Silvopasturing

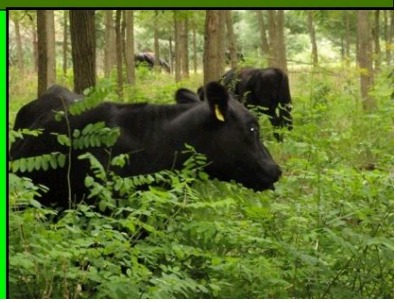
Silvopasturing: A Solution to Some 21st Century Challenges on Rural Landscapes

Brett Chedzoy

Cornell Cooperative Extension
Schuyler County

bjc226@cornell.edu

Cornell University Cooperative Extension
South Central New York Agriculture Team

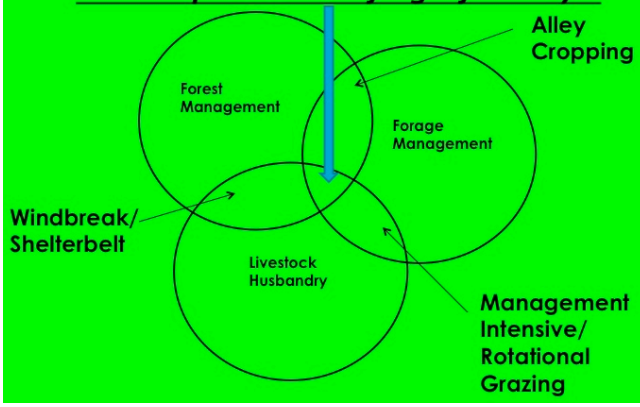


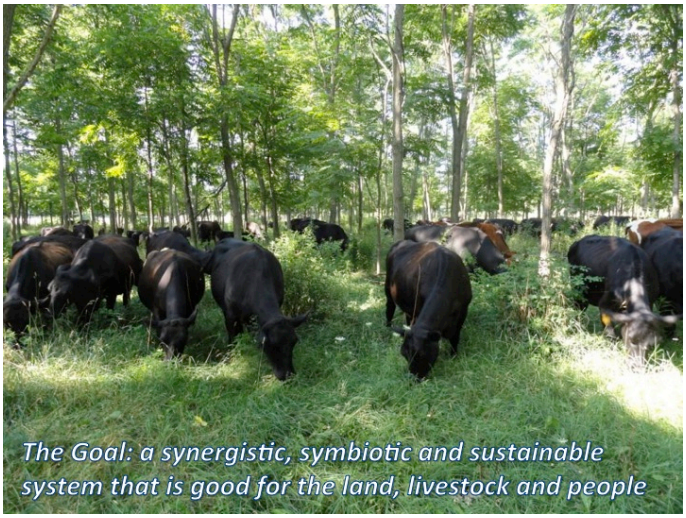
What is Silvopasturing?

"The sustainable production of timber, forages and livestock on the same land"

Silvopasture:

"The Triple Crown of Agroforestry"





The Goal: a synergistic, symbiotic and sustainable system that is good for the land, livestock and people

Still a "foreign concept" in the Northeast…

Agroforest Syst
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Comparing silvopastoral systems and prospects in eight regions of the world

Frederick Cubbage · Gustavo Balmelli · Adriana Bussoni · Elke Noellemeyer · Anibal N. Pachas · Hugo Fassola · Luis Colcombet · Belén Rossner · Gregory Frey · Francis Dube · Marcio Lopes de Silva · Hayley Stevenson · James Hamilton · William Hubbard

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Abstract Silvopasture systems combine trees, forage, and livestock in a variety of different species and management regimes, depending on the biophysical, economic, cultural, and market factors in a region. We

Corrientes provinces, Argentina; La Pampa province, Argentina; northwestern Minas Gerais, Brazil; the Aysén region of Patagonia, Chile; the North Island of New Zealand; the Southeast United States; Paraguay;

… but an established management system in most other forested regions of the world

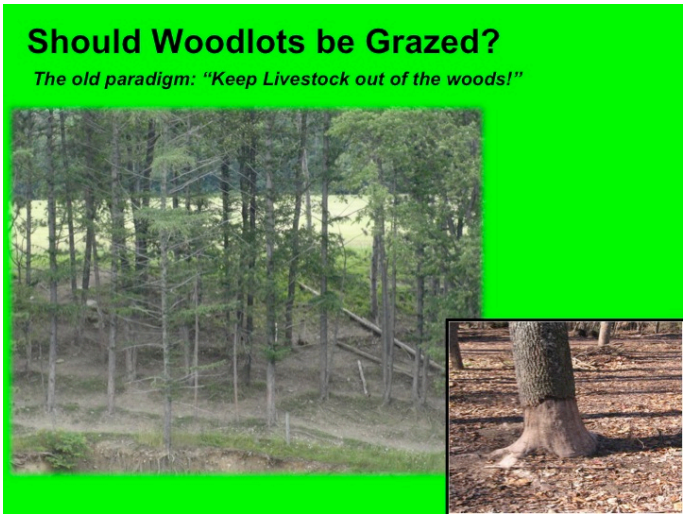

Argentina


Our farm < 2003…


FTX90-L
FECON


2006


2014


Should Woodlots be Grazed?
The old paradigm: "Keep Livestock out of the woods!"

But Today…

- ***Management intensive grazing practices and new tools allow better animal control***

"Goats in the Woods" Project, 2000 – 2002

Cornell University's Arnot Forest (Cayuta, NY)

Intensively-managed goat herds were shown to be effective in the (organic) control of interfering vegetation

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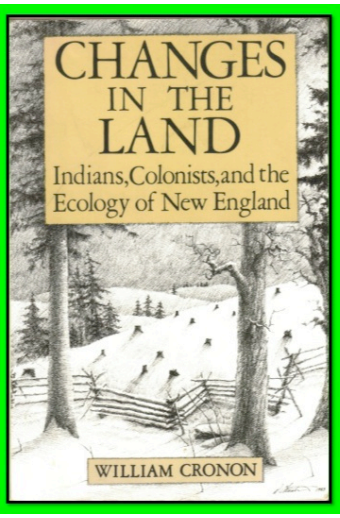
- ***Farm viability and global food production challenges***

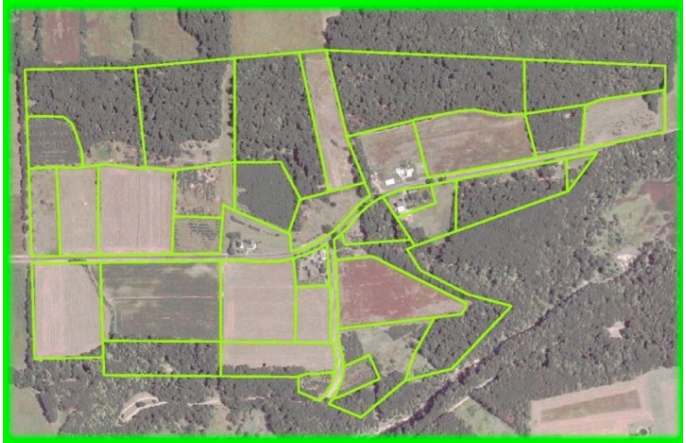
Not to mention meeting the demand for locally-grown foods!

But Today…

- Management intensive grazing practices and new tools allow better animal control
- New biomass and fuelwood markets have created opportunities for aggressive commercial thinning
- Farm viability and global food production challenges
- ***Many threats to forest health that need to be counteracted:***
  - ***Deer***
  - ***Past History and Landowner Apathy***
  - ***Invasive Pests***
  - ***Interfering Vegetation***

Photo by Molly McGovern





Can Wooded Areas Be Grazed?

Requirements:

- ✓ Good Access
- ✓ Secure Fencing
- ✓ Water
- ✓ Productive Growing Site
- ✓ Well-thinned stand that yields good quantity and quality of food
- ✓ Compatible with landowner goals
- ✓ ***Willingness and ability to care for livestock?***

Intensively-managed, but not unlike a modern sugarbush!

Question: *Which of the following would not be an important criteria for evaluating the potential of a site for silvopasturing?*

A. Availability of water source

B. Access

C. Compatibility with landowner's goals

D. Diameter of the largest tree in the area

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Question: *Silvopasturing does not draw heavily upon which of the following sciences?*

A. Silviculture

B. Meteorology

C. Animal Husbandry

D. Forage Management

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Why Pasture Our Woods?

(or why have wooded pastures?)

1. Vegetation Management

2. Ecosystem Services

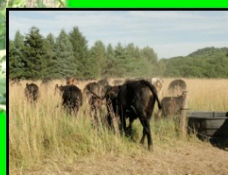
forests in the USA reported that 'the nation's forests are worth at least $400 billion in terms of storm-water management alone' (American Forests, 1996). Despite the importance of canopy interception in these processes, it has rarely been characterized systematically in order to understand how interception alters the

3. Diversified Crops

4. Diversified Diet for Better Livestock Health and Performance

5. Wildlife Habitat Enhancement

6. Emergency, and Drought-resistant Forage Base



July 22th, 2011

7. Heat and Cold Stress Amelioration

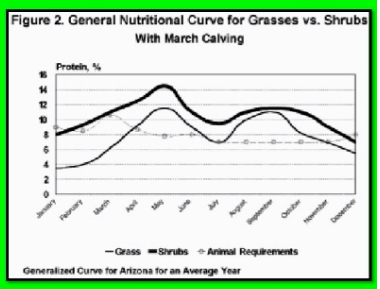
and Shelter from Extreme Weather

8. Supplement Seasonal Forage Curves

Nutritional Comparison: Browse, Forbs, Alfalfa

	% Protein
Alfalfa	21
Burdock	29
Curly Dock	33
Elderberry	24
Wild Grape	22
Willow	20
Mulberry	26

Source: www.agri-dynamics.com



Honey Locust Pasture

(Gleditsia triacanthos)

Alabama Ag Experiment Station

Auburn, Alabama 1942-1945

- 48 trees per acre @ 60 lbs pods/tree = 3,000 lbs pods/acre
  - Equivalent to 50 bu. Corn or 100 bu. Oats
  - Pod sugar content @ 29-39% (sugar beets)
  - Protein at 13%
- +2.5 tons of hay/acre as understory crop

9. *"They Ain't Makin' Farmland Anymore"*

"New Projection Shows Global Food Demand Doubling by 2050"

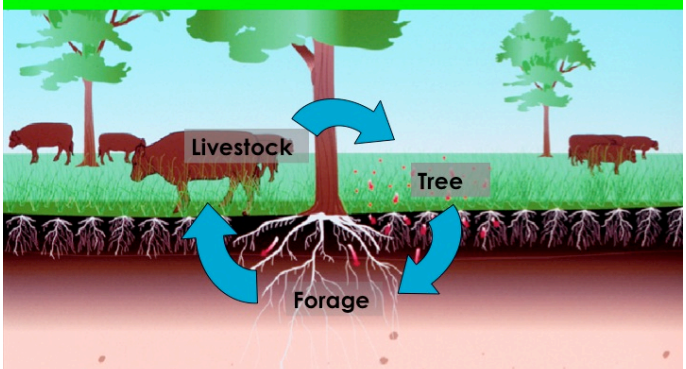
National Science Foundation

November 21, 2011

"Global food demand could double by 2050, according to a new projection reported this week in the journal Proceedings of the National Academy of Sciences."

"The analysis also shows that the world faces major environmental challenges unless agricultural practices change."

10. Improved Fertility, Nutrient Cycling and Productivity



Understand, manage and take advantage of plant-livestock interactions to create stable and symbiotic production systems

Etc…

- Improved aesthetics and create attractive agrarian landscapes
- Possibly improve quality and quantity of forages
- Increased stocking capacity on farm
- Increased grazing time in shade = possibly higher average daily gains
- Provide short-term, annual income from wooded areas
- Rehabilitate degraded woodland areas & control invasives.
- Stimulate forest regeneration
- Property tax abatement programs?
- Engage landowners to be better stewards

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B. Diversified production

C. A good place to stick livestock during mud season

D. Favorable micro-climate for livestock

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Silvopasture is only as good as

the quality and quantity of the food available!

Consequently…

Over-stocked & unthinned stands with barren understories don't make quality Silvopastures!

The Keys to Creating Silvopasture

1. ***Modify stand density to allow adequate sunlight to reach the ground in a "3-D" system***

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3. ***Management of system to avoid negatively pressuring desirable plants (… or deliberately pressure the undesirables)***

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2. Meet the germination requirements for target plant species
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Start with a written plan!

Question: ***Successful silvopasturing creation and management does not usually include the following:***

A. **Grazing at least three species of livestock together for at least three months of the year**

B. **Thinning to maintain adequate sunlight levels on the ground**

C. **Sound rotational grazing practices, with sufficient periods of rest and recovery**

D. **Establishment of desirable forage and browse sources in the understory**

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Question: Which of the following statements is false?

A. A silvopasture is only as good as the quality and quantity of food that it offers for livestock

B. A wide variety of livestock species can be grazed in silvopastures, but some species may work better than others under certain conditions

C. The most valuable trees should always be harvested first when thinning an area for silvopasture development

D. Planning is an important part of implementing silvopasture projects

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For more on the "how-to":

"Guide to Silvopasturing in the Northeast"

available at www.forestsconnect.info

Also visit: www.silvopasture.ning.com to ask questions and share experiences