

A group of people, including men and women, are walking through a pine forest. They are dressed in casual attire like t-shirts, jeans, and hats. The forest has tall, thin pine trees and a grassy ground. The scene is outdoors and appears to be a field trip or a guided walk.

IMPLEMENTING AGROFORESTRY PRACTICES IN VIRGINIA, USA: CHALLENGES AND PATHS FORWARD

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Tim Mize, J.B. Daniel, Jacob Johnson, and Chris Teutsch**

Agroforestry and sustainability

- Economic outputs
 - Diversity and stability
 - Forest “crops”, timber/pulp, pine straw, nuts, fruits, fodder
 - Returns at several time scales
 - Livestock/annual crops < tree crops/products < timber
- Environmental quality
 - Production
 - Carbon sequestration
 - Soil health
 - Species diversity
 - Water quality
 - Wildlife habitat
- Social acceptability



http://fromfarmtofactory.blogspot.fr/p/objects_20.html

Agroforestry utilization in US Southeast

State	Farms practicing alley cropping or silvopasture <i>Farms / Total farms (Percent)</i>
Alabama	119 / 43233 (0.28)
Arkansas	47 / 45071 (0.10)
Florida	137 / 47740 (0.29)
Georgia	99 / 42257 (0.23)
Kentucky	96 / 77064 (0.13)
Louisiana	37 / 28093 (0.13)
Mississippi	65 / 38076 (0.17)
North Carolina	119 / 50218 (0.24)
South Carolina	51 / 25266 (0.20)
Tennessee	51 / 68050 (0.08)
Virginia	74 / 46030 (0.16)
Total farms, Southeast	895 / 511098 (0.18)
Total farms, USA	2725/~2200000 (0.12)

Source: Census of Agriculture USDA National Agricultural Statistics Service

Why isn't agroforestry more common?

Lack of:

- Familiarity with the term and practices
- Visible research and demonstration sites
- Guidelines for adoption
- Strong research data on production, economics
- Social influence and support networks

Institutional / cultural resistance

- Foresters/Resource professionals:
Livestock = nuisance or a detriment
- Farmers:
Trees = nuisance or a detriment
- Both often desire management simplicity

Agroforestry's Implementation paradox

Those features – diversity and complexity – which create the benefits of agroforestry are the same attributes that challenge land managers and limit adoption.

Paths forward

- Efforts to support agroforestry adoption
- Turn challenges into opportunities
- Developing new forms of research & outreach



Build a team



Address challenges/opportunities

Agroforestry practices

- Alley cropping
- Forest farming
- Riparian buffer strips
- Silvopastures
- Windbreaks

Understand audiences

A photograph of a young tree in a wire cage in a field, with two people standing in the background. The tree is in the foreground, supported by a metal cage. The background shows a grassy field and trees, with two people standing in the distance. The text 'Understand audiences' is overlaid on the top part of the image.

VDOF prioritization project

Social science landowner segmentation studies

Conservation Credit for Agroforestry Production

NRCS-CIG; NFWF

Interest in practices:

- Affected by social influence, risk expectancy, planting experience, performance expectancy, parcel size, among others.
- Greater among newer owners with higher incomes and who are less active in farming.
- Benefited by having “hands on” exposure

Non-timber Forest Products / Forest Farming



Appalachian Beginning Forest Farmer Coalition
Merging traditional practices and basic science
Blue Ridge Woodland Growers Action Research
Non-timber Product Output Report
Production Functions and Techniques

Panax quinquefolius



Buffers and Upland Contour Plantings



Native plantings at Catawba Sustainability Center

Silvopasture research and demonstration sites



*In development

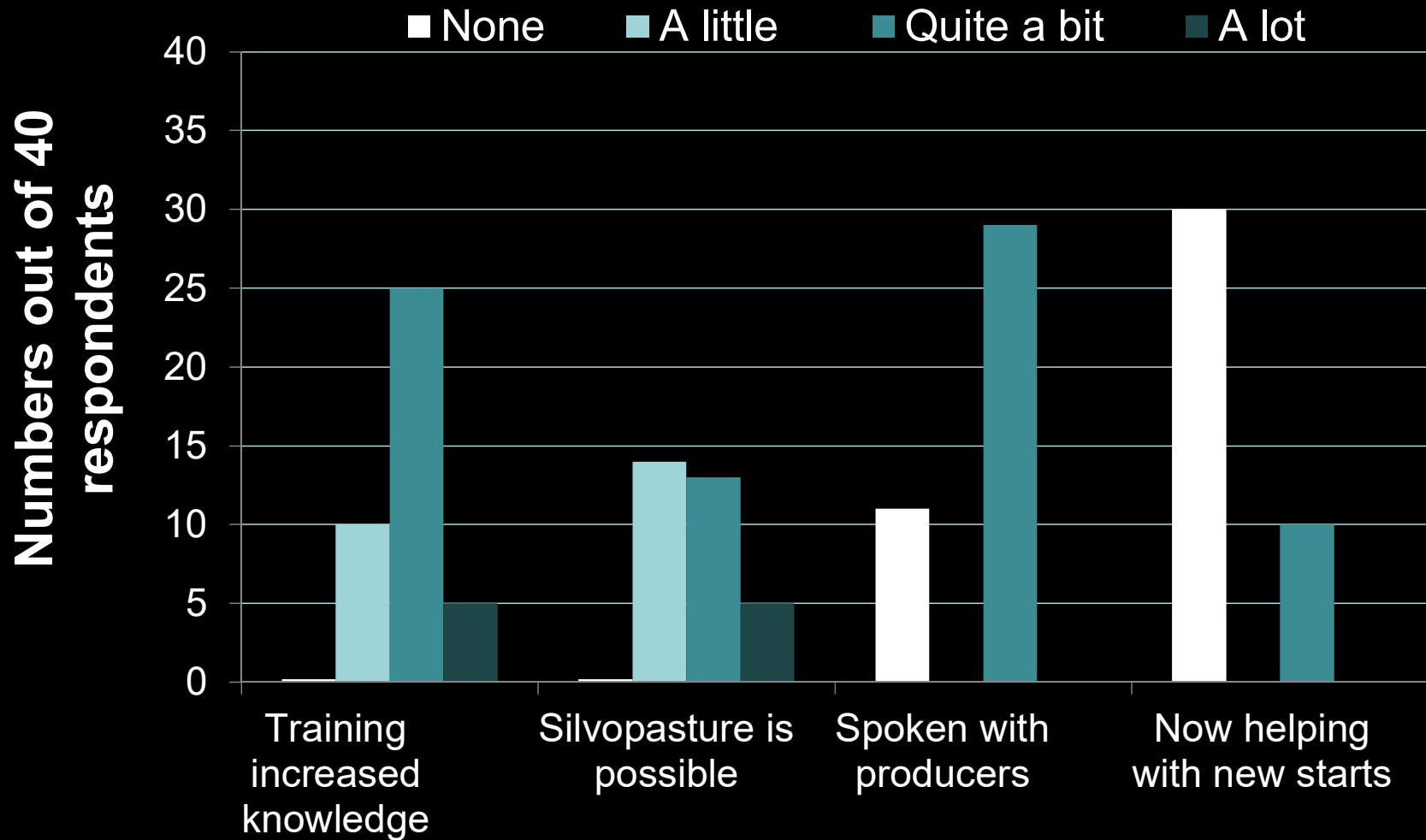


Training Students...

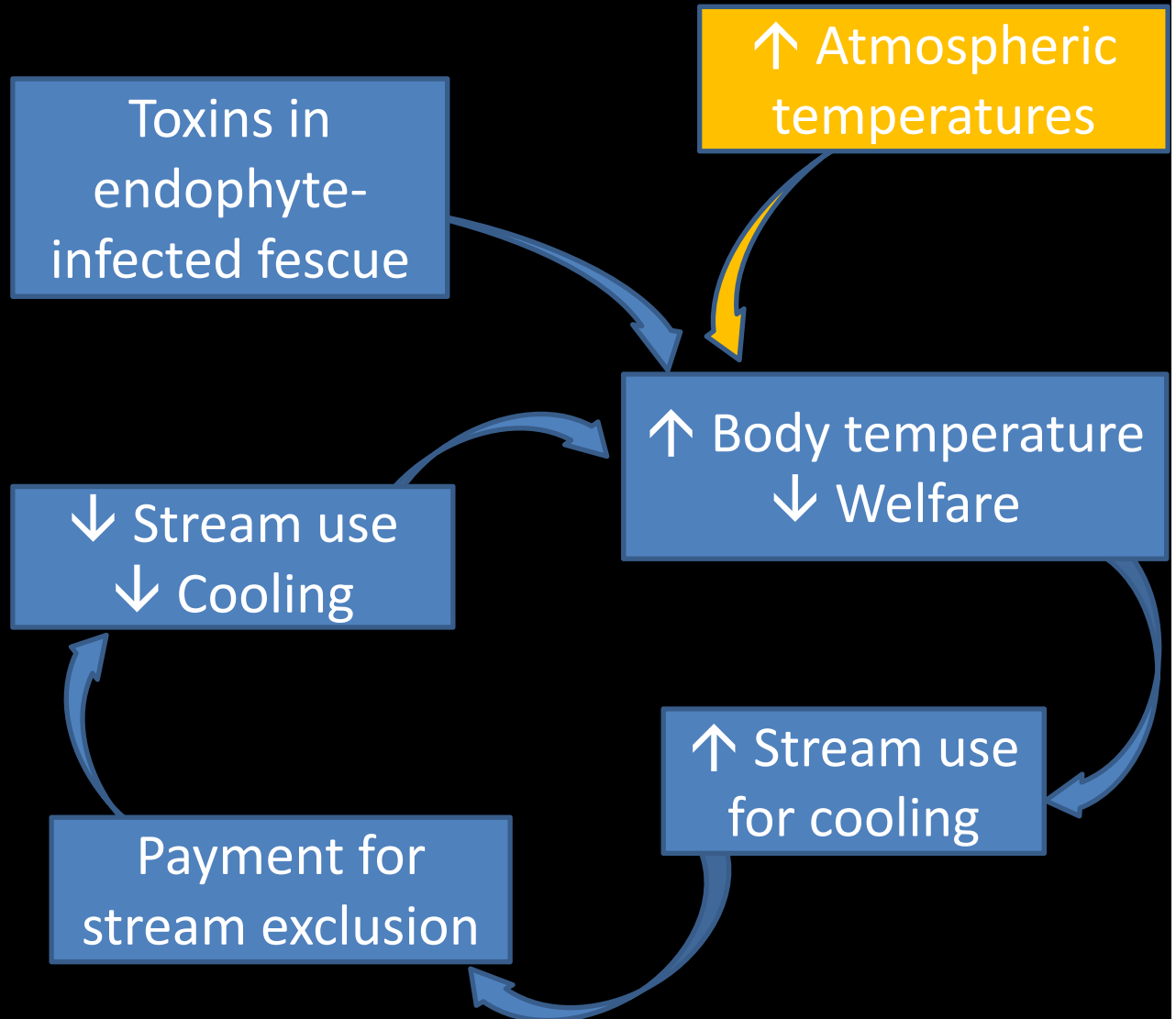
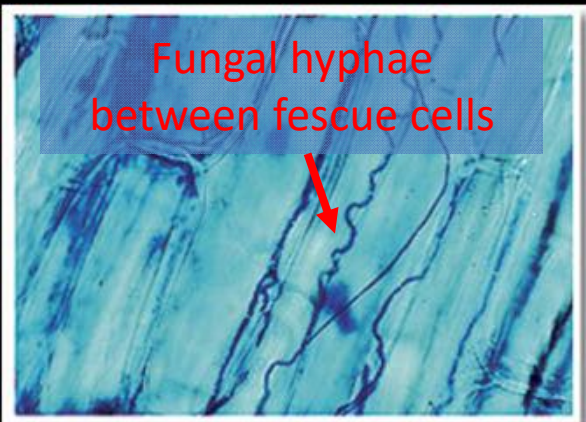
Train trainers



Participant response to training in VA



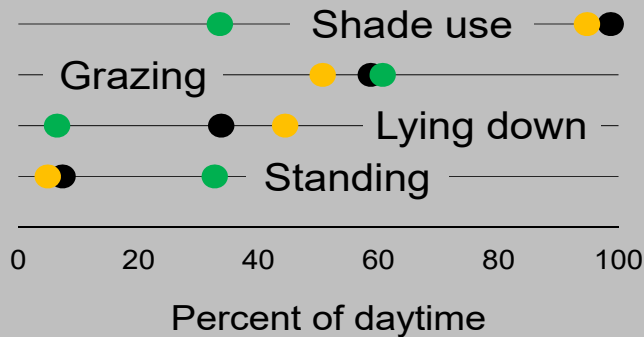
Challenge = opportunity?



Forage Production, Animal Behavior & Performance

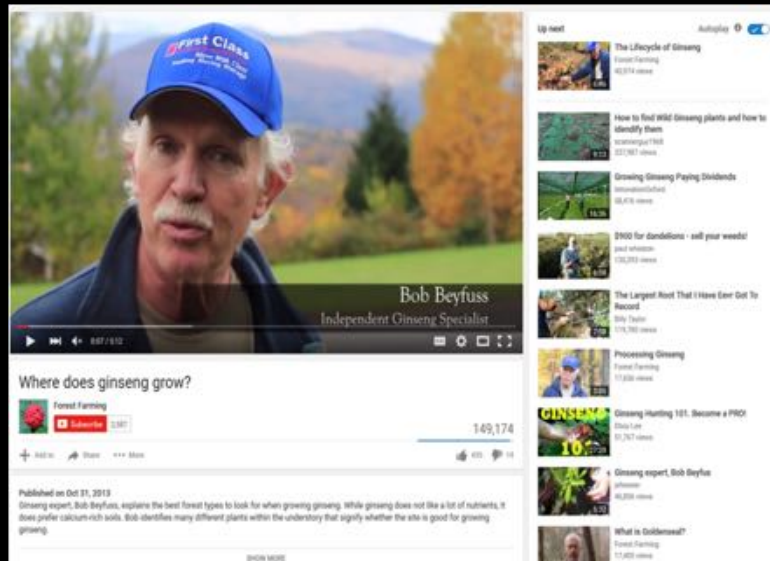


Lambs in silvopastures spend more time lying down and less time grazing



Disseminating information

- Create publications
- Build websites, Youtube
- Hold site visits, field days



Follow Producer Adoption & Attitudes

- Cheaper to plant trees that grow in value
- Transitioning land for generational transfer
- Great for marketing: Customers “get it”

Some next steps



Site Report Generation Tool

1. Address location the forest farm address

Wise County, Virginia, United States

2. Draw the forest farm boundary



3. Get site assessment for your forest farm

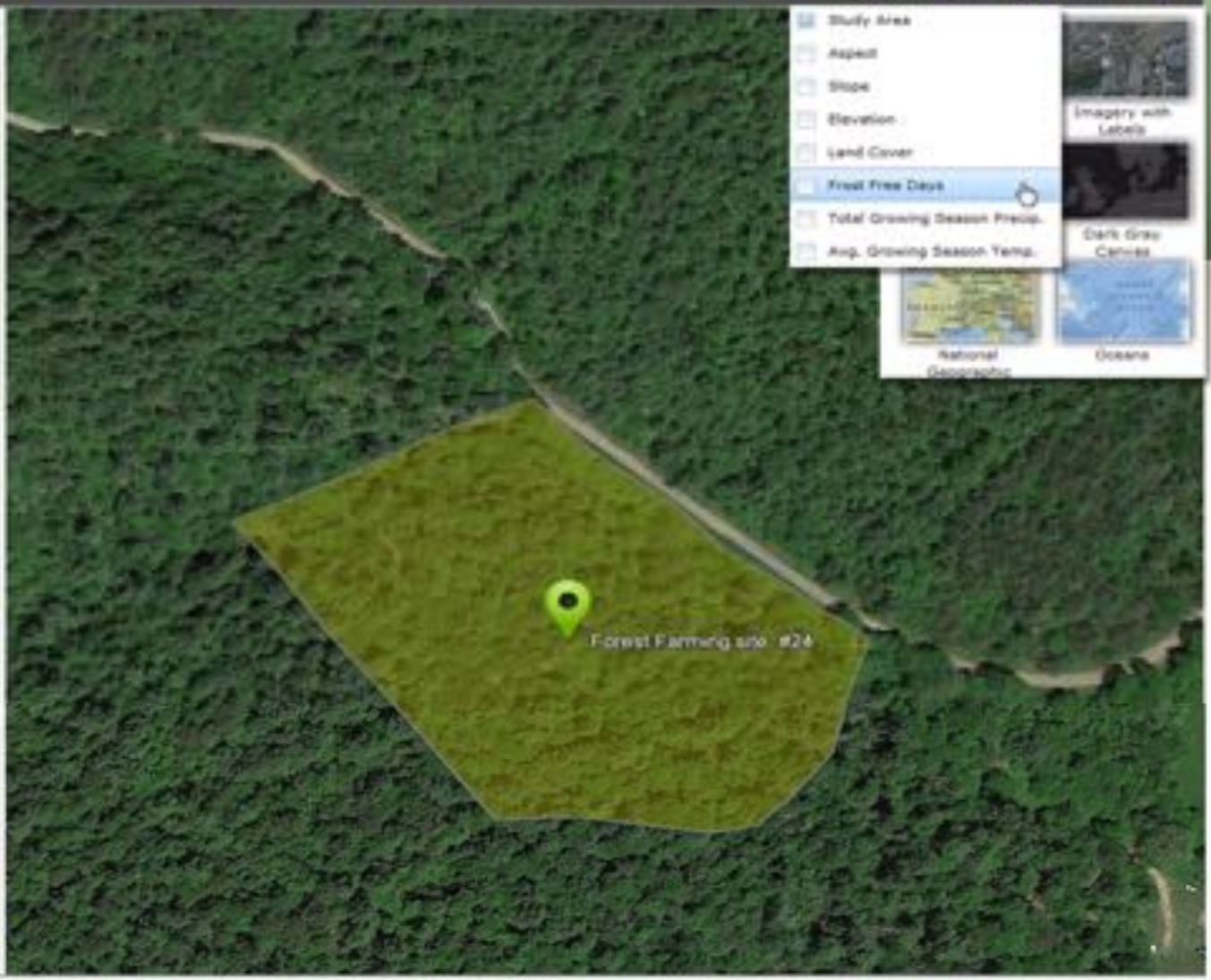
[Draw Polygon](#) [Delete Polygon](#)

Forest Farm Site Reports

Results

- Report generation failed
- Site report generation canceled
- Report request submitted
- Report generation task initiated
- Processing datasets on server ...
- Succeeded. Please check your email**

[Clean Results](#)



Study Area

- Aspect
- Slope
- Elevation
- Land Cover
- Frost Free Days
- Total Growing Season Prop.
- Avg. Growing Season Temp.

Imagery with Labels

Dark Gray Canvas

National Geographic

Oceans

Some next steps



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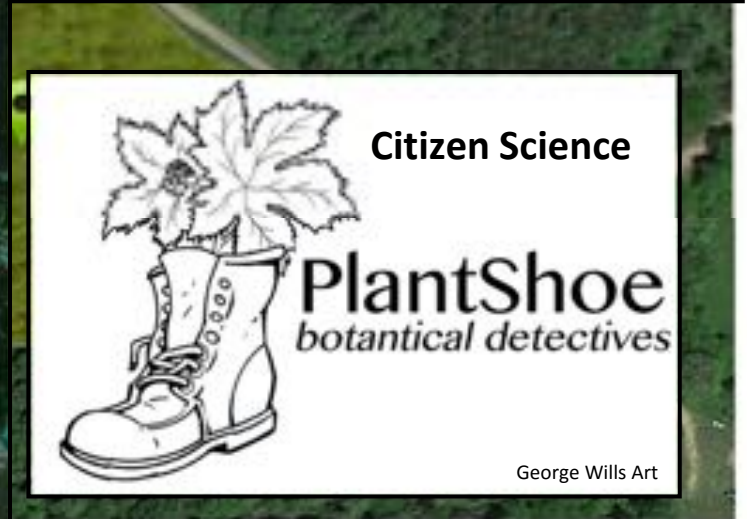
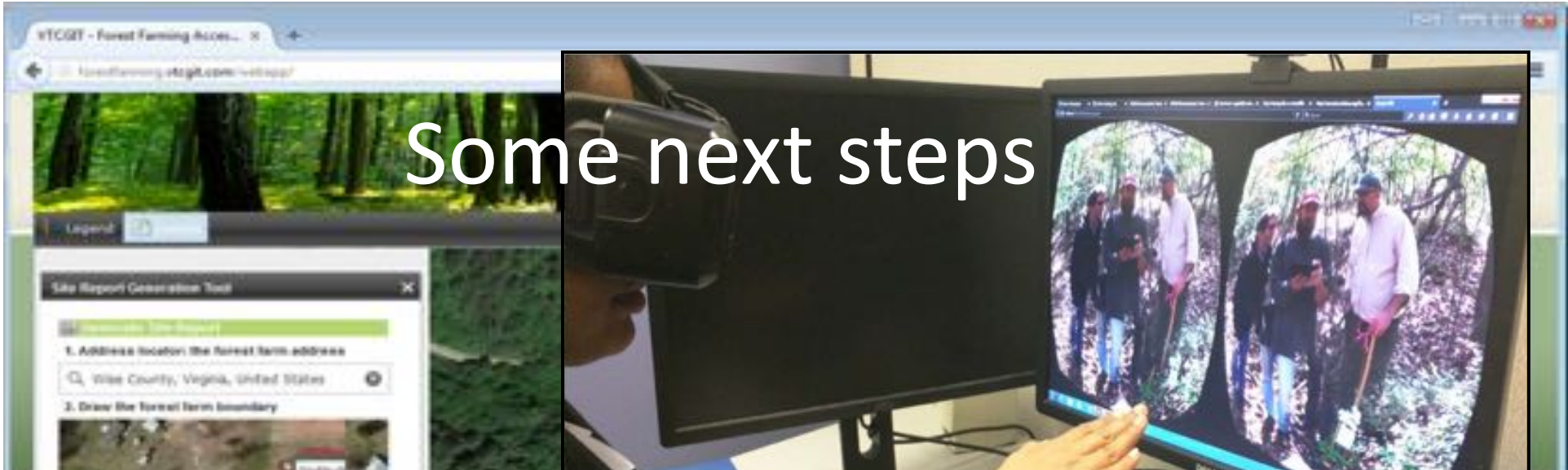
Citizen Science

PlantShoe

botanical detectives

George Wills Art

Some next steps



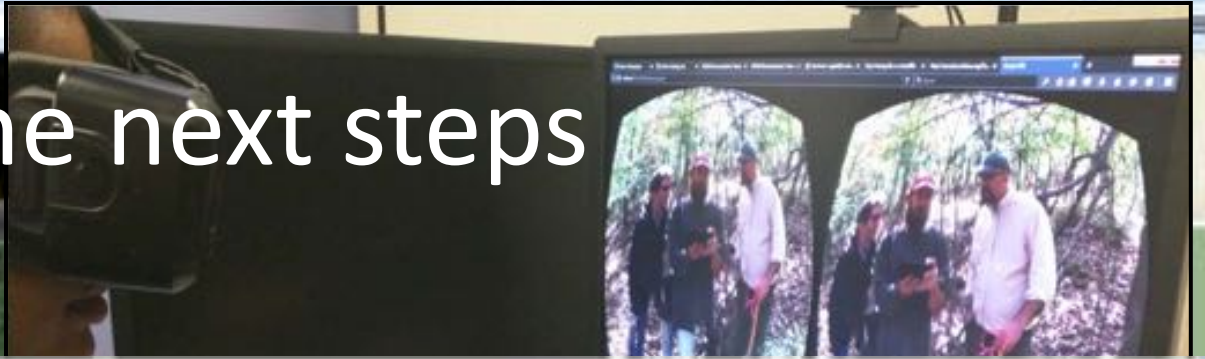
Some next steps



Legend

Site Report Generation Tool

Generate Site Report



Conclusions

A group of people, including men and women of various ages, are walking through a large, open pine forest. The trees are tall and thin, with a dense canopy of green needles. The ground is covered in grass and fallen pine needles. The people are dressed in casual to business-casual attire, including shirts, trousers, and hats. They appear to be engaged in a group activity or a field trip.

Build a team

Address problems / opportunities

Use old and new tools for teaching/learning

Be patient

A close-up photograph of a person's hand holding a large, tangled mass of thin, yellowish-brown roots. The roots are densely packed and appear to be parasitic, possibly dodder. The background is a blurred green field of grass. The text is overlaid in the lower-left quadrant of the image.

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Thanks/Merci!
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