

Lessons Learned in a Silvopasture Start-up

PFI Annual Conference 2021

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GREEN FIRE FARM
A SIXTH **re**GENERATION

Monticello, WI

www.greenfirefarmllc.com





What I'm Working On

- ▶ Mimicking natural communities
 - ▶ Grasslands
 - ▶ Savannas
- ▶ Results
 - ▶ Healthy Soil
 - ▶ Nutrient and Energy Cycling
 - ▶ Water cycle and utilization
 - ▶ Habitat
 - ▶ Diversity
 - ▶ Communities
 - ▶ Vibrant and Beautiful
 - ▶ Resilient and Robust
 - ▶ Happy and Fulfilling
- ▶ Livestock Forage and Comfort
- ▶ Beautiful Green Spaces with Abundant Wildlife







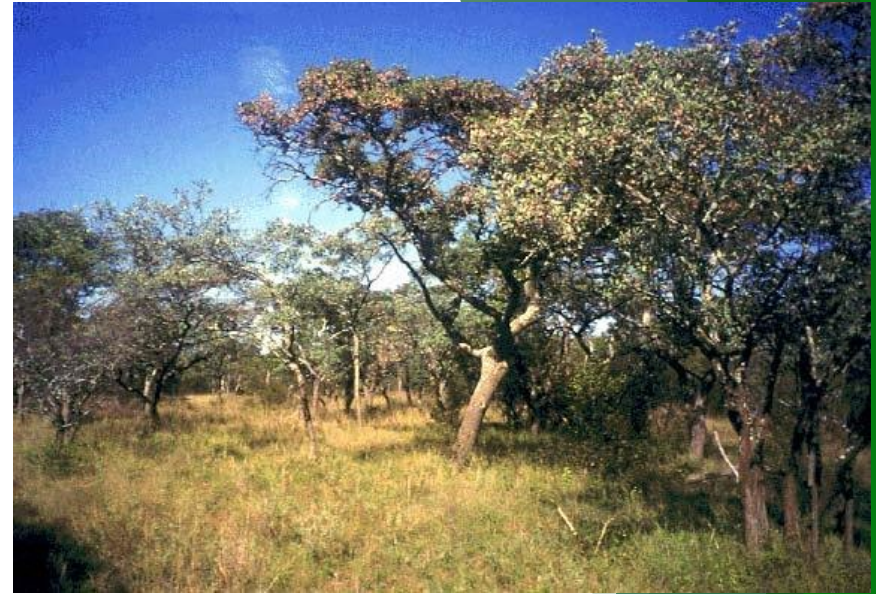




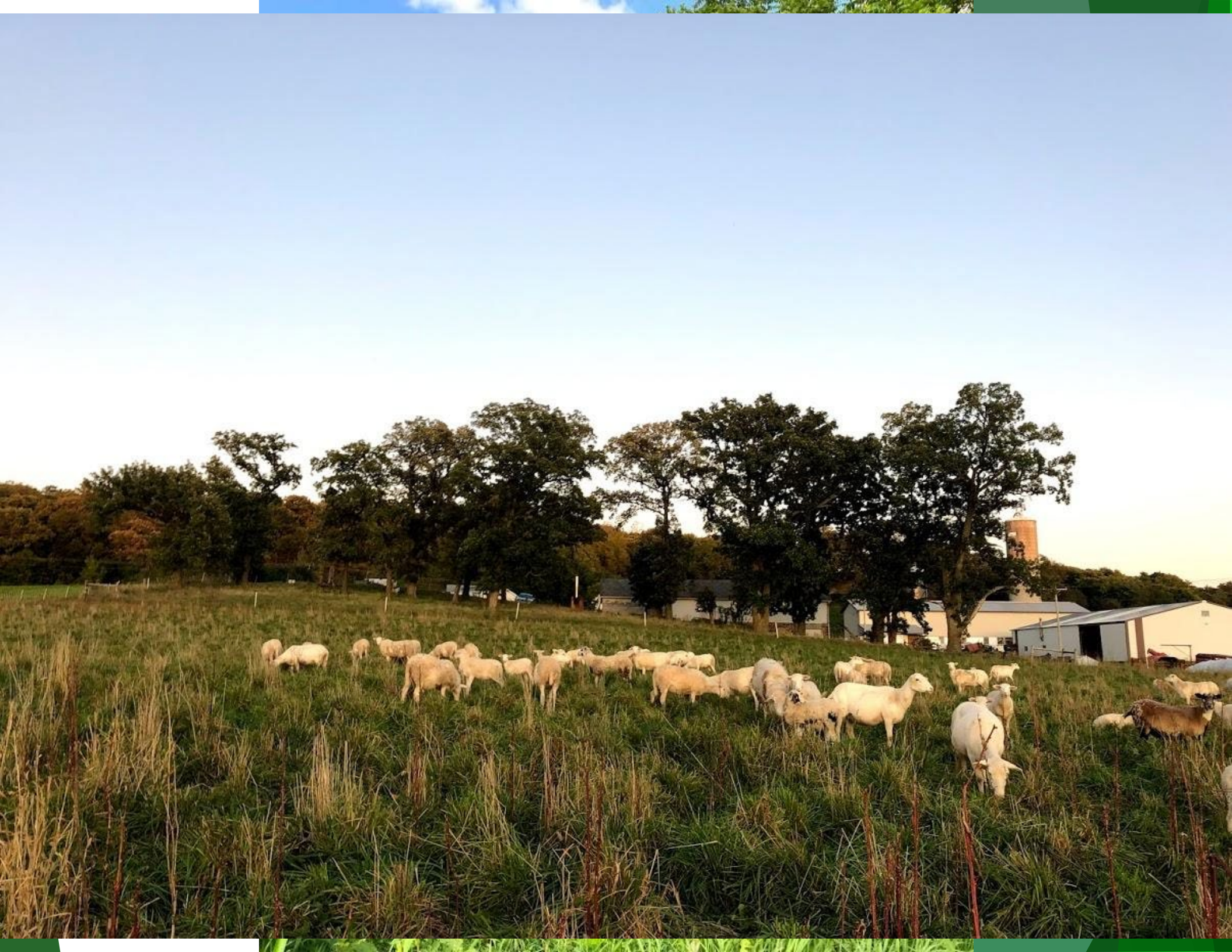


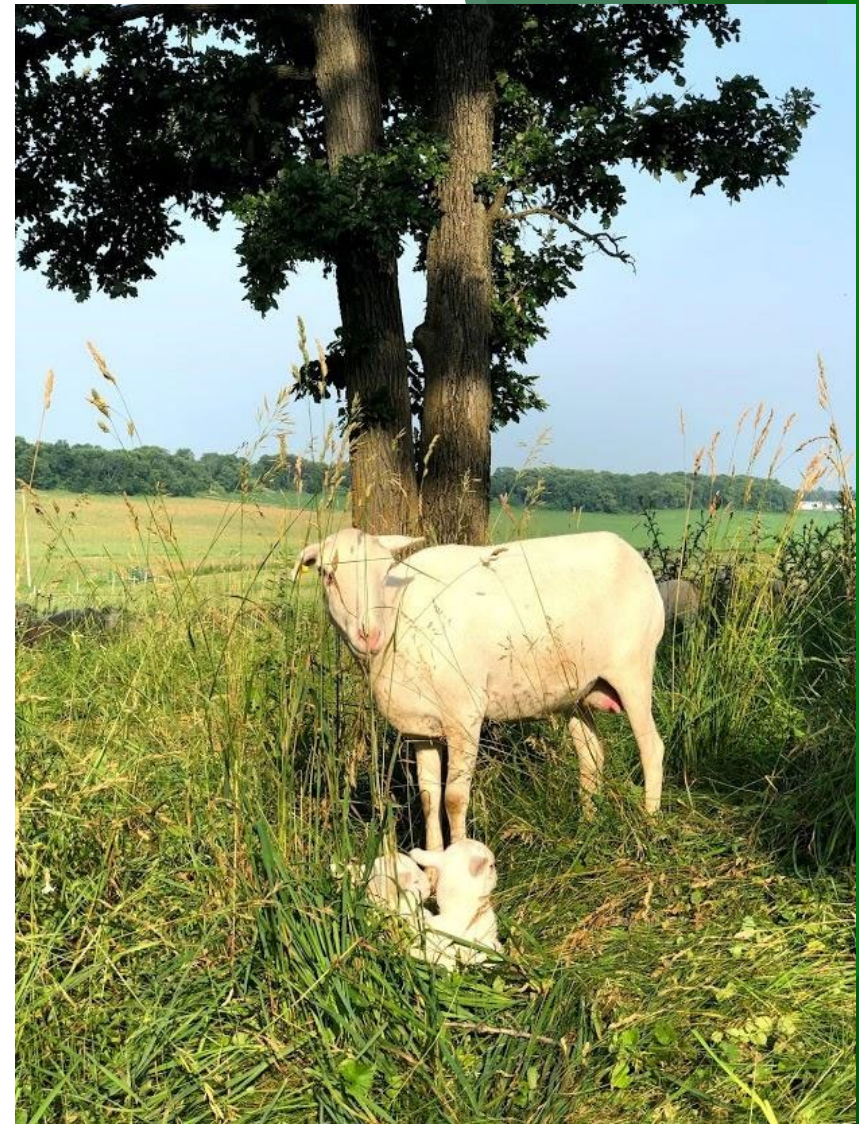




















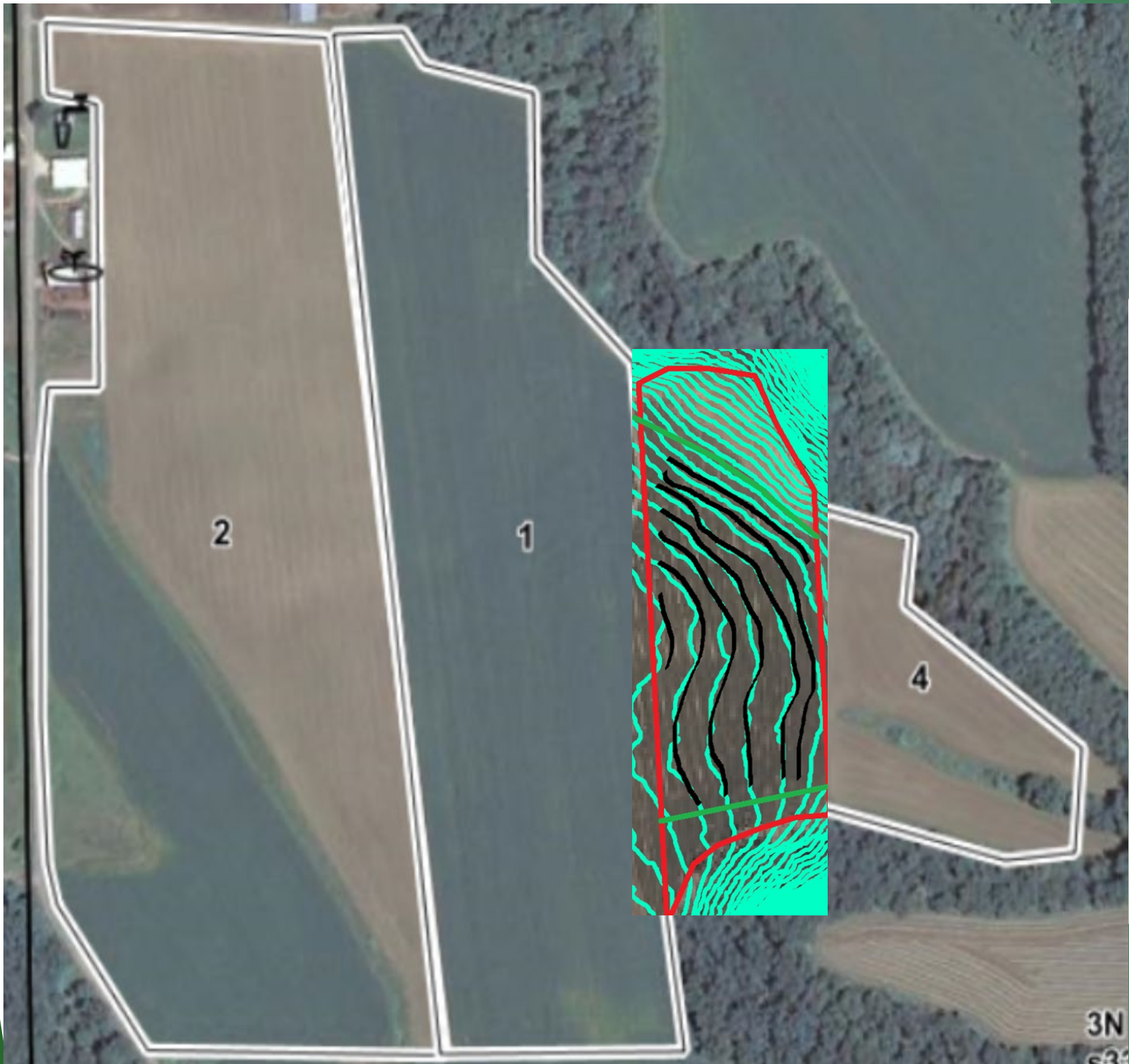


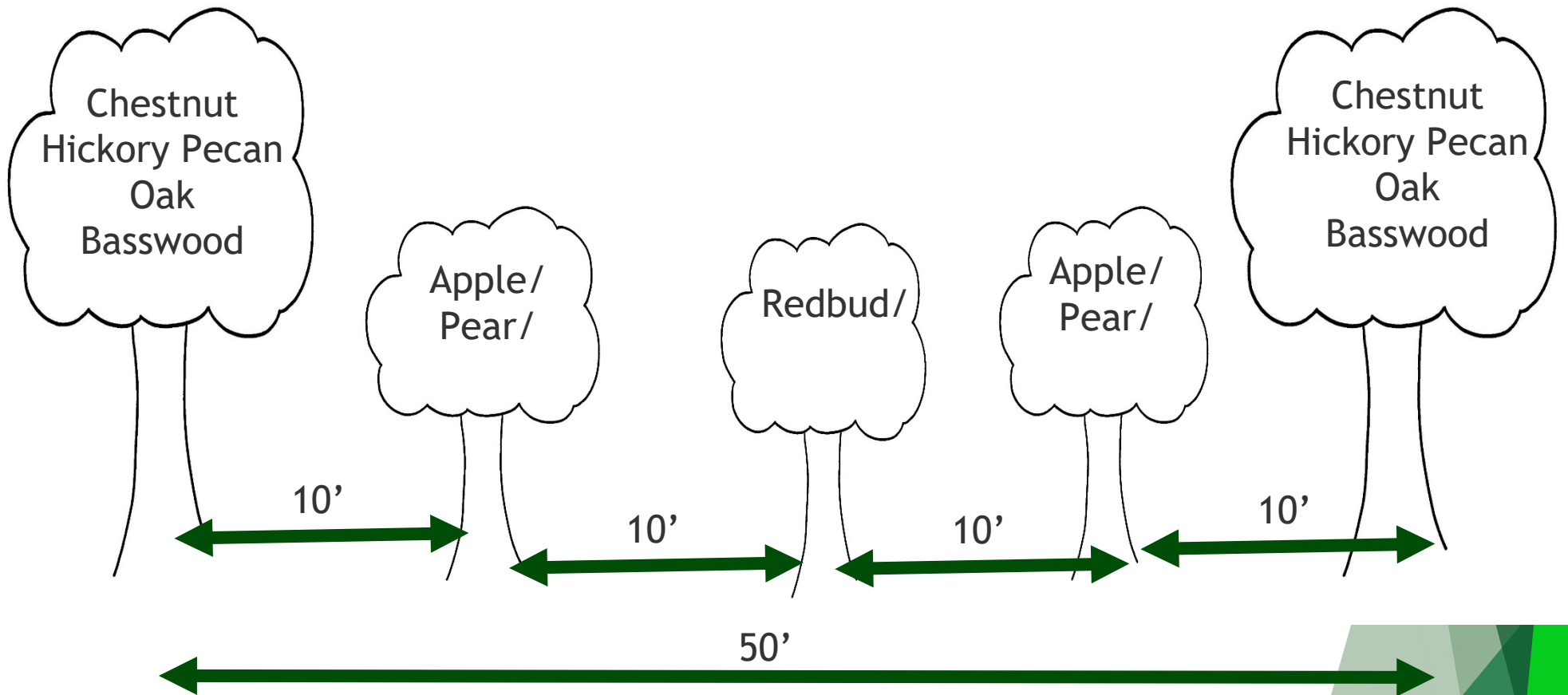
Silvopasture Lessons



Establishment

- 8 acres, 1000 trees in April
 - Pasture seeded and grazed 3x previous year
- Pseudo Keyline
- 45' row spacing
 - Furrow (tree planter) > shovel and hand plant
- 10' tree spacing within row
- Modified NAP Pattern
 - Permaculture Orchard DVD
 - Nitrogen-rich Tree > Apple > Pear
 - Savanna Modified
 - Chestnut/Pecan/Oak/Basswood (Canopy)> Apple/Pear > Redbud > Apple/Pear > Canopy Tree
- Tree Tubes
 - Miracle Pro, Blue-X, Arborshield
- Root Dip
 - Arbuscular Mycorrhizae (Endo) *better than ectomycorrhizae







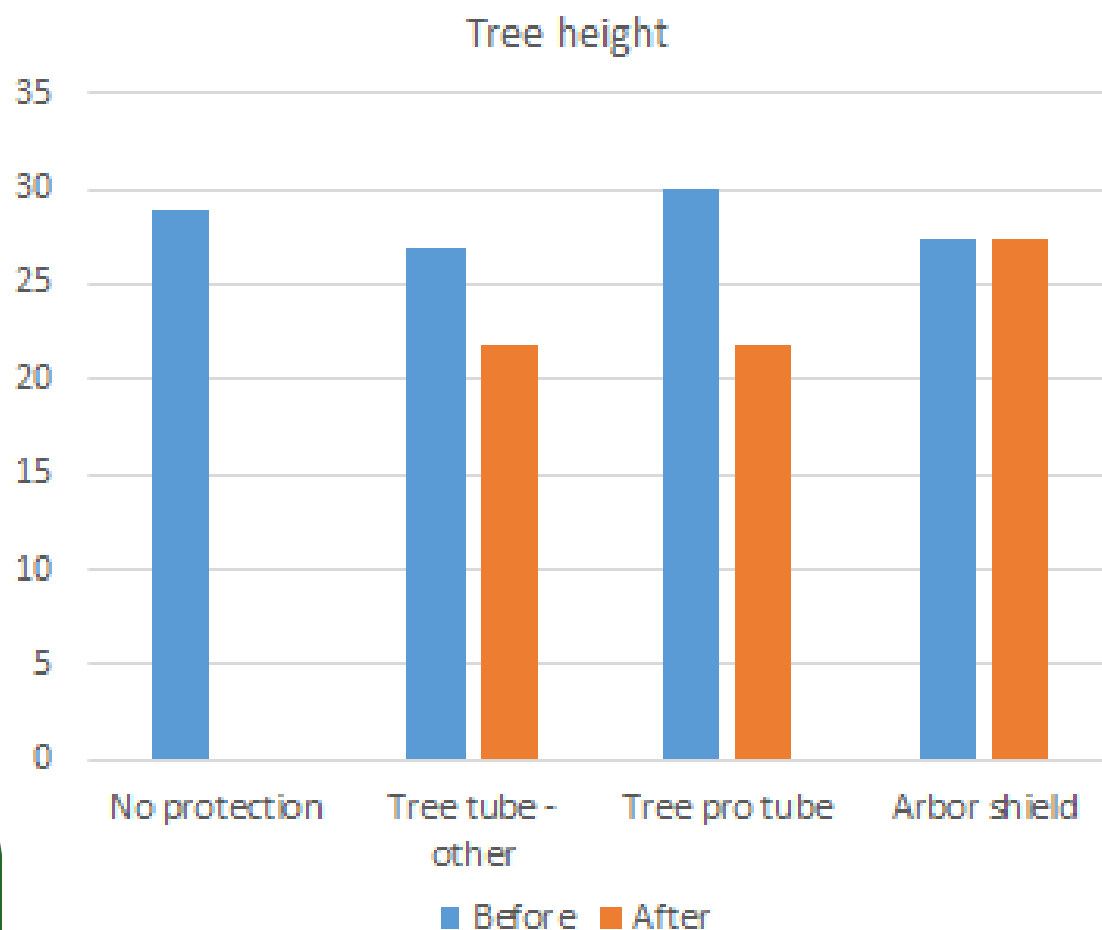
Tree Upkeep

- No Irrigation
- No Regular Mowing or Weed Management
 - Long forage matured and created a mat eventually
 - Got away with it initially
 - Some winter kill (voles)
 - Mow or run down fencelines for electric netting
- Low Labor Availability
- Constant Standing Up (Issue with Stakes)
- Fill in Pig Wallows
- Seed Mudded Areas







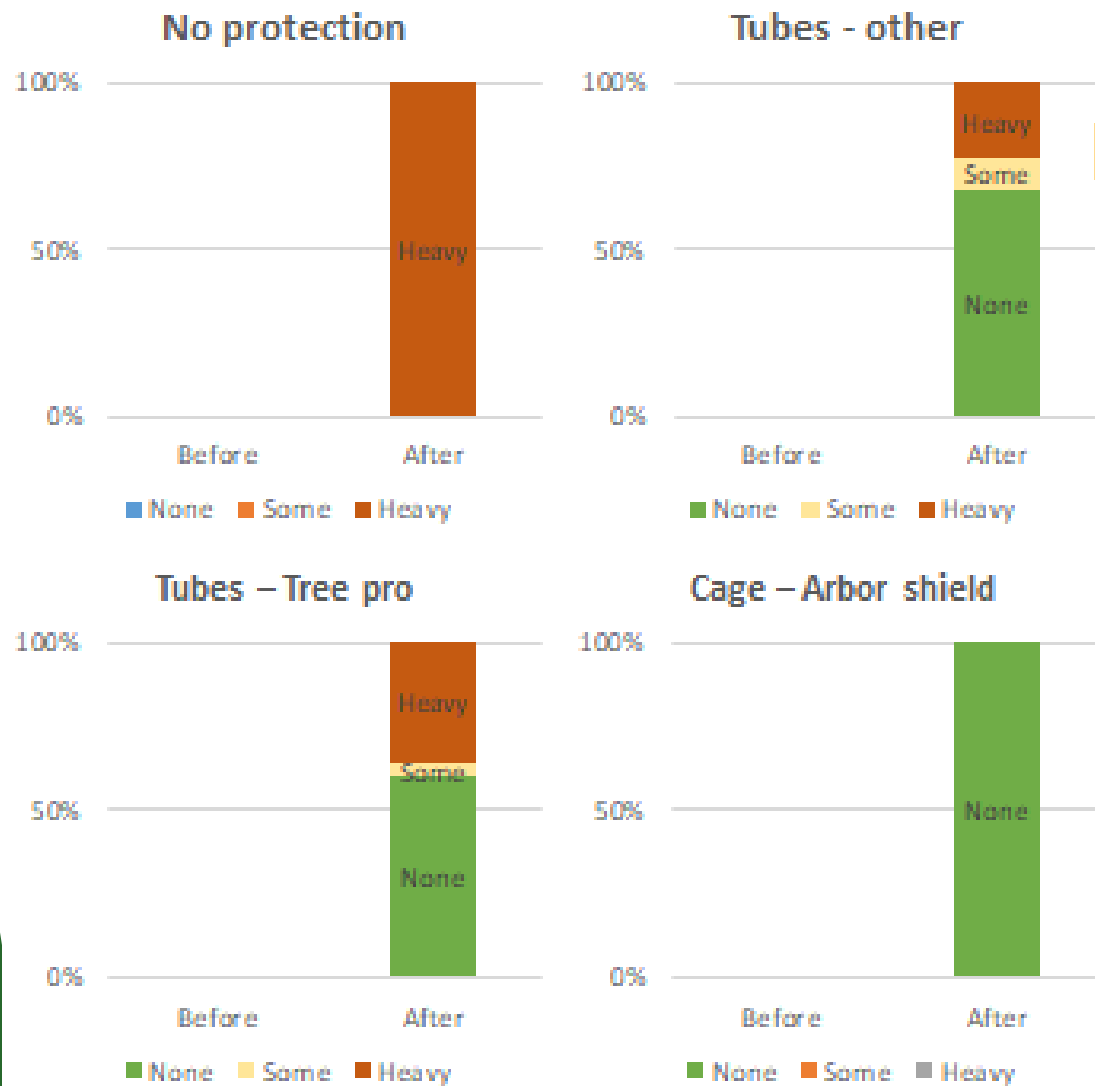


Swine killed all trees in the control group without protection. Arbor shield wire cages resulted in no loss of height

- Livestock: Hogs & Pigs, Sheep
- Trees grown: Apple, Elderberry, Hybrid Chestnut, Pecan, Plum, & some others

Green Fire Farm 2016

Browse/damage



- Heavy damage/death with no protection from hogs and pigs
- Cages protected the trees best from browsing/damage

Lessons Learned

- Wider Alleys
 - 45' -> 60' (20% less trees) up to 200'
 - Depends on livestock and group size
 - Cattle (5 ac/day)
 - Pigs and shee (1 acre/wk)
 - Mowing area
 - Stopped Mowing, just drove on it to trample
- Linear or curved?
 - Shelters
 - Layers
- Sporadic Plantings?
 - With Arborshield
- Tree Tubes
 - Stakes/Post





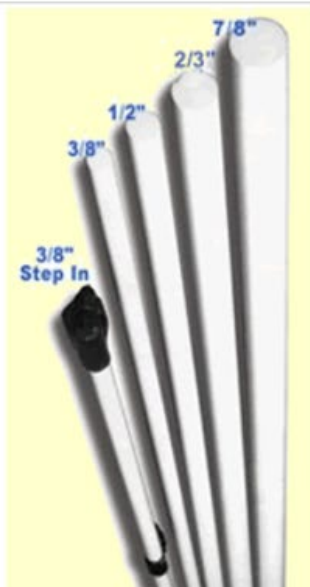
Tree Tubes



	Miracle Pro	Blue-X	Arborshield
Costs	\$3-4	\$4	\$0-5
Sturdy?	Mostly	No	Yes!
Install Time	Quick!	Very Slow	Very Very Slow
Reusable?	Maybe?	No	Yes!
Concerns	Wasp Nests, Winter Kill	Flimsy, Rough top	Injury to livestock, no protection from little critters, competition from forage

	Wood	Fiber Glass	Rebar
Costs	\$1.25-\$2	\$5	\$0-5
Sturdy?	No	Yes	Yes
Reusable?	Probably No	Yes	Yes
Concerns	Fragile	Landfill	Heavy

FiberRod 2/3" -SunGuard - 6'



Sunguard Fiberglass Posts have a protective coating to prevent yellowing and splintering. They are lightweight yet durable and flex upon impact. Eliminate replacing damaged insulators and tracking down shorts at the fence post.

- Self-insulating
- Flexes upon impact
- Will not rot or rust
- Ideal for rotational grazing

Item # F23-6SG

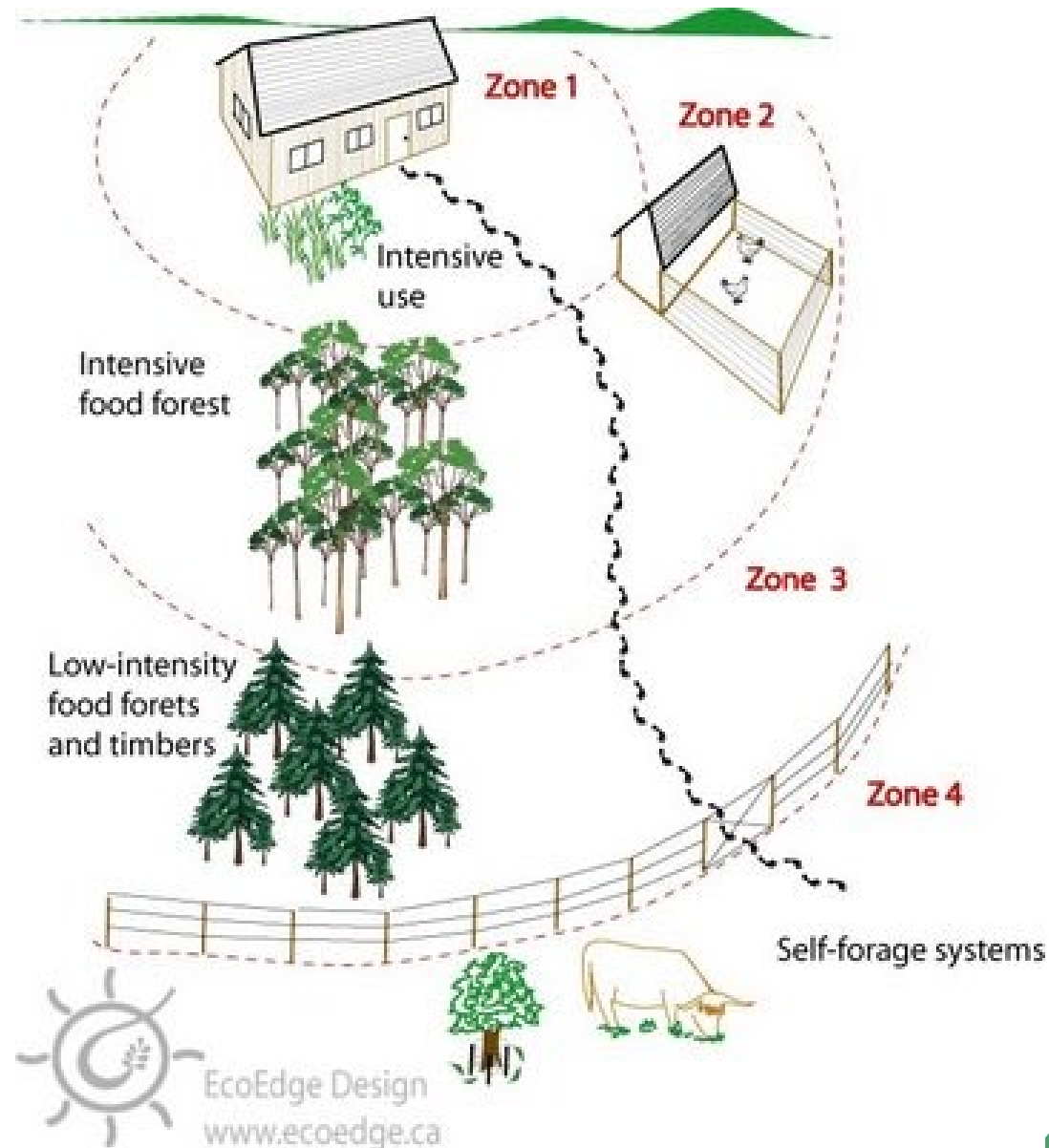
Weight 1.76 lbs

Catalog page: 52

\$5.28 EACH

QTY **Add**

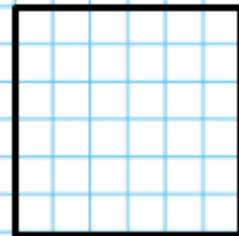
Zones and Efficiency



Area = 36 square feet

*Each \square = 1 square foot

The model that is a square has the least perimeter.



Perimeter
 $6 + 6 + 6 + 6 = 24 \text{ ft}$



Perimeter $36 + 36 + 1 + 1 = 74 \text{ ft}$



Perimeter $18 + 18 + 2 + 2 = 40 \text{ ft}$



Perimeter $12 + 12 + 3 + 3 = 30 \text{ ft}$



Perimeter $9 + 9 + 4 + 4 = 26 \text{ ft}$

Source: <https://fastfence.ca/faq-area-vs-perimeter/>

Plans for the Future

- Tree Selection

- Shade

- Popular, Willow, Locust

- Livestock Forage

- Mulberry, Chestnut, and Apple (Honey Locust?)

- Selected Areas for Aesthetics

- Waterways (Cottonwood, willows)

- Site Selection

- Closer to center of the farm

- Livestock Selection

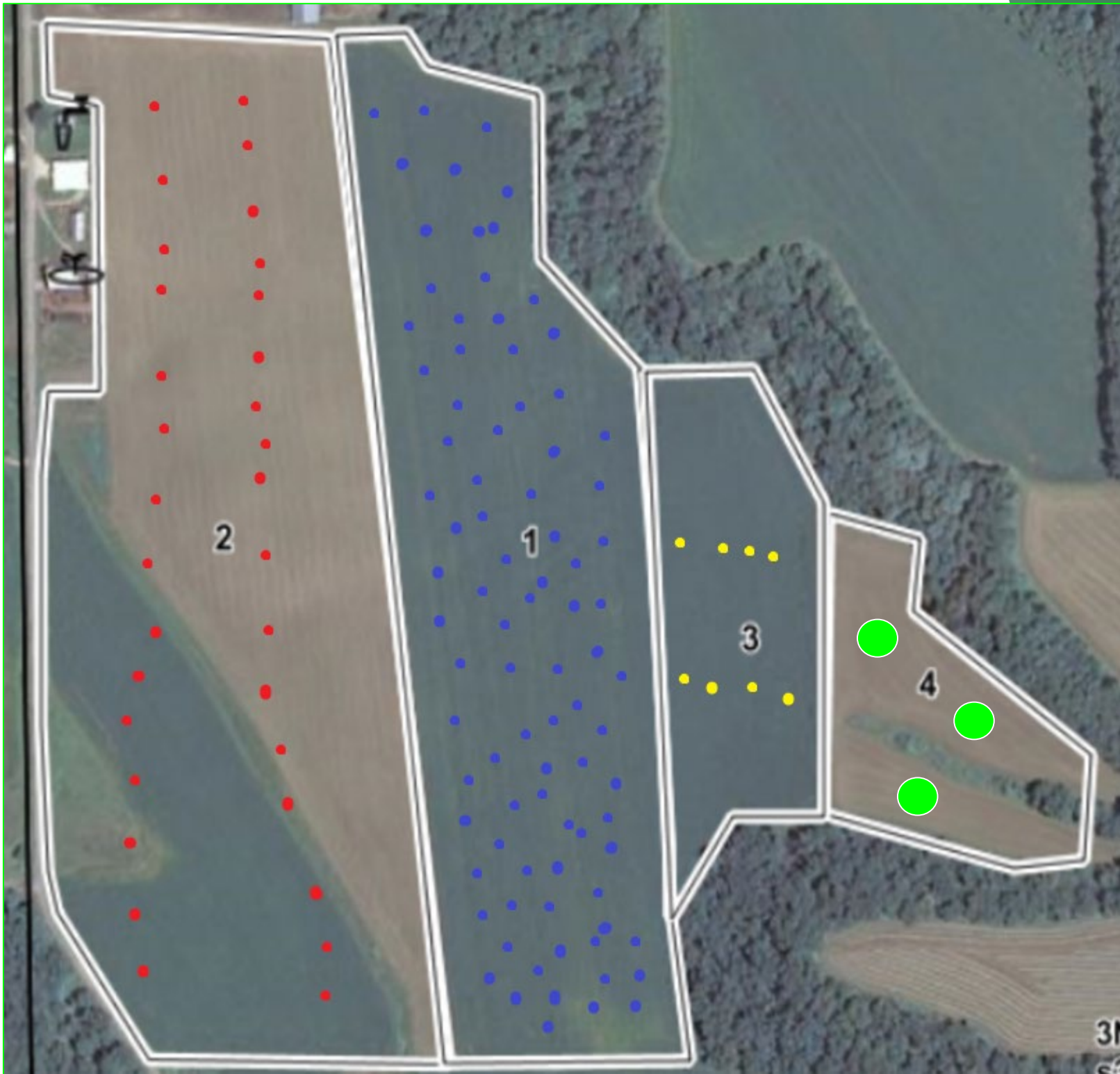
- Majority in Poultry and Sheep Paddocks

- Ease & Frequency of Moving

- Pigs Eventually

- Cattle

- Shade clusters?





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