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Don't Let Drought Burn You How Weather Affects Quail and What You Can Do

By Mike Sams, upland game biologist

Looking at recent history, it's pretty easy to conclude weather has an affect on the annual production of quail. Bobwhite populations are often referred to as an annual crop, because their densities fluctuate annually due to weather patterns much the same way wheat production varies. Summer drought conditions (extended periods of dry and hot weather)



directly affect quail production by ceasing reproductive effort, spoiling eggs, and even causing direct mortality of chicks and adults. But often overlooked is the indirect effects drought has on quail. When coupled with grazing. A drought can have lasting effects on quail by degrading habitat, specifically nesting and screening cover.

With drought being almost as common in western Oklahoma as taxes, ranchers must be prepared for it whether their goals are quail or beef

production. Habitat degradation has a lasting effect on quail populations just like beef production. Stocking rates and management during drought conditions not only affect the current conditions of the range, but also the recovery period. Without taking the appropriate management

actions, the time required for range recovery is extended, as is the recovery of quail and/or beef production.

Early identification of a drought is a critical part of defending against one. Holding on to the hope of a rain often gets ranchers in a difficult spot, because cattle prices plunge and supplemental forage prices sky-rocket. However, studying the historic patterns of precipitation can aid in early detection. For example, if you know that the median rainfall is 40 percent below normal going into months with

historically low rainfall and forage production, it's probably a safe bet you're in the early stages of a drought.

There are several management options available to ranchers that can diminish economic losses and protect range condition during droughts. Although a hard pill to swallow, de-stocking may be the best solution for drought. De-stocking can be achieved by liquidating stockers, early weaning or culling the breeding herd. In areas prone to droughts, ranchers may want to add flexibility to their herd by maintaining a herd composition with 30-50 percent stockers. This provides an opportunity to liquidate a segment of the herd without having to cull the breeding herd. If culling the breeding herd, you might want to consider younger cows.

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**Oklahoma Department of
Wildlife Conservation Mission**

Statement: Managing Oklahoma's wildlife resources and habitat to provide scientific, educational, aesthetic, economic and recreational benefits for present and future generations of hunters, anglers and others who appreciate wildlife.

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Department Names Landowner Conservationist of the Year

The Oklahoma Department of Wildlife Conservation recently named Bruce Robson of Finley the 2002 Landowner Conservationist of the Year.

Robson raises a herd of approximately 320 Coriante cattle for roping stock, but manages the 10,700-acre property primarily to benefit wildlife on the property in southeast Oklahoma.

The Oklahoma Landowner Conservationist of the Year award was established to recognize those landowners who have made outstanding contributions to wildlife conservation on private lands in Oklahoma.

"The purpose of this award is to promote sound wildlife resource management on private lands in Oklahoma," said John Hendrix, private lands biologist for the Department. "Since approximately 97 percent of land in Oklahoma is privately owned, the efforts of landowners are vital to the successful future of wildlife resources in the state."

Robson has incorporated a number of management practices that have benefited wildlife on the property including: prescribed burns, restoring riparian zones, and creating wetland



Wildlife Conservationist of the Year, Bruce Robson manages his 10,700-acre property primarily to benefit wildlife. Ronson's land, shown above, is located in southeast Oklahoma.

development units on the property.

Those interested in more information on the Department's Landowner of the Year program can contact John Hendrix, the Department's private lands biologist at (405) 880-0994.

Prevention Is The Best Cure

By Steve Spade, Byron Hatchery Manager

"I've got sick fish in my pond, what can I do about them?" That is a question that I get all the time and my answer is "the best cure is prevention". The reason is that few drugs are available to treat fish diseases and they are costly. When sick fish are noticed it is usually too late and the sick fish will die from the stress of treatment. This is why prevention is the best cure.

Many potential fish diseases pathogens are continually present in water, soil, and air. In nature, fish are often resistant to these diseases until living conditions deteriorate to the point where the fish become stressed. When stressed, fish may not be able to resist diseases and may get sick and die. The easiest and most effective cure for fish diseases is to prevent stress.

What is stress? Stress is defined as those factors that cause bodily reactions that may contribute to disease and death. There are two basic causes of stress; chemical and physical. Chemical conditions causing stress primarily consist of water quality factors, such as low dissolved oxygen levels in the ponds, extremes in temperatures and pH levels as well as increased levels of carbon dioxide, ammonia, nitrite, hydrogen sulfide, etc. Physical factors causing stress include injury, fish transport, predators and overcrowded fish populations. While fish are able to adapt to stress for short periods, it eventually depletes their energy reserves which suppresses their immune system increasing the susceptibility of fish to infectious diseases.

How do you prevent stress and keep fish healthy? Maintaining good water quality is very important. Check ponds once a week beginning in June and continuing through early September. Check them at sunrise or a little after and look for two things. First look at water color and clarity. If the water turns brown and the clarity is less than 20 inches then a potential oxygen problem is developing. Second, see if fish are on the



The easiest and most effective way to cure fish disease is to prevent stress. One way to prevent stress is to reduce physical injury to the fish. The use of knitted nets (above) instead of knotted nets will reduce injury and scale loss.

Maintaining good water quality is also important. The use of aerators (below) may help by adding oxygen to the water as well as allowing toxic carbon dioxide, ammonia, and hydrogen sulfide to escape into the atmosphere.



surface "piping" or gulping air. If either of these circumstances occur, several steps should be taken as quick as possible. The use of pumps to spray large amounts of pond water back into the pond or the use of commercial aerators may help avoid an immediate fish kill as well as reduce stress which could lead to a disease outbreak. Pond aeration will not only add oxygen to the water, but will also allow for the escape of toxic carbon dioxide, ammonia, and

hydrogen sulfide to the atmosphere. Also, keep vegetation to a minimum in a pond as excessive vegetation can lead to dissolved oxygen problems and disease outbreaks. This can be done by stocking grass carp.

Other ways to prevent stress and keep fish healthy is to reduce physical injury to the fish. This can be done in several ways. When handling fish, speed and gentleness are of the utmost importance. Use knitted instead of knotted nets to reduce injury and scale loss. Also handle and transport the fish at times when fish are least susceptible to stress and infection. This means handling them during the cooler times of the day and not during spawning season. Use non-iodized salt or rock salt at a rate of 0.3 to 1.0 percent in the holding or transport tanks when handling and moving fish. This will minimize osmotic stress as well as bacterial infection. Finally, all tanks need to be large enough to allow complete freedom of movement as well as have no sharp edges inside. The less the fish is handled, the less the chance for injury and the less it is susceptible to diseases.

Finally, be careful of your source of fish when stocking a pond. If purchasing fish, buy them from a reputable dealer with a guarantee of 10 days or more. If collecting from another pond make sure that pond does not have a history of disease problems. Fish diseases are easily transferred from the source pond to another.

If you have any concerns about your pond or your fish population, keep in mind these suggestions and enjoy a healthy and productive fishery.

Timber Stand Improvement For Wildlife

By Jack Waymire, southeast region senior biologist

Private landowners can enhance their timber stands for wildlife habitat by increasing openings in the timber. First, you will need to identify the target species of wildlife and their preferred habitat. Any time you manipulate habitat, you will positively impact some wildlife species and negatively impact others. As a general statement, a savannah-type timber stand (oak savannah or pine bluestem ecosystem) will provide better habitat for a greater variety of wildlife species than a dense stand of timber. Habitat diversity is the key to provide all of the elements that each species of wildlife requires in their life cycle.

Timber is a renewable resource and you should consider a sustainable program that provides for adequate regeneration and future production. It is advisable for the landowner to contact their local Department of Agriculture Forester and Wildlife Department biologist to develop a timber management plan that will ensure a healthy stand that meets the objectives for benefiting the target species. There are several programs available such as The Forest Stewardship Program, Tree Farm, Wildlife Habitat Improvement Program and others that are designed to manage the renewable timber resources. Some of the programs have a cost share incentive if you meet the criteria.

Not only the size of the timber stand, but the type of surrounding habitat should be considered. It is not realistic to manage a



There are several methods you can use to enhance your wildlife habitat. Prescribed fire is an easy and cost effective way to thin your stand of timber allowing for increased growth on the forest floor.

deer herd on 40 acres, but you may have 3,000 acres that surround your property with good deer habitat. You can enhance your acreage to attract deer from the surrounding habitat. The topography is another consideration. If you have steep slopes, then the ability to manage the stand limits your options. Also, whether you have a north or south-facing slope will usually dictate what type of timber will produce better than others. The amount of shading produced by the canopy will effect the structure height of the understory and midstory vegetation.

If you have a dense stand of timber, you can thin the timber, which will allow more sunlight to penetrate to the forest floor. The use of prescribed fire on a rotational burning regime will release the nutrients back into the soil and make them available for the understory vegetation, promoting more highly nutritious forage for wildlife. Fire has historically been a part of Oklahoma's ecosystem and is the most cost-effective method of managing wildlife habitat. The rotational burning program will also manage the woody structure height that provides needed cover and browse.

The Oklahoma Department of Wildlife Conservation and Oklahoma State University have been involved in the research of vegetation response to fire frequency for 20 years on the Pushmataha Forest Habitat Research Area. This research area provides a great demonstration area where landowners/managers can view the vegetation response to different frequencies of prescribed fire. All of these plots have been exposed to cool season burns executed during the months of February and March. Many species of native understory vegetation are fire toler-

ant and some are considered as fire dependent. Some species of trees are more fire tolerant than others due to the stress produced by the scarring effect from fire and the intensity and frequency of the fire. Post oak and shortleaf pine are two of the most fire tolerant tree species. A general statement can be made that a threshold is achieved at a three-year rotation. A burning rotation more frequent than three year intervals drives the plant communities toward a more grass dominated community and a rotation less frequent than three year intervals drives the plant communities toward a more woody dominated plant community. It would be best to promote the propagation of native grasses, forbs, sedges, woody browse and legumes because there is little or no overhead costs associated with them.

Merchantable shortleaf pine timber stands are managed by thinning the stands on a rotation that will produce revenue at regular intervals through the life of the timber stand and release competition to speed up the growth of timber to a desired diameter class. Hardwood stands can be thinned to reduce competition for water and available nutrients and this will increase hardwood production from the remaining, better quality trees. Natural regeneration is considered to be the most cost-effective method for private landowners with little overhead costs associated with site preparation and planting.

Whether you live in the eco-regions of the cross-timbers in central Oklahoma, the oak/hickory region of northeast Oklahoma or the oak/pine region of southeast Oklahoma, you can improve the wildlife habitat on your property and maintain or improve your timber stands to ensure a sustainable, healthy forest.

Basic wildlife habitat requirements include: food, water, cover, interspersed and arrangement. Dependent upon the target species of wildlife that you are interested, one can manipulate the habitat to



Natural regeneration is considered to be the most cost-effective method for landowners with little overhead costs associated with site preparation and planting.



overhead costs associated with them.

provide these species specific habitat requirements. Diversity in habitat types will benefit a greater variety of wildlife species.

Landowners should always protect stream corridors and riparian zones. Wildlife are more comfortable moving through timbered corridors that are wide enough that they can not see through them. A distance of two chains (a chain is 66 feet) is considered adequate. Your primary drainages should incorporate a stream-side management zone of two chain widths from the stream banks and your secondary drainages should incorporate a buffer zone of not less than a one-chain width from the banks.

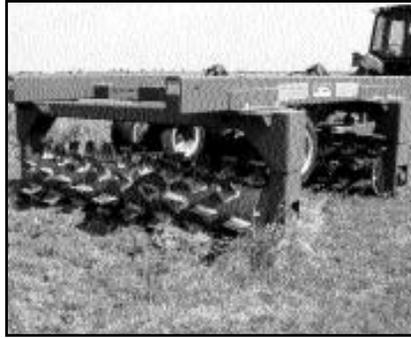
A mosaic pattern of habitat diversity is considered good wildlife habitat. Create as much habitat diversity as possible within large tracts of timbered stands. Linear wildlife openings are generally preferred over large openings in a timber stand. Incorporate some dense stands for cover, some wildlife openings for brooding areas, some savannah ecosystems for nesting and increased forage production, and riparian travel corridors that network all of the ecosystems together.

One last note should include invasive species of trees and plants. Make every effort to control invasive species such as eastern red cedar, salt cedar, sericea lespedeza, johnson grass and others.

If you would like to tour the Pushmataha Forest Habitat Research Area, contact Jack Waymire, Southeast Region Senior Biologist for the Oklahoma Department of Wildlife Conservation, at (918) 569-4329 and schedule a date and time to tour the research area. The tour will usually take approximately two to four hours.

The use of prescribed fire on a rotational burning regime will release the nutrients back into the soil and make them available for the understory vegetation, promoting more highly nutritious forage for wildlife. Fire has historically been a part of Oklahoma's ecosystem and is the most cost-effective method of managing wildlife habitat.

Equipment Available for Landowner Use



Roller Chopper



Tree Spade

The Department of Wildlife Conservation currently has habitat enhancement equipment available for landowner use. The equipment can be rented for a small fee that will be used for annual maintenance costs. Two tree spades and two roller choppers are available for landowner use from December 15 through March 1 of every year.

The roller chopper can be used for landowners wanting to set back rangeland succession and reduce the canopy of brush structure. A tractor with at least 80 hp is required to pull the machine.

The tree spade can be used on riparian habitat projects, establishing turkey roost sites, and to create shrub motts for quail and small game. The tree spade is ideal for moving shrubs like sand plum or sumac and trees up to four inches in diameter.

If interested in renting this equipment cna contact NW Region Wildlife Supervisor Wade Free at 580 / 254-1527 or Private Lands Biologist John Hendrix at 405 / 880-0994.

Preparing For Drought

continued from front page

Younger cows are still developing and require more forage than middle-aged cows and are also worth more money at the sale barn.

Dividing the ranch into smaller pastures can be used to provide rest to certain segments of the ranch and thus reduce degradation. Moving cattle to under used areas of the ranch, combined with providing salt, minerals or temporary water, are other options for providing rest to segments of the range. While rotating or moving cattle can provide some rest to the ranch, it is not a cure-all for the problem of overstocking. From a quail management standpoint, the distribution of grazing can eliminate the patch-habitat which quail thrive in.

One common reaction to drought conditions is to engage in supplemental feeding. While it seems perfectly logical, cattle supplied with supplemental feed continue to graze and degrade the range condition. Many reports on managing for drought warn against supplemental feeding. In significant cases, it may be financially sound to buy feed for maintaining the herd.

Preparing for drought takes some thought and consideration as to what your operation can best handle. Appropriate stocking rates, not only during, but also before and after a drought, are fundamental for maintaining good range condition, beef production and quail production. For more information and technical assistance on grazing management contact your local Natural Resources Conservation Service office. For more information on drought management check out these web sites:

- www.farwest.tamu.edu/rangemgt/drought4.htm
- www.coopext.colostate.edu/samdrought/art-challenge.html
- www.agweb.okstate.edu/pearl/range/E-2855.pdf

Oklahoma Wildlife Habitat Management

January

Habitat Management Practices

- Collect deer harvest data as required by DMAP program.
- Install wood duck nest boxes.
- Strip disk to encourage native food resources.
- Develop fireguards for prescribed burn program.
- Prepare ground for tree/shrub establishment for wildlife cover.
- Replace nesting materials in Canada goose nesting structures.
- Evaluate and recod food resources for wildlife.
- Mow to remove brush encroachment as needed.
- Half cut trees for loafing cover as needed for small game species.

Pond Management Practices

- Cut cedar trees and stock-pile for fish habitat.
- Trap muskrat and beaver as needed.
- Catch and remove crappie.

February

Habitat Management Practices

- Strip disk to encourage native food resources.
- Develop fireguards for prescribed burn program.
- Monitor turkey flocks.
- Plant trees and shrubs as needed for wildlife cover.
- Clean out nesting structures/boxes.
- Set out your bluebird nest-boxes.
- Conduct prescribed burns as needed.
- Mow to remove brush encroachment as needed.
- Conduct prescribed burns as needed.
- Mow to remove brush encroachment as needed.
- Half cut trees for loafing cover as needed for small game species.

Pond Management Practices

- Catch and remove crappie.
- Cut cedar trees and stock-pile for fish.

March

Habitat Management Practices

- Prepare ground for summer food plots if needed.
- Plant native grasses / forbes / legumes.
- Monitor / fluctuate water levels in wetland areas.
- Plan a grazing management system.

Pond Management Practices

- Catch and remove beaver.

April

Habitat Management Practices

- Plant native grasses / forbes / legumes.
- Apply for Deer Management Assistance Program (DMAP). (405) 521-2739
- Clean and store prescribed burn equipment.
- Disk wetland areas to encourage moist soil plants as needed.
- Implement a planned grazing system.

Pond Management Practices

- Install cedar brush piles.

Turtles, Friend or Foe?

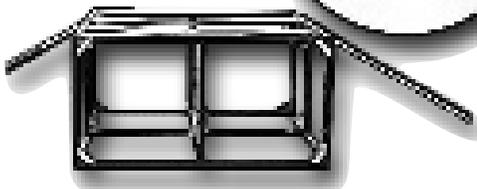
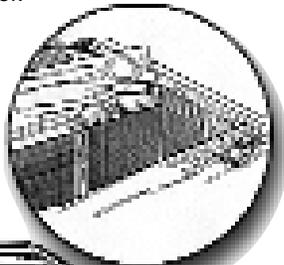
By Gary Peterson, northeast region biologist



Several times throughout the year I receive phone calls from concerned landowners about the number of turtles they see in their pond. The conversation usually goes something like this: "I can't catch any fish but I can sure catch the turtles." Or, "The turtles are eating all my fish because I can't catch anything. How can I get rid of them?"

Well, most of the time the problem is not the number of turtles living in the pond. Recent studies have found that the diets of most turtles contain less than five-percent fish. These studies also show that most of the fish eaten were already dead when the turtles found them. The bad reputation turtles have is unwarranted since many turtles are scavengers eating carrion, vegetation, aquatic insects, crayfish and mollusks.

The conflict arises when turtles become so numerous that they interfere with our fishing activities. Taking a turtle off the hook is not much fun and has a degree of danger associated with it, and no angler appreciates his catch being eaten off of his stringer. How many times has that happened to you? Turtles also may become a problem in a pond where fish are fed pelleted food.



Tiltboard Trap

They quickly learn that pellets taste good and represent a free and easy meal.

If turtles start interfering with your fishing, trapping is a safe method of removal although turtles can quickly repopulate a pond.

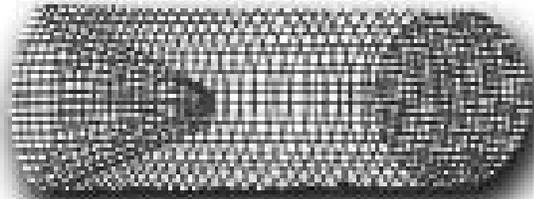
A tiltboard trap is a very effective trap for catching basking turtles, those turtles you see basking on rocks and logs, enjoying the sunshine. First, make a four-foot square from 2 x 4 lumber and cover the sides and bottom with hardware cloth. The tiltboards are 1 x 6 boards attached to the top frame in a manner so they rotate.

One way to make sure they revolve freely is to drill a hole in the center of the end of the tiltboard. Now hammer a 20-penny nail through the frame and into this hole. Install ramps on each end of the trap and you're almost done. Make sure the ends of the ramps are just underneath the water and less than a 45-degree angle. If the angle is greater than that, the turtles will have trouble crawling up the ramps. The last step is to put a small weight on the bottom of the tiltboard so it automatically resets itself. Just put the trap in an isolated part of the pond with about 12 inches of the trap above water and wait.

The turtles will haul themselves out of the water up the ramps and onto the tiltboards, eventually falling into the trap.

Another effective method of trapping turtles is with a wire basket. Wire baskets look like oversized minnow traps. The entrance funnel should be oval however, with the widest part parallel to the pond bottom. The basket itself should be made of heavy gauge welded wire. Mesh from 1/2 inch to 2-inch works well for the average pond. Clip three sides of the bottom (the end away from the funnel) and you have a door to remove the turtles and the occasional fish. Just be sure to wire it shut. To keep the trap from rolling to the lowest part of the pond either stake it down with steel rebar or t-posts. Bait the trap with dead fish, dog food, frogs, chicken entrails or soybean cake and check every 2-3 days. The best place for this type of trap is near the pond inflow in 2-3 feet of water.

No matter which method you use to reduce your turtle population, remember to read and follow the regulations in the Oklahoma Department of Wildlife Conservation's 2003 fishing guide that pertain to turtle harvest. Good luck and good fishing.



Wire Basket Trap

Wire Basket Trap (pictured above)

- Use half inch to two inch heavy gauge welded wire for the basket.
- Entrance funnel should be oval. Widest part parallel to the pond bottom.
- Cut a door on the end opposite of the funnel to remove the turtles.
- Stake the trap down with steel rebar or t-posts to prevent it from rolling.
- Bait the trap and place near the pond inflow in two to three feet of water.

Tiltboard Trap (pictured left)

- Make a four-foot square frame using 2x4 pieces of lumber.
- Cover with hardware cloth. May also use poultry fencing or welded wire.
- Use 1x6 boards for the tiltboards. Drill a hole in the center of the board end.
- Hammer a 20-penny nail through the frame and into the hole.
- Install ramps at each end of the trap less than 45 degrees.
- Place trap in pond with about 12 inches of the trap above the water.