Wildlife Sightings **Newsletter of the Iowa Chapter of The Wildlife Society**

Volume (2016), Issue 2 **Winter 2016**

Oak Savanna Restoration

Management Corner

In recent years a variety of agencies across the state, from the Iowa DNR and County Conservation Boards to the U.S. Fish and Wildlife Service and the U.S. Army Corps of Engineers have been involved in oak savanna restoration projects on both public and private lands. Throughout the Midwest it's estimated that only 0.02% of the original oak savanna remains, making this one of the most endangered ecosystems on the planet. Many of these remnants today are tiny and isolated, often overgrown with small trees and shrubs.

The oak savanna ecosystem has been described by some as prairie with scattered trees - burr oak and less frequently white oak trees. Historical accounts of 19th century surveyors referred to them as oak groves or oak openings, generally distinct from heavily wooded areas. In the past oak savannas were described, not as truly stable ecosystems at all, but transitional zones (ecotones) between tallgrass prairie ecosystems and deciduous forests – mixtures of grasses, forbs, and trees that wax and wane with changing climate conditions and fire regimes.

Today, most plant ecologists would agree that the suite of herbaceous understory species found within oak savannas across the Midwestern region, are unique to this environment of dappled sunlight and partial shade. While species of both the tallgrass prairie and the deciduous forest may

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be found within oak savannas there are many plant species which express their greatest abundance within the savanna and are only marginally found within open prairie or closed forest environments. Savanna indicator species to keep an eye out for include things like purple milkweed, horse gentian, purple giant hyssop, starry campion, and pale Indian plantain. A couple days in the field with a good plant ID guide can be eye opening. I know I've come to realize that many of the southern Iowa "forests" I've worked and played in for years are actually overgrown and degraded oak savanna remnants.

Purple milkweed. The presence of this species is a good indicator for oak savanna restoration potential.

Pale Indian plantain. Another good oak savanna indicator species.

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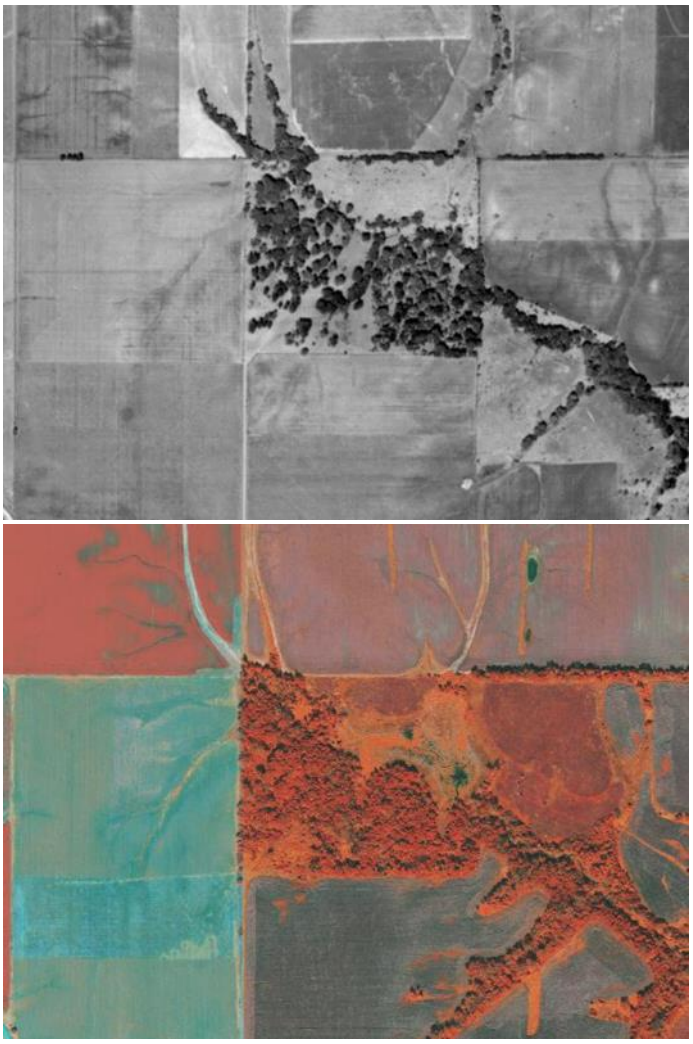
Historical accounts tell of Native American tribes frequently burning off both prairies and savannas up until the time of Euro-American settlement (roughly 1840 in Iowa). Although this land management practice was greatly diminished after the mid-19th century, some burning of grasslands and wooded acres continued up until about the 1940s. At the time of settlement Iowa "forests" were described as a landscape that could be traversed by a horse and rider at full gallop (much different from most upland forests that are found in the Midwest today). Today, remnant oak savannas that are not burned become choked with understory trees and woody shrubs. Shade tolerant ground cover species flourish while savanna species (adapted for more open sunlit conditions) are dramatically reduced. While native woody species such as eastern red cedar, slippery elm, black cherry,

This type of Iowa "forest" would be more familiar to early pioneers than to most people today.



Aerial photos are helpful in assessing savanna remnant potential. The top photo was taken in central Iowa in the 1930's. The lower photo shows woody encroachment of the same area in the 2000's. http://ortho.gis.iastate.edu

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and ironwood are common invaders of oak savanna remnants, land managers today are also faced with a host of exotic species that flourish in the absence of fire, including tatarian honeysuckle, autumn olive, common buck-thorn, multiflora rose, and garlic mustard.

Common management practices to restore degraded savannas include removing under-story trees (generally anything that's not an oak or the occasional shagbark hickory tree), spot spraying invasives, and returning fire to the ecological process. Most controlled burns are conducted in the fall after leaf drop to ensure an adequate fuel source. Savanna fires in overgrown remnants that have lost much of their grass and forb component can be slow, smoky ordeals. One manager I know

Controlled burn in an oak savanna remnant.

Savanna fires clear the way for new oak trees to regenerate.

describes an Iowa woodland burn as having a fire line that an old cow could get up and step over if it got too close. Burn crews typically start lighting things up by late morning, after mois-ture levels drop. It's wise to plan for an all day affair - bring a lunch to the field and maybe supper too. Savanna fires are usually conduct-ed every 3 or 4 years, but some managers burn annually. The ecosystem response can be quite dramatic with increased growth and diversity of native savanna plants.

While a good deal of research has been conducted on the plant response to savanna restoration there is still much to learn about the effects of savanna management on wildlife

Oak Savanna Restoration

Before and after savanna restoration. Timberhill Savanna. Private land. Decatur County, Iowa.

Before and after savanna restoration. USACE. Lake Red Rock, Marion County, Iowa.

Oak Savanna Restoration

species. Presumably, restoring the landscape to pre-settlement conditions would be "good" for native wildlife populations but the effects are largely unknown. Most studies of this kind have looked at bird populations. For example, we know that species such as Wood Thrushes and Ovenbirds have been shown to decline in numbers after savanna restoration. Other birds such as Red-headed Woodpeckers, Orioles, Indigo Buntings, Mourning Doves, and Bobwhite Quail are more common in areas after savanna restoration. Little however has been documented concerning the effects of savanna management on mammals or herpetofauna. Although savanna restoration efforts are becoming more common we still have much to learn about their effects on the landscape.

Red-headed Woodpecker (above) and Indigo Bunting (below). Both species benefit from oak savanna management.

Frequent burning in savannas prevents woody growth and promotes and understory of forbs and grasses.

Pete Eyheralde is an Assistant Professor of Biology at William Penn University.

Warm, rainy spring weather speeds up Scaup migration

Research Corner

Researchers from Western University, along with several state and federal wildlife agencies studied the movement patterns of Lesser Scaup marked with satellite transmitters, to see how environmental conditions affected spring migration. They wanted to see how accurate the Waterfowl Breeding Population and Habitat Survey (originally designed to monitor Mallard migrations) was in estimating Scaup populations.

Female Lesser Scaup.

Publishing in a 2016 Journal of Wildlife Management, Finger et.al. report that in records of waterfowl migration from 1980 to 2010 the peak timing of Mallard and Scaup migration differed almost 70% of the time. Scaup typically moved northward over a 2 week period in early April, while the peak of Mallard spring migration was in late March and then again in late May. They monitored ducks that were captured and marked in Ontario Canada, as well as Iowa, Illinois, and Pennsylvania in the U.S.

Female Lesser Scaup with satellite transmitter attached.

The authors used competing environmental models to test variables of precipitation, temperature, and ice cover on the timing of spring migration, both at the local level and landscape scale. Their results indicate that Scaup in the prairie states migrated north earlier and faster in springs with warmer temperatures and greater amounts of rainfall. Both of these environmental factors can influence the amount of available wetland habitat along the migration route and how much energy the birds will have for mating and egg laying when they reach their breeding grounds. The authors also suggest that the surveys designed for estimating the size of breeding Mallard populations would be inaccurate for assessing Scaup populations.

Research Corner

Predation rates higher for pheasants nesting next to bare fields

Pheasant nest in CRP

Researchers from the University of Nebraska Lincoln assessed nest survival rates of Ring-necked Pheasants in response to landscape features surrounding nest sites. They set out to determine if conditions at large ecological scales, such as patch size or edge habitat influenced nest predation rates in reconstructed prairie sites. Study sites in Hitchcock and Hayes Counties Nebraska included 12 Conservation Reserve Program (CRP fields, and the surrounding landscapes (winter wheat, pastureland, corn, soy bean, and bare fallow acres) within a 2 km radius.

203 artificial pheasant nests (using chicken eggs) were constructed in CRP fields and monitored with camera traps. Nest predators in the study included raccoons, badgers, and skunks. Field data was analyzed with a hierarchical analysis of competing models (AIC) in Program MARK.

Publishing in a 2016 Journal of Wildlife Management, Simonsen and Fontaine report that predicted nest survival increased as the amount of CRP, winter wheat, and pastures surrounding CRP fields increased. Larger areas of bare fallow fields surrounding grasslands with artificial nests resulted in decreased nest success.

The authors suggest that while surrounding bare fields may increase nest density in grassland limited areas (making them more susceptible to predation), it is more likely that their results were due to nest predators finding alternative food sources in sites surrounded by grasslands or dense crop cover.

Camera trap photo: striped skunk predating nest.

Iowa TWS Fall Workshop Recap

On September 27 and 28, 2016, wildlife professionals and students from across Iowa gathered for a series of field trips at Big Marsh Wildlife Management Area, in Butler County, Upper Iowa University in Fayette County, and Capoli Ranch in Allamakee Count, as part of the annual Iowa TWS Fall Workshop.

Leopard frog spotted at Big Marsh WMA.

Our first day's planned radio telemetry demonstration and search for tagged wood turtles was a wash— literally , due to flooding at Big Marsh from the Cedar River. However, we did catch several garter snakes and leopard frogs on an impromptu herping hike and tour of the wildlife management area.

Later that evening, after procuring sustenance at the local watering holes in Fayette, the group gathered in a science lecture hall at Upper Iowa University to hear a talk given by Dr. Paul Skrade about his research on habitat selection by Cerulean Warblers in north east Iowa. We also toured the UIU science hall displays which included a live alligator snapping turtle and an amphiuma, both native to the south eastern United States.

Wednesday dawned cool and cloudy. Not ideal weather conditions for our planned search for timber rattlesnakes, but made the morning's campfire enjoyable for the WPU biology students camped at Volga River State Recreation Area.

We journeyed east to Capoli Ranch in Allamakee County, an amazing complex of goat prairies, oak savanna remnants, and forested bluffs along the Mississippi. Owner, Raleigh Buckmaster, a retired veterinarian, formerly raised fallow deer on the property, but in recent years has been working with the Iowa DNR to restore prairie and savanna,to improve habitat for the resident population of timber rattlesnakes (and big whitetail bucks). While touring the management projects at Capoli, Raleigh spoke of his decades of experience on the ranch and compared wildlife habitat management to airplane mechanics. Recalling the words of a former flight instructor, "If you find a problem, fix it now! You won't like the results if you wait."

Greg Schmitt, DNR Private Lands Biologist for northeast Iowa talked to the group about future research plans for the rattlesnake population at Capoli, deploying iButtons at den sites to monitor temperatures within and outside hibernaculams. These data would allow for a more accurate assessment of when the snakes enter dens in the fall or leave in the spring, for planning management activities like controlled burns.

Raleigh Buckmaster explains invasive tree removal while exploring a goat prairie at Capoli Ranch

Iowa TWS Fall Workshop Recap

Many in the assembled group were impressed by the amount of acres Raleigh burns each year, often just by himself. When asked about his strategies he said "Well, anybody that's been burning long enough will have their moments of terror… but mostly I use the slope of the land and firebreaks we've maintained over the years, watch the weather and the wind speed, and it all goes well."

One of the highlights of the tour was the opportunity to stand toe to root with one of the oldest trees in Iowa, a 500 year old eastern red cedar clinging to the rocky edge of the Mississippi River bluff.

No rattlesnakes were spotted on the chilly day's hike, but a return visit on a warm day next spring is a definite possibility for any ITWS member who are interested. Contact Pete Eyheralde (eyheraldep@wmpenn.edu) for more information.

Biology students at the Fall Workshop next to a 500 year old eastern red cedar tree.

Iowa TWS at work... Photos by ITWS members

Upcoming Events

- **The Stewardship Network** 2017 Science, Practice & Art of Restoring Native Ecosystems , 13-14 January 2017, East Lansing MI. For more information go to www.stewardshipnetwork.org

- **Iowa Association of County Conservation Board Employees (IACCBE)** Winterfest, 24 - 26 January 2017. Five Sullivan Brothers Convention Center, Waterloo, Iowa. For registration and more information, www.mycountyparks.com/Info/WINTERFEST.aspx.

- **Midwest Fish & Wildlife Conference**, 5– 8 February 2017 at the Lincoln Marriott Cornhusker Hotel in Lincoln, Nebraska. For registration and other information, visit www.midwestfw.org

- **National Pheasant Fest and Quail Classic**, 17– 19 February 2017, Minneapolis Convention Center, Minneapolis, MN For more information, visit www.pheasantsforever.org/Pheasant-Fest.aspx

Iowa Chapter of The Wildlife Society

Winter Meeting

Wildlife Management on Working Lands

15-16 February 2017

Quality Inn, Ames, Iowa

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2016-2017 Iowa Chapter The Wildlife Society Education and Information Committee Members

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