

Leopold Center for Sustainable Agriculture

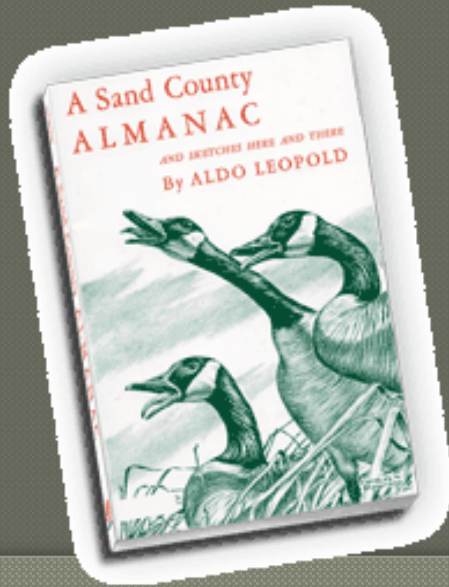


Jeri Neal, Program Leader, Ecological Systems and Research

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To keep every cog and wheel is the first precaution of intelligent tinkering

Aldo Leopold



...a land ethic changes the role of Homo sapiens from conqueror of the land-community to plain member and citizen of it...

Mission.....



- Identify & research negative impacts of agriculture
- Develop profitable systems that conserve natural resources
- Plan and deliver information with ISU Extension

About the Center...

STAFF

- Director
- Distinguished Fellow
- Program leaders (4)
- Accountant
- Communications specialist & intern
- Administrative assistant

- ◉ Location: on the Iowa State central campus
- ◉ 17 member Advisory Board
- ◉ Budget \$1.9 million



Program areas.....



- Ecological Systems
- Policy
- Food & Marketing
- Cross-Cutting
- Competitive Education Support

Activities and outreach

- Competitive Grants – research, education & demonstration (annual, may be multi-year)
- Communications, Outreach (ongoing)
- Partnerships, working groups and research teams (ongoing)

Cool Tools

www.leopold.iastate.edu

- Website
- Facebook
- Quarterly newsletter
- E-news and notes
- Publications
- Annual report
- Impact sheets
- White papers
- Displays
- Videos



Cultivating local biomass for renewable energy

By STEFANIE TROUT, Leopold Center Graduate Communications Assistant

As the local food movement continues to gain momentum, the University of Iowa is positioned to start a new trend: local fuel.

The UI Biomass Fuel Project emerged in response to the University's 2010 pledge to achieve at least 40 percent renewable energy consumption by 2020. The plan seeks to green the campus's energy portfolio with locally-grown biomass that could improve Iowa's environment, benefit local communities, and support the rural economy.

At the time, only 11 percent of the fuel burned in UI's power plant came from biomass, in the form of oat hulls, while 50

percent of the energy was generated from burning coal. The University consumes 90,000 tons of coal each year, all of which is imported from outside of Iowa. The 2020 target will cut coal use by half and make up the difference through locally-sourced biomass that could retain millions of dollars that would have been spent on out-of-state coal.

In 2012, a Leopold Center grant supported the formation of the Biomass Partnership Project (BPP). This pilot project brought potential collaborators— from researchers to industrial representatives to farmers— to the table to assess strategies for cultivating

BIOMASS (cont. on page 4)

Food at work: More than vending machines

By SAVANNA LYONS, Leopold Center Graduate Marketing Assistant

The vending machine and cafeteria aren't the only places to get food while on the job these days. Employees at some eastern Iowa

employees at their workplaces. The Worksite Food Box strategy has shown promise as a way of reaching customers who otherwise would not consume local

INSIDE THIS ISSUE



Director: Losing more than just a species

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Kirschenmann: Strategies for



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Current focus

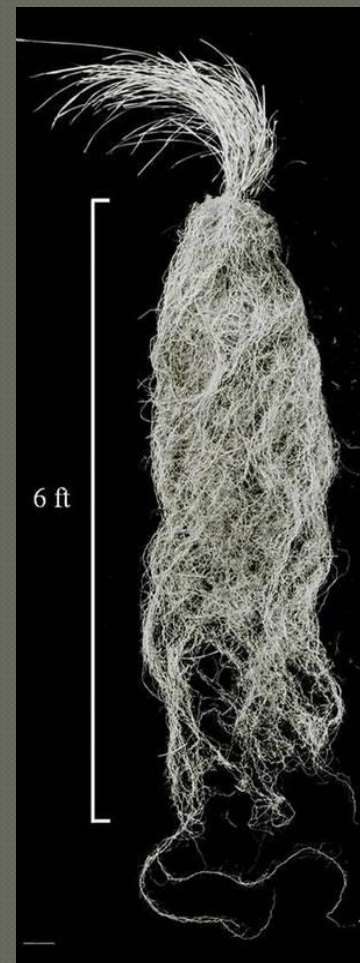


- **Healthy Soils**

- **Increasing Biodiversity**



- **Pattern over Problem**





SUSTAINABLE AGRICULTURAL LAND TENURE INITIATIVE

[Home](#) | [Landowner Tools](#) | [Reference](#)

Home

This site is intended to assist landowners and farmers develop farm lease arrangements that are profitable and sustainable for the landowner, the farmer, the community, and the land.

The Landowner's Toolbox

There are four primary tools available on this site. A description of each tool and access to the tools can be found in the [Landowner's Toolbox](#).

Landowner's Toolbox

- [The Landowner's Guide to Sustainable Farm Leasing](#)
- [Video Library](#)
- [Decision Tree](#)
- [Quick Reference](#)

Reference Material

- [Tenancy Law](#)
- [Conservation Law](#)
- [Bibliography](#)
- [Links](#)
- [Form Leases](#)

Video Library



Landowner's Guide

Top Priorities

Reference

making the news

making the news...



Check out the manual: [Machinery Sharing Manual for Fruit and Vegetable Growers](#)

Read a related publication: [Potential for Machinery: A Case Study of Fruit and Vegetable Growers in Iowa](#)

Revisit a [Leopold Letter article](#) on this project [Fall 2013]

Related grant projects:

[Innovated equipment solutions to reduce costs and improve productivity for small-scale fruit and vegetable growers](#) [M2013-07]

[Machinery management for small- and medium-sized horticultural farms](#) [M2012-11]

Local Food System Toolkit 1: Developing a Worksite Food Box Program

JULY 2014

Savanna Lyons, Leopold Center for Sustainable Agriculture; Nick McCann, Teresa Wiemerslage and Nick Mabe

This is a guide for creating a program for pre-packed food boxes delivered weekly and picked up by employees at their workplaces. It is marketed to employers, such as businesses, universities and hospitals who want locally grown food more accessible for their employees. This was a collaboration with the Iowa Food Hub and ISU Extension and Outreach. [News release](#) [Newsletter article about this project](#)



[Download Document \(PDF\)](#)

Current Projects

- Convening the Regional Food Systems Working Group (RFSWG)
- Small-farm business development incubator for refugee farmers
- An automated mechanical intra-row weed removal system for vegetable crops
- Market development and logistics for local food distribution in the Cedar Valley

Learn more at:

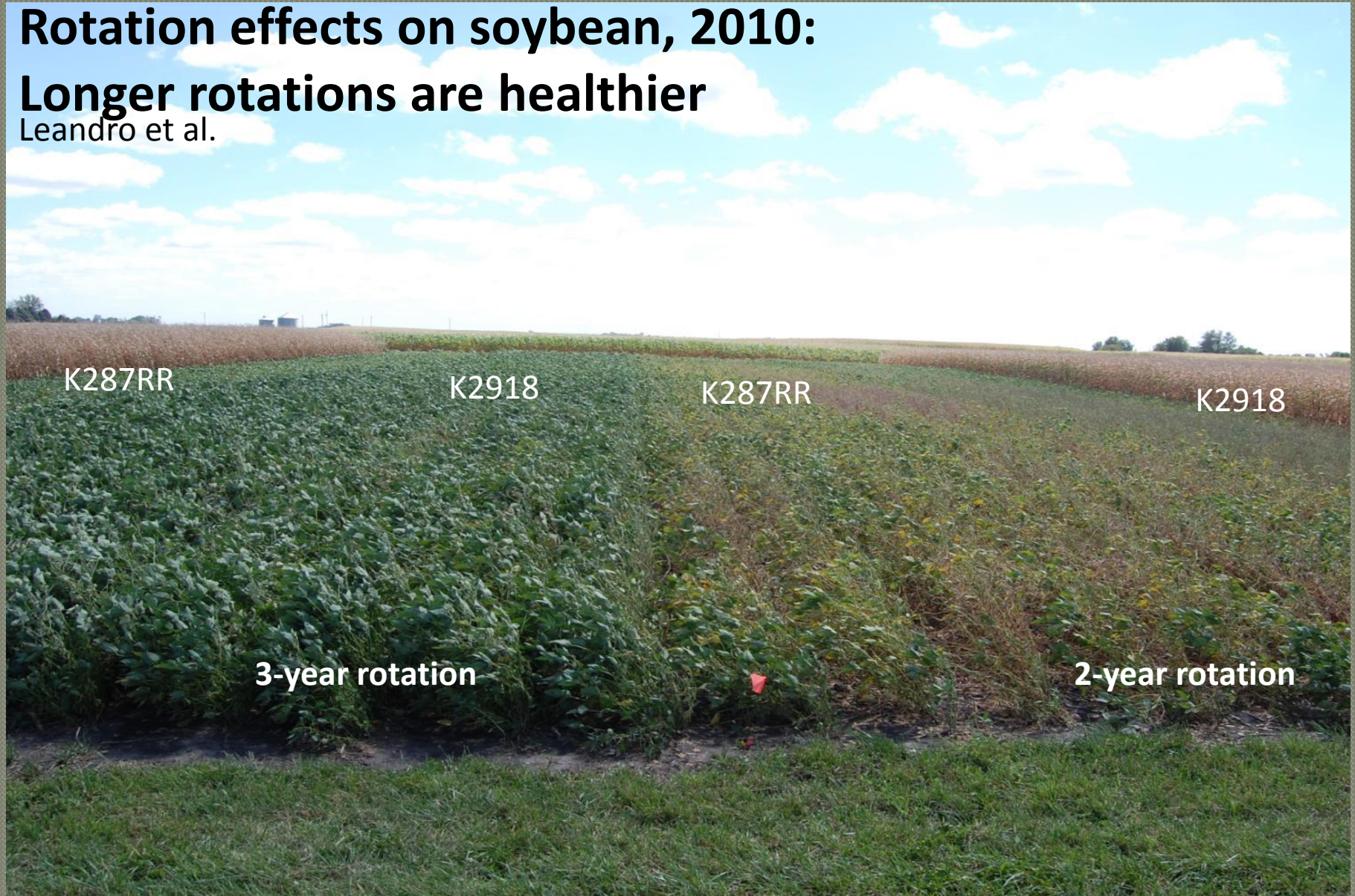
<http://www.leopold.iastate.edu/marketing>

Making the news...longer rotations

Rotation effects on soybean, 2010:

Longer rotations are healthier

Leandro et al.



K287RR

K2918

K287RR

K2918

3-year rotation

2-year rotation



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100% crops



90% crops : 10% prairie



100% prairie



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Making the news: STRIPS



On an average 100% crop field:

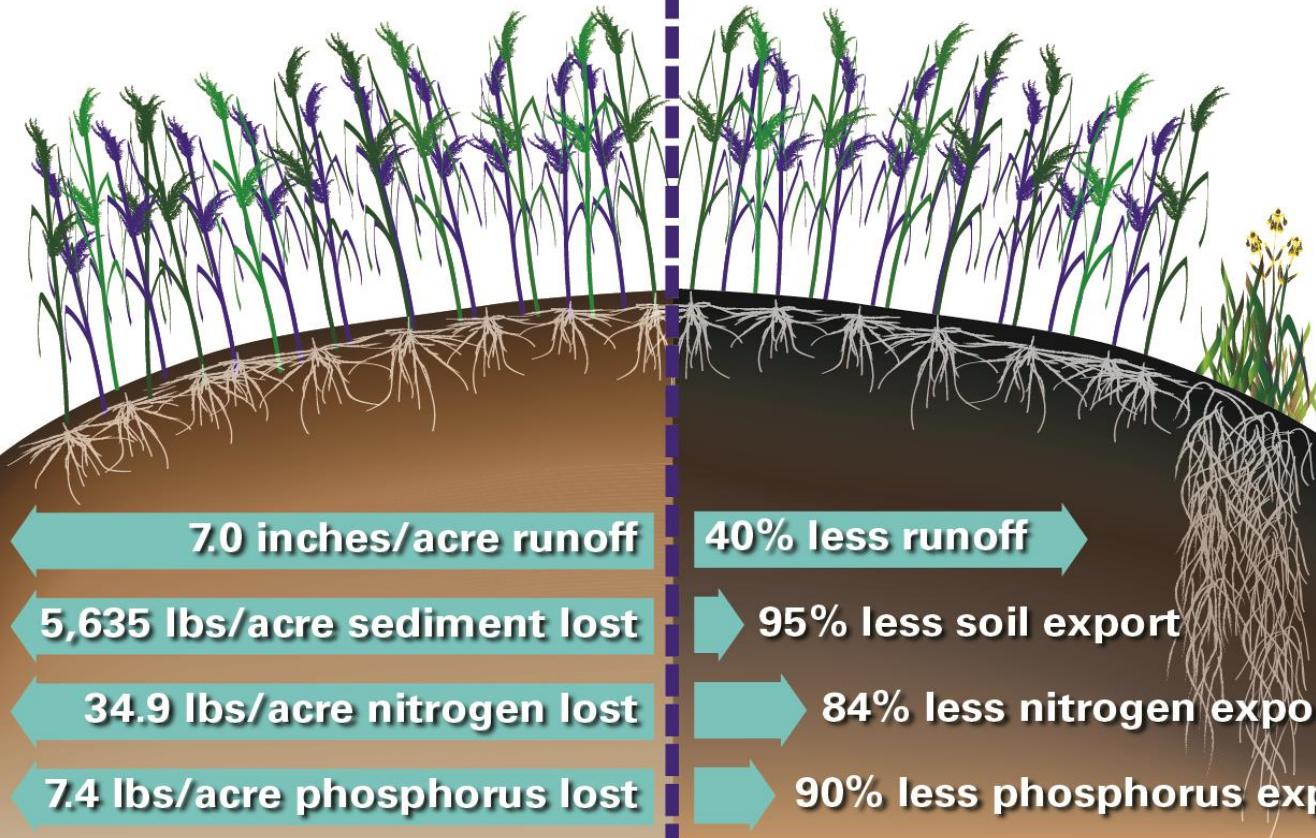
13 plant species

1 bird species, 2 birds per field

What 10% in prairie strips can do:

Four-fold increase in plant species

Twice the bird species,
three times the abundance



A Landowner's Guide to Prairie Conservation Strips

Small Changes, Big Impacts: Prairie Conservation Strips



The Cost of Prairie Conservation Strips



Adapted from the STRIPs research paper:

Tyndall, J. C., L. A. Schulte, M. Liebman, and M. Helmers. "Field-Level Financial Assessment of Contour Prairie Strips for Enhancement of Environmental Quality." *Environmental Management*, 2013. DOI: 10.1007/s00267-013-0106-9.

What are prairie conservation strips?

Prairie conservation strips are a tool for improving the function and integrity of row-cropped farms. Researchers at STRIPs (Science-based Trials of Rowcrops Integrated with Prairies) have found that strategically planting small patches and strips of native prairie in farmland provides multifunctional benefits disproportional to the amount of land converted. In other words, small patches make a big

Why plant prairie strips on my land?

Prairie strips are of primary importance because they prevent soil erosion and nutrient runoff from farmland. Specifically, converting just 10 percent of farmland to prairie can reduce sediment and nutrient transport off the field into waterways by more than 90 percent. They also increase pollinator, plant and wildlife diversity, create opportunities for forage and biomass, and suppress the



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?Buffing up
buffers?



More trees?...the making of MAAWG

- **Origin:** from Leopold-funded event & then chartered 2009.
- **Purpose:** to provide an organization for advancing the science, practice & adoption of agroforestry by landowners and natural resource managers in the Midwest.
- **Goals:**
 1. Identify core issues (gaps/barriers/conflicts/ opportunities) for advancing agroforestry.
 2. Initiate & coordinate actions to address & resolve core issues.
 3. Communicate effectively w/ key audiences about the Working Group's purpose, goals, and core issue actions and findings.



MidAmerican Agroforestry Working Group

What

- A public-private partnership
- A working group whose members are actively engaged in agroforestry-related
 - research, development, knowledge and technology transfer;
 - providing technical assistance to landowners/producers
 - production of goods and services from agroforestry practices/systems.

Organizational Strategy

promote adoption of agroforestry through:

- expanding knowledge,
- coordinating and leveraging resources, and
- building stakeholder capacity.

Implementation

- Leopold Center convenes & facilitates;
- Conference call meetings, email and can have annual face-to-face
- Steering Committee made of highly active members who develop agendas and follow-up on actions items agreed to by its members.

AGROFORESTRY LOGIC MODEL

Mission Statement: The purpose of the Mid-American Agroforestry Working Group (MAAWG) is to provide an organization for advancing the science, practice, and adoption of agroforestry by landowners and natural resource managers in the Midwest region of the U.S.

Inputs	Activities	Outputs	Outcomes	Measurements	
What We Invest	What We Do	Who We Reach	What Results	What We Measure	
<p>Economic</p> <ul style="list-style-type: none"> • Grant money • Donations • In-kind contributions <p>People</p> <ul style="list-style-type: none"> • Steering committee, working group members, facilitator • Stakeholders: NGO's, producers, businesses • Researchers, service providers <p>Equipment</p> <ul style="list-style-type: none"> • Computers, phones, software • Conference space • Virtual network structure supported by technology platform 	<p>Short-Term (1 Year)</p> <ul style="list-style-type: none"> • Develop work plan • Increase MAAWG working group's capacity • Obtain funding for ongoing facilitation • Integrate state and federal survey questions <p>Mid-term (1-3 years)</p> <ul style="list-style-type: none"> • Create or aggregate case-studies & resource budgets • Develop communications plan • Agroforestry projects: FFA <p>Long-term (3+ years)</p> <ul style="list-style-type: none"> • Contribute to agroforestry research • Reproduce the working group 	<p>• MAAWG Working Group Participants</p> <hr/> <p>• Agroforestry Practitioners</p> <p>• Policy Makers</p> <hr/> <p>• Researchers</p> <p>• Future Working Group Participants</p>	<p>Short-Term (1 Year)</p> <ul style="list-style-type: none"> • Develop work plan • Increase organizational capacity • Obtain funding for ongoing facilitation • Integrate state and federal survey questions <p>Mid-term (1-3 years)</p> <ul style="list-style-type: none"> • Create or aggregate case studies & resource budgets • Develop a communications plan • Agroforestry projects: FFA <p>Long-term (3+ years)</p> <ul style="list-style-type: none"> • Contribute to agroforestry research • Reproduce the working group. 	<p>Awareness</p> <ul style="list-style-type: none"> • Increased awareness regarding agroforestry practices and their economic, social, environmental benefits • Increased motivation to adopt agroforestry practices <p>Action</p> <ul style="list-style-type: none"> • Increased skills among agroforestry practitioners • Increased adoption of agroforestry practices • Greater incorporation of agroforestry into public policy <p>Sustainability</p> <ul style="list-style-type: none"> • Increased economic returns documented for 25 Agroforestry practitioners • Improved environmental impacts (soil, water, air, diversity) • Increased availability of agroforestry products, • improved access to clean air, soil, and water 	<p>Awareness</p> <ul style="list-style-type: none"> • The number of page views on http://maawg.wordpress.com/ • The number of resource PDF's downloaded • Survey responses <p>Action</p> <ul style="list-style-type: none"> • Harvesting techniques • Planting techniques • Growing techniques • Marketing techniques <p>Sustainability</p> <ul style="list-style-type: none"> • 5% increased in ROI for agroforestry investments • Nitrogen content in soil • Number of species found on sites • Water pollutants • 5% increase in agroforestry markets for pawpaw fruit & chestnuts

More trees?...and the making of MAAWG

GAPS (2009)

- **Communications and Education about agroforestry**
- **Models to demonstrate it**
- **Training**
- **Research**

MidAmerican Agroforestry Working Group



MidAmerican Agroforestry Working Group

- ❖ Collaboration on activities and conferences
- ❖ Revision and reprint of training manual
- ❖ Midwest Web presence
- ❖ Drafted language NASS 2012 Census on Agriculture
- ❖ Grants
- ❖ Training and Education
- ❖ Peer support and encouragement
- ❖ Identify ongoing priorities for agroforestry agenda



Moving agroforestry forward...

IMPROVE CONNECTIONS to other CLC strategies (and watersheds) through existing and new partners

- a. Annual meetings, or different model, to enhance interaction.
- b. Collect tools in central location for easier incorporation of agroforestry (i.e., targeting tools for riparian buffers for multiple purposes)
- c. Identify 'issues' w/in Farm Bill that are creating adoption 'disincentives' to WQ/watershed improvement project.



Moving agroforestry forward...

GENERATE COMMON UNDERSTANDING eg. address misconceptions and -perceptions of agroforestry w/in agencies, landowner groups & nat. resource providers

- a. Create Tool - Visualization Catalog of Agroforestry Practices for different regions, start with Midwest
- b. Use COMMON LANGUAGE/DEFINITIONS

PROVIDE TRAINING & EDUCATION OPPORTUNITIES

- a. Conduct Agroforestry Academies (Gold-MO)(Jensen – IA T4VR)
- b. Tie into national-level forestry & crop certification programs (SAF/Tri-Societies) to reach landowners, CCA, & farm managers.



Questions?

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