Agroforestry Opportunities

2015 Iowa Water Conference
March 2nd 2015
Trees Forever Mission

To plant and care for trees and the environment by empowering people, building community, and promoting stewardship.
Deep Roots, Enduring Commitment

Planted over 3.4 million trees since 1989

Charitable 501(c)3 organization based in Marion, Iowa

Staff of 22 in Iowa and Illinois

National projects and recognition
Investing in Green

Assist 200+ communities and land owners annually

Engage an average of 7,000 volunteers

Award over $500,000 in grants plus technical assistance
A Voice for Trees and Forests

Lead coalitions on trees and forests

Promote the values of trees and natural areas

Support campaigns related to our mission

Educate legislators on threats and forest health
Working Watersheds: Buffers & Beyond

*50% cost share up to a maximum of $2,000 plus technical assistance with the establishment of conservation practices for water quality

*Riparian Buffers
*STRIPS
*Fruit and nut plantings
*Prairie plantings
*Pollinator habitat
*Agroforestry practices
What is Agroforestry?
Here, do this! Use forestry!

Here, do this! Use agriculture!

Forestry          Agriculture
Putting the right plant, in the right place, for the right purpose!

Agroforestry Practices
Perennial Crops for Agroforestry Systems
Chinese Chestnuts

• Chestnuts are in high demand, i.e. a bottomless pit of a market

• Existing Markets – Prairie Grove Nut Growers

• Establishment cost: $1,700 - $3,000/acre

• Time to yield: 5-6 yrs
Black Walnuts

- Grows in all 99 IA counties
- Cultivars are required for commercial production
- Existing Markets – Heartland Nuts n More

- Establishment cost: $467 - $860/acre
- Time to yield: 5-6 yrs
Hazelnuts

• An “emerging” crop
• Cultivars needed for commercial production
• Oil is high in monounsaturated fat

• Establishment cost: $5,400 - $15,000
• Time to yield: 4-5 yrs
Aronia Berry

- Superfruit - formerly “black chokeberry”
- Highest level of anti-oxidants of any fruit
- Existing Markets – Aronia Cooperative
- Establishment cost: $3,700 - $12,000
- Time to yield: 4-5 yrs
Elderberry

- Another Superfruit
- Good anti-oxidant profile
- Existing Markets – River Hills & MN Elderberry Coop
- Establishment cost: $3,700 - $12,000
- Time to yield: 2-3 yrs
What are the benefits of Agroforestry?
Weighted Average Crop Yield Increase:
Corn - 12%
Soybeans -13
Barley - 25%
Winter Wheat - 23%
Spring Wheat - 8%
Hay - 20%

(Kort, 1988)
Benefits of Agroforestry

Protection and Conservation Benefits

Improves Water Quality

Reduces Runoff and Sediments

Udawatta et al., 2002; 2007; 2009; 2011
Reduce Nutrient Loading

Lin et al., 2000; 2003; Schultz et al., 2009

50 to 80% total N
41 to 92% NO3–N
46 to 93% total P
28 to 85% dissolved P

Lin et al., 2000; 2003; Schultz et al., 2009
Benefits of Agroforestry

Protection and Conservation Benefits

Decreases off site movement of nutrients or chemicals - surface

- Trees planted on contour trap sediment and residue along with attached nutrients and chemicals
- Infiltration increases in tree rows decreasing overland flow and associated movement of soluble nutrients and chemicals off site
Benefits of Agroforestry

Protection and Conservation Benefits

Increases net carbon storage in the soil and vegetation

- Roots, crop residue, leaves and forage add to soil carbon
- Tree component adds to total potential carbon stored on site through long term sequestration in the above ground and below ground biomass
Benefits of Agroforestry

Protection and Conservation Benefits

Improves utilization and recycling of soil nutrients

- Tree roots are generally deeper than crop roots
- Nutrients and chemicals that pass through crop root zone are intercepted by trees
- Nutrients are utilized by the trees and recycled back to the soil surface by leaf drop
Benefits of Agroforestry

Protection and Conservation Benefits
Provides or enhances wildlife habitat and provides habitat for pollinators

- Provides food and cover through a diversity of plants
- Creates vertical habitat structure
- Improves pollinator foraging and nesting habitat
- Builds travel corridors for wildlife movement to connect to other food, cover, or water resources
What pollinators need

- Minimize pesticides near pollinator habitat
- Access to soil surface for nesting
- Native flowering forbs and shrubs offering blooms all season
- Shrubs with pithy stems for nesting
- Nest Block
- Retain some dead branches for nesting
- Some tree species can provide pollen and nectar for pollinators
- Access to soil surface for nesting
- Retain snag trees for nesting
Getting perennials on the landscape – a path forward
Perennial Easement - How it works (in a nutshell)

Perennial easements are offered to identified landowners for conversion of row-crops to perennials on environmentally sensitive acres.
Easement Details

* The easement is paying for the environmental services the perennials are providing, and risk mitigation to the landowner for providing them.

* The easement and operations and maintenance plan are recorded with the county.

* Easements are for 10 years.
Easement Payment

• The easement payment is calculated by averaging the soil rental rates of the three predominant soil types in the easement area.

• The averaged soil rental rate is paid out on each acre for each year of the easement.

• The total of all acres and years in the easement is tallied and multiplied by the rental rate and a lump-sum payment is made after the easement has been established and recorded.
What makes perennial easements unique?

• PEP is an innovative program
  • Landowners are allowed and encouraged to manage the easement and harvest and market any produce from the easement (*in accordance with operations and maintenance plan*).

• Monitoring requirements are scaled down--ensure the easement is in perennial cover and managed for its intended use.

• Great way to leverage dollars to maximize benefits
What will it take?
What will it take?

Pool of dollars (funding)

Willing partners

Desire to try something innovative
Questions?

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Thank You! Want to Become more Involved?