GUIDELINES FOR
Qualification of Agricultural Land in Wildlife Management Use

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Introduction

These *Guidelines for Qualification of Agricultural Land in Wildlife Management Use* will discuss the requirements that land must meet to qualify for wildlife management use, how to value this land, and each of the seven wildlife management activities mandated by state law.

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.

In 2001, the Legislature passed H.B. 3123 requiring the Texas Parks and Wildlife Department to develop and the Comptroller to adopt rules for the qualification of agricultural land in wildlife management use. These guidelines and Chapter 9, Subchapter F, Texas Administrative Code, constitute the rules, as required by Section 23.52(g), Tax Code. The Texas Administrative Code language specifically addresses qualification of land partitioned from a previously qualified larger tract of real property qualified for 1-d-1 appraisal as wildlife management land.

The Tax Code, Chapter 23, Subchapter D, addresses the requirements for landowners to qualify their land for agricultural appraisal and also instructs county appraisal districts on how to appraise qualified agricultural land. Land used for wildlife management must meet all the legal requirements of land qualified for agricultural appraisal. Those requirements, however, are outside the scope of these guidelines. The Comptroller publishes a *Manual for the Appraisal of Agricultural Land* that discusses in detail the qualification of land for agricultural appraisal, the rollback tax penalty for change of use and appraisal of agricultural land.[1]

Land on which the owner engages in wildlife management and that meets other requirements for agricultural appraisal is qualified for agricultural appraisal and is technically in agricultural use. To simplify terms, however, this booklet refers to agricultural land used for wildlife management as land in *wildlife management use*.

The Tax Code, Section 23.51(1) defines qualified agricultural land as:

Land that is currently and principally devoted to agricultural use to the degree of intensity typical for the area and has been used for agriculture or timber for at least five of the preceding seven years.[2]

Section 23.51(2), Tax Code, includes wildlife management in the definition of *agricultural uses* of land. Section 23.51(7), Tax Code, defines wildlife management as:

Actively using land that at the time the wildlife management began was appraised as qualified open-space land under this subchapter in at least three of the following ways to propagate a sustaining breeding, migrating, or wintering population of indigenous wild animals for human use, including food, medicine, or recreation:

(A) habitat control;
(B) erosion control;
(C) predator control;
(D) providing supplemental supplies of water;
(E) providing supplemental supplies of food;
(F) providing shelters; and
(G) making census counts to determine population.

Part One discusses the qualification of agricultural land used for wildlife management. Part Two discusses in detail the seven wildlife management activities listed in Section 23.51(7).

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[1] To obtain a copy of Manual for the Appraisal of Agricultural Land, please write the Comptroller, Property Tax Division, P. O. Box 13528, Austin, Texas 78711-3528.

[2] Land qualified for timber appraisal is not eligible for wildlife management use. See discussion on page 3.

Part I:

Qualifying Land for Wildlife Management Use

Wildlife Management Use Requirements

Land must be qualified for Chapter 23, Subchapter D (1-d-1) Agricultural Appraisal

The first requirement for wildlife management use qualification is purely technical and is not related to the land's actual use to manage wildlife. The law restricts the land that may qualify for wildlife management use. To qualify for agricultural appraisal under the wildlife management use, land must be qualified for agricultural appraisal under Chapter 23, Subchapter D, Tax Code (also called 1-d-1 or open space agricultural appraisal), at the time the owner changes use to wildlife management use.

In other words, the land must have been qualified and appraised as agricultural land during the year before the year the owner changes to the wildlife management use. For example, an owner who wishes to qualify for wildlife management use in 2002 must be able to show the land was qualified for and appraised as agricultural land in 2001.

Land qualified for timber appraisal is not eligible to qualify for wildlife management use. Timber land is qualified under Tax Code, Chapter 23, Subchapter E. The law limits wildlife management use to land qualified under Subchapter D of Chapter 23. Similarly, land qualified for agricultural appraisal under Article VIII, Section 1-d, Texas Constitution and Chapter 23, Subchapter C, Tax Code, (also called 1-d agricultural appraisal) is not eligible for wildlife management use.

Land must be used to generate a sustaining breeding, migrating, or wintering population of indigenous wild animals.

The second requirement for qualified wildlife management use is that the land must be used to propagate a sustaining breeding, migrating or wintering population of *indigenous* wild animals.

An *indigenous* animal is a native animal that originated in or naturally migrates through an area and that is living naturally in that area—as opposed to an exotic animal or one that has been introduced to the area. In this context, an *indigenous* animal is one that is native to Texas. (Contact the Texas Parks and Wildlife Department to determine if an animal species is considered *indigenous*.)

Land may qualify for wildlife management use if it is instrumental in supporting a sustaining breeding, migrating or wintering population. A group of animals need not permanently live on the land, provided they regularly migrate across the land or seasonally live there.

A *sustaining breeding* population is a group of indigenous wild animals that is large enough to live independently over several generations. This definition implies that the population will not die out because it produces enough animals to continue as a viable group. The Texas Parks and Wildlife Department may be able to provide information to help determine the number of animals of a particular species that must group together to sustain the population.

A *migrating* population of indigenous wild animals is a group of animals moving between seasonal ranges. A *wintering* population of indigenous wild animals is a group of animals living on its winter range.

The indigenous wildlife population must be produced for human use.

The law requires an owner to propagate the wildlife population for human use. Human use may include food, medicine or recreation. Land will not qualify unless the owner propagates the population of wild animals for a human purpose.

The use of animals for food and medicine is self explanatory. These uses result in a product and require active participation. A recreational use may be either active or passive and may include any type of use for pleasure or sport. Bird watching, hiking, hunting, photography and other non-passive recreational or hobby-type activities are qualifying recreational uses. The owner's passive enjoyment in owning the land and managing it for wildlife also is a qualifying recreational use.

Is the land used for three or more of the following activities?

Under the law, an owner must perform at least three of seven listed wildlife management activities on the land. An owner may qualify by doing more than three, but may not engage in fewer than three of the activities. These activities are explained in detail in Part Two of this booklet, but a short summary of each management activity listed in the law appears below.

- ***Habitat Control (Habitat Management).*** A wild animal's habitat is its surroundings as a whole, including plants, ground cover, shelter and other animals on the land. Habitat control—or habitat management—means actively using the land to create or promote an environment that is beneficial to wildlife on the land.
- ***Erosion Control.*** Any active practice that attempts to reduce or keep soil erosion to a minimum for the benefit of wildlife is erosion control.
- ***Predator Control (Predator Management).*** This term means practices intended to manage the population of predators to benefit the owner's target wildlife population. Predator control is usually not necessary unless the number of predators is harmful to the desired wildlife population.
- ***Providing Supplemental Supplies of Water.*** Natural water exists in all wildlife environments. Supplemental water is provided when the owner actively provides water in addition to the natural sources.
- ***Providing Supplemental Supplies of Food.*** Most wildlife environments have some natural food. An owner supplies supplemental food by providing food or nutrition in addition to the level naturally produced on the land.
- ***Providing Shelter.*** This term means actively creating or maintaining vegetation or artificial structures that provide shelter from the weather, nesting and breeding sites or "escape cover" from enemies.
- ***Making Census Counts to Determine Population.*** Census counts are periodic surveys and inventories to determine the number, composition or other relevant information about a wildlife population to measure if the current wildlife management practices are serving the targeted species.

Agricultural Use Requirements

Chief appraisers should remember that an owner's wildlife management use must meet all the requirements to qualify for agricultural use, defined in Section 23.51(1) Tax Code. Below is a brief discussion of the principal issues involved in agricultural use of land used for wildlife management. For a thorough discussion of these components, please refer to the *Manual for the Appraisal of Agricultural Land*.

Primary Use

The law requires agriculture to be the *primary use* of the land. Wildlife management is an agricultural use under the law. The *primary use* requirement is particularly important for land used to manage wildlife. For example, land devoted to wildlife management can be used as a residence for the owner, but the land will not qualify if residential use—and not wildlife management—is the land's primary use.

A chief appraiser must gather and consider all the relevant facts to determine if the land is primarily used to manage wildlife. Some important questions are listed below.

- Is the owner implementing an active, written, wildlife management plan that shows the owner is engaging in activities necessary to preserve a sustaining breeding population on the land? An owner's management plan is required and must be completed on a form supplied by the Texas Parks

and Wildlife Department for each tract of land for which qualification is sought. A plan is clear evidence of the owner's use of the land primarily for wildlife management. A good plan will usually list wildlife management activities with the appropriate seasons and/or sequence of events.

- Do the owner's management practices emphasize managing the population to ensure its continued existence over another use of the land? For example, does the owner refrain from allowing visitors on the land in years when the habitat is sensitive?
- Has the owner engaged in the wildlife management practices necessary to sustain and encourage the population? In some cases, an owner must control predators and supply water when water is not adequate, supply shelter and food when natural food production is not adequate and establish vegetation to control erosion. In other cases, less active management may maintain and encourage the growth of wildlife.
- Are there improvements—appropriate fencing, for example—necessary to control or sustain the wildlife population?

An owner may use land for purposes that are secondary to the primary use—wildlife management—if the secondary use is compatible with the primary use. For example, an owner may engage in wildlife management and also operate a business in which bird watchers stay on the land overnight and watch for birds during the day (known as a bird and breakfast operation). This activity is secondary to the primary activity of managing the wildlife, but it is not incompatible with the wildlife management use. General principles of primary and secondary use are discussed in the *Manual for the Appraisal of Agricultural Land*.

Degree of Intensity for Wildlife Management Use

The degree of intensity standard for wildlife management land is determined in the same way as other agricultural uses. Wildlife management land usually requires a management of the land that encourages long-term maintenance of the population.

A chief appraiser may ask questions such as whether fencing is typical in the area for managing the target wildlife population, and what is the typical population size? In addition, the chief appraiser should ask how many of the following activities are typical in the area (or which are typical for the area during some parts of the year): habitat management; predator management; erosion control; providing supplemental supplies of food or water; providing shelter and engaging in census counts.

Because wildlife management activities are elements of the degree of intensity determination, an owner must be engaging in three of seven activities to the degree of intensity typical for the area. General principles of the degree of intensity test are discussed in the *Manual for the Appraisal of Agricultural Land*. The Texas Parks and Wildlife Department has developed regional wildlife management plans detailing specific management activities appropriate for each ecological area. (See page 8.)

Historical Use Requirement

Land must have qualified for 1-d-1 agricultural use and been appraised as 1-d-1 agricultural use in the year before the owner changes its use to wildlife management. Consequently, the time period test to determine if the land has been used for agriculture for five of the preceding seven years is usually not necessary.

Determining Appraised Values

The wildlife management use is a *revenue neutral* use of land. *The owner who switches from another agricultural use to wildlife management use must pay the same amount of property taxes that would have been paid if the land had remained in its former agricultural use.*

Land qualified for wildlife management should be placed in a wildlife management category, but should have the same appraised value as before conversion to wildlife management use. For example, if the land was in Irrigated Cropland I before the owner switched its use to wildlife management, the land should be placed in the wildlife management category, but will be appraised at the Irrigated Cropland I value.

If that land use category's value subsequently changes in the county, the new category values would apply to those tracts under wildlife management use in that category.

Notifying the Chief Appraiser of Change to Wildlife Management Use

The law does not require an annual application for agricultural use once the land has qualified. Because only 1-d-1 qualified land may qualify for wildlife management use, an owner who changes to this use need not reapply for agricultural appraisal. The law, however, does require an owner who changes the category of agricultural use to notify the chief appraiser of the change of use.

When an owner changes agricultural uses to wildlife management, the owner must notify the chief appraiser in writing before May 1 of the year in which the owner wants to qualify under wildlife management use. The chief appraiser will then determine if the land qualifies for wildlife management use. Likewise, an owner must notify the chief appraiser if land is switched from wildlife management use to another qualifying agricultural use.

Owners should contact their county appraisal districts about notification requirements before changing the use of small portions of their land from one qualified agricultural use to another. For example, if an owner converts a part of a 1,000-acre farm to wildlife management use by creating a pond for wildlife, the owner should ask about the appraisal district's need for notification and documentation requirements.

Part II:

Wildlife Management Activities, Practices and Definitions

Among the statutory requirements for property owners to qualify their agricultural land for wildlife management use is a mandate that owners perform at least three of seven wildlife management activities, which were briefly summarized in Part One.

- Habitat control (habitat management);
- Erosion control;
- Predator control (predator management);
- Providing supplemental supplies of water;
- Providing supplemental supplies of food;
- Providing shelters; and
- Making census counts to determine population.

Below is a detailed explanation of the kinds of practices that chief appraisers should examine to determine if property owners are satisfying the law's requirements. Some of the practices listed may require permits from federal, state or local governments. For example, before improving a wetland or controlling grackles or cowbirds, an owner may need a permit. Or before a planned burning, an owner may be required to provide a map of the acreage. Property owners should contact the appropriate legal authorities for permit information if they have any questions or concerns about engaging in any of the practices listed above.

Wildlife Management Plan

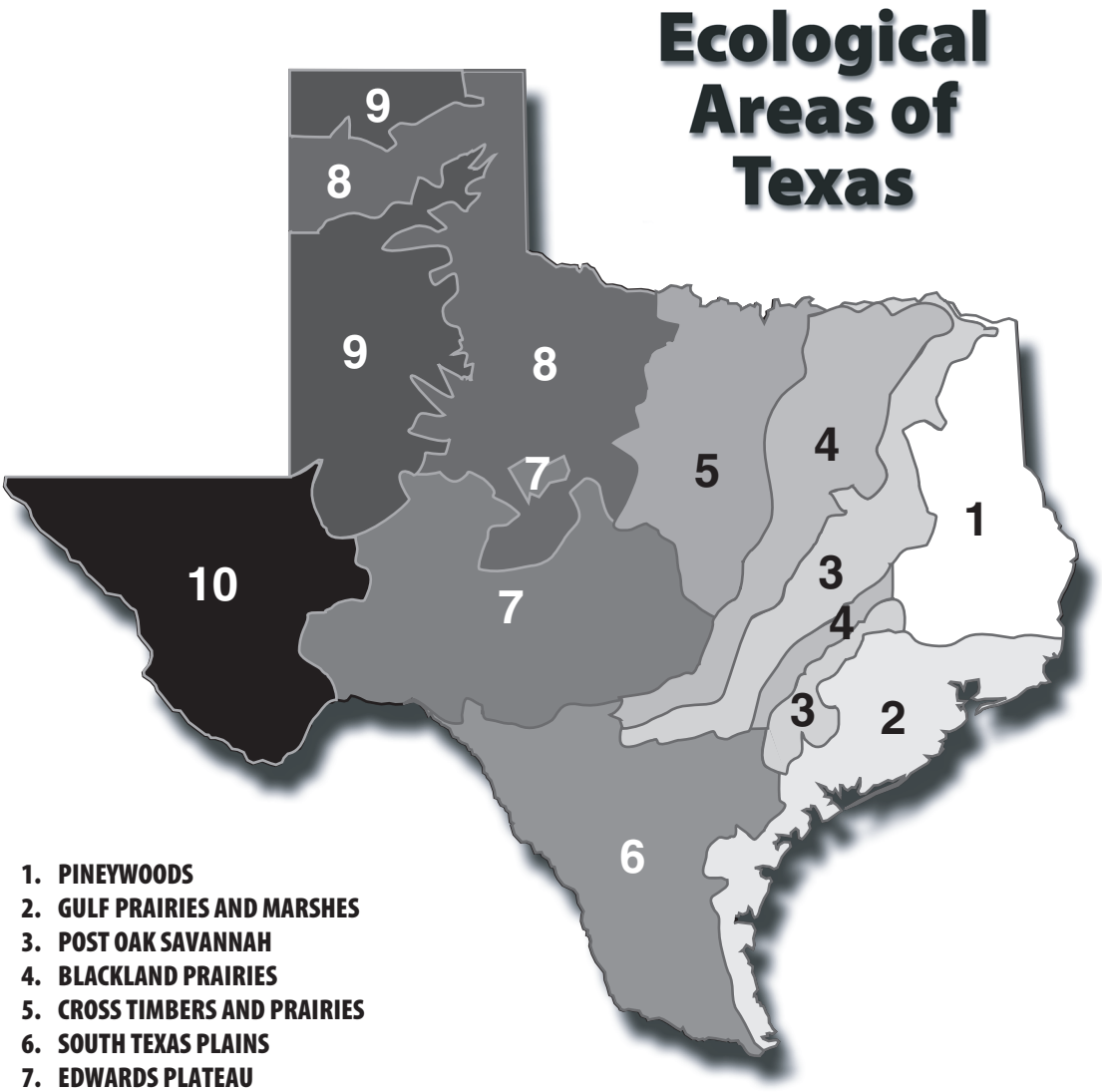
A *Wildlife Management Plan* gives information on the property's history and current use, establishes landowner goals for the property and provides a set of activities designed to integrate wildlife and habitat improvement. Such a plan is clear evidence that the owner's use of the land is primarily for wildlife management.

As stated in Part 1, an owner must provide a wildlife management plan to the appraisal district . The plan must be completed on a Texas Parks and Wildlife Department form for each tract for which wildlife management use qualification is sought. The activities and practices contained in the plan must be consistent with the activities and practices recommended in the model Texas Parks and Wildlife Department regional management plan for the region in which the property is located.

Landowners may formulate their own plans. Assistance or review, however, is available from the Texas Parks and Wildlife Department, the Texas Agricultural Extension Service, the United States Department of Agriculture's Natural Resource Conservation Service, the Texas Forest Service or other qualified wildlife biologists.

A complete plan is likely to include elements of all seven listed wildlife management activities. All activities and practices should be designed to overcome deficiencies that limit wildlife or harm their habitats. Each one of the activities listed in Part Two should be practiced routinely or consistently as part of an overall habitat management plan. For example, scattering seed corn sporadically would not qualify as providing supplemental supplies of food under these guidelines, and occasionally placing barrels of water in a pasture would not meet the requirements for providing supplemental supplies of water.

In addition, some activities that are appropriate for certain regions of Texas would be inappropriate in others. For example, some areas of East Texas may not require providing supplemental pond water for wildlife. And there may be no need for supplemental cover in South Texas brush. The Texas Parks and Wildlife Department has developed regional wildlife management plans, listing the activities appropriate to Texas' ten ecological regions. The regions are:



1. PINEYWOODS
2. GULF PRAIRIES AND MARSHES
3. POST OAK SAVANNAH
4. BLACKLAND PRAIRIES
5. CROSS TIMBERS AND PRAIRIES
6. SOUTH TEXAS PLAINS
7. EDWARDS PLATEAU
8. ROLLING PLAINS
9. HIGH PLAINS
10. TRANS-PECOS, MOUNTAINS AND BASINS

1. Pineywoods
2. Gulf Prairies and Marshes
3. Post Oak Savannah
4. Blackland Prairies
5. Cross Timbers and Prairies
6. South Texas Plains
7. Edwards Plateau
8. Rolling Plains
9. High Plains
10. Trans-Pecos, Mountains and Basins.

Habitat Control (Habitat Management)

A wild animal's habitat is its surroundings as a whole, including plants, ground cover, shelter and other animals on the land. Habitat control—or habitat management—means actively using the land to create or promote an environment that benefits wildlife on the land.

Activities that contribute to habitat control or management include:

- grazing management;
- prescribed burning;
- range enhancement;
- brush management;
- forest management;
- riparian management and improvement;
- wetland improvements;
- habitat protection for species of concern;
- managing native, exotic and feral species; and
- wildlife restoration.

Grazing management means shifting livestock and grazing intensity to increase food and animal cover or to improve specific animals' habitat. Grazing management focuses on: 1) the kind and class of livestock grazed; 2) stocking rates; 3) periodic rest for pastures by controlling grazing intensity; and/or 4) excluding livestock from sensitive areas to promote vegetation protection and recovery or to eliminate competition for food and cover.

Deferred grazing can last up to 2 years. Seasonal stocker operations also may be appropriate. Supplemental livestock water—provided by earthen tanks or wells—may be useful when implementing grazing rotation.

Appropriately designed fencing can play an important role in grazing rotation plans. Fencing also can be used to improve or protect sensitive areas, woodlands, wetlands, riparian areas and spring sites. Property owners should review their fencing practices and grazing plans annually to ensure they meet the overall wildlife management goals.

Prescribed burning is defined as the planned application of fire to improve habitat and plant diversity, to increase food and cover or to improve particular species' habitats. If the owner has a wildlife management plan, that plan should indicate the frequency of planned burnings and the minimum percentage of acreage to be burned. A plan may designate the areas to be protected or excluded from burning, but should remain flexible during periods when conditions are not favorable for burning such as during periods of drought.

Range enhancement means to establish native plants—such as grasses and forbs (weeds and wildflowers)—that provide food and cover for wildlife or help control erosion. Protecting, restoring and managing native prairies also is considered range enhancement.

The plants chosen and the methods for establishing the plants should be appropriate to the county. Non-native species are generally not recommended, but if required for a specific purpose, non-native species should not exceed 25 percent of the seeding mix.

The seeding mixtures should provide for maximum native plant diversity. Many broadleaf plants, such as weeds and wildflowers, provide forage for wildlife and/or seed production. Owners should encourage weed and wildflower species by using the methods appropriate to native rangelands, land devoted to the federal Conservation Reserve Program and improved grass pastures (for example, Coastal Bermuda). Some periodic noxious weed control may be necessary in fields converted to native rangeland to help establish desirable vegetation.

Brush management may involve maintaining, establishing or selectively removing or suppressing targeted woody plants species (including exotics) to encourage the growth of desirable trees, shrubs, grasses and forbs for forage and nesting or protective cover for selected wildlife species. Brush management also includes keeping the proper kind, amount and distribution of woody cover for particular species.

A useful brush management plan should examine wildlife cover requirements, soil types, slope angle and direction, soil loss and erosion factors and plans to control reinvasion as part of an overall wildlife management plan. This practice also should focus on retaining snags to provide cover and nesting sites for cavity-nesting animals. In addition, herbicides, if used, should be used in strict accordance with label directions.

In some areas, where brushy cover is limited, property owners may establish native tree and shrub species to provide food, corridors and/or shelter using appropriate plant species and methods.

Forest management involves establishing, maintaining, harvesting, selectively removing or suppressing trees or woody species (including exotics) to allow for the growth of desirable trees, shrubs, grasses, and forbs for forage and nesting or protective cover for selected species. Forest management activities also include keeping the proper kind, amount and distribution of woody cover for selected animal species.

As with brush management mentioned above, this practice also includes retaining snags to provide cover and nesting sites for cavity-nesting animals. Forest management activities include pre-commercial thinning or non-commercial thinning, which involves reducing the stocking levels in a stand to increase the sunlight that reaches the ground to increase vegetation or plants in the understory.

Property owners should establish native tree and shrub species to provide food, corridors and/or shelter using species and methods appropriate to the county. Owners should attempt to restore important forested habitats including bottomland hardwoods, longleaf pine, bogs, mixed pine/hardwood areas and upland hardwoods. Owners also should avoid breaking up large forested habitats for some wildlife species.

Riparian management and improvement focuses on annually and/or seasonally protecting the vegetation and soils in riparian areas (low areas on either side of stream courses). Riparian management and improvements can include: providing livestock alternate watering sites; deferring livestock grazing in pastures with riparian areas during critical periods; excluding livestock from pastures with riparian areas; and fencing to exclude or provide short duration livestock grazing.

Property owners should attempt to restore important forested habitats including bottomland hardwoods, bogs, mixed pine/hardwood areas and turkey roost sites and avoid breaking up large forested habitats in riparian areas.

Wetland improvements provide seasonal or permanent water for roosting, feeding or nesting for wetland wildlife. This practice involves creating, restoring or managing shallow wetlands, greentree reservoirs, playa lakes and other moist soil sites.

Habitat protection for species of concern refers to managing land to provide habitat for an endangered, threatened or rare species. Habitat protection includes managing, or developing additional areas for protecting nesting sites, feeding areas and other critical habitat limiting factors. This protection can be provided by fencing off critical areas, by managing vegetation for a particular species, by maintaining firebreaks to ensure critical overstory vegetation and by annually monitoring the species of concern. Any broad-scale habitat management for migrating, wintering, breeding neotropical birds (primarily songbirds) should follow the specific guidelines provided in the Texas Parks and Wildlife Department's management plans for each ecological region. Contact the Texas Parks and Wildlife Department or follow specifically approved management guidelines before practicing activities designed to protect endangered species.

Managing native, exotic and feral species involves controlling the grazing and the browsing pressure from native and non-native wildlife, particularly white-tailed deer and exotic ungulates, such as axis

deer. This practice is designed to prevent overuse of desirable plant species and to improve the habitat and plant diversity for native animals.

To ensure that an owner's objectives are met and that the animals are not exceeding the habitat's carrying capacity, owners should monitor harvesting of animals and vegetation use over time. Owners also may control other exotic and feral animals to improve the habitat and reduce the negative effect on native wildlife. (Feral animals are previously domesticated animals that have become wild.)

In addition, owners should selectively remove or control exotic vegetation affecting native habitats and wildlife over a period of time (for example, large stands of naturalized salt cedar, Chinese tallow, weeping lovegrass, etc.). Owners also should convert tame pasture grasses (such as large areas of coastal bermuda) to native vegetation.

Wildlife restoration simply means 1) restoring and improving a habitat to good condition for targeted species and 2) reintroducing and managing a TPWD-approved native species within a habitat's carrying capacity as part of a TPWD-approved restoration area.

Erosion Control

Any active practice that attempts to reduce or keep soil erosion to a minimum for wild animals' benefit is erosion control. Some erosion control practices include:

- pond construction;
- gully shaping;
- streamside, pond and wetland revegetation;
- establishing native plants;
- dike, levee construction or management; and
- water diversion.

Pond construction is defined as building a permanent water pond to prevent, stop or control erosion as an approved Natural Resource Conservation Service (NRCS) watershed project while providing habitat diversity and benefiting wildlife. Whenever possible, owners should use ponds to help create or restore shallow water areas as wetlands and for water management.

Gully shaping involves reducing erosion rates on severely eroded areas by smoothing to acceptable grades and re-establishing vegetation. An area should be seeded with plant species that provide food and/or cover for wildlife.

Streamside, pond and wetland revegetation means revegetating areas along creeks, streams, ponds and wetlands to reduce erosion and sedimentation, stabilize streambanks, improve plant diversity and improve the wildlife value of sensitive areas. Some revegetation practices include:

- building permanent or temporary fences to exclude, limit or seasonally graze livestock to prevent erosion;
- using hay (native, when possible) to slow and spread water runoff in areas where vegetation has been recently re-established;
- establishing plant buffer areas or vegetative filter strips along water courses or other runoff areas;
- installing rip-rap, dredge spoil, or other barrier material along embankments to prevent erosion and protect wildlife habitat; and
- establishing stream crossings to provide permanent low water crossings to reduce or prevent erosion.

Establishing native plants on critical areas is one method of controlling erosion. These plants also can provide food and/or cover for wildlife and restore native habitat. Some of the ways to establish these plants are listed below.

- Establish and manage wind breaks/shelterbelts by planting multi-row shelterbelts (at least four rows that are 120 feet wide by 1/4 mile), renovate old shelterbelts (re-fence, root-prune and replace dead trees) and establish shrub mottes.
- Establish perennial vegetation on circle irrigation corners by revegetating at least every other corner to reduce erosion and sedimentation, improve plant diversity and improve wildlife habitat.
- Plant permanent vegetation on terraces and field borders to reduce erosion, improve plant diversity and improve wildlife habitat.
- Conserve tillage/no-till farming practices by leaving waste grain and stubble on the soil surface until the next planting season to provide supplemental

food or cover for wildlife, control erosion and improve the soil tilth.

- Manage Conservation Reserve Program (CRP) cover by maintaining perennial cover established under the CRP on erodible sites using proper management techniques such as haying, prescribed grazing or burning.

Dike, levee construction or management is a way to establish and maintain wetlands or slow runoff to control or prevent erosion and to provide habitat for wetland-dependent wildlife. Levee management may include reshaping or repairing damage caused by erosion and revegetating levee areas to reduce erosion and sedimentation and stabilize levees. This practice may include fencing to control and manage grazing use.

Water diversion systems also can be installed to protect erodible soils and divert water into wetlands to provide habitat for resident and migratory water birds and wetland-dependent species.

Predator Management

This term refers to practices intended to manage the population of predators to benefit the owner's target wildlife population. Predator control is usually not necessary unless the number of predators is harmful to the desired wildlife population. Predator control and management should not be counted as one of the seven wildlife management activities necessary to qualify for agricultural use appraisal unless it is part of a comprehensive wildlife management scheme or plan. Some types of predator management and/or control are:

- mammal predator control;
- fire ant control;
- brown-headed cowbird control; and
- grackle or starling control.

Mammal predator control may be necessary to increase the survival of the targeted species. Key native predator species may include: coyotes; raccoons; bobcats and mountain lions; while exotic predators may include wild house cats, wild dogs and wild hogs.

Fire ant control (imported red fire ants) can be used to protect native wildlife species or their food base. Treatments should comply with the label instructions and should cover at least 10 acres or one tenth of an infested area each year—whichever is more.

Controlling brown-headed cowbirds to decrease nest parasitism of targeted neotropical bird species (for example, endangered songbirds) also may be part of an overall planned program.

Grackle/starling control can be undertaken as part of a planned program to reduce bird diseases and overcrowding, which can harm the population of white-winged dove and/or other neotropical birds.

Providing Supplemental Water

Natural water exists in all wildlife environments. Supplemental water is provided when the owner actively provides water in addition to the natural sources. This category of wildlife management activity includes providing supplemental water in habitats where water is limited or redesigning water sources to increase its availability to wildlife. Wildlife water developments are in addition to those sources already available to livestock and may require protection from livestock. Some examples of recommended practices include:

- marsh or wetland restoration or development;
- managing well, trough and windmill overflow; and
- spring development and/or improvements.

Marsh or wetland restoration or development can provide supplemental water in the form of shallow wetlands for wetland-dependent wildlife, even in areas where inadequate water does not limit wildlife. Owners may include seasonally available water such as:

- greentree reservoirs;
- specific shallow roost pond development;
- seasonally flooded crops and other areas;
- moist soil management;
- cienega (desert marsh) restoration, development and protection; and
- maintaining water in playa lakes.

Based on the wildlife's needs and the suitability of the property, managing water levels annually is desirable. To be effective, a minimum of at least one

marsh/wetland should be restored or developed every five years.

Managing well, trough and windmill overflow can provide supplemental water for wildlife and provide habitat for wetland plants. Owners also may drill wells if necessary and/or build pipelines to distribute water. Building devices—known as wildlife water guzzlers—to collect rainfall and/or runoff for wildlife in areas where water is limited also helps protect wildlife, but these devices must be a part of an overall habitat management program.

Spring development and/or improvements can be designed to protect the immediate area surrounding a spring. Excluding and/or controlling livestock around springs may help to maintain native plants and animal diversity. Other ways to protect areas include moving water through a pipe to a low trough or a shallow wildlife water overflow, making water available to livestock and wildlife while preventing degradation of the spring area from trampling.

Improvements also could include restoring a degraded spring by selectively removing appropriate brush and revegetating the area with plants and maintaining the restored spring as a source of wildlife water. Maintaining critical habitat, nesting and roosting areas for wildlife and preventing soil erosion must be considered when planning and implementing brush removal. This practice should be planned and implemented gradually and selectively over a period of time.

Providing Supplemental Food

Most wildlife environments have some natural food. An owner supplies supplemental food by providing food or nutrition in addition to the level naturally produced on the land. *Grazing Management, Prescribed Burning* and *Range Improvement* can be used to provide supplemental food. (For information on these activities, see pages 9-10.) Other ways to provide supplemental food include:

- food plots;
- feeder and mineral supplements; and
- managing tame pasture, old fields and croplands.

Food plots are one way to establish locally adapted forage to provide supplemental foods and cover during critical periods of the year. Livestock should be generally excluded from small food plots. The shape, size, location and percentage of total land area devoted to food plots should be based on the requirements of the targeted species.

Feeders and mineral supplements also can help dispense additional food to selected wildlife species during critical periods. Feeders should not be used except to control excessive numbers of deer and/or exotic ungulates as defined within a comprehensive wildlife management plan with a targeted harvest quota that is regularly measured. Harmful aflatoxin in feed should not exceed 20 parts per billion.

Mineral supplements also may be supplied to wildlife in several ways, however, this practice must be a part of an overall habitat management plan that addresses all animal groups and considers the habitat's carrying capacity.

Managing tame pasture, old fields and croplands can increase plant diversity, provide supplemental food and forage and gradually help convert the land to native vegetation. Recommended practices may include:

- overseeding or planting cool season and/or warm season legumes (for example, clovers, vetches and peas) and/or small grains in pastures or rangeland;
- using plants and planting methods appropriate to the county;
- shallow tillage (discing) that encourages habitat diversity, the production of native grasses and forbs or increases bare ground feeding habitat for selected species; and
- no till or minimum till agricultural practices that leave waste grain and stubble on the soil surface until the next planting season—which provide supplemental food or cover, control erosion and improve soil tilth.

Legumes should be planted annually until all pastures are shifted to native vegetation.

Providing Supplemental Shelter

This term means actively creating or maintaining vegetation or artificial structures that provide shelter from the weather, nesting and breeding sites or "escape cover" from enemies. The best shelter for wildlife can be provided by a well managed habitat. Some practices listed below provide types of shelter that may be unavailable in the habitat:

- installing nest boxes and bat boxes;
- brush piles and slash retention;
- managing fence lines;
- managing hay meadow, pasture or cropland;
- half-cutting trees and shrubs;
- establishing woody plants and shrubs; and
- developing natural cavities and snags.

Installing nest boxes and bat boxes in the proper numbers and locations to provide nests or dens for selected species when necessary should be consistent with the habitat needs of the target species.

Brush piles and slash retention can provide additional wildlife cover and protection in habitats where inadequate natural cover limits the growth of a selected species. Planned placement of brush piles and slash retention—leaving dead brush on the ground where it was cut or uprooted—also can protect seedlings of desirable plant species. In addition, stacking posts or limbs in tepees can provide cover for small game and other wildlife in open areas.

Fence line management, which maintains or allows trees, shrubs, forbs and grasses to grow around fence lines, can provide both food and cover. This practice should only be used where cover is insufficient in the habitat, i.e. cropland or tame pasture.

Hay meadow, pasture or cropland management can be useful tools in wildlife management. Owners should postpone mowing/swathing hay fields until after the peak of the nesting/young-rearing period of local ground-nesting birds and mammals.

Owners also should mow or shred one-third of open areas per year, preferably in strips or mosaic types of patterns, to create "edge" and structural diversity. Weeds are an important source of food for many wildlife species, and owners should, therefore, minimize weed control practices.

Owners should use no till/minimum till agricultural practices to leave waste grain and stubble on the soil surface until the next planting season to provide supplemental food or cover for wildlife, control erosion and improve soil tilth.

Providing shelter also can include roadside right-of-way management for ground-nesting birds, establishing perennial vegetation on circle irrigation corners, terraces, fencerows and field borders, establishing multi-row shelterbelts or renovating old shelterbelts, and protecting and managing old homesites, farmsteads and Conservation Reserve Program cover.

Half-cutting trees and shrubs—partially cutting branches of a live tree or shrub to encourage horizontal cover near the ground—provides supplemental cover in habitats where cover is lacking for a targeted wildlife species (See the Texas Parks and Wildlife Department's *Bulletin 48*).

Woody plant/shrub establishment—planting native seedlings to establish shrub thickets, shelterbelts or wind rowswind rows—should be organized by four rows of 120 feet for a 1/4 mile.

Natural cavity/snag development involves retaining and/or creating snags for cavity-dwelling species. Undesirable trees can be girdled or treated with herbicide and left standing. Large living trees should be protected and girdling should be minimal where trees are insufficient.

Census Counts

Census counts are periodic surveys and inventories to determine the number, composition or other relevant information about a wildlife population to measure if the current wildlife management practices are serving the targeted species. Such surveys also help evaluate the management plan's goals and practices. Specifically, this activity estimates species numbers, annual population trends, density or age structure using accepted survey techniques. Annual results should be recorded as evidence of completing this practice. The survey

techniques and intensity listed below should be appropriate to the species counted:

- spotlight counting;
- aerial counts;
- daylight wildlife composition counts;
- harvest data collection and record keeping;
- browse utilization surveys;
- census and monitoring endangered, threatened or protected wildlife; and
- census and monitoring of nongame wildlife species.

Spotlight counting animals at night along a predetermined route using a spotlight should follow accepted methodology, with a minimum of three counts conducted annually.

Aerial counts using a fixed-wing aircraft or helicopter to count animals also should follow accepted methodology for the region and be performed by a trained individual.

Daylight wildlife composition counts are driving counts used to census wildlife in daylight hours. Annual population trends on dove, quail, turkey and deer, as well as sex/age structure on deer, should be determined by sightings along a standardized transect of a minimum of five miles at least three times during a season.

Harvest data collection/record keeping means tracking annual production of wildlife. Age, weight and antler development from harvested deer, and the age and sex information from game birds and waterfowl should be obtained annually.

Browse utilization surveys annually examine deer browse plant species for evidence of deer use on each major vegetative site on the property. The surveys should be conducted in a way that can be repeated.

Census and monitoring of endangered, threatened or protected wildlife through periodic counts can improve management and increase knowledge of the local, regional or state status of the species.

Census and monitoring of nongame wildlife species also can improve management or increase knowledge of the local, regional or state status of the species. These practices can include developing checklists of wildlife diversity on the property and should be a part of a comprehensive wildlife management plan.

For More Information

The Texas Parks and Wildlife Department can provide more information on any of the activities or practices listed above. They also have detailed information on appropriate practices for each ecological region of Texas. Contact your local Texas Parks and Wildlife Department office or the state headquarters in Austin at 1-800-792-1112 or 512/389-4800.

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