

A Food Forested Revolution

By Michelle Winglee

A kuku (a Persian fritatta) with collard greens, garlic scapes, passion fruit leaves and duck egg mayonnaise with roasted wild mushrooms. Photo by Sarah Bixby



Garlic and kale in the Forested garden.

Photo by Sarah Bixby

Tucked away behind an unassuming cul-de-sac in Bowie, MD, a narrow dirt trail leads to an open meadow and a chicken-wire fence framed by sturdy wooden beams. The gate reads: FOREST GARDEN. Opening into a lush green 10-acre parcel of tree canopy and wildflower-speckled underbrush, the forest garden is not your typical form of agriculture.

Most of the world's cropland is a swath of tilled land devoted to a single crop: a monoculture. In the U.S., most cultivated acreage is planted in corn or soybeans, while worldwide, wheat is the predominant crop. Amidst the global monoculture model, Lincoln Smith, a high-end-architect-turned "forest gardener," is challenging the conventional way we grow our food.

Dependence on pesticides, herbicides and chemical fertilizers to maintain conventional crop yields has had steep consequences. Nitrogen fertilizers require a fossil-fuel-intensive process that combines natural gas and nitrogen in highly

pressurized conditions. Fertilizer runoff has increased the cost of filtration for municipal drinking water and decimated aquatic ecosystems such as the crab and oyster populations of the Chesapeake Bay. Meanwhile, farmers battle evolving weed and insect resistance to herbicide and pesticide sprays, becoming more reliant on new products from agrochemical companies.

Lincoln Smith's strategy is to work with nature rather than against it.

As a landscape designer, Smith wanted to help clients live in an integrated way with the surrounding ecosystem—having seen the forests he'd grown up with as a boy razed for strip malls and sprawl. But clients were often more interested in perfect sod lawns than creating thriving forests native to the DMV's temperate climate. On his 30th birthday, Smith quit his job of five years to pursue the potential of agroforestry.

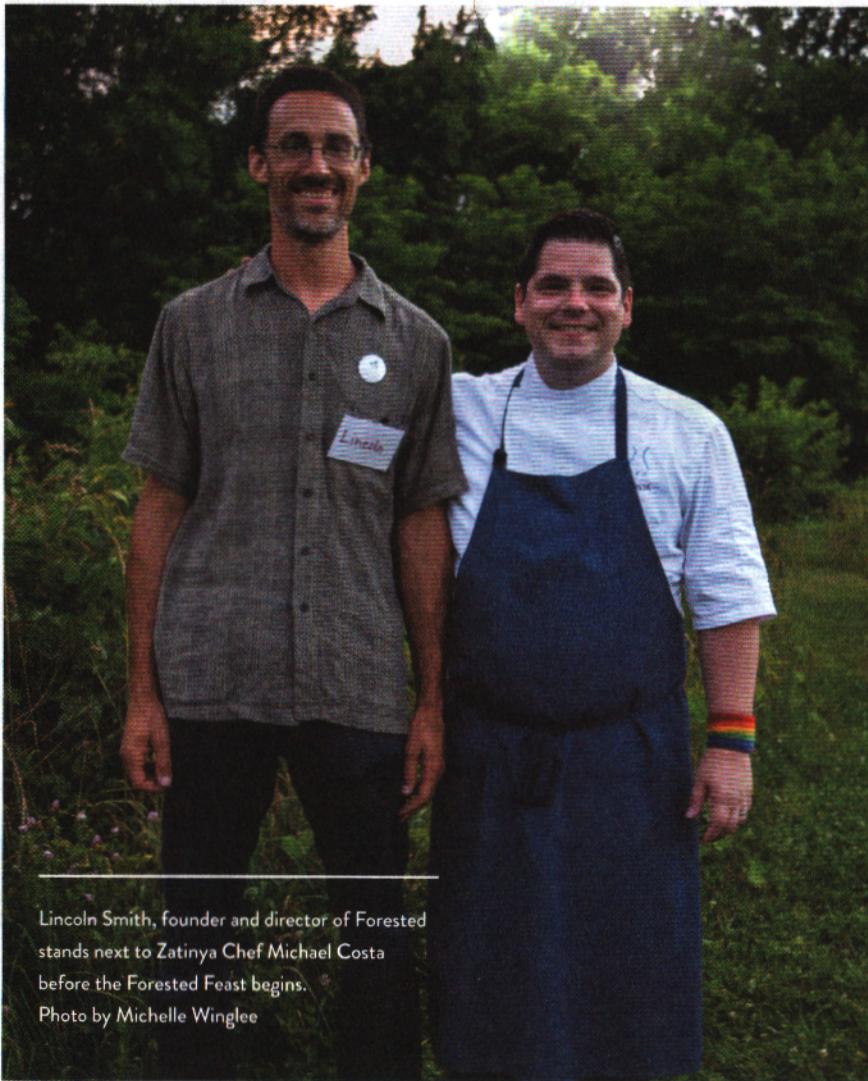
"Every ecosystem has amazingly abundant potential, we just need to rediscover it," says Smith, who founded the forest garden, Forested LLC, in 2012.

Forested supports a 15-member CSA, hosts agroforestry training classes and supplies food for "Forest Feasts," twice-a-year events featuring food grown from the plot. Through agroforestry, Smith is adding fertility to soil depleted from previous corn and tobacco fields while pioneering a new way to cultivate an edible crop in forest canopy.

Forested stands as a potential model for a more efficient, resilient and environmentally friendly form of agriculture than conventional monoculture systems.

Compared to planting rows of a single crop, forest agriculture maximizes the vertical dimensions of land space. Specifically spaced planting of taller trees with large canopies of leaves, then shorter trees that can grow beneath and lower edible shrubbery in a high to low slant, mimics the activity in a forest cycle before it reaches full maturity, maximizing sunlight and layering potential of land space.

In addition to working with the natural forest ecology, Forested also grows what is already adapted for the area with a few



Lincoln Smith, founder and director of Forested stands next to Zatinya Chef Michael Costa before the Forested Feast begins.
Photo by Michelle Winglee

tweaks: “We tap into the raw energy of the forest and then take it into a direction that we can use.”

After observing wild persimmon trees growing on his property, Smith introduced a sweeter fruit-bearing persimmon variety through a process called grafting. Grafting takes advantage of an existing trunk base and root structure to grow a compatible and more palatable species. Smith has also made use of invasive trees in his forest garden—grafting the Bradford Pear, an ornamental tree that originated in China and now grows virulently in eastern North America, with an Asian Pear to produce a crisp, sweet and tangy fruit.

Growing what is adapted to the local ecosystem takes the pressure off pesticide application. Unlike organic fruit farmers, Smith does not apply even organic pesticides. He believes that trees that

build up their natural defense system will produce tastier and more wholesome fruit.

To build up resilient plants, Lincoln believes in building a resilient ecosystem. While most agriculture focuses on growing a single crop to maximize yields, Lincoln goes for diversity.

Supporting a larger ecological web beyond just what is edible has come with unanticipated paybacks. Wasps, for instance, attracted by the bright flowers woven into the green underbrush, have

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helped to keep down the Japanese beetle population, which in the previous year decimated Smith’s cherry and grape harvests. The diversity has attracted insect-eaters like birds, grasshoppers and even spiders, keeping pest populations in check.

“If you’re trying to eat my plant there’s a good chance you’ll be a spider’s lunch,” says Smith with a grin. He also benefits from unplanted edibles like black raspberry, dandelion greens and onions that grow naturally in the forest.

Unlike monocultures, the diversity of the forest ecosystem can build soil fertility rather than deplete it. Trees like the black locust take nitrogen in the air and fix it into soils—providing a rot-resistant wood at the end of their life cycle rather than resource runoff. The deep root systems, canopy coverage and leafy floors of forests also retain moisture and nutrients while reducing the need for irrigation.

Not far from DC, Forested also takes advantage of urban resources. The discarded coffee grinds from a nearby Starbucks—50 pounds per day—and vegetable waste from the neighborhood make up the compost. An abundant stream of wood chips supplies free mulch.

But while Smith has found a way to fit into the surrounding ecosystem, his food model doesn’t necessarily fit within existing framework. Compared to commodity growers that receive government-subsidized crop insurance, Lincoln receives no financial support for his forest gardening despite its benefits to the environment.

Limited research and development funding has gone into polyculture agriculture, which requires interdisciplinary study across traditionally separate fields of forestry and agronomy. Meanwhile, models for studying the complex webs of ecological relationships rather than isolating a single variable is a challenge.

And profits of forest agriculture are based on the long run. A nut tree, for instance, doesn’t reach its peak production

until six to eight years after being planted. Meanwhile, compared to the machinery that can harvest and process commodity crops, forest agriculture is more labor intensive.

Benjamin Friton, a soil ecologist who works on the farm, acknowledges the economic sacrifices involved in pioneering this kind of work. "It's about trying to quantify things that aren't quantifiable."

There are additional benefits than the ones to the environment. "When my daughter comes out to play in this garden she feels free," says Ben. His daughter and Smith's three children all have their own forest garden plots.

Other volunteers are attracted to the work too. Lincoln has a team of 50 volunteers, a handful of whom show up to help during regular Friday hours. The group is made up of neighbors, former students from his agroforestry classes

and folks just happy to get out of the city. "People are pretty cut off from the outdoors and nature," says Lincoln. The forest garden offers a place for the community to reconnect with nature.

Meanwhile the edible forest model taking hold beyond garden gates. Lincoln has been hired by DC's Urban Forestry Administration and municipal governments in Maryland to design forest gardens in public schools and parks.

Still, Smith's forest garden is in its early stages. With the tops of walnut and persimmon trees within the reaches of his tall and lanky frame, it will be a while before fruits of the forest garden can be reaped: "I look at this as a multi-generational project ... we have a lot of work to do and it's going to take longer than my lifetime, but it's really exciting to see the beginning of what it could be."

The Forest Feast

In less than four hours a stream of 60 guests will arrive for the Forest Feast, a five-course meal held twice a year at Forested prepared by Chef Michael Costa, of DC's popular Zaytinya. With the exception of local cheeses and acorns gathered locally around DC, the food tonight comes exclusively from Forested.

The team of Forested volunteers, including family members, neighbors and students from Lincoln's agroforestry class, have been helping to harvest an edible bounty, combing the forest grounds for wild grape leaves to be fermented and made into dolmades and climbing trees to reach mulberries for a rich duck-egg custard. Let's just say it's an atypical table-in-forest dining experience.

But Lincoln Smith is not your typical farmer, nor is Michael Costa your typical



Wild grape leaves that grow in profusion in the forest garden were used to make "dolmades" at the Forest Feast. They are stuffed with a nutty "bulgar" made with acorns.

Photo by Michelle Winglee



Left, guests gather at this summer's Forested Feast. Right, Lincoln Smith begins his tour of the forest garden by showing how the different layers can be used for edible purposes.

Photos by Michelle Winglee

chef. Lincoln is piloting a new type of forest agriculture at a time when most food is produced on farms atop razed land and reliant on chemical fertilizers and pesticides. Costa is interested in sustainable sourcing, even though the easier route is to work with suppliers that can provide quantity and consistency no matter the season.

Their collaboration is representative of a new kind of dining experience. World-renowned chef René Redzepi, of the Michelin two-star restaurant Noma in Denmark, employs professional foragers to fill the restaurant's larder. As part of a food-foraging movement, in June, he launched an app showing users how to identify and utilize the culinary potential of their natural environment.

Still, after meeting at a sustainable food conference in Pennsylvania the year before, Smith was surprised by Chef Costa's

dedication, leaving his own restaurant on a Saturday evening and bringing along his top two sous chefs.

"When you have the opportunity to work in an environment like this, how can you not?" remarked Costa, indicating the lush green canopy of trees in the forest garden. "I like being around passionate, driven people and I admire Lincoln's mission."

Many of the ingredients like red clover or the parsley-like leaves of Queen Anne's lace had little precedent in the restaurant community and required weeks of new research and development. But Costa finds the challenge fun and a benefit to his staff. "When you show your staff what fresh coriander really looks like and where it comes from, you see their eyes light up."

"I was blown away by the feast," said Jane Sachs, a psychologist from Frederick, MD, of the table-in-forest experience.

Owner of an 11-acre wooded plot herself, she's now inspired by the forest potential.

By the time guests leave, the glow of June sun has been replaced with stars. Now, volunteers remain to put away folding chairs. Smith's wife, Becca, is under the food prep tent, sorting Chef Costa's dishes from hers.

"I'm happy that Lincoln is doing something that he loves and building community," says Becca. About 20% of the guests were neighbors. Others came from as far as New York. "So many people share his vision."

The next Forest Feast will be in September and feature a new season of forest bounty. For more information on upcoming events or visiting, go to www.forested.us.