



Your Side of the Fence

Winter 2019

A Publication of the Oklahoma Department of Wildlife Conservation's Private Lands Section

Welcome Bats to your Property

By Melynda Hickman, Wildlife Biologist



Bats are extraordinary insect eaters that feast on moths, beetles, and even biting insects like mosquitoes using echolocation, a mixture of active

sonar and special ear features that allow bats to "see" with sound. While some of the insects hunted by bats are considered a mere nuisance, others can cause damage to crops or landscapes. With the "free pest control" bats offer in mind, many landowners install bat boxes to welcome bats to their properties.

Oklahoma bats may seek out a variety of daytime retreats including caves, rock crevices, old buildings, bridges, mines and trees. Some bat species prefer large colonies while others prefer a more solitary lifestyle. Twenty-four species of bats have been documented in Oklahoma; seven species are most likely to occupy bat houses in urban and rural areas. Two factors – bat house

location and design – will greatly influence whether or not bats will move in to the house.

Whether you purchase a bat house or build your own, the most successful bat houses have roost chambers at least 20 inches tall and 14 inches wide. Rocket boxes, a relatively new pole-mounted design with continuous 360 degree chambers, should be at least 3 feet tall. All houses should have 3 to 6-inch landing areas extending below the entrances. Houses with at least three chambers are more likely to provide appropriate ranges of temperature and better accommodate the larger numbers of bats typical of nursery colonies. Additionally, a vent is required on the front of the box. Ventilated houses with tall chambers allow bats to move vertically to find the best daily and seasonal temperatures.

When selecting materials for a



Bat houses, including this new "rocket box" design, are a great way to invite bats to your property. (Joe Nabonne/ODWC)

bat house, pressure-treated wood should be avoided as it contains chemicals that may be toxic to bats. Bats like dry, warm, draft-free houses, so careful caulking and painting are important. In Oklahoma, houses need to be painted a tan or light brown to help absorb a little heat, but not too much. Do not use oil-based products. Do not use metal mesh on landing and inside surfaces as it will tear at the bats wings and feet. Use only UV-resistant plastic

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mesh or put one-quarter to one-half-inch grooves on the wood surfaces for footholds. Recommended mesh size is one-eighth or one-quarter-inch mesh.

Sun exposure and heat absorption must be carefully considered when bat houses are installed. Houses should face southeast for the most sunshine and warmth. Bat houses should be within one-quarter of a mile of permanent fresh water. Single-chambered houses should be mounted on wooden or masonry buildings, which will help to buffer temperature changes. Multi-chambered bat houses should be placed on metal or wooden poles, at least 20 to 30 feet from the nearest tree branches or utility wires. Predators can use trees and wires to more easily hunt bats. The bottom of the bat house should be 12 to 20 feet above the ground. If a wooden pole is used, a predator guard is needed to keep snakes and raccoons from climbing the pole to eat the bats.

Even with the right design and



These seven bat species are known to accept bat boxes:

Big Brown Bat (statewide)

Tri-colored Bat (statewide)

Evening Bat (statewide)

Little Brown Bat (east)

Cave Myotis (west)

Mexican Free-tailed Bat (west)

Pallid Bat (west)

location, it can take up to two summers for bats to start using the structure. If the bat house is still not occupied after two years, try a new location.

Construction plans for a rocket box and other bat house designs may be found at batcon.org.



Evening bats, like this one captured during a survey of Cimarron Hills WMA, can be found statewide and accept bat houses. (Jay-T Parrish/OKC Zoo)



Brandon Brown/ODWC

Act Now to Prevent Summer Farm Pond Fish Kills

By Jon West, Fisheries Biologist



Fish kills are often associated with raising water temperatures during the dog days of summer, but landowners can take steps to avoid these die offs

throughout the year.

Fish kills are often the result of decreased oxygen levels that can be traced back to excessive nutrients in the system. How do excess nutrients lead to a fish kill? Phytoplankton – microscopic, free-floating algae – use nutrients and sunlight for photosynthesis and expel oxygen as a byproduct. While phytoplankton produce oxygen during sunlight periods, they cannot during the night and even consume oxygen during this time. Because of this, oxygen levels may be sufficient throughout the day but can reach lethal levels by sunrise. If this happens, fish begin gulping air at the surface. Several overcast days in a row can lead to reduced photosynthesis and cause a fish kill.

Ponds with 10 feet of water are deep enough to have a stratified

layer in the summer where deeper, cooler water is depleted of oxygen and shallower, warmer water is oxygenated. In smaller ponds, a turnover – the sudden mixing of these two layers – can result in enough oxygen depletion to kill fish. Turnovers occur in the fall when the water temperatures are dropping, reaching a tipping point where the densities shift and the surface water is more dense than the deeper water. Rapid turnovers in ponds are usually associated with cold fronts and storms.

Adding some form of aeration to your pond can help with oxygen depletion issues. This can take the form of fountains, underwater diffusers, or agitators. Aeration not only provides an immediate supply of oxygen for fish, but also reduces stagnation, facilitates aerobic breakdown of organic materials on the pond bottom, and prevents wintertime freezing.

Controlling nutrients coming into the pond is another critical factor in fish kill prevention. Most of a ponds nutrient load comes off of the landscape through the watershed. Allowing buffer zone strips of grass to grow in the pond's drainage area can slow erosion, allowing sediment to drop out and trap nutrients before they reach the pond. Fencing livestock out of the watershed also helps reduce the nutrient load coming into a pond.

Controlling aquatic vegetation is another important part of pond management but it can be easy to go overboard. When applying herbicide for vegetation control, break the work into sections. It is recommended to treat only one-quarter of the pond per application allowing a week of rest in between applications. This will help avoid adding too much decaying matter into the pond at once and keep your oxygen in the water for the fish.



Maintaining buffer strips of grass around ponds can reduce nutrient runoff and prevent summer fish kills. (William McCoy/USFWS)

Landowner Spotlight

Wightmans Named Landowner of the Year

By Jeff Pennington, Regional Supervisor



Randi and Fred Wightman of Osage County were recently named the 2018 Landowner of the Year. The award acknowledges their effort, dedication and

passion for wildlife conservation on private lands.

The Wightmans own and operate a 1,750-acre ranch in east central Osage County. The property contains 1,100 acres of high quality cross timber habitat. The remaining 650 acres is comprised of tallgrass prairie. When first purchased in 1999, the property had been very heavily grazed for many years and the habitat quality was quite low.

The Wightmans enlisted technical assistance from the Natural Resources Conservation Service, the US Fish and Wildlife Service, and the Wildlife Department to improve wildlife habitat. The Wightmans executed the plans provided by these agencies, starting with resting the rangeland, then cross fencing the property to improve grazing management. In just a few years,

the rangeland fully recovered. Today the ranch has dominant stands of big bluestem and high quality native forbs. Some of the big bluestem clumps reach over seven feet in height.

A big challenge in maintaining the native plant communities on the Wightman's Harrier Hills Ranch has been the invasive plant species sericea lespedeza. Sericea is very persistent and difficult to control once established. If it is not controlled, it can become dominant on the landscape. Sericea control with broadcast herbicide applications can result

in the loss of all other forbs. Forbs provide the bulk of wildlife food, so they are vital for quality wildlife habitat. The Wightmans have controlled most of the sericea on the ranch with spot treatments instead of broadcast treatments. This requires a high amount of effort, but has retained forb diversity and controlled this pest plant.

The Wightmans increased fishing opportunity by installing flow through pipes and reworking spillways on six existing ponds. Next they constructed two very large new ponds. The new



Recognizing the 2018 Landowner Conservationist of the Year winners are, from left, ODWC Director J.D. Strong, Jeff Pennington, Fred and Randi Wightman, ODWC Assistant Director Wade Free, and ODWC Chief of Wildlife Alan Peoples.

impoundments were stocked and all ponds were managed for quality fish. The end result has been a great place for family and friends to wet a line.

Deer management has been another goal of the Wightmans.

They have enrolled in the Wildlife Department's Deer Management Assistance Program and collect all spotlight count and harvest data in a precise manner. They have also followed harvest recommendations aimed at addressing their challenges of

deer sex ratio and buck age. The Wightman family and friends have harvested 12 does for each adult buck to improve herd dynamics during their 18 years in the program.



Landowner Technical Assistance is Available across the State



Private Lands Biologists

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(580) 334-4459
- SW OK - Jeremiah Zurenda
(405) 397-1599
- Central Ok - Kyle Johnson
(405) 590-2584
- Eastern Ok - Rosalee Walker
(918) 607-1518

Enhancing wildlife habitat on your property can start with a call to the Wildlife Department's Private Lands Program. Biologists

are stationed across the state to help landowners develop a plan – whether that plan involves planting native grass, managing

timber, controlling brush, preparing for a prescribed burn, or creating pollinator habitat.

Tech Note

Managing the Unwanted Musk Thistle

By Kyle Johnson, Private Lands Biologist



Native to western Europe, the musk thistle was first noted in Oklahoma around 1960. Today, the plant is one of three thistles designated

as noxious weeds in the state. Thankfully, the other two plants – scotch thistle and Canada thistle – are not nearly as common or as widespread. But Oklahomans aren't as fortunate when it comes to the musk thistle.

Maintaining grasslands and rangelands in good to excellent condition can help prevent the establishment of musk thistle. However, even sound land management is not a 100 percent cure against these opportunistic weeds. Sometimes a small area of soil disturbance is all that is needed for one plant to grab hold and take off. At that point, monitoring and control will be required to reduce its spread.

Preventing plants from reaching the seed-developing stage is key for managing the spread of this thistle. Although some plant-eating insects (primarily weevils)



Showy pink to purple flowers and spiny leaves are characteristics of the noxious musk thistle. (Kyle Johnson/ODWC)

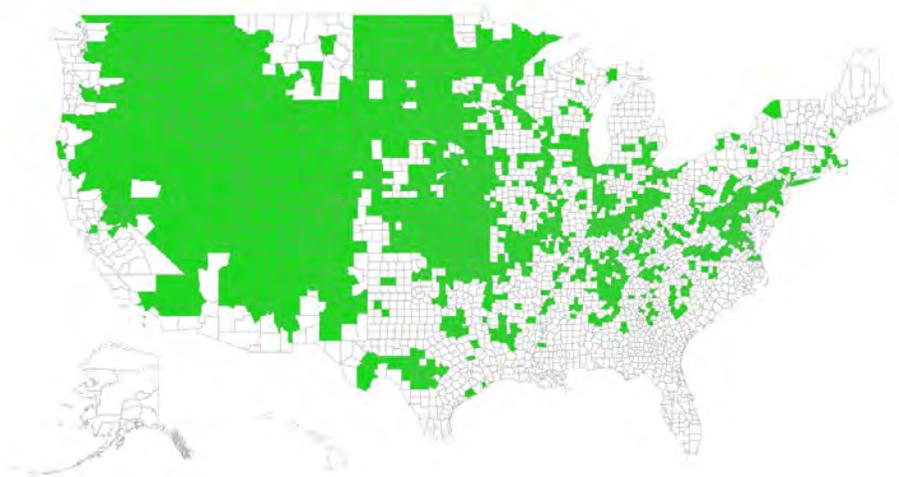
can help with this endeavor, a combination of mechanical and chemical treatments is usually required.

The best proven control method is chemically treating musk thistle during its young rosette stage. A spring herbicide application is preferred, but a fall application

is an option for seeds which germinate during the fall. The key is to monitor for fall- and spring-developing seedlings and treat the rosette of leaves during this young stage. Many herbicide options are available (Milestone, Tordon, 2,4-D, MCPA, Roundup), but control is best when the soil has adequate moisture and the

air temperature is above 60 degrees. Spot spraying individual plants or groups of plants is recommended to avoid killing desirable native plants, especially perennial grasses.

Landowners missing the opportunity to chemically treat musk thistle during the rosette stage do have additional control options. Plants in the bolting stage, when the upright stem is produced, can still be sprayed with herbicides but may still produce mature seeds. Mechanically severing the root with a shovel or hoe between two and four inches below the soil surface will kill the plant and prevent re-sprouting. Mowing the plants as close to the ground as possible just before flowering can also be effective, though late season blooms can still occur if lower leaves and stems remain intact after mowing. For smaller infestations, clipping and removing flower heads can also help prevent seed production.



EDDMapS. 2018. Early Detection & Distribution Mapping System. The University of Georgia - Center for Invasive Species and Ecosystem Health. Available online at <http://www.eddmaps.org>.

Although the purple-colored flowers of musk thistle can be somewhat attractive, the drawbacks of these nonnative plants are many, including their ability to outcompete native plants for space and reduce forage production. Maintaining

healthy plant communities, keeping a watchful eye, and being ready to take action against the musk thistle are proactive measures to help prevent the spread of this weed across the landscape and improve wildlife habitat.



Musk thistle is best controlled with herbicide treatment of young rosettes. Severing the root and mowing are other control options. (Kyle Johnson/ODWC)



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Courtesy, Celley/USFWS