



SUMMER GUIDE INSIDE



CAVS DOMINATE

LeBron romps, Cleveland controls Boston, 116-86 **C1**

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EAST PROVIDENCE

Concert producer pleaded in assault

Holder of licenses at Bold Point Park reached deal in Maine domestic case

By Andy Smith
Journal Arts Writer

The City of East Providence has transferred the liquor and entertainment licenses at its live music venue in Bold Point Park to a Maine company whose owner, Alex Gray, pleaded guilty in October to a misdemeanor charge of domestic violence assault in Portland.

The East Providence City Council transferred the licenses from the previous holder, Rhode Island-based Waterfront Productions LLC, to Gray's Waterfront Concerts LLC by a unanimous vote on April 17.

In Maine, the guilty plea may have cost Gray's company a summer concert series in Portland. But East Providence Police Chief Christopher Parella said last week that his city was unaware of the case when the licenses were transferred, although it had received extensive coverage by Maine news media.

Parella said that even if he had known about Gray's case, he would not have recommended denying the Bold Point licenses to Waterfront Concerts.

"We feel the situation in Maine, in the totality of its circumstances, would have no bearing on the kind of licenses that his company is holding," Parella said. After researching the case, he said that, in his opinion, Waterfront

SEE GRAY, A16



A royal wedding that bridges the Atlantic

Prince Harry, Meghan Markle wed in Windsor as millions watch.

Photos, A12-13 Story, A14



PHOENIX IN THE FOREST



They're burning tall trees, turning back the clock in R.I.

By Alex Kuffner
Journal Staff Writer

COVENTRY — Mark Teixeira flings flaming drops of a gasoline-and-diesel mixture from a handheld drip torch onto the ground, sowing precise rows of fire as he moves through the woods.

Almost instantly, the tiny flames grow bigger and spread wider as they feed on the deadwood that litters the forest floor.

Teixeira, a senior specialist with Northeast Forest and Fire Management, is committing an act of

conservation, not arson.

It may seem counterintuitive, but burning this overgrown forest in the Nicholas Farm Management Area in western Coventry will help restore its health by clearing out the trees that weren't historically here and leaving the fire-adapted species that do belong.

The burn is also a preemptive strike, a way of reducing the risk of a wildfire by using up much of the fuel in the forest in as safe a way as possible.

SEE PHOENIX, A10

Alex Entrup of Northeast Forest and Fire Management pauses on a hill in western Coventry to assess the progress of a recent "prescribed burn." The company, working with state and federal environmental agencies, is setting orchestrated fires in pitch-pine forests to clear out invasive trees that load the landscape with fuel and displace native wildlife. Top, native grass sprouts just three days after the burn. [THE PROVIDENCE JOURNAL / DAVID DELPOIO]

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Complete forecast, A9



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PHOENIX

From Page A1

Such burns are a common forest management technique elsewhere in the country, but this one in Coventry is the first in a decade in a state-owned forest in Rhode Island.

The state Department of Environmental Management hopes the burn will return the forest to a “pine barrens,” a globally imperiled ecosystem — characterized by airy stands of pitch pines with understories of berry bushes, grasses and thickets of scrub oak that are home to species of moths, butterflies, rabbits and birds found in few other places.

The fire will kill most trees, but the hardy pitch pines will survive. Their thick scales of bark are like suits of armor, and so the trees will scorch but suffer no serious damage. They are one of the only species of pine that can sprout new needles after burning, so while competitors like the white pines that now dominate this landscape won't recover, the pitch pines will.

Joel Carlson, the owner of Massachusetts-based NE-FFM, watches Teixeira work.

“The average person looks at this and thinks, ‘This is bad,’” Carlson says. “But it’s not. This is really good.”

History, humans and habitat

Pine barrens once stretched throughout the Northeast, from Massachusetts to New Jersey with pockets as far south as Maryland, as far north as Maine and inland to central New York.

Also known as pinelands, pine plains and sandplains, barrens proliferated in the gravel and sand outwash left behind as glaciers retreated after the last Ice Age about 12,000 years ago.

In the nutrient-poor soil, the resourceful pitch pine became a preeminent species. *Pinus rigida* is a hardy tree found in places where other species won't grow, on rocky ledges and dry fields. With its twisted trunk and stunted branches, the tree is not pretty in a classical arboreal sense, but it can be sculptural. Picture a bonsai, only full-size.

Although barrens formed through a natural process, they were to a large extent maintained by human intervention.

There is evidence that in New England and other parts of the nation, Native Americans burned the land regularly. Researchers say they set fires to create rangelands for game and flush out prey while hunting, to replenish berry patches and stimulate acorn production, and later, to create fields for crops.

No matter the reason, the result was the same: a dependable cycle of fire that thinned the forest, maintaining prairies in the Midwest, and, near the Northeast coast, ensuring that pitch pine thrived.

“In this respect, humans were a ‘keystone species,’ actively managing the environment with fire over millennia,” ecologist Gregory Nowacki, of the U.S. Forest Service, and Marc Abrams, of Penn State, wrote in a 2008 study.

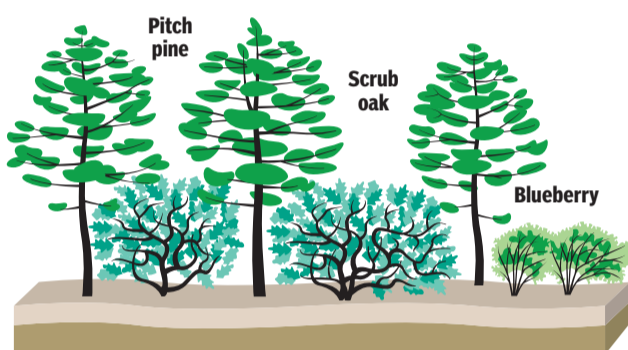
European settlers prized pitch pine for the tar and pitch that could be produced from its wood and used to waterproof sailing ships. They also coined the term “barrens” because of their struggles growing crops in the poor soils where they found pitch pine forests.

But starting with the settlers' arrival in the New World in the 1600s, fire started to fall out of use as



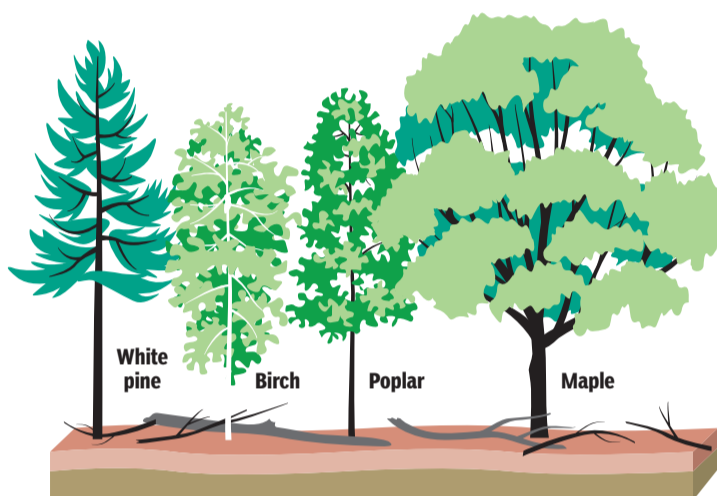
Smoke swirls through the forest in the Nicholas Farm Management Area in western Coventry as fire crews coax a prescribed fire through 8 acres dominated by white pine and oak trees, invasive species that have overshadowed the native pitch pines and the habitat that accompanies that native species. [PROVIDENCE JOURNAL PHOTOS / DAVID DELPOIO]

Trouble made in the shade



Scrub oak and blueberry bushes thrive in the dry, sandy soil of the pitch pine forest. The dense understory provides cover and food for small animals and birds.

Naturally occurring fire prevents overcrowding of trees and maintains a healthy ecosystem.



Lack of fire allows leafier species of trees to move in, shading out the understory of small trees and shrubs. Small animals and ground-nesting birds move out.

Over time, these larger trees generate larger fuel loads on the forest floor, increasing the risk of catastrophic fire.

THE PROVIDENCE JOURNAL/TOM MURPHY



During a planned fire on a recent Saturday in the Nicholas Farm Management Area, it was “holding boss” Olney Knight’s job to make sure the set fire didn’t escape the 8 acres where it had been prescribed. He’s the forest fire program coordinator for the state Department of Environmental Management. Managing a fire requires an understanding of topography, fuels and weather, Knight explains. “There’s an art and science to it,” he says.

a forest management tool. The risks were too great as settlements spread and logging became a valued industry.

Fires did continue well into the 20th century, the result of arson, sparks from steam engines or lightning strikes, but roads and rail lines served as fire breaks, and logging and the clearing of land for agriculture helped deter the spread of fire.

Over the past century, as firefighting techniques improved and a national policy took hold of suppressing fire at all costs — think of “Smokey Bear” — the incidence of wildfires has plummeted.

For example, in Rhode Island, there were severe fires in 1905 and 1910 and a smaller one in 1930 in the Kingston pine barrens in South Kingstown, according to the DEM. But the last one in that area occurred in 1968 and the forest is now intercut by housing.

The changes have had far-reaching impacts on the

natural world.

“This wholesale shift in fire regimes had unforeseen ecological consequences across the United States,” Nowacki and Abrams wrote. “A cascade of compositional and structural changes took place whereby open lands (grasslands, savannas, and woodlands) succeeded to closed-canopy forests, followed by the eventual replacement of fire-dependent plants by shade-tolerant, fire-sensitive vegetation.”

The World Wildlife Fund estimates that the Northeast has lost about 90 percent of its pine barrens since pre-Colonial days, due to a combination of development and changes in forest composition.

There are large tracts that remain: the New Jersey Pine Barrens, the Ossipee Pine Barrens in New Hampshire, barrens in and around Plymouth, Massachusetts and on Cape Cod, and the Albany Pinebush in New York.

As of 2011, Rhode Island

had about 389,000 acres of forest, but less than 1 percent was pine barrens. There are no big barrens left in the state, only small, isolated parcels in places like the Arcadia Management Area in Exeter, Ninigret National Wildlife Refuge in Charlestown, the Narragansett Bay National Estuarine Research Reserve on Prudence Island and Nicholas Farm.

Many are overcrowded and are slowly giving way to other forest types. Without fire, other trees intrude. Pitch pines love dry soil, but when white pines spread they drop a thick layer of needles on the ground that holds in too much moisture. Pitch pines need ample sun, but when maples, oaks and other hardwoods grow tall their canopies cast too much shade.

“It becomes a feedback cycle,” says DEM wildlife biologist Tanner Steeves. “White pine gets a footing, perpetuates, and itself makes changes.”

Among the 84 habitat types catalogued in the Rhode Island state Wildlife Action Plan, pine barrens received the second-highest overall rank in an assessment that considered such factors as importance to biodiversity and degree of threat.

“This is a fire-dependent forest,” Steeves says of Nicholas Farm, “but fire has been absent since the 1950s.”

How it’s done

It’s a Tuesday morning in early May, the second day of the burn at Nicholas Farm.

This is an all-hands-on-deck job. Lighting a fire isn’t difficult, but trying to direct where it goes takes a lot of manpower.

These types of fires are often called “controlled burns” or “prescribed burns.” Carlson, the owner of NE-FFM, uses only the latter term.

“We have prescription parameters that we follow, and we can maintain it within the confines of what we want it to do,” he says. “But we don’t control it. The general public likes ‘controlled’ because it sounds better, but I think it’s a lie.”

Along with him and four of his employees, there are three DEM foresters on site, a couple of wildlife biologists, including Steeves, and a summer intern with the agency, two fire experts from the U.S. Fish and Wildlife Service and three Coventry firefighters.

The team gathers at the entrance to Nicholas Farm, 1,429 acres of forestland that straddles the Moosup River and butts up against the Connecticut border.

They all wear fire-resistant Nomex-material clothing and tough plastic helmets. Some carry heavy-duty fire rakes with blades that look like shark teeth to dig into burning undergrowth while others have

backpack water pumps for extinguishing flames.

Alex Entrup, a senior specialist with NE-FFM, leads the pre-burn briefing. He’s the “burn boss” today, coordinating the entire job, but there’s also an “ignition boss” — Teixeira, who is in charge of lighting the fire — and a “holding boss” — Olney Knight, the DEM’s forest fire program coordinator, who will make sure the fire doesn’t escape the burn area.

The 25-acre area stretches west along a dirt road, following the hilly topography toward the river. On the previous Saturday, the team burned through 17 acres. They have 8 acres left.

Entrup goes over the strategy for lighting the fire.

“We’re going to try to get that line [of fire] in early while the dew’s still burning off from overnight and from that point we should be able to baby it through the rest of the unit,” he says.

A forestry crew came through two years ago with an excavator-mounted masticator, a logging machine that uses a rotary drum with steel teeth to chew up trees from the top down. The detritus was left on the ground to dry out enough to burn easily.

Fire lines were dug out by hand on one side of the burn area. The other is bordered by a stream and wetlands. The chances are low that the fire will escape, but an engine from the Western Coventry Fire District is stationed at the top of the access road. Two all-terrain utility vehicles are also on site as well as a Mercedes Unimog offroad truck.

Burns can only take place under a narrow set of weather conditions determined by temperature, humidity and wind speed. Slight changes in the weather can prevent a burn from happening. The burn at Nicholas Farm was supposed to take place last year, but the spring was too wet and the summer was too hot and dry.

Conditions came together quickly this spring, with a succession of cool and dry days. The DEM and Fish and Wildlife burned a small area of forest in the Ninigret refuge in late April and then the team set to work here.

As Entrup continues the briefing, he walks through contingency plans if an ember escapes, reminding everyone to “anchor, flank and pinch” the fire to cut off its path. But he cautions them not to be overly aggressive in trying to extinguish the fire because it will likely run north to the river and die out there.

SEE PHOENIX, A11

PHOENIX

From Page A10

The scrub in parts of the burn area is extremely dense, he adds.

"You don't want to get out there stuck in the shrubs in front of something that's incredibly hot," Entrup warns.

Fire reconsidered

It wasn't until the 1970s that scientists in New England started rethinking the role of fire in the region's forests and bucking the notion that all fire is destructive.

William A. Patterson III, a professor emeritus at the University of Massachusetts at Amherst, was one of the earliest proponents of restorative burning. He conducted his first burn, of only a couple of acres, in 1981 in a field beside the Quabbin Reservoir in western Massachusetts and progressed to larger sites in Acadia National Park in Maine and the Cape Cod National Seashore.

At Camp Edwards, on the upper Cape, he used helicopters to set fires and would burn through hundreds of acres at a time.

Patterson was among the researchers who found evidence of the use of fire by native tribes, in part by measuring the presence of charcoal in sediment cores.

"Fire and humans go hand in hand," he says.

His interest in fire was as a tool to restore pine barrens and other fire-dependent habitats. But he and other fire scientists also realized that small, periodic fires could help stave off catastrophic blazes by reducing the fuel load near the ground and eradicating "fuel ladders" that could carry flames from the forest floor into the canopy.

They have also found that prescribed burns may mitigate carbon dioxide released into the atmosphere by reducing the risk of destructive fires that produce higher emissions.

Wildfires are associated with the western United States, but they do occur in the Northeast. The Great Fires of 1947 in Maine burned 200,000 acres and killed 16 people. On the day in 1963 that became known as "Black Saturday," fire tore through more than 190,000 acres in the New Jersey Pine Barrens and killed seven people. And in Rhode Island in 1942, fire burned 24,500 acres in the section of Coventry where Nicholas Farm is located.

Patterson's earliest memory of wildfire was as an 11-year old being driven from his home in Hingham, Massachusetts, to a Boy Scout camp through the scorched aftermath of the Plymouth fire of 1957, which burned 15,000 acres.

"It was just totally black," he recalls. "They say it burned through 18 acres a minute."

Massachusetts now has a state-managed prescribed burn program. So does New Hampshire. The Rhode Island DEM used to carry out burns in such places as the Great Swamp in South Kingstown and Dutch Island in Narragansett Bay, but the most recent before this year was in 2008.

The program dropped off mainly because of staff retirements, says Steeves. It can take years for someone to get the certifications necessary to work as a burn boss.

Bringing in a private contractor like NE-FFM to do the work is expensive. The burn at Nicholas Farm is costing nearly \$50,000, though it is funded entirely through federal sources and foundations.

It is falling to Knight to



Using a drip torch, state wildlife biologist Tanner Steeves sets fire to brush in the Nicholas Farm Management Area in western Coventry. "This is a fire-dependent forest," Steeves says, "but fire has been absent since the 1950s." [PROVIDENCE JOURNAL PHOTOS / DAVID DELPOIO]



Pitch pines, native to the glacial outwash plain that covers much of the northeastern U.S., are remarkably fire-adapted. A blaze will char the bark but not kill the tree, which will sprout needles through the blackened bark.



Charred but surviving, and soon thriving, a bud on a pitch pine in the fingers of Joel Carlson, owner and principal consultant of Northeast Forest and Fire Management.

When a seasonal worker for the DEM commented, Knight responded, "Good boots."

He is learning from the workers at NE-FFM and others at Fish and Wildlife. Managing a fire requires an understanding of topography, fuels and weather, Knight says.

"There's an art and science to it," he says.

The burn at Nicholas Farm is envisioned as the first of many in the forest, as the DEM transforms the structure of the landscape.

When Giovanni da Verrazano explored Narragansett Bay in 1524, he reported seeing wide-open plains, according to one of Patterson's studies. The area that would become Rhode Island was 95-percent forested, but it was a patchwork that included woodlands and fields in various stages of growth, according to the College of the Environment and Life Sciences at the University of Rhode Island.

The early Europeans cleared about two-thirds of the forests for agriculture. As farming declined, fields gave way to shrublands and saplings. More than half of the state is forested again, but in the absence of fire and other disturbance, the forests are becoming dense and populated by mature

trees, homogeneous instead of varied.

Green and black

The fire at Nicholas Farm is in "full ignition," covering a hillside above a patch of wetlands. The flaming front climbs the hill, a curtain of smoke in its wake. Flames swirl up the crooked trunk of a pitch pine in a vortex created by the wind.

While the fire crackles, air bubbles in the trees pop and pockets of water squeak as the heat turns them to steam. Teixeira and the rest of the ignition crew work in "the green," the part of the forest still to be burned.

Carlson stands in "the black," the area already burned. It's the safest place during a fire, he explains, because the ground fuel has already been used up.

He is a forest ecologist who studied under Patterson at UMass Amherst. Before he went to college he spent four years in the Marine Corps, which included a stint running mule trains in the Sierra Nevada in California. He founded Northeast Forest and Fire Management in 2006.

This fire is burning as planned, but Carlson is ever-watchful, shepherding a reporter and a photographer back from the flames and checking and rechecking the

temperature and humidity.

He knows from experience that conditions can change fast. He estimates that he's taken part in as many as 900 burns. In one instance, on Nantucket, the fire escaped. It happened while he was directing a burn in a forest like this one.

Concerned about smoke in the humid conditions, he concentrated the fire and made it burn hotter, following a standard technique to channel the plume upward. But the atmospheric chimney he created allowed a layer of dry air drifting above the forest to drop to the ground, "just like flushing a toilet," Carlson says. The humidity in the forest plummeted and the fire turned into an inferno.

"I had two 150-foot fire whirls," he says.

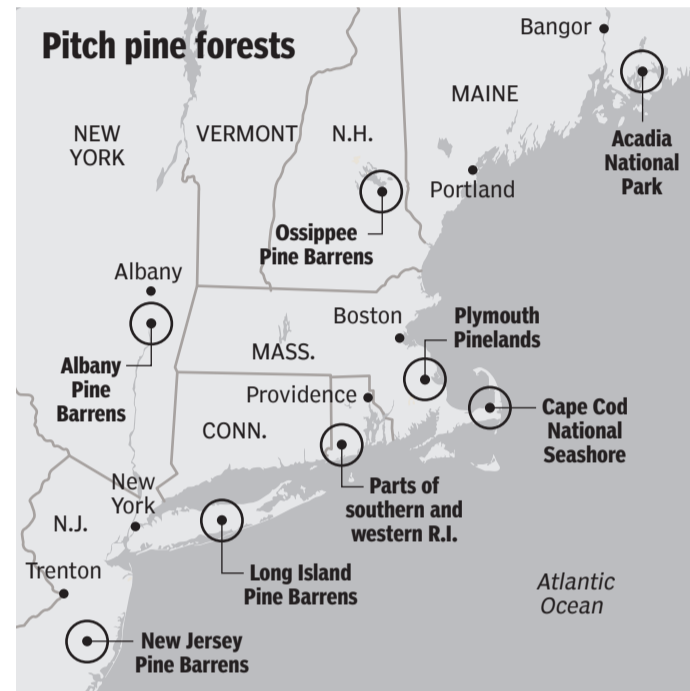
"Tornadoes." Carlson's team and local firefighters got the fire under control, but not until it had burned about 20 acres outside of a planned burn area of 40 acres. Nobody was injured and no developed property was damaged.

Carlson says it was a lesson in the unpredictable behavior of wildfire. But there are things that can be predicted. For one, heavy fuel loads in a forest will only increase the chances of a disastrous fire occurring.

He is a firm believer in the need to do as many prescribed burns as possible to thin out fuel. A pine barrens should have loads of about two to three tons per acre; when it's overgrown, the number can be 10 times as high. One risk assessment equated the threat in the New Jersey Pine Barrens to having an inch of gasoline covering the south and central parts of the state.

"If you have dense undergrowth and you have a wildfire, it will blow up through the canopy and carry through the forest," Carlson says.

He worries about what can happen when loads that have built up over decades



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of successful suppression are combined with periods of extreme heat caused by climate change.

"What we'll see is a catastrophic fire that will not be able to be suppressed by even the best firefighters," he says.

'That's regrowth'

Arizona State University science historian Stephen Pyne has called this period of time the "fire age" for the indelible changes humans have wrought on the environment by burning everything from trees to fossil fuels.

The burn at Nicholas Farm is one example of fire being used to manipulate a landscape. The burn team is restoring the pine barrens, but it's questionable that this type of habitat would be here in the first place without human intervention.

"I spend a lot of time trying to figure out what this landscape wants to be," Knight says.

Still, he and the other team members are sure of one thing. Bringing back the barrens will help support animal life.

It is not so much that pine barrens are more valuable in terms of the plants and animals found in them than other habitats in Rhode Island. But a diversity of habitats supports a diversity of wildlife.

Rare species inhabit barrens and associated shrublands and grassy fields that aren't found elsewhere. They include the box turtle, whip-poor-will and ruffed grouse, American woodcock and blue-winged warbler, the buck moth, wood bee and New England cottontail.

"It's about maintaining a unique natural habitat that we don't see other places," Steeves says.

Thinning the forest could also help deter the spread of southern pine beetles, pests that burrow through bark and spread a destructive fungus.

The tiny beetles that have ravaged forests in the South first showed up in New Jersey in 2013 and in the following years pushed onward along the New England coast, expanding their range, scientists say, due to warming temperatures. The first live southern pine beetle was trapped in Rhode Island three years ago.

When Carlson first visited Nicholas Farm four years ago, he didn't know if the pine barrens could be saved. The scrub oak was dying. White pine was everywhere. The forest was almost impenetrable.

"I walked out here and I was like, 'Oh my God, there's no hope. It's gone,'" he says.

As Carlson steps into a meadow that was burned on the previous Saturday, the radio on his chest comes to life. Someone reports seeing a 3-foot-long black racer.

"Did you hear that?" he says. "Snakes need sunning spots. In a closed forest, it's too cold and damp."

The field lies at the entrance to the forest. It was choked out and full of invasive grasses. Now, it looks like nothing more than a bare, blackened expanse.

Carlson bends down and points. Delicate blades of grass poke out of the ashes. They have grown since the first round of fire three days before. They look like switchgrass or little bluestem, warm-season grasses that belong here, Carlson says.

They should be joined soon by wildflowers and, in time for the return of monarch butterflies in mid-summer, milkweed.

"That's regrowth," Carlson says with pride. "You'll come back in August and the only way you'll know it's been burned is because the grass will be so green. This will be emerald green."

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