

Appendix E

Vegetation Management Recommendations

Examples of cover requirements for High Plains and Rolling Plains wildlife are:

- **Pronghorns** prefer open grasslands* and need fawning cover (taller grass/forbs in spots) without heavy woody cover (less than 10% canopy coverage);
- **White-tailed deer** in agricultural areas need protective cover afforded by Conservation Reserve Program (CRP) lands*, and are favored in areas of heavier woody cover (up to 75% canopy) associated with river breaks;
- **Mule deer and elk** are favored in areas of open grasslands* interspersed with rough canyonlands*, CRP*, and agriculture with a canopy of 15-40% woody cover;
- **Bobwhite quail** need areas of bare ground interspersed with protective overhead woody cover (25% canopy), nesting cover of midgrass (bluestem), and brood range with forbs (weeds) often found in draws with sandier soils;
- **Scaled quail** have similar habitat requirements as bobwhite quail, but do well with much less woody canopy cover (10%); they occur on hardland sites as well as sandy sites;
- **Rio Grande wild turkeys** require protected roost sites (usually 30% mature timber in the form of upland shelterbelts* or cottonwoods* in river bottoms), nesting cover in the form of brush piles/tall grass on uplands sites, and rely heavily on agricultural crops adjacent to these sites;
- **Lesser prairie chickens** need extensive tracts of mid-grass prairie* with perennial bunch grasses (i.e. sand bluestem, little bluestem) and woody cover (30%) made up of sand shinnery oak, plum thickets, sand sage, and/or aromatic sumac, interspersed with native forbs;
- **Neotropical migratory bird species** such as killdeer, American kestrel, American avocet, long-billed curlew, Mississippi kite, scissor-tailed flycatcher, Swainson's hawk, and lark bunting benefit from grasslands* and a mosaic of cover types created by planned grazing and cropping systems that incorporate crop rotation and *reduced tillage*; and,
- **Ring-necked pheasants** need a 30% canopy of heavy grass/weed cover for winter protection and nesting in the form of unmowed roadsides*, CRP fields*, odd corners*, field borders*, and undisturbed playas* interspersed with clean ground (brood range) and grain fields (60% stubble left standing for food/cover in winter).

In short, a variety of diverse cover types within a farm or ranch boundary generally

promotes greater wildlife diversity; however, the habitat needs, home range, and mobility of particular species must be taken into account when planning enhancements for wildlife in order for reasonable goals/expectations to be realized.

*Important sites/elements to retain and manage

Management of vegetation, whether it be shortgrass prairie, midgrass prairie, Conservation Reserve Program lands, canyonlands, or riparian zones, requires long-term planning. Any vegetation manipulation practice will have an impact on resident wildlife species, either good or bad, depending on the type of treatment used, the degree of use, and location. Before implementing vegetation control techniques, determine what the long-term effects will be for each wildlife species that occurs in the area and minimize the negative impacts. Consider the location and size of sensitive wildlife habitats that provide important nesting or roosting sites, feeding areas, desirable wildlife food producing plants, cover, water, and space needs. Wildlife can be displaced by disturbance from an area without adequate escape or security cover. The amount and distribution of cover on adjacent lands need to be taken into consideration when assessing the cover needs of wide-ranging wildlife species such as mule deer, pronghorns, lesser prairie chickens, and Rio Grande wild turkey. A small ranch would need a larger amount of security cover on a percentage basis than would a larger ranch where the vastness of the area provides security.

The control of plant species such as redberry juniper, mesquite, prickly pear, that invade a variety of rangeland sites is often warranted. When these species dominate an area, they diminish plant diversity and the quality of habitat for most wildlife species. Vegetation manipulation may be in the form of prescribed burning, mechanical, biological, or chemical control of trees, brush, or weeds. Most of these practices will require the use of specialized equipment or machinery for plowing, discing, bulldozing, spraying, or other vegetation or soil manipulation procedures. The cost effectiveness of the different control measures must be considered prior to initiation of control measures.

Prescribed burning is an effective, low-cost habitat management tool that can be used to enhance plant diversity by stimulating the production of a variety of forb and grass species and to maintain woody plants at the low heights most beneficial to wildlife. Livestock as well as wildlife can benefit from a properly planned and conducted prescribed burn. However, there are legal constraints and liabilities in



the use of fire. The land manager should be well-trained and knowledgeable on the proper use of fire before attempting a prescribed burn. Refer to Texas Agricultural Extension Service bulletin *Prescribed Range Burning in Texas* for details on the use of fire as a range management tool.

Prescribed Burning Recommendations:

To enhance wildlife habitat on rangelands or Conservation Reserve Program lands, prescribe burn sites @ the rate of ¼th to 1/5th of the total acreage on a property during late-February through early-April (before green-up) on a rotating basis, burning each site every 4-5 years to remove old growth and stimulate new growth of forbs (weeds and wildflowers). In order to have enough fine fuel to produce a hot fire during cool-season burning, pasture deferment may be necessary to allow growth of vegetation normally grazed by cattle. See TCE publication entitled *Prescribed Range Burning in Texas* for good general guidelines, especially for native pastures. About seven times more insects are usually found in burned native grass areas compared to unburned areas, thus providing much more spring and summer high protein food for quail, wild turkey, prairie chicken, and/or pheasant poult.

General burn prescriptions for the High Plains and Rolling Plains habitats are:

1. Prepare disked bare-ground fire guard around all sites before burning. Disked fire guards, which can include roads and right-of-ways, should be 15 to 20 feet wide. (These disked areas can be planted to winter supplemental food plots between burn years.
2. Humidity should be between 25 - 40 percent.
3. Wind speed should be between 10 - 15 miles per hour.
4. Always burn into the wind first (backfire) 50 yards into the woods or pasture, then set fire with the wind (headfire). The entire burn may be conducted with a backfire, depending on fuel and weather conditions and burning experience of crew.
5. As a general rule, initiate burns in the morning, after 9 a.m.

Consult with TPWD, Natural Resources Conservation Service (NRCS, formerly Soil Conservation Service, SCS), or Texas Forest Service, and notify local volunteer fire department before conducting burns.

Cattle should be excluded from burned areas for at least 3 months to allow regrowth of new, tender vegetation.

Prescribed burning is the cheapest, most effective habitat management technique for the Rolling Plains Ecological Area.

The use of mechanical equipment to control woody plants will typically result in an initial growth of forbs and annual grasses and the resprouting of many woody species. Soil disturbance associated with mechanical controls releases the natural seed bank found in the soil, increasing the quantity, quality, and distribution of plants beneficial to wildlife. However, without periodic follow-up treatments of fire, herbicides, or additional mechanical manipulations, and/or without proper livestock grazing management, these sites will eventually again become dense stands of regrowth brush and trees. Mowing (shredding) areas of herbaceous plants and/or low density woody plants is another form of mechanical treatment. Mowing should be postponed until after the peak of the nesting/young-rearing period of local ground-nesting birds and mammals. One-third of open areas can be mowed per year, preferably in strips or mosaic types of patterns, to create "edge" and structural diversity.

Biological control is the use of heavy grazing pressure by livestock such as goats to control or suppress woody plants and sheep to control herbaceous weeds. Long-term heavy grazing pressure by goats, which prefer woody browse but will also consume forbs, will eliminate all leaves from woody plants up to a height of four feet. The creation of this "browse line" and the resulting park-like appearance of the woody plant community will have negative effects on the wildlife species that also depend on the low-growing foliage of woody plants for both forage and cover. Heavy grazing pressure by sheep, which prefer forbs, will reduce or eliminate forbs that are also beneficial to wildlife. Under certain management goals, biological control of woody plants and forbs can be a legitimate practice if done correctly. ***However, it is not normally a recommended wildlife habitat management practice.***

The use of chemical herbicides can have a significant negative impact on many plant communities and may suppress or eliminate plants other than the target species. From a wildlife habitat management perspective, the use of herbicides is one of the least desirable methods of vegetation control. If herbicides are used, selective applications, rather than broad-scale applications, are recommended to avoid the elimination of plants that are important to wildlife.

Mesquite Control

Mesquite is another woody invader infesting many range sites in northwest Texas. Its growth form varies from a multi-stemmed shrub to an upright tree. Adaptable to a variety of soil types, mesquite can colonize and dominate open rangelands, old fields, and other areas where ground cover has been reduced and fire eliminated from the



Use of helicopters to apply herbicide provides the convenience of aerial application with the added benefits of allowing precision application, virtually eliminating chemical drift, and allowing the landowner to selectively treat very specific areas.

environment. Mesquite sprouts from buds along a compressed, buried section of the stem called the "crown". Control by grubbing, bulldozing, root plowing, and chaining of mature-size trees has proven successful under proper soil moisture conditions. Several approved herbicides are also available for control. Shredding, on the other hand, or other practices that only remove top growth but do not involve removal of the crown is not recommended and may result in further sprouting. Any control planning should proceed with good common sense and a sense of aesthetics.

Mesquite seed pods are readily eaten by wildlife and livestock, resulting in the dispersal of undigested seeds across the landscape. Seeds may remain dormant for extended periods of time and germinate when the right conditions or soil disturbances occur. Young mesquites can quickly become established and grow rapidly, particularly when competition from other plants is reduced by heavy grazing pressure.

Like redberry juniper, mesquite does have some redeeming qualities. It provides seed pods that are a beneficial although sporadic food source, microclimates for cool season grasses and forbs that may be important to plant diversity, nitrogen fixing roots, and cover, that make its occurrence beneficial to many wildlife species.

Farming Practices: Delaying of haying in native grass pastures or Conservation Reserve Program fields (when permitted by specific plan) until after the first of July will usually avoid accidentally killing of young fawns or ground nesting birds.

Keep use of herbicides to a minimum. If necessary, spot spraying or "tactical brush management" is much preferred over broadcast spraying of some of the newer herbicides which last longer. Spray early in the spring while plants are still small, requiring less spray. Many "weeds" are important to wildlife.

To provide weed seeds (ragweed, croton, sunflower, partridge pea, trailing wild bean, etc.) that are the basis of quail, dove, and other seed-eating bird's fall and winter diets, shallow disk 10 - 20 foot wide strips in sandy soil around the edge of brush and woods after the first freeze. This practice will promote growth of these important forbs the following spring and summer. This treatment should always be conducted with the natural contour of the land on country with <3% slope to avoid erosion problems, and should be performed generally during the months of February-March in the Rolling Plains.

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compiled by Calvin Richardson and Gene Miller
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