



METROPARKS
TOLEDO

PINE MANAGEMENT IN OAK OPENINGS PRESERVE

Tim Schetter and Tim Gallaher

2/9/2019



OAK OPENINGS PRESERVE (4,180 acres)

176 parcels acquired between 1931 and 2015

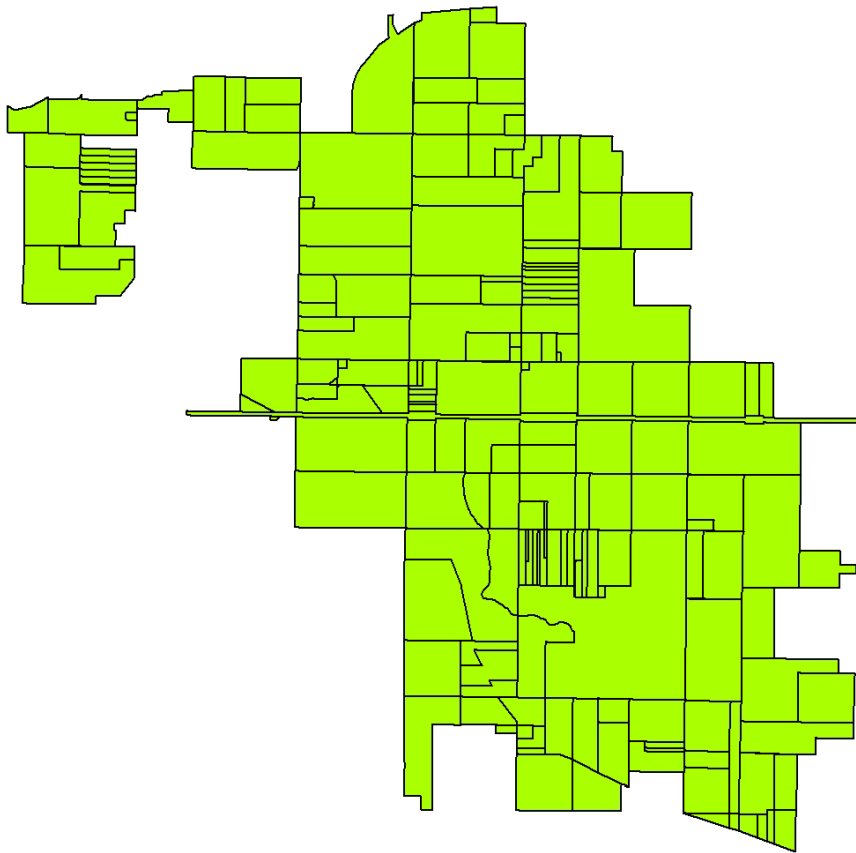
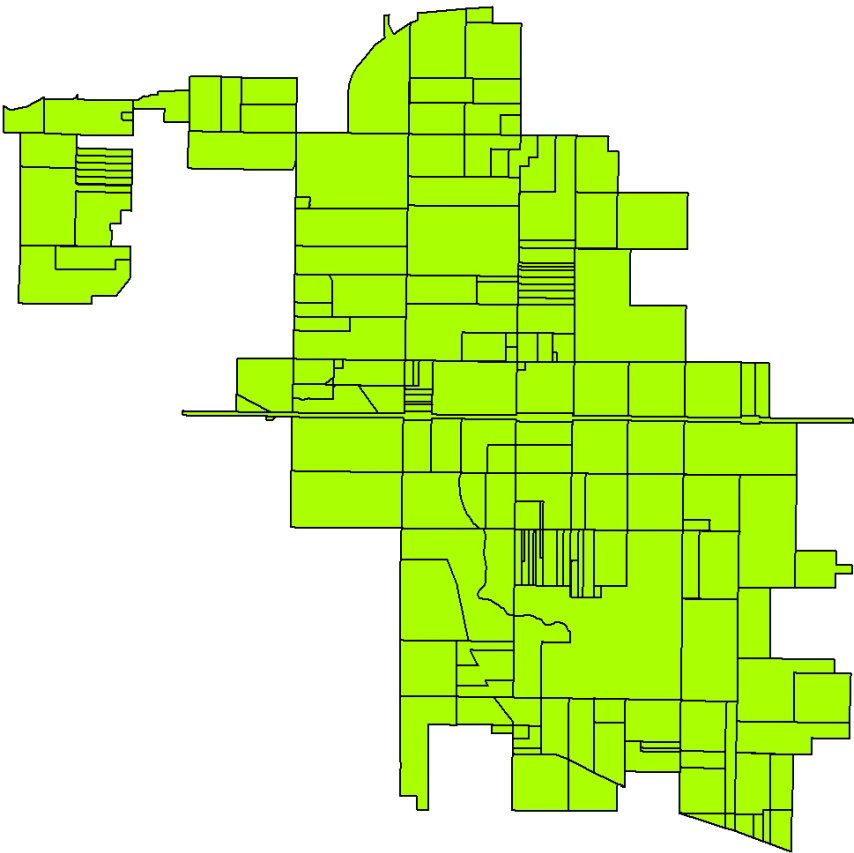


photo: Art Weber



OAK OPENINGS PRESERVE (4,180 acres)

176 parcels acquired between 1931 and 2015



PARK IS LARGER THAN:

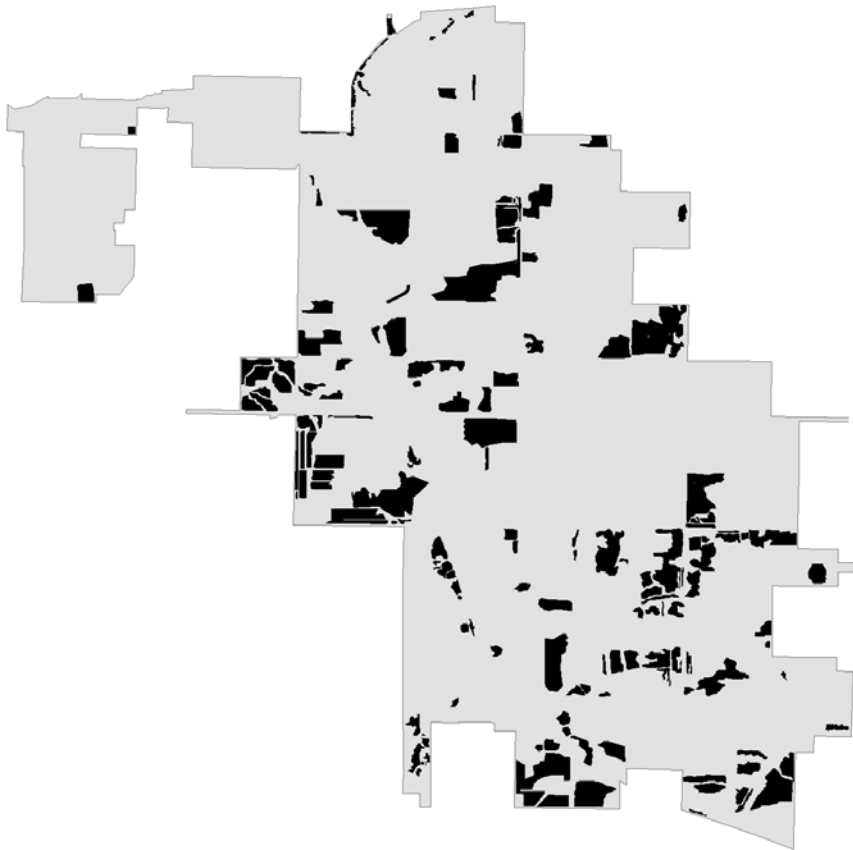
- Howard Marsh (995)
- Blue Creek (676)
- Pearson (627)
- Secor (610)
- Wildwood Preserve (493)
- Swan Creek Preserve (451)
- Side Cut (321)

COMBINED!



HISTORY OF PINES AT OAK OPENINGS PRESERVE

481 acres of mixed conifers: planted 1930 – 1976



Why were they planted?

- Best management practice (at the time)
- Aesthetics
- Soil stabilization
- Future revenue for park operations

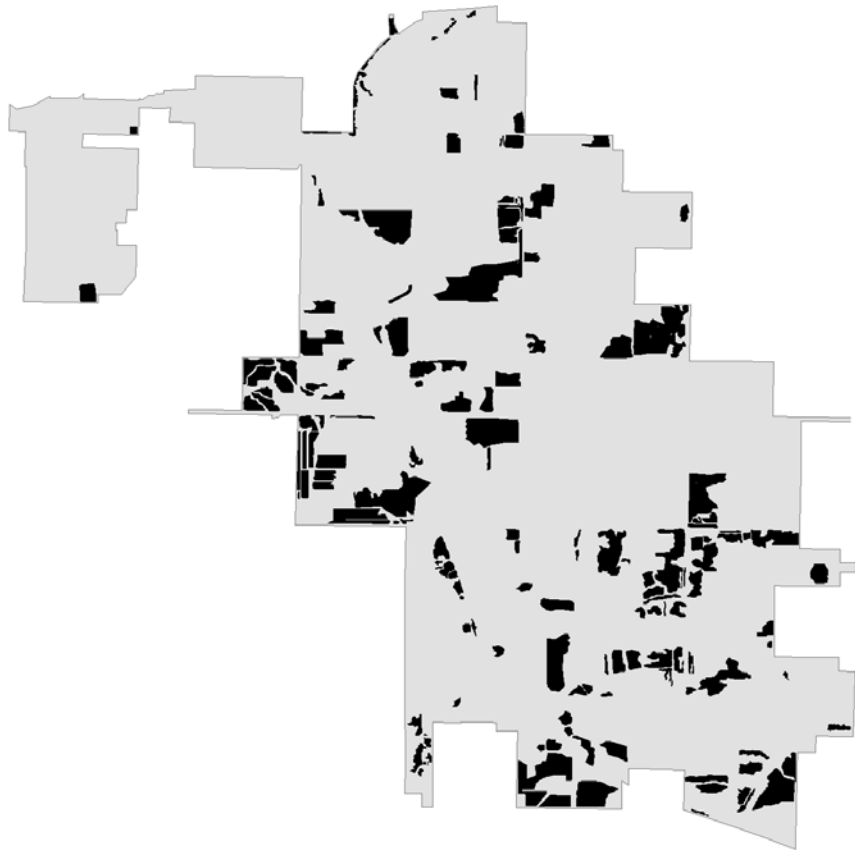


Civilian Conservation Corps (photo: nps.gov)



HISTORY OF PINES AT OAK OPENINGS PRESERVE

481 acres of mixed conifers: planted 1930 – 1976



What was planted?

- White Pine
- Red Pine
- Jack Pine
- Austrian Pine
- Scotch Pine
- White Spruce
- Norway Spruce
- Colorado Spruce
- Douglas Fir



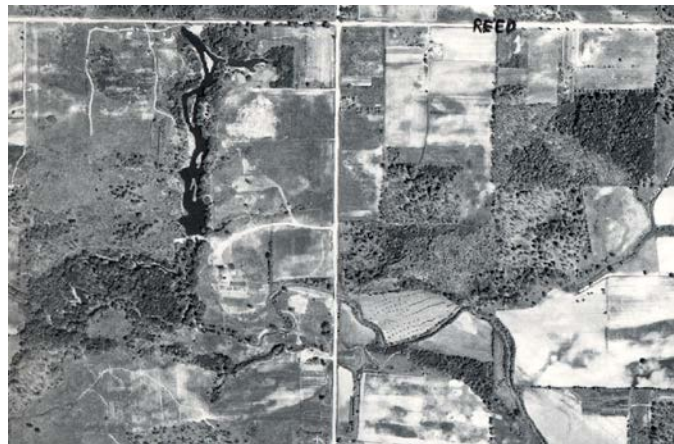
Civilian Conservation Corps (photo: nps.gov)



HISTORY OF PINES AT OAK OPENINGS PRESERVE



Year: 1939



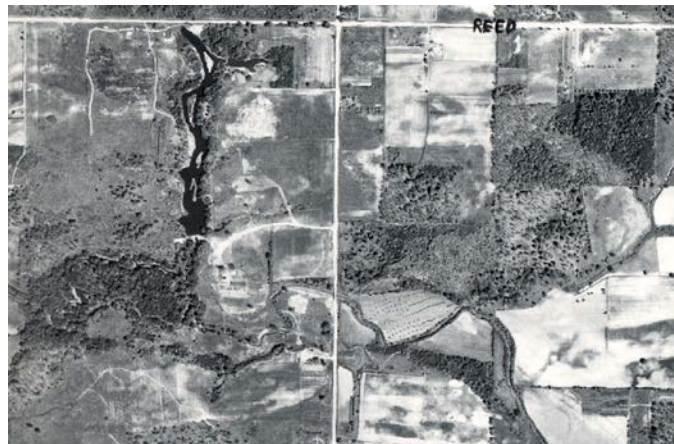
bottom photo: ohiohistorycentral.org



HISTORY OF PINES AT OAK OPENINGS PRESERVE



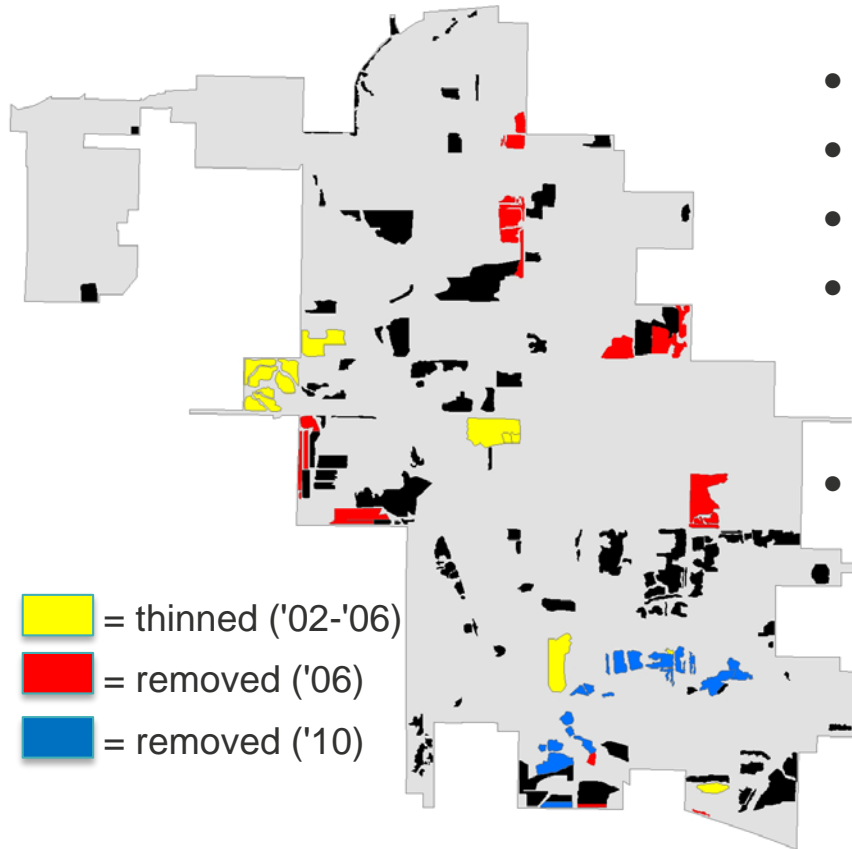
Year: 1939



bottom photo: ohiohistorycentral.org



CONIFER MANAGEMENT HISTORY

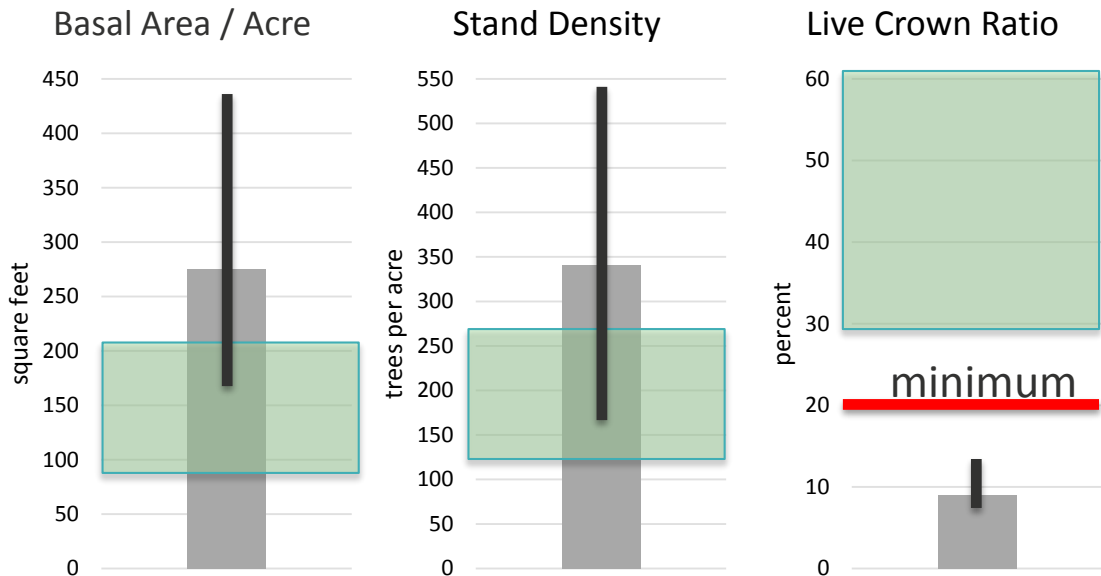


- Before 2002: no management
- 2002 to 2006: 157 acres thinned or removed
- 2010 Tornado: 55 acres destroyed / removed
- After 2010: 395 acres of conifers remain (many stands in very poor condition)
- Today: 464 acres prairies & savannas restored



CONIFER STAND CONDITION ASSESSMENT: RED PINES

- 19 variable-radius plots sampled in 2018
- Mean Tree DBH = 12" (range 11-14")



Gray Bar = sample mean

Black Line = sample range

Green box = recommended range (from U.S. Forest Service)

Example: The "Spot"



bark beetle damage

(photo: U. of Minnesota)



CONIFER MANAGEMENT RATIONALE

- Many conifer stands now in rapid decline
- Without management:
 - stands will continue to collapse
 - many stands will succeed into dense maple forests
 - future management will become unfeasible





CONIFER MANAGEMENT BENEFITS

- Hazard Mitigation
- Aesthetics
- Access
- Invasive Species Management
- **Wildlife Habitat**
- **Ecological Benefits**





CONIFER MANAGEMENT BENEFITS: OAK REGENERATION



Oak regeneration after pine removal

(Photo: Reed Rd. & Wilkins Rd.)






ELSEVIER

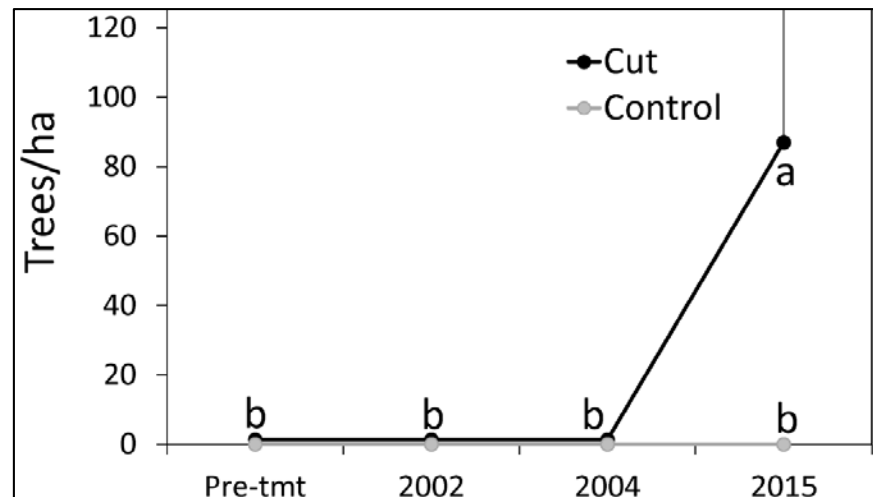
Biological Conservation

Volume 212, Part A, August 2017, Pages 265-273



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CONIFER MANAGEMENT BENEFITS: NATIVE PLANT DIVERSITY



Native plant diversity increases after pine removal
(Photo: Reed Rd. & Wilkins Rd.)



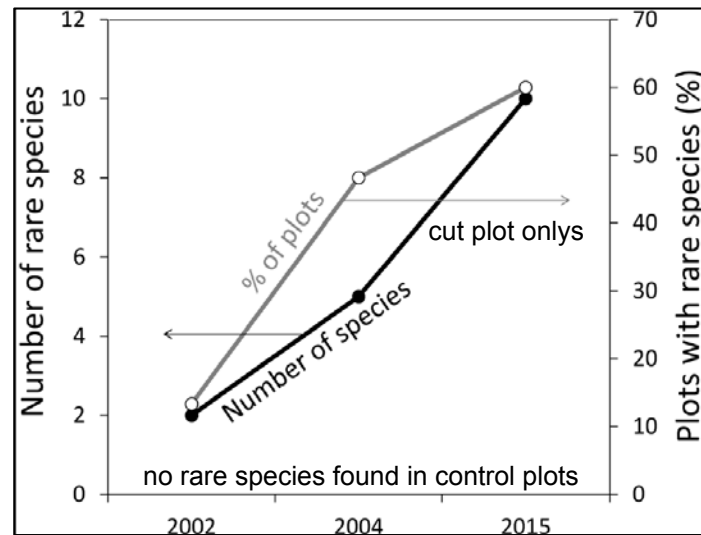
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CONIFER MANAGEMENT BENEFITS: POLLINATOR HABITAT









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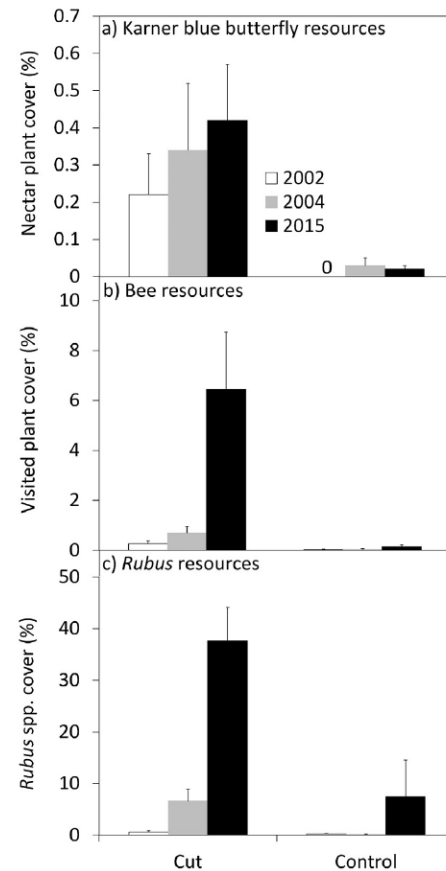
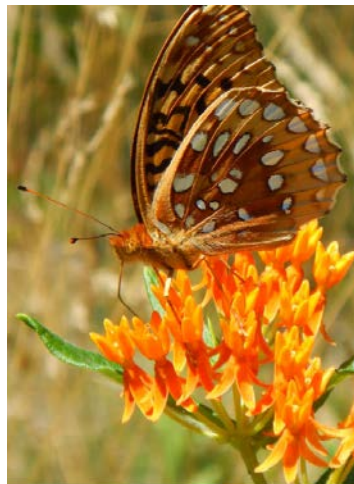
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CONIFER MANAGEMENT BENEFITS: REPTILE & AMPHIBIAN HABITAT

“Pine plantations lack many of the attributes of suitable habitat for our native amphibians and reptiles and none of our native species are adapted to life in pine habitats.”

“Restoration of pine dominated areas, through thinning or removal, should increase the suitability of habitat for many of our native species.”

- Gregory Lipps, Program Manager
Amphibian & Reptile Conservation
Ohio Biodiversity Conservation Partnership
The Ohio State University



Eastern Hog-Nosed Snake*



Woodland Box Turtle*

*Designated as ‘Species of Concern’ by Ohio Division of Wildlife
(photos: Ohio Division of Wildlife)



CONIFER MANAGEMENT BENEFITS:

BIRD HABITAT (ESPECIALLY FOR SPECIES OF CONSERVATION CONCERN)

Partners In Flight Landbird Conservation Plan (2016):
Upper Mississippi River / Great Lakes Region Joint Venture

Common Species in Steep Decline:



Field Sparrow



Grasshopper Sparrow



Eastern Meadowlark

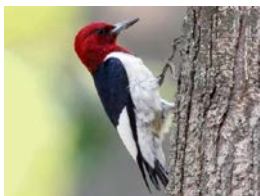
Watch List Species:



Henslow's Sparrow



Eastern Whip-poor-will

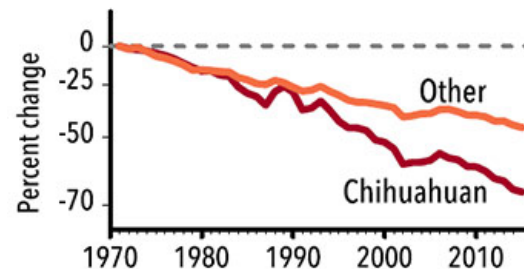


Red-headed Woodpecker

“During the past quarter century, grassland birds have experienced steeper, more consistent, and more widespread population declines than any other avian guild in North America.”

- Vickery et al., Cornell Lab of Ornithology

Grassland Species



Data: U.S. Fish and Wildlife Service

All Species found in Oak Openings Preserve
(photos: allaboutbirds.org)



CONIFER MANAGEMENT PLAN: OBJECTIVES

- Salvage timber from dead & collapsed pine stands
- Restore Oak Openings habitat
- Promote the health and vigor of culturally significant pine stands

All proceeds from the sale will be used to manage and restore sites at Oak Openings Preserve





CONIFER MANAGEMENT PLAN: TIMBER STAND IMPROVEMENT VS REMOVAL



Timber Stand Improvement:

Used to promote health & vigor of remaining pine stand through selective removal of suppressed or poorly formed trees

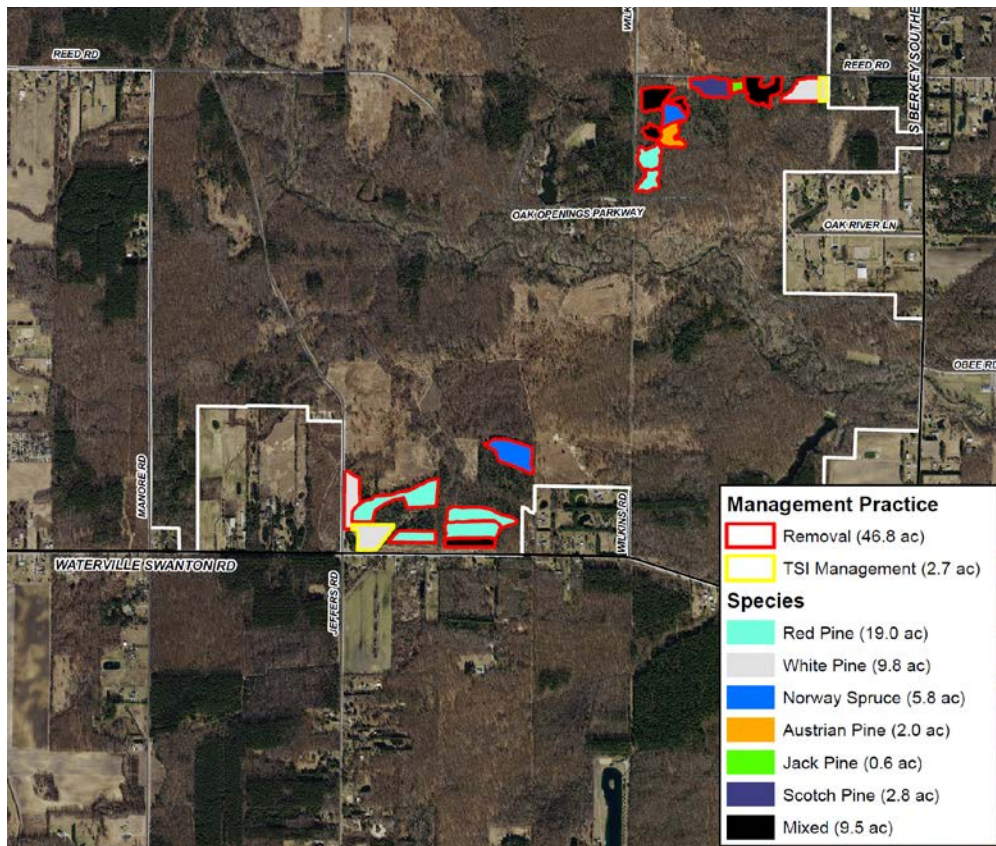


Complete Removal:

Conversion to native oak woodlands, savannas and prairies



CONIFER MANAGEMENT: 2018-2019 (50 total acres managed)

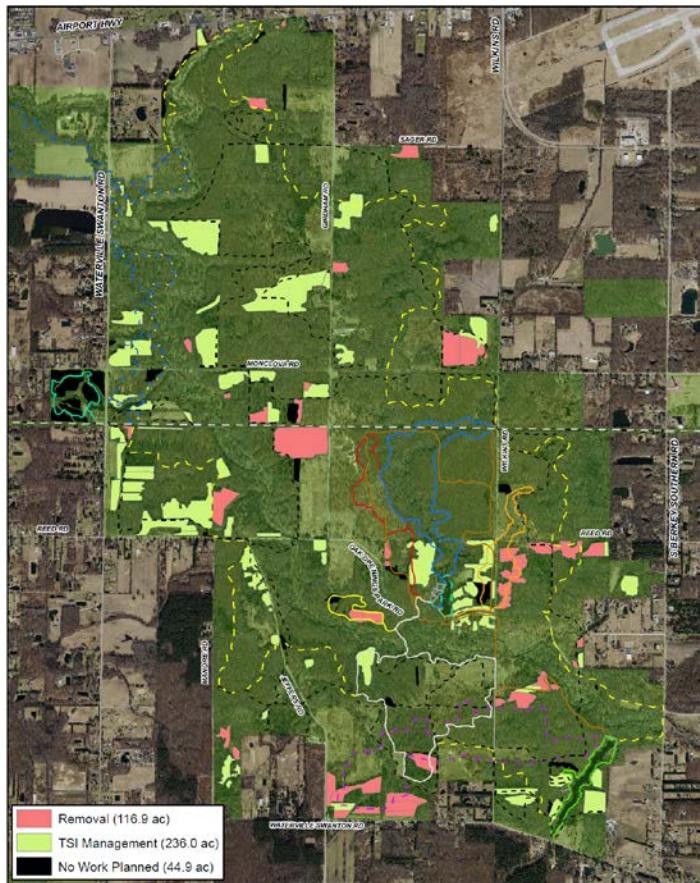


- Timbering completed by mid-February
- Stump & slash removal ongoing
- Selective seeding (pollinator focus)





CONIFER MANAGEMENT LONG-RANGE PLAN



348 acres remain (after 2018-19 management)

- 233 acres: timber stand improvement
- 70 acres: removal
- 45 acres: no management

Future of Pines at Oak Openings Preserve?

- Only white pines likely to persist long term
- No new pine plantings in natural areas
- Pines may be planted in park developed areas



ACKNOWLEDGEMENTS

Pine Condition Assessments

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