

Fire and Savanna Management in the Lakeplain Oak Openings Region

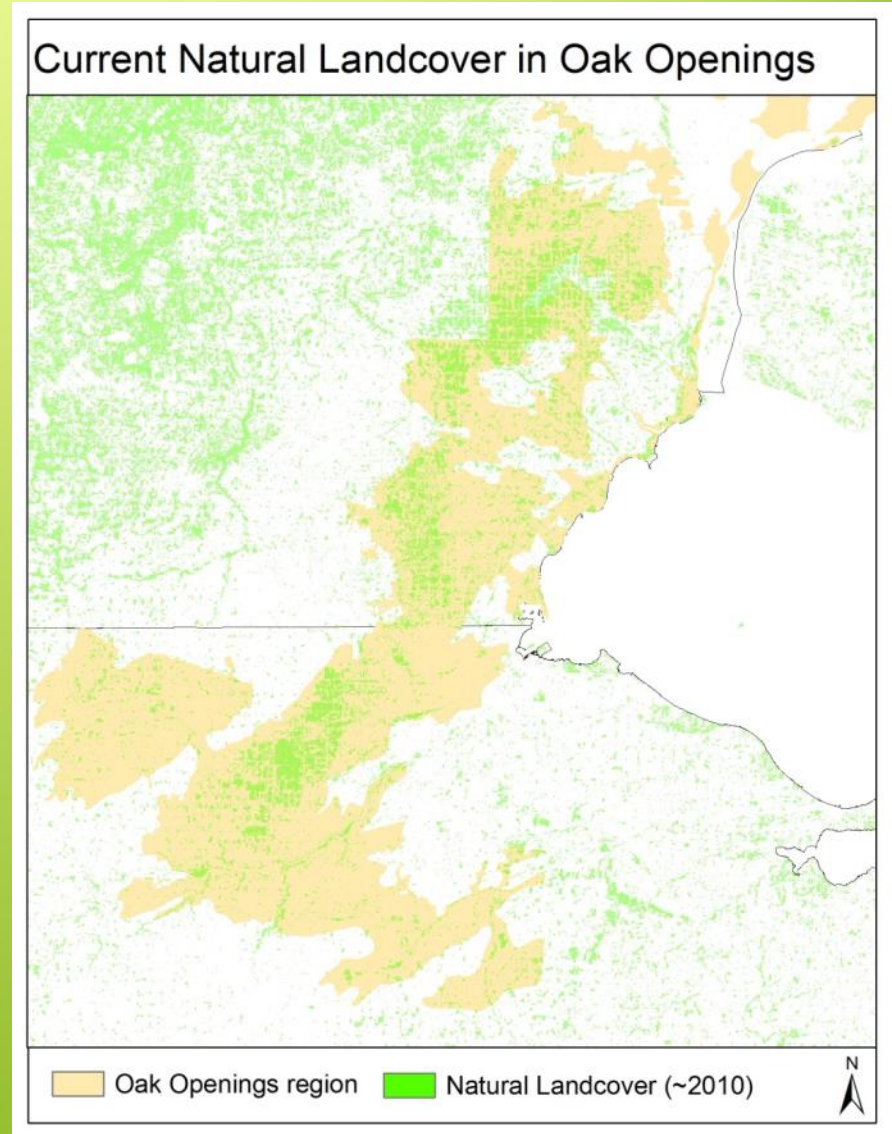


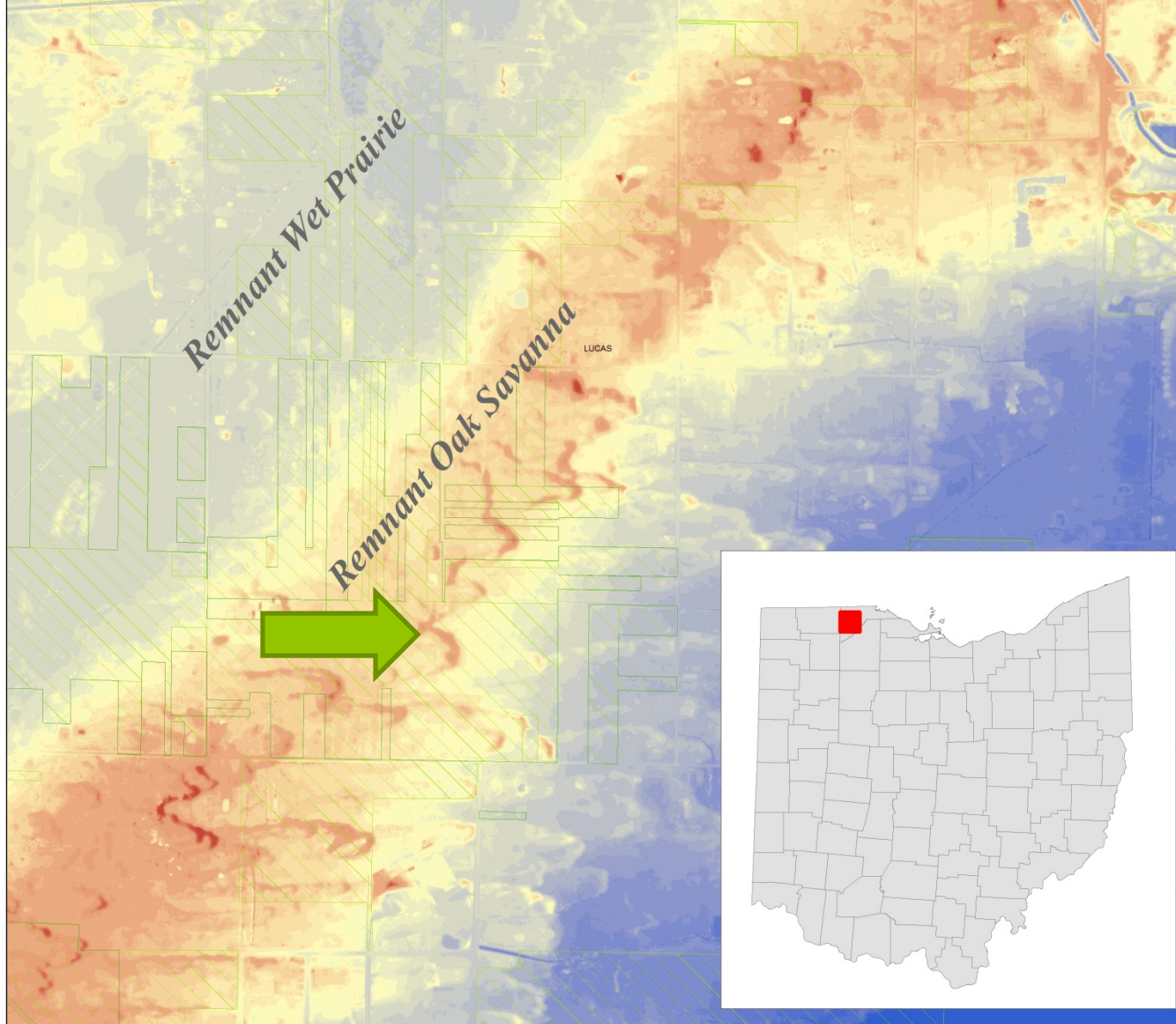
Objectives

- Highlight variables associated with fire and oak management and how we can use them.
- To tell you what I think I know
- Start a discussion where “prescribed burn” means more than just “intentionally burn”. It means burning with specific timing, interval and conditions to achieve a broad suite of management outcomes.

The Oak Openings

- Historic shoreline of Lake Warren
- 1300 square
- 9% of Western Lake Erie
- 36% of Maumee River
- Globally rare plant communities and species
- Higher concentration of diversity than anywhere else in Ohio





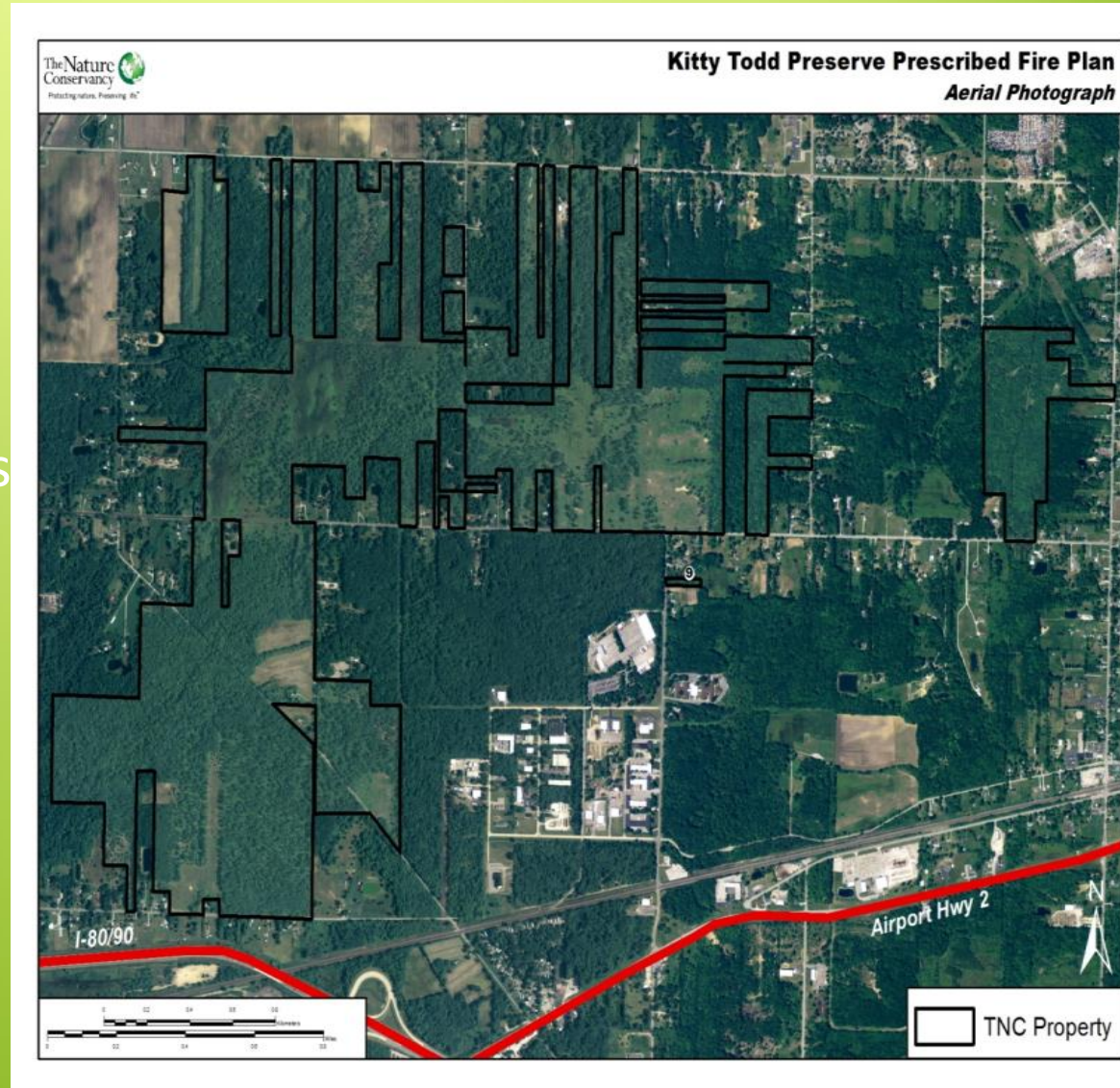
Legend

-  Conserved Lands
-  Kitty Todd Nature Preserve
-  High: 688m Elevation
Low: 650m Elevation



Threats to Oak Openings

- Fire suppression
- Invasive plants
- Fragmentation/development
- Ditch/drain wet prairies
- Lack of public understanding and appreciation
- Lack of sufficient protected land





1. Generally speaking Fire in Oak savannas are good

- Burn often, it is hard to do lasting damage to a savanna with fire
- Try not to burn the whole thing all at once





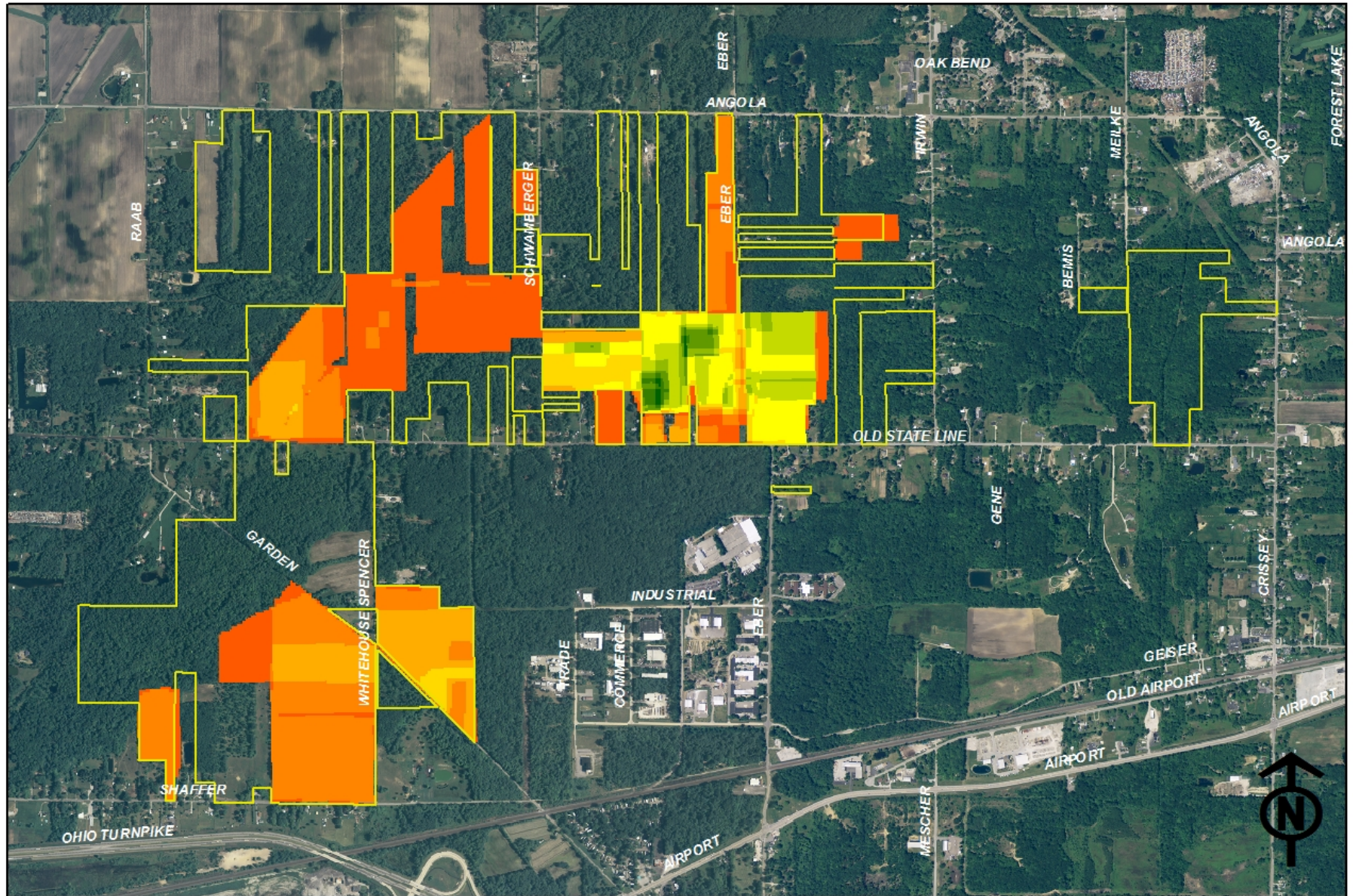
Lesson 2. Diversity is key and comes in many forms

- Season
- Weather day of burn
- Weather prior to burn – (i.e. days since rain)
- Return interval – it's an average
- Ignition pattern
- Unit boundaries



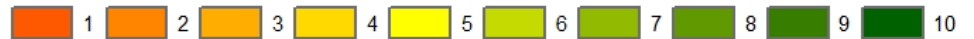


Kitty Todd Fire Frequency, 1987-2012



0 0.2 0.4 0.8 Kilometers

1987_2012 # of burns



3. We are managing systems not species

- There is almost always an assumption that fire is bad for species we are trying to protect
- The default conclusion is: “Don’t burn when the target species is present”
- This forces managers to simplify their regime, which simplifies diversity, which makes communities less resilient and creates a negative feedback cycle

Box Turtle



Ohio Karner Blue Butterfly

Overview



- Extirpated 1988
- Reintroduced 1998
- 8,155 individuals have been released at 5 sites
- 2 sites have not persisted
- 2 new sites established through natural migration
- Yearly Monitoring observes around 100 individuals
- Target = 5 populations of 1,000

Federal involvement implications

- Permitting requirements may limit innovation, implementation and adaptive management
- Other stakeholders affected by our management decisions.
- Short term benefits to the individual vs. the long term benefit to the population
- Assumption that all individuals within burn units die.
- We are on the same team and need to act like it
- Negative effects of monitoring the species?
- Reintroduction or repopulation before managers are ready

Black Oak/Lupine Barrens



Midwest Sand Barrens



Pin Oak/Swamp White Oak Sand Flatwoods



Oak/Blueberry Forest



Mesic Sand Tall grass Prairie



Lesson 4. In the absence of fire nutrients accumulate in the soil

- Plants naturally fix carbon
- Carbon (aka organic matter) builds up in soil retaining nutrients and water
- Savanna plants compete best when there are few nutrients and little water
- In Savannas nutrients are bad



Wild Lupine

The Oak Openings Region of Northwest Ohio



Bracken Fern

31 10:40AM





Lesson 5. Patience is a virtue

- There is no fast way to grow a 100 year old oak tree
- These systems took 150 years to screw up and may take about that long to restore
- Your measures of success should account for changes that are achievable in your career while acknowledging that the trajectory you set, might not fully achieve goals for 50 years.
- You can push your agenda with supplemental management







