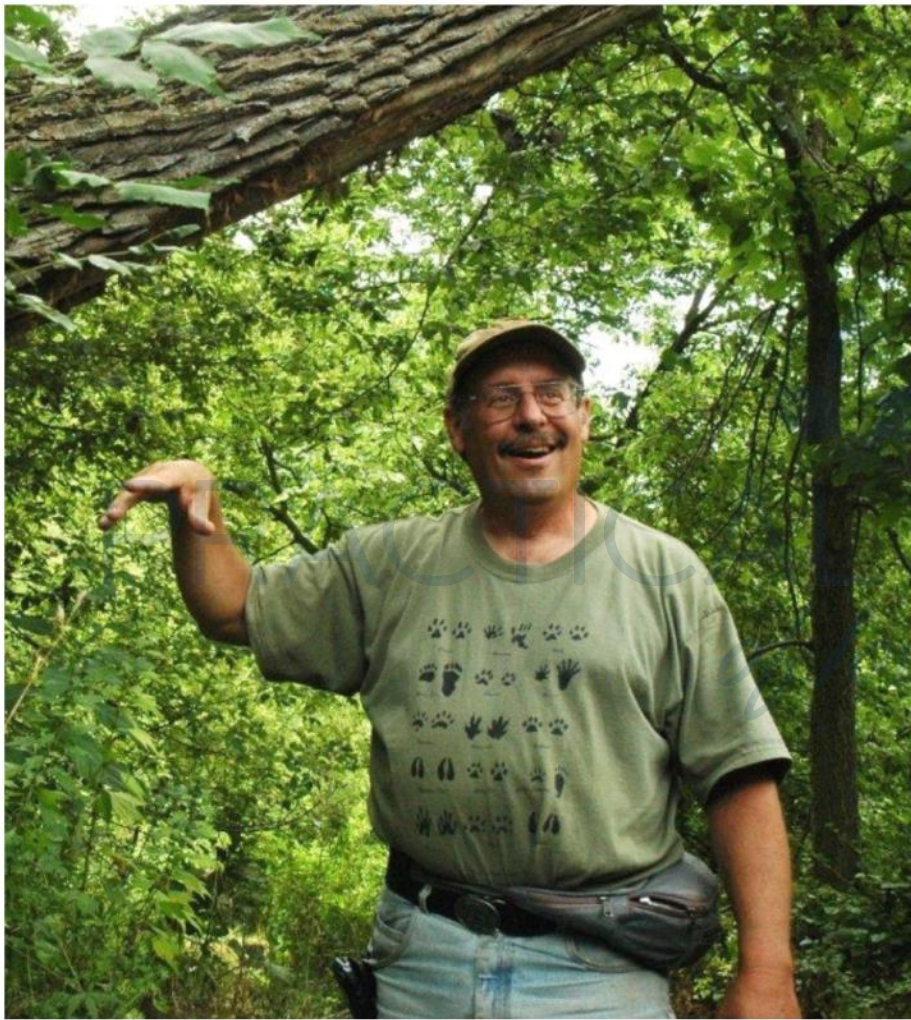


Sustainable Prairie and Timber Management On 400-Plus Acres

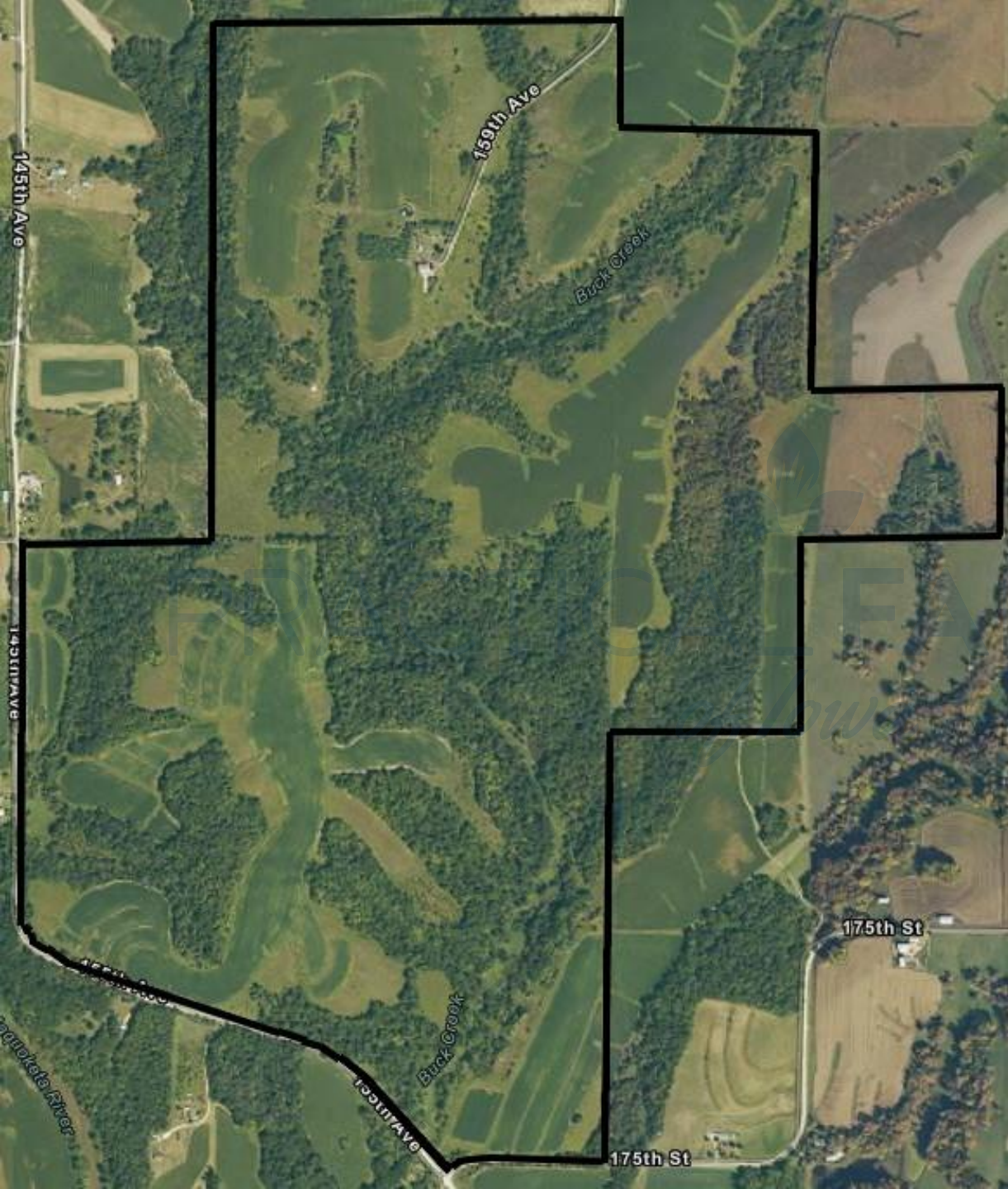
PRACTICAL FARMERS
of Iowa

**David Gossman
Hidden Bluffs Farm
Jackson County, Iowa**



David Gossman Hidden Bluffs Farm

- 1994 – 2024
- 670 Acres
- 1.5 miles spring-fed
Buck Creek
- 180 Crop Acres
- Limestone Bluffs
and Caves



Iowa Map Server – Incredible Resource!

<https://isugisf.maps.arcgis.com/apps/webappviewer/index.html?id=47acfd9d3b6548d498boad2604252a5c>

FARMERS

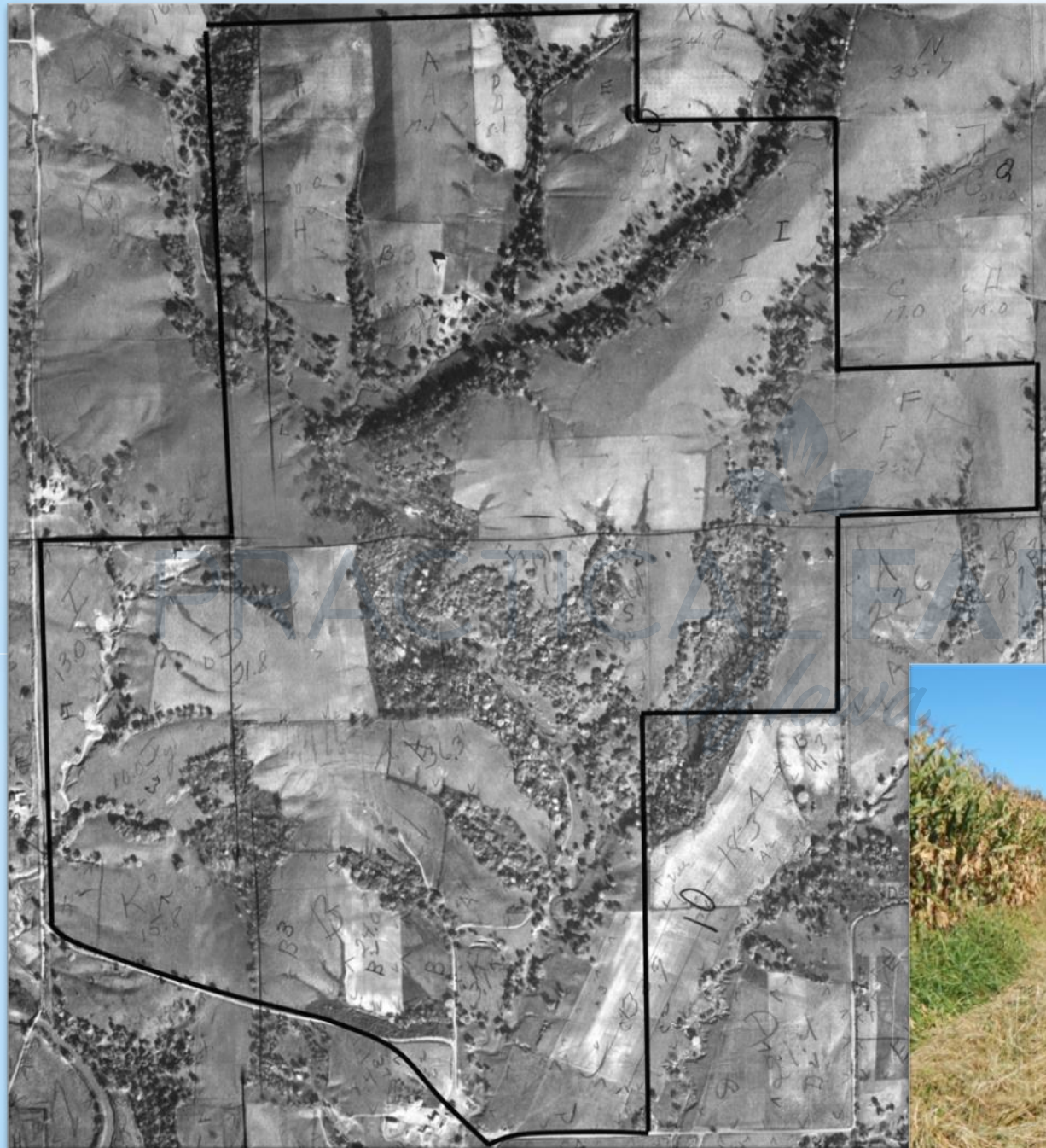
**1875
Atlas**

**Buck Creek
School**



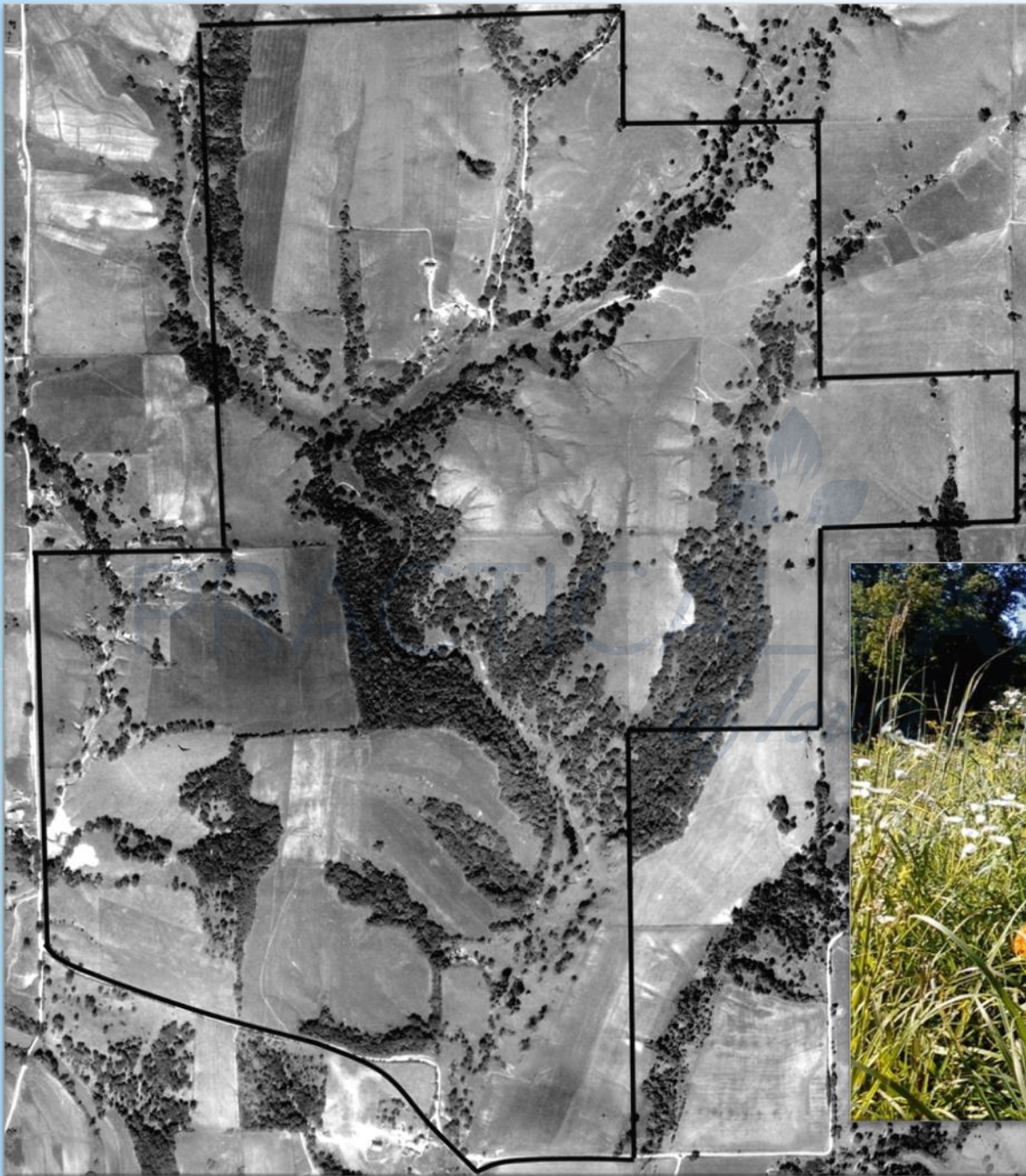
1930's

- Row crop and livestock
- No contour farming
- Signs of heavy erosion



1950's

- Little change from the 1930's





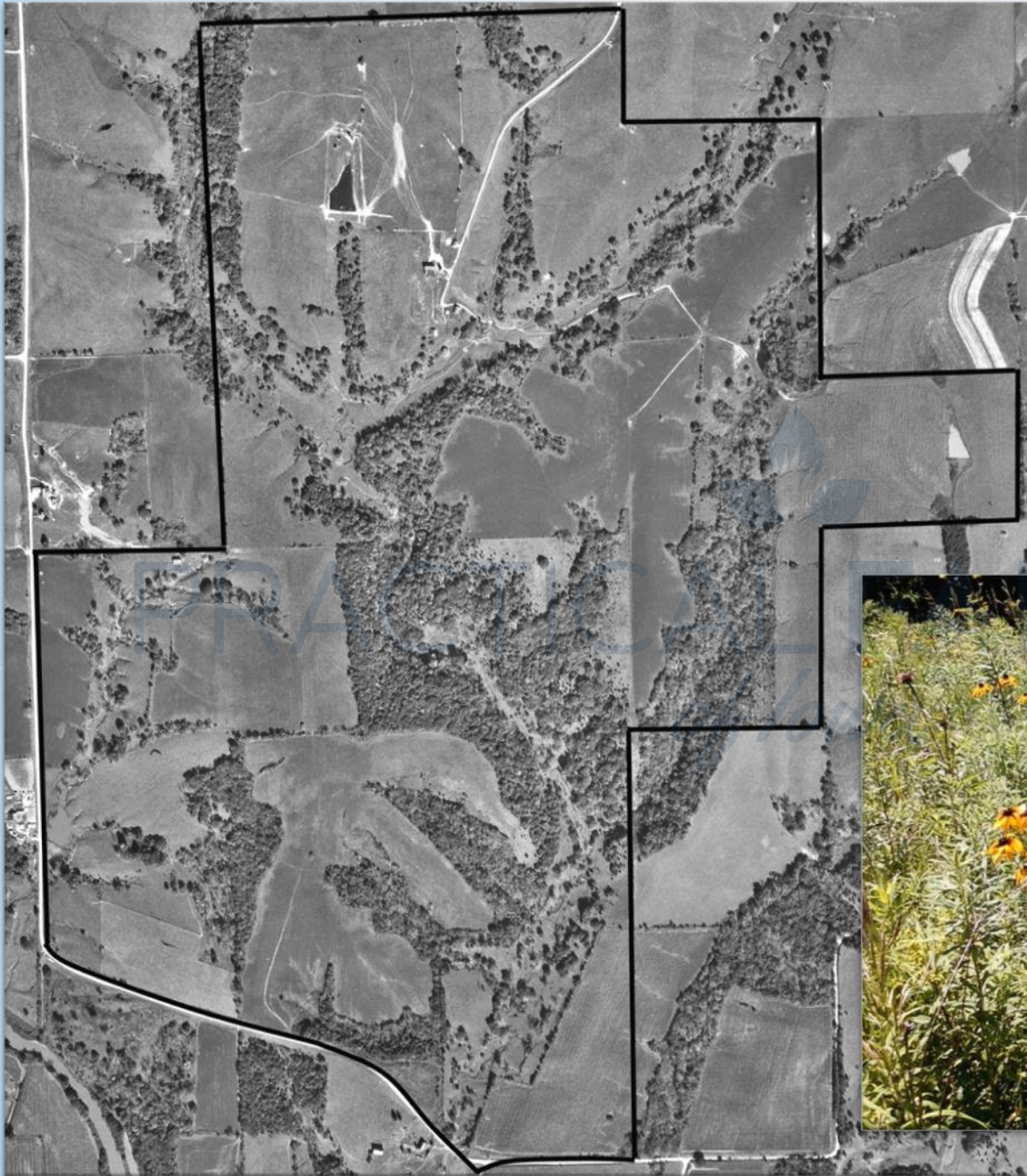
1960's

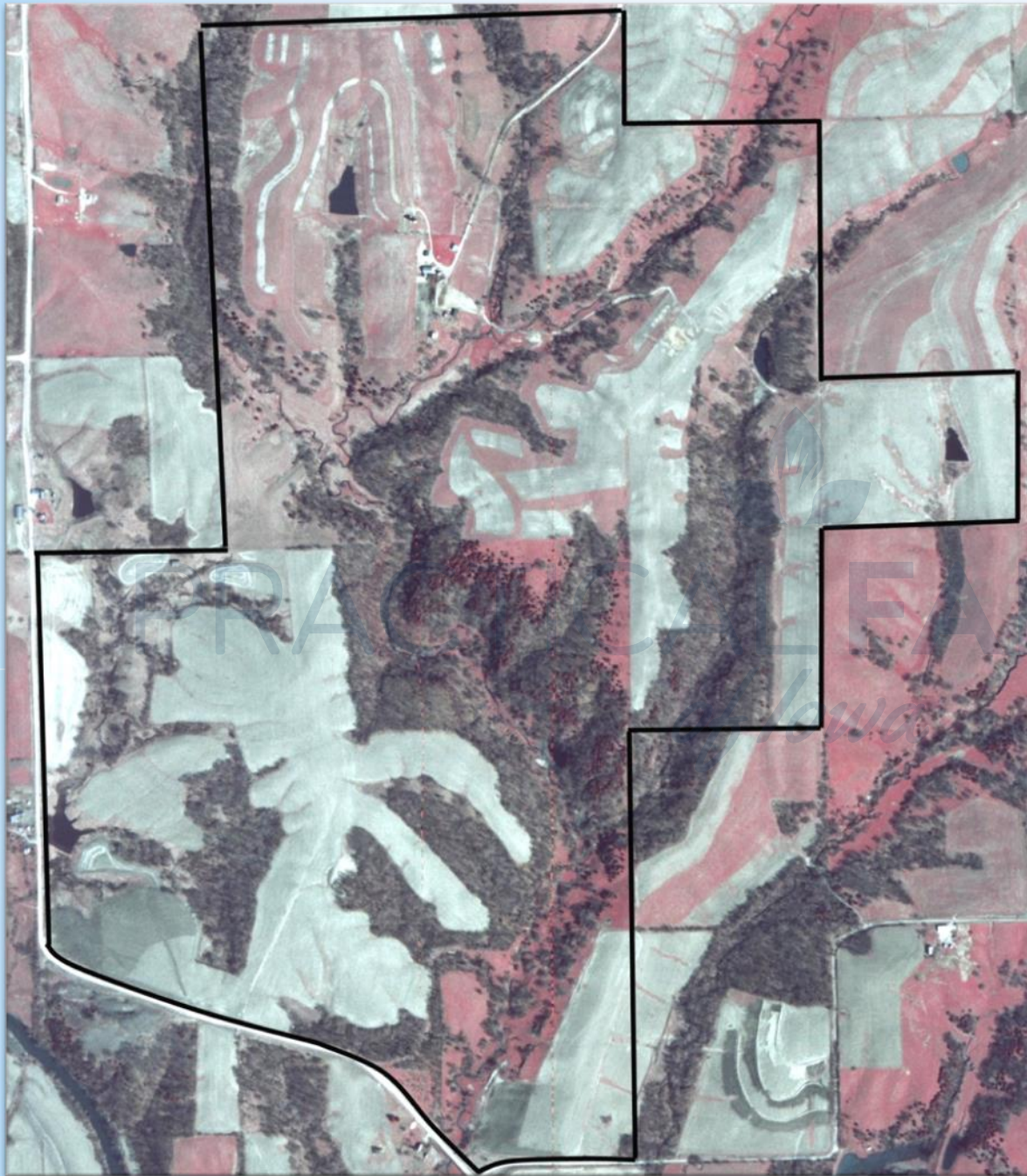
- **New farm lane and house**
- **First pond**
- **More trees in some draws**
- **Still no contour farming**



1970's

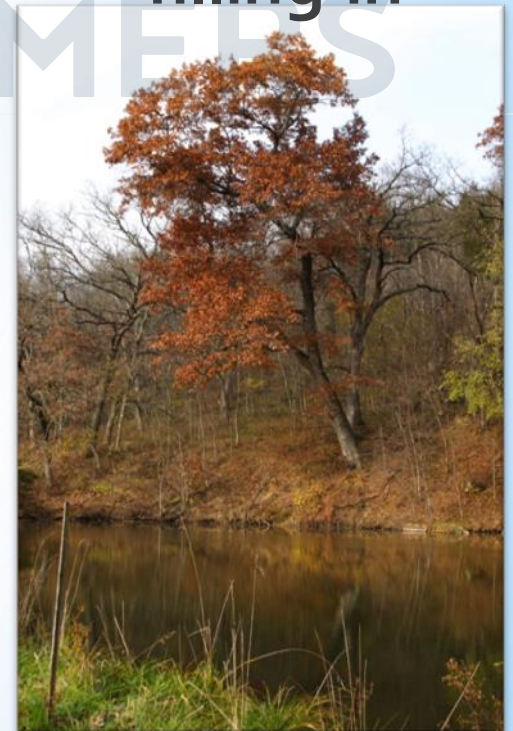
- **Two more ponds**
- **No contour cropping**





1980's

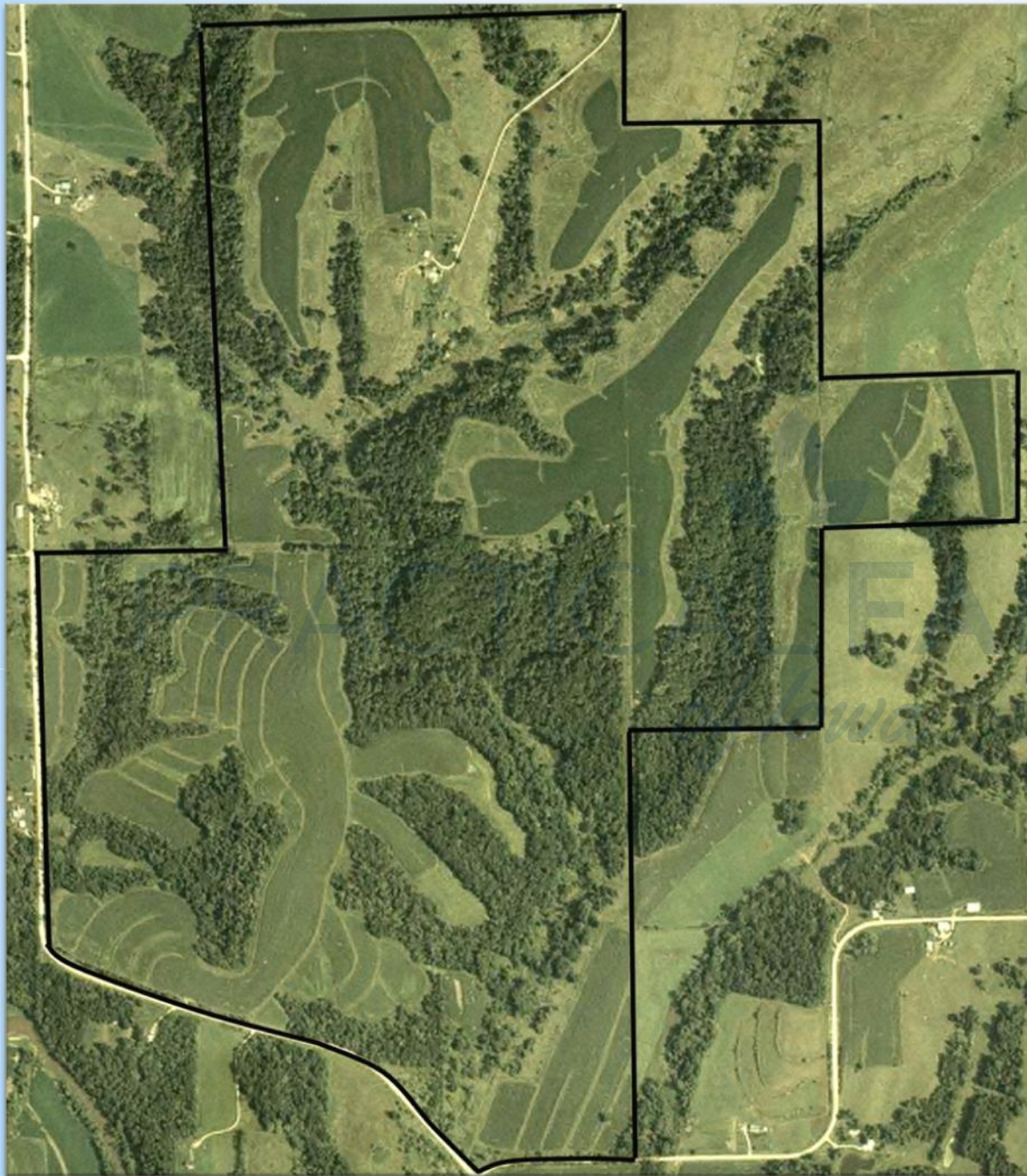
- Two more ponds
- Finally contour cropping
- Trees start filling in



1990's

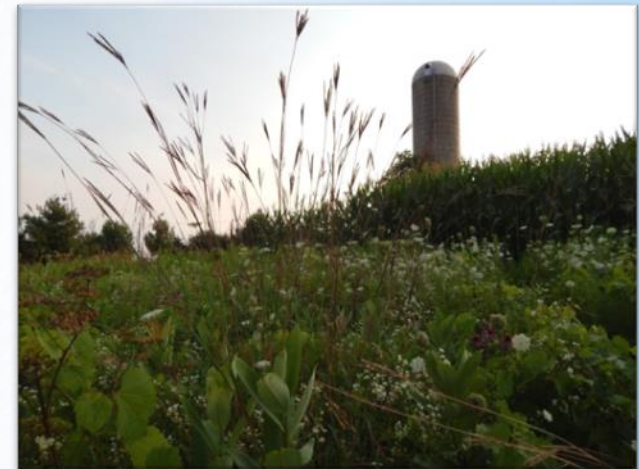
- Most crop ground in monoculture (brome grass CRP)
- Riparians used for grazing
- Trees filling in many areas of former pasture





2004

- **Buffers and native prairie planting established**
- **Many areas replanted with tree seedlings**



2005



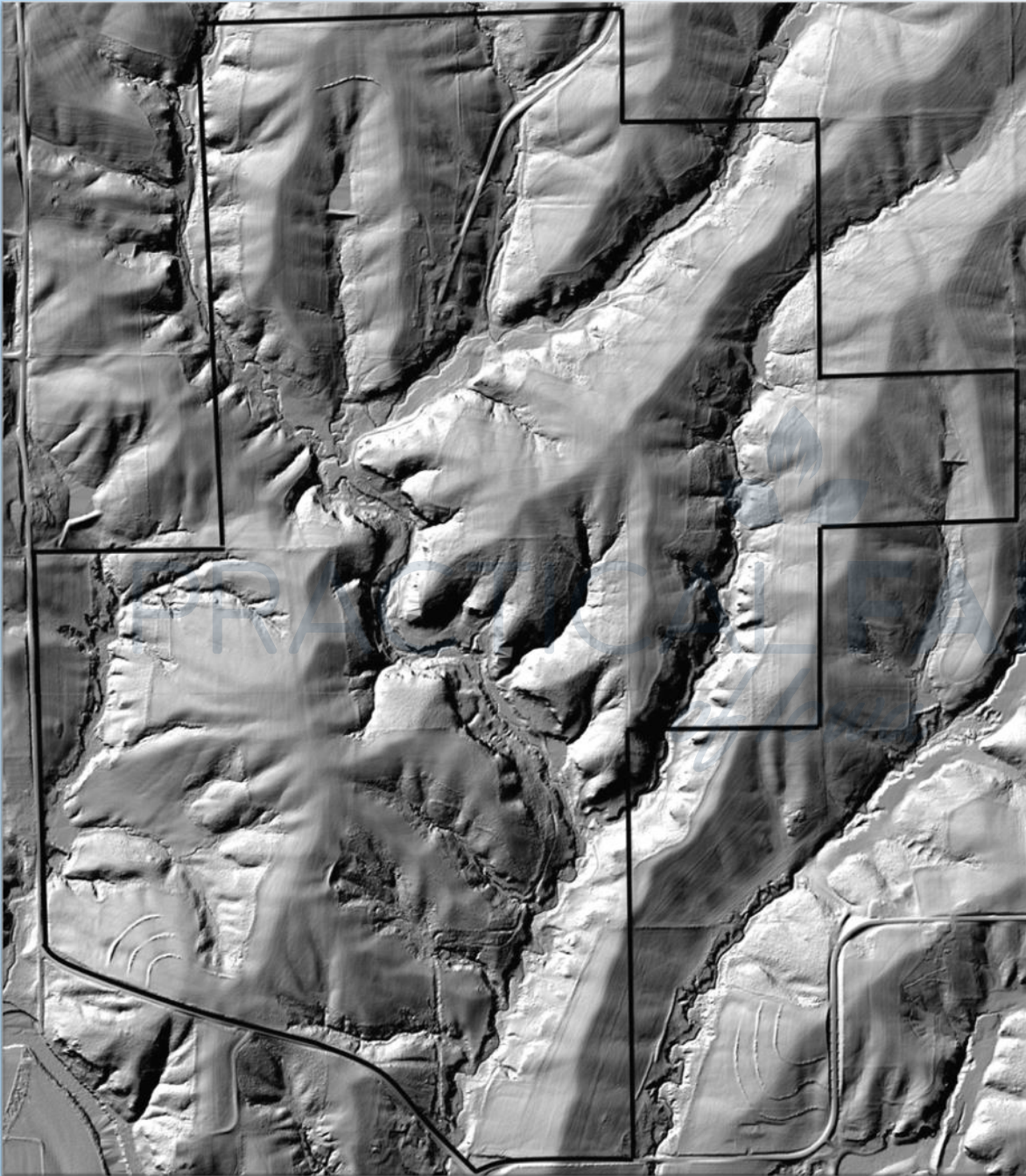
FARMERS

2010

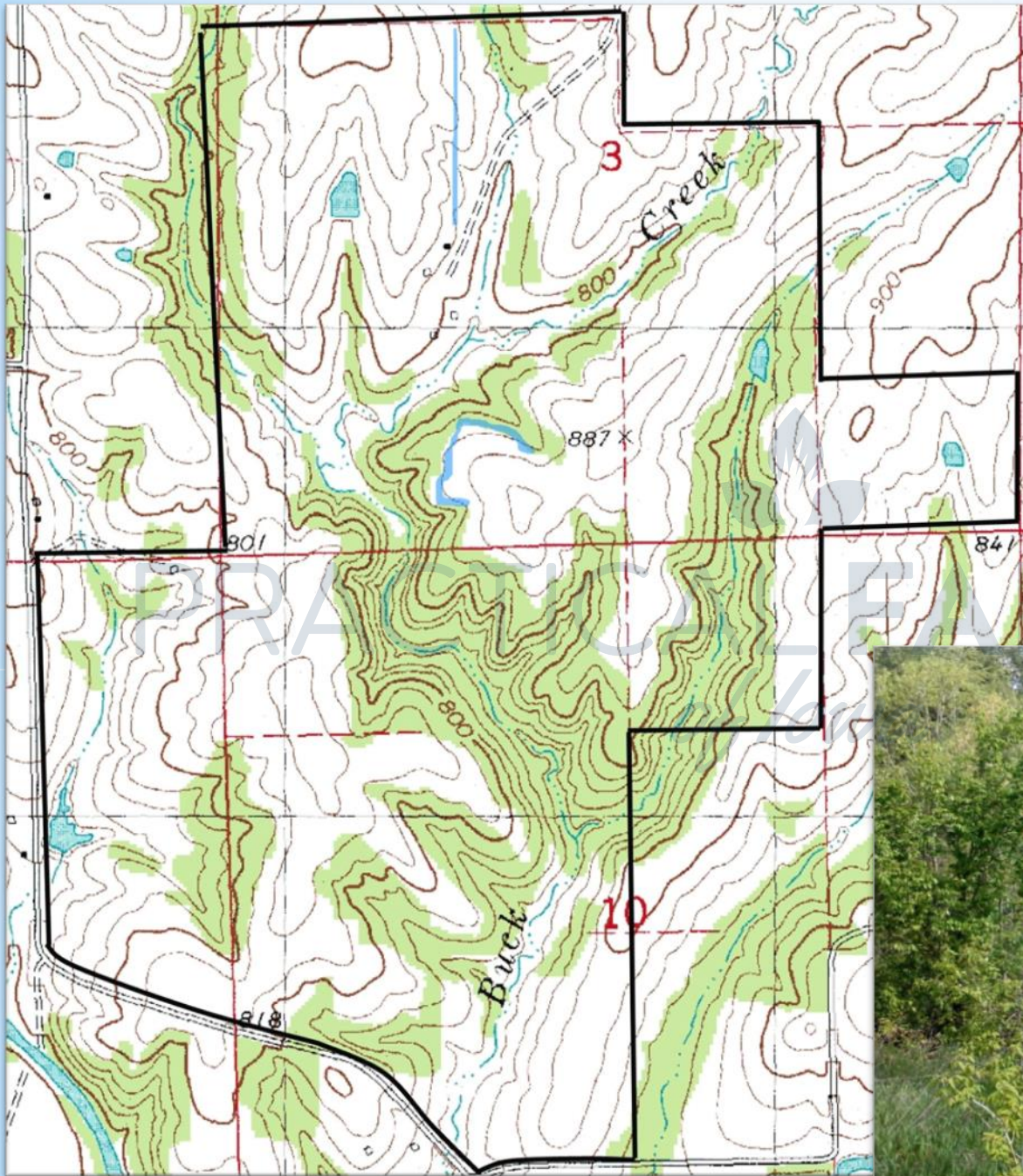


LIDAR

- Steep bluffed valleys
- South facing slopes
- North facing talus slopes
- Old plow lines and roads from 19th century



Topographical Map





2011

- Soybean / corn rotation
- No-till
- No! Anhydrous ammonia

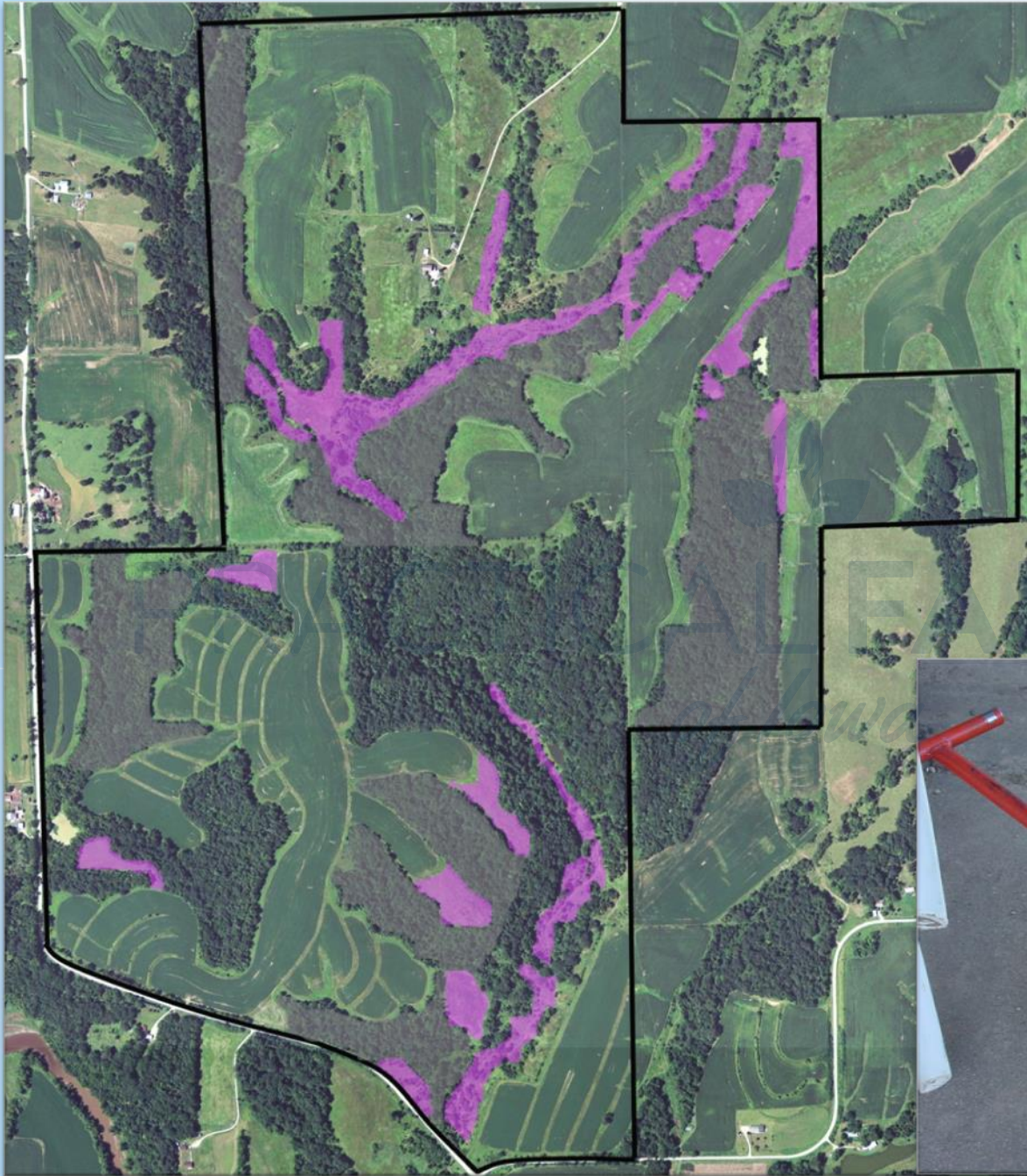




Timber Stand Improvement

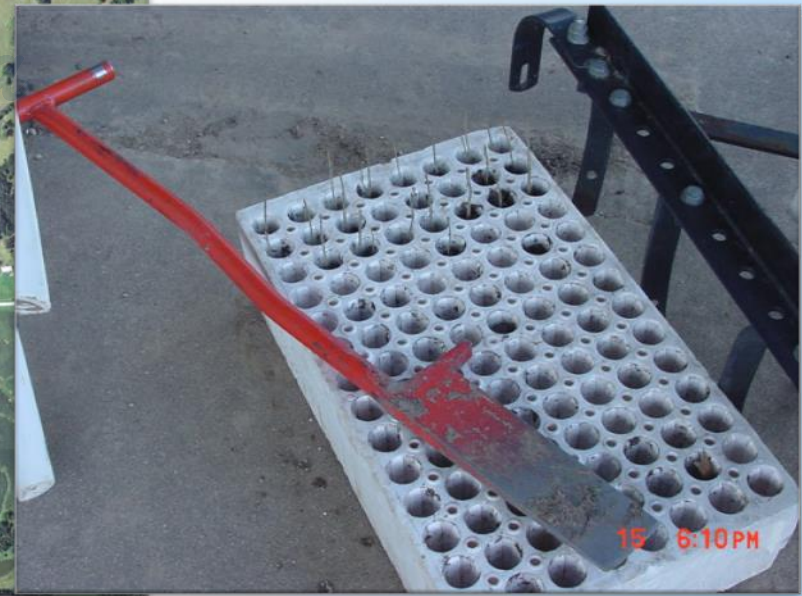
- “Low-grading”
- Salvage logging
 - Value in:
 - Box elder
 - Hackberry
 - Black willow
 - Basswood
 - Cottonwood bark !





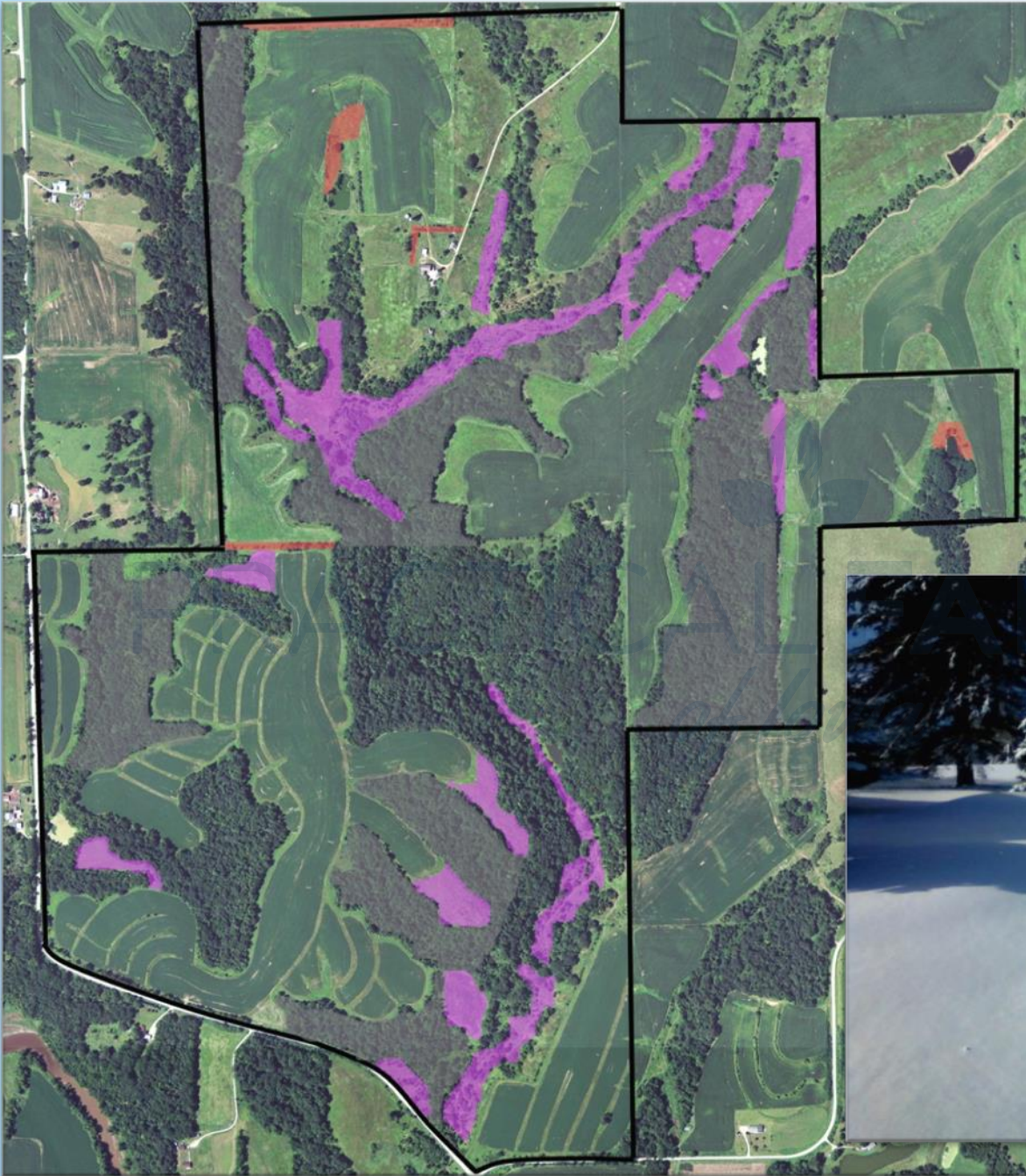
Hardwood Tree Planting

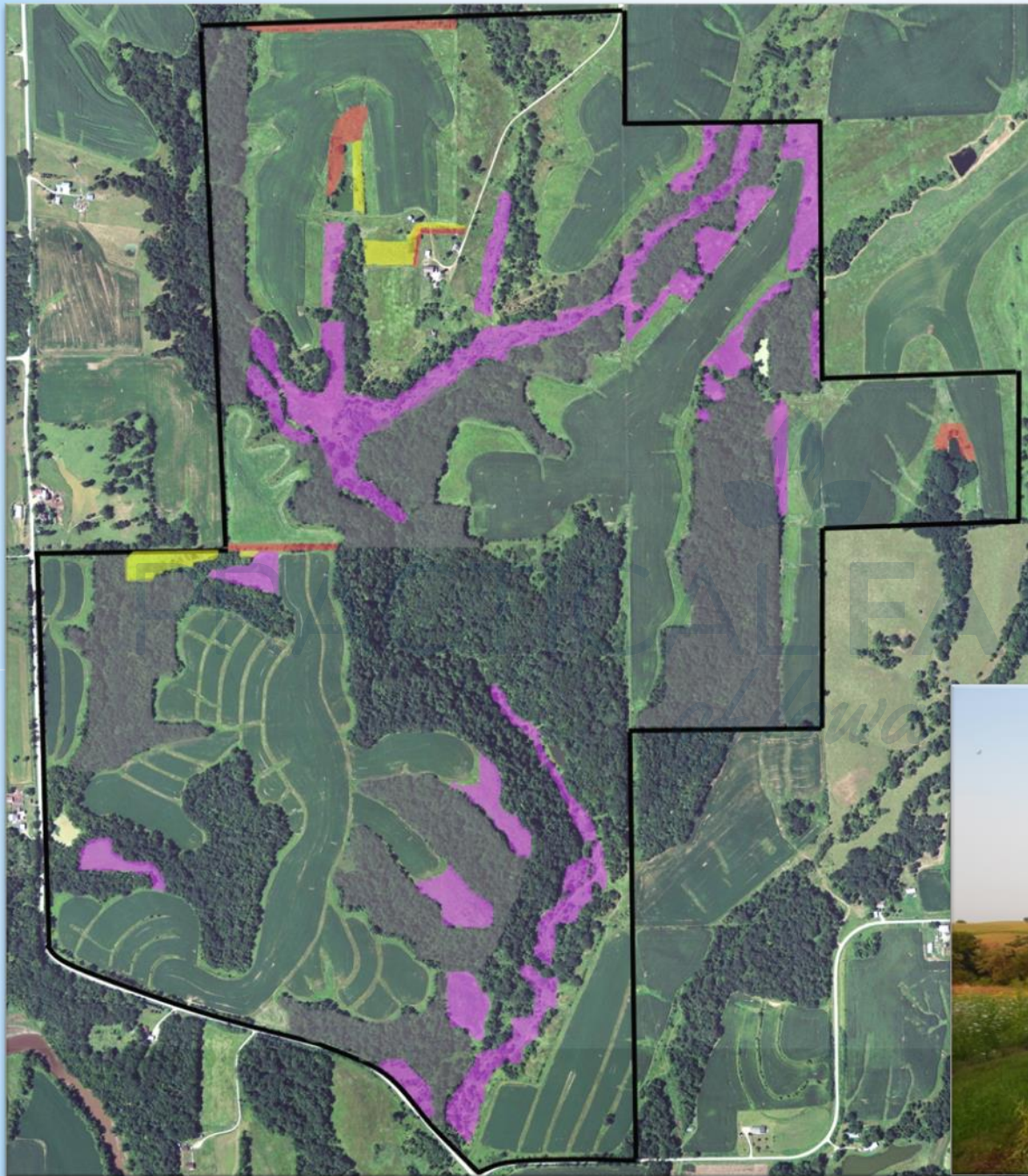
- About 60,000 trees planted over 18 years
- Plug planting with Water Gel



White Spruce

- The “best” wind break

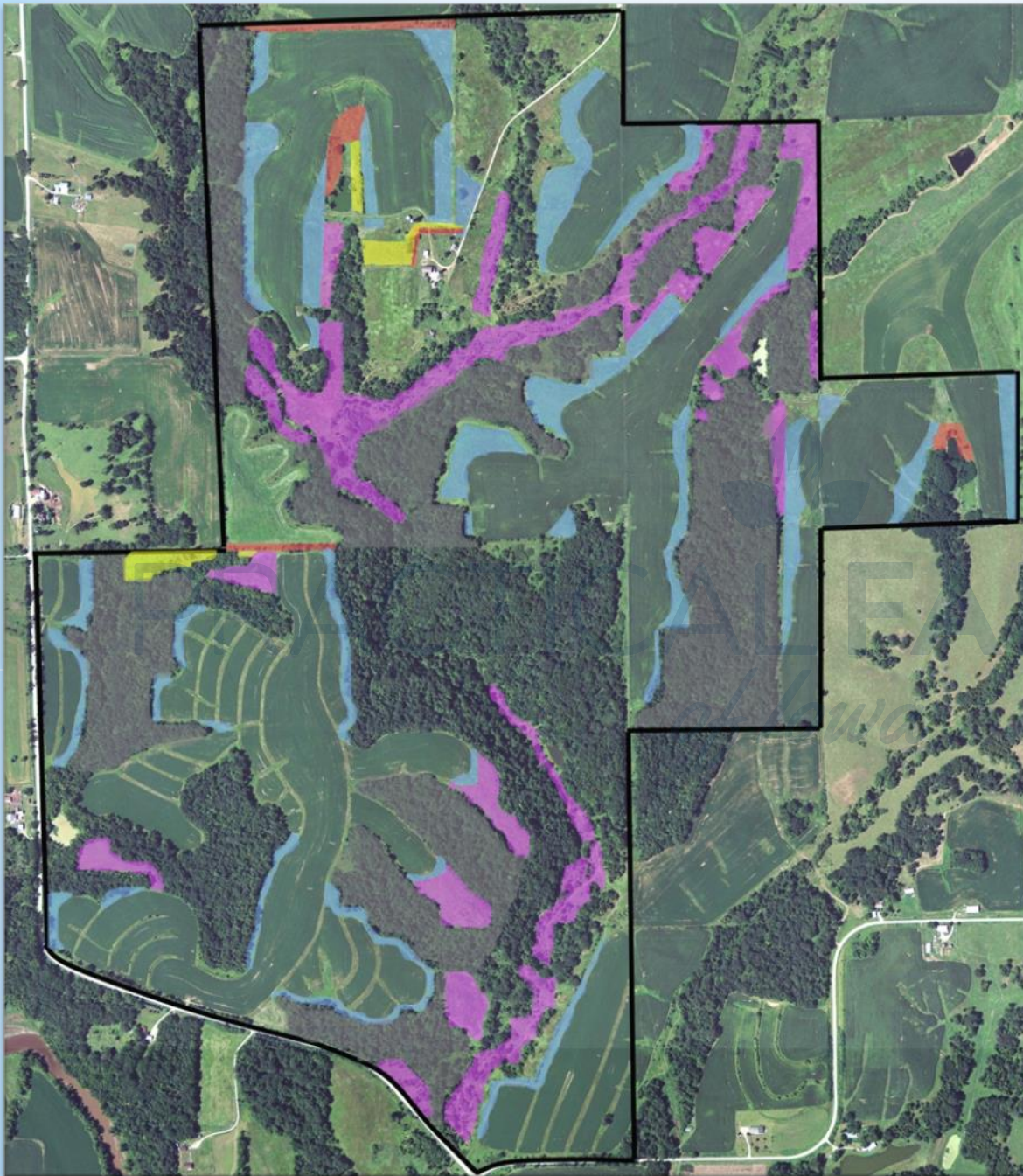




White Pine

- Protect trees from:
 - Rabbits
 - Mice
 - Voles
 - Deer





Native Grasses

- Large species mix (50-100 species)
- Hand broadcast seed mixed with damp sand



Seeding Native Grasses and Forbs

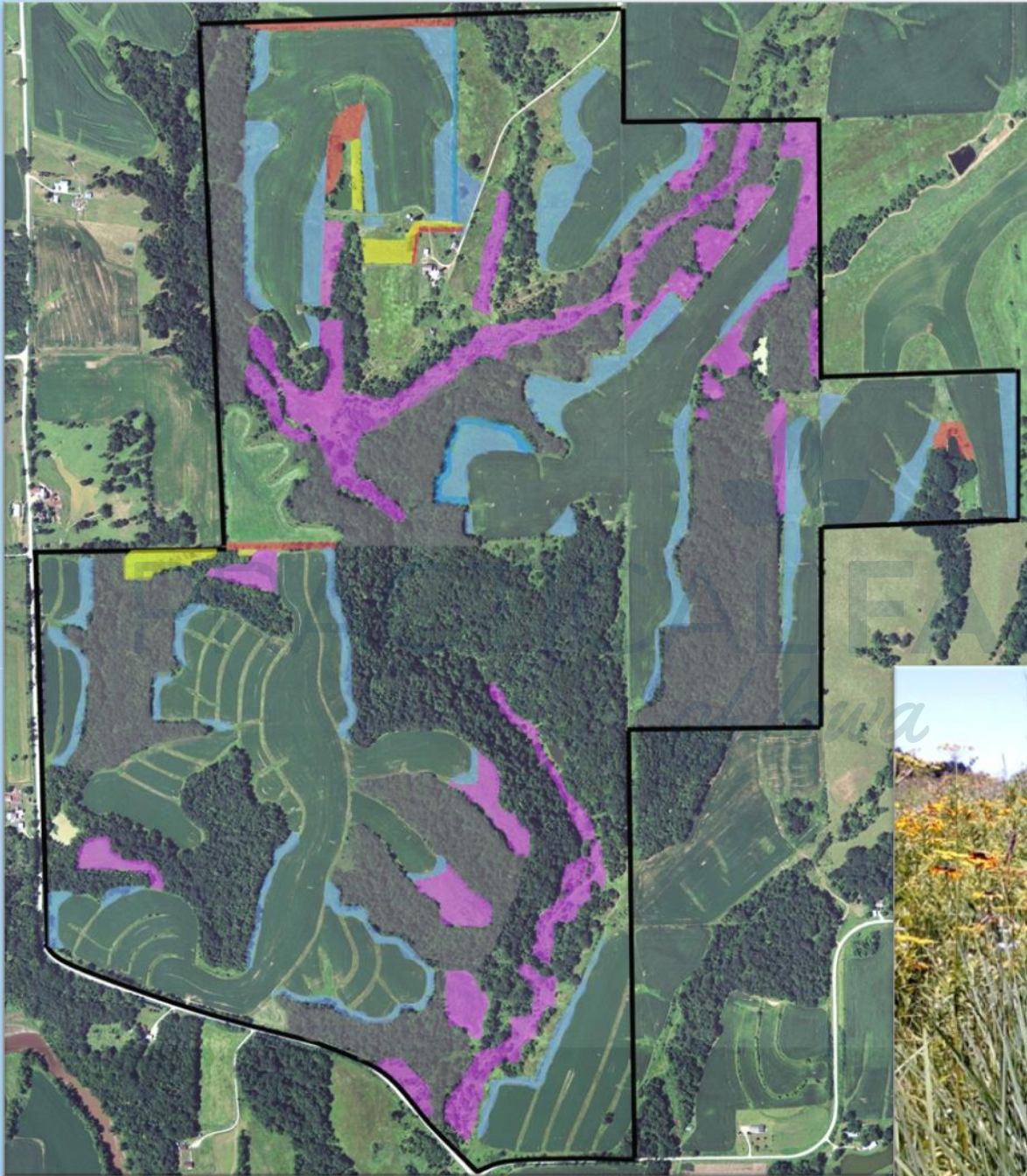


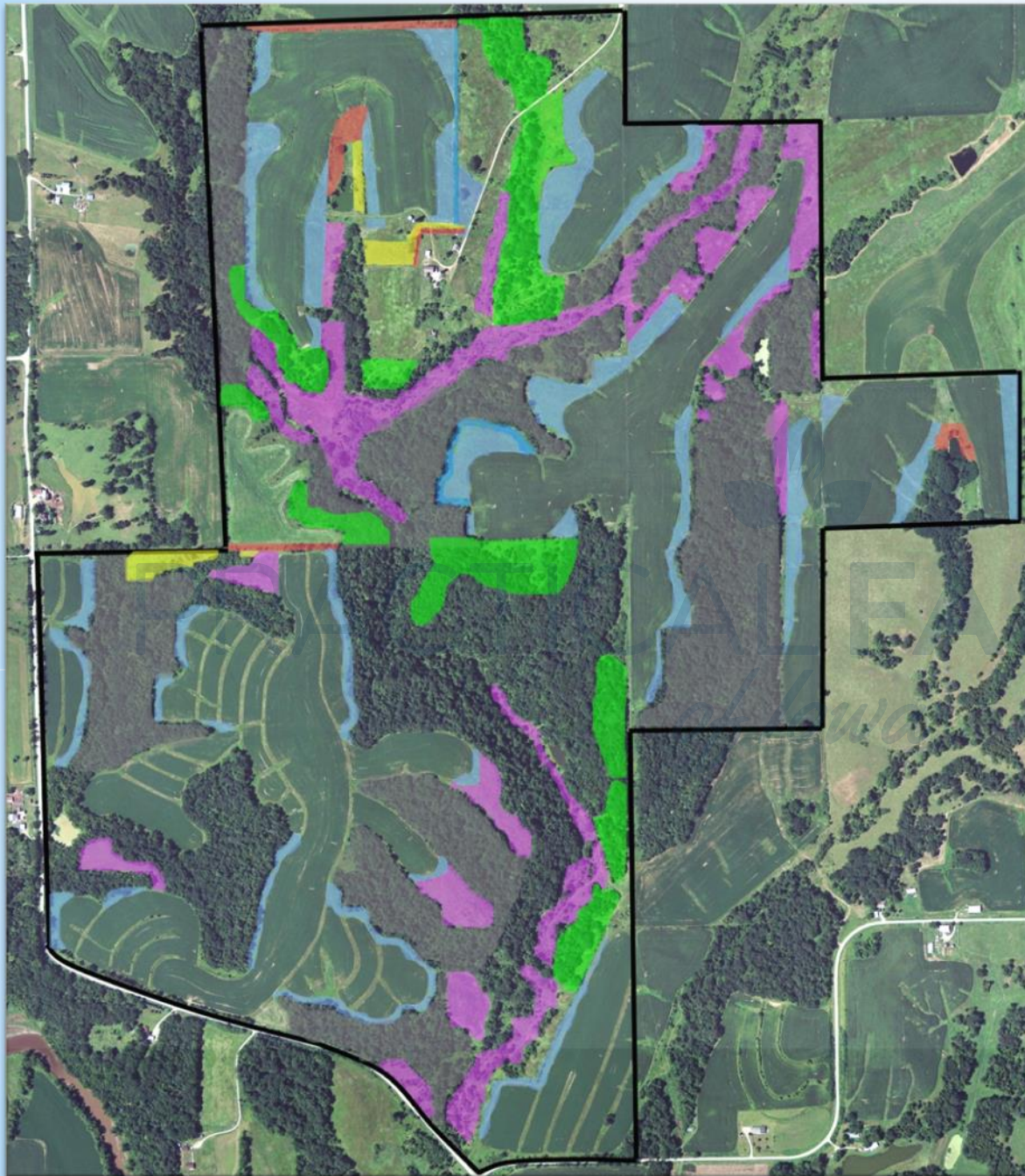
Practical Farmers of Iowa

Forbs for Pollinator Habitat

Species	Common Name	Species	Common Name
<i>Allium canadense</i>	Wild Garlic	<i>Liatris pycnostachya</i>	Prairie Blazingstar/Thickspike Gayfeather
<i>Allium cernuum</i>	Nodding Onion	<i>Liatris spicata</i>	Spiked Gayfeather
<i>Allium stellatum</i>	Prairie Onion	<i>Lupinus perennis</i>	Wild Lupine
<i>Amorpha canescens</i>	Leadplant	<i>Mertensia virginica</i>	Virginia Bluebells
<i>Artemisia ludoviciana</i>	Prairie Sage	<i>Monarda fistulosa</i>	Wild Bergamor/Bergamont
<i>Asclepias tuberosa</i>	Butterfly Milkweed	<i>Monarda punctata</i>	Dotted Mint
<i>Aster azureus</i>	Sky Blue Aster	<i>Oenothera biennis</i>	Evening Primrose
<i>Aster laevis</i>	Smooth Blue Aster	<i>Parthenium integrifolium</i>	Wild Quinine
<i>Aster sericeus</i>	Silky Aster	<i>Pedicularis canadensis</i>	Wood Betony
<i>Astragalus canadensis</i>	Canada Milkvetch	<i>Penstemon digitalis</i>	Foxglove Beardtongue
<i>Baptisia australis</i>	Blue Wild Indigo	<i>Penstemon grandiflorus</i>	Lg-flowered Beardtongue
<i>Baptisia leucantha</i>	White Wild Indigo	<i>Petalostemum candidum</i>	White Prairie Clover
<i>Cassia fasciculata</i>	Partridge Pea	<i>Petalostemum purpureum</i>	Purple Prairie Clover
<i>Castilleja coccinea</i>	Indian Paintbrush	<i>Phlox pilosa</i>	Prairie Phlox
<i>Coreopsis tinctoria</i>	Plains Coreopsis	<i>Physostegia virginiana</i>	False Dragonhead
<i>Coreopsis tinctoria red</i>	Dwarf Red Coreopsis	<i>Potentilla arguta</i>	Prairie Cinquefoil
<i>Delphinium virescens</i>	Prairie Larkspur	<i>Pycnanthemum tenuifolium</i>	Slender Mountain Mint
<i>Desmanthus illinoensis</i>	Illinois Bundleflower	<i>Ratibida pinnata</i>	Yellow/Grey headed Coneflower
<i>Desmodium canadense</i>	Showy Tick Trefoil	<i>Rudbeckia hirta</i>	Blackeyed Susan
<i>Desmodium illinoense</i>	Illinois Tick Trefoil	<i>Ruellia humilis</i>	Wild Petunia
<i>Echinacea pallida</i>	Pale Purple Coneflower	<i>Silphium laciniatum</i>	Compass Plant
<i>Eryngium yuccifolium</i>	Rattlesnake Master	<i>Silphium terebinthinaceum</i>	Prairie Dock
<i>Gallardia pulchella</i>	Indian Blanket	<i>Sisyrinchium angustifolium</i>	Blue-Eyed Grass
<i>Gaura biennis</i>	Biennial Gaura	<i>Sisyrinchium campestre</i>	Blue-Eyed Grass
<i>Gentiana quinquefolia</i>	Stiff Gentian	<i>Tephrosia virginiana</i>	Goat's Rue
<i>Geum triflorum</i>	Prairie Smoke	<i>Tradescantia bracteata</i>	Prairie Spiderwort
<i>Helianthus maximiliani</i>	Maximilian Sunflower	<i>Tradescantia ohiensis</i>	Ohio Spiderwort
<i>Heliopsis helianthoides</i>	Ox-eye Sunflower	<i>Verbena stricta</i>	Hoary Vervain
<i>Heuchera riciardsonii</i>	Prairie Alumroot	<i>Viola pedatifida</i>	Prairie Violet
<i>Lespedeza capitata</i>	Roundheaded Bushclover		

Pollinator Habitat

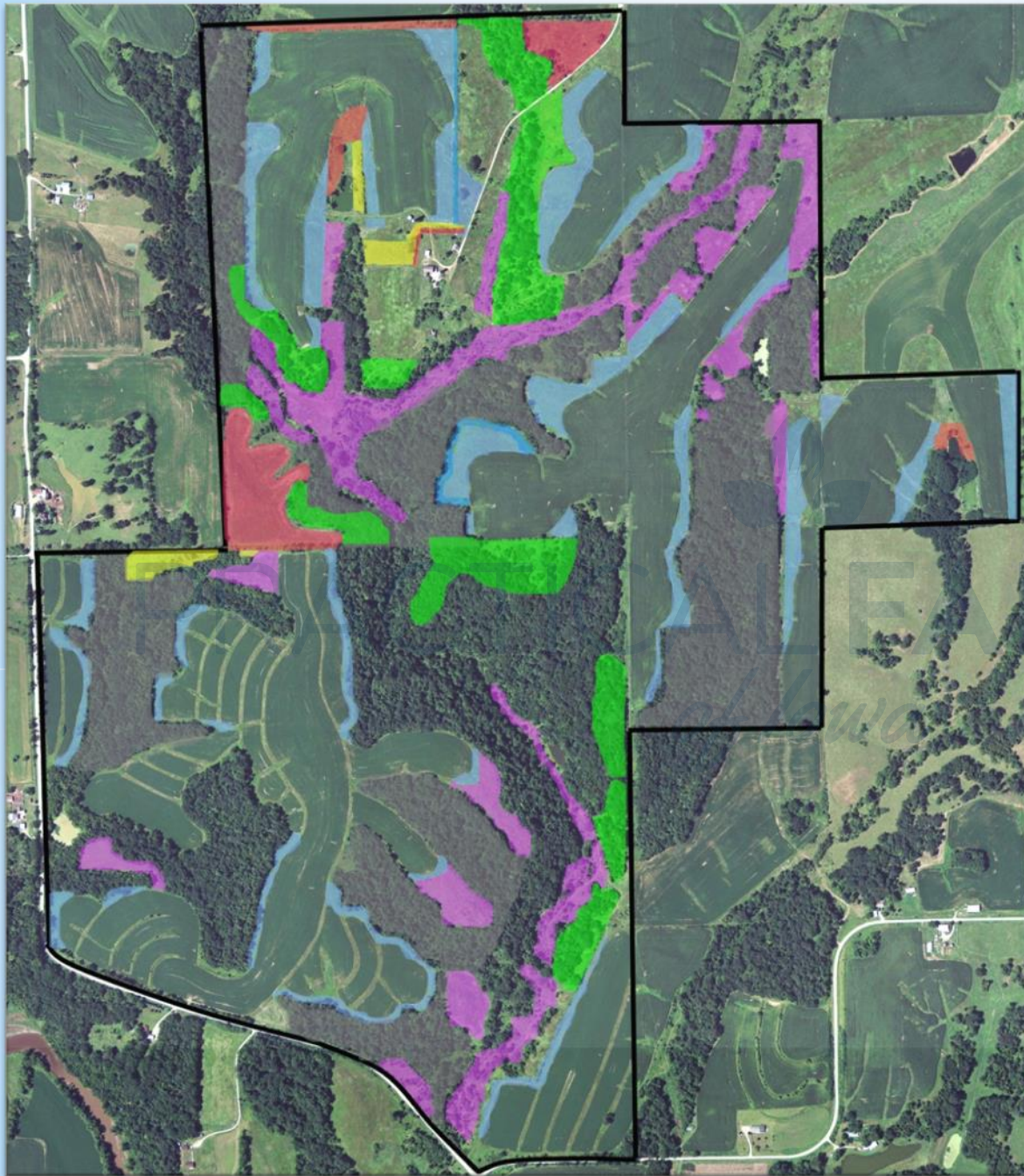




Oak Savanna Remnants and Goat Prairies

- Restoration work just beginning in some areas
- First step – cedar removal
- Then – burns



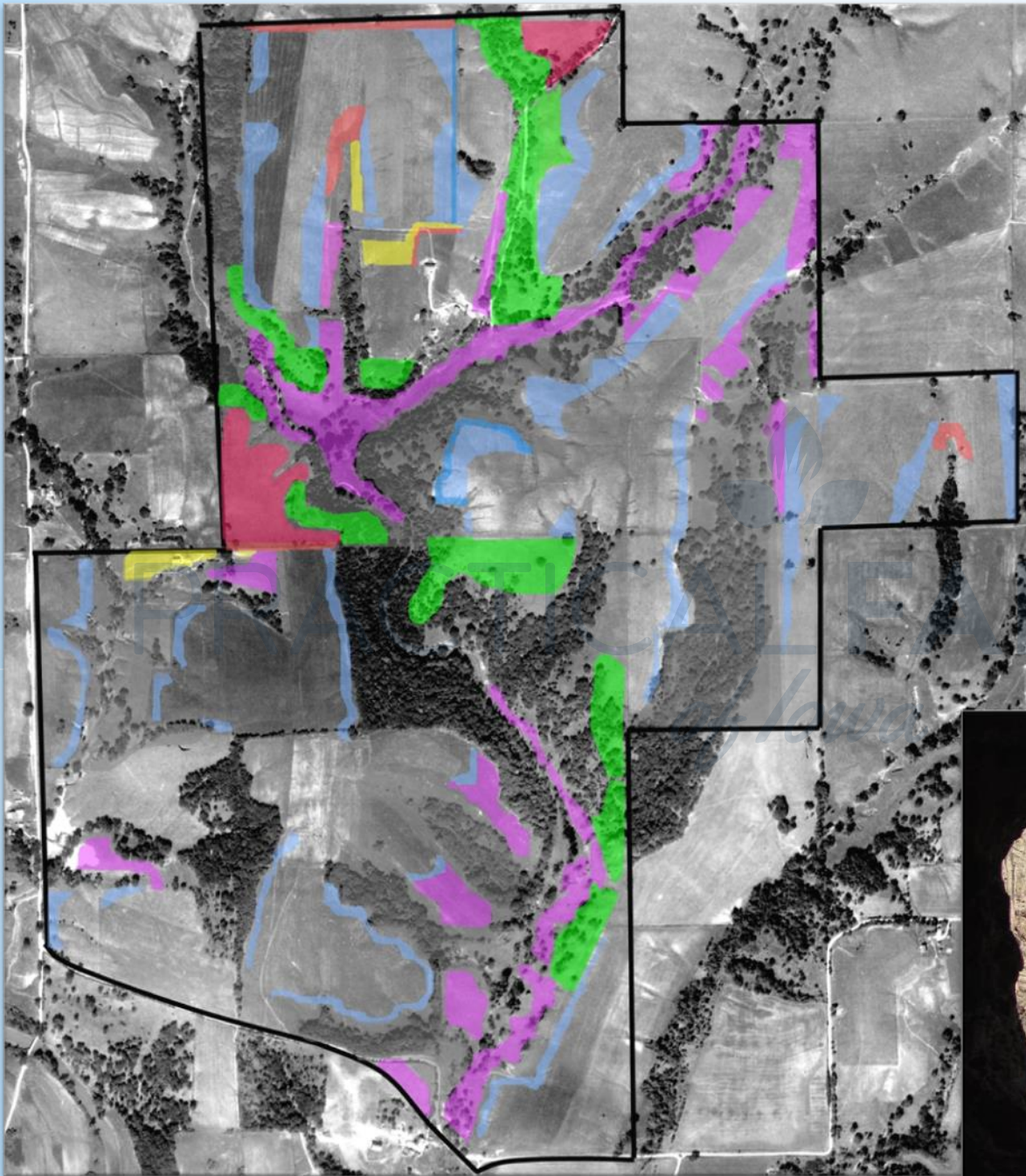


Oak Savanna Recreation

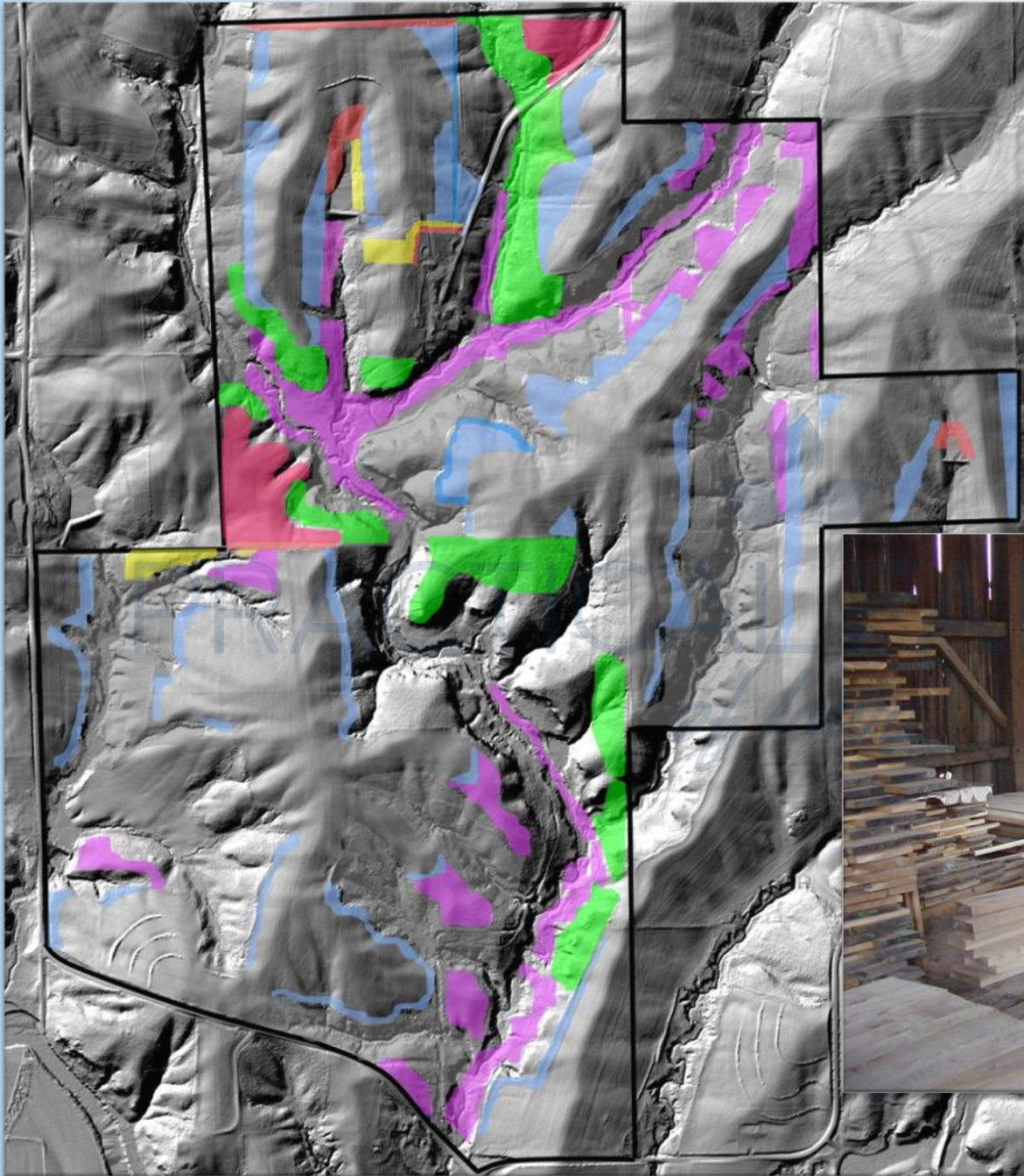
- Native forb and grasses establishment
- Plant oaks and shagbark hickory



Overlay of activities on 1950's photo



Overlay of activities on LIDAR photo



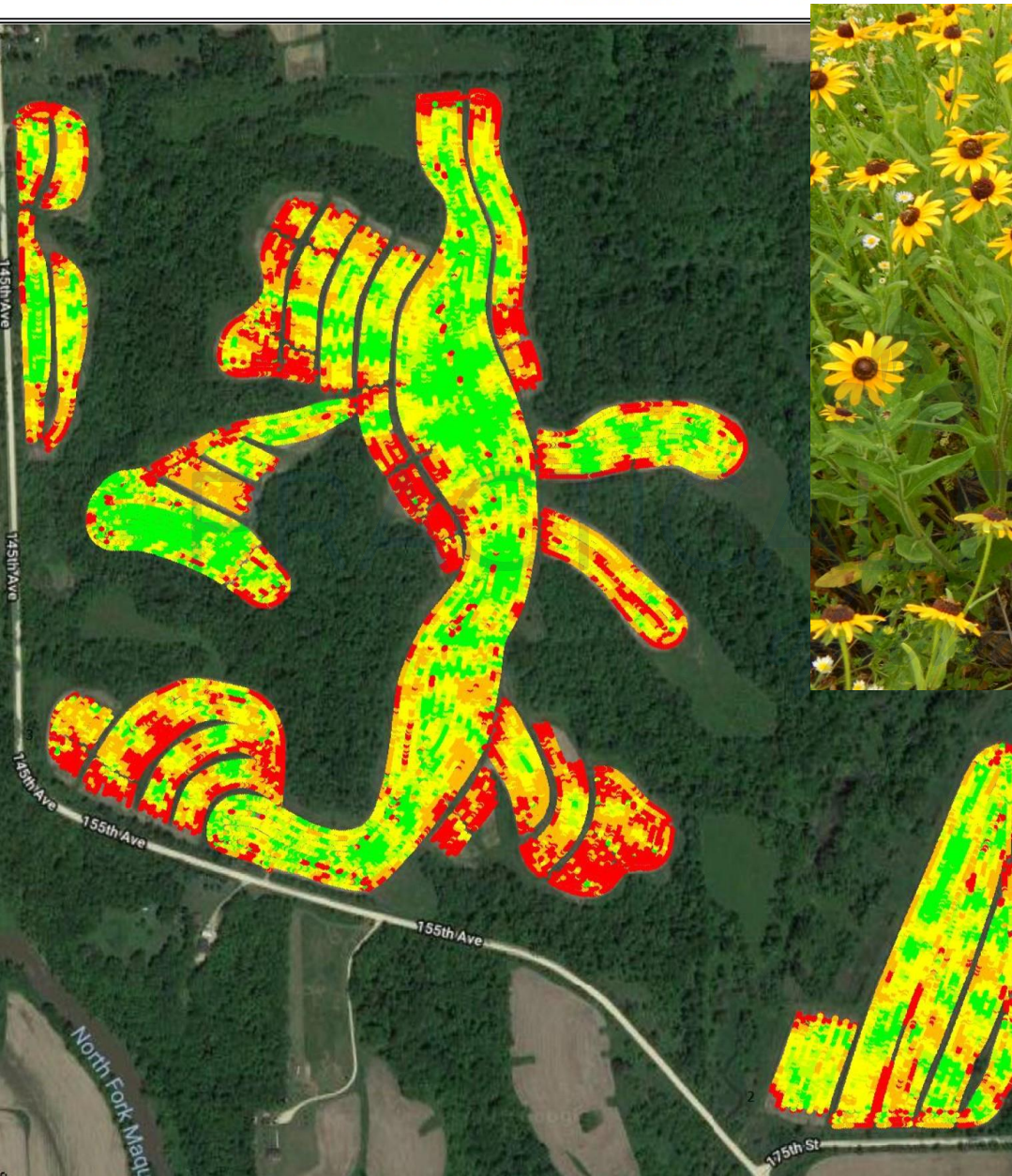
Use of Field Yield Maps

Gossman North--Soybean--2018



Use of Field Yield Maps

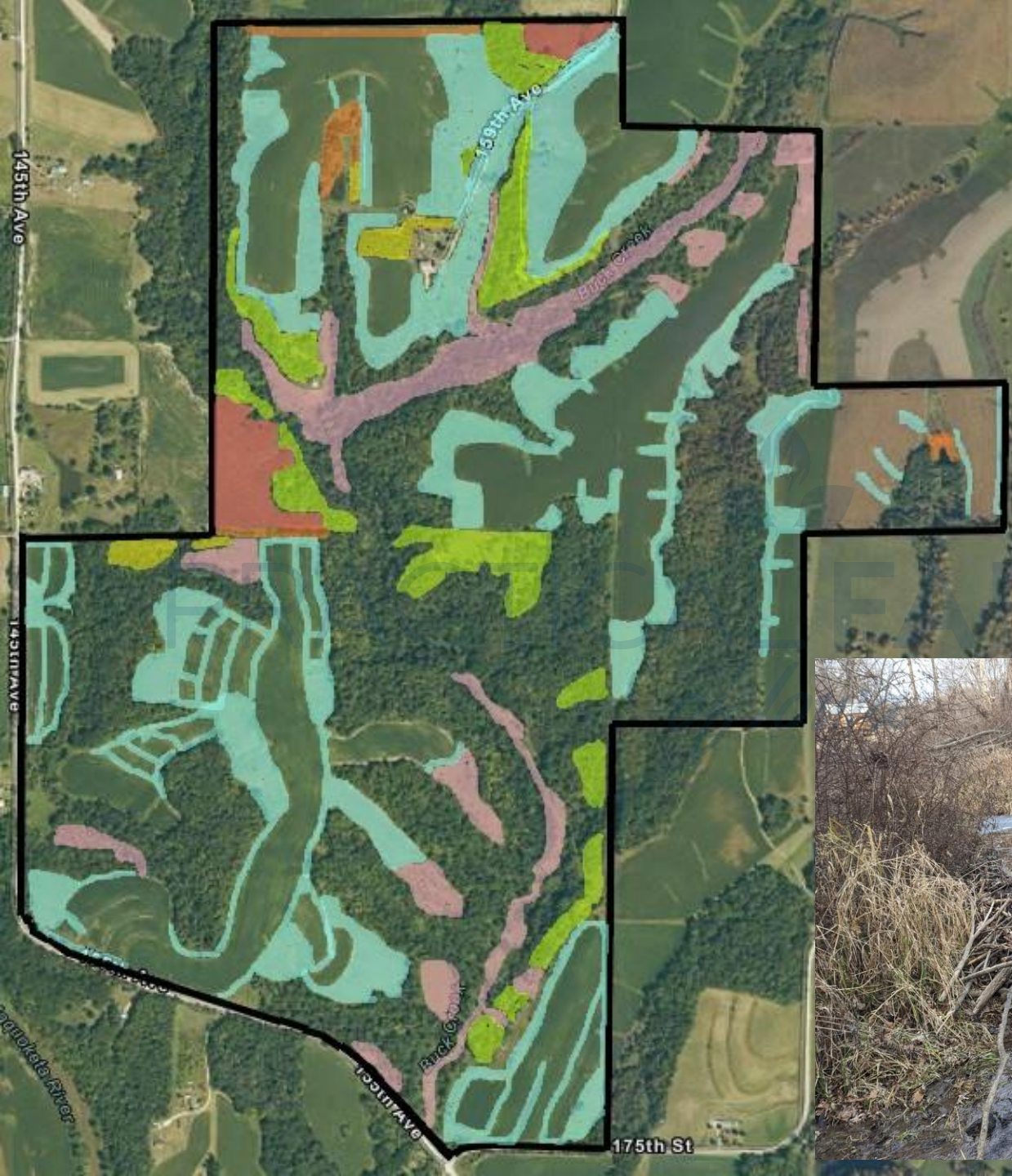
Gossman--Corn--2018



**This was the
plan**



**This was the
result
Always look
to adjust
and change!**



FARMERS



Farm Income

- Crops – Grains and Timber
- Hardwood Lumber business
- Conservation Stewardship Program (CSP)
- Conservation Reserve Program (CRP)
- Environmental Quality Incentives Program (EQIP)
- Wildlife Habitat Incentive Program (WHIP)
- Other cost share programs for conservation

Diversify!

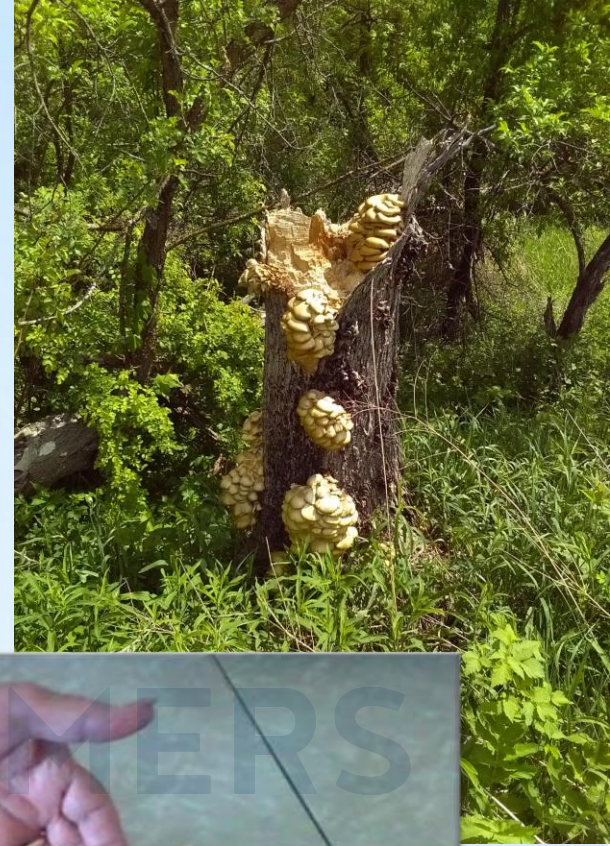
Farm Income

- Lumber sales
 - On the stump
 - Logs
 - Prepared lumber
 - Wood chips / bark



Farm Income

- Other potential income
 - Mushrooms
 - Wild herbs (like ginger)
 - Ginseng
 - Honey
 - Journalism



Illinois Math and Science Academy

- **Mentorships**
 - Photo journalism
 - Botany
 - Archaeology
 - Forestry
 - Ichthyology
 - Ornithology
 - Computer aided mapping
 - Endangered species research
 - Geology
 - Soil science



Illinois Math and Science Academy

- One Week Intersessions
 - Outdoor winter survival
 - Environmental analytical chemistry



University of Northern Iowa

- **Field Days**

- Soil sampling and profiling
- Cave mapping and chemistry investigations



Hunting Program

- Deer management plan
- Hunt masters on shotgun weekends
- Bow hunters – exclusive zones
- Free hunting
 - Permission required
 - Rules followed
- Most hunters volunteer
 - Burns
 - Tree planting
 - Prairie seeding

