation, recreation, and education, including maintaining the 825-mile Blue-Blazed Hiking Trails system. CFPA depends on the generous support of members to fulfill its mission. For more information and to donate, go to ctwoodlands.org

Editor’s Note

Days spent at the beach. Leisurely bike rides. Camping trips. Picnics at the park. After a long winter that seemed to drag on and on, summer beckons us to get outside. And with a state park or forest within 15 minutes of every Connecticut resident, we have ample opportunities to explore.

Our state parks are vital not only for the rich natural heritage they protect, but also for the diverse cultural history they preserve. They enhance our quality of life, and, if we’re thoughtful about how we care for them, will continue to do so for generations to come.

As you know, this year our state parks are free for all Connecticut residents thanks to the Passport to the Parks. But despite the new program, many of our parks remain underfunded and understaffed. I’m grateful for the generosity and dedication of local Friends groups who volunteer their time and resources to help make our state parks safer, more accessible, educational, and fun.

As carefree as summer can feel, for many it’s also the busiest time of year. Trail crews hit the woods to maintain and improve our vast Blue-Blazed Hiking Trails. Scientists and naturalists spend countless hours in the field, patiently observing and documenting our native plants and wildlife. Connecticut’s farmers cultivate our rich soil, producing a wide variety of healthy foods while protecting open space and building community.

At CFPA, we too are busy, working hard to conserve and protect your forests, parks, and trails. We’re also hosting numerous events and educational programs for the whole family. I can think of no better way to kick off summer than by joining one of the more than 240 Trails Day events happening statewide on June 2-3. For more information and a complete listing of all the Trails Day activities, go to ctwoodlands.org/td2018dir

I’ll see you outside,



Timothy Brown
Editor

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CFPA
Updates

Everybody loves a good story. CFPA staff and members are constantly swapping stories of their adventures on the trails, many of which involve a run-in with a furry, slimy, or feathered woodland critter. On April 19, we took these stories on the road and hosted our first Story Slam at the REI store in Milford. CFPA volunteer Mat Jobin, founder, owner, and guide at Reach Your Summit, cohosted the event.

Emma Kravet, Education Director at CFPA, says she got the idea for the Slam after hearing so many CFPA volunteers share stories about encounters they’ve had with wild-life. “I get photos, phone calls, and in-person accounts of exciting, unique and sometimes frightening—and even life-changing—encounters with wildlife on a weekly basis,” she said.

The theme of the Story Slam was “Wildlife Encounters.” Five storytellers signed-up in advance, and one person who stepped up to the open mic. The stories featured a diverse selection of wildlife, including a face-to-face encounter with a moose!

Jobin concluded the event by providing some tips for safely sharing the woods with wildlife. One participant said she felt much more comfortable with the idea of hiking in the woods after hearing his presentation. “There’s a lot of interesting wildlife in Connecticut,” said Shane Lancer. “The Story Slam really made me want to get outside and explore!”

You can hear all the stories on the latest episode of our new podcast, Boots & Bark, available on the CFPA website and iTunes.

To learn more about these and all of our upcoming programs, go to ctwoodlands.org/CFPA-events

Blazed

For W.S.

By Peter Sagnella

When I was four we hiked West Rock with lunch—beans, hotdogs, hot chocolate—and made fire from wads of The Journal Courier and The New Haven Register and slats of grape boxes from California. Heading south the trail was not blazed, and hardwood hung above us

in skeletons of twig and branch. Dad and I hugged trap rock ledges, twisted through oak and hickory until we found the charred stone, the rusted grill. High on the ridge late morning was raw. Milk and salt warmed my throat.

Today, tasting memory, I hike with you. We duck under cedar limbs, sniff resin, spot deer scat. We follow red and blue marks on rocks and trees and veer north, northeast, south, then behold what must seem to you the edge of the world. On smooth

sloping sandstone we look out. A breeze picks up. You ask to sit on my lap. I pull you in, wrap my arms around yours. I squeeze you, embrace bone and the muscle attached to that bone. Your body is warm, your cheek cold.

Peter Sagnella lives and teaches in North Haven, Connecticut. His poetry has appeared in several national journals, and has been nominated for a Pushcart Prize. In 2017 he was an Edwin Way Teale Artist-in-Residence at Trail Wood.

Just because something is simple,

The formula for protecting forests, parks, and trails is pretty simple. You need 1) funds to acquire public lands, 2) resources (dollars and personnel) to appropriately manage public lands for public benefit, and 3) strong laws to ensure that valuable public lands aren't given away. Simple formula, but it certainly hasn't been easy to ensure those three variables are in place during the last several years of state budget cuts.

doesn't mean it's easy.



Eric Hammerling speaks at an event at the new REI store in West Hartford. REI was a key backer of SJ 35.

Speaking of budgets, the Connecticut State Assembly alternates between “long sessions” (January to June) in odd years focused on passing a two-year state budget, and “short sessions” (February to May) in even years focused on policy issues. Despite 2018 being a short session, adjustments were necessary to the state budget this year to ensure positive outcomes for your forests, parks, and trails.

Amongst CFPA’s top three priorities this year, two involved budget-related adjustments:

- 1) Ensuring the new Passport to the Parks is protected in a non-lapsing account;
- 2) Reauthorizing state bonding for Recreational Trails & Greenways grants; and
- 3) Passing a resolution to put a referendum question on the November ballot to amend the state constitution to better protect public lands.

The Passport to the Parks was approved last October with great fanfare. But the legislative language that established the Passport needed to be fixed to make clear that **the funds collected from the \$10 DMV registration fee and other revenue sources must be held in a “separate non-lapsing account” rather than in the General Fund.** A non-lapsing account is more difficult to sweep or raid than a fund in the General Fund, and as the name suggests, it also rolls over from one year to the next. This allows DEEP to more efficiently hire seasonal workers when they are needed for the spring to fall outdoor recreation season. Without a non-lapsing account, DEEP would continue to be dependent upon the uncertain timing of the annual budget process and a July 1st fiscal year break that inconveniently occurs at the peak of the outdoor season. Fortunately, the language of the Passport was fixed to make it a non-lapsing account.

It was also essential to reauthorize bonding for DEEP’s Recreational Trails & Greenways grant program, because the all of the previous bonding that was previously authorized had been spent. If restored, **this bonding would be the only source of funding available in 2018 that could be invested in a wide variety of recreational trail projects around the state.** Crucially, these funds are invested where federal dollars cannot, such as planning, design, and other smaller, but critical connections to various state trails networks. The General Assembly passed a bonding package on the last night of session (May 9th) that authorizes \$3 million in bonding for recreational trails and greenways. CFPA has asked the Governor to convene the State Bond Commission to allocate this funding, something we hope will happen in the near future.

Lastly, **CFPA has been fighting for several years to amend the state constitution to ensure that Connecticut’s public lands can’t be sold, traded, or given away without appropriate public input.** This year, the General Assembly considered SJ 35, “Resolution proposing an Amendment to the State Constitution to Protect Real Property Held or Controlled by the State,” that puts a question on the statewide ballot this November that

would, if passed by a majority vote, lead to the following critical changes:

- 1) **Require a public hearing** before any public lands are sold, traded, or given away; and
- 2) **Require a two-thirds vote** before lands held by the Department of Energy & Environmental Protection, such as state parks, forests, and wildlife management areas, or the Department of Agriculture could be sold, swapped, or given away.

These changes are necessary because every year, the Connecticut General Assembly considers a “Conveyance Bill” to sell, swap, or give away state-owned public lands. Valuable public lands like state parks and state-owned agricultural lands can be included in the sale. Moreover, changes are often made to the Conveyance Bill at the very end of the Legislative session when no debate or public input is possible. The opportunities for mischief are abundant, and **each Conveyance Bill actually waives all other laws that may interfere with selling, trading, or giving away public lands by using the powerful language: “Notwithstanding any provision of the general statutes...”** Constitutional reform is essential so the General Assembly cannot so easily waive or ignore protections for public lands in the state constitution.

Outdoor Recreation Generates

\$6.9 billion Consumer Spending	\$2.2 billion Private Sector Wages & Salaries	\$502 million State & Local Tax Revenues
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Supports 71,000 Connecticut jobs.

Source: Outdoor Recreation Economy Report by Outdoor Industry Association, April 2017

Fortunately, SJ 35 was passed unanimously in the Senate, and then by a vote of 118 to 32 in the House, which meets the three-quarters threshold to place this question on the November 6 ballot. It’s about time that

Connecticut joined Maine, Massachusetts, and New York who already have constitutional protections for public lands. I hope everyone gets out in November to vote “yes” on this vital ballot question.

The 2018 session concluded with these victories for CFPA’s top legislative priorities. We thank our many partner organizations, members, and other committed citizens for their help and support.

Eric Hammerling has served as the Executive Director of the Connecticut Forest & Park Association since 2008.



The Bees' Needs

We rely on both introduced honey bees and their wild, native cousins to pollinate our foods. But many bee species have suffered drastic losses in recent years. Now scientists, farmers, and concerned citizens are stepping up to help make Connecticut a more bee-friendly environment.

By Hanna Holcomb

As the sun rises over Massaro Community Farm in Woodbridge, honey bees, *Apis mellifera*, buzz around their nine hives. They fly from flower to flower, collecting nectar and pollinating squashes, eggplants, tomatoes and other crops. The bees visit about 100 flowers in a single foraging trip, slurping nectar from each one into their “honey stomachs,” a special holding place with enzymes to breakdown nectar. They then return to the hive and regurgitate the partially-processed nectar into the mouth of another bee, who passes it to another, who, in turn, passes it to another until the nectar’s complex sugars are broken into simple monosaccharides. The bees deposit the nectar into a cell in the comb and beat their wings to evaporate water. They cap the cell with beeswax, and the nectar continues to break down until it turns into sticky yellow honey that the bees rely on for nourishment and we love to eat.

Life for honey bees has not been all sweet though. “Bees are exposed to a lot of different stresses,” says Steve Dinsmore, President of the Connecticut Beekeepers Association, an organization dedicated to supporting beekeepers across the state and increasing public awareness about the importance of honey bees for agriculture and the environment. “If it wasn’t for beekeepers, the bees would have a hard time surviving because they have too many things working against them,” he says.

The intensity of stresses affecting bees has increased in the last few decades. “About 30 years ago, experiencing a 3 to 5 percent loss was the norm of what beekeepers would expect each season,” says Caty Poole, Executive Director of Massaro Community Farm. “But they started seeing drastic changes in the loss from season to season. Beekeepers have now become accustomed to losing 20 to 30 percent of the hive each year and having to replenish it.”

A variety of factors have contributed to the decline in honey bees. According to the UConn Center for Land Use Education and Research, Connecticut lost 62 square miles of agricultural land and 190 square miles of forest cover between 1985 and 2010. Much of that land was developed, which reduced the number and size of pollinating sites for bees. Agriculture’s trend towards monoculture has homogenized the bee’s diet, which makes them more likely to have a nutritional deficit and to be more susceptible to infection. Further, at sites with neonicotinoids, a class of insecticide chemically similar to nicotine, nearly all of the bee’s pollen and nectar is contaminated with toxic residues. Neonicotinoids have been shown to damage the bees’ flight patterns and navigation, decrease taste, and slow learning.

In recent years, the biggest threat to honey bees has been the varroa mite, *Varroa destructor*. The mite was first introduced to North America in the 1980s, and was discovered in Connecticut in 1991. The varroa mite is an eight-legged

reddish brown external parasite that sucks blood from both adult and developing honey bees, and breeds inside capped comb cells. Inside the cell the mites feed on developing bee pupae causing deformities and shortening the bees’ lifespan. “Varroa mites also transmit viruses that can kill off a honey bee colony pretty effectively over the course of a couple years,” says Kimberly Stoner, an Associate Agricultural Scientist at the Connecticut Agricultural Experiment Station who specializes in alternatives to insecticides for managing vegetable insects.

Scientists estimate that between April 2015 and May 2016 nearly 45 percent of Connecticut’s bee colonies were lost. But beekeepers have adapted to the presence of mites and intensity of other stressors by monitoring hives for mite infections, supplementing food sources, and replacing bees when

there are losses. To support beekeepers, the Connecticut Beekeepers Association runs seasonal workshops at Massaro Community Farm. The popular workshops guide beekeepers through technical processes like hive inspection, maintenance, and closing hives for the winter. “We get a lot of people coming to these workshops. I’m hoping that will create the next generation of beekeepers,” said Poole.

With nearly 700 registered beekeepers managing over 5,000 hives in Connecticut, honey bees are important members of local ecosystems. But honey bees are not native to North America; they were introduced from Europe in the 1600s for honey production. They have since played significant roles in agriculture and contribute some \$15 billion to the national economy. Yet the introduced bee is only a supplemental pollinator to the more than 300 species of native bees in the state.

One of Stoner’s recent studies examined pollination of pumpkin and winter squash at 20 different sites over three years. She found that 85 percent of pollination was done by two native bee species – the common eastern bumble bee, *Bombus impatiens*, and the squash bee, *Peponapis pruinosa*. Honey bees were responsible for just 15 percent of pollination for these crops.

Honey bees are convenient pollinators because they live in large colonies of tens of thousands of bees and can be

moved to pollinate different crops at different times of the year. But the pollination provided by the biodiversity of native species is essential to the health of local ecosystems. For example, native bumble bee species pollinate spring-blooming crops in wet and cool conditions. And variation in body type amongst native species allows them to pollinate certain types of flowers that may not be effectively pollinated by honey bees.

“If it wasn’t for beekeepers, the bees would have a hard time surviving because they have too many things working against them.”

Native species are subject to many of the same threats as honey bees, such as habitat loss and pesticide toxicity, but the resiliency of each species varies widely. For example, out of Connecticut’s 14 bumble bee species, two have been lost and two others have not been collected in the state for several years. Conversely, the common eastern bumble bee is increasing its range. For other species, like Fernald’s cuckoo bumble

bee, *Bombus fernaldae*, there is too little data to accurately know the bees’ status. “For most bees we don’t have a good baseline,” says Stoner, “but we’re learning more about identification and classification of bees all the time.”

Despite the critical role of native bee species, less is known about them than honey bees because honey bees are easier to study. But increasing knowledge about the range, numbers, and health of native species will help to guide management policies and protect more of Connecticut’s pollinators.

Recognition of the ecological value of pollinators has spurred legislation and other protective measures. In 2016, the Connecticut State Assembly passed “An Act Concerning Pollinator Health,” which restricts the use of neonicotinoids, requires the study of varroa mites, promotes the



Right: Native bumble bees forage at Massaro Community Farm.

establishment of pollinator habitat, and requires the production of a citizen's guide to pollinator habitat creation.

Stoner, who spearheaded the pollinator habitat guide, insists the best thing that people can do to attract pollinators is to plant vegetation that blooms through a whole season. She recommends planting flowering plants, including shrubs and trees, which vary in bloom time and shape to provide food for bees throughout the season and accommodate a variety of pollinators. Further, the pollinator habitat guide, which can be found on the Connecticut Agricultural Experiment Station website, emphasizes the importance of protecting pollinator habitats, including lawns, vegetable gardens, and flower beds, from chemical pesticides and insecticides. These simple adjustments in land management can greatly aid Connecticut's pollinators.

There has also been an increased interest in pollinator education in recent years. At CFPA's headquarters, Master Naturalist Lynn Kochiss and CFPA Education Director Emma Kravet offer programs such as "Honey Bees and Other Pollinators" where kids can learn about the social structure of honey bees, how they make honey, and participate in



Honey bee hives at Massaro Community Farm.

a honey taste test. At the James L. Goodwin Conservation Center, Kochiss and Caroline Driscoll teach students about the relationship between plants and pollinators, and spend time outdoors observing pollinators in action. Both of these programs are part of a popular season-long youth series.

"I have found that nothing captures the interest and imagination of both children and adults like telling the story about honey bees," says Kravet.

Through field trips and summer camps, Massaro Community Farm also teaches children about the role of pollinators. The farm has a see-through demonstration

hive which allows viewers to study the hive's structure, watch a queen in action, and see bees process nectar. The demonstration hive has a pipe leading outside so the bees can pollinate crops, often ending up in the farm's learning garden beside many visitors.

"The kids can get quite comfortable being around bees that are in the learning garden," says Poole. "They've gone through the process of understanding that the bees aren't aggressive by nature."

The gardens at Massaro Community Farm rely on pollination from both native bee species and honey bees. The combined effect of these pollinators helps the farm to produce a 200-member CSA each summer and donate about 10,000 pounds of food to local hunger-relief agencies annually. Protecting the health of our pollinators is essential for vegetable production at Massaro Community Farm, and for all of us who enjoy and depend on locally grown foods.

Hanna Holcomb is a first semester senior at Wesleyan University.

From the Land What's the Buzz All About?

By Jean Crum Jones

Folks sometimes ask me if we care for animals on our farm and I say, "Yes—native bees!" I usually get a quizzical stare with that response. We realized the importance of native bees in the late 1980s when a couple of bears attacked our honey bee colony. All of the hives had to be removed to discourage the return of the bears, and I was worried about the amount of fruit we would have for harvests that year. But as it turned out, we had good fruit sets thanks to the abundant native bee populations on our farm. As a result of the bears, we decided to become more

deliberate about creating a bee-friendly farm.

My favorite native bee is the bumble bee, and it has a special relationship with my favorite fruit, the blueberry. A blueberry flower is shaped like a small bell and its flower parts are deep inside. Insects must pollinate it so it can bear fruit. The

bumble bee gathers nectar from the tubular flower section using its long tongue. Once inside the blossom, it grabs hold of the flower parts with its jaws and then shivers its flight muscles while its wings are folded against its body. This strong vibration creates a buzzing when the bee is feeding. As it shakes, its body gets coated in pollen, which the bee spreads to the next flower. The bumble bee is very efficient at pollinating blueberry flowers. In the time that it takes a honey bee to pollinate a single flower, a bumble bee can pollinate six. Bumble bees can average 450 flower visits per hour—more than seven flowers per minute.

A large healthy blueberry bush produces thousands of flower buds every year, with up to sixteen individual flowers developing from each bud, and every flower a potential berry. In May, when the bumble bees are at work in the blueberry fields, one can hear a very audible buzzing.

As a result of our farm's need to have an abundance of pollinating bees, we have established a method of growing native wildflowers amongst our Christmas trees. In the spring, there are dandelions, clovers, and wild strawberries, as well as cultivated strawberry and blueberry fields for bees to visit. When June comes, the wild oxeye daisies proliferate, followed by the black-eyed Susan in July, then



the Queen Anne's Lace in August. Throughout the summer, the bees enjoy the Joe-Pye weed, butterfly weed, wild chicory, elderberry, yarrow, goldenrod and sunflowers growing helter-skelter along farm walkways. We also grow pumpkin and squash crops for the fall that produce giant flowers in August and September. We estimate that 35 percent of our farm has been cultured to allow for plentiful native bee forage. This is why I say we are native bee farmers. Of course, we encourage native wildflowers because our livelihood depends on it. But if everyone did what they could to help preserve native bees in their own yards, we would have a more secure, beautiful, and delicious world.

Jean Crum Jones lives in Shelton with her farming family.

Summer Pollinator Events

Symposium. Wild about Bees: How Gardeners Benefit from Pollinators, keynote address by Dr. Kimberly Stoner, Bruce Museum, Greenwich. June 13, 7 p.m.

Planting for the Bees' Needs – Providing Habitat for Honey Bees and Wild Bees with Dr. Kimberly Stoner, Connecticut State Library, Hartford. June 21, 12 p.m.

Discover Goodwin Forest Youth Series: Pollinators with Lynn Kochiss and Caroline Driscoll. James L. Goodwin Conservation Center, Hampton. July 29, 1-3 p.m.

Discover Highlawn Forest Youth Series: Honey Bees and Other Pollinators with Lynn Kochiss and Emma Kravet. CFPA Headquarters, Middlefield. August 11, 1-3 p.m.



Tangy Blueberry Chutney

Servings: About 2 cups.

1 cup diced onion, red or yellow

½ cup sugar

½ cup golden raisins

½ cup cider vinegar

2 cups fresh or frozen blueberries, divided

1. In a saucepan, combine onion, sugar, raisins, and vinegar. Bring to a boil.
2. Reduce heat and simmer until sugar dissolves, about 3 minutes.
3. Add 1 cup blueberries. Simmer until saucy, about 5 minutes.
4. Add the remaining 1 cup blueberries. Simmer 1 minute longer.
5. Serve as accompaniment to cheese, chicken, ham or rice entrée dishes. Delicious on slices of baguette.

Left: Blueberry chutney served with fresh burrata cheese.

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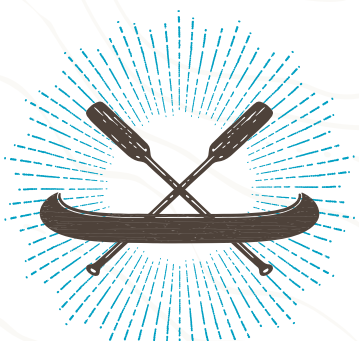
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100
Hikes

60
Nature
Walks

40
Educational
Walks



10 PADDLES



TRAIL MAINTENANCE
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people who may not have seen them
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Kenneth Selling, Event Leader



"I'll be leading hikers up Connecticut's highest peak where wonderful views
await those ready to wander where the wifi is weak."

Nicole Diaz, Event Leader



HORSEBACK RIDING, GEOCACHING, TRAIL RUNNING, AND MUCH MORE!

Questioning (Un)natural Borders

Acclaimed artist James Prosek pushes the boundaries of how we understand the natural world, and ourselves.

By Krista Karlson



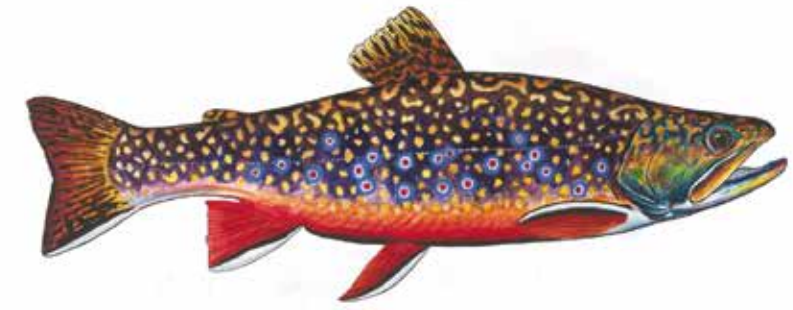
Set against a crisp, white background, a carefully constructed fish beams in reds, browns, yellows, and blues. Its mouth is open. There's an entrancing blue-green ring around its eye. Intricate patterns on the fish's side move from deep red lines to orange spots with eggplant filling, then a few prominent bull's-eyes and a cheetah-like fin.

The painting is of a brook trout, a species native to Eastern North America that has captivated artist James Prosek since he was 9 years old. "I fell deeply in love with this fish called a trout," he says. "I can't tell you how consumed I was by this fish."

When he was 12, he tried to find a book about all the varieties of North American trout. But to his surprise, none existed, so he decided to write one. He contacted Fish and Game officers and biologists across the country asking about their trout and discovered they disagreed on the number of species and subspecies that existed. What did it mean that the experts couldn't agree on how many varieties of trout there were, or more basic, how a species should be defined? Could an animal that's not considered a species be protected under the Endangered Species Act?

As the questions piled up, Prosek also started to wonder about the connections between thinking and drawing.

"Life as a human would be much more pale if we didn't have these beautiful creatures to engage with and fall in love with."



*Brook Trout (Salvelinus fontinalis) West Branch, Upper River, Adirondack Park, NY 1940
James Prosek for NYHS 2012*

"When I sat down at my desk, this strange thing would happen when I was drawing the fish," he says. "The sound of the stream would come back, and the buzz of the flies or the smell of blossoming flowers in the air." Later, when he returned to the stream, he found that the act of drawing had sharpened his observation skills and made him a more efficient fisherman.

His father, a merchant marine-turned-school teacher, instilled pragmatism in his son from a young age. "He wanted me to have a decent profession. He said artists starve because that's what he knew of artists," Prosek says. But his father never said he couldn't be an artist. When Prosek enrolled in Yale, he knew he wanted to study drawing and painting. As a freshman, he sent unsolicited book proposals about the trout of North America to 10 publishers. Nine rejected his pitch. But one company agreed to publish the book, "Trout: An Illustrated History," which was released in Prosek's junior year.

He remembers receiving the first copy in the mail. "It was a really interesting experience," he says. "I was just elated that it was coming out." And he wasn't the only one. The media quickly picked up the story of the 19-year-old author. Prosek was featured in newspapers, magazines, and on the nightly news. "It was kind of surreal," he says. From then on, he was known as "Trout Boy" around campus.

Since graduating from Yale in 1997, Prosek has pursued his love of nature all over the world, documenting fish, eels, and other subjects from Connecticut to Mongolia. His paintings encourage viewers to pause and think about the power of categorizing and naming the natural world, and they explore the ways nature is fluid and constantly changing. "Artists live in the realm of mystery and myth and the unexplainable. That's the realm I've chosen to dwell in," he says.

Prosek, now 43, is tall with salt-and-pepper hair and a gentle laugh that punctuates his words. He lives in Easton, on the same street where he grew up. His studio floor is covered with books, stacks of papers, photos, and sticky notes. "Each pile is a different thought or project," he says. "The whole floor is kinda like a desk." Another desk, built about six inches off the floor and tucked beneath a large picture window, overlooks an open field that he and his neighbors are working to protect from development.



Right: The artist's studio is blanketed with stacks of books, magazines, Post-it notes, and artwork, all research for his projects.



“Artists live in the realm of mystery and myth and the unexplainable. That’s the realm I’ve chosen to dwell in.”



Top: American Elk (Wyoming), 2016. Oil, acrylic, and mixed media on wood panel.

Bottom: Flying Fox with Prussian Firearm: The Fox Hunt, 2009. Watercolor, gouache, colored pencil, and graphite on tea-stained paper.

This window provides a glimpse into Prosek’s other passion: conservation. In 2004 he teamed up with Patagonia founder Yvon Chouinard, a conservationist and fly fisherman, to create World Trout, a nonprofit that protects and restores wild species like trout and salmon in their native habitats. The project reflects Prosek’s deep love for trout and his commitment to their conservation. “Life as a human would be much more pale if we didn’t have these beautiful creatures to engage with and fall in love with,” he says.

One of these creatures, eels, consumed much of Prosek’s work for nearly a decade. He was first drawn to the animal’s odd behaviors, such as the fact that they spawn in saltwater but spend most of their lives in freshwater. “They fascinated me because they don’t fit into any neat category in our minds. They’re fish, but we look at them more like snakes,” he says. His passion led to a book, “Eels: An Exploration, From New Zealand to the Sargasso, of the World’s Most Amazing and Mysterious Fish,” along with several paintings, and articles in *Orion*, *National Geographic*, and the *New York Times*.

“I have these very focused obsessions that will last for decades,” he says. His latest is a book—his 12th—that explores the fallibility of language and the naming of nature. He works with a variety of mediums including acrylics, etching, silkscreen, sculpture and powdered mica. But he prefers watercolor. Watercolor is extremely portable, which historically made it the first choice for many naturalist expeditions. “When you see watercolor, that history is kind of embedded,” he says. But artists don’t like to be pigeonholed. “Sometimes in order to make a statement you have to do something a little different.” For Prosek, this means foxes and bears with wings, paintings that place land and sea creatures side by side, and upside down butterflies.

One of his exhibitions, “Invisible Boundaries,” explored the impact on migratory elk herds of delineating the boundaries of Yellowstone National Park. The interdisciplinary project, a collaboration between the Buffalo Bill Center of the West and the Yale School of Forestry and Environmental Studies, highlighted the opportunities and challenges of transboundary conservation. “It matters for an animal what side of the line they’re on. Even though it’s invisible to them, it’s meaningful to us,” he says.

The paintings in this series are silhouetted landscapes of plants and animals with numbers but no identification key, a comparison to traditional field guides that help users identify species. The silhouettes invite viewers to challenge their instinctual urge to know the names of each creature, instead exploring the ways the creatures come into being through their relationship to the whole ecosystem.

Deciding where to place each element in a painting can be tricky, just like balancing the joys and responsibilities of personal and professional life. As a new father and a passionate artist, Prosek admits that the lines between home and work can get fuzzy. “I can’t leave work behind,” he says. “[I’m] haunted by it all the time.”



Prosek at work in his Easton studio.

The haunts of his mind inspire projects that reveal the immense beauty of the world. He strikes an improbable, but far from impossible, balance between push and pull: pushing against boundaries of order and classification, while pulling viewers in to complex questions and inviting them to engage on their own terms. His work, while intricate, is also quite simple, he says. “I’m cheering for the things that won’t be contained.”

Krista Karlson is freelance writer based in New Haven. Her work has appeared in Backpacker, The Hartford Courant, and Long Trail News, among other publications.

Befriending our State Parks

Throughout Connecticut, Friends groups are helping to protect and enhance our state parks.

By Timothy Brown

It's no secret that Connecticut has struggled to fund and maintain its state park system in recent years. But thanks to the new Passport to the Parks, an initiative spearheaded by CFPA that took effect earlier this year, our state parks will now have more reliable support. The Passport—a \$10 fee added to your Connecticut DMV vehicle registration every other year—is expected to provide nearly two-thirds of the necessary funding for the park system. This program will enable parks to hire more seasonal workers, including lifeguards at all state park beaches; re-open campgrounds; extend spring and fall camping at six parks; and restore regular hours of operation at museums and nature centers. And by eliminating entrance fees for Connecticut residents, more people will now be able to enjoy our state parks.

But despite the new revenue, Connecticut's state parks will still depend on the generosity and support of local Friends groups for staffing and other needs. Currently there are 17 Friends groups throughout the state who work alongside the larger Friends of Connecticut State Parks, an umbrella organization dedicated to the preservation and enhancement of our state parks.



The new Meigs Point Nature Center at Hammonasset Beach State Park is a stunning example of a successful partnership between a committed Friends group and the state. Hammonasset, a two-mile long shoreline park in Madison, is one of the state's most popular. In 2017, the park saw some 2.4 million visitors, including 156,000 campers between Memorial Day through Labor Day. More than a decade ago, the Friends of Hammonasset approached the state about the need for a new nature center to replace its smaller 64-year-old one. After several rounds of negotiations, the state finally agreed to fund the construction of a new \$3.5 million building under one condition—the Friends would be responsible for the interior of the center, including its design, fabrication, and the installation of all of its exhibits. It was a daunting challenge, but one that the Friends group embraced. “We need to rally sometimes and do what we do best and partner with the state,” said Christine Koster, President of the Friends of Hammonasset.

The Friends raised \$450,000 to complete the project, much of it from small donations. For example, each spring the Friends holds an annual plant sale just outside the park's main entrance. “If you bought a plant, you own part of the inside of this nature center,” said Koster.



Top: The new Meigs Point Nature Center.

Left: A summer day at Hammonasset Beach State Park.



Volunteers help staff the center, which features live wildlife exhibits and interactive touch-screen displays. They serve as docents and help with animal care. When the center opened in May of 2016, the state was in the midst of a financial crunch. By that fall, there were rumors that the center might have to close for the winter due to a shortage of staff. Koster met with the Park Supervisor and put out call to the Friends; 75 new volunteers responded.

In addition to staffing the nature center, Friends volunteer lead nature programs and host weekly film screenings for campers at the campground amphitheater. “I think it's important that people know that these things happen because of the Friends,” said Koster.

Each year some 8 million people visit Connecticut's 110 state parks. Like our National Park System, some parks were designated to protect the state's rich natural heritage; others celebrate our diverse cultural history.

Some 17 years ago, Jay Willerup and his family were hiking the Heublein Tower in Talcott Mountain State Park in Simsbury. As he signed the guest book at the Tower, he casually mentioned that he'd be happy to help in any way he could. Today Willerup is the President of the Friends of Heublein Tower, a group dedicated to restoring the 104-year-old tower to its original condition.

Willerup had never previously served on a board, but was inspired to help. Under his leadership, the Friends group has completed several projects, including the installation of a white oak parquet floor in the observation room and four copper canopy lights on the stone piers that lead to the Tower's main entrance. Willerup, an architect, and other committed Friends have done much of the work

themselves, from painting to putting in the copper lights.

“The role of Friends groups is greatly increasing,” he said. “Whether just a couple of people or 20, Friends are friends to help.”

The Tower sees well over 100,000 visitors each year, thanks in part to the dedicated Friends. Each August, the group sponsors Hike to the Mic, a music and arts festival at the top of Talcott Mountain. And each October, they host Tower Toot, a two-day Bavarian festival that attracts upwards of 3,000 attendees a day. Recently, the Friends of Heublein Tower has also experimented with brewing beer using wild hops that grow near the Tower, which could become another fundraiser to help support further improvements to the Tower and its grounds.

Like other Friends, Willerup is passionate about maintaining state parks for the benefit of all of Connecticut's residents. “Not everyone has a place on Martha's Vineyard that they can go to,” he said. It's a common sentiment from those who dedicate their time and resources to our state parks. As Koster said, “The parks belong to everyone.”



Top: Sunset at the annual Hike to the Mic festival.

Above: Heublein Tower.



Jewels of the Forest

By Deb Field

Hiking along a familiar trail on a Saturday afternoon I glanced down to check my footing, nearly stepping on a little plant. At first I thought it was a striped wintergreen. But looking more closely I realized I was seeing something new.

The plant turned out to be downy rattlesnake plantain, *Goodyera pubescens*, the most common terrestrial orchid in New England, but one that's rarely seen. The leaves and inflorescence of its dark green rosette are covered with a fine fuzz, and the white checkered pattern of the leaves looks like snakeskin. Its flower spike, which resembles a rattlesnake tail, can grow to a foot tall and often persists through the winter. Rosettes extend out from the mother plant. There can often



be a dozen or more connected plants in a small area, but they're usually hidden under the leaf litter.

Orchids evoke images of brightly colored and exotic flowers of the *Phalaenopsis* (moth orchids) or the large-blossomed, heavenly-scented *Cattleya*. But outside of aficionados, few people recognize terrestrial orchids or are aware of the diversity of temperate species. Connecticut is home to 44 species of terrestrial orchid: seven are listed as endangered, one is threatened, four are species of special concern, six are believed extirpated, and one is non-native. The remaining 25 are found throughout the state, although their habitat preferences and flowering cycles can make them difficult to spot.

Top: A pink lady's slipper.

Left: The flower spike that gives the downy rattlesnake plantain its name.

Last spring, as a student in the Master Naturalist Program at the Goodwin Conservation Center, I turned casual observations into an in-depth research project on two of my favorite local species—pink lady's slipper and downy rattlesnake plantain. Thanks to generous support from Joshua's Trust, a land trust in northeastern Connecticut, I set out to collect data on their growth and flowering patterns throughout the entire season.

The pink lady's slipper, *Cypripedium acaule*, is easily recognizable. A delicate, single moccasin-shaped flower emerges in mid-May and ranges in color from deep pink to almost white. Sometimes you'll see just one or two plants, but occasionally you can find patches with up to a dozen flowers and many more non-flowering individuals.

About eight years ago, while hiking through Joshua's Trust's Hubbard Sanctuary in Chaplin, I stumbled upon one of those elusive fields. It was classic lady slipper habitat—near a pond with slightly upland, acidic soil; pines and oaks providing dappled sunlight; and far enough off the trail to avoid detection. I returned regularly to check on the orchids. When the resident beaver dropped two large trees and opened up the canopy, I was worried I'd lose the patch. The following season there were only a few plants and no blooms. But gradually the orchids shifted a little to the west and resumed blooming.

My lady's slipper research focused on flower spike production, blooming incidence, and seed capsule production rate in four separate sites. The data I collected confirms other research on the flowering success of this species. Out of 50 plants, only 15 successfully bloomed and only two produced seed capsules. I never saw a pollinator near any flower. My conclusion was that lady slippers don't bloom very often and have a low pollination rate based on seed capsule production.

The rattlesnake plantain research also focused on the ratio of flowering orchids to number of plants. I identified eight

separate field sites, and added a ninth in August when I discovered more than 30 plants blooming behind one of my existing study sites. One week later, nearly three-quarters of the flowers, along with numerous flower spikes, had been nipped off by deer. I shifted my focus to the percent of flowering plants that never made it to seed formation. Out of over 300 plants, 75 bloomed, but 36 of those were eaten. Like their *Cypripedium* cousins, *Goodyera* forms many more plants than bloom, almost half of which never get a chance to form seeds.

My study was complicated by the recent gypsy moth infestations. Hubbard Sanctuary was particularly hard hit in 2016 and 2017, and the canopy cover in my study area was reduced by about 80 percent. There was also significantly less leaf litter on the forest floor, but plenty of caterpillar waste. I spent a month covered in squished caterpillar with guts and frass on every bit of my equipment.

On my most memorable field day, a great horned owl landed in a pine directly above me. As I scrambled to get decent pictures, a Cooper's hawk came screaming in followed by a red-tailed hawk. A three-way battle ensued. After nearly five minutes, the skirmish ended and everyone flew off to their own patch of forest. If I hadn't been sitting quietly, I would have missed the entire spectacle. If I hadn't been looking down, I wouldn't have seen my first little *Goodyera*. We can hike the same spot over and over, yet often fail to see what's really happening. Terrestrial orchids are certainly jewels of the forest, but the real treasure lies in the time we spend getting to know the forest around us.

Deb Field is a certified CT DEEP Master Naturalist and has been a marine and environmental science educator for 25 years. As an avid day-hiker, birder, and gardener, her main goal is to teach people about the importance of developing an understanding of nature as it surrounds us. She lives in Chaplin with her husband, two cats, an assortment of fish, and a tortoise named Djaq.

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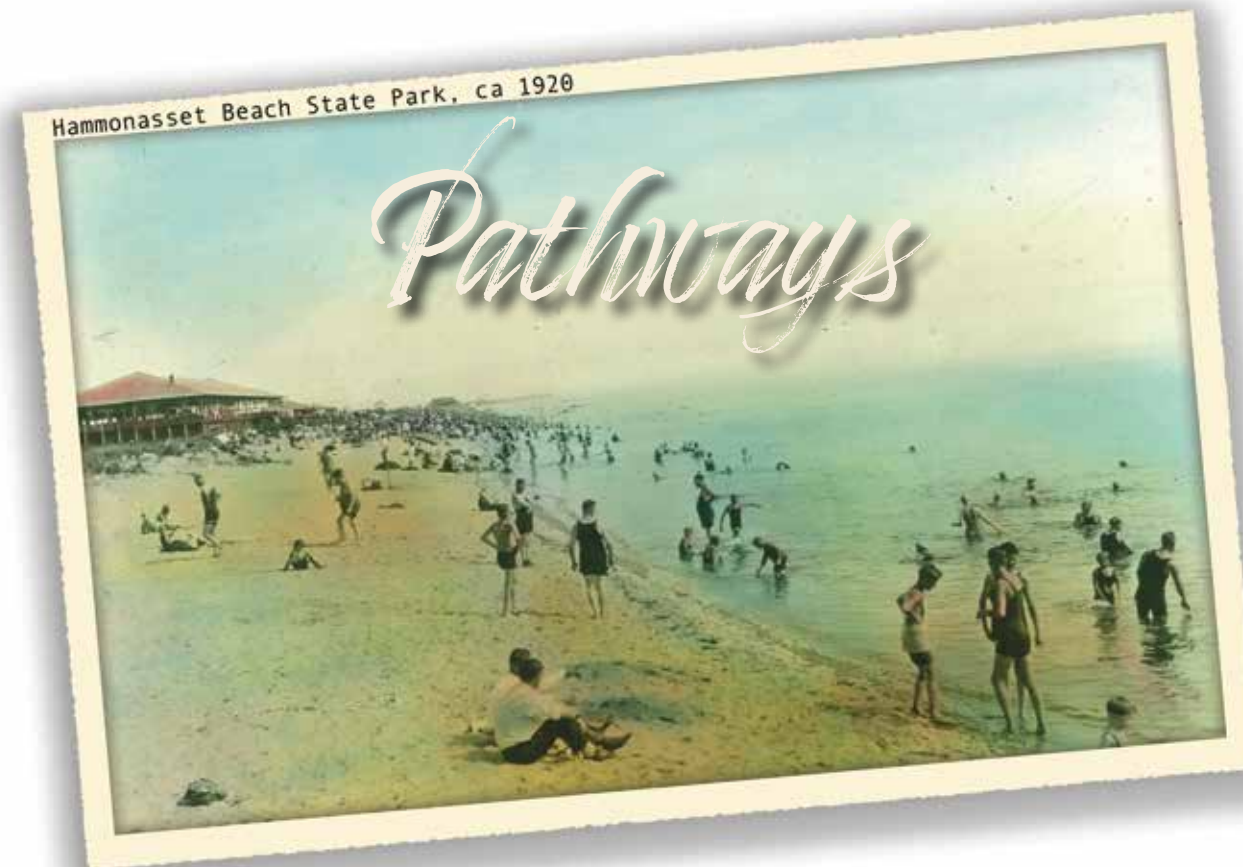
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Hammonasset Beach State Park has long been considered one of the crowning achievements of the Connecticut State Park System. Named for the original Eastern Woodland tribe who farmed the area, the park boasts 2 miles of beach, more than 550 grassy campsites, and the new Meigs Point Nature Center. Hammonasset opened to the public on July 18, 1920, and drew more than 75,000 visitors that first season.

The Grand Pavilion, seen in the above photo next to the boardwalk and clam shed, was built by the State Park Commission in the spring of 1920. It rested on more than 1,000 pile foundations of mostly dead chestnut trees from Devil's Hopyard State Park. The 300-foot-long pavilion survived several storms, including the Hurricane of 1938, and was eventually torn down in 1967. During World War II, the park temporarily closed to the public and was used by the federal government as a U.S. Army reservation and aircraft firing range. After the war ended and the park reopened, attendance soared. Today, well over 2 million people visit Hammonasset Beach State Park each year.



Camping at Meigs
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