

# Lessons Learned in a Silvopasture Start-up

PFI Annual Conference 2021

January 23, 2021

Jacob James Marty

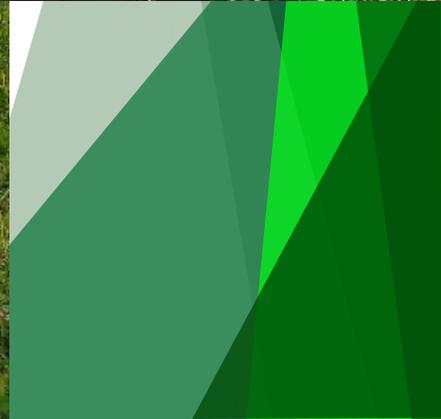
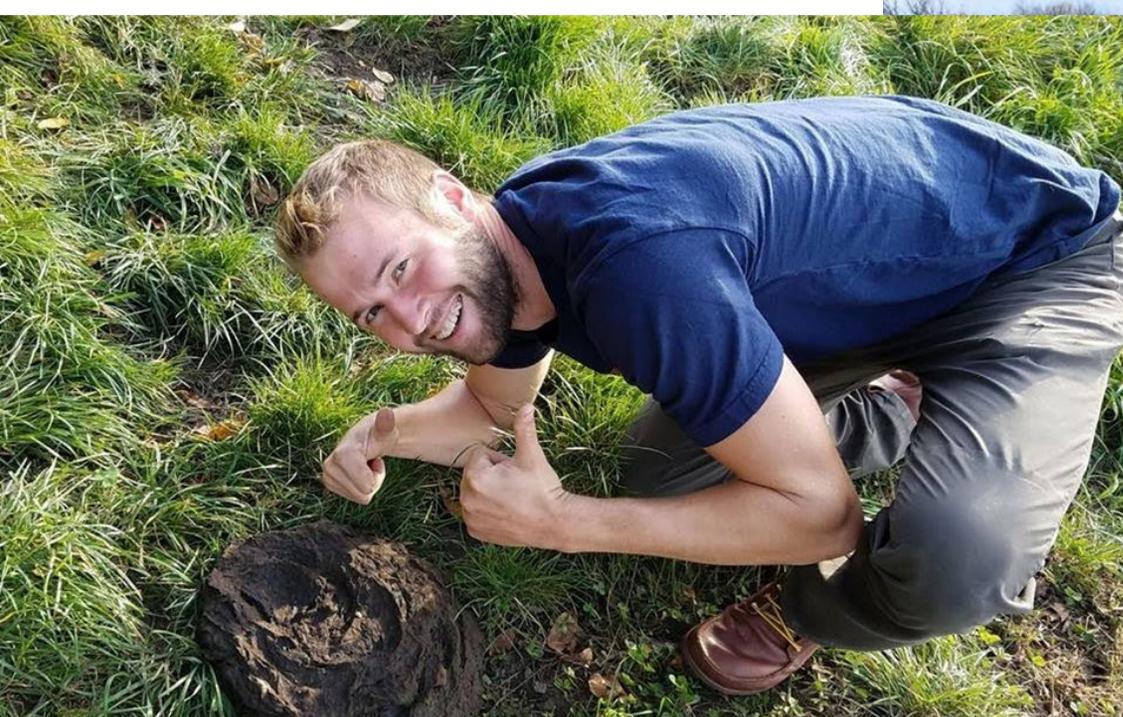


**GREEN FIRE FARM**

A SIXTH **re**GENERATION

Monticello, WI

[www.greenfirefarmllc.com](http://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







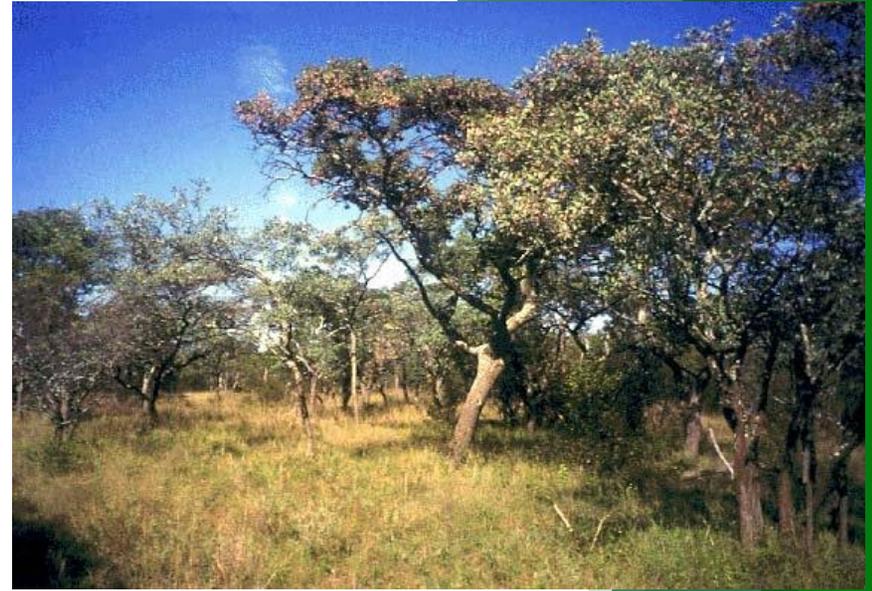




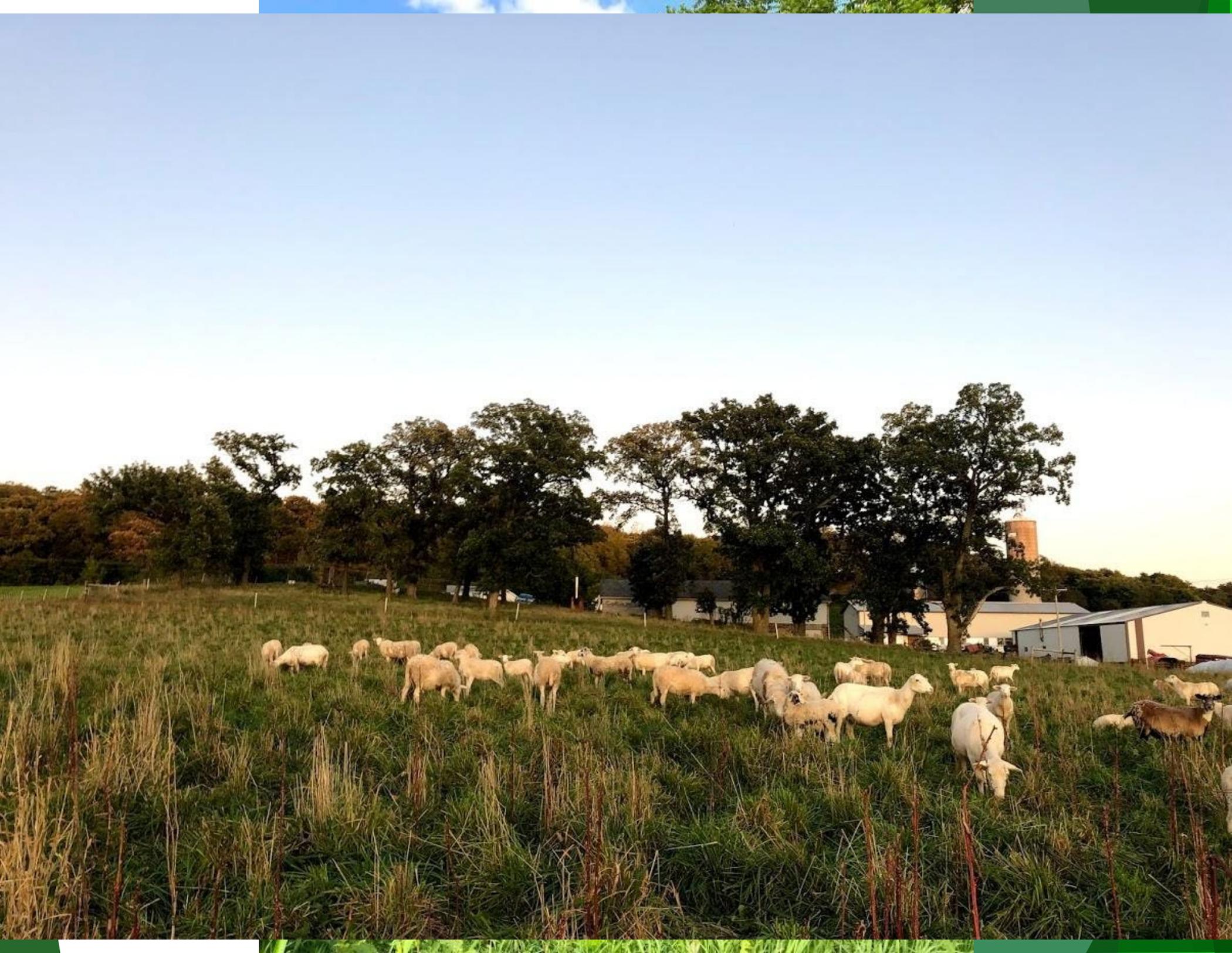








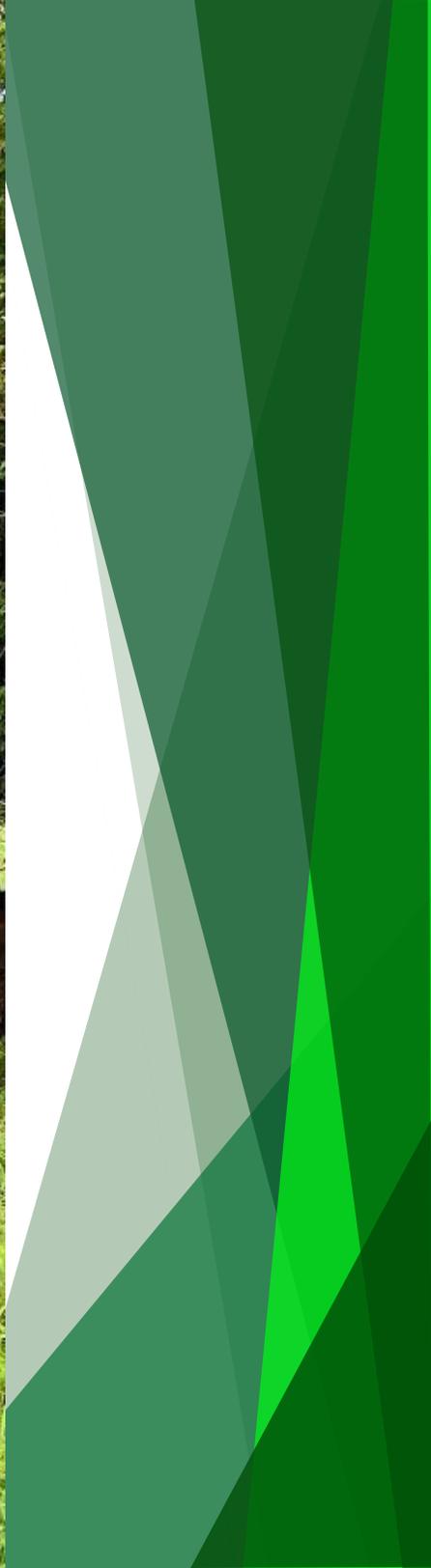














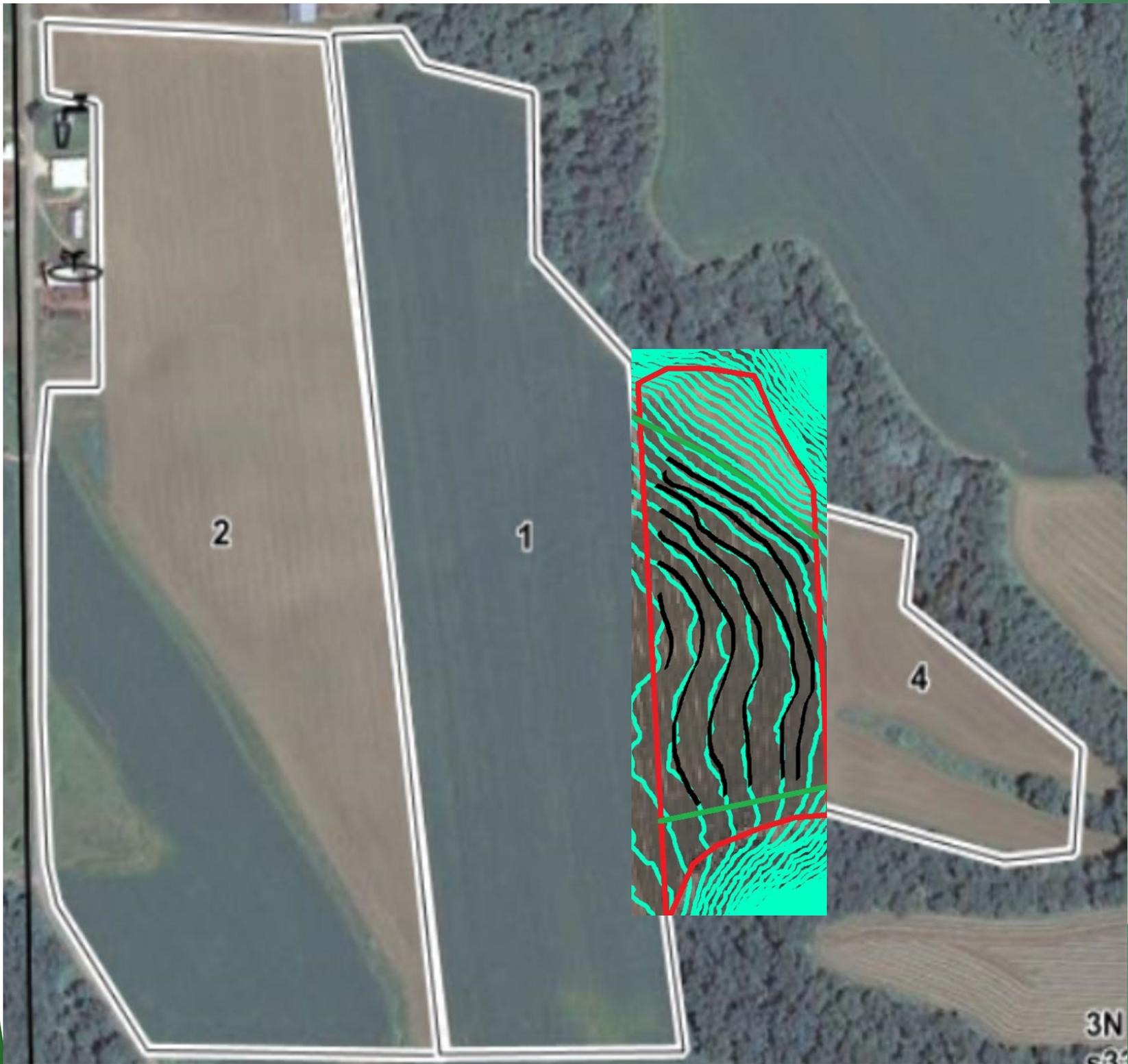


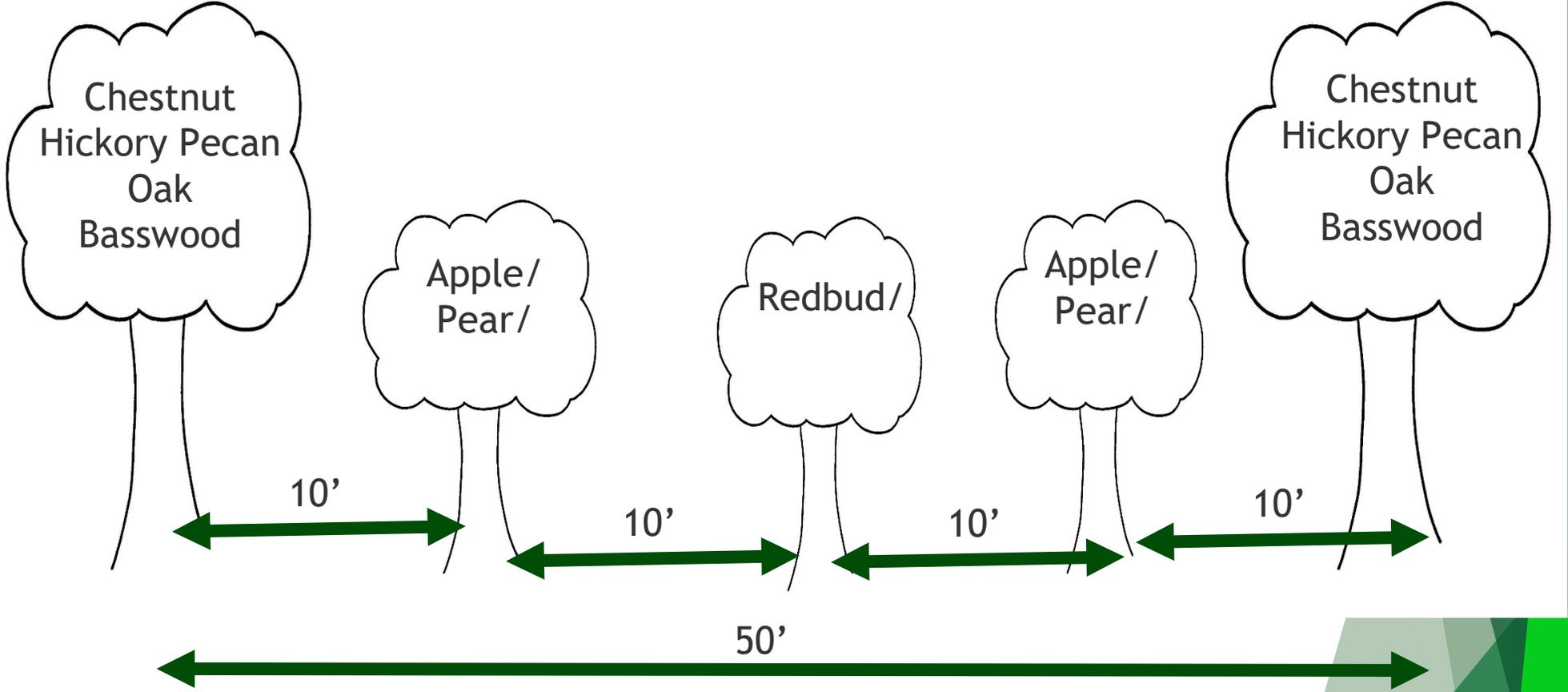
# Silvopasture Lessons



# 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







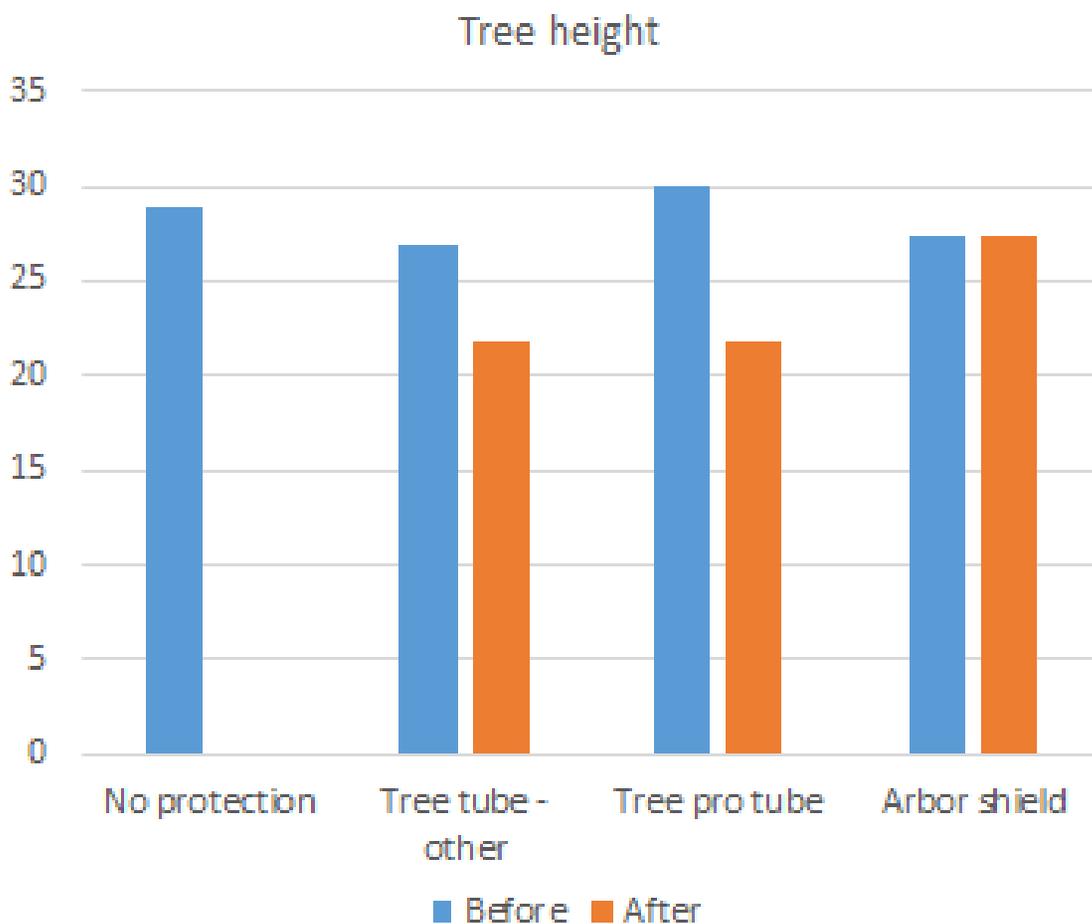
# Tree Upkeep

- 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







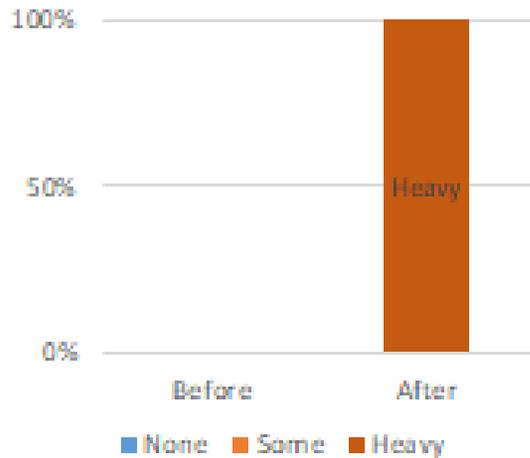


Swine killed all trees in the control group without protection. Arbor shield wire cages resulted in no loss of height

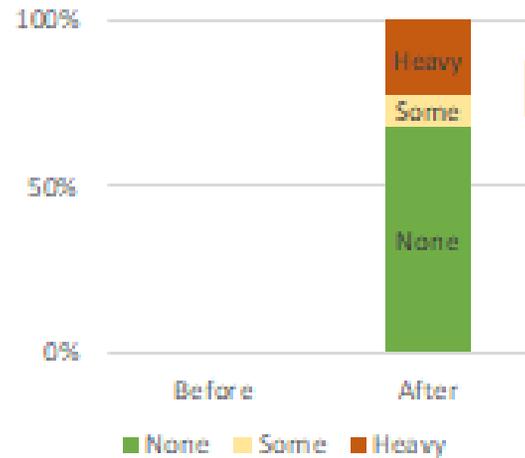
- Livestock: Hogs & Pigs, Sheep
- Trees grown: Apple, Elderberry, Hybrid Chestnut, Pecan, Plum, & some others

# Browse/damage

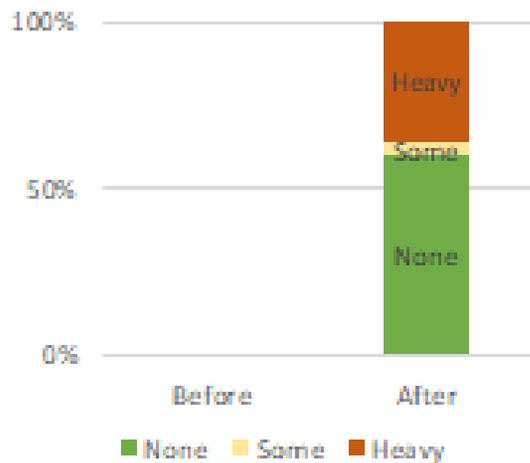
### No protection



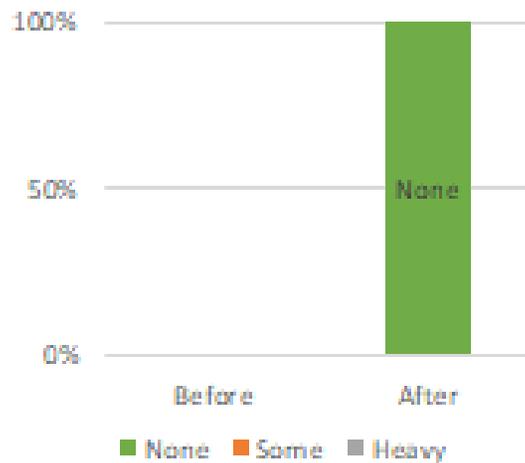
### Tubes - other



### Tubes - Tree pro



### Cage - Arbor shield



- 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





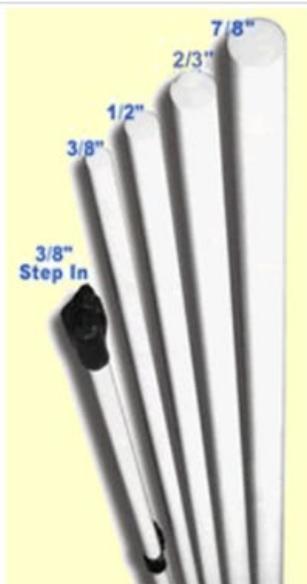
Tree Tubes



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

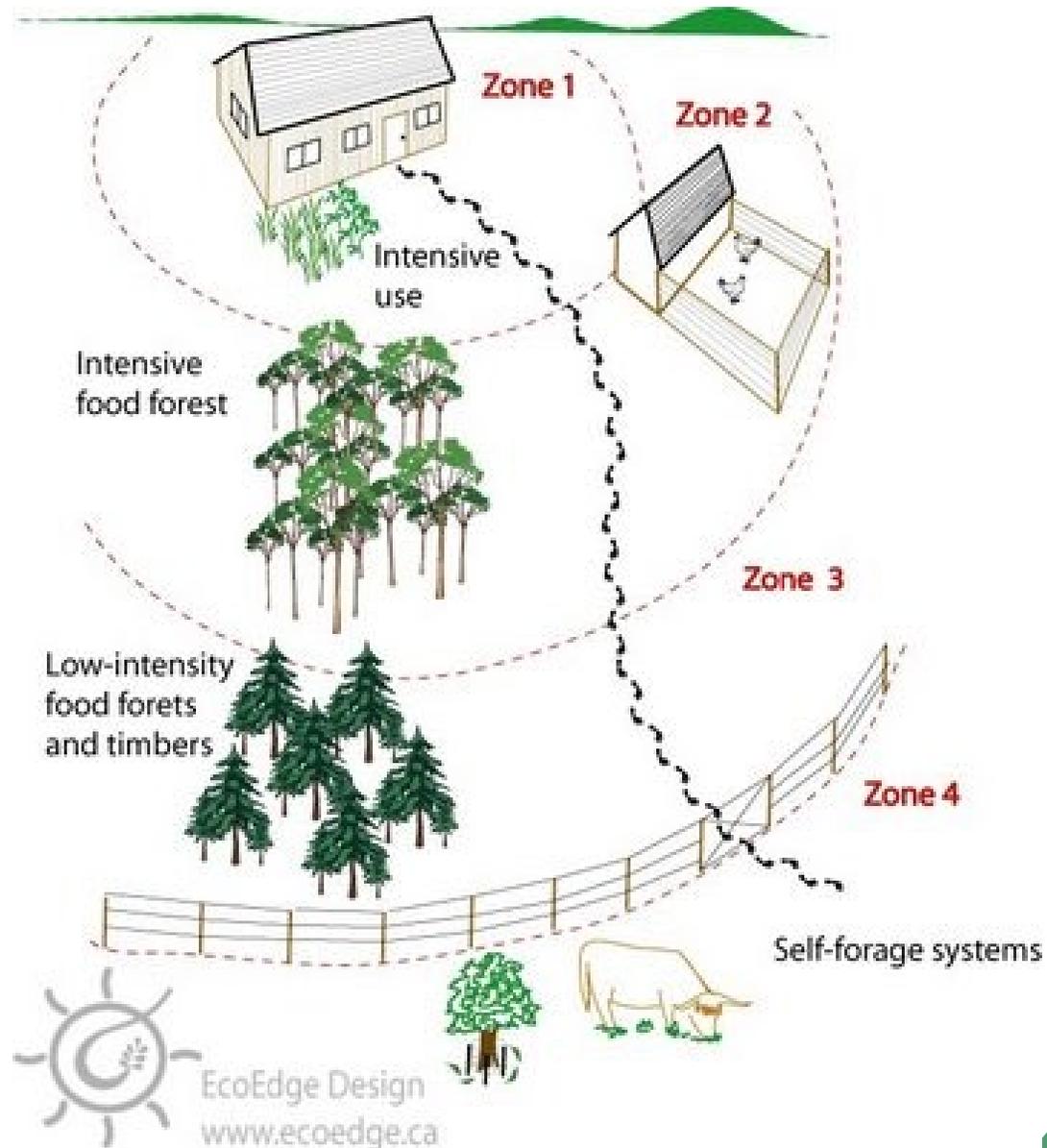
Weight 1.76 lbs

Catalog page: 52

**\$5.28** EACH

QTY  **Add**

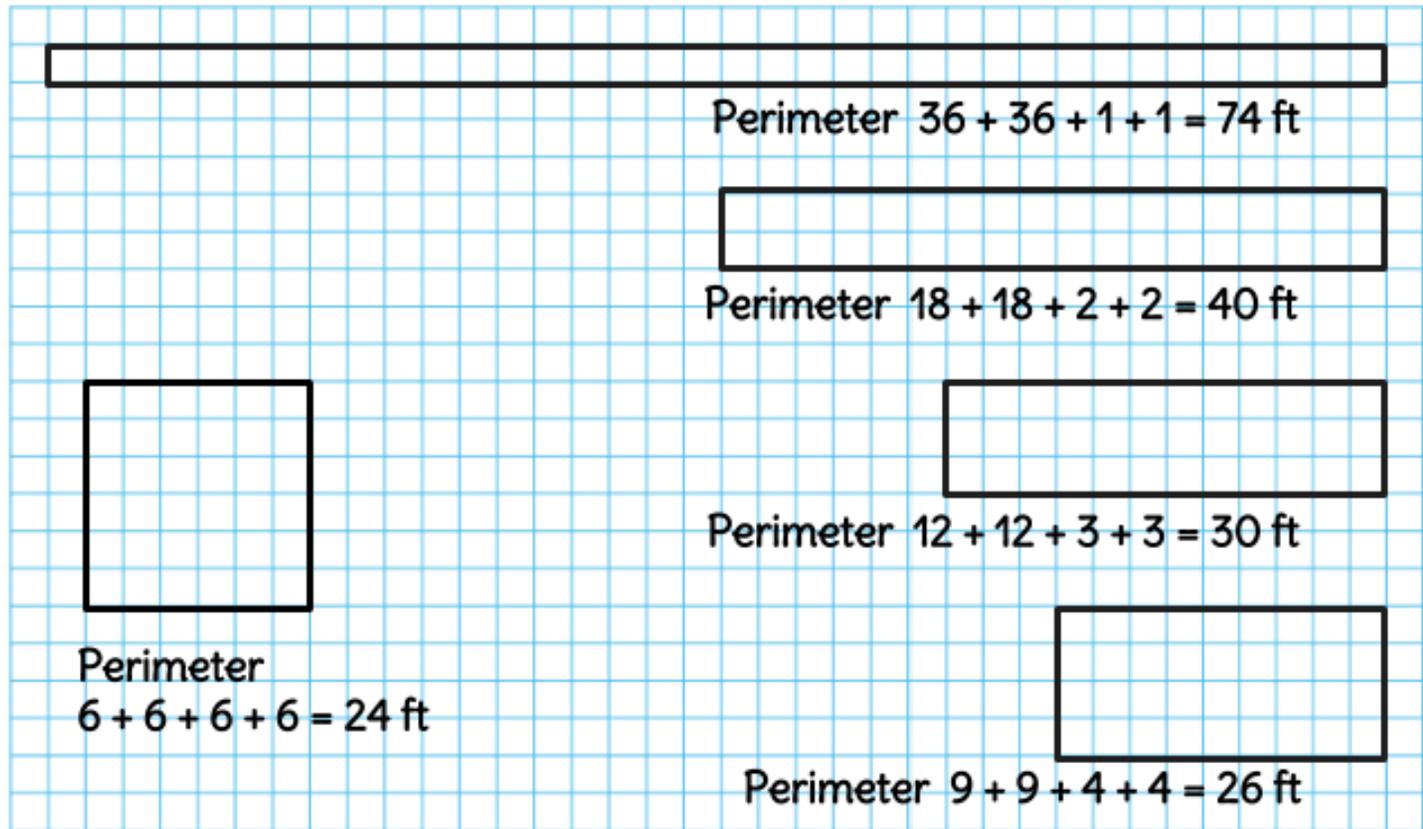
# Zones and Efficiency



Area = 36 square feet

\*Each  $\square$  = 1 square foot

The model that is a square has the least perimeter.



# 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

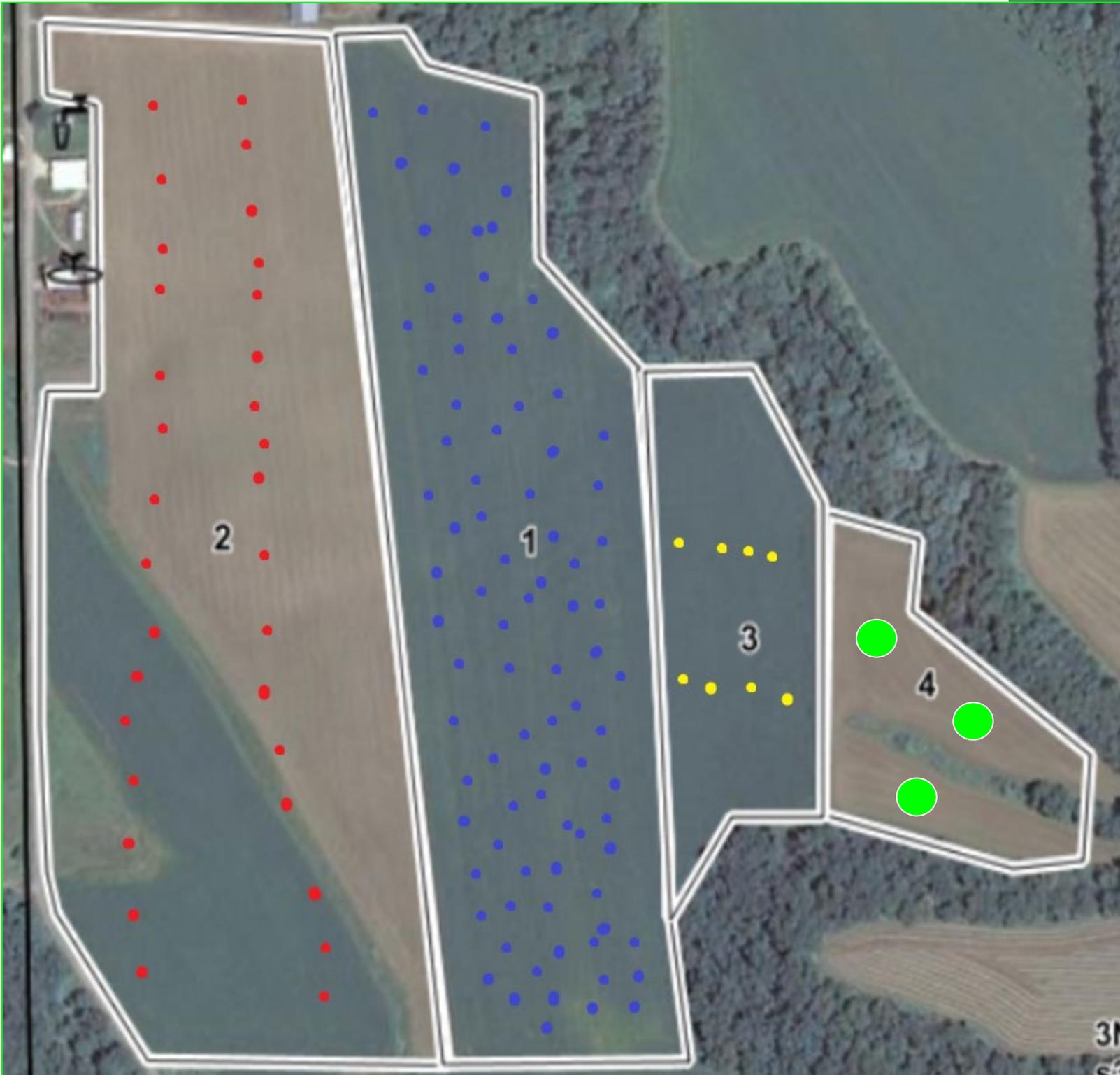
- Majority in Poultry and Sheep Paddocks

Ease & Frequency of Moving

- Pigs Eventually

- Cattle

Shade clusters?





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