

Adding Value by Farming Specialty Woodland Crops

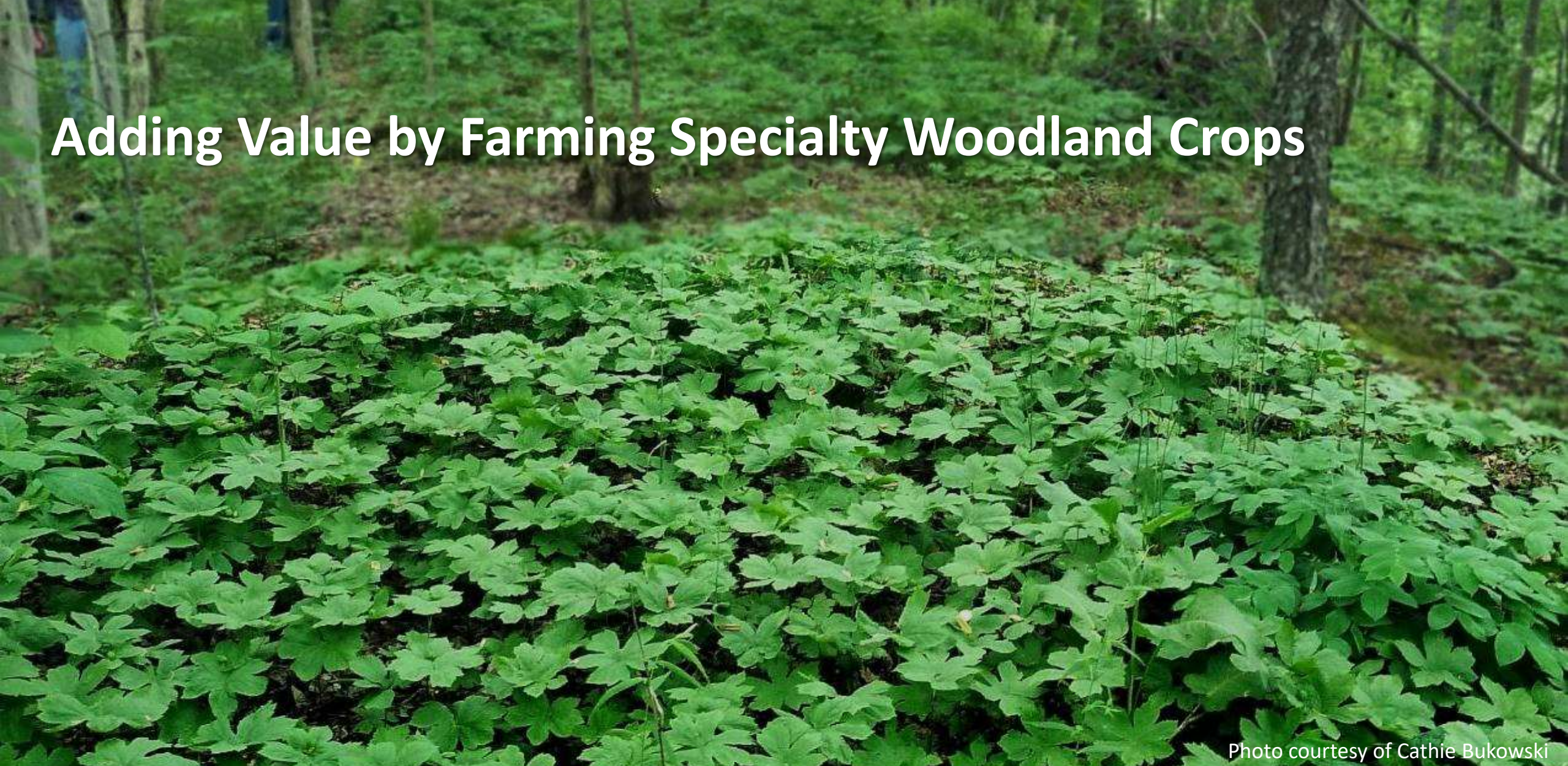


Photo courtesy of Cathie Bukowski

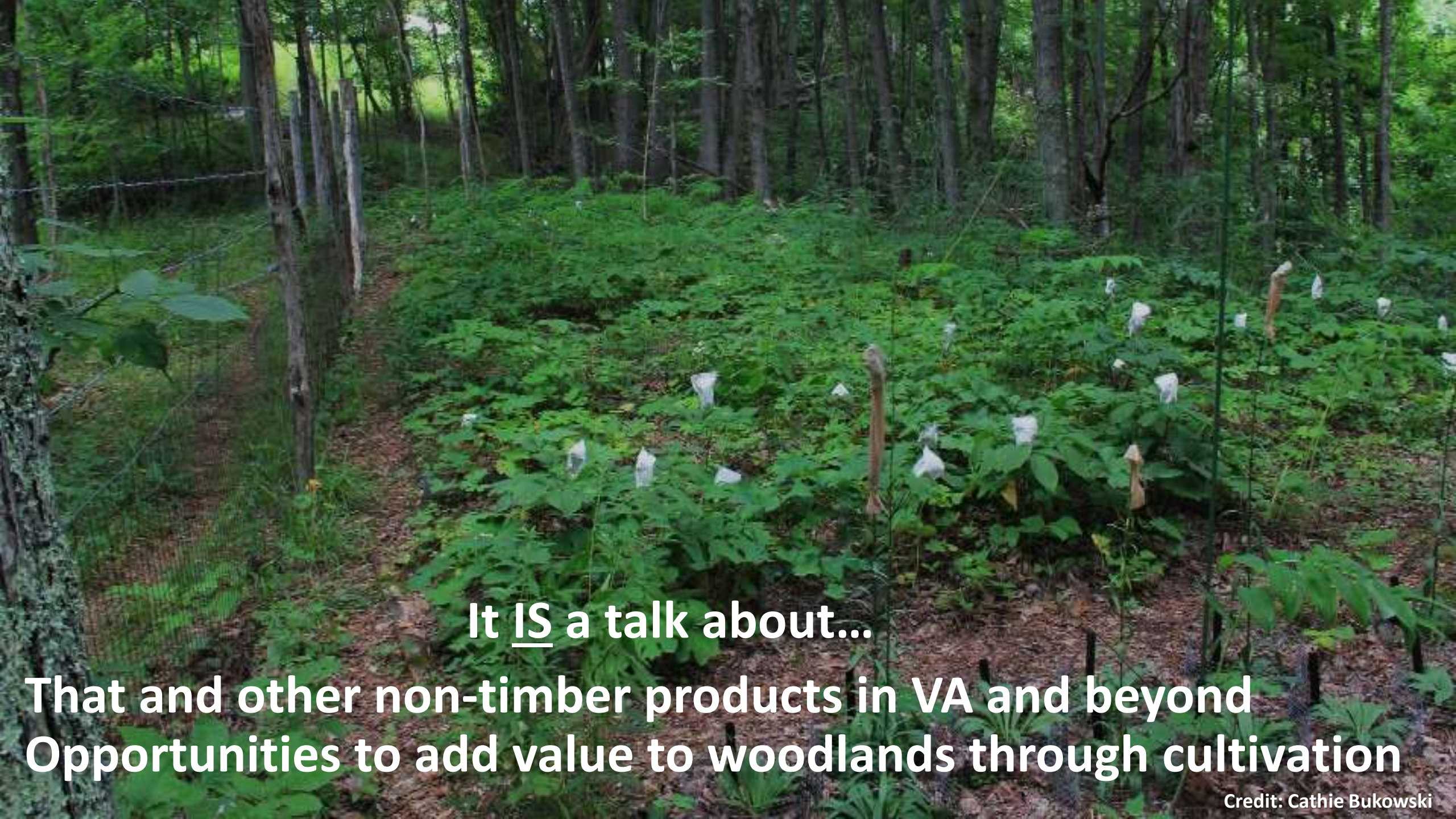


John Munsell
Forest Resources and Environmental Conservation



Not a Ginseng talk...





It IS a talk about...

That and other non-timber products in VA and beyond
Opportunities to add value to woodlands through cultivation

Credit: Cathie Bukowski

Agroforestry... land-use that manages competition and optimizes benefits when trees are combined with crops and/or livestock (Garrett 1997)



Not...





Not...

Definitely not reality television *ginseng hunting*...





Is...

Photo courtesy of the National Agroforestry Center



Is...



Forest Farming

Is...



Non-Timber Forest Products (NTFPs)

Plants, parts of plants, fungi, and other biological material that are harvested from natural, manipulated, or disturbed forests and used for commercial or personal value

WILD CRAFTING

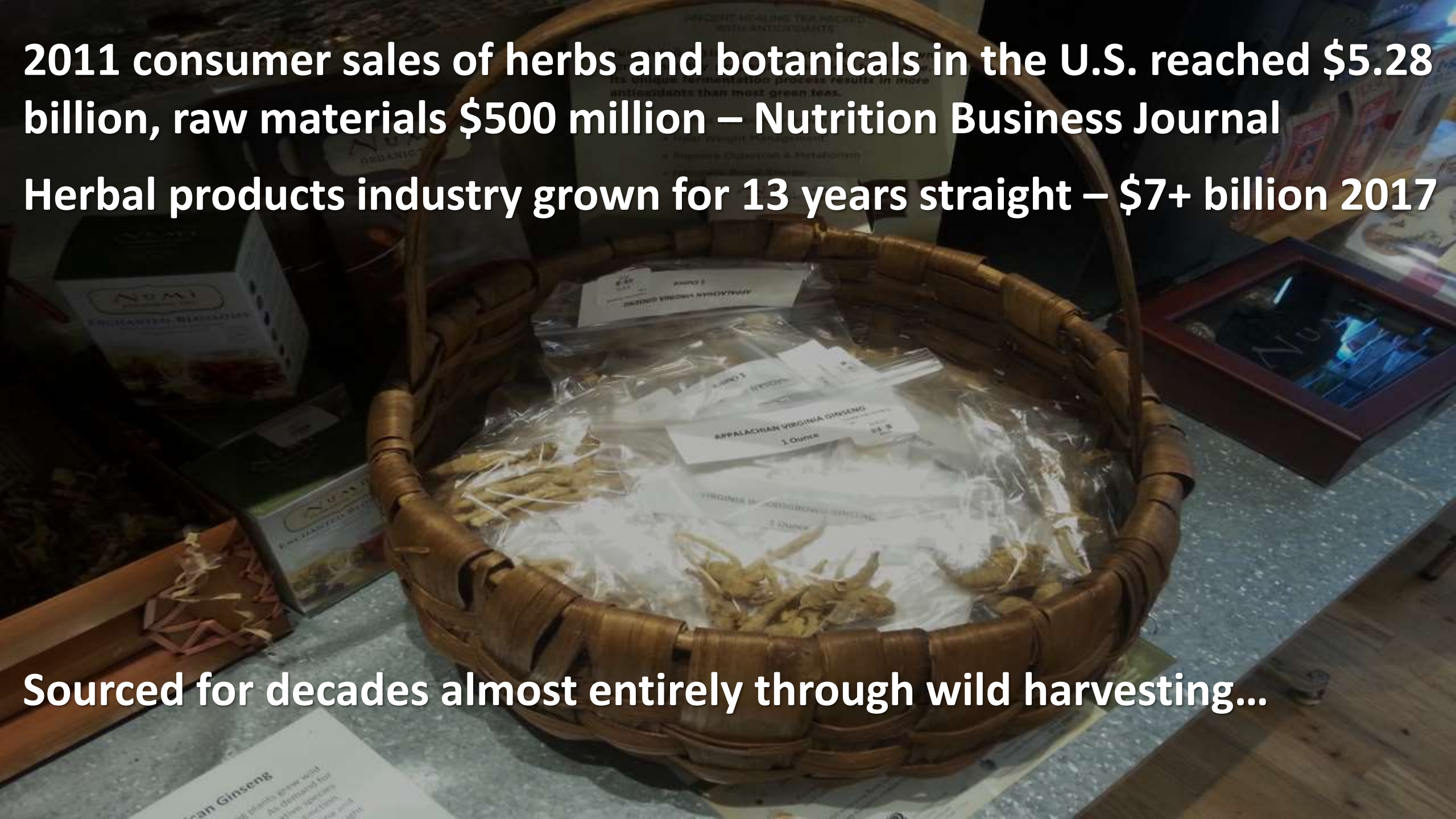
TIPS AND TRICKS



2011 consumer sales of herbs and botanicals in the U.S. reached \$5.28 billion, raw materials \$500 million – Nutrition Business Journal

Herbal products industry grown for 13 years straight – \$7+ billion 2017

Sourced for decades almost entirely through wild harvesting...







Forest Farming

The intentional cultivation of high-value NTFPs under a forest canopy that is managed to maintain suitable growing conditions

Woods Grown

Intensive, think gardening





Wild Simulated
Less intensive



**Managed Wild Populations
Extensive but intentional**

Farming is one thing, sales is another



Fact of the matter is that forest farming is relatively rare... Why?

Current Situation

**Changing market focusing more on traceable supply
and with teeth in terms of revenue potential**

Leading Industry Association Speaks Directly to Nutrition Industry Executive Readers

A New Domestic, Sustainable Supply of Forest Cultivated Medicinal Herbs



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/UCAZP07pEcZWuGGol1veWQ

Farmer feature videos:
Harding's Farm:
www.youtube.com/watch?v=JVi60N-v80
Equinox Botanicals:
www.youtube.com/watch?v=lp26yOfQheo
Eliana's Garden:
www.youtube.com/watch?v=g1oZ7WFMtNE&t=1s

Different forest farming methods:
www.youtube.com/watch?v=jcVlkdMw34
www.youtube.com/watch?v=JnrgLZyewk



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

Evolving value chain Scaling?



APPALACHIAN HARVEST





Post-harvest processing equipment and sales assistance nested in certified food handling facility

Aggregates supply from forest farmers that are Forest Grown Verified

2017 1 herbal products company purchased 50 pounds of 1 species; 2019 8-10 companies seeking thousands of pounds of 4 species

10-15+ times average price for wild

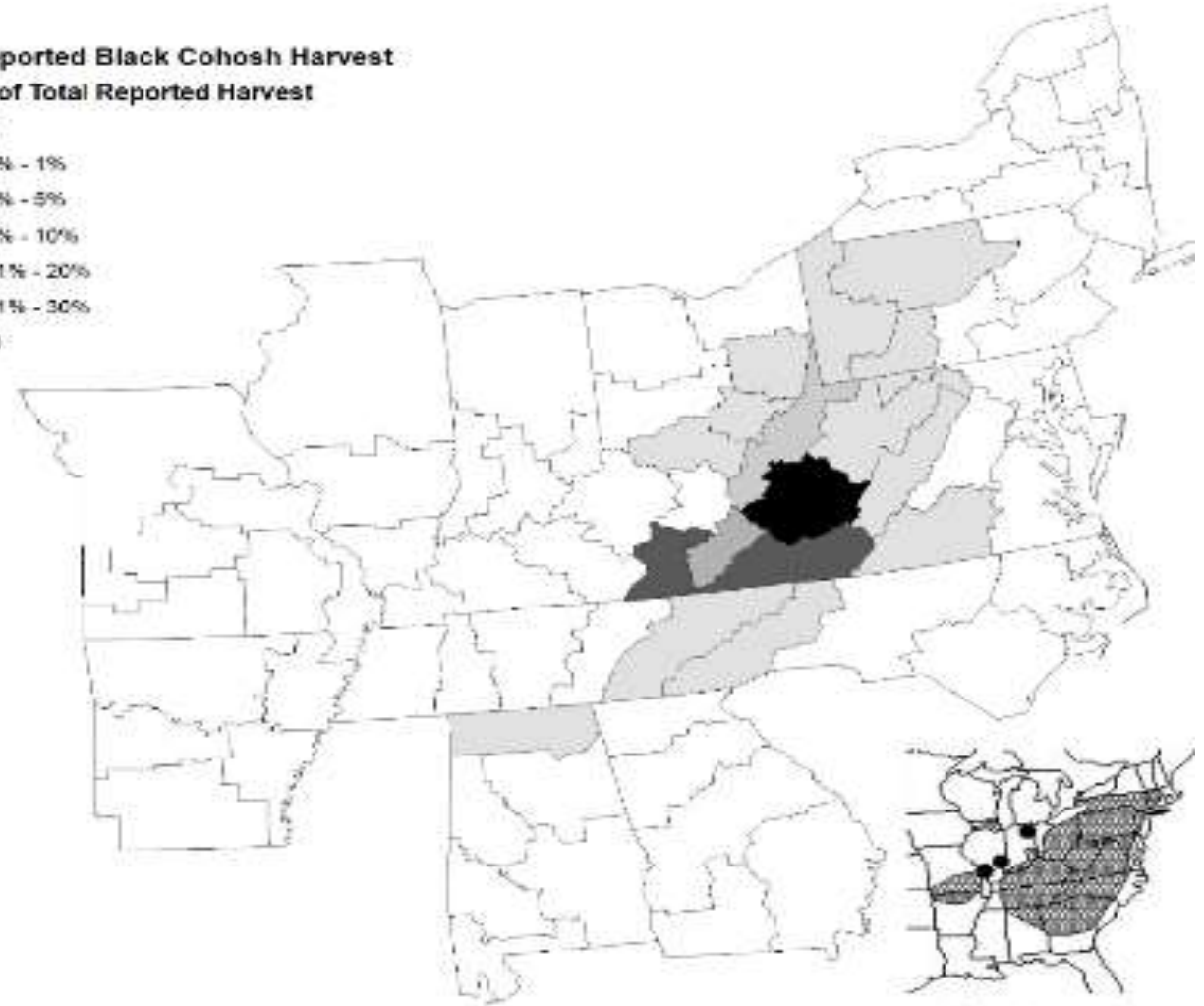
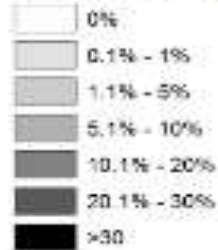
Companies beginning to explore contracts, standing up planting stock supply programs

Demand currently exceeds supply, there is room to grow with serious economic implications

Track and map NTFP trade – Black Cohosh Example



2015 Reported Black Cohosh Harvest
Percent of Total Reported Harvest



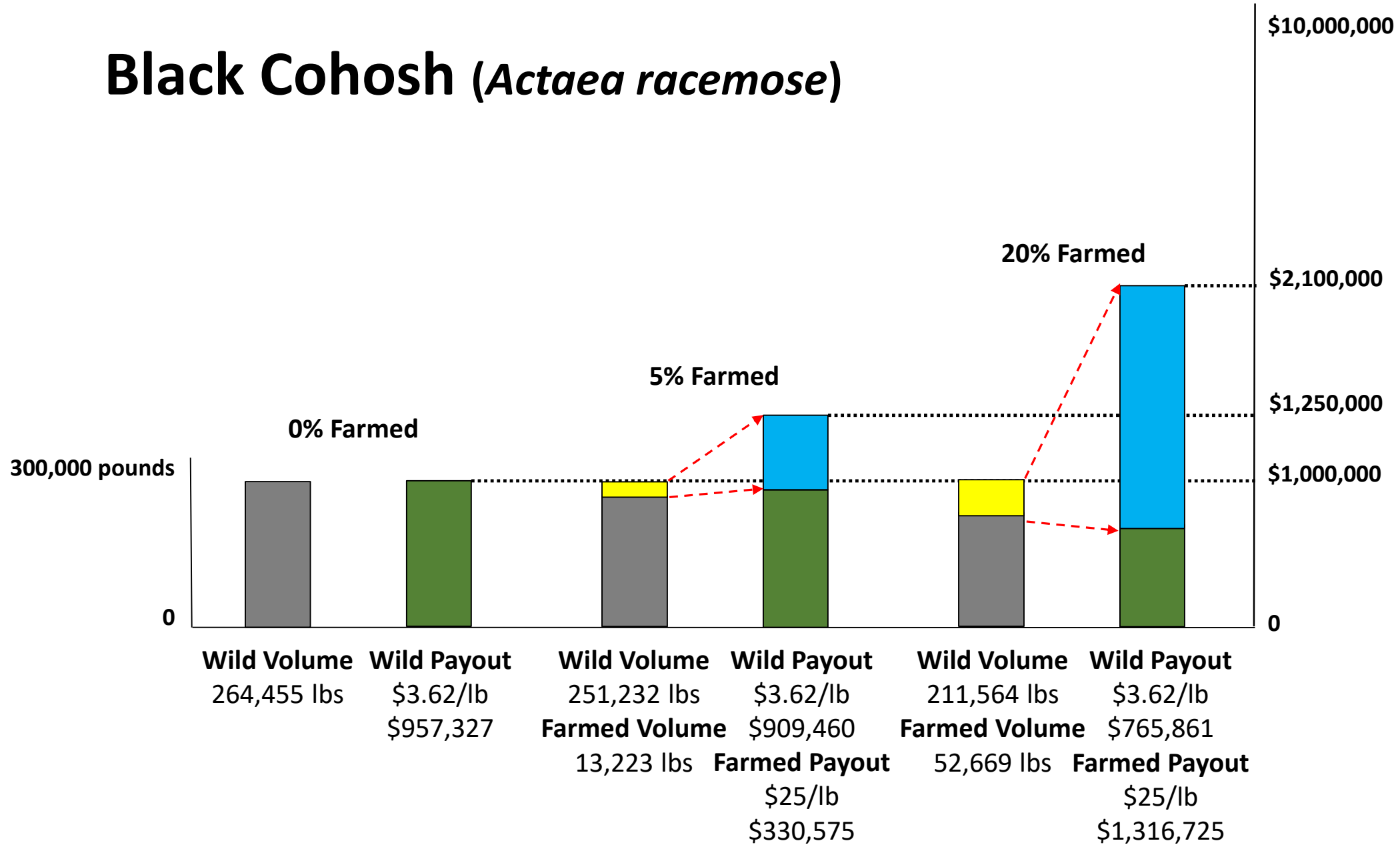
Range Data from North American Flora
www.eflora.org

Black Cohosh (*Actaea racemosa*) by FIA Zone

Preliminary Projected Volumes – ~264,000 dry pounds

Species	Total Pounds	Mean Dry Price	% of Total Value	Total Value USD\$
Black cohosh	264,455	\$3.62	22%	\$957,327
Bloodroot	21,991	\$10.39	5%	\$228,486
Blue cohosh	3,701	\$2.62	0%	\$9,697
Cranesbill	581	\$2.73	0%	\$1,586
False unicorn	6,143	\$72.14	10%	\$443,156
Goldenseal	106,105	\$22.38	55%	\$2,374,630
Mayapple	13,616	\$3.14	1%	\$42,754
Slippery elm	78,121	\$2.68	5%	\$209,364
Trillium	1,338	\$3.11	0%	\$4,161
VA snakeroot	201	\$84.65	0%	\$17,014
Wild yam	16,675	\$2.44	1%	\$40,687
Sum				\$4,328,864

Black Cohosh (*Actaea racemose*)



APPALACHIAN
sustainable
DEVELOPMENT



NC STATE UNIVERSITY



Southern Regional
Extension Forestry



BLUE RIDGE WOODLAND GROWERS



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



ABFFC Facebook



Appalachian Beginning Forest
Farmer Coalition

4 days ago

Are you interested in learning the
many techniques for adding value to

UPCOMING EVENTS

Sort Options

29⁻¹
SEP OCT

FOREST FARMING - A

14
OCT

GINSENG

20⁻²²
OCT

FROM HARVEST TO

1,500+ Members

Compendium

The collage features four main components:

- YouTube Video:** A video player showing Ben Kitchen, an herbalist, speaking in a forest setting. A sidebar menu lists topics like 'What is Goldenrod?', 'Where does Goldenrod grow?', 'Planting goldenrod in the forest', 'Biology and propagation of goldenrod', and 'The life cycle of goldenrod'.
- Facebook Page:** The 'Forest Farming' page (@amrgha1eeb) with a large image of green plants. The page includes navigation links (Home, About, YouTube, Reviews, Photos, Likes, Videos, Posts) and a post from August 11, 2016, mentioning a 'Forest Farming' event.
- NC State University Article:** A page titled 'Black Cohosh (*Actaea racemosa* L.)' with an 'Introduction' and 'Botanical Information' section. The text describes the plant's characteristics and uses.
- Newsletter Cover:** 'FOREST FARMING FOOTNOTES Spring 2016' featuring a white flower in a forest. The cover includes a 'TABLE OF CONTENTS' and a 'Sign up now!' link.

5,837 YouTube Subscribers, 1.5 million+ views

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 communities, states, and the economy. NTFPs are the plants, fungi, and other biological material that keep our forests healthy and productive. These products are harvested, processed, and sold throughout the nation – primarily in rural communities. Increased attention to these products by



MONTCLAIR STATE

UNIVERSITY

Thanks

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

Non-timber Forest Products

Edible

Medicinal

Floral and Decorative

Specialty



Edible



Mushrooms

Nuts

Honey

Syrup

Fruit, leaves, roots of plants and ferns

Berries for jams, jellies, juices, wines



Medicinal

Wood (cedar oils)

Bark (slippery elm)

Buds (cottonwood)

Leaves (catnip)

Roots (goldenseal)

Fruit/flowers (St. John's Wort)

Pollen (ash)



Credit: Jim Chamberlain

Floral and Decorative

Greenery (galax)

Tips (balsam fir)

Berries (holly)

Flowers (rhododendron)

Straw and cones (pine)



Specialty



Credit: Jim Chamberlain



Forest Farming Methods

Woods Grown

Wild Simulated

Managed Wild Populations



Woods Grown

Primary Buyer Questionnaire

Business Characteristics and Spatial Trade

Virginia Tech RootReport Questionnaire

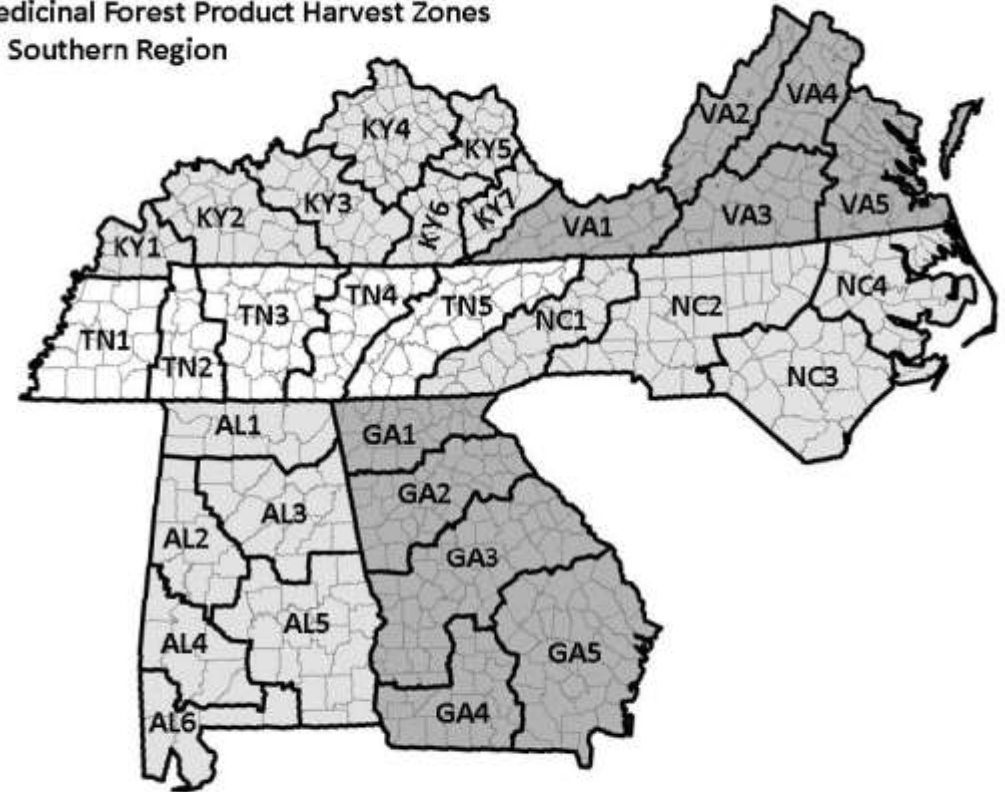
Part 1: The Business. These questions tell us about the different kinds of companies that purchase medicinal forest products. They allow us to create more accurate assessments of the market and more effective extension services. Questions about employment and whether you sell to other buyers or directly to consumers help us measure the botanical industry's contribution to the regional economy. **Any information you give throughout the survey is confidential and will not be shared.**

- 1) Which of the following was true in 2015?
- I only bought ginseng in 2015 I bought **other** medicinal products in 2015 I bought ginseng **and** other medicinal products in 2015
- I did not buy **any** medicinal forest products in 2015
- 2) Do you buy any **non-medicinal** forest products (edible plants or products for the floral or craft industry)? These include morels, galax, log moss, ramps, etc.
- Yes No
- If you answered **yes**, what non-medicinal forest products do you purchase?
- _____
- _____

If you bought medicinal products other than ginseng in 2015, please continue. If not, you've completed the survey and can send it in.

- 3) What **percentage** of your medicinal products do you and/or your employees harvest? _____ % } Should total 100%
- What **percentage** of your medicinal products are harvested by someone else? _____ % }
- 4) How many people (including yourself) are employed at your company (or the part of your company that works with botanicals)?
- _____ Part time _____ Full time
- 5) Do you manufacture your own consumer products from the plants you buy? (as packaged whole root, teas, tinctures, supplements, etc)
- Yes No
- 6) Approximately what percentage of your non-ginseng products do you sell to the following:
- Other Buyers _____ Manufacturers _____ Retailers _____ Consumers _____ Other(Please Specify) _____

Medicinal Forest Product Harvest Zones
Southern Region



Species	Total Pounds	Mean Dry Price	% of Total Value	Total Value USD\$
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Wild yam	16,675	\$2.44	1%	\$40,687
Sum				\$4,328,864

106,105 * 400 plants/lb = 42.4 million plants

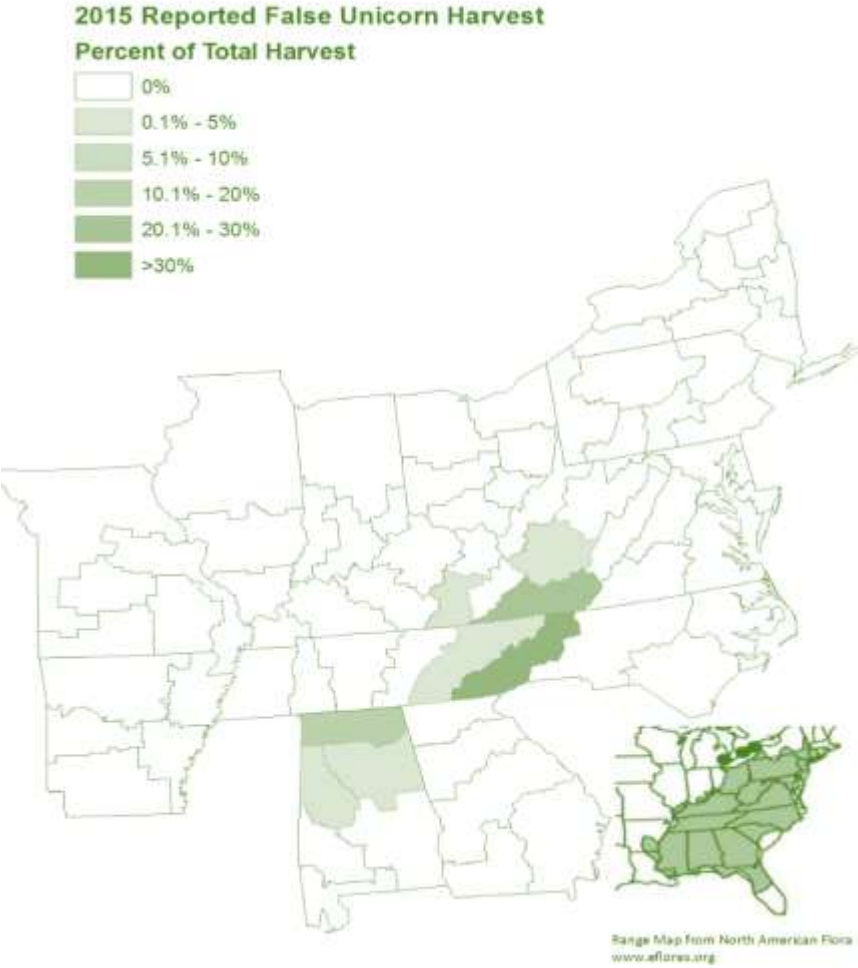
Some preliminary comparisons indicate a 30-fold increase from first point of sale to retail

Revenue? Tracking NTFPs and mapping markets

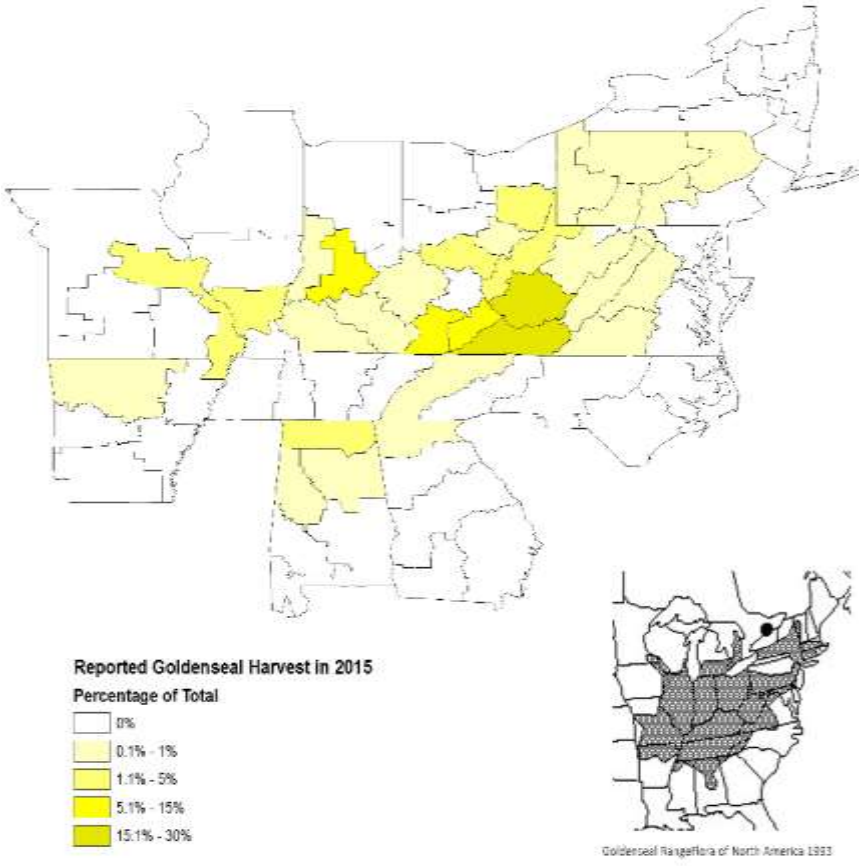


Annual volume, trade location, and average prices?
Primary buyers of iconic Eastern forest herbal plants

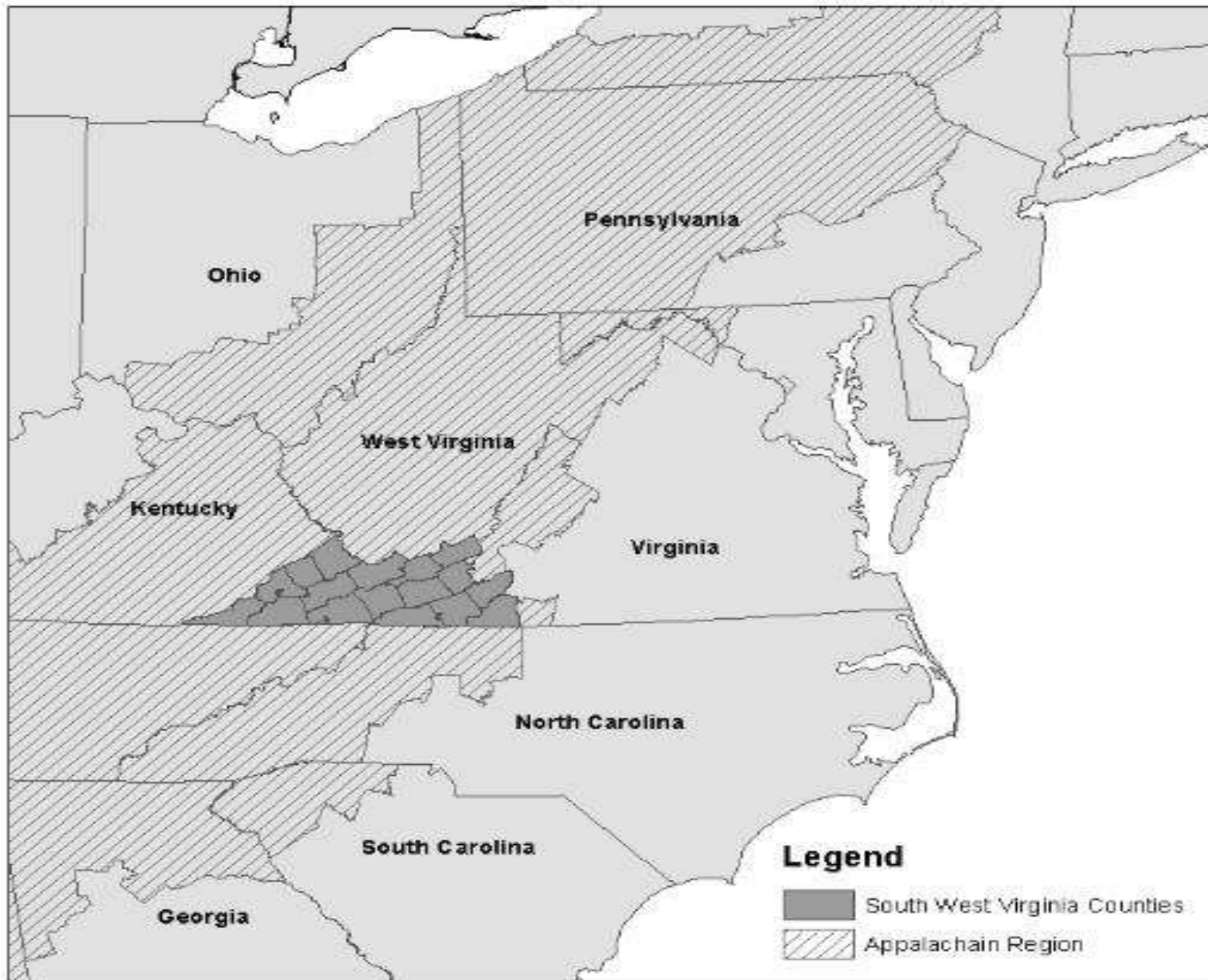
Revenue? Tracking NTFPs and their markets



False Unicorn (*Chamaelirium luteum*)



Goldenseal (*Hydrastis Canadensis*)



Who will farm?

Survey on 3 things

- 1) Interested in forest farming?
- 2) Lease your land to a farmer?
- 3) How much do you need to make?

~1,000 owners

~300 responses

1/3rd interested in farming/leasing

5,000+ acres – farming

1,500+ acres – leasing

Forest Food and Medicine in Contemporary Appalachia

KATIE TROZZO

Virginia Tech

JOHN MUNSELL

Virginia Tech

KIM NIEWOLNY

Virginia Tech

JAMES L. CHAMBERLAIN

US Forest Service Southern Research Station

Forest food and medicine have a long history in Appalachian culture, but the region's social landscape is shifting from in-migration of amenity seekers and out-migration of multigenerational residents in search of economic opportunities. As a result, much of what we know about harvest and use has likely changed. We conducted 16 interviews with people involved in harvesting forest food and medicine in a Southwest Virginia community. Our study focused on participants' mo-

multigenerational participants, they were more inclined toward a broad suite of edible species (mushrooms, nuts, fruit, plants); however for medicinal forest species they limited harvesting to herbaceous plants. Shared motivators offer a starting point for regional programs that address the needs of both multigenerational residents and newcomers. As the future unfolds, residents are collectively shaping the next chapter in Appalachia's forest food and medicine culture in a