

Eco-Archipelago

A Network of Community Forest Gardens



*Aerial image found at <https://www.fayetteville-ar.gov/339/Urban-Forestry>

*Concept only - Locations are random

Project Summary

Cities across the country are experiencing the benefits of incorporating productive green spaces throughout their urban areas. Food forests, green infrastructure, low-impact development (LID), and edible landscapes are all features of this move toward nature and holistic design.

Permaculture is an integrated regenerative approach to growing food and managing resources. Using this framework, **we can transform underutilized areas throughout our urban infrastructure into productive and beautiful landscapes.**



A LOCALIZED URBAN AGRICULTURE INITIATIVE

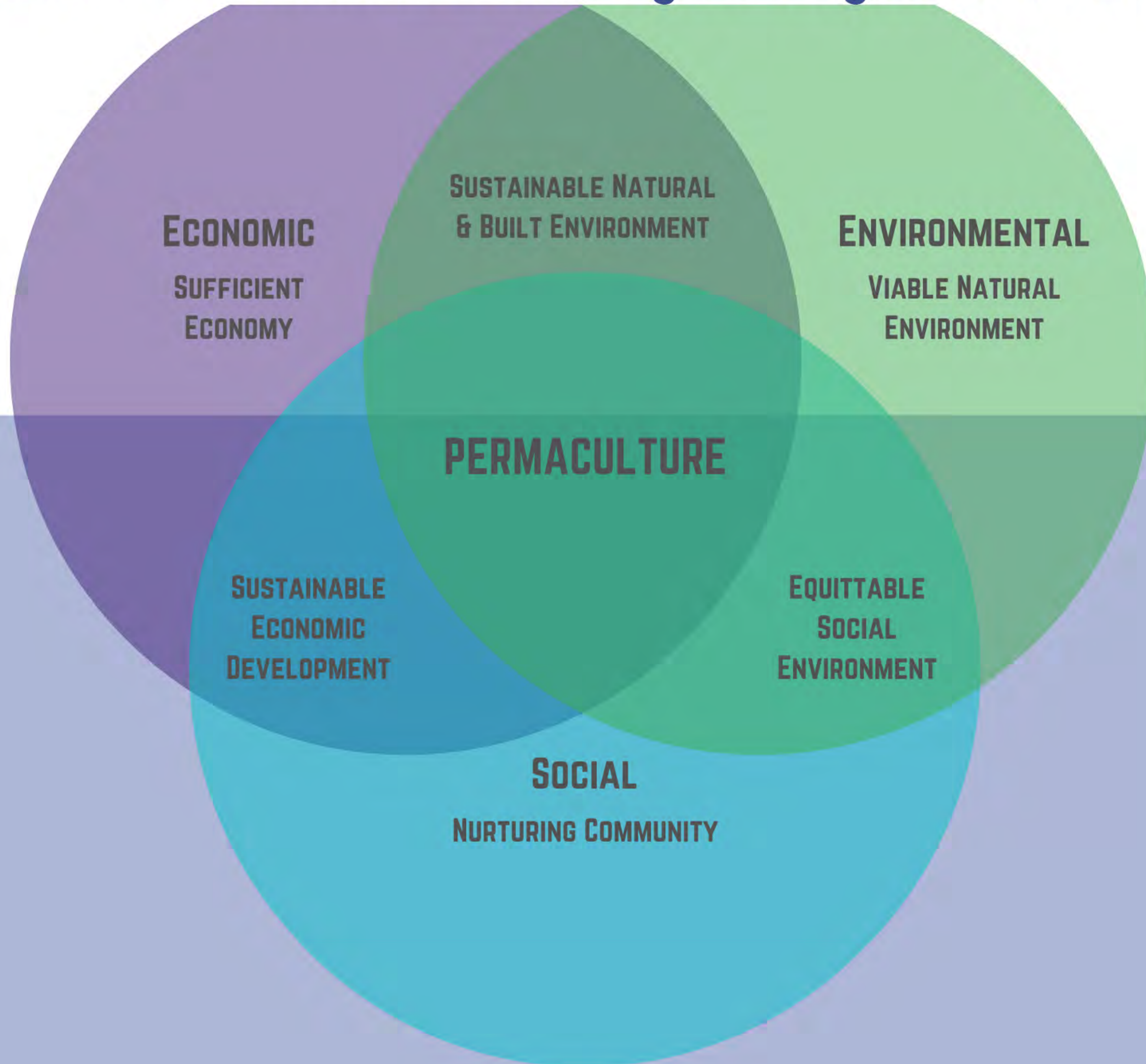
These refurbished green spaces will address food insecurity, food illiteracy, and help grow our community while fostering new social networks. Greenways, parks and business landscapes can host pollinator sanctuaries and pollution remediation guilds, which manage runoff and sequester carbon. We can convert invasive species takeover into shaded recreational spaces while addressing the urban heat island effect. We can transform unused park space into community-powered urban agriculture and garden networks.

These systems offer opportunities for stewardship, education and student research. Universities across the nation are researching sustainability in urban areas and experimenting with food forestry.

With a strong community network, we can combine our individual knowledge, resources and skill sets to initiate real change in our community. With enough interest and public support, we can unify, empower each other, and transform our culture along the way.

Lets make Fayetteville a resilient Food City together.

The Goal Use permaculture design to address economic, social and environmental challenges facing communities today



What is Permaculture?

The conscious design of life-supporting systems which have the diversity, stability, and resilience of natural ecosystems.



- Paraphrasing Bill Mollison
Co-ordinator of concept
of Permaculture, c. 1978



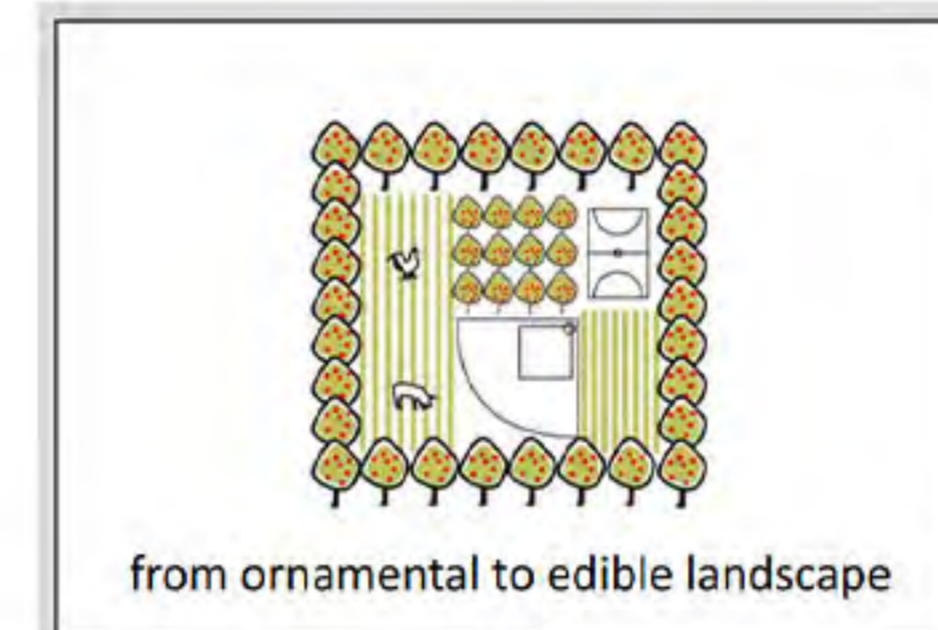
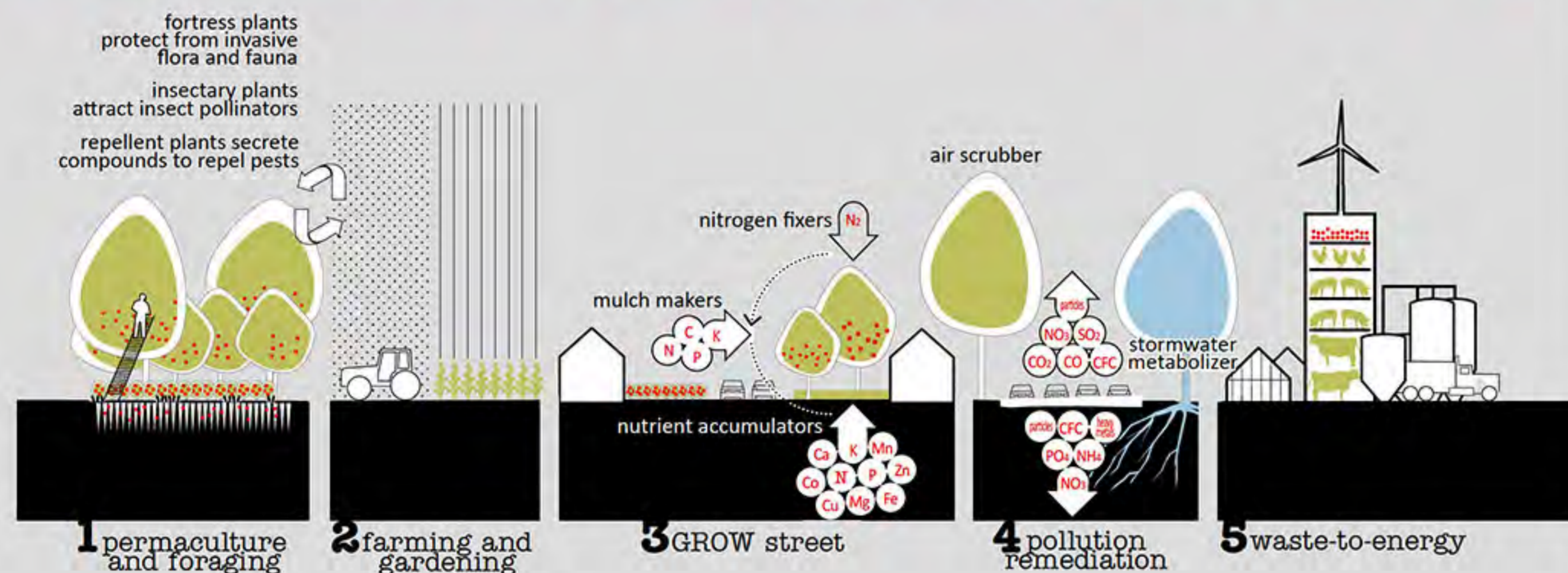
Le Bec Hellouin Farm in Normandy, France
Photo: Nicolas Vereecken

A BEACON OF INSPIRATION

This award-winning report by the University of Arkansas Community Design Center envisions a remarkable future of resilience and sustainability for Fayetteville. Deeply inspired, we aim to initiate action towards this Food City

University of Arkansas Community Design Center

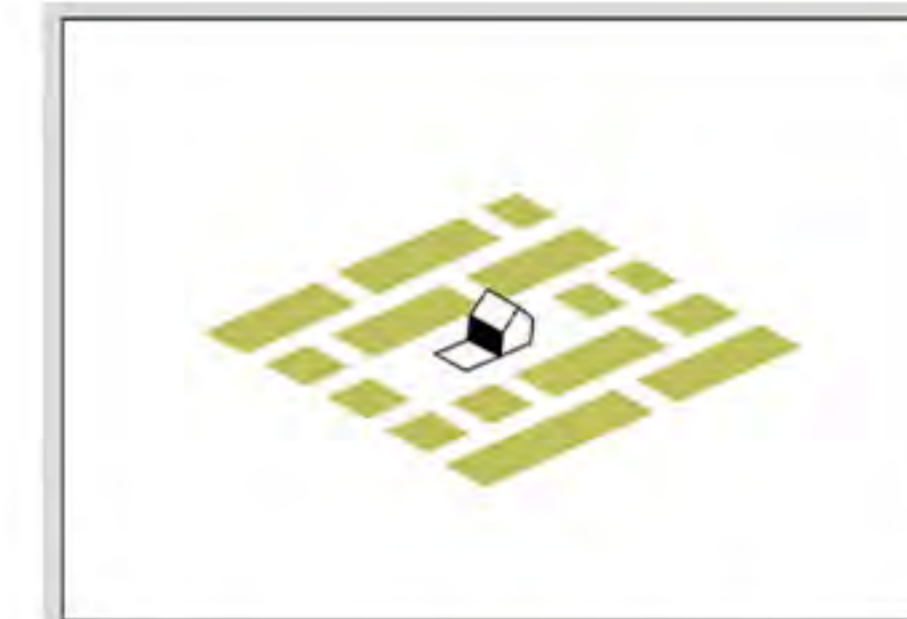
Fayetteville 2030: Food City Scenario



from ornamental to edible landscape

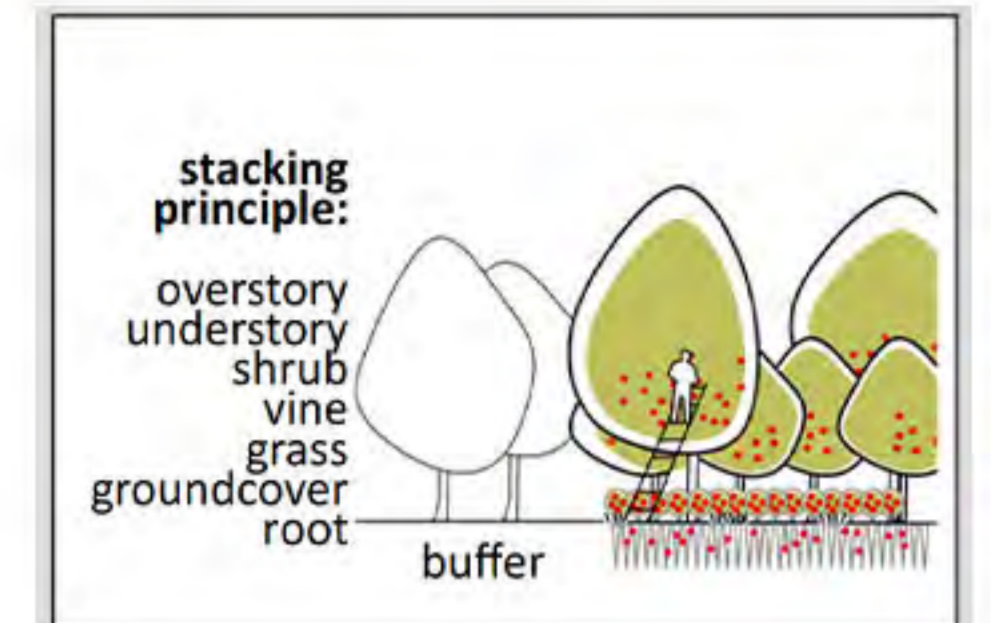
6. edible park

public landscape with mixed uses, including food production which privileges the growing of edible plant communities for harvesting or foraging over ornamental plants.



3. community garden

contrary to allotment gardens, this non-commercial garden space is open access and tended collectively by participating gardeners. They can be temporary spaces without formal lease or ownership agreements, as well as be held in trust by local governments or nonprofits.



stacking principle:

overstory
understory
shrub
vine
grass
groundcover
root

9. forest garden

seven-layer polyculture food production hosted in woodland ecosystems, intermixing fruit and nut trees, herbs, vines, shrubs, fungi, and perennial vegetables. The forest garden integrates an interventionist approach, like companion planting and intercropping production techniques, with a woodland conservation approach, constituting an agroecosystem where ecological succession is inflected by human beings.

Edible Park

Public facilities, like Walker Park, are ideal places to substitute productive edible landscapes for ornamental landscapes. Nut and soft fruit allees organize recreational functions within public rooms. Foraging by individuals is supplemented with harvesting by civic volunteer groups, while city maintenance staff attends to pruning and pest management.



- 1 existing riparian
- 2 existing sports fields
- 3 nut and fruit allees
- 4 food forest
- 5 community gardens
- 6 parking garden
- 7 commercial corridor retrofit
- 8 pocket neighborhood

Food awareness overemphasizes the cultivation of food on vacant lots or the improvised community garden, which tend to be placeholder solutions. Planting public spaces with perennial foodscapes institutionalizes the role of food in the city and is the best chance for advancing agricultural literacy. It matters where food is planted and that it is even allowed.



GROW Street: Moving Beyond the Backyard

The desire and ability to produce food is socially transmitted. Gardened Right-Of-Ways privilege food production and other non-traffic functions within the street yet still accommodate traffic uses. The best GROW Streets will integrate front yards cultivated as food growing systems—"edible estates"—with fruit-bearing right-of-ways to create great community spaces. Pollution remediation landscape guilds featuring bioswales, filter strips, and infiltration basins protect food production spaces from contaminants in stormwater runoff. Special building frontage systems with verandas, modulated garden sheds and screened porches complete this shared space.



usufruct laws provide the legal right to harvest fruit from private or public property if it overhangs, or is accessible from, public and even semi-public space.



LAYERS OF A FOOD FOREST

Food forests are modeled after patterns in nature. Ecological niches are filled with species that are edible, medicinal or have supportive roles in the ecosystem.

Overstory
Large fruit and nut trees

Vining
Climbing fruits and vegetables

Herbaceous
Non-woody herbs and vegetables

Root Layer
Tubbers and flower bulbs

Midstory
Dwarf fruit trees

Shrub Layer
Berry bush

Groundcover
Living mulch

Fungal Layer
Mycorrhiza



Undervalued potential across the city

Unused areas along bike trail



Public trails like the Razorback Greenway hold opportunity for edible landscaping. Invasive species could be replaced with native and productive species. These beautiful parklettes would offer a place to sit down and find refreshing seasonal fruits.



Areas with high pedestrian traffic

Undervalued potential across the city

Underused park spaces

Public parks like Walker Park, Wilson Park and Gulley Park house large spaces and fields some of which elicit little activity. These open areas could be transformed into community forest gardens featuring agroforestry and allotted plots for residents without garden space. Community activities, presentations and workshops promote land stewardship and help build an inclusive community identity.



Walker Park open area on the corner of
S Block Ave & W 7th St

Undervalued potential across the city

Commercial plots, strips and islands

Businesses and residents can adopt this strategy and tie into the city network of urban green projects. We can substitute costly lawn care with resilient landscapes.



Common urban landscaping

Areas with high pedestrian traffic

Underutilized potential across campus

Areas throughout the University of Arkansas

Student Life

Campus food forests could offer seasonal foraging and a shaded refuge for studying and relaxation.

These plots present research opportunities in areas like sustainability, soil and water science, urban agriculture, social sciences, and more.

Agroecology Students Build Sustainable Food Forest



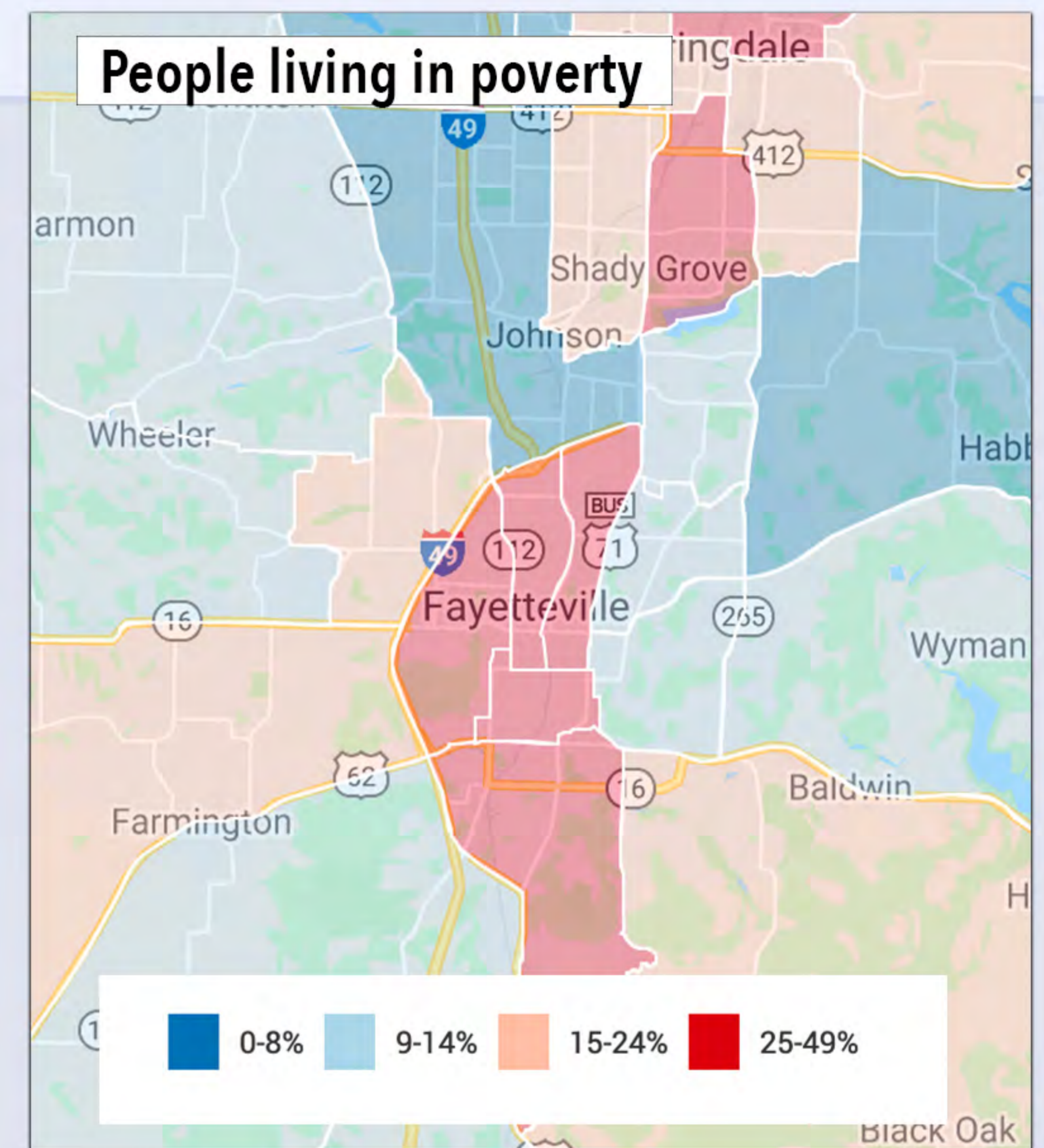
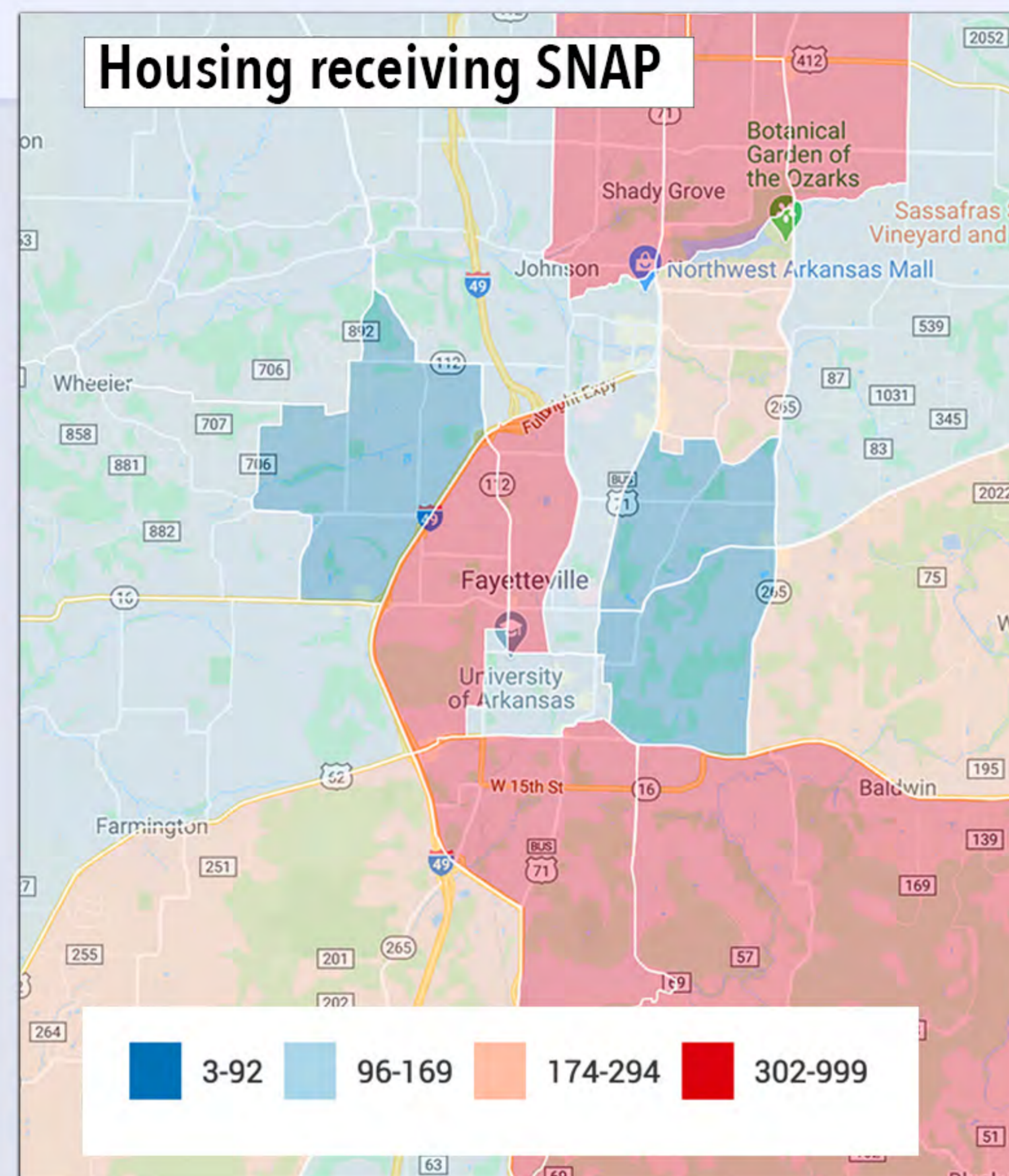
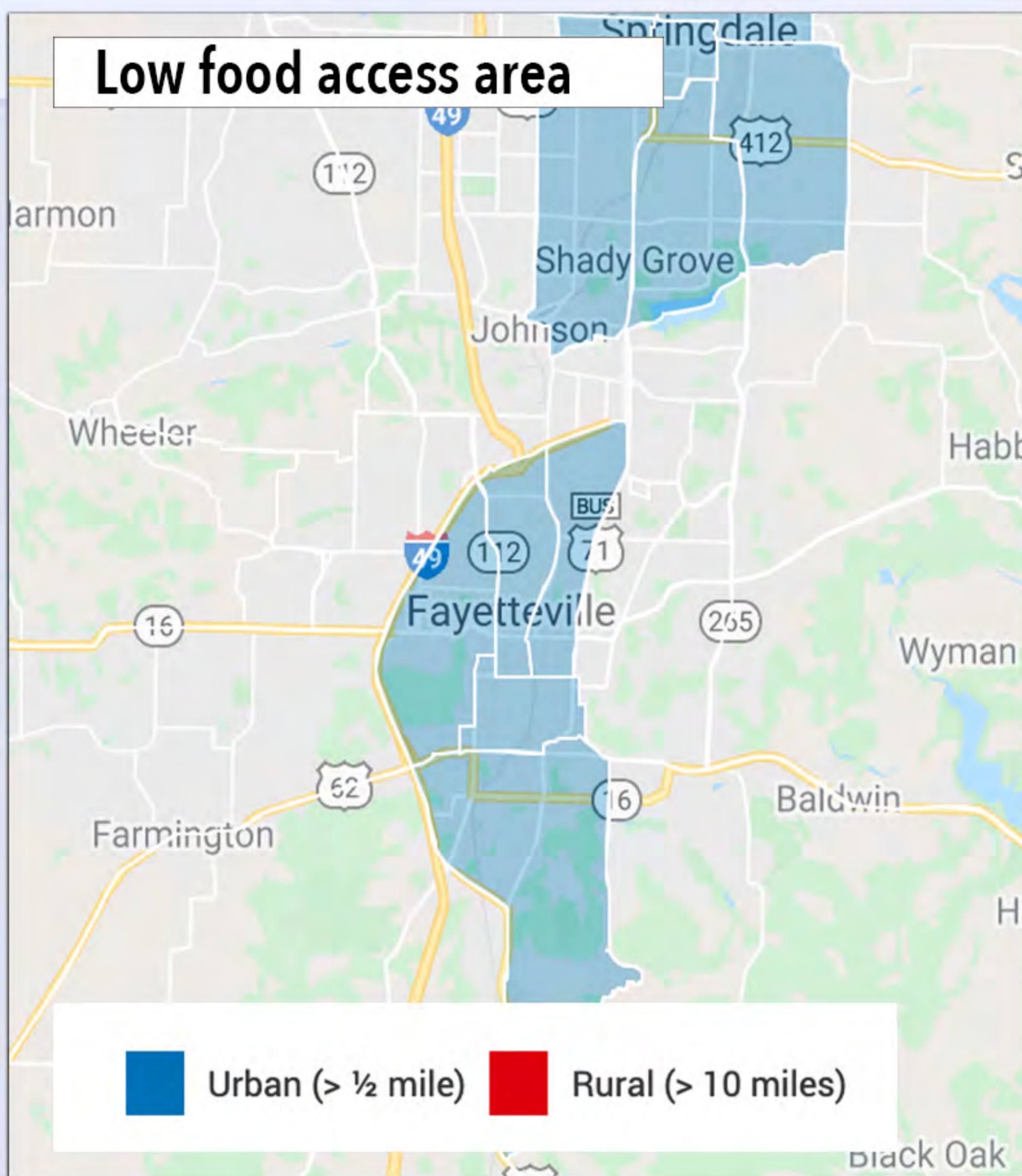
January 27, 2020 | Jennifer Howard



Cleared hill below a parking lot near the corner of Dickson St & Duncan Ave

Areas with high student traffic

FOOD INSECURITY



<http://datascience.cgr.org/arkansas-food-insecurity/>

FLOODING, EROSION & WATERSHED STRESS

NEWS


Fayetteville Plans Drainage Improvements After City was Devastated in 2017 Floods



by: Katie Davila
Posted: Apr 13, 2019 / 01:43 PM CDT / Updated: Apr 15, 2019 / 03:48 PM CDT

Stream bank erosion worsens in Northwest Arkansas

by Scarlet Sims | May 28, 2017 at 1:04 a.m.



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NWA Democrat-Gazette/DAVID GOTTSCHALK. Eri Davis surveys Thursday the damage and debris left behind by the flooding of a creek next her home at 23000 Salem Springs Road in rural Washington County. The series of recent rains have flooded the creek eroding away the stream bank and flooding her property.

LINCOLN -- The water cut deeply into the side of the stream bank that runs beside Effe Davis' home. Flooding eroded a 100-foot-deep and several feet-wide gully instead of a normal bank.

OUTREACH

Flash Floods Cause Damage In Washington County

WASHINGTON COUNTY, Ark. (KFSM) — This weekend flash flooding caused a lot of problems for towns in southern Washington County. Sunday (June 23) morning, West Fo...



Author: Tori Johnson
Published: 7:53 PM CDT June 24, 2019
Updated: 7:53 PM CDT June 24, 2019

WASHINGTON COUNTY, Ark. (KFSM) — This weekend flash flooding caused a lot of problems for towns in southern Washington County.

Sunday (June 23) morning, West Fork evacuated residents living near the Lake Side area where flood water began to inch toward the houses. However, Monday (June 24) there was little damage found.

PERMACULTURE LANDSCAPES CAN:

- Reduce runoff
- Improve runoff quality
- Endure extreme flood and drought events
- Prevent erosion
- Replenish water table
- Reduce water consumption
- Reduce utility use and save money

Science News

from research organizations

New data confirm increased frequency of extreme weather events

European national science academies urge further action on climate change adaptation

POLLINATOR & WILDLIFE HABITAT DECLINE

Reversing Pollinator Decline is Key to Feeding the Future

Posted by Dr. Sonny Ramaswamy, Director, National Institute of Food and Agriculture in Food and Nutrition Feb 21, 2017



About 44 percent of managed honey bee colonies have been lost over the past year. (iStock image)

Without pollinators, we don't eat—it's simple as that—and, at the moment, large numbers of pollinators are dying. With the world's population projected to exceed 9 billion in just the next 30 years, our food production is not a good position for us to be in.

More than 90 species of U.S. specialty crops require pollination, and various animals, including butterflies, moths, bats, and birds are a critical part of the pollinator-plant ecosystem. Despite

Walmart plants pollination plots

Joint effort enlists government, nonprofits and employees
by Serenah McKay | September 22, 2019 at 1:46 a.m.

Follow



A garden planted with wildflowers attracts butterflies and other insects earlier this month at Walmart's headquarters in Bentonville. The retailer's program now includes about 20 gardens around the country. (NMA Democrat-Gazette/BEIN CC BY / Ben Gaff)

Bees and butterflies have long signified summer, putting on a delightful show as they flit from flower to flower. They do the important work of spreading pollen even as they enjoy the blossoms' sweet nectar. In recent decades, however, pollinators have been under attack on many fronts in recent decades, causing an alarming decline in their populations.

Intermixing natives, wildflowers and larval host plants throughout our design can provide rich habitat for beneficial wildlife.

Food Forests and Natural Pest Control – Observations

Angelo Eliades February 12, 2013

19 15

Hearing Geoff Lawton speak about the effectiveness of natural pest control in food forests during my PDC studies is what originally prompted me to design and build a backyard food forest garden. Nature taking care of pests in the garden? It's too good to believe, and coming from a science background, I just had to test the concept out. After all, any good science is replicated!

Precious pollinators: A diverse mix of flowering plants can attract pollinators including bees, butterflies and more to your garden

by JANET B. CARSON Special to the Democrat-Gazette | June 15, 2019 at 1:40 a.m.



RENEWAL RESTORATION & REHABILITATION

Address drawbacks of urbanization SOIL DEGRADATION

Biodiversity decline, loss of organic matter, and chemical fertilizer and pesticide use all impact soil organisms. With mindful ecological design, we can remediate degraded and polluted soils, creating a healthier landscape that provides valuable ecosystem goods and services. Permaculture practices regenerative agriculture, a way to grow food while reversing the negative effects of industrial agriculture and urbanization.

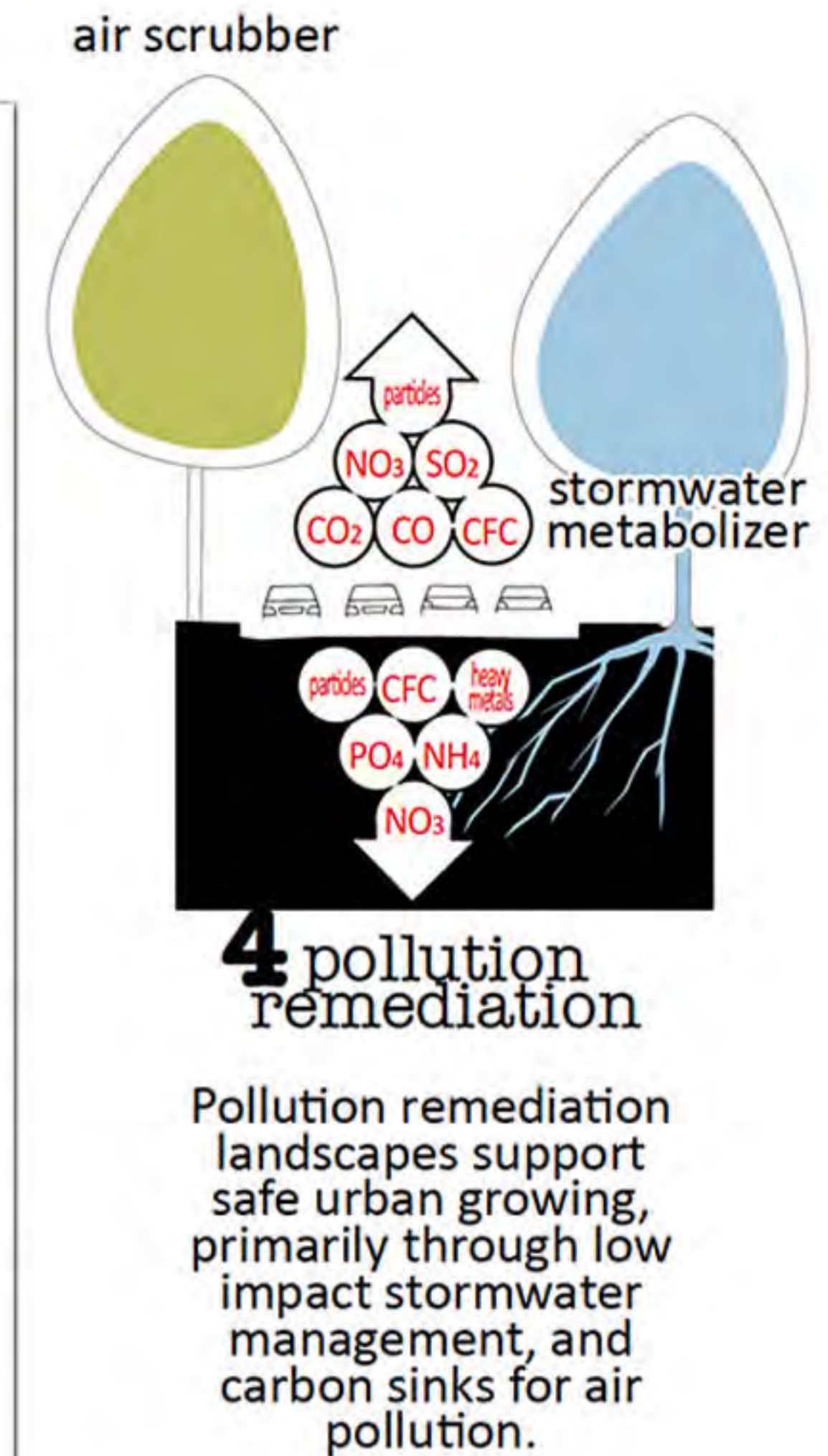
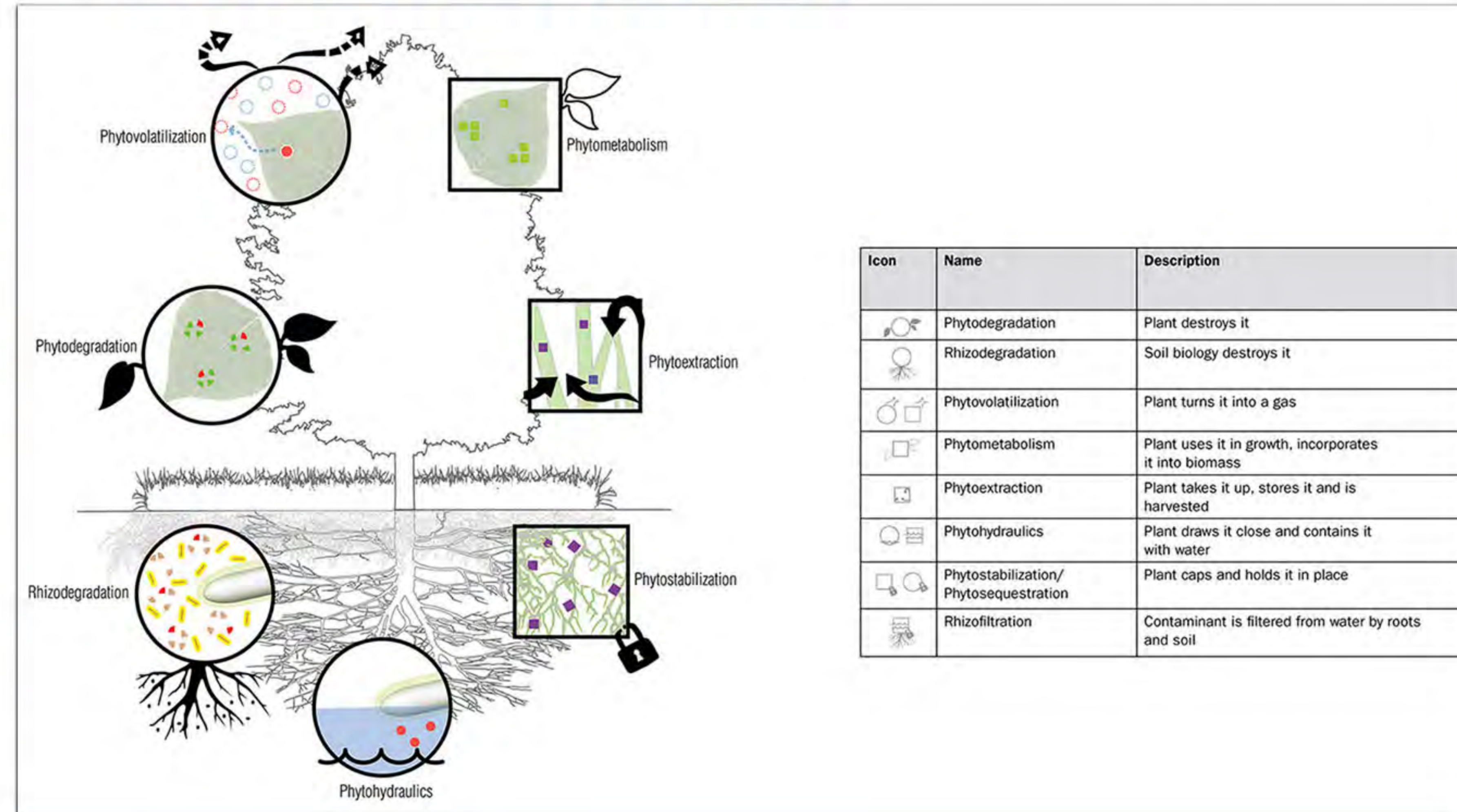
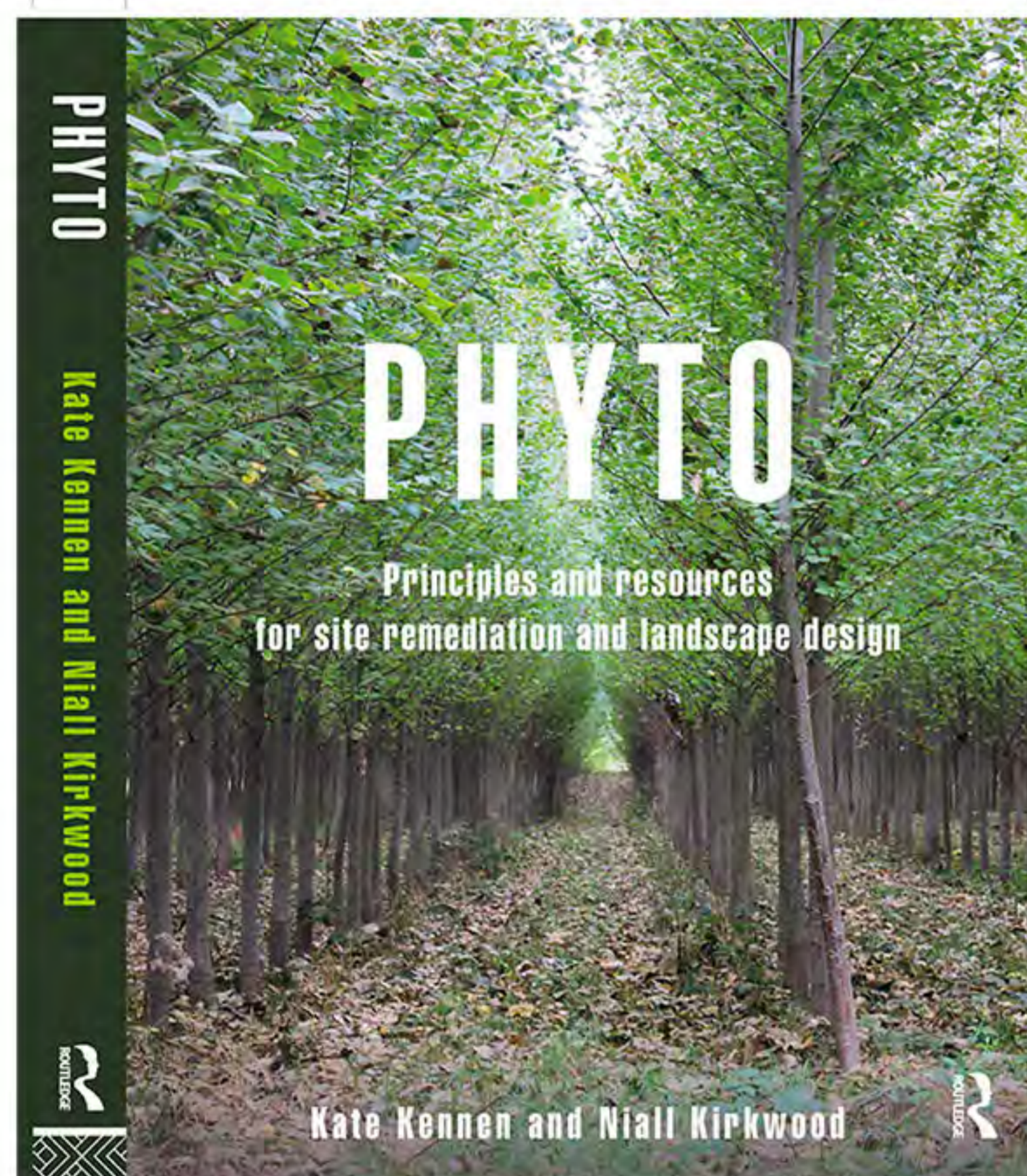


University office landscape. Undergoing regular herbicide application



RENEWAL RESTORATION & REHABILITATION

Address drawbacks of urbanization PHYTOTECHNOLOGY



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[Int J Phytoremediation](#). Author manuscript; available in PMC 2014 Mar 14.
Published in final edited form as:
Int J Phytoremediation. 2013; 15(9): 889–899.
doi: [10.1080/15226514.2012.760521](https://doi.org/10.1080/15226514.2012.760521)

PMCID: PMC3911111
NIHMSID: NIHMS541111
PMID: 23711111

Phytotechnologies – Preventing Exposures, Improving Public Health

Heather F. Henry, Joel G. Burken, Raina M. Maier, Lee A. Newman, Steven Rock, Jerald L. Schnoor, and William A. Suk

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Urban environments represent a variety of contamination sources. Pollution remediation guilds use a natural process called phytoremediation by which plants remove environmental pollutants. This and other phytotechnologies are being used by scientists and engineers to improve stormwater quality and sequester carbon.

Address drawbacks of urbanization **SOIL EROSION**



Erosion along walkway near the Greek Amphitheater, U of A Campus

In addition to addressing food insecurity, these designs mitigate soil erosion. Diverse plant communities stabilize soil and decrease runoff, relieving watershed stress. Permaculture chooses species with multiple functions to maximize design benefits.



RESEARCH ARTICLE



Plant diversity maintains multiple soil functions in future environments

Nico Eisenhauer^{1,2†*}, Jes Hines^{1,2†}, Forest Isbell³, Fons van der Plas⁴, Sarah E Hobbie³, Clare E Kazanski³, Anika Lehmann^{5,6}, Mengyun Liu^{1,2,7,8}, Alfred Lochner^{1,2}, Matthias C Rillig^{5,6}, Anja Vogel^{1,2,9}, Kally Worm¹⁰, Peter B Reich^{10,11}

RENEWAL RESTORATION & REHABILITATION

Address drawbacks of urbanization **INVASIVE TAKEOVER**

In urban natural areas, native species are being outcompeted by invasives, limiting access, visibility and disrupting wildlife habitat.



CHECK OUT THE EDUCATIONAL PACKET
IDENTIFYING INVASIVES IN FAYETTEVILLE

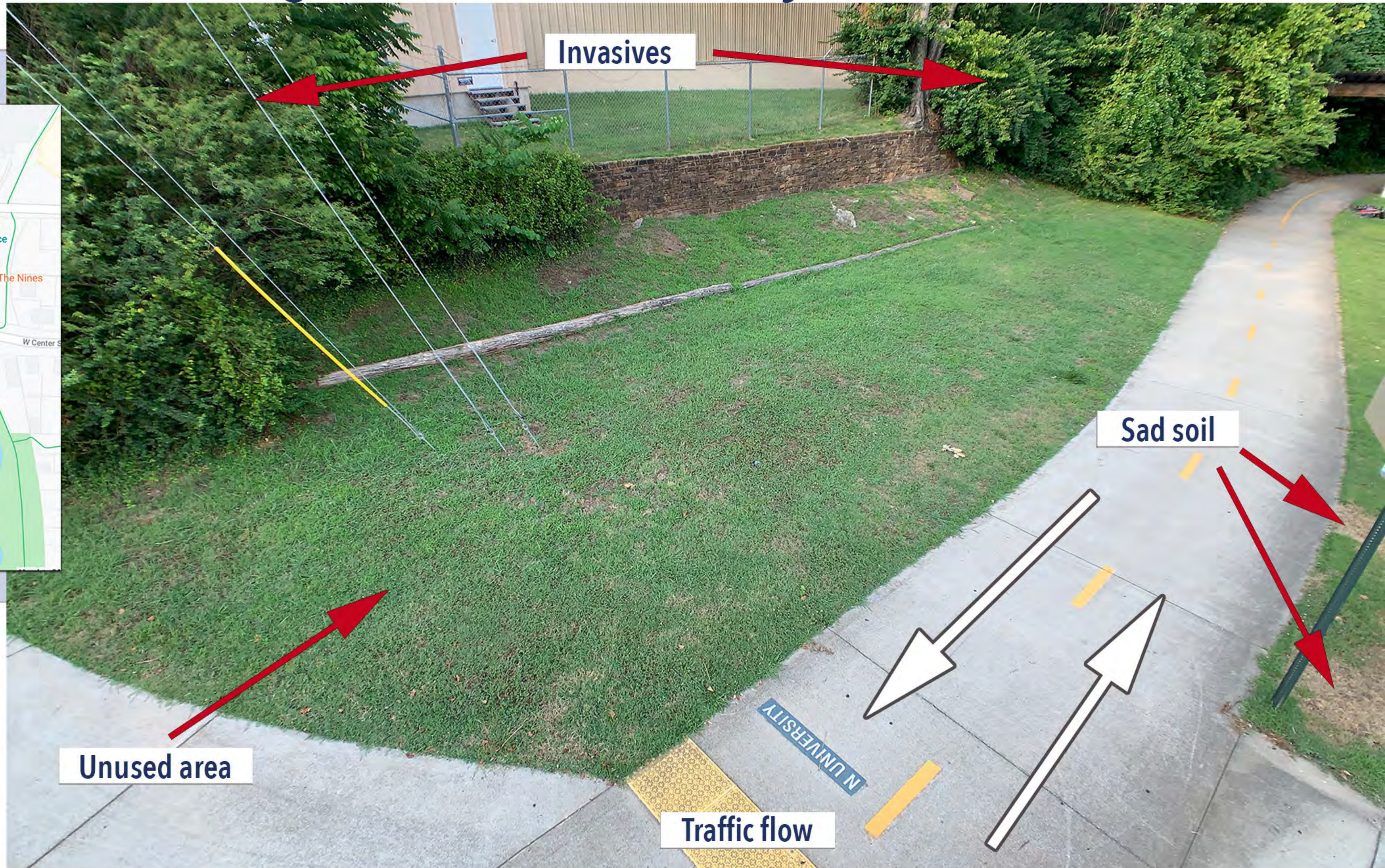


**Invasives along Oak Ridge Bike Trail near the
corner of N University Ave and W Center St**

OTHER ISSUES PERMACULTURE ADDRESSES

**PLASTIC WASTE FROM PACKAGING
FOSSIL FUEL TRANSPORTATION
REDUCE CHEMICAL RUNOFF POLLUTION
AQUIFER DEPLETION
URBAN HEAT ISLAND
CARBON STREAM
TOPSOIL LOSS**

So what might this look like in Fayetteville?



Oak Ridge Bike Trail, Corner of N University Ave and W Center St

Permaculture Parklette Vision Design



Fruit tree overstory

Permaculture Parklette
Vision Design

Public Seating

Asparagus-strawberry guild

OAK RIDGE
FOOD FOREST

ELDERBERRY

N UNIVERSITY

Oak Ridge Bike Trail,
Corner of N University Ave and W Center St



BIODESIC STRATEGIES

WHY

RESILIENCE & SELF-SUFFICIENCY Renovating neglected, overlooked and undervalued areas will establish new avenues for resilience and self-sufficiency



"Determined to change South Central Los Angeles from food desert to food forest, [Ron] wants his actions to be educational, inspiring, and nutritious. He wants kids to grow up with the option of healthy food, instead of fried, fattening staples. He wants to sweep up and transform his street, his hood, the city of LA and communities everywhere." - Ronfinley.com

Ron Finley, community leader & gardening activist
South Central Los Angeles

Check out Ron's
TEDTalk

TED
Talks

WHY COMMUNITY & EDUCATION

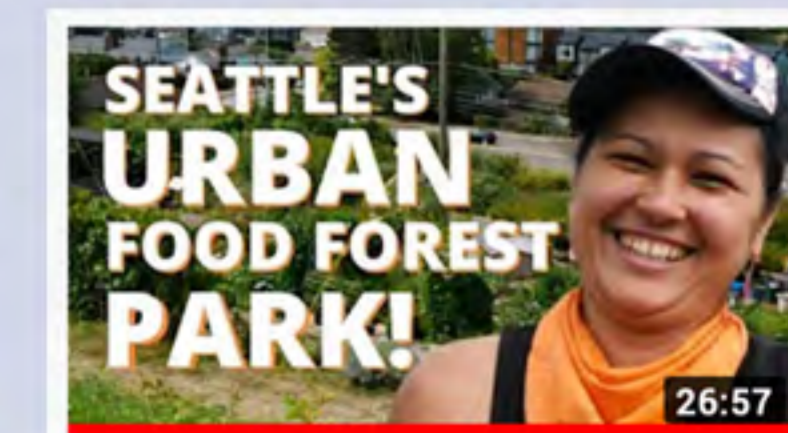
Food forest projects provide opportunity for community growth, stewardship and education. A way to connect and grow our community identity



Beacon Hill Food Forest, Seattle

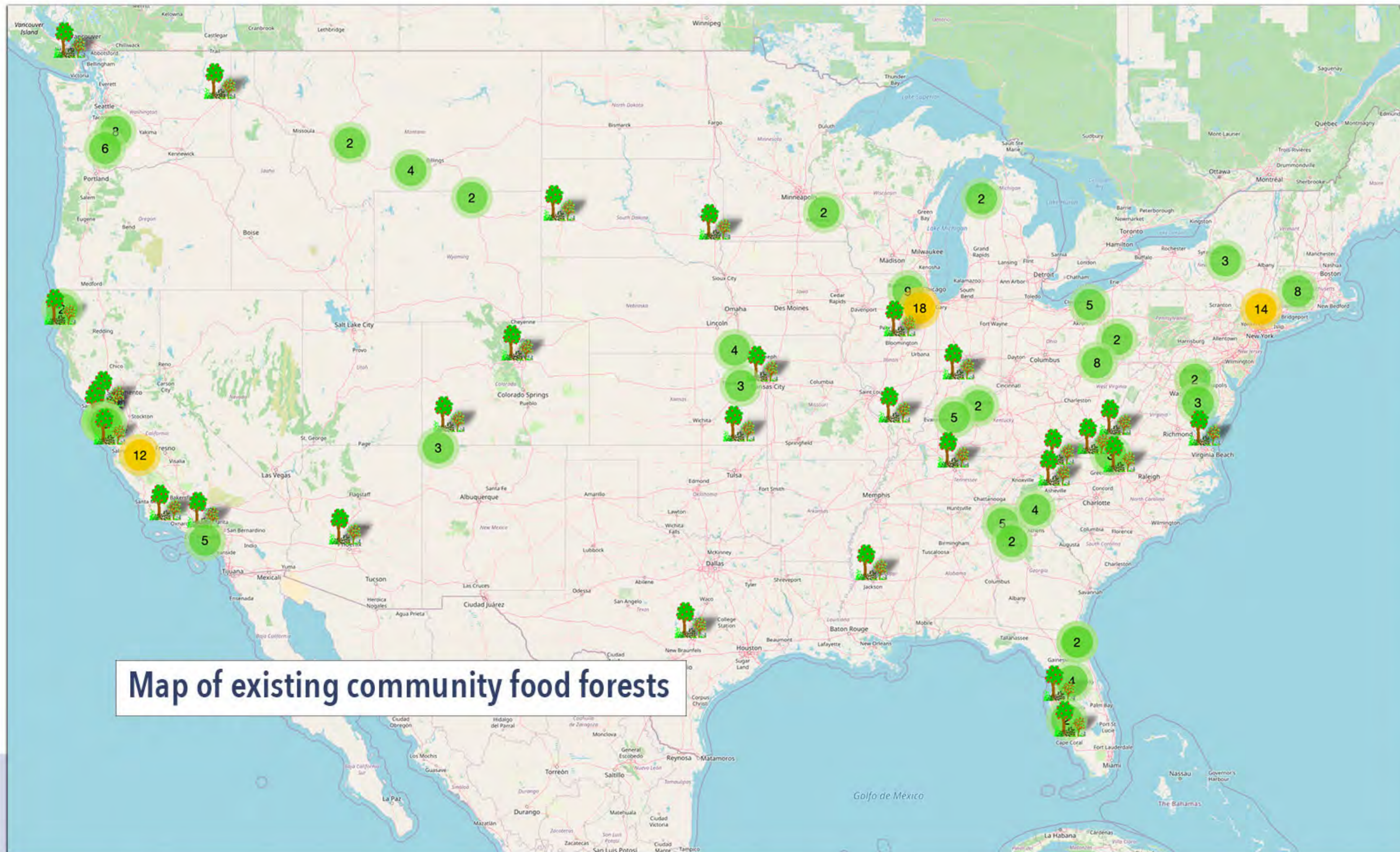
"The design of this seven-acre site provides opportunities for cultural exchange and understanding, for education and recreation..." - Beaconfoodforest.org

ALSO
CLICK →



WHY COMMUNITY & EDUCATION

Community food forest initiatives are popping up across the nation



There are currently over 70 community food forests in the United States with many more emerging every year. Cities are beginning to realize the economic, social and environmental benefits to community food forestry and permaculture design.



What is a community food forest?

Community Food Forests • 332 views • 5 years ago

This video is a short description of what community food forests are and the benefits related to environmental, social and health ...

WHY COMMUNITY & EDUCATION

Communities are recognizing the benefits of community food forests

Atlanta creates first food forest in Georgia, largest in U.S.



City Council approved the transformation of 7.1 acres of property into a public park and garden

AJC LOCAL IN-DEPTH: FOOD FOREST | May 24, 2019

By [Raisa Habersham](#), The Atlanta Journal-Constitution

Atlanta is paving the way for the southeast with plans for the largest community food forest in the nation. A 7.1 acre vacant property will become an edible park with trees, shrubs and vines all for public consumption.

DEEP DIVE

The rise of urban food forests

Cities like Atlanta and Philadelphia are recognizing a park can be more than just a green space when visitors are allowed to pick fruits, vegetables and nuts.



NewsFoto.com

Author: [Katie Pyzyk](#) @_PyntheSky


PUBLISHED
July 2, 2019

walk through an Atlanta park will soon include the option of picking berries, plucking apples from trees or gathering herbs from surrounding plants — all for free.

The Food Forest at Browns Mill, which has been years in the making, surged ahead in May when the Atlanta City Council unanimously approved an

Urban Food Forests: Demonstrating City Permaculture

Last Updated November 24th, 2019 by [Amy](#) — [Leave a Comment](#)

< 560 SHARES   

Food forests are permaculture gardens consisting of a diversity of edible perennials. Up until recently, they've mainly been incorporated into backyard gardens and small-scale farms.

In this article, find out how two urban community food forests are shaking up the local food movement in their respective cities.

This article may contain affiliate links. Please read [my disclosure](#) for more info.



THE RISE OF COMMUNITY FOOD FORESTS

Food System

Aug 29th, 2018 | By [Catherine Bukowski](#) and [John Munsell](#)



Fruit or nut trees like this apple tree at the Bloomington Community Orchard in Bloomington, Ind., are typically planted as canopy species. Shorter plants (shrubby perennials, tall herbs, or flowers) and ground covers are installed below trees or along the periphery of a patch.

← Links

Examples of other green initiatives



Fargo Food Forest Garden, Portland, OR



Homespun Farm, Cape Cod



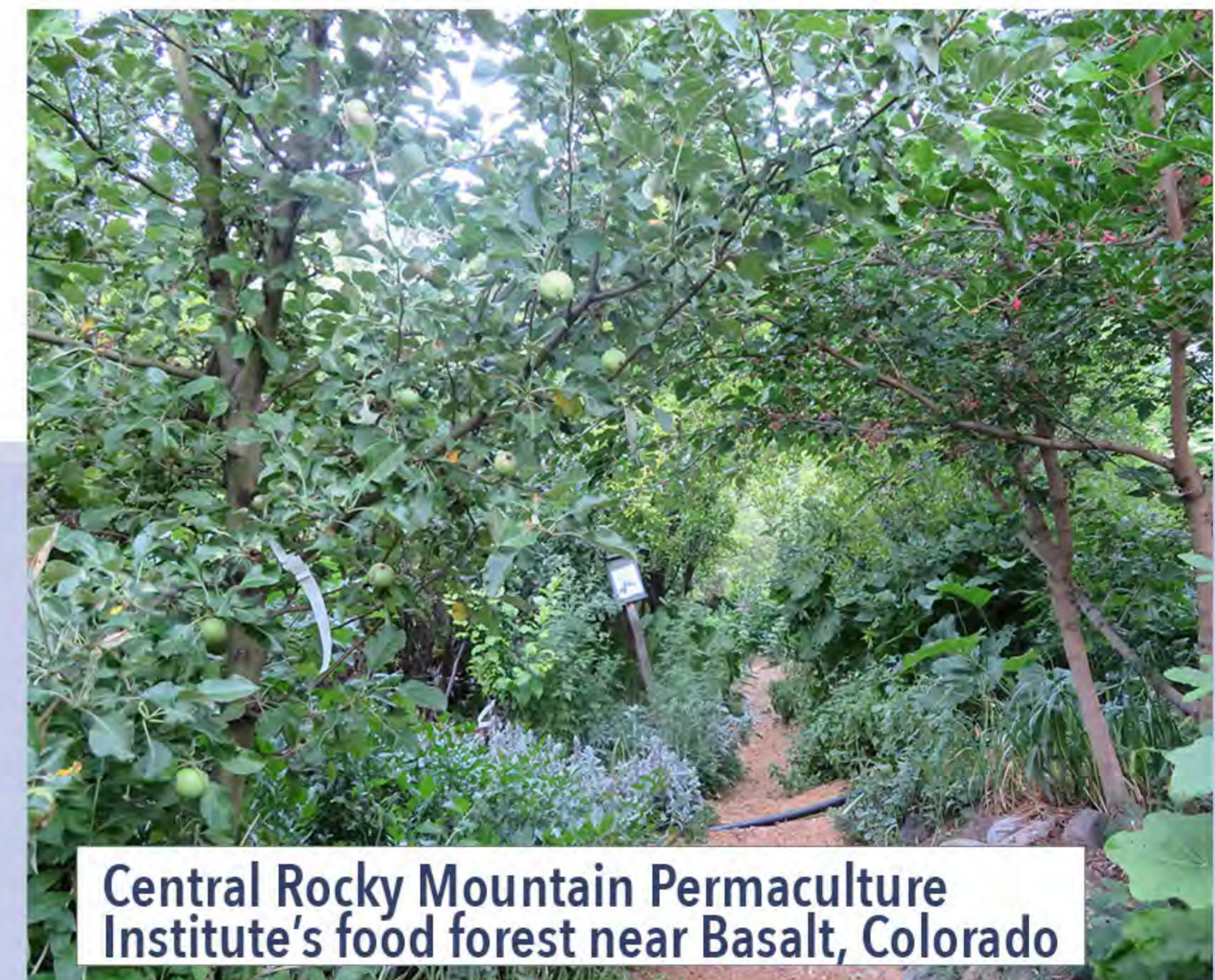
St. Pete Ecovillage, FL



Los Angeles, RonFinley.com



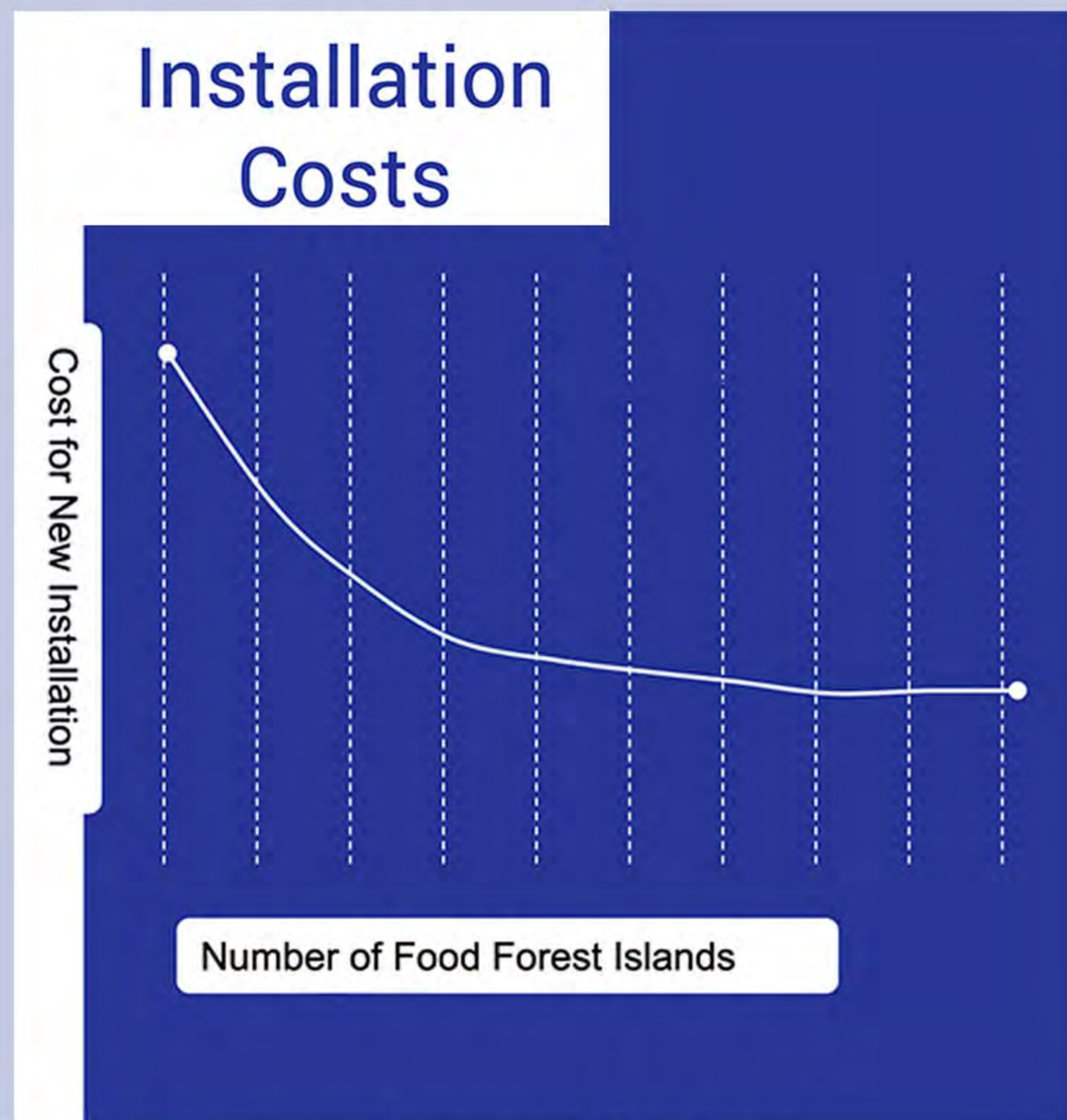
Beacon Hill Food Forest, Seattle, WA



Central Rocky Mountain Permaculture Institute's food forest near Basalt, Colorado

How we will save money

Since permaculture mimics natural ecosystems, established food forests require very little maintenance over time. Where as lawn care requires recurring expenses for irrigation, fertilization and mowing, mature food forests require only harvesting and occasional pruning. Plant stock for new projects would come from cuttings, propagations and seeds collected from previous sites, lowering capital costs for every new site.

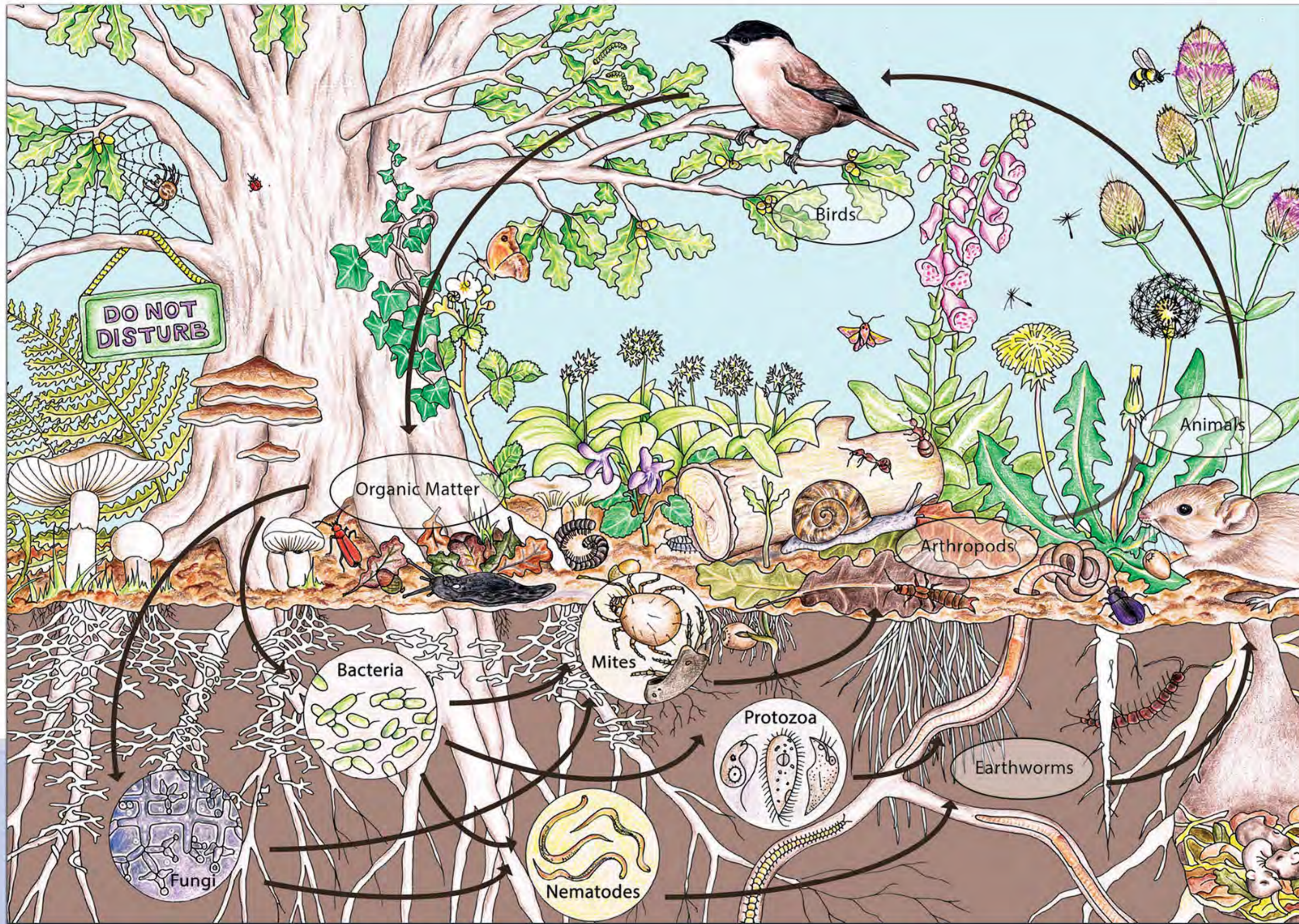


Trends downward as more islands are created



Trends downward after time of installation

WHY THE SOIL-FOOD WEB



Soil organisms form a symbiotic relationship with plants to cycle nutrients and enhance soil structure. Together they improve water quality and infiltration. With focus on building organic matter, we can fuel the food web, growing healthy and resilient plants without chemical fertilizers.



DR. ELAINE INGHAM
SOIL BIOLOGIST
SOILFOODWEB.COM

What is the Soil Food Web?

Dr. Elaine Ingham • 99K views • 8 months ago

Discover how the soil food web works in harmony with plants to produce a number of benefits including: Increased Yields ...

← CLICK TO
LEARN MORE

WHAT IS THE
SOIL FOOD WEB?

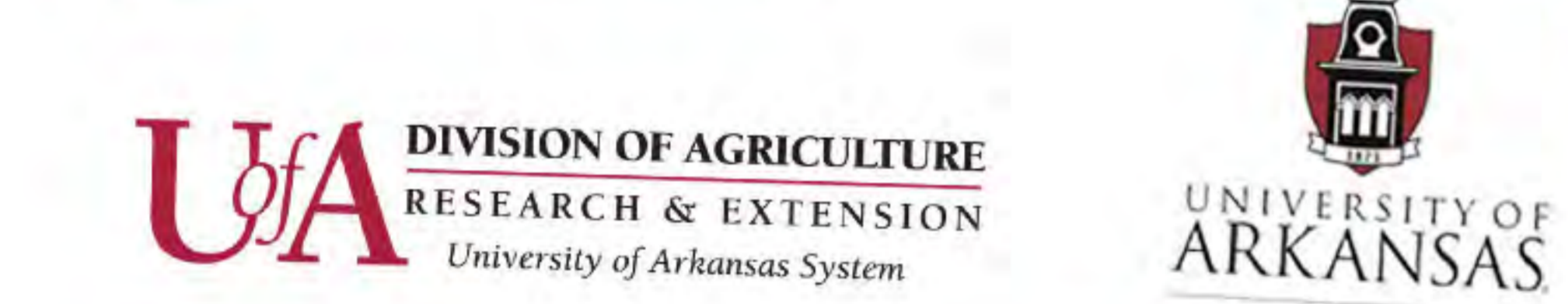
5:57



THE POSSIBILITIES



Parks and Recreation



AND MANY MORE!



AND MANY MORE!

COMMUNITY-FOOD WEB

INTEGRATION

An interconnected community effort that transforms the culture, ecology and future of our living space



Growing A Project Team

CHASE JONES
TÄS ZINCK
Project designers
and directors

CHRISTIAN RAMBEAU
Project manager and
outreach liaison

DAGEN AMES
Nursery specialist

YOU



In 2017, Täs and Chase started Biodesic Strategies to offer permaculture design and consulting to NWA. Their work includes edible landscaping, food forestry and educational outreach. Biodesicstrategies.com

A graduate of the Walton College of Business, Christian brings 10 years of business development and networking experience. With a heart for people and passion for the planet, he helps provide a pathway to connect with our community in deeper and more meaningful ways.



Dagen of Ames Orchard, specializes in disease resistant fruit trees and is expanding the family business to provide stock for food forestry. Amesorchardandnursery.com

This project's mission to engage our community in food forestry necessitates involvement from a diverse coalition of community members. If you have expertise, experience or interest in the ideas put forth in this proposal, get involved so we can grow a greener future together.

Get Involved

We are building a team and gathering feedback to better understand the challenges of urban-community food forests

If you have questions or would like to contribute please reach out

biodesic@gmail.com

Help us gather feedback and garner support by taking our survey

[LINK TO SURVEY](#)



Biodesic