

## **SHARED WILDLIFE RESOURCES**

### **An Ecological Approach to Cooperative Wildlife and Habitat Management in the Cross Timbers**

**by**

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**History** The Cross Timbers Region of north Texas has long been recognized for its bonanza of wildlife resources and unique habitat for a wide variety of native and migratory wildlife species. Collectively referred to as the Cross Timbers and Prairies Ecological Region, it encompasses approximately 17.9 million acres in north and central Texas. It can be subdivided into five sub-regions or land resource areas based on soils, vegetation, rainfall, and geological features reflected on the landscape. Geographically, it occupies the general area from Sherman in Grayson County on the northeast, southward to the top of the Texas Hill Country west of IH 35, west to near Ballinger in Runnels County and north to Wichita Falls.

Kennedy of the British diplomatic corps noted in 1841 that “....The lines of civilization are rapidly extending towards it (the Cross Timbers), and soon the security of science will be forever checked by the destroying axe of the pioneer”. In May of 1854, J. Pope’s report on the exploration of the region for a route for the Pacific Railroad stated “....but by far the richest and most beautiful district of country I have ever seen, in Texas or elsewhere, is that watered by the Trinity and its tributaries. Occupying east and west a belt of one hundred miles in width, with about equal quantities of prairie and timber, intersected by numerous clear, fresh streams and countless springs, with a gently undulating surface of prairie and oak openings, it presents the most charming views, as of a country in the highest state of cultivation, and you are startled at the summit of each swell of the prairie with a prospect of groves, parks and forests, with intervening plains of luxuriant grass, over which the eye in vain wanders in search of the white village or the stately house, which seem alone wanting to be seen”.

Early settlers were drawn to the region following these glowing reports of abundant prairie grasses and forage for livestock, wood for building and fuel, fresh water streams, and a cornucopia of wildlife. Stockmen pored into the region in the 1860’s and 1870’s despite the firm grip held on the land by native Americans. Men like legendary Charles Goodnight and Oliver Loving moved into the region and helped usher in the new era of westward expansion and livestock ranching. But not until the late 1870’s did the Indians relinquish their hold on the region and it become open for permanent settlement. Vast free-ranging herds of cattle grazed on rangelands without permanent property ownership boundaries. Large land holdings purchased for a few dollars per acre were common as demanding cattle markets at the northern railheads proved lucrative to those who learned to judiciously husband the Cross Timbers and Prairies country. Fencing did not become

prominent until the late 1880s. By 1884, the last of the cattle herds had passed through Fort Worth and by 1885 few areas of “free grass” for grazing remained.

Settlement of this region was for the most part environmentally determined. The influence of natural processes of the land and environment held control over the early pioneers in their efforts to survive and sustain an economic foothold in these new lands. Drought, fire, wind, wild animals, insects, disease, floods, cold winters, and Indians often preempted ventures to grow crops, graze livestock, or reap the bounty of this land. There were few roads, water sources were unreliable, and rainfall was unpredictable. The procurement of staples required long and often hazardous trips to frontier settlements. Wildlife, however, provided a source of sustenance from the land to feed many of the early settlers. Buffalo, white-tailed deer, antelope, turkeys, quail, black bear, prairie chickens, waterfowl, and other birds and mammals were common table fare. Wild cattle, horses, and hogs were present in many areas. The supply must have seemed inexhaustible.

**Current Trends** The evolution of this settling process has resulted in vast changes in the Cross Timbers and Prairies Region over the past 150 years and today we see a much different region manifested by changes in land use, demographics, and infrastructure. The impact of ecosystem fragmentation on wildlife and wildlife habitat has become a significant factor in many parts of the Cross Timbers and Prairies. The conversion of large areas of deciduous oak woodlands to improved pastures and open grazing lands and urban development is occurring at an alarming rate. Land ownership size continues to diminish as larger ranches and land holdings are divided, sold, and developed for different uses. Human population growth and occupation of rural areas continues to grow. Commercial construction, water development on streams, rural subdivisions, and vegetation control projects near urban areas often contribute to the displacement or elimination of many of our wildlife and habitat resources. That trend will likely continue into the 21<sup>st</sup> century.

Land use in the Cross Timbers and Prairies Region, not unlike most other parts of Texas, is now economically determined for the most part. Many landowners no longer derive their entire livelihood directly from the land. Diversity and multiple land uses for income, a job in town, or a few good pumping oil or gas wells has helped many landowners overcome the environmentally determinant factors of drought, predators, floods, crop failures or fire faced by early settlers. Land continues to change ownership in the Cross Timbers and as it does, often so do land uses. Many new landowners may not have strong ties to the land or understand the natural ecosystem processes that continue to influence wildlife and wildlife habitat resources they now control. Others purchase land primarily for recreation with little knowledge of ecosystems or habitat requirements for wildlife. The presence of good wildlife habitat and sustaining populations of game animals and other wildlife species is often of high priority to new land purchasers in the Cross Timbers. It is in this broad context that the concept of shared wildlife resources and habitat management is emphasized to landowners, land managers, and all others whose land use and management decisions affect these resources.

**Wildlife and Habitat Management Problems** With the exception of wildlife found on large land holdings or confined by high fences, most wildlife species found in the Cross Timbers and Prairies Region of Texas live and die on land owned by more than one owner. Land ownership boundaries are not concomitant with home ranges of many wildlife species. The location and distribution of habitat components found on the landscape dictate where populations and individual animals may be at any given time during the year. Food and its seasonal availability and distribution, water, mating, cover, and extremes in weather will influence movements throughout the year.

As land continues to change hands, so too do neighboring landowner relations. Absentee landowners are common in the Cross Timbers; people who purchase rural land, live in the city, and come out to their “ranch” on weekends. Others are “recreational cattlemen” whose bottom line may not be a profit from their livestock operation. Land use may change from providing productive grazing lands for livestock to total non-use of the land for anything except hunting, fishing, or nonconsumptive uses. Absentee landowners often are unacquainted with their adjoining neighbors and view their land use and management activities as an enterprise unto itself without regard to the common shared wildlife resources.

It is this continual changing of land ownerships, reduction of land holding size, and the affect of changing land use and management that will likely determine the ability and capacity of the Cross Timbers and Prairies Region to sustain wildlife populations into the 21<sup>st</sup> century and beyond. One thing that remains constant in this evolutionary process is the habitat requirements for our native wildlife for survival and reproduction. Wildlife species have evolved and adapted to environments that dictate their life cycles and circadian rhythms for life. Habitat requirements vary greatly among species. All require food, water, cover and space but not in the same amount or type. Many species are territorial and have genetically predetermined spatial requirements for nesting or raising their young, seasonal food requirements, or cover and water availability needs. The ecosystem for waterfowl, for example, may encompass an area from the Arctic circle to Central America whereas that of songbirds may be only a few acres. Habitats that become fragmented or experience degradation may no longer support a species. Individuals of that species may be forced to find alternative and perhaps less productive habitats or be entirely displaced to other areas. Although some species can adapt to modifications of their environment, most do not. Consequently, many landowners’ expectations for their land to produce and sustain populations of different wildlife species is often met with disappointment. Attempts to select and target only individual species and their habitat for management are often detrimental to the well being of other species and their habitat. In the natural setting, most actions taken on the land to manipulate vegetation on the landscape will result in many reactions. Wildlife species are often a barometer by which a measure can be made to determine if those actions were the most appropriate for achieving the desired long term results.

Game animals with large home ranges such as white-tailed deer and Rio Grande turkeys are additionally impacted by hunting. Differing philosophies regarding management and harvest of these species however may be diametrically opposed by adjoining landowners. A flock of turkeys may roost on one landowner's creek bottom, feed on a neighbor's hillsides, and loaf during the day in a brushy pasture of another adjoining landowner before returning to its roost. During the spring, gobblers may seek out hens and establish territories for breeding on an adjoining ranch. Turkey hens may also nest several miles from their winter roost site, improving the odds that they will cross multiple land ownerships in the process. In addition to the square mile that makes up the home range of most white-tailed deer, bucks will range far outside their home range during the rutting season and may be exposed to heavy hunting pressure on acreage owned by several landowners. Young bucks may also be forced out of their normal home range by older bucks during breeding season. Does often travel to open grassy areas to have their fawns which may be on someone else's land. A landowner implementing good range management and proper whitetailed deer habitat, population, and harvest management strategies to produce quality animals may adjoin a neighbor whose land use objective is to maximize livestock production and maximize hunting revenue. Coveys of bobwhite quail may shift their feeding areas during the winter months as they seek better sources of food and cover which may be just across the fence on another property. Doves are attracted to large grain or sunflower fields during the late summer and early fall for feeding and will fly great distances daily to feed or obtain water which may be located several miles from their roost sites.

Nongame species, songbirds, small mammals, reptiles, amphibians, and insects are important to the overall ecosystem of the Cross Timbers and are integral components of the wildlife community. They too are affected by changes and intensity of land use. Although little research has been conducted in the Cross Timbers and Prairies Region on these species, their role in the food chain and diversity of life they represent should not be discounted.

Livestock grazing enterprises also continue to influence vegetation in the Cross Timbers and Prairies Ecological Region by their affect on plant succession, species diversity and the configuration of plant communities on the landscape. Grazing is one of the most important land management tools available to landowners to help manage rangelands and wildlife habitat. Rangelands properly grazed and rested under rotation grazing systems offer a positive influence on wildlife and wildlife habitat. The extremes of grazing intensity, ranging from overstocked or continuously grazed rangelands to those totally void of grazing by livestock, can have detrimental effects on wildlife populations. Continuous overgrazing diminishes seasonal plant diversity and promotes invasion by undesirable annual grasses, weeds or noxious woody species. In the absence of grazing, rangelands may become populated by native grasses that dominate range sites and reduce space for desirable plants used by wildlife for food and cover. Judicious use of livestock, particularly cattle, can be a compatible vegetation management tool for wildlife habitat management.

**Cooperative Land and Wildlife Management** Aldo Leopold, known as the father of wildlife management, espoused in his book "A Sand County Almanac" a land ethic philosophy by stating ... "All ethics so far evolved rest upon a single premise: that the individual is a member of a community of interdependent parts. His instincts prompt him to compete for his place in that community, but his ethics prompt him also to cooperate. The land ethic simply enlarges the boundaries of the community to include soils, waters, plants, and animals, or collectively, the land." Viewing the land as a community or ecosystem of interrelated parts is fundamental to its management. Unless an understanding of the inter-workings of those parts is perceived in the mind of landowners or land managers, wildlife resources will inevitably be negatively impacted. There continues to be a need to comprehend and promote this "land ethic" philosophy today as more and more wildlife and wildlife habitat becomes shared resources. There must be willful and open communication between individual landowners committed to long term goals and objectives that address the needs of their shared wildlife and wildlife habitat resources.

Cooperative ventures can be initiated between adjoining landowners to collectively promote land management through a commitment to consider the needs of wildlife and wildlife habitat and the overall ecosystems they occupy. Strategies can include implementation of predetermined guidelines that address broad land management practices such as brush control and management, use of fire and herbicides to improve range conditions, water development and use, harvest recommendations for game animals, wildlife census efforts, livestock grazing systems, and other proven land and wildlife management techniques. This cooperative approach must be preceded by a willingness on the part of consenting landowners to 1) participate in a cooperative program, 2) acknowledge and learn about the biological requirements of all wildlife species in the ecosystem, 3) adhere to sound wildlife and wildlife habitat management practices, 4) make concessions on the land that accommodate and promote wildlife populations, 5) understand the limitations of land for sustaining populations of different wildlife species, 6) maintain wildlife populations at or below the carrying capacity of the habitat, and 7) be committed to the long term application of proper land and wildlife management practices.

**Conclusion** The need for cooperative management of shared wildlife and habitat resources in the Cross Timbers and Prairies Region of Texas has become apparent as the new century approaches. Lessons learned from changes in land uses over the past 150 years tell us that this land is productive, environmentally diverse, and ecologically fragile. The changing demographics of Texas will place added demands on it as our population expands. Wildlife habitat will continue to be altered to accommodate urban sprawl and development and alternative land uses. Fragmentation of land into smaller and less diverse land holdings will have long term effects on native wildlife species and their habitat. The future availability of habitat for wildlife will in large part be determined by the commitment of individual landowners and the degree of cooperation they foster with their neighbors to provide for and sustain these resources. There are tremendous opportunities at hand for landowners who have a vision for ecosystem management and who will

become involved in the management of our shared wildlife resources of the Cross Timbers and Prairies Region of Texas.

*Many state and federal agencies offer assistance programs to help landowners manage their wildlife and habitat resources. Texas Parks and Wildlife Department's Private Lands and Habitat Program has a staff of regional technical guidance wildlife biologists and other district wildlife biologists who are available upon written request to help landowners develop management plans to address their long term goals and objectives for habitat enhancement and wildlife management. For more information, contact Texas Parks and Wildlife Department, 4200 Smith School Rd. Austin, TX 78744.*