

New and Different Partnerships Through Agroforestry

John Munsell

Forest Resources and Environmental Conservation



Who am I? And how did I end up here?

Some perspective on the state of extension and USDA (disclaimer)

Changes underfoot!

The problem and promise of agroforestry

Interdisciplinary excitement and institutional action

Theory of change (at least the long-term theme)

Case examples from eastern US

Conclusion, near and long term



Association for
Temperate Agroforestry



VT VIRGINIA
TECH™



Take home message

**USDA and extension (and NGO) partnership opportunities alive and well
*BUT... in most cases, work-around is required
(issues-, not practice- or production-based)***

In many ways, product of...

Compartmentalized disciplines, sectors, institutions/agencies

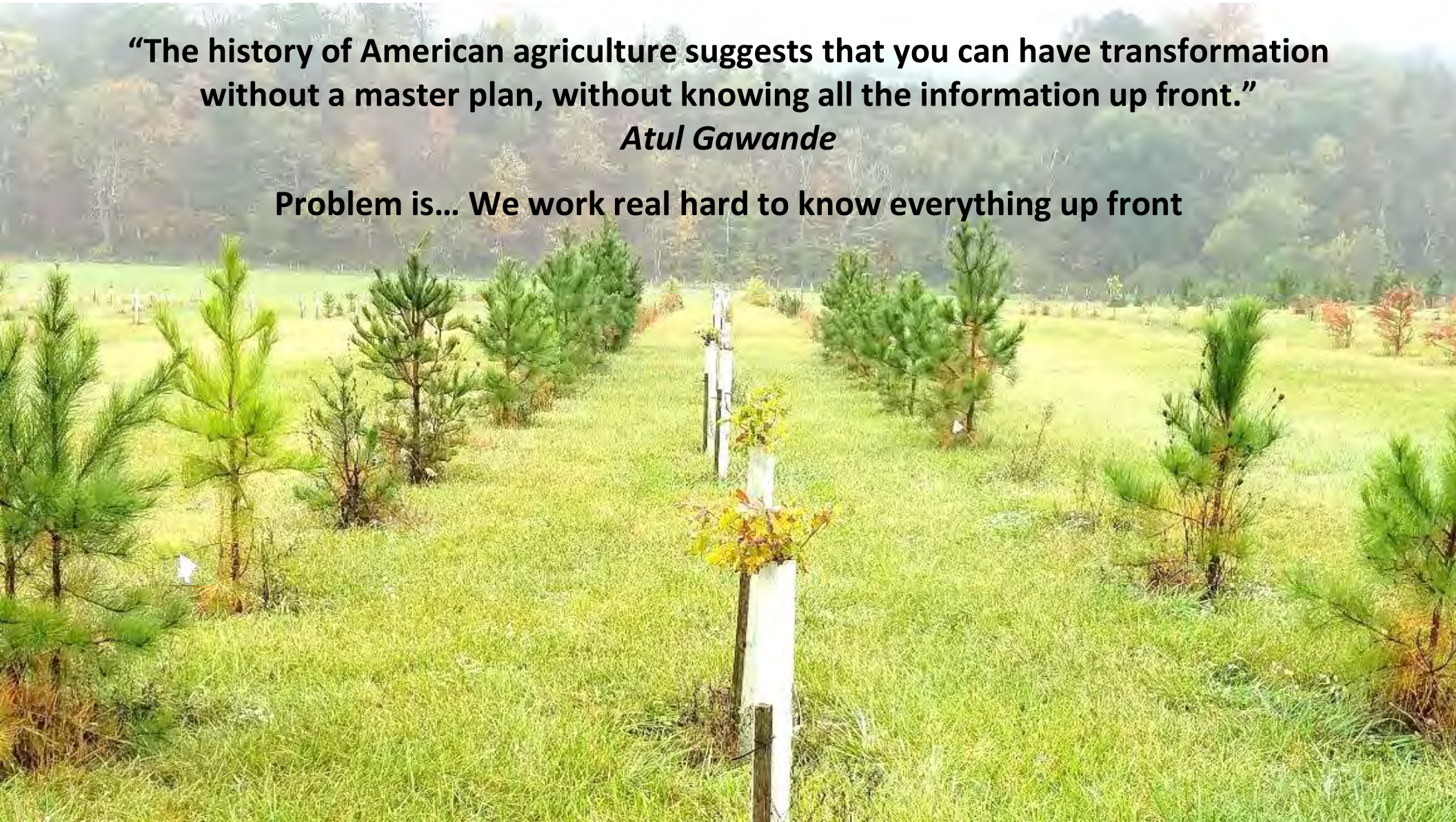
New, different, and eager partners await



“The history of American agriculture suggests that you can have transformation without a master plan, without knowing all the information up front.”

Atul Gawande

Problem is... We work real hard to know everything up front



State of Extension and USDA



State of Extension and USDA



But the times, they are a changin'

MARK R. WARNER
VIRGINIA

United States Senate

WASHINGTON, DC 20510-4606

COMMITTEES:

FINANCE

BANKING, HOUSING, AND
URBAN AFFAIRS

BUDGET

INTELLIGENCE

RULES AND ADMINISTRATION

March 19, 2019

The Honorable Vicki Christiansen
Chief
United States Forest Service
201 14th Street, SW
Washington, DC 20024

Dear Chief Christiansen:

I write today concerning the Forest Service's tracking and management of non-timber forest products (NTFPs). The United States has 766 million acres of forests that support local

There is a growing base of forest farmers in the United States, and NTFP industry leaders and many non-governmental organizations support this trend. In 2015, USDA's Beginning Farmer and Rancher Development Program funded a three-year project led by Virginia Tech to build a coalition of new and aspiring forest farmers and provide them with technical assistance and networking services. Over 800 new and prospective forest farmers are coalition members and a large percentage started their operation in the past five years. The USDA's National Agroforestry Center promotes forest farming and worked closely with Virginia Tech to support preliminary phases of coalition building. One draw to forest farming is that higher price points are possible because supply is traceable, giving industry and consumers the confidence needed to trade in high-quality, responsibly sourced retail. In Duffield, Virginia, forest farmers sold black cohosh roots the past two years to herbal products companies at five to six times the average market value for wild harvested material. Growth in this sector is promising, and the impact to forests and forest-dependent communities would be substantial.

sters

Emerging space for Extension and USDA

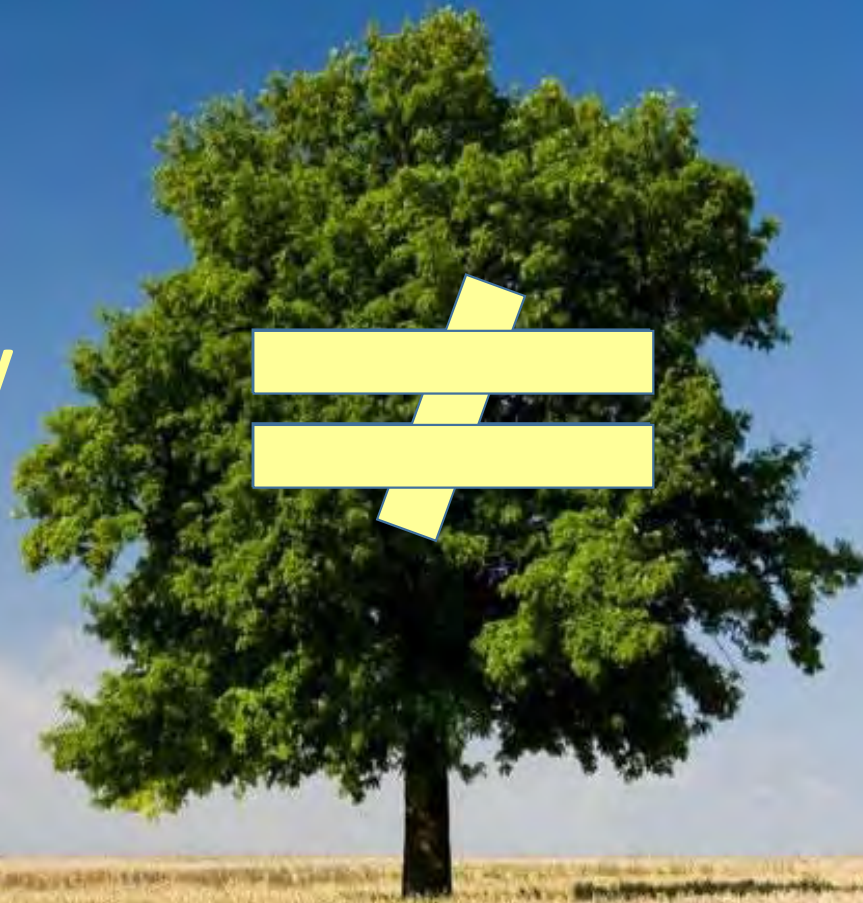


Emerging space for Extension and USDA



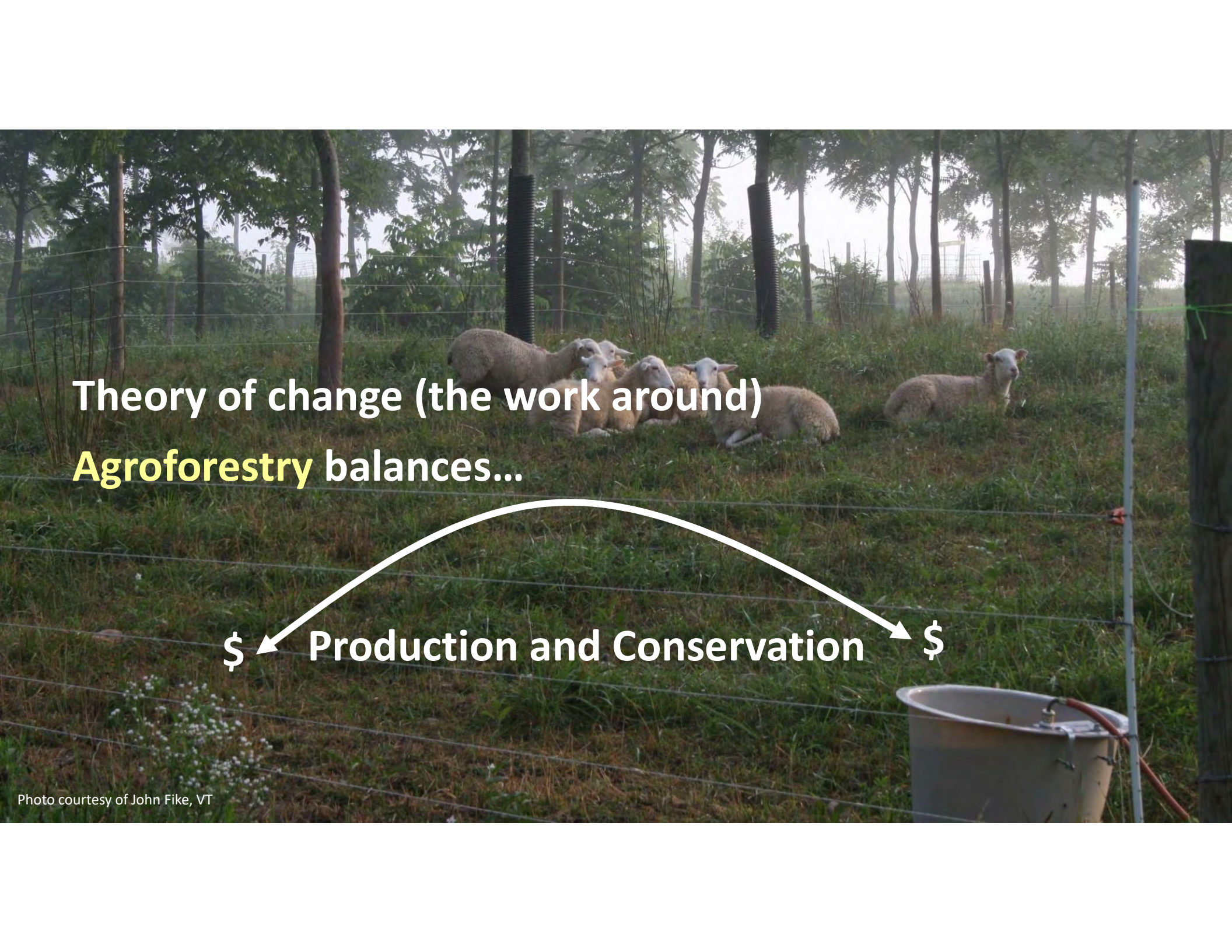
Problem is...

Interdisciplinary
Excitement



Institutional
~~Action~~

↑
CONFUSION



Theory of change (the work around)

Agroforestry balances...

Production and Conservation

\$

\$

A few examples from eastern US...



Photo courtesy of Cathie Bukowski

Catawba Sustainability Center **the university farm that isn't a university farm**











APPALACHIAN
sustainable
DEVELOPMENT



NC STATE UNIVERSITY



Southern Regional
Extension Forestry



United States Department of Agriculture
National Institute of Food and Agriculture

BLUE RIDGE WOODLAND GROWERS



United States Department of Agriculture
National Institute of Food and Agriculture



14 Forest Farming Training Programs
700+

BECOME A MEMBER or LOGIN



APPALACHIAN BEGINNING
FOREST FARMER COALITION

ABOUT CALENDAR RESOURCES ENGAGE

Appalachian Beginning Forest Farmer Coalition

Growing Opportunities Beneath the Canopy

BECOME A MEMBER

f ABFFC Facebook



Appalachian Beginning Forest
Farmer Coalition

4 days ago

Are you interested in learning the
many techniques for adding value to
your forest products?

UPCOMING EVENTS

SORT OPTIONS

1,100+ Members

29⁻¹
OCT
BEP

FOREST FARMING - A

14
OCT

GINSENG

20⁻²²
OCT

FROM HARVEST TO

Compendium

The collage displays various digital assets for Forest Farming:

- YouTube Video:** A video by Ben Kitchen, Herbalist, titled 'Forest Farming Guidelines'. The video player shows a man in a forest setting. A sidebar lists topics like 'What is Goldenseal?', 'When/How Goldenseal grows', 'Planting goldenseal in the forest', 'Herbicide and herbicide-resistant goldenseal', and 'The life cycle of goldenseal'.
- Facebook Page:** The 'Forest Farming' page (@farmingsales) features a post about 'Black Cohosh' with a photo of green leaves. The post text includes botanical information and a note about a 'Forest Farming order'.
- NC State University Article:** A snippet of an article titled 'Black Cohosh (*Actaea racemosa* L.)'. It includes an introduction and botanical information, describing the plant's characteristics and uses.
- Newsletter:** The 'Forest Farming Footnotes' newsletter for Spring 2016 features a white flower on a dark background. It includes a 'Dear Community Members' letter and a 'TABLE OF CONTENTS' section.

5,837 YouTube Subscribers, 1.5 million+ views

APPALACHIAN HARVEST





NRCS CIG Grant expand verification in OH & WV





Cultivating Forest Medicinals, Creating Healthy Economy

By Eliza Laubach

Appalachia's forests feature an especially concentrated diversity of medicinal plants. From the famous ginseng to lesser-known false unicorn, many of these plants are valued in today's herbalism industry.

A traditional culture of harvesting plants like ginseng and ramps from the region's expansive forests has long helped to sustain area families. Now, a movement called forest farming is emerging to grow these plants in private forestland to decrease strains on plant populations and strengthen the market for Appalachian botanicals.

Cultivators Coalesce

Shafts of afternoon sunlight dapple the forest floor. A path bordered by partly rotten branches

Crops Research and Extension Center in Mills River, N.C., is a learning tool for extension agents, graduate students and members of the WNC Medicinal Herb Growers Club. All work together to plant the seeds and track the health of Appalachian forest medicinal plants.

Lorri Burra, a member of the club, first planted ginseng on her land seven years ago in an old box spring frame. For two years, she saw nothing, so she stopped looking. Then last year, she saw the ginseng.

"The plants move around," she says, "you can't even weed." Sure enough, a ginseng plant grows outside of the box.

Jeanine Davis, extension specialist and a teacher to Burra and many others, specializes in research and development for growing new crops,



Michelle Pridgen, above, dug black cohosh last fall. This autumn, she plans to harvest it again. Photo by Priya Jaishanker. Other plants are commonly misidentified as black cohosh. left. There are 23 temperate species in black cohosh's genus, Actaea. Photo by Eliza Laubach

the U.S. Department of Agriculture and consists of 14 partners: universities, nonprofit organizations, governmental agencies and a regional extension program. Members include herbal medicine processors and growers.

The most commonly tended roots like ginseng and black cohosh

woodland coves and is heavily dug in the fall harvest season. It has several lookalikes and is not always correctly identified when wild harvested.

Black cohosh often fetches a lower price than stinging nettle, according to Pennsylvania State University ethnobotanist and coalition partner Eric Burkhart. Even though

Leading Industry Association Speaks Directly to *Nutrition Industry Executive* Readers

A New Domestic, Sustainable Supply of Forest Cultivated Medicinal Herbs

A broad coalition of non-governmental organizations (including AHPA), governmental agencies, universities, and private industry formed two years ago to improve production and market opportunities for forest farming of medicinal herbal grown in Appalachia.

Funded by the National Institute of Food and Agriculture (NIFA) under the Beginning Farmer and Rancher Development Program (BFRDP), the Appalachian Beginning Forest Farmer Coalition (ABFFC) promotes and expands cultivation and conservation of native forest medicinal products. It prepares forest farmers to supply raw material that is both forest-grown verified and certified organic to herbal product industries. In turn, this allows herbal products manufacturers to reduce their impact on the environment and market and sell sustainable, clean products to consumers.

The ABFFC has trained hundreds of new and aspiring forest farmers in Appalachia and beyond and connected stakeholders across the industry. Their work is focused on a new domestic and sustainable supply of forest cultivated medicinal herbs backed up by profitable and predictable production that meet the needs of the growing sector of herbal products consumers who are concerned about where their herbs come from and how they are grown.

In addition to training and technical assistance, the coalition has played a leading role in coordinating harvests of forest farmed raw material sold by coalition farmers for premium prices to herbal products manufacturers who are leading the way in connecting consumers with these sustainable, forest-grown products from Appalachia.

Some manufacturers are already looking to capitalize on the growing demand for high-quality, sustainably and domestically produced medicinal herbs by introducing product lines featuring forest farmed materials.

Background

Native Appalachian forest plants have long been in high demand in the herbal products market. The vast majority of raw materials from this region come from wild harvests. However, the environmental conse-

quences of long term wild harvests of slow growing forest medicinal plants, such as black cohosh, goldenseal and American ginseng, are increasingly in question and threats to native populations could lead to shortages in supply that affect the availability of these sought after herbal products. Additionally, attempts to source raw materials from elsewhere and internationally can create expensive quality control challenges, adding to increasing consumer concern and scrutiny.

The ABFFC has trained hundreds of new and aspiring forest farmers in Appalachia and beyond and connected stakeholders across the industry.

Many in the Appalachian forest region are interested in native medicinal herbs, but cultivation of these plants in their native forested settings for sale has been constrained by historically low prices paid for raw materials that are typically gathered from the wild. However, the situation is changing due to concerns about plant population sustainability and product quality combined with growing demand for products that are "Made in America."

Forest farming of native woodland medicinal plants allows for increased quality control and traceability across the supply chain, while keeping forest ecosystems intact and conserving wild plant populations, attending to main points of concern among the growing herbal products consumer base.

Additionally, a new and growing body of research supports the cultiva-

tion of herbs within their native environment and surrounded by companion species and associated flora and fungi for development of optimal chemical activity. Finally, forest farming also provides a new income opportunity for many in Appalachia, a region of historic economic distress, which has recently been further strapped in the face of a dwindling coal mining industry. NIE

Learn More:

ABFFC website: www.appalachianforestfarmers.org/

ABFFC YouTube channel with nearly 200 videos on forest farming, ranging from growing, harvesting, processing, marketing and how to make value added products to stories featuring beginning and long-time farmers. www.youtube.com/channel/UCA-ZP07ePcWuCGu1wWQ

Farmer feature videos:

Harding's Farm: www.youtube.com/watch?v=Jw60N-vB0

Equinox Botanicals: www.youtube.com/watch?v=IPzfgUfQheo

Elana's Garden: www.youtube.com/watch?v=g1eZWFtMINE&t=1s

Different forest farming methods:

www.youtube.com/watch?v=jclVildnW34

www.youtube.com/watch?v=JnrgLZrvrWk



Michael McGuffin, President and Board of Trustees, American Herbal Products Association (AHPA)

Primary sales one thing, retail another





Conservation Credit for Agroforestry Production



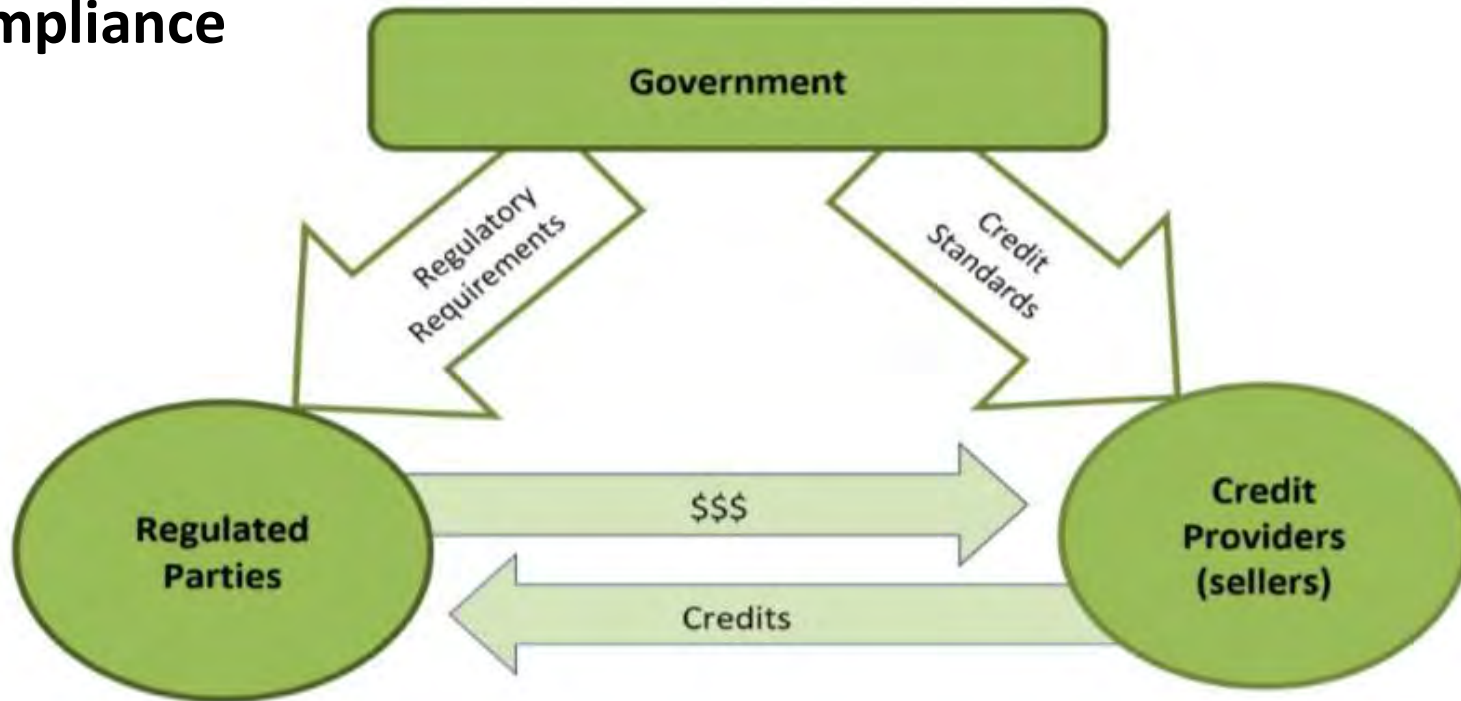
Chesapeake Bay

- 1) Nation's largest estuary, perhaps 3rd largest in the world
- 2) National treasure, but highly impaired
- 3) Non-point primary source of impairment



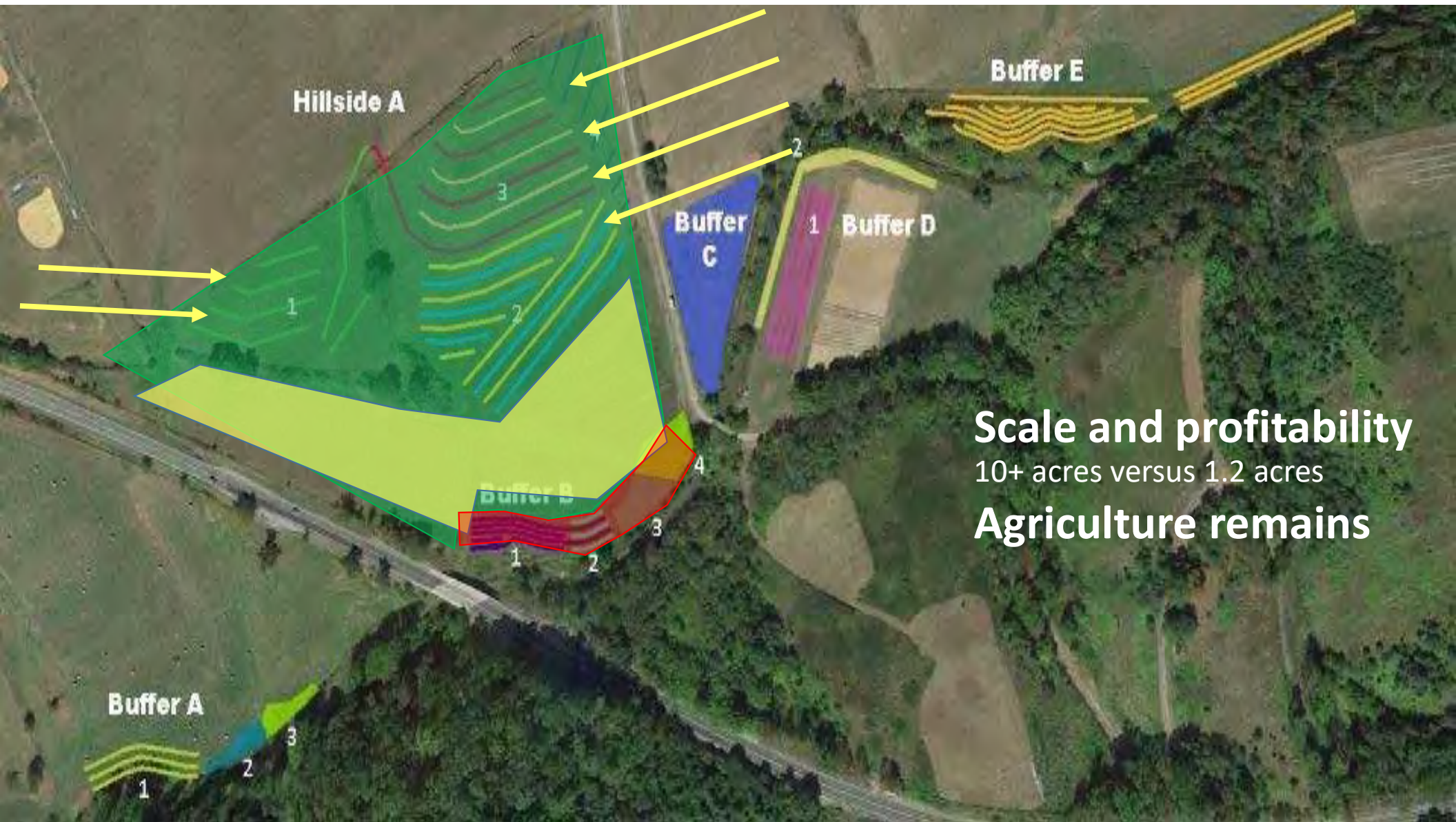
Virginia Nutrient Credit Trading Program

Private Market (2009) – Financial exchange between two actors that helps regulated parties come into environmental compliance



**Deed restricted easement
(400 tpa, 988 tph, management allowed)
Open land / agricultural retirement**





Hillside A

Buffer E

Buffer C

Buffer D

Buffer A

Buffer B

Scale and profitability

10+ acres versus 1.2 acres

Agriculture remains

AgBufferBuilder



AgBufferBuilder is a GIS-based computer program for precision design of vegetative filter strips around agricultural fields. The tool analyses the terrain for spatial patterns of overland runoff and designs a variable-width configuration that matches those patterns to provide a constant, user-selected, level of performance along the field margin. The tool also can assess the performance level of existing or hypothetical configurations.

Why Use **AgBufferBuilder**?

- To improve filter strip performance by enlarging the strip where overland flow concentrates.
- To reduce costs by downsizing filter strip where little runoff flow occurs.
- To assess and compare the performance of alternative designs.
- AgBufferBuilder designed configurations are, on average, **twice as effective** as fixed width configurations covering the same number of acres (see [*AgBufferBuilder: A geographic information system \(GIS\) tool for precision design and performance assessment of filter strips*](#)).



Community projects

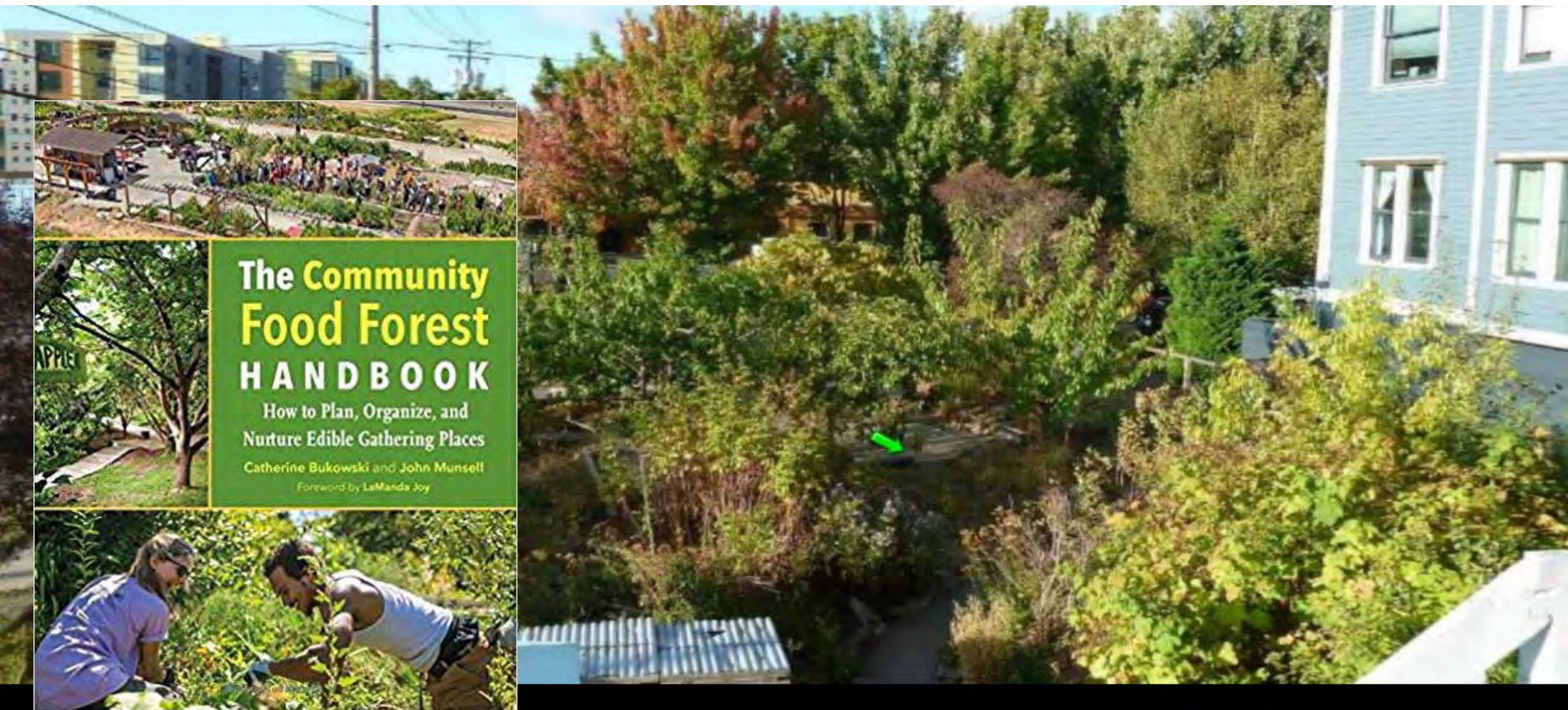
Photo courtesy of Catherine Bukowski

Fargo Food Forest, Portland, OR (May 2009)



Fargo Food Forest, Portland, OR (July 2011)





Fargo Food Forest, Portland, OR (October 2015)

“Everybody loves progress, but nobody likes to change”

**Many ways system in current
Configuration not suited to
Explicit agroforestry support**

WORK AROUND

New Farmers

Air and Water

Climate

Invasives

