

**BEFORE YOU BUY: PURCHASING SMALL ACREAGES FOR WILDLIFE
HABITAT IN THE CROSS TIMBERS AND PRAIRIES REGION OF NORTH
TEXAS**

by

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The demand for rural land throughout much of Texas for home building sites, recreation, weekend retreats, small agricultural enterprises, hunting, and retirement has dramatically escalated during the past few decades. Having wildlife to view or hunt is often an added incentive to purchase land. Many areas in the Cross Timbers and Prairies Region of north Texas near large metropolitan centers such as Dallas, Fort Worth, and other communities within commuting distance to jobs and other conveniences of large cities and towns are developmentally attractive but biologically sensitive. Large rural parcels of land that were once devoted to traditional agriculture such as ranching, farming, and wildlife management now have higher economic value for subdivisions, rural developments, or as small acreage properties. Consequently, populations of wildlife and significant acreages of wildlife habitat continue to decline. This is particularly apparent along the I-35 corridor and the counties adjacent to it.

Fragmentation of land into smaller and smaller tracts disrupts many wildlife species by the cumulative affects on their biological requirements for food, cover, water and space. Some species are density dependant and require interaction of many individuals to sustain viable populations. Others have specific habitat requirements for nesting or feeding. Mobile species move across the landscape and may inhabit several different properties during the year.

Not everyone that purchases land has prior knowledge about the population dynamics of native wildlife species that may be found on the land they buy or their habitat requirements to survive and reproduce. Expectations about having populations of wildlife are often met with disappointment a few years down the road. An ad describing a 40 acre parcel of land “with trees” as “excellent deer, quail, mourning dove, and turkey hunting” should sound too good to be true – and guess what, it probably is. Wildlife species that are present when the contract is signed may disappear or only occasionally be seen. Other species may increase and become pests. Migratory species or those with large home ranges may be present only during certain times of the year. Conflicts often arise over nuisance wildlife or damage to vegetation or what the neighbor next door is doing or not doing. Wildlife habitat on small acreages often becomes severely degraded by excessive grazing or browsing – too many horses, goats, sheep, cows or in some cases, too many deer.

Potential land buyers should have a clear set of goals and objectives in mind prior to purchasing land. A thorough assessment of property, regardless of size, to determine its potential for supporting wildlife or other preconceived land uses should be undertaken

prior to signing on the dotted line. Not all land can support populations or even a few individuals of certain wildlife species and there are grazing limitation for livestock.

The following general guidelines are presented on topics that should be considered and investigated prior to purchasing small acreages where wildlife is a primary consideration. Understanding the potential and limitations of land is fundamental to making informed land purchases and future habitat management decisions for wildlife.

Soils The type of soil or soils present on any given piece of land is a reflection of the geologic history of the region. All soils in north Texas are derived from sedimentary deposits, formed over geologic time from the Pennsylvanian (350 million years) to Cretaceous (70 million) Periods. Most soils we see today originate from sandstone or limestone formations or sedimentary deposits from weathering of parent materials that were transported by water or wind. Vegetation present on the surface is a direct reflection of the chemical and elemental properties of the soils. Some plants are adapted to specific ranges of acidity or alkalinity levels in the soil while others tolerate a wide range of values. Some vegetation flourishes on deep soils and others grow luxuriantly on shallow, rocky soils. The introduction of plants not adapted to local soils will likely fail or be unproductive.

Land with uniform plant communities over large areas may indicate similar soil types. However, soil types and properties over most of north Texas changes on the surface within very short distances. A change in the type of plants present or growth form is usually an indication that soil types have changed. A shift in the predominance of one or a group of plant species to others may help explain these hidden soil changes that may not be visible to the eye. Hairy grama may flourish in shallow soils on hilltops and Canada wild rye on deep alluvial bottomlands. Post oak and blackjack oak trees grow in acidic or slightly acidic sandy soils whereas live oak and Texas oak prefer loamy soils derived from limestone parent material. Other species such as mesquite or Ashe juniper may grow well in either situation.

A detailed description of soils, soil properties, and vegetation potential is available in most counties from the United States Department of Agriculture Natural Resources Conservation Service (NRCS). Reviewing information about soil should be an initial step in assessing the potential of land for producing or sustaining wildlife habitat.

Topography The landscape in northcentral Texas is varied to say the least, ranging from the gently rolling plains of the Fort Worth Prairie to the rugged breaks and escarpments of the West Cross Timbers. The geologic history reveals there were uplifts, subsidings, inland seas, mountain ranges, and vast erosions that contributed to formation of the topographic surface features we see today. Exposed rocky sandstone and limestone surface features are common in many areas.

The slope and grade of land may contribute to its habitability for wildlife and growth of a diversity of vegetation. Steep, sloping terrains not suited for cultivation may support dense growths of trees, vines, and other wood vegetation. These areas provide important

feeding, roosting, or escape habitat for a wide variety of wildlife species. Relatively level terrains may support grasslands or cultivated croplands that provide other habitat types used by wildlife. Herbaceous vegetation grown here in the form of grasses, forbs, or woody plants may be important to livestock, nongame wildlife, songbirds or deer. River and stream watersheds that drain the region contain large areas of rich alluvial soils and bottomlands that support diverse habitats for wildlife. In general, land with a variety of topographic features may support a greater variety of wildlife and habitat types.

Water Water is perhaps the most important component of good wildlife habitat in north Texas. Lack of water can often be identified as a limiting factor for wildlife. Most streams are intermittent and may provide water sources only during wet periods. Droughts occur regularly and deplete surface water. Land without adequate sources of reliable water throughout the year may limit its habitability for wildlife. Poor distribution of water may also require wildlife to travel greater distances and become exposed to predators, hunters, or the elements. Existing ponds that leak or have eroded dams are a clue that soil properties are not adequate to impound or retain surface water.

If water is in short supply or poorly distributed, additional water sources will need to be developed by constructing ponds or piping water from wells or rural water supplies. Existing springs can also be cleaned out and diverted to holding structures or basins. Subsurface water sources in many areas of north Texas are not available or economically feasible to drill for and develop, so don't assume you can just put in a well and have water. Before purchasing land, assess water availability and check with the NRCS to determine if soils types present will support pond construction and if there is a sufficient watershed to support a pond.

Vegetation Plants form the basic framework of wildlife habitat by the cover and food they provide wildlife. An assessment of the species of trees, shrubs, vines, forbs (weeds or wildflowers), grasses, and other plants present should be made to determine the quality of wildlife habitat and what wildlife species they can support. A further analysis to categorize plants present as annual, perennial, cool season, warm season, non-native, or noxious will compliment the assessment. Since not all plants may be visible during any one month of the year due to their seasonality, it may require looking at a piece of land over a period of time or by seasons. A thorough understanding of the vegetation requirements of wildlife species native to the area should be investigated to help evaluate the quality of wildlife habitat present.

How many different types of plants, species, or plant communities there are on the land may also give clues to the quality of wildlife habitat. Monoculture stands of one or two species of plants have limited importance to most wildlife species. A properly managed mixture of trees, brush, forbs and grasses will likely support a greater array of wildlife species. Land with a mixture of dense woods and brush, grassy openings or rangeland, croplands or fields, and riparian zones along streams offer the best combination of vegetation and habitat types for a wider variety of wildlife. Many small acreages have only one habitat type or a limited diversity of vegetation and may not be capable of supporting populations of some wildlife species.

Each wildlife species has different needs for plants, whether it's for food, cover, nesting, roosting, or a combination of all these factors. Food habits of most wildlife species are well known from research. Lack of necessary preferred vegetation that provides food and cover may be a significant limiting factor of the habitat on any given piece of land. For example: white-tailed deer populations may be low in marginal habitats that lack preferred browse plants or forbs; bobwhites may decline where dense woody escape cover is missing; and songbirds that require cavities for nesting will look elsewhere if natural or man-made cavities aren't available. Marginal habitats may support only isolated or small populations of wildlife. Vegetation is habitat – without it, wildlife will not flourish.

Land Use History Most land in north Texas looks the way it does today because of its present and past land use. There are few areas that have not been altered or influenced by man's land use over time. The accumulative influences of livestock grazing, land clearing, elimination of naturally occurring fire, and other agricultural practice have shaped the landscape we see today. Natural plant communities have been altered and continue to be in a state of constant change. Taking a look at past and present land use events may help explain the quality of wildlife habitat on a piece of land and its management potential today.

Some areas that now appear as open rangeland or cropland may have once supported post oak woodlands. Past land clearings and planting of improved forage species may have altered the plant community to accommodate agriculture. Others areas that are now dominated by dense thickets of mesquite or juniper may have once supported tallgrass prairies or were farmed as cropland. By examining past land use history you should be able to determine if your present goals and objectives are feasible. It is very difficult, if not impossible, to replicate natural or climax plant communities or restore land to its original state. The art and science of that process is tenuous at best. The thought process should be to work with what's available on the land at present and strive to sustain or restore plants native to the area that will constitute good wildlife habitat. There are few shortcuts and success will require a long term commitment.

Overgrazing by livestock by continuous grazing throughout the year is one of the primary contributors in the change that has resulted in the invasion and replacement of native plant species by other tree, brush, grass, weed and forb species. Landscape scale alterations of plant communities using aerially sprayed herbicides, extensive chaining or root plowing, and other mechanical methods have also contributed to the alteration of plant communities in north Texas. Some native species that were once only a small component of the native plant community are now dominant to the detriment of the land and wildlife. The obvious absence of native perennial grass species such as little bluestem, big bluestem, sideoats grama, switchgrass, and many other species is usually a dead giveaway that things aren't what they should be. Rank growths of opportunistic species such as mesquite, juniper, pricklypear, brome and other cool season grasses, pricklypear cactus, broomweed, or other annual species are symptomatic of mismanagement in the past. Dense growths of Ashe juniper and eastern red cedar in the

understory of post oak woodlands of the East and West Cross Timbers also indicates past land use influences.

Carrying Capacity One common misconception that should be avoided when purchasing small acreages is that it will support a population of all native wildlife species found in the area...like the ad said it would. Wrong! All land has a limit to the number and kind of animals it can support, whether its domestic livestock or eastern bluebirds. Defining those limits is difficult and can only be determined over a period of time by observing the relationship between plants and animals on the land. It is important to know what wildlife species occur in the area the land is located and their habitat requirements. Populations of some non-native or feral species may also be significant.

Small islands of habitat do not necessarily mean that wildlife species know to occur in the area can survive and reproduce there or that the land can be improved to support them. It all depends on the individual species and its biological requirement for food-cover-water-space, home range, seasonal movements, migration, and social interactions of other members of its species.

Although home ranges of several different species may overlap, individual species usually have limited tolerance for each other during breeding seasons and establish well defined territories they defend and exclude others from. Others may be colonial and function in groups or concentrations.

Carrying capacity is often defined or limited by food availability throughout the year. Populations of large herbivore species such as white-tailed deer or livestock may exceed the ability of the land to support them and literally eat themselves out of house and home, thus impacting other wildlife species occupying the same habitat. Neotropical songbirds that nest only in low growing brush that has been over-browsed by deer may be displaced. Grasslands overgrazed by cattle that remove or eliminate preferred nesting vegetation for bobwhites may become unproductive for that species. Seasonal movements may result in an increased numbers of animals moving to available food supplies within their home range such as croplands or supplemental feeders. Although proper land management practices may help improve carrying capacity for livestock and wildlife, accepting the limitations of the land is often a reality that must be considered.

Wildlife Biology and Life History Knowledge about the life history of animals found in the area is important in helping evaluate the property's potential for supporting populations of individual species. All need food, cover, water, and space but each species will have different requirements. Knowing species normal daily or seasonal activity period(s) may help explain their visibility. Nocturnal species are not likely to be seen during the daytime whereas crepuscular species are only active during early morning or late evening hours. Others are nocturnal and unless you're out and about at night, you may not know they are around.

Some species have only one mate (monogamous) and others many (polygamous). Social or hierarchal interactions within populations of wildlife is not well understood but may be

of significance. Flocking species such as Rio Grande turkeys or bobwhites may require large areas of good habitat to support them throughout the year. Mobile species such as mourning doves may appear during the nesting period or be attracted to fields of sunflowers available during late summer and then migrate south. Migratory waterfowl and shorebirds require water or shallow wetlands during seasonal movement periods.

Food habits of different wildlife species will involve a wide spectrum of plants that produce seeds, fruits, mast, browse, leaves, and buds. Insects and other invertebrates are important in the diets of others. Some animals have a short life span and others may live for many years. Annual reproductive rate may be as a single offspring or the production of several broods or litters of many young each. Populations of non-native and feral species may also be present and require special management or control.

Many birds, mammals, snakes, reptiles, and amphibians species are year round residents. During the late fall, many northern migrant songbird species filter south to spend the winter in north Texas and may be present for several months. Others migrate north from the tropics during the spring to nest and raise young before returning in the fall. Some birds are cavity nesters and others require woody cover or grasslands for nesting habitat.

Land Management and Enhancement In the 1930's, Aldo Leopold, the father of the art and science of wildlife management, espoused the philosophy that land and wildlife are dynamic and interrelated, and that man's influence is part of the equation. He stated that, "The central thesis of game management is this: game (i.e. *wildlife and wildlife habitat*) can be restored by the creative use of the same tools which have heretofore destroyed it – ax, plow, cow, fire and gun...Management is their purposeful and continuing alignment". Use of these same tools remain as viable methods for land and wildlife management today.

Purchasing land with the intention of just "letting nature take its course" may ultimately result in habitat degradation for many wildlife species, invasion of noxious on non-native vegetation, overpopulation of some wildlife, or any of a number of less than desirable outcomes. Grasses can become rank and thatched over a period of years due to the accumulation of litter which inhibits growth of new plants. Germination of seedlings dependant on sunlight is greatly reduced and monocultures on grasses may result. Land with a history of overgrazing by livestock where native grasses have been replaced by cool season annuals may now support rank growths of mesquite, juniper or pricklypear. Lack of naturally occurring or prescribed fire also contributes to the invasion of undesirable plants. Revegetation to native species and climax plant communities may require a substantial period of time or may never be achieved without reintroductions. Unfortunately, commercial sources of locally adapted seeds of native plants are unavailable for most ecological regions of Texas.

Use of land management practices such as total or periodic grazing deferments, short term rotation grazing systems, prescribed fire, brush management, reseeding or replanting native plants, controlling excessive populations of white-tailed deer (hunting), winter

fallow disking, water developments, or seasonal mowing to control vegetation will likely be required at some level to maintain and improve habitat for wildlife.

Food Plots Planting annual crops or food plots specifically for wildlife may provide seasonal sources of nutritious foods but should not be used in place of proper land management practices. Food plots are expensive to maintain and very unreliable in north Texas where drought and seasonal weather and temperature extremes are the rule. There are no “silver bullet” crops that will provide year round food, despite what you may read in the magazines. Unless you have deep pockets and are knowledgeable about farming practices, food plots may not be the best strategy for wildlife management on your land.

If you intend to plant food plots or crops for wildlife on land you purchase, look for existing or old fields that were once cultivated as potential areas to plant crops or reseed to native plants. Plant species of plants that are adapted to the area and will be used by a wide variety of wildlife. Check the soil type and fertility prior to cultivation to determine fertilization needs.

Supplementation In most cases, wildlife does not need supplementation, rather good quality native habitat that is maintained throughout the year to provide food, cover, water, and space. Supplementation should only be addressed after proper habitat management practices are in place. At no time should wildlife populations be allowed to exceed the ability of the native habitat to support healthy populations of wildlife or at levels that result in degradation of vegetation. Artificially providing food concentrates wildlife and may result in increased predation, spread of diseases, and an increase in browsing of vegetation in the immediate vicinity of feeders.

Hunting Hunting is another important consideration when purchasing land for wildlife. In most cases, it's the size of the property that will dictate the level at which wildlife can be maintained to sustain hunting. Larger properties offer the greatest potential for wildlife management and the setting of long term goals and objectives for producing huntable populations of wildlife. As size diminished, factors relating to wildlife biology and population dynamics come into play. Small acreage properties have very limited potential for sustained hunting without impacting wildlife resources on adjoining properties. It is important to have realistic expectations and understand the limitations of the land and the wildlife found there.

In some cases, a hunting strategy should be anticipated to prevent species such as white-tailed deer from becoming overpopulated and impacting their habitat and that of other wildlife species. Seeing a lot a deer may be alright for a while but when they begin to eat themselves and you out of house and home, then it's probably too late. Be sure to find out about any hunting restrictions on small acreage properties that may contribute to high wildlife populations. Small acreage properties also present safety concerns for hunting and restrictions may apply. Contact adjoining landowners to explore the possibility of establishing a cooperative to promote management of wildlife and habitat resources.

Agricultural Tax Valuation The agricultural tax valuation status of a small property is also something that should be thoroughly investigated prior to purchasing land. In 1995, Texas voters approved Proposition 11, which amended Article VIII, Section 1-d-1 of the Texas Constitution to permit agricultural appraisal for land used to manage wildlife. H.B. 1358 implemented the constitutional amendment by making wildlife management an agricultural use that qualifies the land for agricultural appraisal. Small properties that do not have an existing agricultural tax valuation may not qualify. To learn more about requirements for qualifying land for agricultural tax valuation using wildlife management, contact the local Tax Appraisal District in the county where the land is located. Texas Parks and Wildlife Department and other state and federal conservation agencies have developed regional guidelines to assist landowners in developing wildlife and habitat management plans that address provisions of Proposition 11.

CONCLUSION

Do a little homework and preplanning prior to purchasing small acreages where long term goals and objectives include wildlife and habitat management. Although managing wildlife and habitat can be done in combination with other land uses, there are usually tradeoffs and concessions. Solicit the assistance of professional wildlife and habitat resource management specialists in the area where the land is located for the answer to many of the questions presented here.

Many state and federal agencies offer assistance programs to help landowners manage their wildlife and habitat resources. Texas Parks and Wildlife Department has a staff of regional Technical Guidance Biologists, Private Lands 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. Additional information is also available on the Texas Parks and Wildlife Department website at www.state.state.tx.us.