



# Range-wide Conservation Plan for the Lesser Prairie-Chicken

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The following document represents a range-wide conservation plan for the lesser prairie-chicken. This plan is a collaborative effort coordinated by the Ecosystem Management Research Institute working with the Western Association of Fish and Wildlife Agencies and the Lesser Prairie Chicken Interstate Working Group representing Kansas Department of Wildlife, Parks, and Tourism, Oklahoma Department of Wildlife Conservation, Colorado Parks and Wildlife, Texas Parks and Wildlife Department, and New Mexico Game, Fish and Parks. Affiliations of authors of the plan are:

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## Introduction

The lesser prairie-chicken (*Tympanuchus pallidicinctus*; hereafter LEPC) is a North American grouse species that occupies sand sagebrush (*Artemisia filifolia*), sand shinnery oak (*Quercus havardii*) and mixed grass vegetation communities of the southern Great Plains. Historically, LEPC occupied an estimated range of approximately 182,843 sq. mi however boundaries of this estimated range included many areas of unlikely habitat in shortgrass prairies. Since the 19th century, LEPC and the habitat upon which they depend have diminished across their historical range (Crawford and Bolen 1976a, Taylor and Guthery 1980a), with recent estimates of current occupied range totaling approximately 30,900 sq. mi, or about 17% of the estimated area of their historical range, as shown in Figure 1. Causes for this reduction in occupied range are primarily attributed to habitat loss and fragmentation (USFWS 2012a). Habitat losses have been caused by conversion of native prairie to cropland (Bent 1932, Copelin 1963, Jackson and DeArment 1963, Crawford and Bolen 1976a, Taylor and Guthery 1980b), and long term fire suppression (Woodward et al. 2001) leading to tree invasion (Fuhlendorf et al. 2002). Habitat degradation has occurred due to long term fire suppression (Woodward et al. 2001, Jones 2009) grazing management practices that reduce LEPC habitat quality (Jackson and DeArment 1963, Taylor and Guthery 1980a, Riley et al. 1992), and herbicide spraying that reduces LEPC habitat quality (Jackson and DeArment 1963, Peterson and Boyd 1998, Thacker et al. 2012). Habitat fragmentation has resulted from combinations of the above habitat loss and degradation factors as well as from fragmentation caused by oil and gas development (Hunt 2004) and suspected effects of wind energy development (Pruett et al. 2009b). In addition, LEPC populations have been influenced by fences and utility lines (Wolfe et al. 2007, Hagen 2010), prolonged drought (Merchant 1982, Dixon 2011, Lyons et al. 2011, Grisham 2012), and climate change (Grisham 2012, USFWS 2012a, USDA NRCS 2012).

Because of these declines, the U.S. Fish and Wildlife Service (USFWS) was petitioned to list the LEPC as threatened in 1995. After review, the USFWS issued its findings in 1998 that the species was warranted for listing but precluded from listing because of actions needed for other higher priority species (USFWS 2012a). The USFWS assigned LEPC a listing priority number of 8 (1 indicating the highest need for action and 12 lowest), which it then revised in 2008, increasing it to a 2 (USFWS 2012a) primarily because of the perceived increased threat of wind development and associated development of transmission lines within the occupied range. On December 11, 2012, the USFWS released a Proposed Rule to list the LEPC as a threatened species (Fed. Reg. 50 CFR Part 17 Docket No. FWS-R2-ES-2012-0071:4500030113 (<http://www.gpo.gov/fdsys/pkg/FR-2012-12-11/pdf/2012-29331.pdf>)). A final rule determination is scheduled to be made by September 30, 2013.

Not all areas within LEPC range have experienced the declines noted above. In parts of Kansas, LEPC populations are stable or increasing, and have expanded into new areas as Conservation Reserve Program (CRP) lands have created LEPC habitat (Rodgers and Hoffman 2005). Garton (2012) conducted a quasi-extinction analysis for LEPC populations in 4 ecoregions and found that the population in the short grass ecoregion in Kansas and the population in the sand shinnery oak ecoregion in New Mexico and west Texas appear to be relatively stable. The results from these analyses also

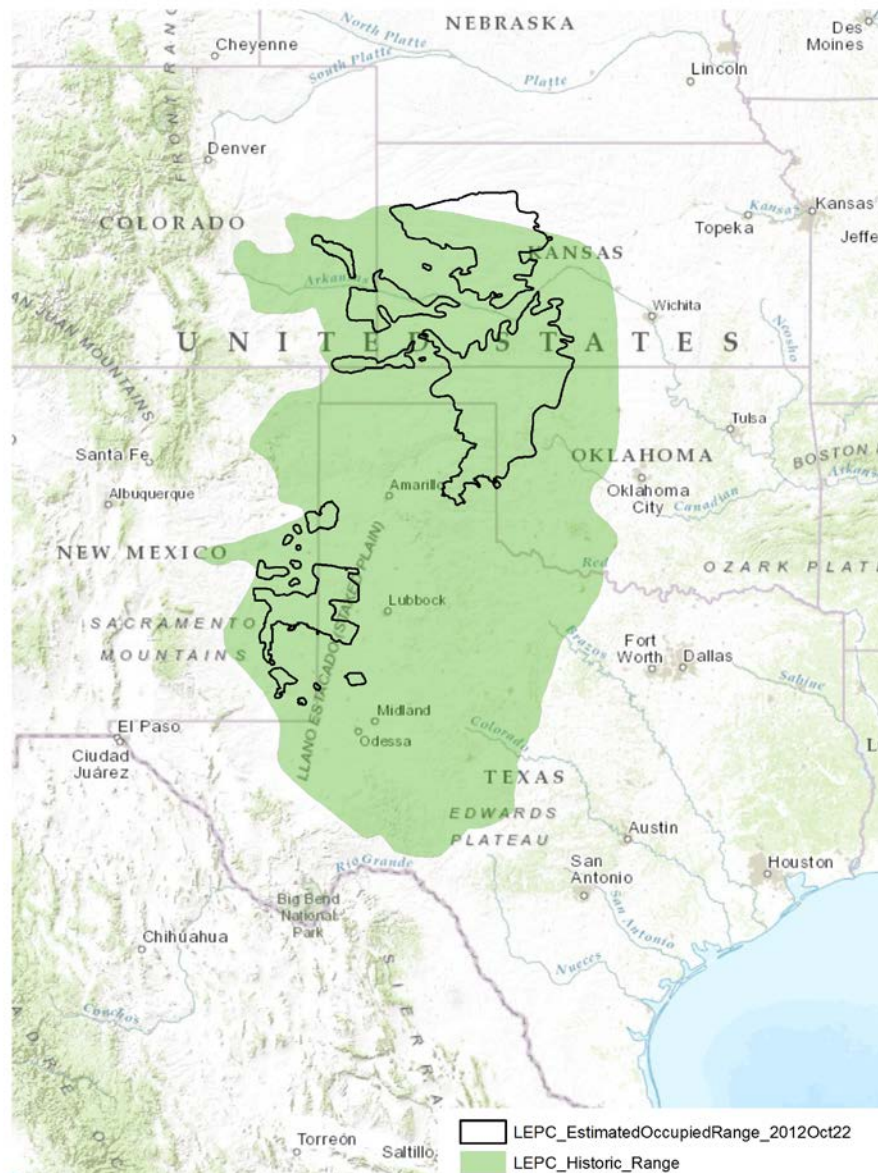


Figure 1. Estimated historical range and current occupied range of lesser prairie-chickens.

indicated that the carrying capacity would likely decline over time for the ecoregions if no changes in conservation activities occurred. However, despite this predicted change, populations still had high likelihood of persistence but at lower levels of abundance.

Numerous efforts to address the decline of LEPC have been initiated since the initial determination of its status as a warranted but precluded species. Numerous state and federal programs have been implemented with millions of acres enrolled in LEPC programs. However, despite the fact that some LEPC populations appear to be stable and concerted efforts are underway to address the declines in other ecoregions, the USFWS (2012a) expressed concerns that a number of existing and expanding threats are currently outside of the regulatory authority of the states to control, thus the determination

to propose listing LEPC as threatened. In June 2012, the 5 states supporting LEPC specifically Kansas (KS), Colorado (CO), Oklahoma (OK), New Mexico (NM), and Texas (TX) agreed to develop a range-wide conservation plan for LEPC. The 5 states worked through the Western Association of Fish and Wildlife Agencies (WAFWA) and WAFWA's LEPC Interstate Working Group (IWG), and engaged the Ecosystem Management Research Institute (EMRI) ([www.emri.org](http://www.emri.org)) to coordinate development of the plan. The plan compiles information on the on-going initiatives and has identified new initiatives that are being implemented by federal and state agencies, organizations, industries, landowner groups, and others. The plan identifies a two-pronged strategy for LEPC conservation, with one component being the coordinated implementation of incentive-based landowner programs for LEPC habitat and the second being the implementation of a mitigation framework administered by WAFWA that will reduce threats of development and provide for off-site mitigation opportunities. It is recognized that a very high percentage of LEPC habitat is on private lands. While public lands can contribute to the needs of the species in a limited number of locations, the bulk of the habitat needs must be provided on private lands. This plan recognizes that fact, and is developed to engage landowners in programs that recognize their needs while improving conditions for LEPC. The strategies included in this plan should provide for improvement in LEPC habitat conditions that will increase populations of the species and provide for long-term sustainability.

### Range-wide LEPC Conservation Plan Goal

The overall goal of the range-wide conservation plan for LEPC is to develop a conservation strategy for the species that identifies, coordinates, and commits to the implementation of a conservation strategy that ensures the improvement and long-term sustainability (into the foreseeable future) of the species throughout its current or expanded range. More specifically, this plan:

- Identifies a range-wide and sub-population goals for LEPC,
- Identifies desired habitat amounts and conditions to achieve the population goal,
- Develops a map of focal areas and connectivity zones where LEPC conservation actions will be emphasized to produce the habitat conditions required to expand and sustain the species,
- Enhances programs and cooperative efforts to encourage and expand voluntary landowner incentives and practices to produce the desired habitat conditions,
- Promotes agreements designed to avoid impacts to LEPC from various development activities, and where avoidance is not possible, to minimize and mitigate impacts,
- Establishes a mitigation framework to be administered by WAFWA that would establish development agreements and when unavoidable impacts occur, to compensate for these impacts through off-site mitigation actions,
- Identifies and implements monitoring and research needs,
- Develops an adaptive management plan that will incorporate monitoring and new information into future adjustments to the plan, and
- Addresses input and suggestions from agencies, organizations, landowners, industries, other stakeholders, and the general public on the conservation plan for LEPC.

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## LEPC BACKGROUND INFORMATION

### LEPC Life History and Habitat Requirements

During the breeding season (primarily mid-March through May), male LEPC congregate on lek sites and perform courtship displays to attract females for mating. Nests are initiated mid-April through late May, typically within two weeks of lek attendance and copulation (e.g., Bent 1932, Copelin 1963, Snyder 1967, Merchant 1982, Haukos 1988, Behney et al. 2010). Hatching peaks in late May through mid-June throughout the range (e.g., Copelin 1963, Merchant 1982). Re-nests (following nest depredation or abandonment of the initial clutch) are initiated mid-May through early June, with hatching mid-June through early July (e.g., Merchant 1982, Pitman et al. 2006). In the autumn and winter, birds assemble into mixed flocks of both sexes, feeding primarily in sand sage, sand shinnery oak, or mixed-grass prairies, but also often in waste grain fields (Hagen and Giesen 2005). Habitat components necessary to fulfill LEPC life history needs include nesting habitat, brood-rearing and summer habitat, and autumn/winter habitat.

#### Leks

LEPC have high fidelity to lek sites (Campbell 1972) and males often use traditional lek sites year after year. Females tend to select traditional leks rather than newer or temporary leks (Haukos and Smith 1989), however new leks will form especially with an expanding population as reported for greater prairie-chickens (*Tympanuchus cupido pinnatus*) (Hamerstrom and Hamerstrom 1973). Lek sites are characterized by sparse, low vegetation (less than 4" (10 cm)) and are often located on a knoll or ridge, or grama-grass (*Boutela* spp.) flat (Jones 1963, Copelin 1963, Cannon and Knopf 1979, Taylor and Guthery 1980a, Giesen 1991). Disturbed areas such as roads, abandoned oil and gas well pads, areas around livestock watering facilities, herbicide treatments, and prairie dog towns (Crawford and Bolen 1976a, Davis et al. 1979, Sell 1979, Taylor 1979, Ahlborn 1980, Locke 1992, Bidwell et al. 2003) may also be used as lek sites. Jones (2009) reported on a lek being established in a sand sagebrush site one year after a burn. A study conducted by Jarnevig and Laubhan (2011) indicated that areas with slight topographic relief are favored as lek sites.

Generally, there are sufficient areas with appropriate conditions for use as leks to meet this LEPC habitat requirement. Lek sites are therefore not considered limiting to LEPC populations, and habitat management to specifically provide for lek sites is not considered to be necessary. However, leks are very important in management for LEPC as they help wildlife managers understand the distribution and trends of LEPC in an area, and indicate where birds are finding nesting habitat. Monitoring of leks is an important component of a LEPC conservation plan. Lek data provide a valuable index of the population status of LEPC in an area over time. Further, lek locations provide valuable information on where maintenance and improvement of nesting and brood rearing habitat will be most effective. The presence of birds on leks reveals that at least minimum quality habitat exists in the area and that birds are present to respond to habitat improvements. Lek locations are therefore considered an important consideration in developing management plans for specific sites.



### Nesting Habitat

Nesting success and brood survival are two of the most critical population parameters for LEPC sustainability (Hagen 2003, Pitman et al. 2006, Hagen et al. 2009, Grisham 2012). Therefore, nesting and brood rearing habitat are considered two of the most critical habitat components for this species.

The importance of shrub and herbaceous cover as a key component influencing nest fate of LEPC is well documented (e.g., see Davis et al. 2008). In sand sagebrush-grasslands, nests are most often in sand sagebrush or in tall native bunchgrasses (Giesen 1994b, Pitman et al. 2005, 2006). Further, successful nests are typically associated with greater heights and cover of shrubs and/or tall perennial grasses (e.g., native bluestems) (Davis et al. 1979, 1981; Riley et al. 1992, Patten et al. 2005a, Davis 2009, Lyons et al. 2011, Hagen et al. in review). Typically the height and density of shrubs, forbs, or residual grasses are greater at the nest site than in the surrounding rangeland, and are greater at successful nests than at unsuccessful nests (Riley 1978, Davis et al. 1979, Wisdom 1980, Haukos and Smith 1989, Riley et al. 1992, Pitman et al. 2005, Patten et al. 2005a, Davis 2009, Lyons et al. 2011, Hagen et al. in review). In southwestern Kansas, LEPC that nested in areas with denser cover were more successful in hatching nests than females with less cover (Hagen et al. 2007b). A maximum height selection for grasses and shrubs appears to be around 18-20 in. (46-51 cm) (Lyons et al. 2011), with areas supporting taller grasses than this not showing significant selection for these greater heights. Grasses were found to be taller at successful nests (average height = 26 in., (66 cm)), than unsuccessful nests (average height = 14 in., (36 cm) n = 26; Riley et al. 1992). Optimum nesting habitat in sand sagebrush communities would have >60% absolute cover of shrubs, grasses, and forbs, and where feasible should support grasses >20 in. (51 cm) in height (Hagen et al. in review). Elmore et al. 2009 suggested that habitat patches should maintain average grass heights greater than 15" (38 cm) in order to provide enough taller vegetation to provide preferred nest sites. Residual litter should be maintained and bare ground minimized (Davis 2009, Grisham 2012, Hagen et al. in review). In sand shinnery oak, nesting habitat has been reported to have lower total vegetation cover (>35% absolute cover desired), but should strive to support grasses >20 in. (51 cm) in height and maintain a high level (>30%) residual cover of litter (Haukos and Smith 1989, Riley et al. 1992, Davis 2009, Grisham 2012, Hagen et al. in review).

In Conservation Reserve Program (CRP) grasslands planted to mixed, native warm-season grasses, nests are predominately found in mid- and tall grasses such as little bluestem (*Schizachyrium scoparium*), big bluestem (*A. gerardi*), switchgrass (*Panicum virgatum*), and in some locations western wheatgrass (*Pascopyrum smithii*), where clumps of tall residual vegetation from the previous growing season are common (Fields 2004). Nests have been found in CRP planted to Old World bluestems (*Bothriochloa* spp.) (Wolfe et al. 2003) but such stands are generally thought to offer poorer quality nesting habitat than native warm season grass stands.

Leks are generally located around good nesting habitat, and female LEPC typically nest within 2 miles of leks (Suminski 1977, Riley 1978, Giesen 1994b). Pitman et al. (2006) reported that the majority of hens they monitored nested within 1 mile of a lek, but not necessarily the lek where they were captured. Thus locations of leks can serve as an indicator of where existing nesting habitat is located, and indicate

prime areas for potential improvements to nesting habitat.

### **Brood Habitat**

Areas used for brood-rearing are usually close to nesting areas (juxtaposition and interspersions (King 1938) of nesting and brood habitat is important), and so are generally found within 2 miles of lek sites. As broods have limited mobility, especially at early ages, quality brood habitat needs to be close to nesting habitat. Giesen (1998) suggested approximately 1000 ft. (300 m.) as a desirable maximum distance for brood movement. A mosaic of nesting and brood habitat provides the optimal combination of conditions for LEPC. Hagen et al. (in review) suggested that approximately 1/3 of an area should be in brood habitat and 2/3 in nesting habitat for optimum LEPC habitat quality. Thus, interspersions of nesting and brood habitat is important in providing optimum habitat conditions.

Brood habitat typically has a higher amount of forb cover and less grass cover than nesting sites (Ahlborn 1980, Applegate and Riley 1998, Hagen et al. in review). Brood-rearing locations are usually associated with higher levels of insect abundance (Jamison et al. 2002b, Hagen et al. 2005) and where chicks can move easily on the ground (Bidwell et al. 2003). Grisham (2012) reported that brood survival from 0-14 days post-hatch was the primary limiting factor to LEPC in the Southern Great Plains, and that lack of forbs that could support greater numbers of insects was a primary factor. Active sand dunes with shrubs, especially within sand shinnery oak or sand sagebrush vegetation types are common in brood-rearing habitat. Jones (2009) reported male LEPC and females with broods used sand sagebrush areas one and two years following a burn. Greater forb density was found in these areas. Burning of LEPC habitat (both sand sagebrush and sand shinnery oak communities) tends to temporarily reduce shrub and grass cover while increasing forb cover for one to two years post-fire and has been found to increase grasshopper densities (Boyd and Bidwell 2001). Following this, the shrub and grass component recovers and the forb cover is reduced (Davis et al. 2008). Thus, brood habitat is improved for a few years following a burn while nesting habitat is lowered in quality, but this is a temporary change as grasses and shrubs respond following the burn and typically return to their higher cover and density within several years. Grisham (2012) compared brood habitat selection in areas in New Mexico that had either been grazed or were ungrazed combined with being treated or untreated with herbicide (tebuthiuron) to reduce sand shinnery oak. He found that broods used areas that were either grazed or had received herbicide treatment over areas that were ungrazed or not treated with herbicide, further supporting the selection of broods for more disturbed areas.

Shrubs and shinnery oak have been reported to be used for shade in summer (Copelin 1963, Donaldson 1969, Bell 2005, Larsson et al. 2012) for thermoregulation during high temperatures (Bell et al. 2010, Larsson et al. 2012) not only for broods but for adults as well. At higher temperatures, LEPC broods in New Mexico selected locations with more overhead cover and taller plant heights (Bell et al. 2010). There was also evidence that sand shinnery oak was preferred habitat irrespective of temperature (Bell et al. 2010).

### **Autumn/Winter Habitat**

LEPC typically range across larger areas during the autumn and winter months, occupying the same

general vegetation types as are used for nesting and brood-rearing (Giesen 1998). Boal and Pirus (2012) reported that 97% of bird locations in the non-breeding season for 23 birds they monitored in west Texas were within 1 mi (1.7 km) of a lek. Kukul (2010) studied over-winter habitat use of LEPC in the northeastern Panhandle of Texas, and found that 98% of the locations for the birds were within 3 mi (5 km) of the lek where they were captured, and within 1.4 mi (2.4 km) of a known lek. As these findings represent similar distances for locations of over-wintering birds as reported for distances from leks for nesting and brood rearing birds, these results indicate the general overlap in nesting, brood, and autumn/winter habitat use. LEPC were found to use mixed-grass, sand sagebrush, or sand shinnery oak for resting and roosting (Taylor and Guthery 1980a). The birds fed in these vegetation communities, or congregated in agricultural fields with waste grains as long as they are located in close enough proximity to rangelands that provide adequate cover for resting and concealment (Jones 1964, Crawford and Bolen 1976b, Ahlborn 1980, Taylor and Guthery 1980b, Jamison 2000). Sand shinnery oak provides leaves, catkins, acorns, and insect galls as seasonal food resources. Pirus (2011) and Boal and Pirus (2012) described overwinter habitat use in sand shinnery oak ecosystems in west Texas, and found that birds in this location selected for grasslands mixed with sand shinnery oak while not selected for sand sagebrush dominated areas whether these had grasses present or not. Kukul (2010) described overwinter habitat use in the panhandle of Texas and found the LEPC there preferred grasslands with <15% shrub cover, and emphasized the need to maintain good quality grasslands for over-winter habitat use. Kukul (2010) did not observe birds using agricultural fields. Because of the overlap in autumn and winter habitat requirements with nesting and brood habitat, specific management for autumn and winter habitat is not considered to be necessary as long as good quality nesting and brood habitat is present.

### **Food**

The USFWS (2012a) provided a review of foods of LEPC. They noted that most food habits studies have been conducted in sand sagebrush and sand shinnery oak areas, with food habitats from mixed grass communities less well documented. Insects are a key component of the diet when available, and are especially important for broods. Martin et al. (1951:97) reported oaks as a primary food in fall, winter and spring, with grain crops, especially wheat and sorghum used in fall and winter, with sumac in winter, and gromwell in spring and summer. They reported insects as a key summer food with grasshoppers the largest component followed by “beetles, bugs, and caterpillars”. As summarized by the USFWS (2012a), vegetation provides the bulk of the diet of adults through fall, winter and early spring. Green vegetation becomes important in spring, with seeds, mast, and leafy vegetation being selected throughout this time. In sand shinnery oak, acorns are an important food item when available, but their availability varies considerably from year to year (Smith 1979). Thus, vegetation eaten by LEPC is diverse with many different species selected.

### **Water**

Water has not been considered a direct requirement of LEPC (Davison 1935, Elmore et al. 2009, USFWS 2012a), although they will use surface water when it is available. Supplemental water sources were noted as being more available today than historically because of water developments for livestock. Supplemental water was suggested as a benefit during periods of drought (Crawford 1974), but no data



to support its importance are available. Generally, water developments in most parts of the range are not considered to be a habitat improvement practice for LEPC. However, Haukos (USGS, personal communication) noted that in the sand hills of the Southern Great Plains that with the drawdown of the Ogallala aquifer that many springs and seeps appear to have dried up. Loss of these water sources could reduce LEPC habitat in these dry landscapes so that water improvements may be desired in these areas. Boal and Pirijs (2012) reported that 99.9% of the locations for 23 birds they monitored in west Texas were within 2 mi (3.2 km) of a water source, raising the question of the importance of water for LEPC in this part of its range.

### Home Ranges

Home ranges of individual LEPC have been reported in various studies, and have been summarized by the USFWS (2012a). Home ranges vary by sex, age, and season, and weather patterns. LEPC are not territorial, so home ranges of individuals will overlap. Taylor and Guthery (1980c) reported home ranges of 19 telemetered birds in western Texas as ranging from 86 acres (35 ha) for 1 immature female in February to 4804 acres (1,944 ha) for 3 immature males in December. The overall average monthly home range for the 19 birds was 988 acres (400 ha). Riley et al. 1994 conducted telemetry studies in New Mexico and found that 51 females averaged home range sizes of 571 acres (231 ha) during pre-nesting and 227 acres (92 ha) while nesting. Females with broods had home ranges that averaged 294 acres (119 ha) while females without broods averaged 180 acres (73 ha) in the post-nesting timeframe. Toole (2005) studied LEPC in Texas and found that home ranges for 24 birds distributed across 2 study areas for 2 years ranged from 286 acres (116 ha) to 729 acres (295 ha) during the breeding season while home ranges for 7 birds across the 2 study areas during one fall ranged from 422 acres (171 ha) to 647 acres (262 ha). Toole (2005) found no significant differences in home ranges between sexes or ages of the birds he monitored. Giesen (1998) reported that home ranges for males in Colorado were 512 acres (207 ha) while females were 1,473 acres (596 ha). Jamison (2000) reported home ranges of males in Kansas to range from 30 acres (12 ha) to 346 acres (140 ha) in the spring, 190 acres (77 ha) to 356 acres (144 ha) in the summer, and 566 acres (229 ha) to 1,010 acres (409 ha) in the fall. Taylor and Guthery (1980a) reported winter home ranges in Texas to range from 86 acres (35 ha) to 1,223 acres (495 ha). Boal and Pirijs (2012) monitored home ranges of 23 LEPC in west Texas and reported that female prairie-chickens had slightly larger home ranges averaging 1,244 acres (504 ha) compared to 1,209 acres (489 ha) for males with this difference not significant. Kukul (2010) reported home range sizes for 11 male LEPC in the northeastern Panhandle of Texas in the fall and winter of 2008-2009 as 1,657 acres (671 ha) in fall and 1,271 acres (515 ha) in winter. He reported home ranges for 18 male LEPC in the fall and winter of 2009-2010 as 1,483 acres (600 ha) and 1,189 acres (481 ha) respectively. Kukul (2010) reported home ranges of 3 female LEPC for the fall of 2008 as 791 acres (320 ha), and reported 3 female LEPC having fall and winter home ranges in 2009-2010 of 1,880 acres (791 ha) and 697 acres (282 ha) respectively. Home ranges have been noted to increase in size during droughts (Copelin 1963, Ahlborn 1980, Merchant 1982). Merchant (1982) found the average home range size of 7 female lesser prairie-chickens was 430 acres (174 ha) during a year of normal precipitation, but was 1,146 acres (464 ha) for 8 females in a drought year, a 267% increase. Home ranges have generally not been compared to measures of habitat quality, although an assumption that

could be applied to the Merchant (1982) study is that habitat quality was reduced during drought years resulting in the larger home range sizes. Thus, in general, nearly all home ranges of LEPC have been found to be less than 2,000 acres (809 ha) in size at all times of the year.

### **Minimum Sizes of Habitat Blocks**

To ensure a sustainable population, Applegate and Riley (1998) recommended clusters of 6-10 or more leks, each with a minimum of 6 males, separated from one another by a distance of 1.2 mi (1.9 km) or less. A number of studies have reported distances between leks of 1 mi (1.6 km) or less (Crawford 1974, Crawford and Bolen 1976a, Taylor 1979, Locke 1992, Jamison et al. 2002a). If each lek in the cluster was surrounded by a 2 mi radius area (3.2 km) (i.e., the minimum breeding season patch size around a lek), the entire cluster of leks and core habitat complex might occupy up to 32 sq. mi (83 sq. km) (~21,000 acres) (8,500 ha), with a wider perimeter of habitat for autumn and winter foraging and escape cover. This is more or less consistent with the 25,000-acre (10,118 ha) estimate of Bidwell et al. (2003) for a lek complex.

Taylor and Guthery (1980c) recommended that LEPC be managed in units of at least 16,000 acres (648 ha) in size. Bidwell et al. (2003) suggested that the collective home range of all birds that attend a particular lek site averages approximately 19 sq. mi (49 sq. km) (>12,000 acres) (4,856 ha), indicating that large areas are needed to ensure the long-term persistence of LEPC populations (Elmore et al. 2009). Although the minimum habitat patch size to support LEPC is not clear, several studies have speculated that habitat mosaics containing patches ranging from 1,200 acres (486 ha) to 25,000 acres (10,118 ha) of contiguous native rangelands may be necessary to sustain LEPC populations (Davison 1940, Copelin 1963, Crawford and Bolen 1976a, Taylor and Guthery 1980b, Wildlife Management Institute 1999, Woodward et al. 2001, Bidwell et al. 2003), although the specific definition of contiguous was not included. Crawford and Bolen (1976a) reported that areas should be greater than 63% high quality habitat to provide good habitat conditions. A conservation plan for LEPC in Oklahoma (Hauffer et al. 2012) used recommendations developed by a science team that reviewed the available information on sizes of habitat blocks and set an objective for core conservation areas for LEPC to average 50,000 acres (20,236 ha) in size with at least 70% of the area in good to high quality habitat.

The USFWS (2012b) discussed the need for “strongholds” to support viable populations of LEPC. They defined strongholds as areas that are managed or set aside for long-term LEPC conservation and of sufficient size to support a viable population of LEPC. They recommended that for viable populations, strongholds should contain at least 6-10 leks, with at least 6 males/lek. This recommendation is based on the work reported above (Applegate and Riley 1998). They suggested a minimum size of 25,000 acres (10,118 ha) but that would only apply if all of the area was high quality habitat, with the need for up to 50,000 acres (20,236 ha) or more if lower habitat quality was interspersed in the area. High and lower quality habitats were not defined in this description. They noted that patches with <65% high quality habitat may not be able to support a viable population. Strongholds should have long-term protection where threats are removed. USFWS (2012b) stated that where split estates (different owners of surface and mineral rights) occur, to qualify as a stronghold an area must have agreements in

place that protect high quality habitat from impacts associated with the extraction of minerals.

### Density Information

LEPC do not defend territories other than the small area of a lek defended by a male during the breeding season, so that determination of home range sizes does not provide a basis for density estimates as it can for many other species. Density estimates are best derived from surveys of number of birds occurring at leks, and extrapolating this to population sizes over the area surveyed. Various estimates of densities have been made. Texas estimated a mean density of 5.63 LEPC/sq. mi (14.6 LEPC/sq. km) (range 2.18-8.64 (5.6-22.4)) (Davis et al. 2008). New Mexico used an estimate of 4.85 birds/sq. mi (12.6 birds/sq. km) (Davis et al. 2008). Kansas estimated densities of LEPC in much of its range at 10 breeding birds/sq. mi (25.9 birds/sq. km) (Davis et al. 2008). In development of the conservation plan for LEPC in Oklahoma, an estimate of 5 birds/ sq. mi was used in setting habitat goals (Haufler et al. 2012). Olawsky and Smith (1991) using transect sampling reported summer densities of 52-67 birds/sq. mi, and 88-137 birds /sq. mi in winter in their study areas in Texas and New Mexico. Davison (1935) estimated a spring population of 850 birds on a 10,000 acre ranch in sand shinnery oak in northwestern Oklahoma in 1935, a density of approximately 55 birds/sq. mi, and reported an average density of males of 24/sq. mi for 7 years of monitoring in the 1930's, a decade with reported reduced numbers of LEPC due to drought conditions (Davison 1940). These higher densities of birds may have been influenced by declining amounts of available habitat.

### Movement Information

Movements of LEPC may be expressed as normal daily movements or occasionally as dispersal movements. Campbell (1972) observed that males moved several miles from their leks to feed in grain fields in the winter. Taylor and Guthery (1980c) recorded a daily movement of over 2.4 mi in one day, with one juvenile male moving 7.7 mi in 4 days, a move that they attributed to dispersal. Pitman (2003) reported on one female that moved 35 mi (58 km) from its capture site to where it nested. Jamison (2000) in a study conducted in southwestern Kansas reported movements that averaged 806 ft per day (n = 14, range 634 – 1,411 ft) for broods less than 14 days of age and 1,040 ft per day (n = 8, range 605 – 2,139 ft) for broods 14 to 60 days of age (Jamison 2000). Banded juvenile male LEPC moved an average of 5.3 mi (range 0.2- 12.6 mi) from the lek they were captured on to where they were collected by hunters (Campbell 1972). Riley et al. (1994) reported that 3 females with broods moved an average of 910 ft per day. Kukul (2010) reported on fall and winter movements of 15 male LEPC monitored in the northeastern Panhandle of Texas in 2008-2009 and found minimum average daily movements of 2,015 ft (614 m) in fall and 1,588 ft (484 m) in winter. Male LEPC monitored in 2009-2010 (n=18) had minimum average daily movements of 2,067 ft (630 m) in fall and 1,581 ft (482 m) in winter.

### LEPC Habitat Dynamics

Davis et al. (2008) provided a good description of the relationship of fire to LEPC: "Fire was a naturally occurring form of disturbance on the pre-Columbian Great Plains and was ignited not only by lightning but, for at least 12,000 years, also by aboriginal Americans. The impact of fire was a major force in shaping the structure of the vegetation community (e.g., Knopf and Samson 1997). The long history of

large ungulate herbivores on the Great Plains is also well accepted (Milchunas et al. 1988). Large ungulates are attracted to recently-burned areas by the new growth that is typically more palatable and of greater nutritional quality than vegetation in unburned areas. In turn, recently burned and, consequently, heavily-grazed areas supported more forbs and were less likely to burn in subsequent years due to a reduction in grass litter. The effect of this historical pattern, known as the fire-grazing interaction, created a mosaic of patches (burned/unburned, heavily grazed/lightly grazed, dominated by forbs/dominated by grasses) that shifted spatially over time (Vinton et al. 1993, Hartnett et al. 1996, Fuhlendorf and Engle 2001).” Since LEPC tend to nest in areas with greater heights and density of grasses and shrubs (e.g. Riley et al. 1992, Pitman et al. 2005, Lyons et al. 2011) but then move their just-hatched chicks to areas with less grass, more forbs, and greater insect availability (e.g. Bidwell et al. 2003, Jamison et al. 2002b, Hagen et al. 2005, Bell et al. 2010), this historical shifting mosaic satisfied their critical reproductive needs. Average intervals of fire return to any given area varied and were generally more frequent in eastern sections of the Great Plains where litter accumulation rates were greater. Within the range of the LEPC, fire return intervals varied from an average of 5 years in eastern sections of the range to 10-20 years in the more-arid, western-most parts of the species’ range (Hahn 2003, Masters 2004).

Thus, a mix of nesting and brood rearing habitat are considered the most critical components of LEPC habitat. These should be in relatively close proximity and fairly well interspersed to maximize habitat quality. The movement and home range information reported in above sections supports the need for these two habitat requirements to be in relatively close proximity to provide optimum habitat conditions. As previously discussed, Hagen et al. (in review) suggested a 2/3 to 1/3 mix of nesting to brood habitat to optimize LEPC habitat. Brood habitat can be created by fire, or by other disturbances including grazing, herbicide application, or mechanical treatments. However, for a site to maintain its dynamics where it will return rapidly from a brood condition to an optimum nesting condition, as occurred with historical fire regimes, it needs to support appropriate shrub/grass/forb communities. Disturbances that create brood habitat but do not sustain the compositions to allow the transition of brood habitat to nesting habitat make development of the mix of good nesting and brood habitat difficult.

### **LEPC Survival Rates**

Survival rates of LEPC and factors affecting these rates have been studied at various locations. Haukos et al. (1988) reported a hen survival rate of 58% for the three month breeding season. Hagen et al. (2007) determined survival rates of females on 2 study sites in southwest Kansas and found that birds nesting or raising broods had higher mortality rates than at other times of the year or for females not involved in these activities. They suggested that nesting and brood habitat were key components to survival rates of LEPC. Jones (2009) reported lower survival rates for LEPC during the breeding season than other times of the year. Pitman et al. (2006) reported on survival of birds in southwest Kansas during early and late brood rearing as well as over-winter, and recommended that improving food resources for early brood rearing was important for increasing LEPC survival rates. Grisham (2012) studied both male and female LEPC survival rates in Texas and reported that males had a 57% survival

rate during the breeding season while females had an 89% survival rate during 2010 and a 71% survival rate in 2011. He reported that these survival rates for females were higher than reported in other studies. Lyons et al. (2009) reported annual survival rates of 31% in sand shinnery oak ecosystems and 52% in sand sagebrush ecosystems in Texas with higher mortality occurring during the breeding season. Boal and Pirius (2012) monitored survival rates for 53 adult birds over 3 years in west Texas and reported: "Survival rates during the first 2 years (year 1:  $0.846 \pm 0.141$ ; year 2:  $0.827 \pm 0.092$ ) were among the highest ever reported for the species during the nonbreeding season. Survival was markedly decreased in year 3 ( $0.572 \pm 0.136$ ) and resulted in an overall nonbreeding season average of  $0.721 (\pm 0.0763)$ ." From this they concluded that non-breeding season mortality in their study area was a limiting factor to the population.

### LEPC Population Status

The LEPC is endemic to sand shinnery oak, sand sagebrush, and mixed-grass prairie communities in eastern New Mexico (Ligon 1961, Hubbard 1978), portions of southeastern Colorado (Hoffman 1963, Giesen 1994a), southwestern Kansas (Schwilling 1955, Horak 1985, Thompson and Ely 1989, Jensen et al. 2000), western Oklahoma (Duck and Fletcher 1944, Copelin 1963, Horton 2000), and the Texas panhandle (Henika 1940, Oberholser 1974, Sullivan et al. 2000). The USFWS (2012a) provided an overview of the population status of LEPC in each of these 5 states.

In 2012, a range-wide aerial population monitoring program was initiated. This survey used helicopters flying standard routes within 15 km by 15 km blocks distributed within 4 LEPC ecoregions (McDonald et al. 2012) consisting of the sand shinnery oak ecoregion in eastern New Mexico-southwest Texas, the sand sagebrush ecoregion located in southeastern Colorado-southwestern Kansas and the western Oklahoma Panhandle, the mixed grass ecoregion located in the northeast Texas panhandle-northwest Oklahoma-south central Kansas area, and the short grass/CRP mosaic ecoregion located in northwestern Kansas and northeastern Colorado (Figure 2). McDonald et al. 2012 reported observing 36 lesser prairie-chicken leks, 26 greater prairie-chicken leks, 5 lesser and greater prairie-chicken mixed leks and 85 prairie-chicken groups not confirmed to be lekking for a total of 152 prairie-chicken groups. Additional flights flown by Texas Tech University and the Oklahoma Department of Wildlife Conservation (ODWC) detected 10 lesser prairie-chicken leks and 7 groups not confirmed to be lekking. An estimated total of 3,174 lesser prairie-chicken leks (90% CI: 1,672 – 4,705) and 441 lesser and greater prairie-chicken mixed leks (90% CI: 92 - 967) were reported to occur in the study area, equating to an estimated total population of 37,170 individual lesser prairie-chickens (90% CI: 23,632 – 50,704) (Table 1) and 309 individuals based on the hybrid lesser-greater prairie-chicken lek counts (90% CI: 191 - 456).

Garton (2012) conducted a reconstruction analysis of LEPC populations for the overall population of LEPC as well as for each of the 4 ecoregions for LEPC (Figure 2). Garton (2012) developed the population analysis from past lek counts including the most recent aerial survey reported above and used these to estimate quasi-extinction probabilities. He discussed many of the limitations of the



### Lesser Prairie Chicken Occupied Range and Ecoregions

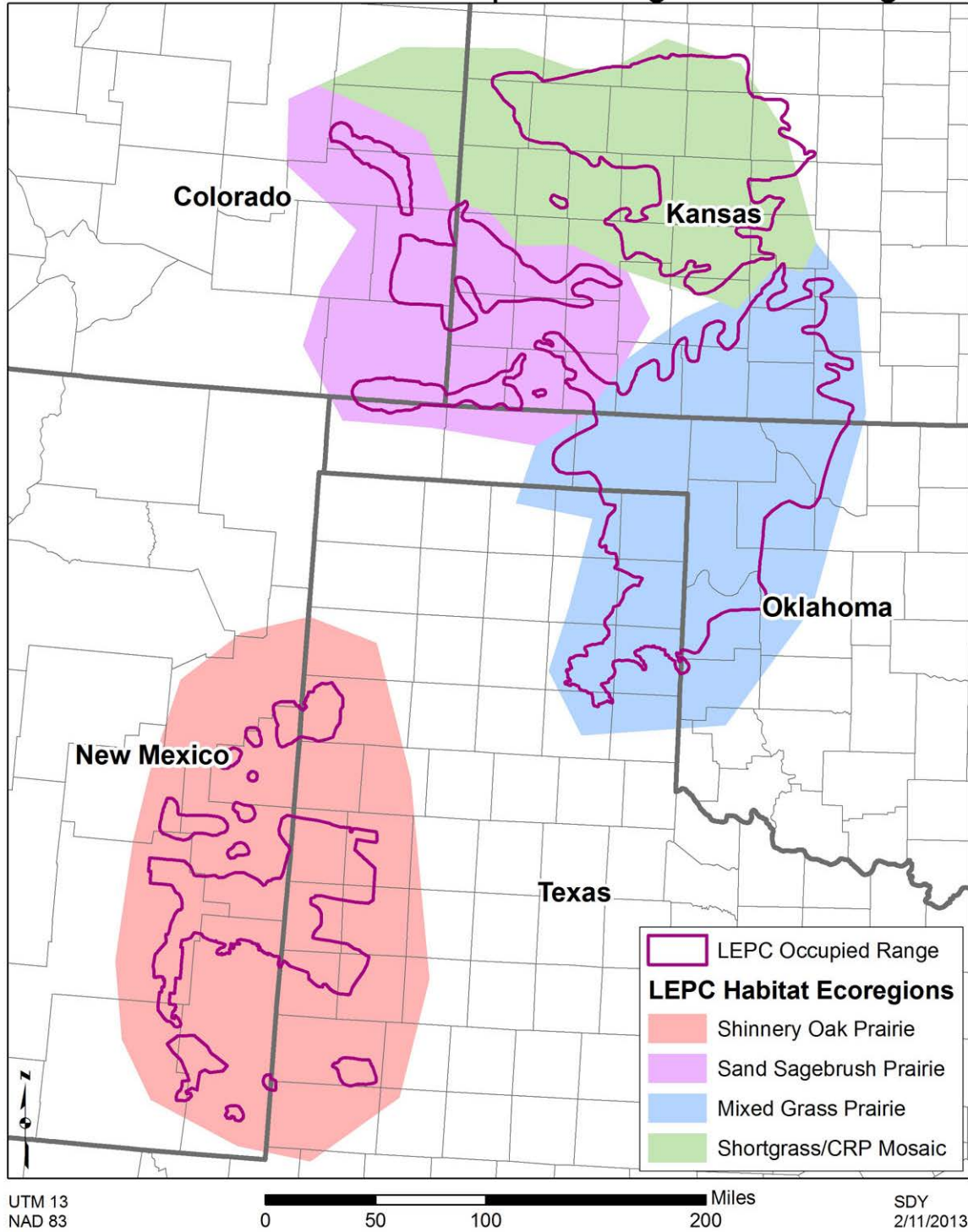


Figure 2. Ecoregions delineated for LEPC for their range including the currently estimated occupied range (EOR) of the species.

Table 1. Population estimates of LEPC based on an aerial survey conducted in 2012 (McDonald et al. 2012).

Ecoregion	Estimated # of leks	Estimated Population	% of surveyed leks in ecoregion	% of surveyed pop. in ecoregion
Sand shinnery oak	428	3,699	13.5%	10.0%
Sand sagebrush	105	1,299	3.3%	3.5%
Mixed-grass	877	8,444	27.6%	22.7%
Short-grass	1,764	23,728	55.6%	63.8%
<b>Totals</b>	<b>3,174</b>	<b>37,170</b>	<b>100%</b>	<b>100%</b>

available population data including the limited number of leks surveyed as one goes farther back in time, the inconsistencies in the survey methods used, the assumptions of observed males on leks to numbers of females, and the minimum population sizes assumed to be needed to maintain populations. Garton (2012:16) showed “future projections of carrying capacity without substantial changes in key determinants of LEPC population dynamics are slightly above 10,000 in 30 years and less than 1,000 in 100 years.” Of significant value in the analysis were the comparisons of the various ecoregions. Data for the shortgrass ecoregion could not be analyzed prior to 1997 due to a lack of sufficient leks, but the data for 1997- present showed this population to have a high probability for persistence and projected increasing numbers. The population analysis for the sand shinnery oak ecoregion showed good probabilities of short and long term persistence, although not as high as for the shortgrass ecoregion. However, the projected populations in the mixed grass ecoregion and especially for the sand sagebrush ecoregion showed higher levels of short term risk and significant long term likelihood of dropping below the population extinction thresholds of 50 and 500 individuals based on the above assumption of no changes to key determinants of LEPC population dynamics.

Garton’s analysis of LEPC populations (2012) used short and long-term population viability targets based on the 50/500 rule as suggested by Franklin (1980) and Soule (1980) as the basis for the quasi-extinction analyses. An analysis for greater sage-grouse (*Centrocercus urophasianus*) used these same population viability targets (Garton et al. 2011). Garton (2012) used the effective population size ( $N_e$ ) values of 50 for short-term (30 year) persistence and 500 for long-term (100 year) persistence and adjusted these for count composition of sexes resulting in an estimate of 85 birds counted at leks for the  $N_e=50$  and counts of 852 birds representing  $N_e=500$ . As used by Garton et al. (2011), a significant likelihood of extirpation was defined as a result of >50% of simulated population forecasts falling below the respective  $N_e$  for either 30 or 100 years.

Other targeted population goals besides the 50/500 populations as minimum viable population sizes for quasi-extinction thresholds have been suggested. Flather et al. (2011) noted: “Genetic considerations consisted of comparing an estimate of the effective size ( $N_e$ ) of a population to the 50/500 ‘rule’ of conservation genetics (i.e. an  $N_e$  exceeding 50 for short-term and 500 for long-term survivability).

However, the 50/500 values of  $N_e$  are simply viability goals for maintaining genetically diverse populations; they provide little direct connection with extinction risk” (Flather et al. 2011:308). Traill et al. (2010) attempted to determine a generalized minimum viable population number, much like the 50/500 rule, and reported that the evolutionary and demographic constraints on populations require minimum sizes to be at least 5000 adults. However, Flather et al. (2011) reported on reviews they conducted of the viability analyses used by Traill et al. (2010) that revealed that a huge range in minimum viable population estimations existed, finding that even estimates conducted within many populations varying by orders of magnitude. They also reported on the limitations of population viability analyses (PVA’s) to provide meaningful estimates of minimum population sizes. Flather et al (2011:308) stated that estimates of extinction risk from PVA models were often imprecise, inaccurate, contingent upon threats currently acting, and affected by model structure, study duration and other uncontrolled factors (Flather et al. 2011 referencing Beissinger and Westphal 1998). Flather et al. (2011:308) went on to note that PVA’s were best used for ranking relative extinction risk, switching the focus of these analyses away from the determination of a minimum viable population to emphasize the importance of PVAs for understanding the relative probability of persistence for populations in comparisons among management options.

The Garton (2012) report potentially could have run other minimum viability population targets for their extinction analyses. The results of such different population targets would be likely changes to the timeline over which any of the declining populations would reach a minimum threshold and fail to meet the desired quasi-extinction probabilities. However, PVA’s conducted on other grouse species have supported the use of the 50/500 number. Grimm and Storch (2000) estimated the minimum viable population for capercaillie (*Tetrao urogallus*) in central Europe, and stated that 470 individuals were needed to sustain a population with less than 1% chance of extinction in 100 years. They noted, however, the sensitivity of their model to certain model parameters such as female survival rates, and suggested that additional populations needed to be studied to confirm their findings. The Gunnison Sage-grouse Rangewide Steering Committee (2005) reported that small populations of Gunnison sage-grouse (*Centrocercus minimus*) having fewer than 25 individuals had a high probability of extinction in 50 years, but that populations of 500 individuals were fairly secure (<5% extinction probability) if the populations were generally stable. Garton (2012) did not provide an estimated minimum viable population for LEPC, but did provide the quasi-extinction probabilities for the range-wide population as well as for the ecoregional populations based on past population trends and assuming continued losses in population carrying capacity within the overall range or in the sand sagebrush and mixed grass ecoregions.

Of interest is the expansion of LEPC into the shortgrass ecoregion. Early descriptions of LEPC range described LEPC as a shrub associated species. Copelin (1963) reported LEPC used low to high density shrub savannahs with shrubs less than 1 m tall. Donaldson (1969) reported LEPC occurring in sand shinnery oak and sand sagebrush ecosystems using sand sagebrush and sand shinnery oak areas intermixed with areas of grassland. They were not reported to occur in grasslands (Copelin 1963, Donaldson 1969). Jones (1964) reported that LEPC occurred in sand sagebrush areas intermixed with



patches of shortgrass prairie, while greater prairie-chickens occurred in tall grass prairies intermixed with shortgrass prairies. However, with the establishment of CRP in northwestern Kansas, LEPC have expanded their range into new areas with established blocks of CRP (Rodgers and Hoffman 2005). The grasses planted in these areas were a standard mixture used across Kansas (Pitman, KDWPT personal communication) and expanded various tall warm season grasses into ecological sites that were not noted to support dense stands of these species historically. It is possible historical grazing combined with the lower precipitation in these sites precluded the occurrence of stands of tall warm season grasses that occurred further east in higher precipitation areas. The shorter grasses occurring on less sandy ecological sites in this area may have provided a habitat barrier between populations of greater prairie chickens to the east and LEPC that utilized sand sagebrush and sand shinnery oak vegetation in the west. Schwillig (1955) reported that LEPC did not occur in the flatlands in this area but were confined to the rougher sand country to the west. However, with the protection from grazing in CRP, the taller grass species could occur further west allowing LEPC to move into these areas. LEPC populations are doing well in these planted fields with a generally expanding population (Garton 2012). Garton (2012) did note the extensive intermixing of LEPC and greater prairie-chickens in these areas with a number of mixed flocks and hybrids.

## THREATS TO LEPC POPULATIONS

The USFWS (2012a) provided a summary of threats they considered in their listing proposal. Potential threats identified by the USFWS (2012a) included habitat conversion from agriculture, livestock grazing, collision mortality, shrub control and eradication, altered fire regimes and invasion by woody plants, insecticides, wind power and energy transmission development and operations, petroleum production, roads and other linear features, predation, disease, hunting loss and other recreational disturbances, hybridization, and competition from ring-necked pheasants (*Phasianus colchicus*). A number of these potential threats can cumulatively result in habitat loss and fragmentation, the primary concern identified by the USFWS (2012a) for proposing LEPC as a threatened species.

### Habitat Loss and Fragmentation

The USFWS (2012a) reported that the threat of habitat loss and fragmentation is a primary concern for proposing LEPC as a threatened species. Habitat loss and fragmentation is a result of the cumulative effects of all factors affecting amounts and qualities of LEPC habitat. It can affect LEPC populations at multiple scales. At large scales, fragmented populations of LEPC may become genetically isolated and lose genetic diversity. Genetic concerns from fragmentation have not been shown to occur with LEPC. The LEPC population in New Mexico and west Texas does have some genetic differences from the rest of the population (Van Den Bussche et al. 2003, Hagen et al. 2010b, Pruett et al. 2011), but this population is of adequate size and with a low enough quasi-extinction risk to not be of a concern (Garton 2012) for maintaining a population above  $N_e$ . Fragmented populations may require demographic support to help build numbers back up following a local population crash from such factors as severe weather events. If no other population sources are close enough or if the intervening habitat conditions are too adverse to allow movements of individuals, local populations could be extirpated.

Finally, reductions in habitat quality within habitat patches can reduce population sizes, reproductive success, and survival rates. While these will fluctuate annually with weather patterns and other factors, areas with low habitat quality may be population sinks and not able to maintain their population sizes without demographic support from other areas.

### **Wind Power and Energy Transmission**

One of the primary reasons why the USFWS (2012a) in 2008 increased the priority for a listing decision on LEPC was the increased perception of risk from wind energy developments and associated increases in development of transmission lines. Substantial areas of LEPC current occupied range do have high suitability for wind energy development (Pruett et al. 2009b), particularly some of the sandy ridgelines that comprise high quality LEPC habitat. While empirical data on the effects of wind energy development on LEPC are lacking, and the avoidance behavior of LEPC towards transmission lines has limited empirical data, concerns exist about the impacts of these developments on habitat use by the species (Robel et al. 2004, Pruett 2009a, 2009b, Hagen 2010, Hagen et al. 2011, USFWS 2012a). Presently, little is known on how wind power developments affect LEPC and/or LEPC habitats. Wind developments include the turbine to harness the energy, as well as access to the sites, and transmission line connections to substations or other existing power grids. Physical disturbance affected by the construction of turbines, turbine noise, and physical movement of turbines during operation have the potential to disturb nesting LEPC (Robel et al. 2004). However, behavioral avoidance of these facilities by prairie grouse has the potential to exacerbate the negative impacts of the project area. The effects of habitat fragmentation may indirectly affect local LEPC populations by decreasing the area of habitat available for nesting and brood-rearing (Pitman et al., 2005). It is predicted that nesting and brood-rearing hens will avoid large wind turbines by at least a 1 mi radius (Robel et al., 2004), but again, no empirical data are available to support such predictions.

### **Petroleum Production**

Oil and gas developments have been reported to cause impacts to LEPC (Hunt 2004, Hunt and Best 2010, Hagen et al. 2005, Pitman et al. 2006, Beck 2009, Hagen et al. 2010, 2011). While additional information on avoidance behaviors of LEPC around oil and gas development and production activities and how these influences integrate with other land use activities in an area is still needed, concerns exist that increased densities of wells in an area will result in reduced LEPC populations. Hunt (2004:96) reported that abandoned leks in his study area had higher densities of wells than active leks stating "Average number of active wells near active leks was 1, while average number of active wells within 1.6 km (1 mile) of abandoned leks during their last active year was 8." Activities associated with oil development and production including roads, power lines, pipelines, compressor stations, and other structures all add to the cumulative effects and associated concerns for LEPC populations (Hunt 2004).

A challenge in addressing the threat of oil and gas developments is that of split estates, where landowners that own and control the surface of the land and the uses of that land often don't own the subsurface or mineral rights. Mineral rights are often owned by multiple parties and may have complex leases of the rights. As owners of mineral rights have the authority to exercise those rights, agreements with surface rights owners for LEPC habitat protection or management are subservient to

the mineral rights. Thus, provision of LEPC habitat into the future must consider both surface and mineral rights. The complexity of many mineral rights with multiple owners of a parcel makes addressing mineral rights even more challenging. However, factoring this into conservation planning is essential for LEPC habitat planning.

### **Habitat Conversion to Agriculture**

Habitat conversion to agriculture might be more accurately termed conversion of native grasslands and shrublands (rangelands) to rowcrops. This conversion has been identified as an historical event that resulted in a substantial reduction in LEPC habitat (Crawford and Bolen 1976a, Fuhlendorf et al. 2002). Woodward et al. (2002) found that areas with the greatest decreases in amounts of native shrubland had the greatest declines over time in LEPC numbers, but did not relate this directly to conversion to rowcrops. Most of the conversion to rowcrops occurred well in the past with settlement of the prairies. However, changing markets and crop prices have stimulated new conversions of grasslands as reported by Wright and Wimberly (2013) for the western Corn Belt. These current losses in grasslands have not been reported within the range of LEPC. Houts conducted a GIS analysis and reported at an ESRI meeting that changes in grasslands between 1993 and 2005 within LEPC range showed a reduction of 255,258 acres (103,303 ha) of grasslands. However, during this same time, substantial increases in grassland plantings, primarily through the Conservation Reserve Program (CRP) also occurred. Thus, while conversion to rowcrops is occurring in some parts of the country, within LEPC range, this seems to be a much more limited concern.

### **Livestock Grazing**

Livestock grazing is a widespread practice on most remaining native grass and shrublands within LEPC range. Maintaining these native shrub and grasslands is desirable, as indicated above, and grazing (ranching) is a land use that encourages maintaining lands in this condition. Grazing is a practice that can have both beneficial and detrimental effects to LEPC habitat. Grazing practices that result in reductions in vegetation structures and residual vegetation that are less than optimal for LEPC are detrimental to LEPC habitat quality (Hoffman 1963, Jackson and DeArment 1963, Sell 1979, Hunt and Best 2010). In particular, reductions in grass heights in nesting habitat can significantly reduce habitat quality as described previously in the nesting habitat section. A lack of lightly grazed habitat will result in insufficient nesting habitat (Crawford 1980, Jackson and DeArment 1963, Davis et al. 1979, Taylor and Guthery 1980a, Davies 1992). Uniform or widespread livestock grazing of rangeland at an intensity that leaves less than adequate residual cover remaining in the spring is considered detrimental to LEPC populations (Bent 1932, Davis et al. 1979, Crawford 1980, Bidwell and Peoples 1991, Riley et al. 1992, Giesen 1994b), due to reductions in nesting cover and desirable food plants. Residual cover at and around nests is thought to increase nest success because the nest is better concealed from predators (Davis et al. 1979, Wisdom 1980, Riley et al. 1992, Giesen 1994b). Leonard (2008) found LEPC to use ungrazed areas for nesting significantly more than grazed areas. However, grazing can also reduce grass densities where they are too dense to allow for the movements of chicks, and be used to produce an increase in forb cover or diversity that can improve brood habitat quality. Thus, grazing can reduce the quality of LEPC nesting habitat, but is also an appropriate practice for improving brood habitat in

some locations. Crawford (1981) reported that grazing can reduce the needed density of grasses as well as increase the density of shrubs. LEPC prefer sand sagebrush and sand shinnery oak with high densities of grasses. Grazing can reduce the density of grasses resulting in an increase in shrub densities (Crawford 1981), particularly in sand shinnery oak (Haukos 2011). Good cover of grasses will utilize available water and keep sand shinnery oak at lower densities. With higher levels of grazing, shinnery oak is able to obtain greater amounts of moisture and expand their densities and keep grasses from reestablishing, which at high levels reduces the quality of LEPC habitat (Haukos 2011).

### Shrub Control and Eradication

Widespread control of sand shinnery oak or sand sagebrush can be detrimental to LEPC habitat quality (Haukos and Smith 1989, Johnson et al. 2004, Patten et al. 2005b, Bell et al. 2010, Gunter et al. 2012, Thacker et al. 2012). Other studies have suggested that reduction of sand shinnery oak in some locations may provide some benefits to LEPC (Doer and Guthery 1983, Leonard 2008) by increasing seed production or producing more favorable habitat conditions. Olawsky et al. (1988) did not find a statistical difference in LEPC densities between treated and untreated areas. Patten et al. (2005) found higher survival rates of LEPC in sand shinnery oak with greater than 20% shrub cover compared to birds using 10-20% or <10% shrub cover. Patten et al. (2005b) noted the more favorable microclimate provided by these higher cover of shrubs. Because most land management goals in sand shinnery oak communities are directly related to improving cattle forage, high application rates of tebuthiuron have been common, with little attention to possible wildlife related effects (Peterson and Boyd 1998, Haukos 2011). No studies have suggested that widespread chemical control of sand shinnery oak or sand sagebrush designed to eliminate these shrub species to increase grass production for livestock were beneficial for LEPC. In Texas, Haukos and Smith (1989) found that nesting LEPCs preferred nesting in untreated areas compared to treated areas. Likewise, Johnson et al. (2004) found more LEPC nests in untreated areas compared to treated areas in New Mexico. However, both of these studies were conducted in the presence of unmanaged grazing. Patten et al. (2006) found that hens typically nesting in untreated areas for several years post-treatment, or if they nested in treated areas selected remnant patches of shinnery oak. Studies on treatments that applied tebuthiuron at lower levels to thin sand shinnery oak rather than eliminate it have reported different results. Zavaleta (2012) tested restoration techniques using a combination of herbicide (0.60 kg/ha tebuthiuron) and managed short-duration grazing (50% utilization of annual production in two grazing events) treatments over a 10-year period. Use of tebuthiuron had the greatest effect on the community by increased grass and forb cover by 149% and 257%, respectively in treated areas. Across the study, plots with the herbicide and grazing treatment combination were the most comparable to NRCS ecological site reference communities with 20.2% sand shinnery oak, 69.7% grass, and 10.2% forb cover. Plots not treated with herbicide had three time greater coverage of sand shinnery oak and less than 50% cover of grass and forbs. Grazing treatment was found to have the greatest influence on LEPC response (Grisham 2012, Boal and Pirius 2012). Of the 66 encounter histories for females only 12% occurred in treatment combinations that included no grazing. No evidence of differences in breeding season survival among treatment combinations were found, and the studies concluded that herbicides and managed grazing can be used to restore monocultures of sand shinnery oak to near reference community compositions of

shrubs, grasses, and forbs. Managed grazing will maintain the community so that future herbicide treatments should not be necessary (Haukos 2011). Haukos (2011) provided a good summary of LEPC use of sand shinnery oak communities and the effects of herbicide application to these communities, and also cited studies that showed the role of fire as a dynamic influence that helped maintain the diversity of conditions desired in sand shinnery oak communities.

Limited research has been conducted on effects of herbicide application to LEPC habitat quality in sand sagebrush ecosystems, although Thacker et al. (2012) and Gunter et al. (2012) found changes in plant communities that were expected to be detrimental to LEPC habitat quality, and numerous studies have shown LEPC preference for nesting in sand sagebrush communities. No studies have reported a positive response by LEPC to chemical control of sand sagebrush.

#### **Altered Fire Regimes and Invasion of Woody Plants**

Expansion of woody plants including eastern redcedar (*Juniperus virginiana*) into LEPC range has caused reductions in LEPC habitat (Elmore et al. 2009, Fuhlendorf et al. 2002). In the southwest, mesquite has invaded some areas (USFWS 2012a). The expansion of these species has reduced or eliminated LEPC habitat. Further, alterations of fire regimes have changed the dynamic processes in sand shinnery oak, sand sagebrush, and mixed grass communities that historically produced the mix of habitats preferred by LEPC as previously discussed. Fear of use of prescribed burning as well as social perceptions of this practice have limited its use in many areas. LEPC habitat quality has declined as a result of these changes (USFWS 2012a).

#### **Climate Change and Extreme Weather Events**

Climate change may have detrimental effects on LEPC (Grisham 2012, USFWS 2012a). Climate projections clearly show warming trends throughout LEPC range along with projected reductions in precipitation and more extreme weather events including intense storms and prolonged drought (<http://www.climatewizard.org/>). All of these are threats to LEPC populations. Plant communities in the southwest parts of LEPC range may shift in compositions or structures to be less favorable as LEPC habitat. Temperatures may stress LEPC populations in these warmer parts of the range. Prolonged drought conditions could cause population fluctuations that could threaten persistence of populations that are fragmented. Intense storms such as during the nesting season may cause significant local reductions in reproductive success or survival. Grisham (2012) modeled LEPC responses to predicted climate change and projected negative effects on the population by 2050.

#### **Collision Mortality**

LEPC have been shown to collide with fences, power lines, and cars (Hagen 2003, Wolfe et al. 2007, USFWS 2012a). Generally, these mortality rates have been relative minor, with the one exception of Wolfe et al. (2007) who reported a substantial level of mortality from fences in Oklahoma.

#### **Other Factors**

Other factors have not been shown to present serious threats to LEPC including diseases, predation, hunting, use of insecticides, or competition from ring-necked pheasant. Diseases, as reviewed by the USFWS (2012a) have not been shown to cause any substantial population concerns. While the

presence of parasites such as eye worm (*Oxyuris petrowi*) were noted, and their effects on LEPC health not well understood, no evidence exists that this is a significant threat to LEPC populations. The USFWS (2012a) concluded that “at this time, we have no basis for concluding that disease or parasite loads are a threat to any lesser prairie-chicken populations.”

Predators have been shown to be causes of mortality of LEPC (e.g., Hagen et al. 2007, Wolfe et al. 2007, Kukul 2010, Grisham 2012) as LEPC are a prey species. However, Behney et al. (2011) and Behney et al. (2012) did not observe predation on leks and LEPC chicks in TX to be a significant concern based on over 700 hours of observations. Davison (1935) noted that predator control might cause changes to other populations (such as rats) that might do more harm to nesting LEPC than the predators being controlled. Robb and Schroeder (2005) discussed the importance of habitat quality as an influence on predation, and suggested that more fragmented habitat may lead to greater risks of predation. While predators do cause mortality of LEPC, predation is generally considered to not be a factor if adequate habitat quality exists.

Hunting could be a concern for a declining species when it is distributed in small, isolated LEPC habitat patches where hunting mortality may be additive rather than compensatory (Hagen et al. 2009). Hagen et al. (2009) reported that hunting mortality in their study contributed only 3% to overall mortality. Hunting of LEPC currently does not occur in 4 of the 5 states, but does occur in KS where there is little concern that hunting mortality is additive rather than compensatory for normal annual population cycles. The harvest of LEPC in Kansas for the past 5 reported years was 500 in 2007, 750 in 2008, 910 in 2009, 633 in 2010 and 378 in 2011, reflecting the general population fluctuations that have occurred with weather patterns (KDWPT reports). The USFWS (2012a) stated: Given the low number of lesser prairie-chickens harvested per year in Kansas relative to the population size, the statewide harvest is probably insignificant at the population level. Campbell (1972) reported no detrimental effects from hunting on an LEPC population he studied.

Effects of insecticide applications on LEPC have not been studied, but are not believed to present a threat to the species (USFWS 2012a).

Hybridization between LEPC and greater prairie chickens is known to be occurring, especially as noted by McDonald (2012) in the area where LEPC are expanding to the north and east in Kansas. While the presence of hybrid birds is known, how they compete in breeding and whether they produce viable offspring has not been researched.

Mote et al. (1998) reported that ring-necked pheasants can harass male LEPC on leks. Hagen et al. 2002 reported on 3 incidences of egg parasitism from ring-necked pheasants into LEPC nests out of 75 nests examined. While these present some evidence for competition between these two species, it is thought to only be a concern at a local level if remaining native rangeland becomes fragmented (Hagen et. al. 2002), but is not currently considered to represent a serious threat to LEPC populations.



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## REGULATORY AUTHORITY TO ADDRESS ENERGY DEVELOPMENT

### Colorado

In Colorado, oil and gas well permits are issued by the Colorado Oil and gas Conservation Commission (COGCC). As of April 2009, the 1200 series COGCC rules address oil and gas development threats to the LEPC. These rules require producers to use online resources to identify sensitive wildlife habitat and areas of restricted surface occupancy. Currently, sensitive LEPC wildlife habitat is defined as production areas that include 80% of the nesting and brood rearing habitat that surrounds leks that have been active once in the last 10 years. Restricted surface occupancy areas for LEPC are defined as areas within 0.6 miles of leks that have been active once in the last 10 years. Under COGCC rule, potential oil and gas wells identified within these areas mandates a consultation with CPW, where best management practices (BMPs) are provided to industry to minimize impacts to LEPC. CO has developed a set of oil and gas BMP's. These include the following provisions for LEPC:

- Consult with CPW at the earliest stage of development to review detailed maps of LEPC seasonal habitats and to help select development sites.
- Conduct comprehensive development planning that provides a clear point of reference in evaluating, avoiding, and mitigating large scale and cumulative impacts.
- No surface occupancy within 0.6 mile of any active or inactive (within past 5 years) LEPC leks.
- Avoid oil and gas operations within 2.2 miles of active leks and within LEPC nesting and early brood-rearing habitat outside the 2.2 mile buffer.
- Select sites for development that will not disturb suitable nest cover or brood-rearing habitats within 2.2 miles of an active lek, or within identified nesting and brood-rearing habitats outside the 2.2 mile perimeter.
- Where oil and gas activities must occur within 2.2 miles of active leks, conduct these activities outside the period between March 15 and June 15.
- Restrict well site visitations to portions of the day between 9:00 a.m. and 4:00 p.m. during the lekking season (March 15 to June 15).
- Establish company guidelines to minimize wildlife mortality from vehicle collisions on roads.
- Avoid surface facility density in excess of 10 well pads per 10-square mile area (one well pad per section) in LEPC nesting and early brood-rearing habitat (within 2.2 miles of active leks).
- When surface density of oil and gas facilities exceeds 1 well pad/section, initiate a Comprehensive Development Plan that includes recommendations for off-site and compensatory mitigation actions.
- Phase and concentrate all development activities so that large areas of undisturbed habitat for wildlife remain and thorough reclamation occurs immediately after development and before moving to new sites. Development should progress at a pace commensurate with reclamation success.
- Locate compressor stations at least 2.2 miles away from LEPC active and historic (within last 5 years) lek sites. When compressor stations must be sited within 2.2 miles LEPC active and

historic (within last 10 years) lek sites, locate compressor stations farther than 0.6 mile (3200 feet) from LEPC lek sites.

- Use topographical features to provide visual concealment of facilities from known lek locations and as a noise suppressant.
- Muffle or otherwise control exhaust noise from pump jacks and compressors so that operational noise will not exceed 49 dB measured at 30 feet from the source.
- Utilize a central generator to feed the entire field via underground electrical lines.
- Design tanks and other facilities with structures such that they do not provide perches or nest substrates for raptors, crows and ravens.
- Install raptor perch deterrents on equipment, fences, cross arms and pole tops in LEPC habitat.
- Bury new power lines and retrofit existing power lines by burying them or installing perch guards to prevent their use as raptor perches.
- Design wastewater pits to minimize retention of stagnant surface water.
- Treat waste water pits and any associated pit containing water that provides a medium for breeding mosquitos with Bti (*Bacillus thuringiensis v. israelensis*) or take other effective action to control mosquito larvae that may spread West Nile Virus to wildlife, especially grouse.
- Use early and effective reclamation techniques, including an aggressive interim reclamation program to return habitat to use by lesser prairie-chicken as quickly as possible.
- In consultation with CPW, replace any permanently impacted, disturbed, or altered sand sagebrush habitat within identified nesting and brood rearing range through enhancement of existing or marginal sand sagebrush habitat or reclamation of altered or converted habitat within or immediately adjacent to mapped nesting or brood rearing habitat.
- Implement the species appropriate reclamation guidelines found in this document.
- When reclaiming breeding habitat, include a substantially higher percentage of forbs than used in other areas.
- Reclaim LEPC habitats with native grasses including switchgrass, big bluestem, little bluestem, sand bluestem, yellow Indian grass, and prairie sandreed.
- Do not plant buffalo grass, blue grama and sideoats grama in LEPC habitat as they will eventually dominate the resulting stand and will not provide LEPC habitat.
- Restore appropriate native shrub species to disturbed sites.
- Do not use aggressive non-native grasses or shrubs in LEPC habitat reclamation.
- Utilize native and select non-native forbs and legumes in seed mixes as they are a vital component of brood-rearing habitat. Dryland adapted varieties of alfalfa and yellow sweet clover should be the primary non-native forb species used.

## Kansas

The Kansas Corporation Commission (KCC) is the regulatory body in Kansas for mineral extraction and also provides siting authority for electric transmission and generation. The KCC permits mineral extraction activities in the state through their established proration orders. Transmission lines proposed by a public utility that are  $\geq 230\text{kV}$  and  $\geq 5$  miles in length are subject to KCC regulations and siting authority. Prior to building a transmission line or an electric generation facility a notice of intent



must be filed with the KCC. A required public hearing is held to discuss each of notice of intent and the final order for each is issued within 120 days of application.

The KCC also regulates set-back distances and the number of completions for each mineral formation in Kansas through establishment of proration orders. The KCC has a set of basic proration orders that apply to all the mineral formations in the state except unless more conservative special proration orders have been established. The basic proration orders require set-backs of 330 feet from lease boundaries and do not cap the number of completions that can occur. The specific proration orders that apply to many of the formations within Kansas LEPC range are much more conservative and require set-back distances ranging from 660-1,250 feet. Those specific proration orders also set a maximum on the number of completions at specified scales (i.e. density). Approximately half of the mineral formations occurring under Kansas LEPC range are subject to specific proration orders that cap well density at 1-6 per square mile. The vast majority of mineral extraction in the sand sagebrush ecoregion in Kansas is subject to specific proration orders that limit densities to 3-6 wells per square mile.

Wind development in Kansas is not regulated by KCC. Some wind developers consult with KCC for their blessing but there is no requirement to do so. County commissions are the only regulatory body with some oversight on wind development in Kansas through their zoning permits. While there is little regulatory oversight on wind development in Kansas the KDWPT does have some additional influence on siting due to strong working relationships with many of the developers and the major power purchasers.

KDWPT also has some regulatory authority over some development pursuant to K.S.A. 32-957 to 963, 32-1009 to 1012, and 32-1033 of the Kansas Nongame and Endangered Species Conservation Act. The KDWPT conducts environmental reviews and permits activities that are publicly funded or require some other type of state or federal permit. If those reviews indicated expected impacts to state-listed species the KDWPT requires mitigation. While the LEPC is not a state listed species in Kansas it shares similar habitats with the state-listed longnose snake in a substantial portion of its range (primarily south of the Arkansas River). Thus, the LEPC is being provided with indirect protections in those areas through the Kansas Nongame and Endangered Species Conservation Act.

### **New Mexico**

In NM, by statute (Sections 9-5A-1 through 7, NMSA 1978), the New Mexico Energy Conservation and Management Division (ECMD) "shall plan, administer, review, provide technical assistance, maintain records and monitor state and federal energy conservation and alternative energy technology programs." Included are programs related to the development and use of solar, wind, geothermal, and biomass resources as well as alternative fuels and transportation. In addition, this division provides technical assistance and information in these areas to government agencies, Indian tribes and pueblos, educational institutions, and the general public. ECMD receives U.S. Department of Energy funding support through its State Energy Program to accomplish the division's clean energy goals.

ECMD partners with citizens, businesses, industry, schools, universities, and research laboratories to invest in clean energy infrastructure and to conduct clean energy programs. ECMD staff develops and implements effective clean energy programs – renewable energy, energy efficiency and conservation, efficient transportation and clean fuels – that reduce energy use and utility expenditures by increasing and diversifying energy supplies to promote environmental and economic sustainability for New Mexico and its citizens. As the importance of energy efficiency, energy conservation, and renewable energy grows each year, the State of New Mexico and ECMD continue to promote the development and implementation of effective programs that strive to lessen dependence on fossil fuels and foreign oil.

By statute (§9-5A-4.D, NMSA 1978), the Mining and Minerals Division (MMD) "shall enforce and administer laws and regulations relating to mine safety, coal surface mine reclamation and abandoned mine lands reclamation."

By statute (Oil and Gas Act, NMSA 1978: Parts 1 thru 39 of Title 19, Chapter 15 of the New Mexico Administrative Code) The Oil Conservation Division (OCD) regulates oil, gas, and geothermal activity in New Mexico. ODC gathers well production data; permit new wells; enforce the division's rules and the state's oil and gas statutes; make certain abandoned wells are properly plugged; and ensure the land is responsibly restored.

## Oklahoma

The Oklahoma Corporation Commission (OCC) was established in 1907 by Article 9 of the Oklahoma Constitution, and the First Legislature gave the Commission authority to regulate public service corporations, those businesses whose services are considered essential to the public welfare. These businesses include oil and gas and electric utilities. The OCC regulates and permits oil and gas drilling and has siting authority only in the sense that it specifies well spacing guidelines, but it does not have siting authority for transmission lines or wind energy development. OCC does conduct voluntary project reviews of transmission and wind projects, but the State has the authority to require mitigation.

## Texas

The Railroad Commission of Texas (RRC) is the state agency with primary regulatory jurisdiction over the oil and natural gas industry, pipeline transporters, natural gas and hazardous liquid pipeline industry, natural gas utilities, the LP-gas industry, and coal and uranium surface mining operations. It is also responsible for research and education to promote the use of LP-gas as an alternative fuel in Texas. The Commission exercises its statutory responsibilities under provisions of the Texas Constitution, the Texas Natural Resources Code, the Texas Water Code, the Texas Health and Safety Code, the Texas Utilities Code, the Coal and Uranium Surface Mining and Reclamation Acts, and the Pipeline Safety Acts. The Commission also has regulatory and enforcement responsibilities under federal law including the Surface Coal Mining Control and Reclamation Act, the Safe Drinking Water Act, the Pipeline Safety Acts, the Resource Conservation Recovery Act, and the Clean Water Act. The RRC is responsible for issuing permits for well drilling and for enforcing rules pursuant to House Bill 2259 that regulate the removal of

surface equipment for wells that have been inactive for more than 10 years. Between 2010 and 2015, legislation is requiring the removal of all surface equipment including power lines from more than 38,000 inactive wells state-wide and more than 4,200 wells within the counties in the range of the LPC. The Public Utility Commission of Texas regulates the state's electric and telecommunication utilities, implements respective legislation, and offers customer assistance in resolving consumer complaints. Texas law provides that most utilities must file an application with the PUC to obtain or amend a Certificate of Convenience and Necessity (CCN) in order to build a new transmission line in Texas. The law requires the PUC to consider a number of factors in deciding whether to approve a proposed new CREZ transmission line. The PUC may approve an application to obtain or amend a CCN for a CREZ transmission line after considering the following factors:

- The effect of approving the application on the applicant and any utility serving the proximate area;
- Whether the route utilizes existing compatible rights-of-way, including the use of vacant positions on existing multiple-circuit transmission lines;
- Whether the route parallels existing compatible rights-of-way;
- Whether the route parallels property lines or other natural or cultural features;
- Whether the route conforms with the policy of prudent avoidance (which is defined as the limiting of exposures to electric and magnetic fields that can be avoided with reasonable investments of money and effort); and
- Other factors such as community values, recreational and park areas, historical and aesthetic values, environmental integrity, and the probable improvement of service or lowering of cost to consumers in the area.

If the PUC decides an application should be approved, it will grant to the applicant a CCN or CCN amendment to allow for the construction and operation of the new transmission line.

In Texas, there is no wind energy-specific siting authority, however individual County Boards can decide on whether or not to approve applications for tax abatements. If TPWD is asked by industry to review a project, they will review it as if it were a development project regulated by NEPA and provide recommendations. TPWD has developed voluntary mitigation siting guides and BMPs to address threats for LEPCs from all types of development that can be accessed at: [http://www.tpwd.state.tx.us/huntwild/wild/wildlife\\_diversity/habitat\\_assessment/tools.phtml](http://www.tpwd.state.tx.us/huntwild/wild/wildlife_diversity/habitat_assessment/tools.phtml). These guidelines include the following:

- Avoid
  - Coordinate and communicate with TPWD to avoid transmission-related development in estimated occupied annual range of LEPC habitat.
  - Avoid any grassland corridors between existing large tracts of LEPC habitat.
- Minimize or limit
  - Minimize impacts to lek sites: Development within 1 to 2 miles of active leks of LEPC is discouraged.

- Minimize impacts to broods
- Schedule timing of activities to avoid LEPC breeding, nesting, and brood-rearing activities (March 01 thru July 31).
- Install raptor deterrents on poles as indicated by Avian Power Line Interaction Committee (APLIC).
- Restoration of degraded habitat
- Conversion or reseeded of cropland into native grasslands is encouraged.
- Compensation
  - If avoidance is not possible and all measures for minimization have been taken, and there is still a need to compensate for LEPC habitat, mitigation should be used.
- Consider alternative locations and development configurations to minimize fragmentation of habitat in consultation with TPWD and USFWS personnel.
- Protect high quality habitat parcels identified by TPWD and USFWS that may be included as part of a plan to limit future loss of habitat for the LEPC.
- Identify areas for restoration of LEPC habitat such as historic LEPC habitat adjacent to or could be connected to existing LEPC habitat through restoration practices.
- Fund/perform monitoring, habitat maintenance, aerial surveys with data sharing among partners, habitat mapping, and/or research.
- Replace or provide substitutes such as habitat acquisition, conservation easements, restoration of historic habitat, enrollment of suitable acres in Candidate Conservation Agreement with Assurances (CCAA), mitigation banking.
- Payment per acre to pre-determined non-profit entity based on agreed-upon LEPC to-be-determined habitat value(s).

## CURRENT LEPC CONSERVATION PROGRAMS

Numerous state, federal, and private programs currently exist that provide conservation benefits to LEPC and directly address threats to the species such as:

- Oil and gas development
- Wind energy
- Electric transmission
- Other vertical structures
- Agricultural conversion
- Loss of CRP
- Grazing management
- Woody invasive such as mesquite and red cedar
- Shrub control such as sand shinnery oak eradication
- Altered fire regimes
- Fence collisions

Through improvements in habitat quantity, quality, and connectivity, these programs also indirectly address LEPC threats such as:

- Climate Change
- Extreme weather events like drought, hail storms, blizzards, etc.
- Predation
- Disease

These programs provide technical and financial assistance to landowners for management for LEPC. Other programs provide assurances to landowners and industries that if LEPC considerations are included in their management activities, then their future management can continue in this manner even if LEPC are listed by the USFWS. Several programs address industry siting, best management practices, and avoidance, minimization and voluntary mitigation. Additional programs provide for direct management of LEPC habitat on public or other lands within LEPC range.

### **Federal Programs**

Five Federal agencies have programs or initiatives that directly relate to delivery of LEPC habitat improvement or assurances. These 5 agencies are the Natural Resources Conservation Service (NRCS), Farm Service Agency (FSA), U.S. Fish and Wildlife Service (USFWS), Bureau of Land Management (BLM), and the U.S. Forest Service (USFS).

#### **Natural Resources Conservation Service and Farm Service Agency Programs**

In 2010, NRCS launched the Lesser Prairie-Chicken Conservation Initiative (LPCI). This initiative has the objective “to increase the abundance and distribution of the lesser prairie-chicken and its habitat while promoting the overall health of grazing lands and the long-term sustainability of ranching operations” ([http://www.nrcs.usda.gov/Internet/FSE\\_DOCUMENTS/stelprdb1047025.pdf](http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb1047025.pdf)). In addition to NRCS technical service providers, LPCI has partnered with various agencies and organizations to help to deliver the program to landowners through cooperative efforts. Partnering agencies and organizations include:

- Colorado Parks and Wildlife (CPW)
- Kansas Department of Wildlife, Parks and Tourism
- Kansas Forest Service
- New Mexico Department of Game and Fish
- Oklahoma Department of Wildlife Conservation
- Texas Parks and Wildlife Department
- USFWS Partners for Fish and Wildlife Program
- LPC Interstate Working Group
- National Fish and Wildlife Foundation
- National Wildlife Foundation
- Pheasants Forever

- Playa Lakes Joint Venture
- Rocky Mountain Bird Observatory
- The Woods Foundation
- Texas Wildlife Association, and
- The Nature Conservancy

LPCI is funded through the NRCS Conservation Technical Assistance Program, Environmental Quality Incentives Program (EQIP) and Wildlife Habitat Incentive Program (WHIP) and helps producers apply conservation practices that benefit LEPC and their operations. The primary goals of LPCI are to transform idle CRP lands to working lands, improve grazing systems to benefit LEPC habitat needs and eradicate invasive eastern red cedar and honey mesquite. The goals are pursued through cost-share on NRCS conservation practices such as brush management, prescribed grazing, range planting, prescribed burning and restoration of rare and declining habitats, many acres having been implemented in priority areas identified in this Plan (Appendix C).

Currently, NRCS practices across all programs have provided conservation to 1,259,612 acres through prescribed grazing (Figure C-1), upland wildlife habitat (Figure C-2), brush management (Figure C-3), and 19 other practices in the focal areas and connectivity zones (Appendix C). More specifically, LPCI has resulted in 137,692, acres of habitat improvement within these priority areas (Appendix C). An investment in the LPCI action area has resulted in approximately 700,000 acres of LEPC habitat benefited (Table 2), with 20% of that occurring in Focal Areas and Connectivity Zones (Appendix C). It is important to note, that NRCS prioritization, prior to this Plan designating these priority areas, did not explicitly target these areas. Both Focal Areas and Connectivity Zones will be included in future targeting. Thus, the numbers herein provide a baseline for monitoring investments and conservation actions in these areas from here forward.

The NRCS collaborated with the USFWS to develop a conference report (CR) which was signed by the USFWS June 30, 2011. This conference report evaluated the overall effects of implementing the LPCI and conditioned 22 conservation practices to provide for overall long term beneficial effect on LPC. By following provisions of this CR when working through NRCS, producers are provided regulatory predictability. NRCS is working with the USFWS to transform the CR into a Conference Opinion which will define incidental take for 5 practices where harm may occur to individual birds through implementation. This identification of incidental take will provide further regulatory predictability to producers implementing conservation practices as outlined in the final Conference Opinion should they harm an individual bird in the implementation of those practices.

In 2012, NRCS working with the USFWS initiated the Working Lands for Wildlife (WLFW) program that incorporated the LEPC as one of its 7 focus species and the LPCI as its delivery program. "Working Lands for Wildlife is a new partnership between NRCS and the U.S. Fish and Wildlife Service (FWS) to use agency technical expertise combined with \$33 million in financial assistance from the Wildlife Habitat Incentive Program to combat the decline of seven specific wildlife species whose decline can be

Table 2. Contracts and funding through NRCS's LPCI program, listed by state for 2010-2012.

Contract Year	State	Contracts	Acres	Amount (\$)
2010	KS	64	28,280	\$1,525,789
2011	KS	43	19,464	\$1,378,072
2012	KS	36	35,659	\$1,377,897
2010	CO	6	33,815	\$365,317
2011	CO	5	17,563	\$423,356
2012	CO	3	33,883	\$484,775
2010	OK	20	19,305	\$645,532
2011	OK	26	28,500	\$906,460
2012	OK	13	28,697	\$1,439,684
2010	TX	231	165,352	\$5,563,556
2011	TX	205	222,777	\$6,868,732
2012	TX	21	48,780	\$817,877
2010	NM	2	12,571	\$234,459
2011	NM	17	164,594	\$1,313,162
2012	NM	9	83,332	\$1,186,590
<b>Totals</b>		<b>701</b>	<b>942,572</b>	<b>\$24,531,258</b>

reversed and will benefit other species with similar habitat needs” (<http://www.nrcs.usda.gov/wps/portal/nrcs/detailfull/national/programs/?&cid=stelprdb1046975>).

Under this program landowners are provided with technical assistance, financial assistance to implement practices, and with regulatory assurances. “Under the WLFW partnership, federal, state and wildlife experts jointly identified at-risk or listed species that would benefit from targeted habitat restoration investments on private lands. Using the best available science, these wildlife experts prioritized restoration actions on a large regional scale to focus assistance most cost effectively. The federal government will grant farmers, ranchers and forest landowners regulatory predictability in return for voluntarily making wildlife habitat improvements on their private agricultural and forest lands. Participating producers must adhere to the requirements of each conservation practice during the term of their contract, which can last from one to 15 years. If landowners would like to receive regulatory predictability for up to 30 years, they must maintain the conservation practices as outlined in the NRCS and FWS agreement” (<http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/programs/?cid=stelprdb1048842>). This combination of Federal dollars for funding technical assistance and implementation of practices combined with partnering agency and organization funding of technical service providers and the

regulatory predictability provided through the NRCS/USFWS agreement is a powerful voluntary, incentive-based initiative that is producing good results in terms of on-the-ground management of LEPC habitat.

NRCS also has other Farm Bill conservation programs that can be applied to LEPC management, specifically the EQIP, WHIP, and the Grassland Reserve Program (GRP), while the Farm Service Agency administers the Conservation Reserve Program (CRP) including the State Acres for Wildlife Enhancement (SAFE) Program.

WHIP is a program offering technical and financial assistance to landowners to voluntarily develop and improve wildlife habitat on private lands. Participants work with NRCS and their local conservation district to develop a wildlife habitat development plan and contract. The plan describes the landowner's goals for improving wildlife habitat, includes a list of practices and a schedule for installing them, and specifies the steps necessary to maintain the new habitat for the life of the agreement. All privately owned rural lands are eligible for participation in WHIP. For more information see: <http://www.nrcs.usda.gov/wps/portal/nrcs/detailfull/national/programs/financial/whip/?&cid=STELPRD B104697>.

EQIP is a voluntary conservation program that promotes agricultural production, forest management, and environmental quality as compatible goals. Through EQIP, farmers and ranchers may receive financial and technical assistance to install or implement structural and management conservation practices on eligible agricultural land. The NRCS administers EQIP with funding coming from the Commodity Credit Corporation. EQIP offers contracts with a minimum term that ends one year after the implementation of the last scheduled practice and a maximum term of 10 years. EQIP activities are carried out according to a conservation plan of operations developed with the program participants. For more information see:

<http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/financial/eqip/>.

GRP is a voluntary program offering landowners the opportunity to protect, restore, and enhance grasslands on their property. The NRCS and Farm Service Agency (FSA) coordinate implementation of GRP, which helps landowners restore and protect grassland, rangeland, pastureland, shrubland and certain other lands and provides assistance for rehabilitating grasslands. This program will address threats to LEPC by conserving vulnerable grasslands from conversion to cropland or other uses and conserving valuable grasslands by helping maintain viable ranching operations ([http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/programs/easements/grassland/?cid=nrcs143\\_008401](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/programs/easements/grassland/?cid=nrcs143_008401)). GRP also addresses LEPC threats related to grazing issues through the development of an NRCS prescribed grazing program as defined under the NRCS Conference Report.

In addition, the Farm and Ranchlands Protection Program (FRPP) may provide additional opportunities for establishment of easements that can provide benefits to LEPC.



CRP is a voluntary program for agricultural landowners administered by the FSA that addresses threats to the LEPC including agricultural conversion by providing a pathway to incentivize landowners to take cropland out of production and plant it back into grassland. The conversion of these lands back to grassland promotes habitat connectivity, which helps address LEPC threats like climate change and extreme weather events. The program also addresses grazing threats by providing millions of acres of grassland habitat that are not in grazing management. This program includes mid-contract management practices that promote wildlife habitat, including shallow disking, prescribed burning, herbicide usage and interseeding with legumes and forbs, and require the control of noxious weeds and trees. FSA and USFWS are currently working on a Conference Report to define how the practices under this program to address the threats to the LEPC. Through CRP, agricultural producers can receive annual rental payments and cost-share assistance to establish long-term, resource conserving covers on eligible farmland. The Commodity Credit Corporation (CCC) makes annual rental payments based on the agriculture rental value of the land, and it provides cost-share assistance for up to 50 percent of the participant's costs in establishing approved conservation practices (<http://www.fsa.usda.gov/FSA/webapp?area=home&subject=copr&topic=crp>).

Because not all interests to participate in CRP can be accepted, applicants compete nationally by submitting offers to enter eligible land into the CRP during designated signup periods. Under CRP's general signup, landowner offers are ranked according to an Environmental Benefits Index (EBI). Those seeking to enroll land (and/or practices) beneficial to the LEPC receive additional points, boosting their enrollment chances. Each eligible offer is ranked in comparison to all other offers and selections are made from that ranking. Producers may offer land at lower than the allowable rates to further increase the likelihood that their offer to participate in CRP will be accepted.

A conservation plan must be developed and approved before land is enrolled in the CRP. Technical assistance is provided to landowners to assist in developing and implementing conservation plans for their CRP contracts. These plans are developed by the NRCS, other conservation partners, or a USDA approved technical service provider in coordination with the landowner. The conservation plan is part of the CRP contract and details the seed mix to be used, required maintenance and mid-contract management activities, and other essential information for establishing, restoring, maintaining, or enhancing conservation covers for soil, water and wildlife benefits.

Mid-contract management within LEPC range now requires conservation practices to enhance vegetative covers that benefit LEPC. All new CRP participants are required to perform at least 1 mid-contract management activity as part of their approved conservation plan. These practices include light disking, inter-seeding, prescribed burning, upland wildlife habitat management (for example, elimination of woody vegetation encroachment and spot spraying to eliminate invasive species), and other practices designed to ensure plant diversity, wildlife benefits, and enhancement of permanent cover. Mid-contract management in the LEPC region is reflected by the number of acres of prescribed burning and upland wildlife habitat management practices. Since 2003 over 190,000 of CRP have been treated with prescribed burning and nearly 470,000 acres have received upland wildlife

habitat management in the LEPC region. There are approximately 200,000 additional acres pending for both the prescribed burning and upland wildlife habitat management practices in CRP conservation plans within the region.

The CRP, as implemented, provides predictable high-quality LEPC habitat. The program has evolved over time in a manner that benefits the LEPC to an even greater extent than in its early years. This includes improving the quality of CRP covers for LEPC habitat by providing incentives for landowners to establish native grass and other covers that benefit the LEPC. Landowners who submit offers to establish these covers improve the likelihood their land will be accepted for enrollment. Between 1986 and 1991, over 90% of the grass established in Kansas and New Mexico was native, but only 40% of the grass in Oklahoma and 57% in Texas was established in native grass. Currently, 93% of grass covers planted in the LEPC states is native grass, ranging from a low of 87% in Oklahoma to a high of 98% in Kansas. In many cases, new native grass contracts are substituted for expiring contracts using introduced grasses, and thus resulted in covers more suitable for LEPC.

State and national conservation priority areas have been established making cropland that is important for wildlife eligible for CRP. Land from these priority areas offered for enrollment receives additional EBI points increasing the likelihood these offers will be accepted. Each of the five States with LEPC populations has established LEPC conservation priority areas.

CRP has proven to be an effective tool in establishing habitat for LEPC throughout its range but especially in Kansas north of the Arkansas River. While there is fluidity in CRP enrollment as individual properties are enrolled in CRP and others come out of the program at the end of 10 to 15-year contracts, the total acres enrolled in CRP throughout the LEPC range has remained relatively constant at around 5.5 million acres since 1998, and nearly 1 million of these acres are in LEPC priority areas identified in this plan (Figure C-4). As CRP contracts expire, many are re-enrolled back into the program. Following CRP General Signups in the autumns of 1997 and 1998-- the point in time when actual re-enrollment can first be gauged-- an examination of state-level CRP re-enrollment activity reveals that re-enrollment rates were 47% in NM, 48% in OK, 63% in KS, and >90% in TX and CO. New enrollments coupled with re-enrollments help retain a relatively constant level of CRP in the LEPC occupied range.

Concerns have been expressed that once CRP acres come off contract that they are immediately returned to agricultural production. However, this does not appear to be the case. An analysis that compared the location of expired CRP fields to 2010 NAIP imagery in Kansas found that 86% of the acreage was still in grass. Not only were these acres still in conservation cover, but that the native grass was located in areas of significant conservation need for LEPC. Across the entire LEPC range, a 2012 survey estimated that of CRP acreage that expired during the period of 2008 through 2011 that 73% of the acres in CO, 90% of the acres in KS, 97% of the acres in NM, 90% of the acres in OK, and 80% of the acres in TX were still in grass.

The CRP has always served as a forage safety net in times of drought or other emergency. Safeguarding wildlife are rules requiring no haying and grazing during the primary nesting and brood rearing season, hay harvesting requirements that 50 percent of the field be left un-harvested, and grazing requirements restricting grazing intensity to 75 percent of carrying capacity. Haying and grazing of CRP land is limited to certain CRP program practices. Haying and grazing considerations are to be incorporated into the NRCS-approved conservation plan, adherence to which is a requirement of CRP contract compliance. Haying and grazing activities must maintain vegetative cover, minimize soil erosion, and protect water quality and wildlife habitat. The total number of days allowed for haying and grazing of CRP is limited. As otherwise consistent with CRP policy, managed haying and grazing is allowed once every three years. The highest proportion of CRP land used for haying and grazing in the LEPC range in recent years was observed during the 2012 drought (23.0 percent), 2011 (20.9 percent), and 2006 (12.4 percent). In each of those drought years emergency grazing made up over 60 percent of the acres that were hayed or grazed.

The installation of windmills, wind turbines, wind-monitoring towers, or other wind-powered generation equipment outside of the primary nesting or brood-rearing season on CRP acreage on a case by case basis is consistent with statute. Local FSA county committees may approve up to 5 acres per CRP contract of wind turbines on CRP acreage provided the environmental impacts have been considered. The 5 acre threshold is a cumulative figure that is calculated by totaling the square footage of land area devoted to the footprint of the wind generating device and any firebreak installed around the footprint. Access roads, transformers, and other ancillary equipment will not be considered in calculating the 5 acre threshold. For cases over 5 acres authority for approval rests with FSA national headquarters.

In March 2007, USDA launched a continuous CRP practice known as State Acres for Wildlife Enhancement (SAFE). Currently a total of 214,000 acres has been allocated to five LEPC SAFE projects- Colorado (21,500 acres), Kansas (52,100 acres), New Mexico (2,600 acres), Oklahoma (15,100 acres), and Texas (122,700 acres). Under SAFE, new land entering CRP are offered Signup Incentive Payments and Practice Incentive Payments. State fish and wildlife agencies, non-profit organizations and other conservation partners work collaboratively with FSA to target CRP delivery to specific conservation practices and geographic areas where enrollment of eligible farm land in continuous CRP will provide significant wildlife value ([http://www.fsa.usda.gov/Internet/FSA\\_File/safe08.pdf](http://www.fsa.usda.gov/Internet/FSA_File/safe08.pdf).)

Together, LPCI, EQIP, WHIP, GRP, CRP, and SAFE directly address a variety of threats to LEPC including agricultural conversion, grazing management, woody invasive species, shrub control, and collision risk, and indirectly address threats like climate change, extreme weather effects and predation by working to create high quality, connected habitat that increases the ability of LEPC populations to respond to these threats. These programs address these threats by helping producers apply practices to improve habitat including, but not limited to, brush management, prescribed grazing, range planting, prescribed burning, grassland establishment, and restoration of rare and declining habitats.

## U.S. Fish and Wildlife Service

### *USFWS Partners for Fish and Wildlife Program*

The USFWS Partners for Fish and Wildlife Program restores, improves and protects fish and wildlife habitat on private lands through partnerships between the USFWS, landowners and others. The objectives of this national program are to:

- Restore, enhance and manage private lands for fish and wildlife habitat
- Significantly improve fish and wildlife habitat while promoting compatibility between agricultural and other land uses
- Restore declining species and habitats
- Promote a widespread and lasting land use ethic.

The Partners Program applies habitat practices on private lands to address threats to the LEPC. This program uses NRCS standards and specifications included in the NRCS Conference report and therefore address threats in the same fashion as NRCS programs. Projects are designed to benefit LEPC and other wildlife while also supporting working lands including farming and ranching operations. Typical conservation practices directed to LEPC habitat conservation include invasive species removal (eastern redcedar, non-native grasses), fence marking or removal, native vegetation planting, prescribed fire, prescribed grazing, and brush control. Through the Partners Program, the USFWS provides technical assistance and financial incentives to landowners that improve the state of LEPC and important habitat on their property. Cooperating landowners agree to use funds for approved wildlife related projects, and manage and maintain the project area for at least 10 years. The program provides technical and financial assistance through a 10-year cost-share agreement. Landowners agree to maintain the conservation practices for the duration of the agreement. More information is available at: <http://www.fws.gov/partners/>.

### *Candidate Conservation Agreements and Candidate Conservation Agreement with Assurances*

A Candidate Conservation Agreement (CCA) is an agreement between the USFWS and a Federal agency that identifies actions to be taken to benefit a candidate species. A Candidate Conservation Agreement with Assurances (CCAA) is a formal agreement between the USFWS and one or more public or private parties to address the conservation needs of proposed candidate species or species likely to become candidates, before they become listed as endangered or threatened under the Endangered Species Act (ESA). CCA's apply to federal programs or lands and specify actions being taken to promote conservation of candidate species that if followed by all landowners would preclude the need for listing the species. CCAA's similarly describe actions voluntarily agreed to by energy or other companies or landowners that if adopted by all companies or similar landowners would preclude the listing of the species, and in exchange for entering into this agreement, the USFWS agrees that if the species is subsequently listed despite the presence of the CCAA, that those entering into the agreement will not be subject to additional actions or regulations relating to the activities covered by the agreement. Habitat Conservation Plans (HCP's) are a similar tool but are designed to operate after listing of a species and provide the ability for a company/landowner which/who voluntarily enters into the agreement to receive an incidental take permit that protects the permit holder from any harm that

may occur to the protected species should such harm occur as an incidental occurrence from the otherwise permitted activities covered by the permit. Candidate species can be included in an HCP if another listed species is also addressed.

A CCAA may benefit property owners in several ways. First, if the conservation actions preclude listing, no regulatory programs that could occur through ESA are implemented. Second, if the conservation actions are not sufficient and the species is listed, the CCAA automatically becomes a permit authorizing the property owner's incidental take of the species, covering any adverse effects of the landowners' normal activities on the species. Thus, the CCAA provides property owners with assurances that they will not face future additional conservation measures or restrictions beyond those they agree to at the time they enter into the Agreement. Third, for property owners who want to conserve the species or want to manage habitat on their land, the Agreement provides an avenue to potential federal or state cost-share programs. The Agreement is a powerful incentive for landowners to participate in conservation actions that benefit the species. Landowner CCAA's for practices conducted to improve LEPC habitat currently exist for NM, TX, and OK. For more information see: <http://www.fws.gov/endangered/what-we-do/cca.html#cca>. To date, Texas has more than 400,000 acres enrolled in the CCAA, and Oklahoma has enrolled 200,000 acres. Both CCAAs require the development of site-specific management plans that address LEPC threats in the following manner:

- Agricultural conversion- landowner commits to refrain from breaking out additional rangeland as long as they are in the program.
- Loss of CRP- landowner commits to re-enrolling or maintaining expired CRP in grass as long as they are in the program.
- Grazing- landowner commits to an LEPC-focused grazing plan as long as they are in the program.
- Woody invasive species- landowner commits to addressing the spread of these species as funding sources become available.
- Shrub control- agreements restrict sand shinnery control but allow for shinnery oak suppression using reduced rate chemical application.
- Altered fire regimes- agreements use prescribed fire as a potential option for management and discuss cost share options for its application.
- Collision- agreements require fence marking in the vicinity of known leks.
- Climate Change- increased habitat quality, quantity, and connectivity through the above actions improve the ability of the LEPC to move and respond to climate change.
- Extreme weather events- increased habitat quality, quantity, and connectivity improves the ability of the LEPC to move and respond to weather events like droughts and storms.
- Predation- increased habitat quality and improved habitat quality decrease predation on nests and juveniles and adults.
- Disease- increased habitat quality results in improved physical condition of individual LEPC.

CCAA's also serve development interests. Energy-related CCA's, CCAA's, and HCP's are either existing, under development, or being considered for LEPC. A CCA/CCAA for NM allows developers and landowners to become Participating Cooperators in the agreement. The CCA/CCAA operates under

the guidelines of the BLM Special Status Species Resource Management Plan Amendment (RMPA). The RMPA established foundational requirements to be applied to all future activities for Federal surface and Federal minerals (including private surface used for Federal mineral development). Each Participating Cooperator must sign a Certificate of Participation for a particular parcel of land (enrolled property), and agree to the foundational requirements of the RMPA, implement conservation measures on the enrolled property and contribute funding, land, or provide in-kind services for conservation efforts that will benefit LEPC either on or off-site of the enrolled property. The Certificate of Participation requires the Participating Cooperator to implement conservation activities including the following ([http://www.fws.gov/southwest/es/Documents/R2ES/LPC-SDL\\_CCA-CCAA\\_2008.pdf](http://www.fws.gov/southwest/es/Documents/R2ES/LPC-SDL_CCA-CCAA_2008.pdf)):

- Establish Plans of Development for enrolled properties,
- Remove caliche pads and roads on legacy wells where there is no responsible party,
- Construct all infrastructures supporting the development of a well (including roads, power lines, and pipelines) within the same corridor,
- Construct new infrastructures in locations which avoid occupied and suitable LPC habitat,
- Bury new distribution power lines that are planned within 2 miles of occupied LPC habitat,
- Minimize total new surface disturbance by utilizing alternative techniques such as co-locating wells, directional drilling, and interim reclamation of drill pads to minimum area necessary to operate the well,
- Provide escape ramps in all open water sources,
- Install fence markers along fences that cross through occupied habitat within 2 miles of an active lek,
- Design grazing management plans to meet habitat specific goals for individual ranches that may include stocking rates, rotation patterns, grazing intensity and duration, and contingency plans for varying prolonged weather patterns including drought, and/or
- Remove mesquite vegetation that invades into soils preferred by LEPC.

These activities address a variety of threats to the LEPC including habitat loss and fragmentation due to oil and gas development, roads, and power lines through avoidance, minimization, mitigation and remediation of defunct and abandoned oil and gas well pads, roads and power lines. The agreement also operates in the same fashion as the TX and New Mexico ranching CCAAs to directly and indirectly address agricultural conversion, loss of CRP, grazing, woody invasive species, shrub control, altered fire regimes, collision, climate change, extreme weather events, predation and disease.

Unlike the TX and OK CCAAs, the NM CCA/CCAA includes mitigation payments for oil and gas developments that are assessed on a per well basis. These payments go into an account managed by a board that can fund land acquisition, conservation easements, and habitat improvement programs designed to offset the impacts associated with the development activities. Much of that habitat improvement funding is used to improve and restore habitat on private land ranches enrolled in the agreement.

HCPs are a post-listing tool designed to mitigate for impacts on federally threatened or endangered species. Nineteen wind energy companies have been working with USFWS on the Great Plains Wind



Energy Habitat Conservation Plan to address threats related to wind industry development for three federally listed species, the whooping crane (federally endangered), piping plover (federally endangered) and least interior tern (federally threatened in the Great Plains region). This plan is also proposed to include the LEPC. This HCP is scheduled for completion after the timelines for this range-wide plan. However, the HCP should be designed to be compatible with the recommendations in this plan.

#### *USFWS Wind Energy Guidelines*

The USFWS (2012c) developed guidelines to address threats related to habitat loss and fragmentation due to wind energy development. These guidelines suggest a tiered approach to wind development, where planning emphasized avoidance of sensitive areas. The guidelines contained a number of recommended BMP's many of which are applicable to LEPC.

#### **Bureau of Land Management**

The BLM manages lands within the occupied range of LEPC and in delineated focal areas, especially in NM, as well as having regulatory responsibility for Federal oil and gas permitting. Where it has management control of lands, it can make substantial contributions towards LEPC habitat. In NM, the BLM has implemented a Special Status Species Resource Management Plan for the LEPC, and as part of this plan, has established an LEPC Habitat Preservation Area of Critical Environmental Concern ([http://www.blm.gov/pgdata/etc/medialib/blm/nm/field\\_offices/roswell/rfo\\_planning/special\\_status\\_species.Par.34868.File.dat/pdf\\_sss\\_rod\\_rmpa\\_May\\_2008.pdf](http://www.blm.gov/pgdata/etc/medialib/blm/nm/field_offices/roswell/rfo_planning/special_status_species.Par.34868.File.dat/pdf_sss_rod_rmpa_May_2008.pdf)). This plan specifies decisions regarding oil and gas leasing and development within the plan area, off-highway vehicle use, land ownership adjustments, and wildlife habitat management. It addresses the management of all resources and uses on approximately 850,000 surface acres of public lands and approximately 1,150,000 acres of Federal mineral estate in the Planning Area located in southeastern NM. The plan established the 58,000 acre Lesser Prairie-Chicken Habitat Preservation Area of Critical Environmental Concern (ACEC). The purpose of this ACEC is to maintain and enhance habitat for the lesser prairie-chicken and sand dune lizard. The plan describes areas that should be avoided from future energy developments, describes the desired plant communities that should be the goal of vegetation treatments and grazing plans, and recommendations for other land uses such as off-highway vehicles. As part of the oil and gas specifics, it includes a description of best management practices. Therefore the BLM is directly addressing threats to the LEPC that include energy development, roads, grazing, woody invasive species, shrub control, altered fire regimes, collision, and is indirectly addressing threats such as climate change, extreme weather events, predation, and disease.

The BLM LEPC Special Status Species Resource Management Plan (BLM 2008) not only directs BLM's land management activities for this area but also specifies guidelines for oil and gas development and other development activities. For example, it established a program where applicants for electric power lines right of ways could participate in a power line removal credit (PLRC) program. Under this program, applicants could remove 1.5 miles of idle power lines (wire and poles) within prairie-chicken habitat management units or LEPC habitat type before receiving authorization to construct 1.0 mile of new power line in similar or lower value LEPC habitat. It includes a set of Best Management Practices

(BMP's) for oil and gas activities. These BMP's specify various actions including seasonal restrictions for time of day of allowable activities, reclamation and restoration requirements, fence marking, burying of power lines, and various other required practices.

### **U.S. Forest Service**

The USFS manages national grasslands within the occupied range of LEPC, with some of these lands occurring within delineated focal areas. The USFS is working to address LEPC threats related to grazing, woody invasive species, noxious weeds, altered fire regimes, and collisions, and is working to indirectly address climate change, extreme weather events, predation, and disease.

#### *Cimarron and Comanche National Grasslands*

The Cimarron National Grassland in Kansas and the Comanche National Grasslands (NG) in Colorado can make substantial contributions towards LEPC habitat in these states. The Comanche NG encompass more than 444,000 acres in southeastern CO. An analysis conducted by Rondeau and Decker (2010) found vegetation conditions on a 9,300 acre high priority area for LEPC generally within the range suitable for LEPC habitat although lacking in preferred bluestem grass species. However, they noted low LEPC populations in the area possibly as a result of the severe winter of 2006-2007. While both the Comanche and Cimarron NG's are still operating under a forest plan developed in 1984, both recognize the importance of management of LEPC habitat. An assessment of management for LEPC in these grasslands was conducted that can provide important information for LEPC conservation actions (<http://www.fs.fed.us/r2/projects/scp/assessments/lesserprairiechicken.pdf>). The Comanche NG has instituted some changes in grazing rotations in designated LEPC grazing allotments to enhance LEPC habitat. In the last four years, the Comanche NG (in partnership with CPW) has installed large grazing exclosures around active prairie chicken leks to improve nesting habitat. In 2012 the Comanche NG and the Campo Grazing association significantly reduced their stocking rates in one of their primary LEPC allotments (Mt. Carmel). The Cimarron NG in southwestern Kansas is 108,175 acres in size and is one of the largest areas of public land in Kansas and the only area managed by the U.S. Forest Service.

#### *Cibola National Forest Grasslands*

The Cibola National Forest administers four National Grasslands: Black Kettle, McClellan Creek, Kiowa, and Rita Blanca, which cover 263,261 acres in northeastern New Mexico, western Oklahoma, and northern Texas (Figure 3). The Black Kettle NG include over 30,000 acres in western OK and while these acres are divided into smaller parcels of Federal ownership, provide opportunities for improvements to LEPC habitat. Potentially suitable habitat for LEPC occurs in shinnery oak, mixed-grass prairie, and sand sagebrush on the Cibola National Grasslands including the Kiowa/Rita Blanca (KRB), Black Kettle, and McClellan Creek (BKMC) National Grasslands (NG) in Oklahoma, Texas and New Mexico. The 2012 Land and Resource Management Plan (LRMP) for the Kiowa, Rita Blanca, Black Kettle, and McClellan Creek National Grasslands provided an analysis of habitat and species with viability concerns. The LEPC was determined to have viability risks and plan components of the plan were developed to ensure suitable habitat. Shinnery oak vegetation type covers approximately 18,900 acres (59%) of the Black Kettle and McClellan Creek National Grasslands. About 45% of the shinnery oak vegetation is in the early to mid-open, post-fire to 3 years post-fire regime and dominated by tall



Figure 3. Location of Cibola National Forest Grasslands.

grasses in shallower and more stable sandsheet areas. Grass cover is dominant with rapid recovery of shinnery oak resprouts. The late-closed successional stage structure and composition stage occur in the 3- to 10-year postfire timeframe. Shinnery cover is mostly dominant, although grasses remain codominant on about 55% of the vegetation type. Most shinnery oak stands are burned on a 2- to 9-year cycle to maintain a codominant canopy cover of grasses intermixed with shinnery oak for wildlife habitat diversity and to resemble historical conditions. Current livestock grazing within the shinnery oak system is relatively light, with utilization levels retaining at least 50 percent of the current year's growth of vegetation, by weight, of forage species.

Mixed-grass prairie covers approximately 11,300 acres or 35% of the Black Kettle and McClellan Creek National Grasslands. The mixed-grass prairie on the red-shale soils is dominated by perennial grasses including; blue grama, hairy grama, little bluestem, and purple threeawn. Forbs make up about 10 percent and woody species another 10 percent of the species composition of mixed grass prairie. Prescribed fire and managed livestock grazing provide disturbance to this vegetation type, which evolved under disturbance regimes. This vegetation type is in low departure from reference condition

for structure, and the desired condition is similar to the existing condition. The goal is to maintain about 10% of the area in forbs and 10% in woody species. In addition, the shortgrass prairie on the Kiowa/Rita Blanca National Grassland has several inclusions including a mixed grass prairie type which provides potential suitable habitat for the lesser prairie-chicken.

The sand sagebrush vegetation type covers approximately 22,651 acres (8%) of the Grasslands. Sand sagebrush typically occurs on areas of level plains, undulating hills and draws, or on gently rolling uplands of the southern Great Plains. The sand sagebrush prairie is dominated by mid-grasses and shrubs. The landscape includes a diversity of areas in different successional stages and with varying vegetative heights, as well as cool season grasses and a variety of forbs. The primary shrub species is sand sagebrush. Native, warm season perennial grasses (including big bluestem, little bluestem, sand dropseed, blue grama, and sideoats grama) are prominent in this ecosystem. One percent is in a post-fire successional stage dominated by resprouts and seedlings of grasses and forbs with low to medium height having a variable canopy cover. This stage typically occurs where fires burn relatively hot. The mid-open successional stage represents about 65% and has less than 35% herbaceous cover, medium to tall in height. Mid-closed stage represents about 35% of the area with greater than 35% herbaceous cover, medium to tall in height. Prescribed burning is currently being accomplished at a rate of approximately 500 acres every 3 to 5 years. Dormant season livestock grazing is generally emphasized to maximize ground cover. Pastures are usually grazed only once during the growing season. The majority of this habitat type is being managed at a mid-open successional stage.

Although there are currently no viable populations of LEPC on the Cibola National Grasslands, they are likely to use portions of the Black Kettle National Grassland in Oklahoma, and are occasionally seen on adjacent private lands. Prairie-chickens are not known to occur on the KRB NG, but in recent years there have been two observations on the RBNG in Texas.

#### Current Management Efforts

The Black Kettle and KRB NG conduct habitat enhancement projects to benefit lesser prairie-chicken including:

- Annual planting of about 30 acres of food plots affect about 480 acres in areas adjacent to occupied prairie-chicken habitat on the Black Kettle National Grasslands
- Annual burning of shinnery oak habitat on about 5000 acres per year including some adjacent private lands in cooperation with FWS. In 2008, the FWS provided funding for burning of private lands through a reimbursable agreement using Wyden Amendment authority on the Black Kettle NG. Burn objectives are to remove upland trees such as black locust and eastern redcedar, considered to contribute to structural habitat fragmentation, and to manage shinnery oak to an earlier successional stage to increase warm season grasses and provide suitable nesting and brood rearing habitat.
- Black Kettle NG grazing program provides habitat for the LEPC through structure height and plant density management that provides nesting cover and brood rearing habitat. Much of the grazing is done during the dormant season to enhance production of warm season grasses.

The Black Kettle NG units that are not dormant season grazed have multiple pastures with rest rotation provided to meet LEPC cover and forage needs.

- Prescribed burns are conducted on the KRBNG to enhance habitat specifically for LEPC by burn objectives developed to improve health and vigor on the landscape, regenerate sand sagebrush, and mid-grass prairie.
- Grazing plans on the Black Kettle NG are revised to improve habitat for LEPC with rest/recovery grazing concentrated on mid-grass prairie objectives to manage for nesting and brood rearing cover.
- Annual removal of eastern redcedar from hardwood bottoms and removal of redcedar and black locust in upland habitat to improve habitat suitability for LEPC and Rio Grande turkey on about 30-50 acres on the Black Kettle NG. Treatments are conducted in association with the National Wild Turkey Federation and ODWC.
- Annual herbicide treatment of invasive weeds like Scotch thistle on about 30 acres to restore native habitat in Oklahoma.
- Marking of about 6 miles of fences annually to reduce collision mortality

The LRMP for the KRB, Black Kettle, and McClellan Creek National Grasslands has provisions to improve habitat and restore ecosystems for sensitive species and species with viability concerns through vegetation treatments and management practices. Plan components such as desired conditions, objectives, guidelines and management approach provisions define habitat features on the landscape for LEPC and wildlife in general. For example, in General Special Uses, a Desired Condition states: The location of new, large linear infrastructure such as power lines has minimal effects on wildlife and minimizes habitat fragmentation. Wind Energy Development has the following Desired Condition: the Grasslands support alternative energy production and facilitate their development while mitigating impacts to resources and values. Wind energy developments are designed to minimize impacts to other uses and resources, in particular wildlife and scenic integrity. The plan also notes that trees and tall human-made structures will be evaluated for removal in areas important for recovery of LEPC habitat.

## Regional Organizational or Interagency Programs

### Western Association of Fish and Wildlife Agencies Lesser Prairie Chicken Interstate Working Group

The Western Association of Fish and Wildlife Agencies (WAFWA) coordinates the LEPC IWG that integrates LEPC management among the 5 states agencies within the range of this species. This group has been working since the 1990's on coordination of activities. It previously developed a detailed report on range-wide status of the LEPC (Davis et al. 2008), and has led the development of the Southern Great Plains Crucial Habitat Assessment Tool, discussed below. The IWG was responsible for coordinating the development of this range-wide plan.

### Southern Great Plains Crucial Habitat Assessment Tool

The Western Governors' Wildlife Council is creating the Western Wildlife Crucial Habitat Assessment Tool (CHAT). The purpose of the CHAT is to provide greater "certainty and predictability to planning

efforts by establishing a common starting point for discussing the intersection of development and wildlife". As a subset of this effort the Southern Great Plains CHAT is being developed. The Southern Great Plains CHAT is focused on the needs of LEPC. An initial version of this CHAT was led by the ODWC and the Kansas Department of Wildlife, Parks and Tourism (KDWPT) along with the LEPC IWG, Playa Lakes Joint Venture, and USGS. The project modeled LEPC habitat and developing an online tool usable by conservation managers, industry, and the public that identifies priority areas (<http://kars.ku.edu/geodata/maps/sgpchat/>). A second version of the CHAT led by ODWC, KDWPT, and the IWG was developed and included new categories identified by this plan. The CHAT is an important tool for implementation of the range-wide LEPC conservation plan.

### **Playa Lakes Joint Venture**

Playa Lakes Joint Venture (PLJV) is a regional partnership of federal and state wildlife agencies, conservation groups and private industry dedicated to conserving bird habitat throughout the western Great Plains- including portions of Colorado, Kansas, Nebraska, New Mexico, Oklahoma and Texas. PLJV has several ongoing programs that provide conservation benefits to LEPC including the development of spatially explicit decision support tools in collaboration with the NRCS and FSA; coordination, support and funding for private lands biologists that help deliver habitat in the LEPC region; promotion and funding of local and state prescribed burn associations in Kansas and Oklahoma; and coordination and hosting of a monthly conference call on LEPC to allow exchange of information about ongoing conservation efforts. PLJV was a facilitating partner in the development of the Southern Great Plains CHAT. In addition, PLJV is a member of collaborative groups in Colorado and New Mexico that developed siting guidance for wind energy developers and associated best management practices documents.

### **National Fish and Wildlife Foundation**

The National Fish and Wildlife Foundation (NFWF) in partnership with NRCS initiated a new funding program in 2011 called the Private Land Technical Assistance Program. The purpose of this partnership is to provide grants on a competitive basis to support field biologists and other habitat professionals (botanists, ecologists, foresters, etc.) working with NRCS field offices in providing technical assistance to farmers, ranchers, foresters and other private landowners to optimize wildlife conservation on private lands. One of the funding priorities of this program was the short grass prairie with a specific focus on helping deliver programs to improve LEPC habitat.

### **Pheasants Forever**

Pheasants Forever (PF) is dedicated to the conservation of pheasants, quail and other wildlife through habitat improvements, public awareness, education and land management policies and programs. In 2009, the North American Grouse Partnership joined with Pheasants Forever, Quail Forever, Theodore Roosevelt Conservation Partnership, Ecosystem Management Research Institute, American Bird Conservancy, and the Mule Deer Foundation to launch the Prairie Grouse Partners, a conservation partnership with an aggressive goal of restoring 20 percent of North America's native grasslands. This effort would result in 60 million acres of improved habitat for a wide range of wildlife, including three species of prairie grouse and pheasants. In support of this and its other habitat management efforts,



PF has been an active partner in funding cooperative technical service provider positions with NRCS and state wildlife agencies. A number of these positions are within the range of LEPC and help deliver NRCS LPCI and other LEPC habitat improvement programs. In this cooperative effort, Farm Bill Wildlife Biologists are employed by PF but work out of NRCS offices. In 2012, PF had 10 biologists in four of five states helping provide technical services within the range of LEPC. The biologists provide direct technical assistance to producers and offer full service in implementing all phases of local programs provided through NRCS, FSA, state fish and wildlife agencies and other partners. This is one of several ways that PF is fulfilling its commitment to the Prairie Grouse Partners effort.

### **Rocky Mountain Bird Observatory (RMBO)**

RMBO is a nonprofit organization that conserves birds and their habitats through science, education and stewardship efforts across the western United States and Mexico. RMBO has been working on grassland bird conservation on private lands for more than a decade including LEPC outreach and management. RMBO works in partnership with the Colorado Parks and Wildlife and Colorado Natural Resources Conservation Service (NRCS) to host and support two biologists through the Strategic Watershed Action Team and Private Lands Wildlife Biologist program, respectively. These positions provide technical assistance to NRCS and landowners in Colorado to deliver NRCS (Lesser Prairie Chicken Initiative (LPCI) and other wildlife and habitat programs. Efforts include promoting grazing compatible with LEPC and landowner goals, conservation easements, creation and enhancement of LEPC habitat thru CRP, and leveraging of partner funding, among other benefits. In addition, RMBO partner positions play a key role in LPCI project monitoring, as well as assisting with annual lek surveys. Both positions are active in the Colorado LEPC working group and work hand-in-hand with NRCS state office staff on review of LPCI policy and implementation. RMBO has various landowner programs and tools that encourage grassland stewardship and promote enhancement of LEPC habitat. RMBO has partnered with several agencies and organizations to provide fence marking kits to help reduce the risk of LEPC collisions with fences, improve seed mixes, provide financial assistance with cost-share on LPCI project and provide wildlife escape ladders for stock water tanks.

### **The Nature Conservancy**

The Nature Conservancy (TNC) has various on-going programs that provide benefits to LEPC. TNC owns a number of preserves within the range of LEPC, several of which have LEPC as a primary focal species. Key preserves will be discussed in the state descriptions below. TNC also offers conservation easements to interested landowners throughout LEPC range. TNC is engaged in various local efforts that are coordinated with state programs, so will be discussed within each state.

### **Land Trusts**

Various land trusts and other organizations have active programs to support conservation easements for private lands within LEPC range. Three land trusts collaborated in a focused effort to help LEPC through application of a NFWF grant. The Colorado Cattlemen's Agricultural Land Trust (CCALT), the Ranchland Trust of Kansas (RTK), and the Texas Agricultural Land Trust (TALT) are working to obtain conservation easements on ranchlands that can provide long term assurances for LEPC habitat. CCALT protects productive agricultural lands and the conservation values they provide by working with

ranchers and farmers, thereby preserving Colorado's ranching heritage and rural communities. CCALT was started in 1995 by the Colorado Cattlemen's Association, who saw a need for a land trust to serve the farming and ranching community. Since inception, it has partnered with over 265 landowners to protect over 394,000 acres throughout the state of Colorado ([www.ccalt.org](http://www.ccalt.org)). RTK is a land trust affiliated with the Kansas Livestock Association (KLA). KLA, formed in 1894, is a trade association that represents the state's multi-billion dollar cattle industry at both the state and federal levels, with a focus on legislative and regulatory issues. In 2003, KLA leaders formed RTK as a separate charitable conservation organization, with a mission to preserve Kansas' ranching heritage and open spaces for future generations through the conservation of working landscapes ([www.klaranchlandtrust.org](http://www.klaranchlandtrust.org)). TALT was founded in 2007 by leaders from the Texas Farm Bureau, Texas & Southwestern Cattle Raisers and Texas Wildlife Association. Today it holds easements on approximately 128,000 acres throughout Texas ([www.txaglandtrust.org](http://www.txaglandtrust.org)). In Kansas, TNC is in partnership with RTK in a program seeking to conserve mixed grass communities.

## State Programs

### Oklahoma

Oklahoma Department of Wildlife Conservation (ODWC) has programs directed towards LEPC management. In 2011, at the request of the state legislature, ODWC began development of the Oklahoma Lesser Prairie Chicken Conservation Plan (Haufler et al. 2012; [www.wildlifedepartment.com/wildlifemgmt/lepc/Final OK LEPC Mgmt Plan 23Oct2012.pdf](http://www.wildlifedepartment.com/wildlifemgmt/lepc/Final_OK_LEPC_Mgmt_Plan_23Oct2012.pdf)) and completed the plan in 2012 to address all threats to LEPC. The plan followed a collaborative process involving agencies, organizations, universities, industry, interest groups and the public in its development. It established a state LEPC science team to provide recommendations on population and habitat needs. It also established an LEPC implementation team to coordinate delivery of LEPC programs to landowners. A number of meetings were held with groups of stakeholders as were two series of 3 public meetings to obtain input to the plan. The plan was available for public review on the ODWC website, and numerous comments were received and addressed.

ODWC has a number of programs designed to address LEPC threats such as agricultural conversion, loss of CRP, grazing, woody invasive species, shrub control, altered fire regimes, collision, and indirectly address threats such as climate change, extreme weather events, predation and disease. ODWC administers these programs to provide technical and financial assistance to landowners to undertake conservation projects that benefit grasslands and restore and enhance habitats important to the LEPC. It also has programs and tools that assist with addressing impact evaluations and mitigation.

The ODWC LEPC Habitat Conservation program was designed to help private landowners develop, preserve, restore, enhance and manage LEPC habitat on their land. This plan has been incorporated into this range-wide plan for LEPC, and will continue to provide the benefits it developed. Landowners receive technical and cost-share financial assistance to develop and maintain LEPC habitat. Eligible conservation practices include brush management, native grass planting, fence marking and removal, fire break construction and prescribed fire. Landowners work with ODWC to develop a habitat

management plan and enter into a contract that specifies the conservation projects that will be accomplished (<http://www.wildlifedepartment.com/wildlifemgmt/lepchcp.htm>).

Through the State Wildlife Habitat Improvement Program (SWHIP), ODWC provides cost share assistance for specific habitat improvement practices. Under the SWHIP, landowners enter into 10-year contracts with ODWC for approved projects to develop, preserve, restore and manage wildlife habitat on private lands. ODWC shares part of the cost of habitat improvement work, based on allowable costs determined by the NRCS. In exchange, the landowner agrees to maintain the habitat for a period of 10 years (<http://www.wildlifedepartment.com/wildlifemgmt/wildlifehabitat.htm>).

The ODWC Quail Enhancement Program focuses on improving quail habitat and increasing the public's knowledge of bobwhite biology, habitat requirements and management. Improvements to quail habitat will also provide many benefits to LEPC, although the habitat requirements of the two species do differ in a number of ways. Technical assistance to improve habitat is available to landowners free of charge by ODWC biologists, including on-site visits and management recommendations. Any landowner in the state of Oklahoma is eligible for technical assistance, regardless of property size. For more information see: <http://www.wildlifedepartment.com/wildlifemgmt/quailenhancement.htm>.

Through a Voluntary Offset Program (VOP), developers can enter into voluntary agreements with the ODWC and make financial contributions to a habitat conservation fund to address threats to LEPC from energy developments by helping offset acknowledged impacts to wildlife habitat from development activities. The VOP is a voluntary mechanism to accomplish offsite mitigation and has been used to offset or partially offset acknowledged impacts to LEPC habitat. Examples include two agreements and payments made by Oklahoma Gas and Electric Company (OG&E) in 2009 and 2010 using a ratepayer impact assessment to provide compensation for two adjacent wind facilities, and a March 2012 agreement with Chermac Energy Corporation to compensate for a planned 55 mi long high voltage transmission line. The OG&E agreement provided funding that has been used to purchase 23,736 acres in fee title for LEPC conservation, with some of these lands providing for a potential LEPC stronghold (see stronghold section). These funds have also provided research, surveys, educational programs, and funding for the development of the Oklahoma LEPC Conservation Plan. OG&E has also specifically avoided important LEPC areas keeping potential impacts out of over 100,000 acres of LEPC habitat, required proposers for wind projects to identify potential wildlife impacts, conducting pre-construction surveys of leks, and assisting in a new research project addressing transmission line impacts on LEPC.

The Oklahoma LEPC Spatial Planning Tool (Horton et al. 2010) is a spatially explicit model designed to assist development planning by providing developers with information that will allow them to avoid, minimize and mitigate negative effects of development on LEPC in Oklahoma. The tool was developed through a cooperative multi-party effort to promote voluntary habitat conservation actions and to prioritize agency management actions ([www.wildlifedepartment.com/lepdevelopmentplanning.htm](http://www.wildlifedepartment.com/lepdevelopmentplanning.htm)).

The Oklahoma Association of Conservation Districts (OACD) has established a wildlife credit program to provide landowners with stewardship payments for work done to protect and expand the habitat of LEPC. This pilot program is funded through a NRCS Conservation Innovation Grant (CIG). See: [www.okconservation.org](http://www.okconservation.org).

The Oklahoma Audubon Council has designated the Selman Ranch in northwest Oklahoma as one of Audubon's Important Bird Areas (IBA) primarily because of the LEPC population present on the ranch. The Selman Ranch IBA is entirely private property, and the ranch owner has worked closely with Audubon to promote her property as an IBA, protect the birds and improve habitat, including marking many miles of fencing to reduce fence collision mortality. Since 2009, this IBA has been the featured destination during the Lesser Prairie-Chicken Festival, Lek Treks & More, in Woodward, Oklahoma.

In Oklahoma, Oklahoma Independent Petroleum Association (OIPA) worked with ODWC to address threats from oil and gas development by developing a set of Voluntary Best Practices for oil and gas development ([http://www.oipa.com/page\\_images/1336665235-regulatory.pdf](http://www.oipa.com/page_images/1336665235-regulatory.pdf)). Preplanning is recommended to consider the location of possible developments in relation to areas of high value to LEPC as mapped by Oklahoma's LEPC Spatial Planning Tool. Avoidance of high value areas is recommended, but where development will occur in these areas, construction during the spring breeding season should be avoided, and ODWC biologists consulted to minimize impacts during pad siting. Where oil and gas development will occur in LEPC habitat, the following best practices are recommended to the extent possible:

- Maximize the use of existing corridors for new infrastructure supporting new well development (i.e. roads, power lines, pipelines, flowlines, etc.) and combine multiple operations at one site to minimize the disturbance / fragmentation of the LPCs habitat.
- Minimize surface disturbance in order to decrease fragmentation.
- Minimize the time needed to complete new construction and drilling operations, remove unnecessary equipment and infrastructure, and reclaim all portions of well sites not needed for production operations and all portions of roads not needed for vehicle travel.
- At new well sites near active leks, consider the use of low profile equipment and whenever economically feasible, consider burying distribution power lines.
- At well sites near active leks, to the extent possible, avoid conducting early morning activities between 3:00 am and 9:30 am during the mating season (March 1 to May 1).
- At well sites near active leks, to the extent possible, use noise control devices to muffle or control exhaust noise from facilities (pump jacks, compressors, etc.)
- New fencing installed that is not associated with tank batteries or other equipment on site should limit the height of the top strand to below 40 inches, limit fencing to three strands, and install fence markers or other visually detectable avoidance mechanisms.
- Remediation practices
  - When reseeding disturbed areas in high importance habitat use native grasses and forbs where possible to promote natural habitat.
  - Remove un-needed equipment, infrastructure, trash and debris from well sites.

## Kansas

Kansas has a number of programs available for helping improve LEPC habitat. The Federal programs (CRP, SAFE, LPCI, and USFWS Partners) are all very important for LEPC in Kansas. The U.S. Forest Service has 108,000 acres in the Cimarron National Grasslands in Kansas. The 5 year plan for these grasslands includes LEPC as one of its indicator species.

KDWPT has several programs that address LEPC threats related to agricultural conversion, loss of CRP, grazing, woody invasive species, and altered fire regimes. These programs help landowners deliver habitat improvements to LEPC. KDWPT's Upland Game Bird – Habitat Improvement Program allows for KDWPT biologists and private landowners to work together in the development of habitat management plans. This program provides a 75% match for practices that can improve LEPC habitat. Currently the annual budget is \$120,000. The program is focused on CRP enhancements, including cost sharing on prescribed burning, light disking, food plot establishment, forb/legume interseeding, brush removal, and providing additional Sign-Up Incentive Payment or Practice Incentive Payment incentives to help increase the enrollment in several Continuous CRP practices. Additional focus has been to provide cost share for the conversion of cropland to native grass, converting cool season grasses to native warm season grass, hedgerow renovation, wetland development, and deferred grazing on native rangeland.

KDWPT secured a State Wildlife Grant (SWG) to provide cost-share assistance to private landowners interested in enhancing habitat for species of greatest conservation need, including LEPC. Those landowners approved for funding will be required to match a minimum of 25% of the total project cost. This match can be cash from non-federal source, contributions of in-kind labor (labor, equipment and supplies) or a combination of both. This program last year had \$212,000 in funding, with 65% of the funds USFWS SWG dollars and 35% state dollars.

In partnership with FSA, NRCS, Playa Lakes Joint Venture, and others, KDWPT developed a targeted Conservation Priority Area to address threats from loss of habitat by encouraging enrollment of CRP within the LEPC current range. KDWPT provides technical assistance in planning seeding mixes and targets KDWPT WHIP cost-share towards enhancing CRP within the identified priority areas. SAFE enrollment is targeted towards LEPC through these priority areas.

The Nature Conservancy in Kansas has a Strategic Watershed Assistance Team grant from NRCS to promote EQIP and WHIP programs. They are also providing assistance to Prescribed Burning Associations such as through workshops. TNC has identified LEPC as a target species in their ecoregional plans for the Red Hills. Conservation easements are an important focus of TNC, and can help maintain LEPC habitat for the long-term. The Smokey Valley Ranch is a TNC property managed as a showcase for how a prescribed grazing program can produce habitat and grazing benefits. TNC provides outreach on EQIP and LPCI to landowners they work with.

KSU Extension has been providing public education through programs and through maintenance of a LEPC website (<http://www.ksre.k-state.edu/p.aspx?tabid=275>). KSU Extension has also been working to assist prescribed burning associations. Several Burn Coops are working within LEPC range- especially

in the Red Hills, Comanche Co, and Park County. The Prescribed Fire Council of the Kansas Grazing Lands Coalition provides help with educational programs and other support for prescribed burning. The Comanche Pool Prairie Resource Foundation is a collaborative initiative of the USFWS Partners program is an effective habitat improvement program within LEPC range that was awarded a NFWF grant to fund two prescribed fire specialists.

### Colorado

Colorado Parks and Wildlife (CPW) has its LEPC habitat improvement program (LPCHIP) that was initiated in 2009. This program was specifically designed to directly address LEPC threats such as agricultural conversion, loss of CRP, grazing, altered fire regimes and to indirectly address threats such as climate change, extreme weather events, predation and disease through the improvement of habitat quality and connectivity. LPCHIP improves and restores habitat on private lands for LEPC and other mid-grass and sand sagebrush dependent wildlife found in occupied LEPC range in southeast Colorado. Program delivery to date has been achieved through the collective and collaborative work of biologists, district wildlife managers, and the partnership farm bill biologists. Specific project identification and implementation is contracted through Pheasants Forever using their program that has been demonstrated to be efficient and effective in delivering on-the-ground conservation. Currently the LPCHIP is funded by the severance tax species conservation trust fund. Program funds are often used to provide incentives in conjunction with Federal programs to target projects that address habitat limiting factors for LEPC, almost exclusively on private lands. A small portion of funding was used for a project on the Comanche National Grasslands, administered by the U.S. Forest Service. As of June 2012, the LPCHIP implemented projects directly impacting 11,212 acres. There were an additional 7,413 acres of projects in progress and areas where there was strong landowner interest. The completed acres include 3,590 acres of CRP projects, 3,280 acres of CRP mid-contract management, 4,380 acres of grazing deferment designed to improve nesting habitat adjacent to leks, and 2,422 acres of non-CRP grass establishment.

CPW conducts annual monitoring of all known and historical leks. Additional reconnaissance is conducted in potentially suitable habitat to detect leks which may be currently unknown or newly established. Aerial helicopter surveys were conducted in 2011 to survey large blocks of potentially suitable habitat north of currently occupied areas in Colorado; however, no new leks were discovered.

The Nature Conservancy is currently focusing on conservation easements as one of the important tools used to protect LEPC habitat in eastern Colorado. The Conservancy is working closely with partners, including CPW and NRCS to conserve properties containing LEPC habitat. Land trusts, such as the Conservancy can apply to CPW and NRCS for funds to help with the costs associated with acquiring a conservation easement.

One of Colorado's core LEPC populations was found on the Comanche National Grasslands. CPW works closely with USFS personnel on LEPC habitat management by offering recommendations on grazing management, assisting with population monitoring on the Grasslands, and by providing equipment, materials, and manpower for LEPC habitat projects. In recent years the USFS has changed



much of their grazing management in order to provide better nesting habitat for the birds. This has included annual deferment of grazing on some pastures, reduction of stocking rates in one of the primary LEPC allotments, and conducting some patch-burn-grazing trials to assess its effectiveness as a habitat management tool for SE Colorado sand sagebrush rangelands. In partnership with CPW, the USFS has also installed large grazing exclosures around or in close proximity to its active leks. Portions within these exclosures are disked annually in order to provide patches of quality brood habitat.

The Colorado Renewables and Conservation Collaborative and the New Mexico Wind and Wildlife Collaborative developed a set of BMP's for multiple species that address threats of wind development for each state <http://www.pljv.org/windandwildlife/index.php>. These are informal groups of representatives from the renewable energy industry and the conservation community whose common purpose was to constructively and proactively address conservation concerns related to renewable energy development in each state. Each collaborative developed a science-based site selection and mitigation framework that described avoidance, minimization and/or mitigation actions associated with wind energy development. The groups also developed BMPs for multiple species and landscape features including LEPC. The LEPC BMPs are similar for each state and include recommendations such as avoiding wind energy development in identified LEPC habitat whenever possible (similar to USFWS guidelines), avoiding large blocks of habitat if possible, bury power lines and minimize fencing and avoid construction during the breeding season. To offset impact that do occur, the BMPs offer mitigation recommendation.

### Texas

Texas Parks and Wildlife Department (TPWD) provides technical assistance to landowners including development of LEPC wildlife management plans (WMP) to those interested. These plans include technical assistance for grazing management and currently cover over 942,000 acres. Implementation of a plan will allow a landowner to be included in the Texas LEPC landowner CCAA with a certificate of inclusion (CI) provided by TPWD to the landowner that will "protect the landowner from future land use restrictions that would be imposed if and when the species is listed." Under this CCAA, "TPWD will meet with participating landowners at their request to provide continued technical assistance, including discussions of funding options, for projects that improve and maintain LPC habitat" ([http://www.tpwd.state.tx.us/huntwild/lesserprairiechicken/media/lpc\\_ccaa.pdf](http://www.tpwd.state.tx.us/huntwild/lesserprairiechicken/media/lpc_ccaa.pdf)). "Under this CCAA, TPWD will issue a CI to private landowners who enter into TPWD-approved WMPs for LEPC and are actively implementing conservation measures for the species. The conservation measures implemented by participating landowners would generally consist of prescribed grazing, prescribed burning, brush management, Conservation Reserve Program (CRP) and cropland management, range seeding, other upland wildlife habitat management practices, and population management techniques". TX currently has over 322,000 acres (130,312 ha) acres enrolled in this program.

The Landowner Incentive Program (LIP) is a TPWD program intended to help meet the needs of private, non-federal landowners wishing to enact good conservation practices on their lands for the benefit of healthy terrestrial ecosystems. LIP focuses on projects aimed at creating, restoring, protecting and enhancing habitat for migratory birds and species of greatest conservation need including the LEPC.

LIP is funded through various partnerships including the U.S. Fish and Wildlife, Partners for Fish and Wildlife Program, National Fish and Wildlife Foundation and other partners. LIP projects for the LEPC are reviewed internally by TPWD biologists and by UFWS Partners biologists to ensure they address threats to the species. These projects include technical and financial assistance for replanting cropland into native vegetation, conversion of expired CRP into rangeland, grazing management, control of woody invasive species and noxious weeds, and fence marking. Since 2008, TPWD has treated more than 15,000 acres specifically for LEPC projects through LIP within the EOR in TX. For more information see: <http://www.tpwd.state.tx.us/landwater/land/private/lip/>.

TPWD also helps coordinate other LEPC management activities within the state through partnerships with other agencies and NGOs. As a member of the Texas State Technical Action Committee, TPWD works with NRCS, FSA and other agencies and NGOs to help effectively target Farm Bill Programs for wildlife habitat. In 2011, TPWD worked with NRCS, Pheasants Forever, and PLJV to hire three State Watershed Action Team Biologists to assist with Farm Bill program delivery and monitoring under the NRCS LPCI. In addition, TPWD recently formed the TX LEPC implementation team with representatives from TPWD, NRCS, FSA, Texas AgriLife Extension, Texas General Land Office and USFWS. The intent of this team is to promote common targeting of LEPC habitat management programs across agencies within the state and to coordinate with similar teams in other states.

The TPWD Wildlife Habitat Assessment (WHAB) Program provides a voluntary project review service for projects across the state including reservoirs, highway projects, pipelines, urban infrastructure, utility construction, renewable energy, and residential and commercial construction, as well as many others. This program provides siting recommendations and recommendations to avoid minimize and mitigate for potential impacts to LEPC habitat for several projects a year and the majority of these are wind energy, transmission and road projects. In 2011, an electric transmission line projects resulted in \$600,000 of voluntary mitigation. Those funds were utilized by The Nature Conservancy with Section 6 funds from USFWS to purchase LEPC habitat adjoining the Yoakum Dunes Preserve and to support aerial surveys in the region.

Within TX, the Dorothy Marcille Wood Foundation has developed a website to disseminate information on LEPC, and helps coordinate LEPC education and other programs.

### **New Mexico**

NM has private landowner programs administered by both state and Federal agencies as well as lands administered by the BLM that are contributing to LEPC habitat. Similar to other states, NRCS in NM has partnered with the National Fish & Wildlife Foundation, Pheasants Forever and Quail Forever to create a Strategic Watershed Action Team (SWAT) that provides specialists in the field to work with landowners and NRCS field offices. The Team assists in conducting range and habitat inventories, grazing plans, outreach, and in monitoring and evaluation of applied conservation practices. As a result of the team's efforts, ranchers and conservationists will have a better understanding of the impacts of conservation activities, and will be able to more effectively prescribe, target and implement future conservation efforts that will benefit the health and productivity of rangeland and lesser prairie-chickens.

New Mexico Department of Game and Fish (NMDGF) recognized the importance of managing LEPC as early as the 1940's. A recent report (NMDGF 2011) stated: "In the 1940's the State Game Commission started to acquire properties for the purposes of conserving habitat for this species (LEPC). These acquired properties, named Prairie Chicken Areas (PCAs), were often farms and ranches that had failed during the Dust Bowl and Great Depression and were scattered throughout De Baca, Lea, and Roosevelt Counties. The basis for this purchase strategy was that wide distribution of protected areas would be more beneficial to lesser prairie-chicken conservation than conserving a large area in only one part of this species' range. Currently, there are 29 properties that encompass 27,182 acres. These properties range in size from 28 to 7,189-acres and are managed primarily to provide habitat for lesser prairie-chickens, but also to provide benefits to other wildlife species. This also includes the Sandhills Prairie Conservation Area (CA), which was acquired in 2007 and encompasses 5,285-acres." NMDGF is in the process of enrolling all of these properties in a CCAA, discussed below.

NMDGF worked with the BLM, TNC, and other partners to identify a series of LEPC core conservation areas. These are areas that have many conservation components already in place, assuring long-term benefits for LEPC.

Many of the livestock grazing allotments are enrolled in a Candidate Conservation Agreement program and the private and state lands associated with these allotments are enrolled in the Candidate Conservation Agreement with Assurances program. Approximately 60 percent of federal mineral estate is not under lease and will remain so. Mineral estate that might be acquired by the BLM under the proposed Permian Basin Land Exchange would be closed to future oil and gas leasing, per the resource allocations and decisions found in the BLM's 2008 Special Status Species Resource Management Plan Amendment. Completion of the proposed Permian Basin Land Exchange would strengthen the habitat protections in both the linkage zones and core conservation areas.

TNC also has land holdings devoted to LEPC in New Mexico. "In 2005, the Conservancy purchased the 18,500-acre Creamer Ranch in eastern New Mexico to become the Milnesand Prairie Preserve. In 2009, the Conservancy significantly expanded the preserve through its acquisition of the 9,200-acre Johnson Ranch. The preserve, now at 28,000 acres, provides superb condition—unfragmented grassland with oak shrubs providing protective cover for these ground-nesting birds." (<http://www.nature.org/ourinitiatives/regions/northamerica/unitedstates/newmexico/placesweprotect/milnesand-prairie-preserve.xml>). TNC has enrolled over 7,000 acres of its lands in the Milnesand Prairie Preserve in the NM CCAA, discussed below. This preserve is also the site of the Annual High Plains Lesser Prairie Chicken Festival that attracts visitors in April to observe mating displays of LEPC.

As reported by the USFWS (2012a:73833) "In January 2003, a working group composed of local, state, and Federal officials, along with private and commercial stakeholders, was formed to address conservation and management activities for the lesser prairie-chicken and dunes sagebrush lizard (*Sceloporus arenicolus*) in New Mexico. This working group, formally named the New Mexico Lesser Prairie-Chicken/Sand Dune Lizard Working Group, published the Collaborative Conservation Strategies for the Lesser Prairie-Chicken and Sand Dune Lizard in New Mexico in August 2005. This Strategy

provided guidance in the development of BLM's Special Status Species Resource Management Plan Amendment (RMPA), approved in April 2008, which also addressed the concerns and future management of lesser prairie-chicken and dunes sagebrush lizard habitats on BLM lands, and established the Lesser Prairie-Chicken Habitat Preservation Area of Critical Environmental Concern. Both the Strategy and the RMPA prescribe active cooperation among all stakeholders to reduce or eliminate threats to these species in New Mexico. As an outcome, the land-use prescriptions contained in the RMPA now serve as baseline mitigation (for both species) to those operating on Federal lands or non-Federal lands with Federal minerals." "Since the CCA and CCAA were finalized in December 2008, 29 oil and *gas companies have enrolled a total of 330,180 ha (815,890 ac) of mineral holdings under the CCA. In addition, 39 private landowners in New Mexico have enrolled about 616,571 ha (1,523,573 ac). There currently are additional pending mineral and ranching enrollment applications being reviewed and processed for inclusion. Recently, BLM also has closed 149,910 ha (370,435 ac) to future oil and gas leasing and closed some 342,770 ha (847,000 ac) to wind and solar development. They have reclaimed 536 ha (1,325 ac) of abandoned well pads and associated roads and now require burial of power lines within 3.2 km (2 mi) of leks. Some 52 km (32.5 mi) of aboveground power lines have been removed to date. Additionally, BLM has implemented control efforts for mesquite (*Prosopis glandulosa*) on some 148,257 ha (366,350 ac) and has plans to do so on an additional 128,375 ha (317,220 ac)."*

## PLANNING APPROACH AND METHODS

The range-wide conservation plan for LEPC was led by the IWG consisting of a representative from each of the 5 states supporting LEPC (CO, KS, OK, TX, and NM) with coordination from WAFWA and EMRI. The plan was developed by engaging agencies, organizations, industries, universities, and other stakeholders through a series of targeted meetings and through broader public input opportunities. Several working teams or committees were established to help provide input to the IWG for various components of the plan. Specifically, a science team was established, as were a mitigation/voluntary offset committee and a habitat credit trading/conservation banking committee. Each state established its own implementation team to coordinate local delivery of LEPC landowner assistance programs. Various industry initiatives (candidate conservation agreement with assurances or habitat conservation plan initiatives) were included in planning discussions.

A critical component of plan development was coordination among the various agencies, organizations, industries, landowners, and other stakeholders interested in LEPC and its conservation strategy. Coordination was needed at multiple levels including interagency coordination for Federal agencies, interagency coordination within and among states, interagency coordination between states and Federal agencies, coordination with regional organizations and industries, intrastate agency and organization coordination, and general outreach and engagement of landowners and the public. Sequencing of planning components involved establishment of various committees to accomplish specific tasks, then engaging broader involvement as various components of the plan were available for

review and input.

The IWG established a science team to assist the planning effort with setting of plan goals as well as providing recommendations for science-based decisions included in the plan. The goals that the science team set were the desired population size and the conversion of the population goal into habitat goals for LEPC. The science team was also tasked with review of a mitigation metrics system to be used to quantify impact units and mitigation units, to recommend impact buffer distances to be used in impact assessments, and to recommend range-wide delineation of sub-population areas. The science team was also asked to review other science components of the conservation plan. The science team included the members of the IWG as well as Dwayne Elmore with Oklahoma State University, Dan Mulhern, Chris O’Meilia, Allison Arnold, Aron Flanders, and Heather Whitlaw with the U.S. Fish and Wildlife Service, Dave Haukos, with the U.S. Geological Survey, Blake Grisham with Texas Tech University, Don Wolfe with Sutton Avian Research Center, Christian Hagen with Oregon State University representing the Natural Resources Conservation Service, and Alex Daniels and Anne Bartuszevige with Playa Lakes Joint Venture. This team met for 2 days in August 2012 and held several webinars/conference calls following the initial meeting to review and recommend inputs to the plan. Minutes of the science team meetings are available on the WAFWA LEPC website.

A significant focus of the conservation plan is the improvement of habitat for LEPC on private lands as well as integration of the limited amounts of public land that can contribute to LEPC habitat needs. A major component of this implementation of conservation initiatives available through agencies or organizations that specifically target delivery of programs for LEPC or that can include the needs of LEPC as a priority. Most of these initiatives are administered at state levels, either through staffing of Federal programs at state levels, state agency programs, or organizations that either operate within a state or align with state level initiatives. For this reason, coordination of LEPC programs within each state is a critical part of conservation planning. Therefore, each state convened an implementation team consisting of agencies and organizations involved in delivery of LEPC programs to coordinate initiatives within each state for maximum effectiveness and efficiency in conservation delivery. These teams reviewed their current coordination, identified additional opportunities for increased coordination, and discussed how to ensure that landowners are being provided with “one-stop-shopping” through contacts with any of the partnering agencies or organizations. Each state also held public meetings to discuss the on-going LEPC planning process and coordination. Landowners were encouraged to attend these meetings and provide input to the planning process.

The conservation strategy for LEPC must address the identified threats discussed above if it is to be successful in providing for a high probability of long-term viability of the species. Inclusion in the plan of mitigation opportunities and tools for voluntary reductions in threats is essential for this success. A framework for the consistent development and application of such conservation tools was needed. The science team, as mentioned, was tasked with reviewing the science involved in metrics that could be used to evaluate potential impact units and mitigation units. However, various decisions concerning the application of these metrics were also needed that involve policy components beyond

what science can provide as guidance. To address these policy components while providing a consistent foundation for impact and mitigation tools, a voluntary offset/mitigation committee was convened. An additional committee was formed to consider the various tools or options that could be developed for credit trading/conservation banking. This committee was tasked with reviewing the mitigation metrics and policy framework developed by the science team and mitigation/voluntary offset committee and providing recommendations on how the foundation could be consistently applied to the various potential trading/banking tools.

The IWG coordinated with on-going CCAA/HCP efforts. The Great Plains Wind Energy Habitat Conservation Plan has held meetings and IWG has sent representatives to these meetings to help coordinate efforts. An oil and gas initiative is developing a draft CCAA for KS, OK, TX, and CO and has involved the 5 states and the USFWS in review of drafts of this effort. A meeting occurred in January 2013 where all interests in CCAA/HCP's or related conservation tools that might be applied to LEPC were invited to review the draft foundations developed for such tools and to provide input to the process.

### Public Involvement

Information on the planning process was provided on WAFWA's website ([http://www.wafwa.org/html/prairie\\_chicken.shtml](http://www.wafwa.org/html/prairie_chicken.shtml)). An initial stakeholder scoping meeting on the revision of the CHAT and the development of the Range-wide Plan was held in Edmond, OK on June 11, 2012. More than 90 stakeholders representing oil and gas, wind energy, transmission, agriculture associations, Farm Bureau representatives, departments of transportation, public utilities and public utilities commissions, oil and gas permitting agencies, agricultural and natural resource agencies, conservation bankers and conservation organizations attended from across the five state region. A first draft of the Range-wide Conservation Plan for Lesser Prairie-Chicken was provided for public input in January 2013. Input was received at a public meetings held in Edmond, OK on January 23 and 24, 2013 and was also received through both email and written inputs. A second draft of the plan was provided in February with a third draft of the plan provided in April 2013.

A number of public meetings were held in each of the 5 states. These meetings were targeted towards local stakeholders including industry representatives and permitting agencies representing the oil and gas industry, wind energy, transmission, State Departments of Transportation, Public Utilities Commissions, soil and water conservation boards, agricultural associations, agricultural agencies, and landowners. In addition, several meetings were held to explore possible CCAA development with oil and gas interests. Members of the IWG contacted representatives of wind energy and transmission industries to encourage involvement and input.

### CONSERVATION STRATEGY FOR LEPC

This plan describes a conservation strategy for LEPC that when implemented will provide the population and habitat needed to expand and sustain this species. The strategy identifies a desired population goal deemed adequate to provide for a well distributed population of LEPC that is viable within each of 4



ecoregions. To meet the population goal the plan identifies habitat goals that provide for good representation of adequately-sized habitat patches to provide for resiliency in populations, and with enough patches to provide for redundancy to support populations that are sustainable in the long-term. The plan also identifies needed connectivity among habitat patches that will allow for genetic and demographic support among populations and will allow for potential movement of the species given uncertainties from climate change. The plan provides for coordination and enhancement of programs to improve habitat on private lands through landowner incentive programs, and promotes the avoidance of impacts to important habitat patches. Where avoidance is not possible, the plan identifies processes to minimize and mitigate impacts from developments. Finally the plan recommends monitoring needs and adaptive management considerations.

A key component of the conservation strategy is applying the concept of focal (core) areas. This concept has been applied to greater sage-grouse (*Centrocercus urophasianus*) in Wyoming, although the Wyoming application is based on differences in assumptions and expectations for these core areas ([http://gf.state.wy.us/web2011/Departments/Wildlife/pdfs/SAGEGROUSE\\_EO\\_COREPROTECTION00006\\_51.pdf](http://gf.state.wy.us/web2011/Departments/Wildlife/pdfs/SAGEGROUSE_EO_COREPROTECTION00006_51.pdf)). This concept as applied to LEPC is based on identifying the areas of greatest importance to the species, and focusing habitat enhancement, maintenance, and protection in these areas. This accomplishes two things. First, it concentrates limited resources for species conservation in the most important areas, allowing for the restoration, enhancement, and maintenance of large blocks of habitat needed by LEPC. Second, it identifies areas where development should be avoided, which also helps identify areas where development is of less concern for LEPC. This provides developers with the guidance they typically seek for their development planning purposes, and helps avoid conflicts over impacts to the species.

The conservation strategy employs various tools to achieve its management objectives with an emphasis on focal areas. With the exception of NM, over 95% of the current range of LEPC is in private lands. To be successful, the conservation strategy must emphasize delivery of habitat improvement in focal or other areas by maximizing landowner incentives to make landowner engagement in LEPC habitat improvements either economically neutral or economically advantageous to the landowner. The strategy identified existing programs available to help provide these improvements and then worked with implementation teams and others to identify how to coordinate and maximize the delivery of these programs especially in focal areas. Second, the strategy identifies approaches and tools to avoid, minimize, and compensate through off-site mitigation the potential threats to LEPC through a mitigation framework that offers assurances for continued operations for developments in the future following identified guidelines and standards. A mitigation framework was developed including a metric system to quantify impact units and mitigation units. A further component of the plan was to identify a subset of focal areas to serve as LEPC strongholds as defined by the USFWS (2012b). Finally, the strategy recognizes that many aspects of LEPC ecology and management remain unknown. Monitoring is proposed that will allow for the generation of new information as well as documentation of plan success in terms of habitat improvements and population responses. The strategy needs to include an adaptive management component that provides certainty for landowners, industry and others who implement programs, yet allows for adjustments as substantial new information is generated.

## Population Goals

The IWG science team discussed LEPC population goals during its August 2012 meeting. The science team recognized the limitations of historical population data and the limitations of any population viability analyses conducted on a range-wide or regional basis to set population goals. With these data limitations, the team agreed to utilize a long term spring population average, trend information, and variability analyses as a basis for setting initial population goals on an LEPC regional basis. Past populations were reviewed, and the estimated population sizes at points in the past were considered. Populations that were present prior to the determination in 1998 by USFWS that the species was warranted but precluded were considered. Initial population goals were set based on available population and habitat information for each ecoregion, and these were then revisited after reviewing the report by Garton (2012). Based on review of the available population information and analyses, the science team recommended a range-wide population goal of 67,000 birds as an annual spring average over a 10 year-time frame. This goal was determined to meet the following population objectives:

- Increase populations to ensure a sustainable long-term population within each of the 4 delineated ecoregions,
- Maintain and expand the current distribution of the species across its estimated occupied range with some expansion into the area identified as current occupied range buffered by 10 miles, and
- Maintain higher population sizes in areas where they currently occur and are stable.

The science team discussed distributions of the range-wide goal. The team agreed with a previous determination used in developing a monitoring protocol (McDonald 2012) that 4 “ecoregions” should be designated within the overall range (Figure 2). The population goals were determined to be the average number of breeding birds estimated within each ecoregion over a 10 year period. To evaluate these goals, population estimates will be developed annually using the aerial survey methods described in the population status section. The 4 ecoregions and their goals were established as follows and will be adjusted through adaptive management in order to maintain long term viability of the species, as appropriate:

- Sand shinnery oak ecoregion—8,000 birds
- Sand sagebrush ecoregion—10,000 birds
- Mixed grass prairie ecoregion—24,000 birds
- Short grass prairie ecoregion—25,000 birds

## Habitat Goals

The science team recommended use of a focal area strategy in order to encourage the restoration, enhancement, maintenance, and protection of large blocks of good to high quality habitat for LEPC. Focal areas are defined as areas that have the greatest potential for supporting and sustaining long-term populations of LEPC through maintenance or restoration of large blocks of good to high quality habitat with minimal anthropogenic disturbances.

The science team recommended use of a focal area strategy in order to encourage the restoration, enhancement, maintenance, and protection of large blocks of habitat for LEPC. Focal areas are defined as areas that have the greatest potential for supporting and sustaining long-term populations of LEPC through maintenance or restoration of large blocks of good to high quality habitat with minimal anthropogenic disturbances. While population goals are set at ecoregional scales to monitor each ecoregional population and the overall range-wide population, the focal area approach represents a mechanism to effectively translate ecoregional population goals to habitat goals at appropriate spatial scales for conservation implementation. Because of the anticipated effects of weather patterns and stochastic events at local scales, it is expected that populations will naturally exhibit greater variability at local scales than at ecoregional scales. Techniques to track population trends and monitor progress toward population goals (e.g., range-wide aerial surveys) are best applied at ecoregional scales, while programs to achieve habitat-based goals within focal areas should be implemented to progress toward goals tracked at that scale. The cumulative effects of achieving and maintaining habitat goals within focal areas are inextricably linked to population goals at ecoregional scales as current local habitat conditions heavily influence ecoregional population fluctuations. For this species, it is reasonable to presume that as local habitat conditions improve, population numbers improve and vice versa.

Identifying focal areas directs conservation efforts into these areas, creating more contiguous blocks of habitat and minimizing small local patches of habitat that will not support desired populations. Spreading conservation efforts across the range of the species (either within historical or estimated current occupied range) dilutes efforts and can result in “random acts of conservation” that, while applying good practices at numerous locations, doesn’t provide for concentrated efforts that produce larger more contiguous blocks of habitat needed to support robust populations of the species. Further, delineation of this smaller set of focal areas will assist developers such as wind and oil and gas industries by prioritizing areas where avoidance of impacts is most needed and encouraging development in areas with minimal or reduced potential impacts to the species. In this way, focal areas define high priority areas needed to sustain the species

The science team further defined its recommendations for focal areas. They based these recommendations on their expert opinion using the best available science described in the section on minimum sizes of habitat blocks as well as the science described in the section on LEPC movements, LEPC survival, and LEPC population status and trends. They identified the following:

- Average size of focal areas should be at least 50,000 acres,
- Goal of at least 70% good to high quality habitat within each focal area,
- Focal areas should strive to be <20 miles apart to provide connectivity for genetic and population support, and
- Connectivity zones connecting focal areas should provide suitable habitat to support movements by LEPC.

Good to high quality habitat is considered to have vegetation conditions that support greater than 35%

canopy cover of grasses, shrubs, and forbs, consisting of greater than 50% composition of preferred species of shrubs and grasses, and have the appropriate structure to provide nesting and brood habitat intermixed within the focal area (Hagen et al. in review).

To set habitat goals, the science team considered what densities of LEPC might be expected in good to high quality habitat. While empirical data on population densities of LEPC are limited, past work has generally supported average density estimates of 5-10 birds/sq. mi. in the spring to be reasonable. In TX, a mean density of 5.63 breeding birds/sq. mi ranging from 2.18-8.64 was reported (Davis et al. 2008). NM estimated densities of 4.85 breeding birds/sq. mi (Neville et al. 2005), while KS used an estimate of 10 breeding birds/sq. mi (Davis et al. 2008). Additional analyses by state biologists have estimated population densities in good to high quality habitat within the TX mixed grass ecoregion to be <4/ sq. mi while in NM an estimate of 4/sq. mi in sand shinnery oak was deemed appropriate. The science team acknowledged density estimates reported in older studies but noted that the methods used in these studies were often not clearly reported or differed substantially from more recent techniques. The science team also recognized that the maximum density estimates reported in the literature occurred during a short time period and are likely not sustainable at those levels. While the potential for higher densities of birds under the right circumstances, the high degree of annual variation is inherent to the species. Thus, it is reasonable to rely on recent average density estimates that have been developed for populations occurring in the best existing habitats. Based on these considerations, the science team recommended using a density of 9/ sq. mi for the shortgrass ecoregion, 5 breeding birds/sq. mi for the sand sagebrush ecoregion and the OK and TX areas of the mixed grass ecoregion, 9/ sq. mi for the KS portion of the mixed grass ecoregion, and 4/ sq. mi for the sand shinnery oak ecoregion. The science team set a goal of having sufficient habitat in focal areas to sustain 75% of the desired population goal of 67,000 birds. This translated into the equivalent of 4,960,000 acres of good to high quality habitat as the initial focal area habitat goal for the strategy. The remaining 25% of the population goals will need to be maintained elsewhere within the estimated occupied range (+10 miles) on the equivalent of 1,488,000 acres of good to high quality habitat.

The need for connectivity zones was also identify by the science team to allow linkage among focal areas. An exception is linkage between the sand shinnery oak ecoregion with the other three ecoregions, as the intervening area in TX is considered unsuitable for restoring or maintaining as a connectivity zone due to a separation of >100 miles of unoccupied and unsuitable habitat. The LEPC population in the sand shinnery ecoregion is relatively stable based on the last 10-15 years of available population data (Garton 2012). Should new information suggest that population interchange with the other ecoregions be deemed desirable (e.g., if genetic exchange was determined to be beneficial) translocations of birds could be considered and implemented through adaptive management at some time in the future, as appropriate.

The science team made recommendations on connectivity zones based on their expert opinion using the best available science described in the section on minimum sizes of habitat blocks and LEPC movements. Connectivity zones should strive to maintain 40% of the area as LEPC habitat. Habitat patches within

connectivity zones should be no further than 2 mi apart. Connectivity zones can be variable in width, but optimally would be at least 5 mi in width. Connectivity zones should avoid or minimize the number of barriers they contain, including anthropogenic structures crossing connectivity zones that may serve as barriers. Where these must occur, they should be placed to minimize their effects on movements of LEPC.

### **Delineation of Focal Areas and Connectivity Zones**

Selection of focal area locations was based on a number of criteria including existing populations of LEPC as indicated by known lek locations and sizes, existing habitat conditions (modeled habitat layers), amounts of existing fragmentation (NAIP imagery and other spatial datasets), amounts of preferred ecological sites (NRCS SSURGO data), location of public lands or other conservation lands that can contribute to habitat goals, and known receptivity of landowners to use incentive programs (local biologist knowledge). On-going LEPC conservation projects and locations of concentrations of CRP lands identified by implementation team biologists were additional factors guiding the siting of focal areas. Known locations of existing or projected energy developments were considered as well, and adjustments made to avoid conflicts with these developments where possible, however presence of substantial existing populations of LEPC and LEPC habitat took precedence in some locations. Initial selection of these focal areas was done by the established implementation teams before being released for public comments in previous versions of the plan. Numerous revisions occurred after the initial release and they were guided by public comments and improved spatial data.

The implementation teams made recommendations on connectivity zone locations based on their expert opinion using the best available science described in the section on minimum sizes of habitat blocks and LEPC movements. The goal of connectivity zones will be to maintain at least 40% of the area in good to high quality LEPC habitat. Habitat patches within connectivity zones should be no further than 2 mi apart. Connectivity zones can be variable in width, but optimally would be at least 5 mi in width. Connectivity zones should avoid or minimize the number of barriers they contain, including anthropogenic structures crossing connectivity zones that may serve as barriers. Where these must occur, they should be placed to minimize their effects on movements of LEPC.

Each state was tasked with delineating focal areas and connectivity zones for the state. Based on the population goals allocated to each ecoregion, each state implementation team developed a map of focal areas and connectivity zones (Figure 3). Details of the focal areas within each ecoregion and state are presented in Tables 3 and 4. Each focal area and connectivity zones within each ecoregion was numbered and evaluated for its existing conditions. Focal areas within each of the ecoregions are displayed in Figures 4-7. Information on the land uses and existing impacts for these focal areas and connectivity zones are listed in table 5 and 6.

Selection of focal area locations was based on a number of criteria including existing populations of LEPC as indicated by known lek locations and sizes, existing habitat conditions (CHAT vegetation layer), amounts of existing fragmentation (CHAT layer and NAIP imagery), amounts of preferred ecological sites

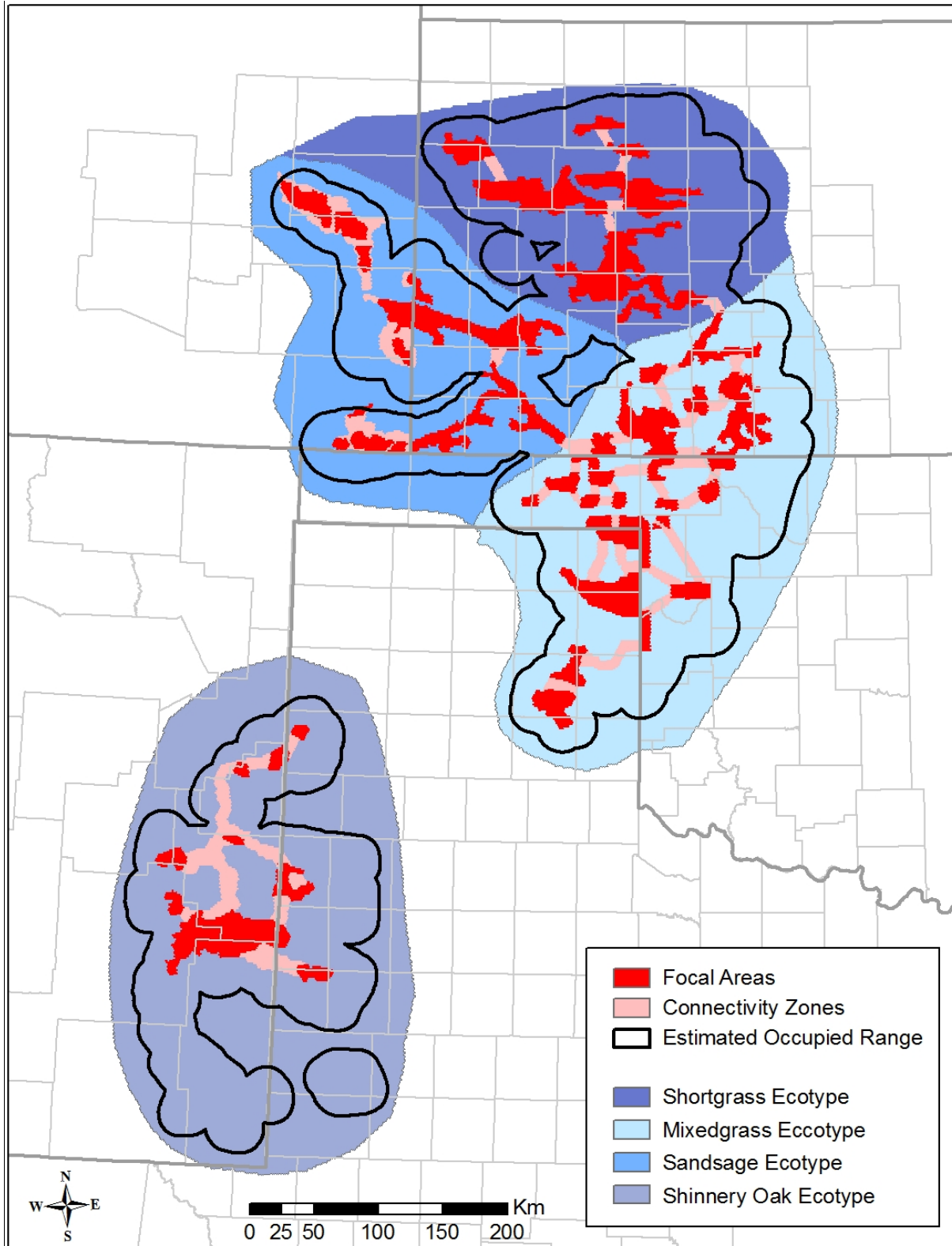


Figure 3. Map of focal areas where LEPC habitat improvements actions will be concentrated and development activities avoided or where avoidance is not possible, minimized.



Table 3. Focal area total acreage delineations for each state compared to acreage of estimated historical range and estimated current occupied range.

State	Estimated Historical Range (ac)	Current Estimated Occupied Range (ac)	Current Occupied Range plus 10 mi buffer (ac)	% Current of Historical	Focal Area Delineation (ac)	Connectivity Zones Delineated	% Focal Delineated of Current
<b>Colorado</b>	5,414,400	1,101,545	3,236,480	20.3%	622,720	538,240	56.5%
<b>Kansas</b>	18,967,040	8,997,133	16,994,560	47.4%	3,929,600	500,480	43.7%
<b>Oklahoma</b>	16,915,200	4,018,883	6,231,040	23.8%	812,160	503,040	20.2%
<b>Texas</b>	58,414,720	3,573,468	7,810,560	6.1%	955,520	488,320	26.75
<b>New Mexico</b>	12,990,720	2,084,979	6,878,720	16.0%	784,000	704,000	37.6%
<b>Total</b>	<b>117,020,800</b>	<b>19,776,008</b>	<b>41,151,360</b>	<b>16.9%</b>	<b>7,104,000</b>	<b>3,107,840</b>	<b>35.9%</b>

Table 4. Population and focal area delineations by ecoregion. Population data were from the 2012 range-wide aerial monitoring survey.

Ecoregion	Population Goal (% of total goal)	Focal Area Delineation (acres)	% of Focal Area Delineated	% of surveyed leks in ecoregion	% of surveyed pop. in ecoregion
<b>Sand shinnery oak</b>	8,000 (11.9%)	1,046,400	14.7%	13.5%	10.0%
<b>Sand sagebrush</b>	10,000 (14.9%)	1,578,240	22.2%	3.3%	3.5%
<b>Mixed-grass</b>	24,000 (35.8%)	2,584,320	36.4%	27.6%	22.7%
<b>Short-grass</b>	25,000 (37.3%)	1,895,040	26.7%	55.6%	63.8%
<b>Totals</b>	<b>67,000</b>	<b>7,104,000</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

(NRCS soils layer), location of public lands or other conservation lands that can contribute to habitat goals, extent of conflicting demands for alternative land uses, and known receptivity of landowners to use incentive programs (local biologist knowledge). The most recent map of lek locations, including lek surveys conducted in 2012 was used as the existing population map, recognizing that additional leks exist in areas that have not been possible to survey from public roads and that were not included in the aerial survey sampling design initiated in 2012. Information contained in the Oklahoma LEPC Spatial Planning Tool was used as an additional information source in OK including the vegetation layer, road and transmission line maps, and existing information on habitat fragmentation. On-going LEPC conservation projects and locations of concentrations of CRP lands identified by implementation team biologists were additional considerations for siting focal areas. Known locations of existing or

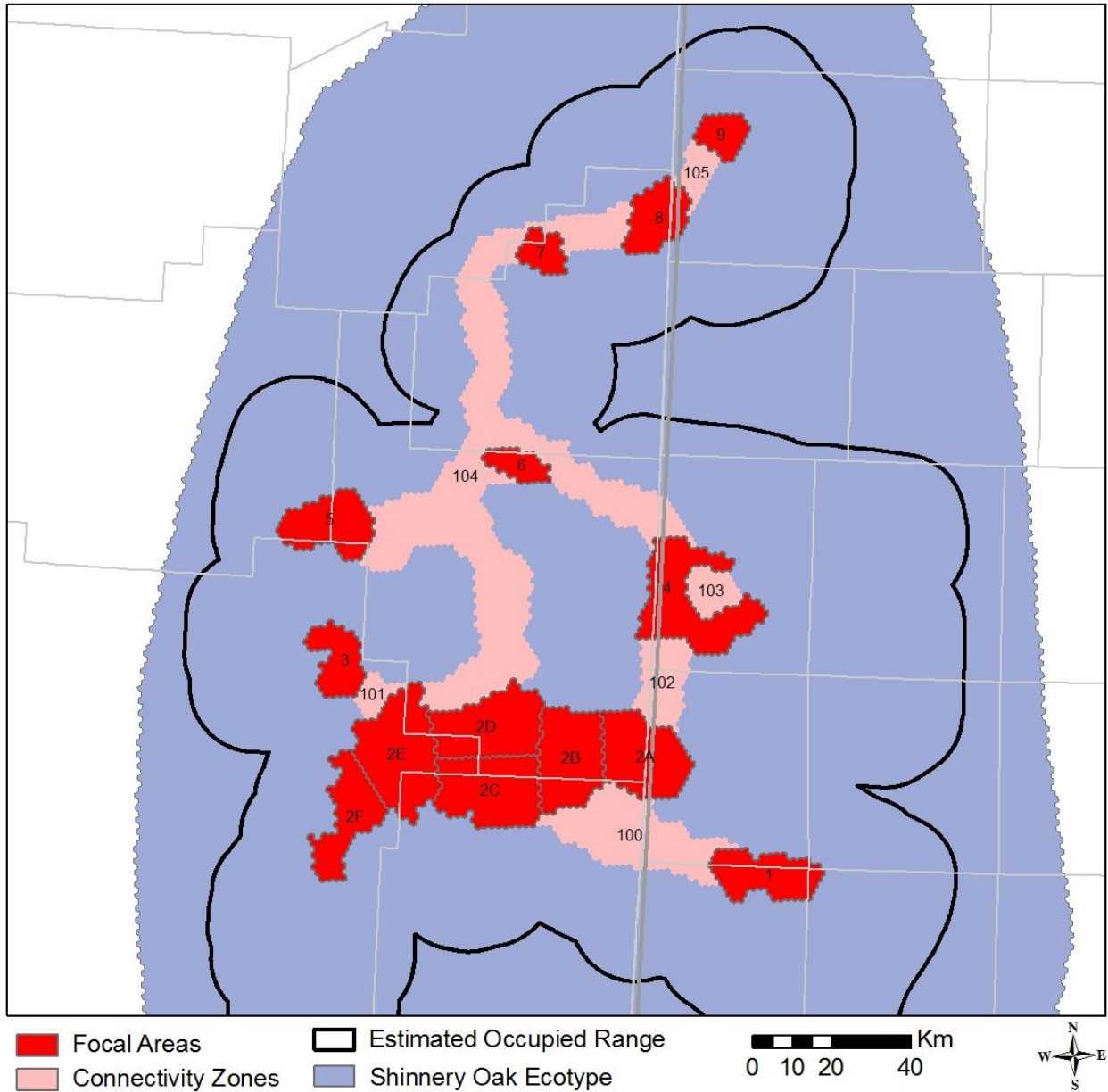


Figure 4. Map of focal areas and connectivity zones in the sand shinnery oak ecoregion.

projected energy developments were considered as well, and adjustments made to avoid conflicts with these developments where possible, however presence of substantial existing populations of LEPC and LEPC habitat took precedence in some locations.

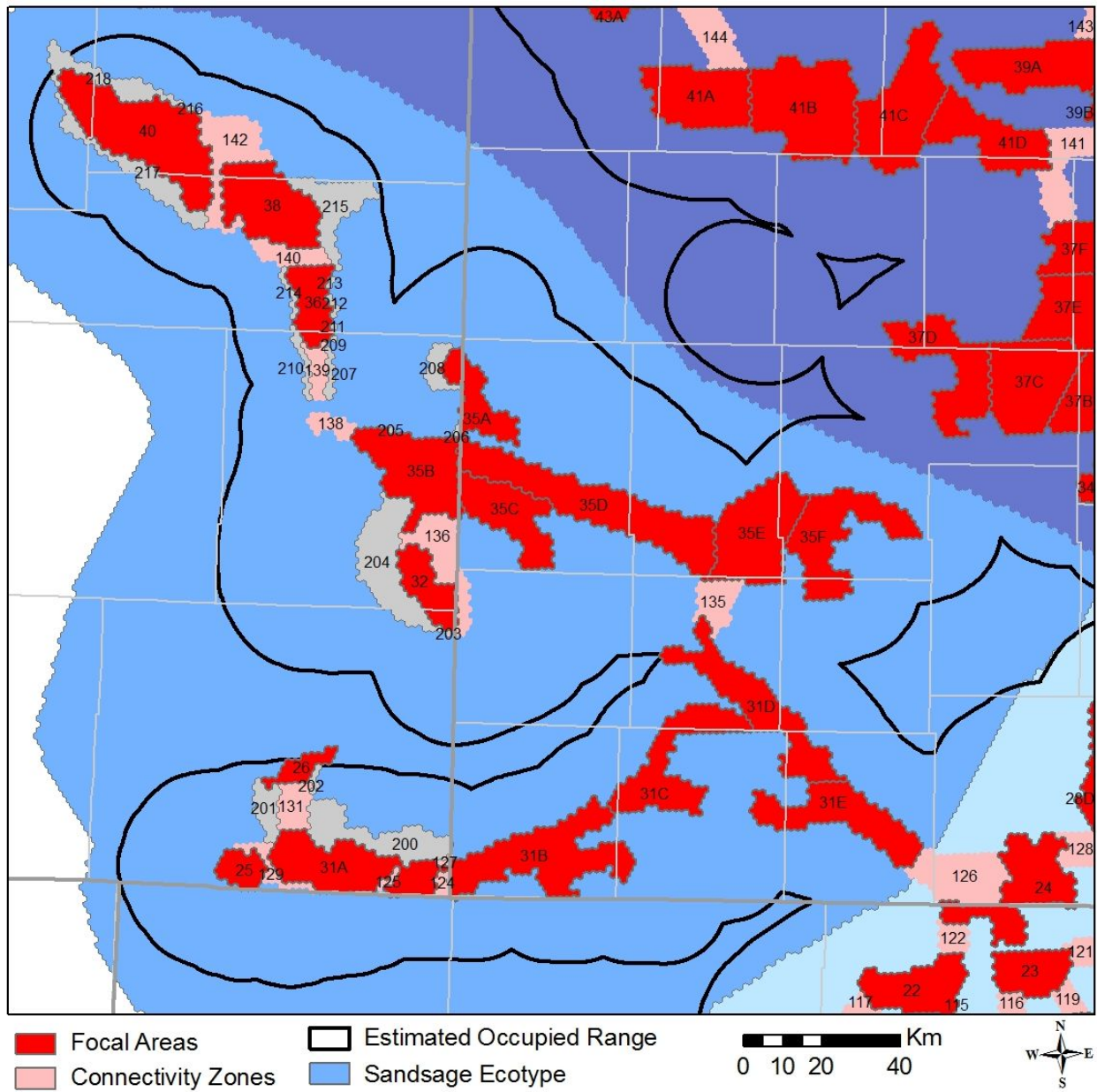


Figure 5. Map of focal areas and connectivity zones in the sand sagebrush ecoregion.

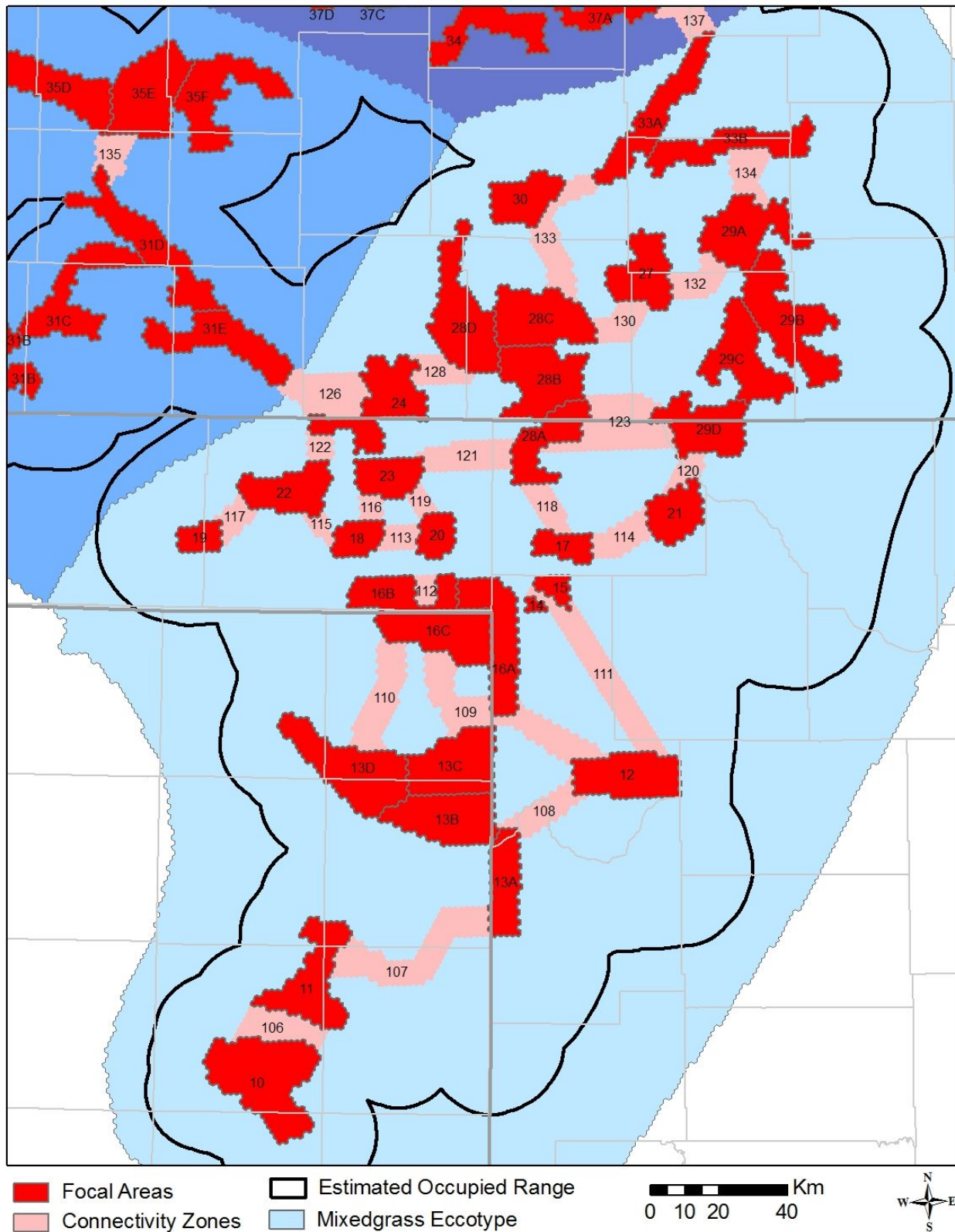


Figure 6. Map of focal areas and connectivity zones in the mixed grass ecoregion.



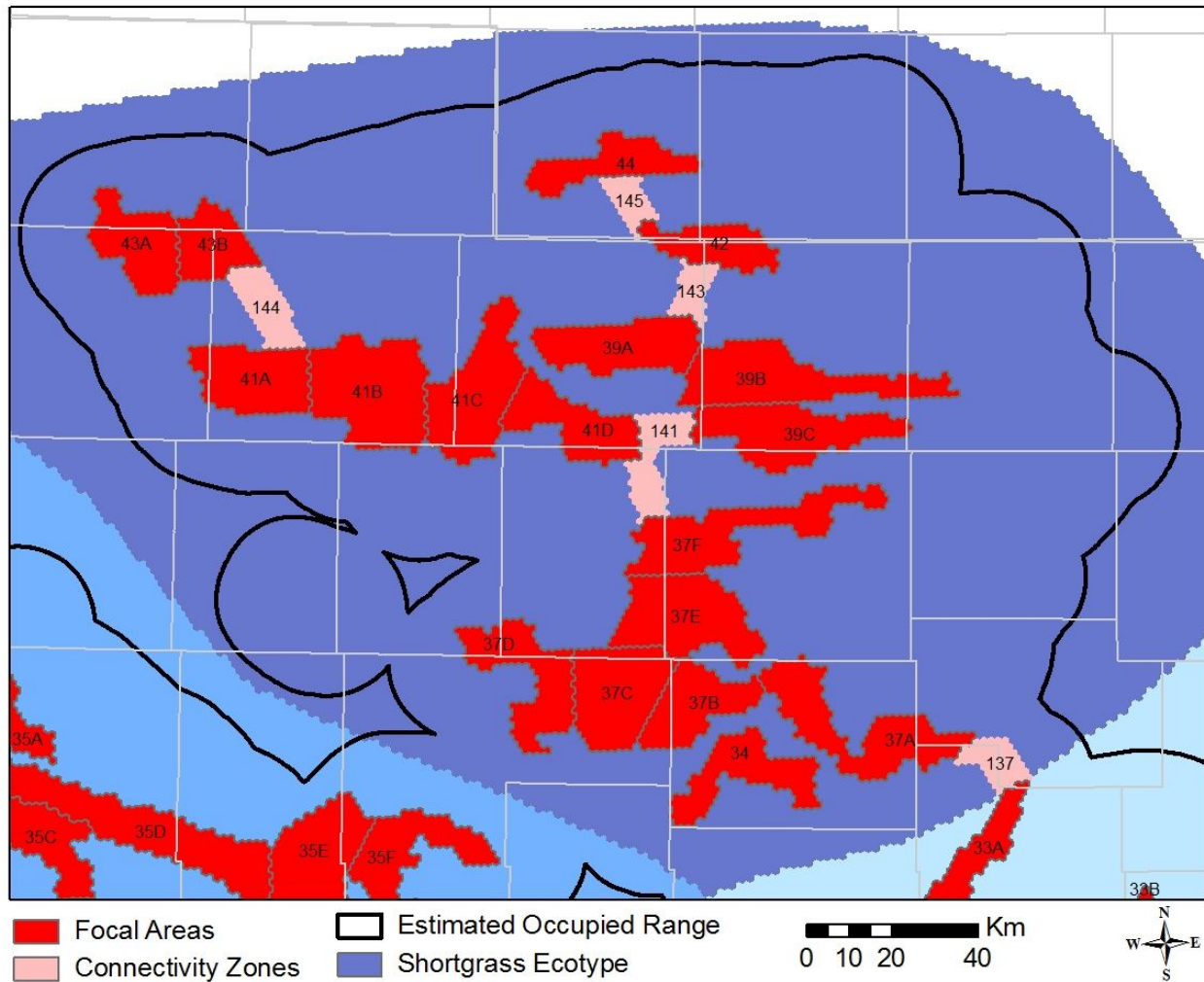


Figure 7. Map of focal areas and connectivity zones in the short-grass ecoregion.

In addition to the habitat provided in focal areas and connectivity zones, additional LEPC habitat will occur outside of these areas. Focal areas should provide the needed habitat to support at least 75% of the population goals, while connectivity zones will provide habitat for an additional component of the population goal. Other LEPC habitat will still be present, and will support additional birds. Populations are likely to experience greater fluctuations in areas outside of the focal areas due to the lower quality of the habitat in these areas and the smaller sizes of habitat blocks (Roloff and Hauffer 2002), but birds are expected to remain distributed throughout most of the current occupied range of the species.

Table 5. Characteristics of focal areas in terms of land cover, land uses, and existing impacts based on available remotely sensed data sources.

Ecoregion/Reporting Unit	Grassland	Shrubland	Cropland	Other	Total	Impacted	Impacted (%)
<b>Shinnery Oak</b>							
1	16,439	52,160	467	693	69,760	15,642	22.4%
2A	18,017	61,841	14,084	2,058	96,000	21,523	22.4%
2B	27,554	63,516	3,191	1,100	95,360	18,878	19.8%
2C	66,486	38,242	0	2,152	106,880	14,302	13.4%
2D	44,961	51,911	1,315	2,294	100,480	23,877	23.8%
2E	67,731	53,869	0	1,920	123,521	15,639	12.7%
2F	46,685	26,966	0	589	74,240	5,294	7.1%
3	15,976	31,670	0	354	48,000	3,822	8.0%
4	61,581	11,794	42,573	6,292	122,241	30,719	25.1%
5	46,450	25,641	0	229	72,320	7,501	10.4%
6	13,559	7,157	3,927	956	25,600	3,517	13.7%
7	21,941	0	4,178	761	26,880	5,460	20.3%
8	41,304	49	12,197	2,130	55,680	13,577	24.4%
9	24,770	73	3,928	669	29,440	2,899	9.8%
<i>Total</i>	<i>513,454</i>	<i>424,889</i>	<i>85,860</i>	<i>22,197</i>	<i>1,046,402</i>	<i>182,649</i>	<i>17.5%</i>
<b>Mixed Grass</b>							
10	103,652	49,274	2,979	4,096	160,001	68,201	42.6%
11	71,338	28,010	3,607	2,006	104,960	34,887	33.2%
12	51,519	32,658	4,254	5,010	93,440	10,425	11.2%
13A	39,966	17,517	3,816	2,701	64,000	18,500	28.9%
13B	75,952	21,435	2,050	1,044	100,480	31,033	30.9%
13C	74,424	22,958	3,261	1,758	102,400	35,882	35.0%
13D	103,755	21,007	2,680	2,479	129,921	43,933	33.8%
14	4,791	385	228	356	5,760	2,431	42.2%
15	12,519	30	4,519	852	17,920	5,287	29.5%



Table 5. Continued

<b>Ecoregion/Reporting Unit</b>	<b>Grassland</b>	<b>Shrubland</b>	<b>Cropland</b>	<b>Other</b>	<b>Total</b>	<b>Impacted</b>	<b>Impacted (%)</b>
16A	68,885	10,329	12,487	4,300	96,000	23,621	24.6%
16B	49,012	5,915	7,114	2,599	64,640	14,484	22.4%
16C	69,165	13,417	14,522	3,376	100,480	37,246	37.1%
17	30,147	563	1,070	1,500	33,280	7,871	23.7%
18	30,176	2,879	291	1,214	34,560	10,464	30.3%
19	24,344	1,224	234	438	26,240	2,322	8.9%
20	28,157	595	2,178	1,709	32,640	9,050	27.7%
21	48,130	4	5,940	2,246	56,320	9,831	17.5%
22	62,543	6,575	1,871	2,612	73,600	18,768	25.5%
23	45,903	1,543	1,832	1,922	51,200	11,082	21.6%
24	90,246	1,197	9,140	4,377	104,960	12,565	12.0%
27	62,791	22	9,792	2,276	74,880	10,990	14.7%
28A	43,633	248	23,414	3,105	70,400	17,971	25.5%
28B	77,022	1,251	20,887	3,881	103,040	10,576	10.3%
28C	93,934	35	6,401	3,951	104,320	9,858	9.4%
28D	101,764	4	15,146	4,047	120,961	15,442	12.8%
29A	84,054	1	10,517	3,349	97,920	15,630	16.0%
29B	117,218	9	6,053	6,000	129,281	18,966	14.7%
29C	83,178	4	9,570	3,248	96,000	10,111	10.5%
29D	81,264	4	3,396	3,017	87,680	9,289	10.6%
30	24,834	0	34,194	1,772	60,800	10,052	16.5%
33A	64,897	18	23,834	4,051	92,800	11,851	12.8%
33B	53,457	5	28,891	2,767	85,120	12,617	14.8%
<i>Total</i>	<i>1,972,670</i>	<i>239,116</i>	<i>276,168</i>	<i>88,059</i>	<i>2,576,004</i>	<i>561,237</i>	<i>21.8%</i>
<b>Sand Sagebrush</b>							
25	8,619	16,436	124	421	25,600	2,635	10.3%
26	10,502	3,986	5,519	473	20,480	2,558	12.5%
31A	45,854	53,480	9,048	2,979	111,361	15,732	14.1%

Table 5. Continued

<b>Ecoregion/Reporting Unit</b>	<b>Grassland</b>	<b>Shrubland</b>	<b>Cropland</b>	<b>Other</b>	<b>Total</b>	<b>Impacted</b>	<b>Impacted (%)</b>
31B	66,739	35,660	31,447	7,594	141,441	40,245	28.5%
31C	39,417	12,252	40,513	4,459	96,640	35,749	37.0%
31D	70,026	1,070	34,622	5,002	110,721	39,178	35.4%
31E	58,039	3,455	30,619	5,807	97,920	34,865	35.6%
32	19,351	1,013	24,994	1,361	46,720	8,672	18.6%
35A	36,644	2,292	11,123	1,142	51,200	6,598	12.9%
35B	42,626	24,885	36,389	3,621	107,520	25,293	23.5%
35C	29,626	4,439	41,987	2,028	78,080	8,855	11.3%
35D	53,038	75,410	31,189	6,124	165,761	22,876	13.8%
35E	34,918	4,203	74,065	2,654	115,841	39,614	34.2%
35F	47,027	0	57,947	3,186	108,160	32,973	30.5%
36	23,678	16,883	3,232	1,648	45,440	4,095	9.0%
38	71,574	19,332	6,396	3,819	101,120	7,775	7.7%
40	63,974	84,273	6,187	4,927	159,361	15,022	9.4%
<i>Total</i>	<i>721,652</i>	<i>359,069</i>	<i>445,401</i>	<i>57,245</i>	<i>1,583,366</i>	<i>342,735</i>	<i>21.6%</i>
<b>Shortgrass/CRP Mosaic</b>							
34	47,596	1	34,433	4,369	86,400	15,066	17.4%
37A	73,023	8	50,977	5,913	129,921	26,491	20.4%
37B	51,611	5	27,635	3,310	82,560	6,484	7.9%
37C	69,666	6	39,069	3,261	112,001	11,625	10.4%
37D	45,064	0	52,583	2,834	100,480	7,021	7.0%
37E	56,254	211	65,659	4,597	126,721	11,648	9.2%
37F	82,090	661	40,127	6,402	129,281	26,332	20.4%
39A	52,682	0	45,251	3,188	101,120	13,496	13.3%
39B	66,597	128	65,881	6,914	139,521	19,449	13.9%
39C	75,885	395	38,118	7,202	121,601	25,886	21.3%
41A	67,488	22	27,009	2,121	96,640	7,314	7.6%
41B	100,013	6	45,156	5,226	150,401	15,964	10.6%

Table 5. Continued

Ecoregion/Reporting Unit	Grassland	Shrubland	Cropland	Other	Total	Impacted	Impacted (%)
41C	89,032	10	32,921	5,397	127,361	15,060	11.8%
41D	57,817	0	25,155	3,429	86,400	10,107	11.7%
42	31,756	50	26,772	4,142	62,720	10,317	16.4%
43A	66,452	16	14,963	3,050	84,480	7,475	8.8%
43B	53,640	6	7,630	1,444	62,720	2,762	4.4%
44	44,326	0	25,750	2,244	72,320	11,944	16.5%
<i>Total</i>	<i>1,130,992</i>	<i>1,525</i>	<i>665,089</i>	<i>75,043</i>	<i>1,872,648</i>	<i>244,441</i>	<i>13.1%</i>
<b>Grand Total</b>	<b>4,338,768</b>	<b>1,024,599</b>	<b>1,472,518</b>	<b>242,544</b>	<b>7,078,420</b>	<b>1,331,062</b>	<b>18.8%</b>

Table 6. Characteristics of connectivity zones and expansion areas in terms of land cover, land uses, and existing impacts based on available remotely sensed data sources

Ecoregion/Reporting Unit	Grassland	Shrubland	Cropland	Other	Total	Impacted	Impacted (%)
<b>Shinnery Oak</b>							
100	68,211	63,723	14,060	2,488	148,481	32,199	21.7%
101	13,497	6,974	0	9	20,480	2,974	14.5%
102	20,898	12,004	28,050	3,048	64,000	19,088	29.8%
103	13,735	2,088	15,490	1,967	33,280	12,804	38.5%
104	420,036	40,729	121,914	16,364	599,043	130,406	21.8%
<i>Total</i>	<i>536,377</i>	<i>125,518</i>	<i>179,514</i>	<i>23,876</i>	<i>865,284</i>	<i>197,471</i>	<i>22.8%</i>
<b>Mixed Grass</b>							
106	37,001	10,610	343	1,966	49,920	34,559	69.2%
107	70,777	32,816	7,188	1,859	112,641	43,852	38.9%
108	25,340	11,627	3,389	1,884	42,240	6,644	15.7%
109	76,775	18,646	18,521	5,738	119,681	43,459	36.3%

Table 6. Continued

<b>Ecoregion/Reporting Unit</b>	<b>Grassland</b>	<b>Shrubland</b>	<b>Cropland</b>	<b>Other</b>	<b>Total</b>	<b>Impacted</b>	<b>Impacted (%)</b>
110	53,797	10,742	6,074	1,707	72,320	30,189	41.7%
111	62,935	17,796	13,946	5,164	99,840	29,765	29.8%
112	10,008	664	2,145	623	13,440	3,178	23.6%
113	15,770	2,561	606	903	19,840	6,671	33.6%
114	27,659	274	8,151	1,676	37,760	10,810	28.6%
115	10,144	1,099	437	480	12,160	4,949	40.7%
116	10,318	2,006	58	417	12,800	4,972	38.8%
117	19,355	1,917	426	703	22,400	7,168	32.0%
118	23,054	24	4,732	1,630	29,440	11,043	37.5%
119	10,946	2	1,192	661	12,800	2,206	17.2%
120	16,072	4	1,053	1,432	18,560	6,612	35.6%
121	36,279	14	16,125	3,261	55,680	14,395	25.9%
122	9,063	1,103	3,647	908	14,720	4,797	32.6%
123	71,861	185	21,259	5,895	99,200	20,000	20.2%
126	56,708	209	7,993	4,210	69,120	12,453	18.0%
128	25,879	0	3,496	706	30,080	2,875	9.6%
130	20,387	0	12,962	1,212	34,560	7,286	21.1%
132	17,159	0	16,607	1,434	35,200	11,565	32.9%
133	38,254	1	23,122	3,263	64,640	11,902	18.4%
134	14,355	0	21,320	1,445	37,120	9,135	24.6%
<i>Total</i>	<i>759,896</i>	<i>112,300</i>	<i>194,792</i>	<i>49,177</i>	<i>1,116,162</i>	<i>340,485</i>	<i>30.5%</i>
<b>Sand Sagebrush</b>							
<i>Connectivity Zones</i>							
124	1,670	385	2,865	200	5,120	773	15.1%
125	1,207	1,577	0	416	3,200	235	7.3%
127	915	596	53	355	1,920	154	8.0%

Table 6. Continued

<b>Ecoregion/Reporting Unit</b>	<b>Grassland</b>	<b>Shrubland</b>	<b>Cropland</b>	<b>Other</b>	<b>Total</b>	<b>Impacted</b>	<b>Impacted (%)</b>
131	9,902	452	12,680	646	23,680	3,533	14.9%
135	3,397	69	25,049	925	29,440	14,085	47.8%
136	12,948	3,028	35,474	1,670	53,120	8,469	15.9%
138	4,342	6,560	2,883	295	14,080	4,632	32.9%
139	6,685	3,719	3,436	1,520	15,360	2,129	13.9%
140	11,141	9,859	728	1,312	23,040	8,012	34.8%
142	42,254	8,504	7,496	3,186	61,440	13,142	21.4%
<i>Total</i>	<i>103,952</i>	<i>38,349</i>	<i>91,629</i>	<i>11,190</i>	<i>245,120</i>	<i>59,895</i>	<i>24.4%</i>
<i>Expansion Zones</i>							
200	35,562	8,648	20,702	2,288	67,200	13,931	20.7%
201	8,661	273	10,125	781	19,840	4,192	21.1%
202	1,063	1	1,968	168	3,200	1,660	51.9%
203	401	28	213	-3	640	9,895	1546.1%
204	45,123	6,197	28,300	2,301	81,920	14,052	17.2%
205	52	67	392	129	640	428	66.9%
206	668	5	365	242	1,280	432	33.7%
207	1,589	424	4,076	310	6,400	910	14.2%
208	13,214	1	1,682	464	15,360	3,580	23.3%
209	10	0	623	8	640	49	7.6%
210	5,252	409	2,898	401	8,960	3,797	42.4%
211	63	19	551	7	640	42	6.6%
212	866	98	1,551	45	2,560	201	7.9%
213	630	81	547	21	1,280	99	7.7%
214	3,430	1,805	360	165	5,760	430	7.5%
215	19,824	199	25,651	1,047	46,720	8,774	18.8%
216	382	170	38	49	640	278	43.5%

Table 6. Continued

<b>Ecoregion/Reporting Unit</b>	<b>Grassland</b>	<b>Shrubland</b>	<b>Cropland</b>	<b>Other</b>	<b>Total</b>	<b>Impacted</b>	<b>Impacted (%)</b>
217	18,473	8,456	15,512	1,720	44,160	6,098	13.8%
218	19,072	13,638	355	1,495	34,560	9,290	26.9%
<i>Total</i>	<i>174,335</i>	<i>40,519</i>	<i>115,909</i>	<i>11,638</i>	<i>342,400</i>	<i>78,138</i>	<i>22.8%</i>
<b>Shortgrass/CRP Mosaic</b>							
137	13,536	33	16,806	2,266	32,640	12,596	38.6%
141	32,450	1	17,541	2,488	52,480	10,838	20.7%
143	7,099	0	18,012	1,129	26,240	6,838	26.1%
144	29,779	20	15,344	1,577	46,720	7,383	15.8%
145	7,478	0	17,381	741	25,600	3,804	14.9%
<i>Total</i>	<i>90,342</i>	<i>54</i>	<i>85,084</i>	<i>8,201</i>	<i>183,680</i>	<i>41,459</i>	<i>22.6%</i>
<b>Grand Total</b>	<b>1,664,902</b>	<b>316,740</b>	<b>666,928</b>	<b>104,082</b>	<b>2,752,646</b>	<b>717,448</b>	<b>26.1%</b>



## Focal Area Strategy

Focal area delineations include approximately 36% of the currently estimated occupied range. Focal areas will only be effective if conservation efforts can be concentrated in these areas, and if development can be avoided to the maximum extent possible in these areas. Focal areas should ensure a sustainable and well distributed population into the future. The conservation strategy depends on the ability of incentive programs to engage landowners in implementing voluntary LEPC habitat improvements, especially within focal areas where large blocks of good to high quality habitat can be restored and maintained. It also depends on the avoidance and minimization of impacts to LEPC from developments especially within focal areas. As a component of mitigation, the strategy encourages the concentrated placement of compensation actions through off-site mitigation (habitat protections and improvement) in focal areas and connectivity zones, supported through a WAFWA Mitigation Framework.

The conservation strategy for LEPC can be divided into these two management components; programs to maximize delivery of voluntary habitat improvements by landowners; and programs to avoid, minimize, and mitigate impacts from development to LEPC. In addition, a subset of lands within focal areas will be identified as “strongholds”. These are areas defined as such by the USFWS, and are a much smaller component of focal areas but have the ability to provide permanent conservation areas for LEPC.

## LEPC Habitat Improvement Goals

The primary over-arching goal of this conservation plan is to restore, enhance, maintain, and protect LEPC habitat in key areas (focal areas and connectivity zones). Within focal areas, the goal of >70% good to high quality habitat has been identified, with the goal within connectivity zones is >40% good to high quality habitat. It is important to identify what is high quality habitat for LEPC, recognizing that characteristics of high quality habitat will differ among the different ecoregions. Optimal LEPC habitat conditions for the sand shinnery oak, sand sagebrush, and mixed grass ecoregions that have been identified from the research findings discussed in the nesting and brood habitat sections of this plan are listed in Boxes 1-3. The short grass ecoregion relies heavily on

### **Box 1. Optimal LEPC habitat in the sand shinnery oak ecoregion (Figure 2)**

#### **Nesting habitat**

1. ***Absolute cover of sand shinnery oak: >20% but <50%***
2. ***Absolute cover of preferred grasses (native bluestems, switchgrass, indiagrass, and sideoats grama): >20%***
3. ***Absolute cover of a good mix of species of native forbs: >10%***
4. ***Variable grass heights that average >15”***

#### **Brood habitat**

1. ***Absolute cover of sand shinnery oak: 10-25%***
2. ***Absolute cover of preferred native grasses: >15%***
3. ***Absolute cover of a mix of native forbs: >20%***
4. ***Variable grass heights that average >15”***
5. ***Shrub, grass and forb understory open enough to allow movements of chicks.***

native grass CRP as LEPC habitat, so the description of optimal habitat in this ecoregion is not included.

It is also important to note that different ecological sites (<http://esis.sc.egov.usda.gov/>) have different potential to support the high quality LEPC habitat within an ecoregion. Appendix A lists ecological sites within the current occupied range of LEPC, and provides a rating for the potential quality of these sites as nesting or brood rearing habitat. Ecological site descriptions (ESD's) can be used to describe the best site conditions that can be obtained for each ecological site within LEPC range. Site specific management plans are needed to identify the optimum conditions that can be produced for LEPC at that location, and to implement habitat treatments to obtain these conditions. Thus, the habitat management goal for LEPC should be to manage a site to produce the optimal habitat conditions for that ecoregion, recognizing the variation in abilities of different ecological sites to produce these optimal conditions.

**Box 3. Optimal LEPC habitat in native rangelands comprised of grasslands without sand shinnery oak or sand sagebrush**

**Nesting habitat**

1. *Absolute cover of preferred native grasses: >50%*
2. *Absolute cover of a mix of native forbs: >10%*
3. *Variable grass heights that average >15"*

**Brood habitat**

1. *Absolute cover of preferred native grasses: 30-50%*
2. *Absolute cover of a mix of native forbs: >20%*
3. *Variable grass heights that average >15"*
4. *Grass is not so dense to impede movement of chicks*

**Box 2. Optimal LEPC habitat in the sand sagebrush ecoregion**

**Nesting habitat**

1. *Absolute cover of sand sagebrush: 15-30%*
2. *Absolute cover of preferred native grasses: >30%*
3. *Absolute cover of a mix of native forbs: >10%*
4. *Variable grass heights that average >15"*

**Brood Habitat**

1. *Absolute cover of sand sagebrush: 10-25%*
2. *Absolute cover of preferred native grasses: >20%*
3. *Absolute cover of a mix of native forbs: >20%*
4. *Variable grass heights that average >15"*
5. *Shrub and grass cover should be open enough near the ground to allow easy movement of chicks*

Focal areas will only serve their function as source areas for the population if they provide good to high quality habitat. Habitat conditions for LEPC are often labeled as "suitable" habitat, implying that an area can support LEPC. However, supporting LEPC and providing good to high quality habitat can be substantially different. Therefore, programs designed to maintain or improve habitat for LEPC should have clear objectives for the desired conditions for the site. In all areas, desired conditions should provide a mix of nesting and brood habitat with the majority of a home range-sized area (2000 acres) in nesting habitat intermixed with 25-35% in brood habitat (Hagen et al. in review). Management of the sites to produce optimum conditions should

include prescribed grazing regimes. For nesting habitat, grazing plans should recommend utilization rates that provide for the recommended cover and heights of grasses and that leave substantial residual herbaceous vegetation for the next spring. Brood habitat should be interspersed among nesting habitat and be created by the use of prescribed burning or prescribed grazing to keep grass and shrublands with enough diversity of conditions to support nesting and brood habitat. Detailed descriptions of prescribed grazing, prescribed burning, and herbicide use to improve LEPC habitat are included in Appendix B.

### **Coordination of Habitat Improvement Implementation**

A significant component of the LEPC conservation plan is coordination among the various programs and initiatives to maximize the delivery of on-the-ground conservation actions for LEPC within focal areas and secondarily in connectivity zones. Coordination is needed at all levels of plan implementation, but is especially important for various range-wide initiatives as well as within each of the 5 states.

ODWC is working with other agencies and organizations to coordinate delivery of conservation benefits, particularly within its delineated focal areas. ODWC, NRCS, and USFWS Partners personnel have coordinated their efforts to identify ways that various programs may be able to complement each other and provide higher levels of match to landowners than individual programs might be able to individually. They have also worked to provide “one-stop-shopping” for landowners so that whichever agency may get approached for technical assistance, the person responding can provide information on all of the available programs that the landowner might use. Coordinated management plans that include all of the programs are being standardized and applied.

ODWC has been working with the USFWS to provide a CCAA for landowners who engage in LEPC habitat improvements. The landowner CCAA is currently being implemented by ODWC and will offer management assurances to landowners who voluntarily agree to implement a LEPC management plan for their property.

Other agencies and organizations in Oklahoma are helping provide LEPC habitat. The Oklahoma Prescribed Burning Association has been working to help landowners better utilize this tool through training programs, coordination of local prescribed burning associations, and identification of liability insurance options. The Nature Conservancy offers conservation easements for interested landowners as well as managing some of its own lands for LEPC. ODWC has a number of wildlife management areas within LEPC range, and is developing management plans for these areas that emphasize the enhancement of LEPC habitat. The USFS manages the Black Kettle National Grasslands which also help provide habitat for LEPC.

Over the last few years, the conservation providers in Kansas have greatly increased the amount of funding and effort going into LEPC range for the benefit of the species. Kansas Department of Wildlife, Parks, and Tourism (KDWPT) staff has coordinated with USDA agencies and USFWS Partners in coordinating delivery of voluntary landowner LEPC habitat improvements for a number of years. In September 2012 a more formal Kansas LEPC implementation team was convened. This team included

representatives from KDWPT, NRCS, a USFWS Partners program, FSA, Kansas State University (KSU) Extension, TNC, and the U.S. Forest Service. At this meeting, all parties agreed to further improve coordination across programs and target focal areas and connectivity zones as priorities. Those participating conservation providers will begin modifying the priority areas identified for their pertinent programs to mimic or encompass the focal areas and connectivity zones delineated in this plan. Those various conservation priority areas are used for determining program eligibility and/or assigning higher rankings to applications. The Kansas implementation team will also develop a 1-2 page handout explaining the practices and available assistance offered to landowners through each of their programs. This handout will be provided to all technical service providers for use as public information materials for landowners and managers to have all available conservation opportunities summarized on one document. . This same handout would be provided on a LEPC webpage maintained by KSU Extension along with numerous more detailed materials explaining the various conservation programs that provide benefits to LEPC. An annual meeting of all technical service providers delivering programs in Kansas will be held to discuss coordination of programs, identify short-falls, and develop any necessary materials to help with landowner participation.

Throughout development of this plan landowners in Kansas have been provided with regular updates about the various opportunities that could be available to them. Those updates have been provided via press releases, radio interviews, 6 public meetings, and opportunities to review and comment on two previous versions of this plan. An additional webinar series involving KDWPT, NRCS, and FSA is scheduled for late spring of 2013. Landowners owning property within focal areas and connectivity zones will be directly targeted with a mailing to make sure they are aware of the upcoming webinar. During that webinar series the participating agencies will discuss programs that are available to landowners within LEPC range or that might be available through implementation of this plan. Programs discussed during that webinar will include CRP, LPCI, and the WAFWA mitigation strategy proposed in this plan.

CPW convened an implementation team meeting for LEPC that included representatives from CPW, USFWS Partners, RMBO, NRCS, U.S. Forest Service Comanche National Grasslands, Kiowa County Energy Development, and Audubon Colorado. This team has met annually in the past to discuss and coordinate LEPC management in Colorado. The team delineated LEPC focal areas for the state and reviewed proposed population goals. Public meetings on LEPC planning were held on Feb. 4, 2013 to review the listing proposal and the draft range-wide conservation plan.

CPW partners with Federal agencies in delivery of their LEPC related programs. CPW is charged with increasing delivery of federal farm bill programs. This task is coordinated with partner agencies and organizations including Pheasants Forever, RMBO, and NRCS. Private Lands Wildlife Biologists are supported through cooperative funding from these agencies and organizations. Cooperative initiatives including the Private Lands Wildlife Biologist program are designed to provide landowners with technical assistance and “one-stop shopping” for a host of federal, CPW, and non-government conservation group programs.

TPWD held implementation team meetings to delineate focal areas and discuss coordinating delivery of LEPC habitat programs into these areas. NRCS is developing prioritization considerations for focal areas at the national level. Cooperating agencies in TX (TPWD, USFWS) will work with NRCS to implement similar prioritization for management in focal area. TPWD is actively enrolling lands in the existing CCAA discussed in the current LEPC program section of the plan.

New Mexico's implementation team consists of representatives from the New Mexico Department of Game and Fish, NRCS, FSA, TNC, PLJV, Audubon, BLM, USFWS, and the oil and gas and ranching industries. The people representing the agencies on this team are responsible for implementing many thousands of acres of conservation under various programs, much of which has already been implemented within the established focal areas to benefit the LEPC in New Mexico to date. BLM has an active LEPC program on its lands and also has LEPC guidelines for the federal mineral rights that it administers. The existing CCAA has enrolled industry and well as private landowners in this LEPC program. As the conservation plan goes forward, the implementation team will meet 1-2 times per year to evaluate the progress and effectiveness of existing programs, and look for opportunities to coordinate funding. The team will also evaluate where the focal areas are lacking in conservation, and devise a plan to reach out to those landowners that are not yet signed up under the CCAA.

### **Threat Avoidance, Minimization, and Mitigation Programs**

A second component of the LEPC conservation strategy is to identify management actions that address the perceived threats to the species. In particular, the threat of impacts from new developments has been identified as significant concerns (USFWS 2012a). While conversion of native rangelands has been a significant impact in the past, conversions within LEPC range have slowed significantly starting in the mid 1990's as a result of the landowner habitat incentive programs discussed previously that have been implemented and are designed to offer economic alternatives to stem or reverse this conversion.

Focal areas identify areas where habitat improvements are desired to be concentrated, but also are areas where impacts from development are to be avoided to benefit the conservation of LEPC. Connectivity zones are areas identified to facilitate individual movements among focal areas which will assist with maintaining genetic diversity for the species. The identification of focal areas and connectivity zones within the CHAT will inform developers of the areas of highest priorities for LEPC habitat conservation, and encourage development into areas where impacts to LEPC will be minimal or completely avoided. In this way, developments are encouraged to be placed in areas with lower CHAT ratings while off-site mitigation actions are encouraged to occur in more highly weighted CHAT categories. The CHAT will also function by steering conservation programs to concentrate benefits in the most important areas.

Several programs discussed in the current LEPC program section already exist to help reduce impacts to LEPC from development. These include the BLM LEPC Special Status Species Resource Management Plan that includes best management practices for oil and gas development, an existing CCAA in NM that addressed oil and gas development, a draft best management practice agreement between ODWC and

the Oklahoma Independent Petroleum Association (OIPA), wind development guidelines developed by the USFWS (USFWS 2012c), wind development guidelines for CO and NM developed by the Colorado Renewables and Conservation Collaborative and the New Mexico Wind and Wildlife Collaborative with assistance from PLJV, and on-going efforts for a Great Plains Wind Energy HCP. In addition, a new range-wide oil and gas CCAA is under discussion by a number of oil and gas companies and associations with WAFWA and the USFWS. Table 7 identifies many of the LEPC programs included in this Plan and the threats that these address.

#### **Establishment of a WAFWA Impact Avoidance and Mitigation Framework**

The 5 states within the range of LEPC through WAFWA, are implementing an impact avoidance and mitigation system that will provide assurances to both developers and landowners that if they follow guidelines specified in the mitigation system, their approved operations will influence any listing decisions under the Endangered Species Act and with the appropriate permits and rules under a listing decision will be exempt from the Section 9 take provisions of the Act. WAFWA will establish a participation permitting system that will specify BMP's for each type of activity or operation covered by this system that must be followed, as well as the assessment of impact units caused by development activities and mitigation units generated from offset management that must be balanced throughout the life of the plan. An upfront creation of mitigation units associated with an issuance of a permit of participation will be used to assure that initial development activities enrolled are being matched with balancing mitigation.

#### ***WAFWA Mitigation Framework Structure***

WAFWA will administer the mitigation framework. Authority for the framework rests with the WAFWA Board of Directors, as delegated to the 5 directors of the State Wildlife Agencies (KDWPT, OPDW, CPW, TPWD, NMGFD) that are within LEPC range. An operating program within WAFWA has been established to administer this framework. Implementation includes identifying impact and mitigation participants, administration of binding mitigation agreements, issuance of permits, certifying of approved technical service providers, reviewing and approving LEPC management plans, collection and dispersal of impact payments, monitoring of impact unit generation and mitigation unit generation, compliance and effectiveness monitoring, and annual reporting on the actions and accomplishments of the mitigation framework.

To assist with the mitigation framework, an Advisory Board will be established. This Board will consist of representatives of state and federal agencies involved in LEPC management programs, development industries including oil and gas, wind, and transmission, landowner representatives, and conservation interests. Specific guidelines for the operation of this Board will be established. The Advisory Board will assist in determining payment rates for mitigation units, costs of impact units, allocation of units between short and permanent markets, handling of disputes concerning impact or mitigation units, and other functions.



Table 7. Threats that are addressed by the LEPC programs described in this Plan.

REGION/CONSERVATION EFFORTS	THREATS ADDRESSED														Estimated Acres in LEPC Range	
	Oil & Gas Development	Wind	Transmission Lines	Cell Towers	Roads	Ag Conversion	Loss of CRP	Grazing	Woody Invasives	Shrub Control	Altered Fire Regimes	Collision	Climate Change	Extreme Weather		Predation
<b>RANGE-WIDE</b>																
Conservation Reserve Program (See pages 24-27)					X	X	X	X	X	X	X	X	X	X		5,500,000
LEPCJ, WHIP, EQIP, GRP (See pages 22-23)					X	X	X	X	X	X	X	X	X	X		942,000
USFWS Partners for Fish and Wildlife (See pages 27-27)					X	X	X	X	X	X	X	X	X	X		Not reported
WAFWA Mitigation Framework	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	In development
<b>MIXED GRASS ECOREGION</b>																
Oklahoma LEPC WMAs		X					X	X	X	X	X	X	X	X		30,141
ODWC Voluntary Offset Program and OIPA BMPs	X	X	X							X						Not applicable
TPWD voluntary BMPs and Mitigation Guidelines		X	X	X	X											Not applicable
US Forest Service lands							X	X	X	X	X	X	X	X		582,175
TPWD Landowner Incentive Program					X	X	X	X	X		X	X	X	X		15,000
TX and OK Ranching CCAAs (See pages 28-29)					X	X	X	X	X	X	X	X	X	X		600,000+
ODWC LEPC HCP, SWHIP, & Quail Enhancement Program					X	X	X	X	X	X	X	X	X	X		Not reported
<b>SHINNERY OAK ECOREGION</b>																
TPWD Landowner Incentive Program					X	X	X	X	X		X	X	X	X		15,000
NM oil-gas-ranching CCA/CCAA and BLM management (See pages 30-31)	X	X		X	X	X	X	X	X	X	X	X	X	X		1,964,776
NM PCAs & TNC Milnesand Preserve							X	X			X	X	X	X		55,182
TNC/TPWD Yoakum Dunes Preserve							X				X	X	X	X		10,884
TPWD voluntary BMPs and Mitigation Guidelines		X	X	X	X											Not applicable
TX and OK Ranching CCAAs (See pages 28-29)					X	X	X	X	X	X	X	X	X	X		600,000+
<b>SAND SAGE ECOREGION</b>																
CGCC and CRCC BMPs	X	X														Not applicable
US Forest Service lands							X	X	X	X	X	X	X	X		582,175
CO LPC Habitat Improvement Program					X	X	X			X		X	X	X		25,427

**Conservation Measures**

Enrollment (Participation) under this Agreement is voluntary, but once enrolled, in order to provide the appropriate level of threat protection and gain the incidental take coverage, participants must fully implement the Agreement’s conservation strategy including all aspects of any management plan included in the Agreement.

Specific requirements for enrollment of landowners, oil and gas interests, wind energy interests, and transmission interests are spelled out in Participant Guidelines for Inclusion. These Guidelines provide measures similar to a CCAA but that can be provided under the 4D rule. However, additional Certificates of Inclusion for possible CCAA's are included in the Appendix. These Guidelines are attached as Appendices D, E, F, and G.

To remove the threats to LEPC, the primary conservation action is avoidance. If avoidance is not possible for a project to remove threats, actions will then be required to minimize the impact of those threats. Impacts that are not addressed through avoidance and minimization efforts must be mitigated through compensatory offsets, primarily as off-site mitigation.

The following process includes the stepwise progression of avoidance, minimization, and mitigation of threats. The standard for avoidance is that no impacts are expected to occur wherever feasible alternatives are available to avoid the impacts. The standard for minimization is that impacts will be minimized through design, siting and other available methods, but some impact is expected to remain. Mitigation will be utilized to offset any remaining impacts.

The initial phase of avoidance is pre-project planning, to site the development or activity in an area that will avoid impacts to LEPCs and minimize any impacts the action may have on LEPCs.

#### Pre-project Planning

- Utilize the Southern Great Plains CHAT (<http://kars.ku.edu/geodata/maps/sgpchat/>) for initial LEPC-related project siting review along with impact area maps, ecological site maps, land cover maps, and aggregated CRP maps provided in the CHAT. It is also recommended that the developer examine the WGA west-wide CHAT and contact State Fish and Wildlife agencies for information related to other state or federal threatened, endangered, or candidate species and species of greatest conservation need that may occur in potential development sites.
- Once a set of potential project sites are identified, developers shall consult with cooperating State Fish and Wildlife Agency staff to assess the potential impacts to LEPC habitat associated with each site. These agencies have access to additional data sources beyond those available in the CHAT, including lek data, and will assist in make recommendations to reduce potential impacts to LEPCs and their habitat and to reduce potential mitigation costs.
- If surveys of proposed project sites have not been conducted within the previous 5 years, and the project sites are within a focal areas, connectivity zone, or within areas identified as high probability lek habitat based on the CHAT (categories 1-3), the developer has the option of conducting surveys themselves according to WAFWA protocols, allowing state or WAFWA affiliated personnel to conduct surveys of the site prior to project initiation, or considering the sites as occupied with active leks.

Once a site is selected through consultation with State Wildlife Agency staff, the developer will contact WAFWA staff to enroll that site in the mitigation framework. Enrollment in the WAFWA mitigation framework will provide regulatory certainty should LEPC be determined to be warranted for listing.

Enrollment is recommended for sites that are within a 10 mile buffer around the estimated occupied range (EOR+10) as represented in the CHAT or where the impact buffer of a new project extends into the EOR+10, as these projects have potential to impact LEPC habitat. Not enrolling these lands could result in areas considered by USFWS to be LEPC habitat deserving to be protected should a warranted decision be determined. Therefore anyone considering enrollment in this program will have to weigh the risk of potential take for their actions and could be held responsible for those actions not enrolled in the WAFWA Mitigation Framework. For those sites identified in the pre-project planning that are within the EOR+10, one should consider which avoidance, minimization and mitigation requirements would be required under this plan to remove or reduce project related threats to LEPCs.

The following are conservation measures that are anticipated for issuance of a permit of participation.

#### **Habitat Loss and Fragmentation**

Habitat loss and fragmentation are primary threats to the LEPC. Any action that negatively impacts potential LEPC habitat or connectivity between blocks of LEPC habitat shall apply the following measures to avoid and minimize those impacts. Primary drivers for these impacts are conversion or development of native rangeland and the addition of vertical structures or roads. Examples of these actions include, but are not limited to oil and gas wells and associated infrastructure, wind development and associated infrastructure, electric transmission or distribution lines, various types of towers, i.e. cell towers, met towers, buildings, etc. Enrolled participants shall consult with State Fish and Wildlife Agency staff to ensure whether or not the planned actions constitute potential impacts to LEPCs.

#### **Avoidance**

- Use available options to avoid focal areas, connectivity zones, or within 1.25 mi of known leks that have been active at least once within the previous 5 years, as well as dominated by tracts of native grass and shrublands (see CHAT and State Fish and Wildlife Agency staff for more information).
- Focus development on lands already altered or cultivated (such as row-crop agriculture or developed oilfields), and away from areas of intact and healthy native grass or shrublands. Select fragmented or degraded habitats over relatively intact areas, and select sites with lower LEPC habitat potential over sites with greater habitat potential.

#### **Minimization**

- Where avoidance is not possible, use common rights of way for multiple types of infrastructure in locating new roads, fences, power lines, well pads, and other infrastructure within focal areas, connectivity zones, or in other areas identified as high probability lek and nest habitat by the CHAT.
- Site projects to minimize new habitat disturbance by increasing the amount of overlap between existing fragmentation and associated impact buffers.
- For oil and gas development, reduce impacts through the use of directional drilling and clustering or in locating facilities to reduce habitat loss and fragmentation of habitat
- Minimize use of herbicide treatments and limit this use to the footprint or right of way for the project. Where practical and applicable, utilize a herbicide that is targeted for specific use and

spot treatments as opposed to a broadband herbicide and broadcast treatments. Apply in conditions that minimize drift.

#### *Mitigation*

- For impacts that cannot be avoided or minimized, refer to Appendix B for information on mitigation for habitat loss and fragmentation impacts based upon the buffer area for the type of infrastructure constructed. This mitigation may include reclaiming or remediating inactive or abandoned facilities and infrastructure under the control of the participant in compliance with applicable state rules and regulations. Remediation proposals must be submitted to the permit holder for review and approval and those proposals must demonstrate that they support the population and habitat goals of the range-wide plan with respect to habitat focal areas and connectivity zones.

#### **Collision and Other Direct and Indirect Sources of Mortality**

LEPC have been shown to collide with fences, power lines, and cars. Power lines also serve as potential perch sites for raptors that may prey on LEPCs. LEPC have been recorded getting caught and drowning in man-made water sources.

#### *Avoidance*

- Locate roads, fences, power lines, well pads, turbines, compressor stations, and other infrastructure, and their assumed impact buffer (per table B2) outside focal areas, connectivity zones, or in other areas identified as high probability lek and nest habitat by CHAT categories 1-3.
- Bury new distribution lines within 1.25 mi of leks active within the previous 5 years.

#### *Minimization*

- Use common rights of way for multiple types of infrastructure.
- Utilize mono-pole construction for new electrical transmission lines within CHAT categories 1-3.
- For oil and gas development, utilize horizontal drilling, pad drilling (multiple wells per pad), and common tank batteries where feasible with regulatory approval to minimize new surface disturbance in areas within CHAT categories 1-3.
- Install appropriate fence markings along new fences that are under the control of the enrolled participant within one quarter (1/4) mile of a lek that has been recorded as active within the previous 5 years.
- During the breeding season (March 1-July 1), minimize traffic volume, control vehicle speed, control access where feasible, and prohibit off-road travel within focal areas and areas identified as high probability lek and nest habitat by the CHAT.
- If new distribution power lines are constructed within 1.25 mi of leks active within the previous 5 years and those lines cannot be buried then site them to minimize potential collision risk and mark the lines.
- Within 1.25 mi of leks, install raptor deterrents on new electrical distribution and transmission poles as indicated by Avian Power Line Interaction Committee (APLIC) Suggested Practices for Raptor Protection on Power Lines: The State of the Art in 2006, as amended.

- Provide escape ramps, rafts or ladders, depending on configuration, in exposed, manmade water containment sources under the control of the enrolled participant.

#### *Mitigation*

- Mitigate for structures constructed based upon the buffer area for in Appendix B.

#### *Disturbance of Breeding Activity*

Disruption of courtship displays and nesting hens in the form of construction and maintenance activities or equipment and infrastructure that emits loud noises may have direct impact on LEPC reproductive output.

#### *Avoidance*

- Avoid non-emergency operations, construction and maintenance activities, where humans are present, during lekking, nesting, and brooding season (Mar 1–Jul 15) within 1.25 mi of leks recorded active within the previous five years. Emergency operations, construction and maintenance activities that are direct human or environmental safety concerns or that relate directly to operational continuity are allowed. Enrolled participants must provide information on what may constitute an emergency situation for their respective operations with a brief description of why those situations constitute an emergency. Participants must also record the dates, duration and purpose of any emergency operations, construction and maintenance activities during the breeding season within 1.25 miles of leks and must provide that documentation with their annual reporting.

#### *Minimization*

- For non-emergency operations, construction and maintenance activities, where humans are present, that cannot be avoided and must occur during March 1-July 15, restrict activities between the hours of 3:00am and 9:00 am in areas within 1.25 mi of leks that have been recorded as active within the previous five years.
- Institute noise abatement year-round for new facilities located in focal areas and connectivity zones or within 1.25 mi of a lek recorded as active within the previous 5 years. Noise from these new facilities shall not exceed 75 db when measured at the permit holder's property line or any point greater than 30 m from the facility boundary. This minimization measure is required unless other regulations require lower noise levels.

#### *Mitigation*

- Avoidance and minimization are required for disturbance of breeding activity. Failure to meet these avoidance and minimization measures will result in a notification of non-compliance.

#### *Non Compliance with Avoidance and Minimization Measures*

Any participant who does not comply with agreed upon avoidance and minimization measures that are appropriate for their impacts will receive a notice of non-compliance from. This notice will include a detailed list of measures that the participant must address and a reasonable agreed upon timeline in which to address them. If, during the duration of the agreement, the participant receives a total of

three notices of non-compliance and fails to address those measures within the allotted timeframe, it will constitute grounds for the termination of the agreement.

#### *Conservation Offsets (Mitigation)*

Developers will coordinate as needed with WAFWA personnel or other WAFWA approved mitigation and conservation delivery providers to assess impact units in accordance with the User's Manual (Appendix B). The developer will compensate for these impact units to provide for the creation of mitigation units by WAFWA approved mitigation providers. Once impact units and fees are assessed and paid, the developer will be provided the appropriate documentation of their participation in the mitigation program of the LPC Range-wide Conservation Plan.

Mitigation providers entering into an agreement with WAFWA for generation of mitigation units will be compensated for the units they produce and provided documentation that their activities are covered by the Range-wide Conservation plan.

#### **Metric System**

As a foundation for threat avoidance, impact assessment, and quantification of impact and mitigation units for LEPC, a metric system was developed for this plan. The metric system is designed to evaluate the ecological impacts of a proposed or implemented development considering its direct and indirect disturbances to an evaluation site, also considering the effects of the conditions in the lands surrounding the site, and the location of the site in the larger context of LEPC populations and distributions. The metrics for quantifying mitigation units use the same variables as those quantifying impacts. The system ensures that impact units and mitigation units are consistently evaluated from an ecological perspective and that provides a basis for determining that a conservation benefit is produced through mitigation actions. The metric system is designed to be rigorous and scientifically defensible, produce ecologically meaningful results for both impact and mitigation determinations, be flexible to support a number of potential mitigation opportunities, yet be as simple to apply as possible. The User's Manual for the LEPC Metric System is attached as Appendix B. The manual describes how the metric system can be applied to a site, provides example calculations, and provides guidelines and standards for a LEPC management plan required for generation of mitigation units as well as the guidelines and standards for practices used as in LEPC habitat improvements.

#### *Quantification of Impacts*

Impacts from developments will be assessed both for their direct changes to the quality of LEPC habitat at an impact site and to their indirect effects on avoidance of surrounding areas by LEPC due to the presence of structures or human activities. Impacts from existing structures or activities will be delineated, and new developments will not generate impact units from areas already impacted by existing structures or developments. Impact units are calculated based on the quality of the existing habitat being impacted by a new development. Impacts of new developments can be avoided or minimized by siting developments on or near existing impacts, as the new impacts are quantified based on the baseline conditions including the reductions from the existing impacts, or by clustering developments so that their impact areas overlap. Impact units can also be minimized by siting



developments in areas with lower quality existing LEPC habitat quality. New proposed or implemented impacts will be quantified by expected changes to the quality of LEPC habitat in a development area caused by both the direct and indirect impacts of the development. Indirect impacts (avoidance behavior to developments by LEPC) are measured using impact buffers delineated around the development. Buffer distances were recommended by the science team using their best expert opinions based on the best available science (e.g., Robel et al. 2004, Hagen 2010, Hagen et al. 2011), acknowledging that these buffer distances are based on limited existing empirical data, and may need to be adjusted as significant new information becomes available. Table 8 lists the recommended impact buffers. Examples of impact unit calculations are provided in the Mitigation User's Manual (Appendix B).

Every impact unit must be offset with two equivalent mitigation units. The total number of impact units from a development will thus be offset with twice the number of mitigation units. Each impact unit provides for a continuing production of a mitigation unit, either through a permanent arrangement such as a conservation bank or the generation of a continuing provision of shorter term agreements that may shift in location, as discussed under mitigation markets.

Table 8. Recommended impact buffers for human structures and disturbances.

Type of Impact	Buffer distance feet (meters)
<b>Oil and gas pads</b>	650 (200)
Wind farms and towers	2165 (667)
<b>Transmission lines (&gt;69 kV)</b>	1300 (400)
Distribution lines	33 (10)
<b>Tall vertical structures (&gt;200 ft)</b>	2165 (667)
Secondary roads	215 (67)
Primary roads	1625 (500)
Commercial buildings	2165 (667)
Residential buildings (houses)	430 (133)
Private roads (Ranch roads, etc.)	33 (10)

#### *Generation of Mitigation Units*

Mitigation units will be generated by enrolling a property into a mitigation agreement with WAFWA. A minimum 5 year agreement will be required to be part of the WAFWA mitigation system. In addition, an area enrolled in mitigation must be at least 160 acres in one block to enter into an agreement in order to assure that an area is of sufficient size to provide meaningful contributions of LEPC habitat. Multiple landowners may cooperate to produce a management area meeting the size requirement. The mitigation agreement will specify (see Appendix B for more detail) that a WAFWA approved LEPC management plan will be developed for the property and the property must be managed in compliance with the management plan to earn mitigation units. Each year that a property is in a mitigation agreement, it will earn mitigation units based on the LEPC habitat quality for each area of the property actively managed for LEPC. As LEPC habitat quality improves in a management area, more mitigation units will be generated. A second way that offset units can be generated is by removing an existing

development or disturbance. The number of impact units caused by the existing development will be lessened by the removal of the development and the impact buffers around the development, and these released impact units will be added to the mitigation units generated from a property. To receive this second source of mitigation units, the property must be under a WAFWA mitigation agreement. Shorter term agreements for removal of existing impacts may be considered on an individual basis.

Entering into a mitigation agreement will earn a landowner an initial signing bonus equal to the baseline score of the evaluation unit times the proportional length of the agreement, where a 30 year agreement will receive a 30% signing bonus based on the existing LEPC habitat quality, a 10 year agreement 10%, and a 5 year agreement 5% of the habitat quality.

Mitigation units can also be generated through implementation of two conservation practices that are exceptions to the approved mitigation generation system. Restoration of bare ground or similar sites through seeding of an approved mix of native grasses and forbs will receive a full mitigation unit for each acre planted, and will receive a payment specified for this practice. Similarly, a site requiring substantial redcedar, mesquite (*Prosopis glandulosa*) or other tree removal or control through an approved brush management treatment will also receive mitigation units for each acre at a payment specified for this practice. Areas to be restored or treated with an approved restoration or brush control practice must enter into a mitigation agreement of at least 10 years in length to receive these mitigation units and their associated payment schedule.

#### *Service Areas for Impact and Mitigation Offsets*

Mitigation units must offset impact units within the same ecoregion. For example, impacts generated in the sand sagebrush ecoregion must be offset with mitigation units generated within the sand sagebrush ecoregion.

#### *Compliance Monitoring and Vegetation Monitoring for the Mitigation Framework*

For mitigation generation, LEPC habitat improvement practices as specified in a WAFWA approved LEPC management plan must be implemented to earn mitigation units. WAFWA will conduct compliance monitoring to confirm adherence to the plan. Landowners entering into a mitigation agreement will grant WAFWA personnel, with appropriate notification, access to properties generating mitigation units to confirm compliance with plan specifications. Compliance monitoring will verify quantification of impact units, compile acres of land and their habitat quality enrolled in LEPC mitigation agreements, practices and improvements applied to these lands, and increases in habitat quality and amounts produced by the mitigation framework.

The Habitat Evaluation Guide (HEG) that evaluates an evaluation site must be filled out the year prior or during the development for development sites, and each year that a mitigation site is enrolled in the Mitigation Framework. Vegetation monitoring is required as part of the impact/mitigation tracking system. The vegetation monitoring required for the NRCS LPCI program is the minimum vegetation sampling required for mitigation monitoring. More detailed monitoring including detailed species compositions, vegetation heights, and similar measures of a site are encouraged. For impact

assessment, the existing LEPC habitat quality must be documented using a WAFWA approved sampling design for the development area that will provide statistically reliable data for the vegetation variables described in the User's Manual (Appendix B). Impact vegetation sampling is only required once, at the time that the development is initiated. For mitigation generation, vegetation sampling following an approved sampling design included in the WAFWA LEPC management plan for the property must be conducted. This sampling will use permanently marked plots to allow tracking of changes to LEPC habitat quality. Timing of repeated sampling will be specified in the management plan. Any increases in mitigation units based on improvements to LEPC habitat quality must be documented with statistically reliable data from the vegetation sampling. Mitigation unit vegetation sampling may be conducted annual during the first years of an agreement for sites where substantial changes to habitat quality are expected, or at intervals of 3-5 years beyond these first years or at sites of high initial habitat quality. Guidelines and standards included in the mitigation framework will be evaluated based on the results of monitoring. Success of practices in improving LEPC habitat will be evaluated, and if changes to practice standards are needed, these will be reviewed by the LEPC plan science team as well as the Mitigation Framework Advisory Board.

### **Mitigation Unit Markets**

The WAFWA mitigation system will implement two separate mitigation trading markets. The need for this two market system is based upon LEPC biology, habitat stochasticity, and anticipation of population shifts brought on by changing climatic conditions. Unlike other grouse species, LEPC appear to be adaptable to changing habitat conditions (i.e. structure, grass species composition etc.) which can be created in a relatively short time period (within 8 years). WAFWA recognizes this adaptability and believes that by coordinating conservation efforts and reducing impacts through this Plan, populations can be anchored using strongholds and be moved across the landscape using focal areas and connectivity zones. This approach emulates how metapopulations function at landscape scales by having core population areas feeding satellite populations. While satellite population's wink on and off over time, core population areas maintain the species existence. It is desirable to have some mitigation actions occurring as permanent agreements at known locations. The establishment of strongholds emphasizes these types of locations although with even further stipulations concerning sizes and locations. To create this market, an initial target of at least 25% of the impact units created by developments will be offset in permanent offset units. A second market (up to 75% of the impact units) will be for shorter term agreements. A minimum 5 year agreement is required to enter the short-term mitigation market. As discussed above, an initial "signing" bonus is offered for a short term agreement and provides partial payment of mitigation units based on the length of the agreement, with a 10 year agreement receiving 10% of the baseline mitigation units under the short-term market. Because the two markets operate under different length of agreement, it is expected that the permanent market will have mitigation units of greater value than the short term market.

### **CHAT Category Weightings for Impact Units and Mitigation Units**

Costs and payments for impact units and mitigation units will be weighted based on their location within CHAT categories. The more important a location to LEPC the higher is the weighting and the higher the cost or payment for impact units or mitigation units that the location generates. This encourages

development to locate in areas of lower importance to LEPC and encourages mitigation to occur in higher quality areas by paying higher amounts for providing mitigation in these areas. The recommended weightings of the different CHAT categories are listed in Table 9. Maxent modeling (Phillips et al. 2006) was used in the CHAT determinations as were the designations of focal areas, connectivity zones, and estimated occupied range, displayed in Figure 8.

Table 9. Weightings of impact units and mitigation units costs and payments for LEPC categories from the Southern Great Plains Crucial Habitat Assessment Tool (CHAT). Maxent model areas are those areas within the EOR that score highly in Maxent model results for nesting or brood habitat areas. EOR+ 10 is the existing occupied range with a 10 mile buffer added for population expansion.

CHAT Category	CHAT Name	Unit Value Multiplier
1	Focal area	2
2	Connectivity zones	1.5
3	Maxent model areas	1.25
4	Within EOR + 10	1
5	Common	0

#### Valuation of Impact and Mitigation Units

Developers will enroll lands on which they anticipate conducting development activities into a WAFWA mitigation agreement. There will be an enrollment fee per acre for lands covered under the agreement. The cost of this enrollment fee will be determined by the WAFWA Mitigation Framework with input from its Advisory Board. These fees will be used to establish an initial bank of mitigation units, with at least 25% of the units in the permanent market and less than 75% in the short term market.

The short term market will have an annual payment per unit set by the WAFWA Mitigation Framework with input from its Advisory Board. This payment will be based on the annual base payment for a mitigation unit in the EOR+10 CHAT category (CHAT 4). The payment of a mitigation unit in a focal area would then be double this base payment, with other CHAT category payments based on their multipliers. Payment for mitigation units in the special practices categories (restoration, planted grass maintenance and tree and brush removal) will be based on costs of the various required practices and site maintenance for the minimum 10 year duration.

The price of the permanent market mitigation units will be determined in an open market. Permanent mitigation units must be located in focal areas or connectivity zones unless specifically authorized to occur outside of these zones. CHAT payment multipliers do not apply to permanent mitigation units, as the price of these units is set in an open market system. WAFWA will initially negotiate with providers of permanent mitigation units using the enrollment fees. This will establish an initial cost of these mitigation units, which may then be adjusted annually by the WAFWA Mitigation Framework based on the available market and the desired percentage of mitigation units assigned to permanent

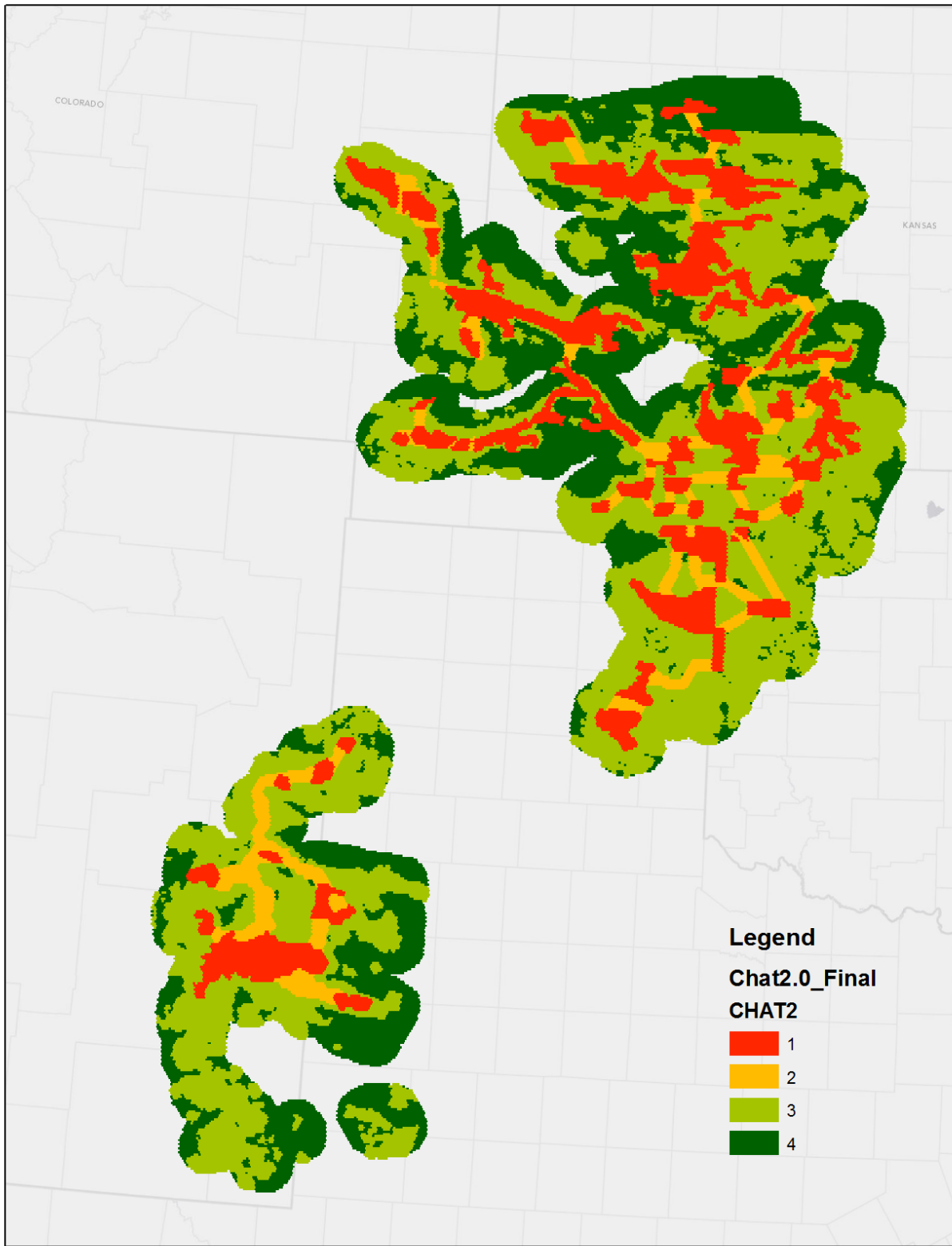


Figure 8. CHAT categories for LEPC delineated for the LEPC range.

mitigation units. Providers of permanent mitigation units will negotiate the sale of these units to WAFWA. Permanent market mitigation units must adhere to all of the requirements and guidelines of the WAFWA Mitigation Framework and be entered into a WAFWA mitigation agreement. The permanent mitigation unit provider will assume additional administration responsibilities for generation and tracking of these units. Documentation of these units will follow WAFWA guidelines with WAFWA recording their annual generation and performing compliance monitoring.

Short term mitigation providers will be paid annually for the number of mitigation units they generate on their property under a mitigation agreement. Permanent mitigation providers will be paid an initial amount for the permanent provision of the baseline level of mitigation units on the property. They will be paid annually for uplift to these baseline levels documented through vegetation sampling.

The cost of an impact unit will be set by the WAFWA Mitigation Framework. The cost will be based on the base cost of the short-term mitigation unit with an added 5% inflation factor to ensure a non-wasting endowment (discussed below) and a 15% administration cost. It will also add in an additional amount to cover the costs of the percentage of mitigation units that will use the special practices categories. This amount will be determined based on demand for these practices and the percentage of overall short term mitigation units that WAFWA assigns to these practices. Finally, the cost of an impact unit must factor in the costs of permanent mitigation units and the percentage of the units assigned to this market. These will determine the base cost of an impact unit.

As stated above, two mitigation units must be provided for each impact unit (thus impact units are doubled to create this 2:1 mitigation:impact ratio. This ratio was recommended by the science team based on its expert opinion of what is needed to assure sustainability of the species, and identified several reasons for the ratio. First, a significant expansion in the population of LEPC is desired (2012 population estimated at 37,100 birds with population goal set at an average of 67,000 birds). For this increase to occur, habitat quality must increase, especially in key population areas, and the 2:1 mitigation to impact ratio reflects this need. Second, mitigation must generate a benefit to the species if it is to provide a foundation for mitigation under this conservation plan. The 2:1 ratio assures that a benefit to the species is being produced. Third, some mitigation units are generated by providing assurances that existing LEPC habitat quality will be maintained. This is important to providing certainty that such high quality areas will exist and provide known source locations for future populations. However, these areas are maintaining habitat quality but not increasing habitat amounts. Requiring a 2:1 ratio assures that LEPC populations will be attaining an overall gain in long-term population certainty.

The final factor in setting impact unit costs is a multiplier of 20. This multiplier establishes an endowment fund for each impact unit generated. This endowment makes the assumption of a 5% return on investment, (equating to a 20 year payment for mitigation costs) which will then generate an annual payment, with an annual inflation adjustment covered by the 5% inflation cost discussed above, to pay for mitigation units each year into the future. In this way this non-wasting endowment provides certainty for the provision of mitigation units equal to the generated impact units for perpetuity. If an



impact is completely reclaimed and restored to at least its original habitat quality, the impact units initially generated by that impact may then be shifted by the developer to cover a new impact. However, no new mitigation units will be credited to the developer or a landowner for the impact units shifted to another development.

### **Split Estates**

Split estates, as discussed previously in the oil and gas threat section, present a challenge for generation of mitigation units. A surface owner that controls his/her surface rights and enters into a mitigation agreement with WAFWA for generating mitigation units may have this effort undermined by an owner of mineral rights to the property who implements those rights. The new impacts to this property can decrease or eliminate the mitigation units being generated. WAFWA would decrease payments to the landowner based on the reduction in the mitigation units. The developer will be held responsible for the landowner's contract obligations if those debits occur on a property that is under a current contract to generate credits, and will be expected to compensate the landowner for the loss of income associated with these reductions in mitigation units for at least the duration of the landowner's mitigation agreement, as this represents a decreased value of the surface owner's property. Where possible, especially for permanent agreements, it is desirable to have both surface and mineral rights included in a mitigation agreement.

### **Establishing Strongholds**

The USFWS (2012b) indicated the desirability of establishing voluntary LEPC strongholds. As discussed, strongholds are areas of high quality habitat at least 25,000 acres in size with conservation easements that ensure their continued management for LEPC. The USFWS (2012b) indicated that one or more strongholds totaling at least 25,000-50,000 acres should be established in each ecoregion. Establishment of these voluntary strongholds as a subset of focal areas would help provide certainty for the continued persistence of LEPC. Maps of existing LEPC strongholds are shown in Figures 9-10.

### **Sand Shinnery Oak Ecoregion Strongholds**

Stronghold #1 consists of 19,150 acres owned and managed by the Grasslands Charitable Foundation which is enrolled in a CCAA, and seven Prairie Chicken Areas (PCAs) also enrolled in a CCAA that are managed by the New Mexico Department of Game and Fish (Sandhills Prairie Conservation Area, North Bluitt, South Bluitt, East Bluitt, Bledsoe, Farmer's, and Antelope Flats. The PCAs total 8,015 acres. Total area is 27,218 acres. The BLM manages 19,355 of federal mineral estate and of that number 11,326 acres are closed to future oil and gas leasing. Federal leases (8,029 acres) that expire will not be re-offered and the remainder of the federal mineral estate is closed to future leasing.

Potential stronghold #2 consists of 27,966 acres owned and managed by the Nature Conservancy which is enrolled in the CCAA, and four Prairie Chicken Areas (PCAs) managed by the New Mexico Department of Game and Fish (Blackhills, Johnson Ranch, and Crossroads 4-5) that are also enrolled in the CCAA. The PCAs total 3,128 acres. The remaining acres (8,277) are made up of state land and ranches enrolled under a CCAA. Total area is 39,843 acres. This area contains many active leks and is high quality LEPC habitat. The BLM manages 19,736 acres of federal mineral estate and of that number,

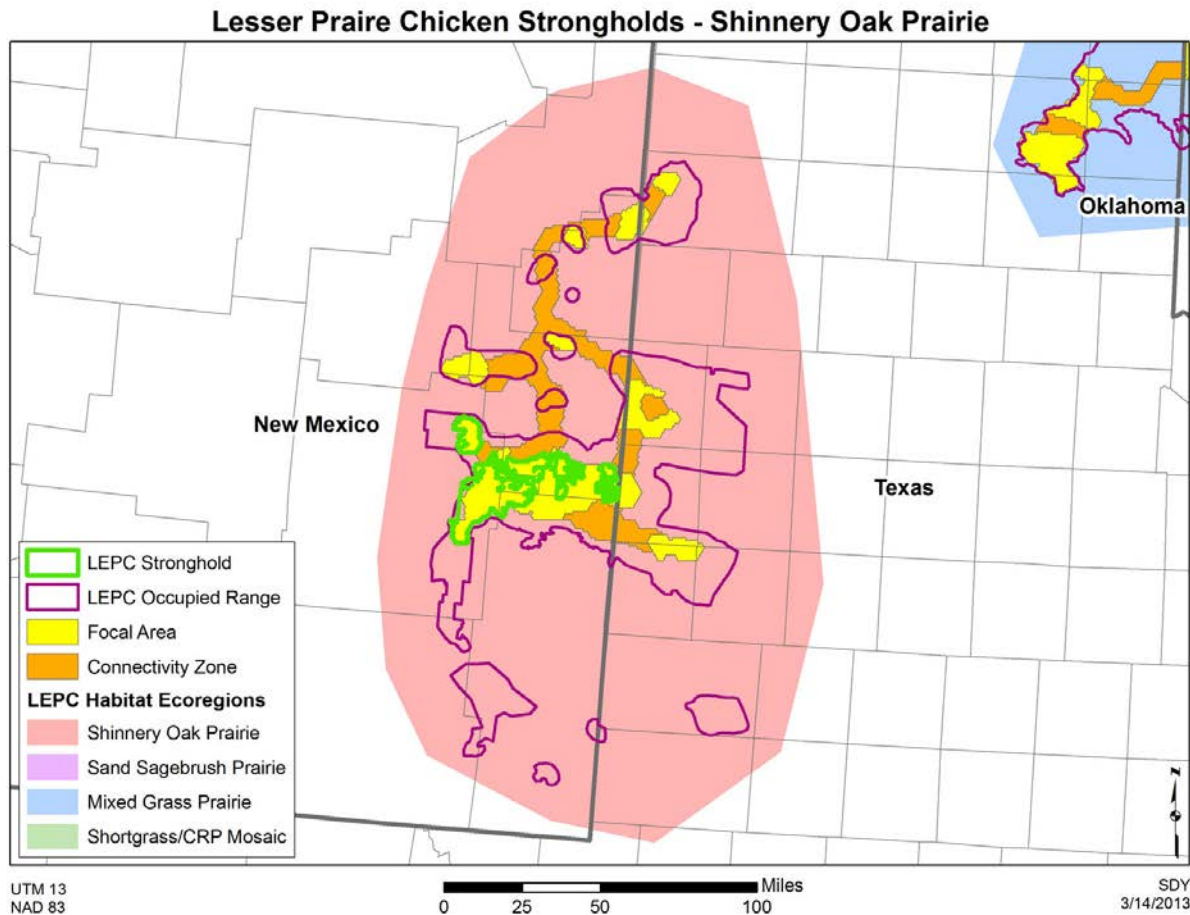


Figure 9. Existing LEPC strongholds in the sand shinnery oak ecoregion.

13,676 acres are closed to future oil and gas leasing. Federal leases (6,060 acres) that expire will not be re-offered and the remainder of the federal mineral estate is closed to future leasing.

Potential stronghold #3 (Gallina Wells) consists of 4,727 acres in 10 Prairie Chicken Areas (PCAs) Managed by the New Mexico Department of Game and Fish (Gallina Wells 1A, 1B, 1-6, Marshall, Crossroads 2) which are all enrolled in the CCAA. Adjacent lands consist of 43,678 acres of additional private lands enrolled in CCAAs. This area is within the primary population area of LEPC and contains many active leks. The BLM manages 4,249 of federal mineral estate and of that number, 3,251 areas are closed to future oil and gas leasing. Total acreage in stronghold #3 is 48,405 acres. Federal leases (998 acres) that expire will not be re-offered and the remainder of the federal mineral estate is closed to future leasing.

Stronghold #4 includes part of BLM's core management are (CMA) which is closed to future oil and gas leasing. It also includes private lands enrolled under the CCAA program. Total area for stronghold #4 is 45,170 acres.

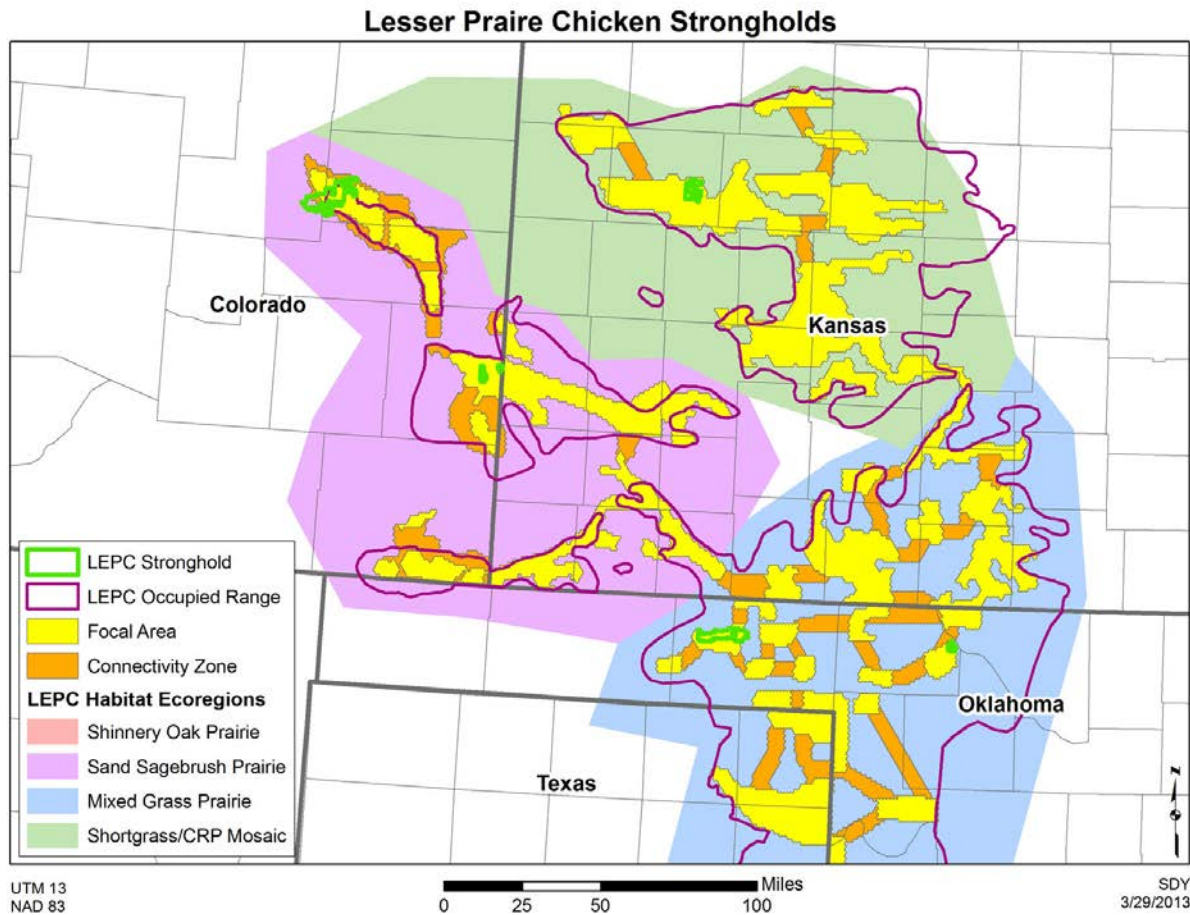


Figure 10. Existing LEPC strongholds in 3 LEPC ecoregions.

In TX, the Yoakum Dunes Reserve resides within the 69,760 acre focal area in northeastern Yoakum and southeastern Cochran Counties. This property has been part of a TPWD LEPC study area since 1999 and contains several known active leks. TNC is negotiating to purchase additional acres adjoining this property. There are an additional 12,924 acres within this focal area that are currently enrolled in the TPWD CCAA for ranching and farming practices. In Bailey County there is another stronghold opportunity associated with the 7,089 acre Muleshoe National Wildlife Refuge. The refuge is located within the southeastern portion of the focal area in the county and has a documented history of LEPC use going back to the 1930's (Jude Smith, Muleshoe NWR Manager, personal communication). USFWS is working on a plan to expand the refuge by approximately 20,000 acres over the next few years.

#### Short-grass Ecoregion Strongholds

The approximately 17,000 acre Smoky Valley Ranch (SVR) is located about 20 miles southwest of Oakley, KS and is owned and managed by The Nature Conservancy. Although the Conservancy owns all mineral rights, a small portion of the ranch (less than 10%), was under an oil lease when purchased, and 4 active wells are currently located on the north end of the property. The Conservancy restricts further

energy development and conversion to cropland. If SVR were sold, a permanent conservation easement would first be placed on the land.

The ranch is located on the western edge of the mixed-grass prairie, where loamy uplands are dominated by buffalo-blue grama and lower sites have a strong sideoats grama and little bluestem component. Drought, grazing pressure, and fire generally shift species composition toward shortgrass species. The ranch is bisected by 8 miles of the Smoky Hill River and associated 1,600 acres of sagebrush flats. The ranch is also home to about 2,000 acres of black tailed prairie dogs and black footed ferrets, which are managed in a central core area of the ranch, primarily dominated by buffalo-blue grama. In order to manage such varying habitats for these keystone and indicator species, the ranch is divided into management areas based on habitat potential and adjacent land use considerations.

Currently, there are approximately 4,500 acres of suitable LEPC habitat. These areas are managed with prescribed rotational grazing and rest, with the primary objective of maximizing nesting and brood-rearing habitat. In addition, 4,400 acres throughout the ranch have been identified as potential LEPC management areas. These areas are currently and will continue to be managed with a properly stocked rest rotation grazing system. To expedite nesting habitat development in these areas within the next 10 years, the Conservancy also plans to manage many of these areas with season-long deferment, and in some cases prescribed fire. In summary, SVR has long-term LEPC management plans on suitable ecological range sites totaling approximately 8,900 acres. This area does not currently meet the requirements for a stronghold, but efforts will be made to build from this core area and expand this site into a stronghold.

#### **Mixed-grass Ecoregion Strongholds**

In OK, the Beaver River Wildlife Management Area is planned to be a designated LEPC stronghold. Located in the panhandle of Oklahoma, Beaver River WMA is dominated by sand sagebrush and buffalo grass on upland sites interspersed with sand plum thickets and rolling sandhills. The total acreage managed by the ODWC is 26,711 acres; 23,441 acres of surface rights are owned by the ODWC, and an addition 3,270 acres is leased from the Commission of the Land Office. The leased land will be under ODWC management control until January 2042. The ODWC is currently developing a LEPC management plan for this area that will include prescribed grazing, prescribed burning, brush management and other LEPC approved practices to provide high quality LEPC habitat. Currently, there are 53 active oil and/or gas wells located on the WMA. Because the ODWC only owns 1/16<sup>th</sup> of the mineral rights on approximately 88% of the WMA, ODWC will continue to work closely with all the oil and gas companies with existing developments on the WMA to ensure disturbance is minimized. The ODWC will also attempt to limit the extent of development and fragmentation on areas leased for additional exploration. The ODWC has entered into Memorandums of Understanding with several oil and gas companies, and will continue to encourage use of the existing Best Management Practices. The ODWC Wildlife Commission passed a resolution that no wind facility infrastructure will be placed on any Wildlife Management Area. With this resolution, the threat of wind development has been

removed for these 26,711 acres. The ODWC will continue to work with landowners in close proximity to the Beaver River WMA in an attempt to improve LEPC habitat and increase the size of the proposed stronghold. Management plans will be developed for interested landowners and CCAA's will be available to those landowners willing to implement specific LEPC related practices.

The ODWC is also considering establishment of a second LEPC stronghold in Harper County. The ODWC recently purchased Cimarron Bluff WMA, a 3,430 acre property purchased for LEPC management. Upland sites of this WMA are dominated by mixed-grass prairie vegetation with rolling hills and high bluffs overlooking the west side of the Cimarron River. The ODWC is currently developing a LEPC management plan for this WMA that will include prescribed grazing and prescribed burning. Since this property is less than 15 percent of the 25,000 acre stronghold requirement, success of this area as a stronghold would rely heavily on neighboring landowners. With that said, this area has high LEPC habitat potential, and neighboring landowners have expressed interest in the recently approved agricultural CCAA.

In the Mixed Grass Prairie Ecoregion, the 5,886 acre Gene Howe Wildlife Management area is managed by TPWD. The majority of the Gene Howe is in the flood plain of the Canadian River Valley, but 2,355 acres are located above the breaks of the river in sand sagebrush mixed-grass habitat within a focal area in Hemphill County. In addition, the Gene Howe is surrounded by more than 50,000 acres of private land within 10 miles on the north side of the Canadian River that is enrolled in the TPWD CCAA for ranching and farming practices.

### **Sand Sagebrush Ecoregion Strongholds**

In Cheyenne County, Colorado approximately 29,500 acres of contiguous sand sagebrush are protected by the Nature Conservancy under permanent conservation easements through the Winship Ranch project and represent a stronghold. The easements were established in 2012 and require compliance in perpetuity with management plans which are beneficial to LEPC and other priority species. The sand sagebrush portion of the Winship Ranch project is located in and adjacent to a focal area and known active leks occur on the easement. Although mineral rights remain in a split estate, TNC retains rights through the conservation easements to negotiate surface use agreements.

In eastern Prowers County, Colorado two permanent conservation easements exist which form the nexus for a potential stronghold. Lowe Ranch State Habitat Area is 1,293 acres and is held under a permanent conservation easement by CPW. This easement was acquired with the purpose of protecting LEPC habitat. TNC holds a permanent conservation easement on the 4,183 acre Wilhite Ranch. Although not currently large enough to constitute a stronghold, these conservation easements are located in a focal area which contains active LEPC leks.

## **MONITORING AND ADAPTIVE MANAGEMENT**

The range-wide aerial survey of LEPC discussed in the population status section is planned to continue. All 5 states have the intention of continuing this monitoring assuming availability of funding. It is



conducted range-wide using a standard method which was developed from a Great Plains Landscape Conservation Cooperative grant awarded in 2011 so it provides a consistent survey of LEPC status within the occupied range. This survey will provide both population estimates on an annual basis as well as good population trend information, so will be an excellent monitoring tool for the overall status of LEPC populations. In addition, comparisons of the amounts of LEPC habitat improvement work conducted within the 15 by 15 km survey blocks will provide an assessment of LEPC population responses to these cumulative practices.

Each state conducts additional monitoring of LEPC populations. For example, ODWC uses a mixture of both road based and aerial surveys to monitor Oklahoma's LEPC population. Surveys are typically conducted from late March through early May, and span the estimated occupied range (EOR). ODWC biologists have been monitoring known historic lek locations since 1968. In 1996, six 10-mile routes were established in select counties to extend monitoring efforts and potentially identify other lek sites. Each 10-mile route has 10 listening locations, one listening location per mile. At each of these locations, surveyors listen for lekking LEPC for 3 minutes. When a lek is detected, the surveyor flushes the lekking birds and counts the total number of birds visiting the lek, including females. The road based survey is conducted twice annually. Flush counts are only conducted once annually. This survey provides ODWC with a lek density trend and shows the average number of birds per lek. ODWC increased LEPC road-based monitoring efforts in 2010 to include saturation surveys throughout the region. The surveys were conducted by the Sutton Avian Research Center in 2010 and 2011. Because of personnel limitations, Oklahoma's EOR was divided into two survey blocks; western and eastern. The western block included Beaver and Texas Counties and was surveyed in 2010. The eastern block included Dewey, Ellis, Harper, Woods and Woodward Counties and was surveyed in 2011. To continue these surveys, ODWC utilized funding contributed by the Oklahoma City Zoo. Zoo volunteers surveyed 18 routes in the western survey block in 2011 and 28 routes in the eastern block in 2012. Over 450 listening locations were surveyed each year. Each stopping location was mapped and results were analyzed to show population trends. This survey is expected to continue until 2017. These road based surveys have been combined with the range-wide aerial surveys to provide better state population trend information. In addition to providing trend information, results from these surveys are used to better inform the public and the USFWS of Oklahoma's LEPC population status. Data are also used to update population models including the Southern Great Plains Crucial Habitat Assessment Tool (SGPCHAT) and the Oklahoma Spatial Planning Tool.

New Mexico conducts annual ground based surveys on 40 established roadside routes as well as on their 29 state game commission-owned Prairie Chicken Areas (PCA's). Survey routes for roadside surveys are located within the known occupied and potential range of LEPC in eastern NM. Routes are 12.8 km (8 mi) long with 9 listening points located at 1.6 km (1 mi) intervals. All routes are located on public roads. Each route is surveyed once so that the number of routes, and in turn as much LEPC range as possible, can be surveyed. Each survey begins approximately one-half hour before and concludes 1-2 hours after local sunrise. Wind speed and temperature are recorded at the beginning and end of each survey. Surveys are not conducted if wind speed continuously exceeds a 3 (12mph) on the Beaufort Scale or if rain or snow is falling. At each stop, the observer shuts off the vehicle's engine, moves at



least 10 m from the vehicle, listens, and observes for 5 minutes. The observer then travels 1.6 km (1 mi) allowing 5 minutes to the next stop and repeats the procedure. Observations at the first and last stops are assumed to include any leks detected 1.6 km (1 mi) behind and forward of the respective stop.

Number of leks, method of detection (audibly or visually), and the direction where the lek is detected are recorded. When a lek is detected audibly, the surveyor records the compass bearing and an arrow is drawn on the map indicating direction from listening point to the lek. The observer attempts to make a visual confirmation from the listening point. If the lek is detected visually, the observer records the total number of LEPC present at the lek and marks the location on the map. A single lek is assumed when the compass direction from 2 consecutive listening points indicates a lek in the same general vicinity within a 1 mi (1.6 km) radius of each listening point. This audio triangulation or visual confirmation is used to determine whether vocalizations detected at 2 consecutive stops are from the same or different leks. Thus, there is little probability that a lek can be recorded more than once. To provide an index of each observer's opportunity to hear vocalizations out to a 1 mi (1.6 km) distance, the observer rates noise disturbance at each stop (e.g., traffic, pump-jacks, cattle, and dogs) on the survey form as none, low, moderate, or high. The observer also classifies habitat at each stop by dominant shrub type (e.g., shinnery oak, sand sagebrush, mesquite), agriculture (cropland), grass rangeland [tall (knee high), medium (shin high), or short (ankle high)], or undetermined. At the conclusion of the survey, each observer backtracks and attempts to locate lek sites, count the number of LPC observed, and map location of leks detected audibly but not visible during the actual survey, if time and access allow. When the lek is visually observed, the observer records the UTM coordinates and notes the lek location(s) on the topographic route map provided.

For PCAs, the goal is to determine presence of LEPC leks over the entire area of each PCA, i.e., a "saturation" survey. Listening points are located along established roads. The first listening point is located at the entrance point of a PCA and each additional listening point is 0.5 to 1 mi (0.8 to 1.6 km) apart depending upon terrain and noise disturbance. Number of leks, method of detection (audibly or visually), and the direction where the lek is detected are recorded. When a lek is detected audibly, the surveyor records the compass bearing and an arrow is drawn on the map indicating direction from listening point to the lek. A single lek is assumed when the compass direction from 2 consecutive listening points indicates a lek in the same general vicinity within a 1 mi (1.6 km) radius of each listening point. The observer counts all leks heard during 5 minute listening periods, but counts only the number of birds per lek on those leks that can be seen from public access or are on public land. Additionally, The Nature Conservancy of Eastern New Mexico conducts annual ground based surveys on their Milnesand Prairie Preserve near Milnesand, NM. Also, both the BLM Roswell Field Office and Carlsbad Field Office conduct annual surveys for LEPC within their respective jurisdictions.

Colorado annually monitors all known existing and historical leks. It currently does not use standard routes for monitoring, but directly count birds on the leks.

NRCS in cooperation with several universities is evaluating both vegetation and LEPC population responses to practices implemented as part of the LPCI. Vegetation monitoring is being conducted by

participants in the LPCI, and while not greatly detailed, will provide good information on basic plant community responses to various LPCI practices. In addition, LEPC telemetry studies of selected populations will allow for analysis of responses of these populations to management practices and other factors.

Monitoring is also required as a component of the mitigation unit generation of the WAFWA mitigation framework. Each mitigation area enrolled in an agreement will have repeated monitoring of the site as well as a history of the management practices applied to the site. With numerous sites enrolled in the program, a substantial database should be developed that will allow a rigorous evaluation of LEPC habitat responses to management practices across a number of ecological sites of importance to LEPC.

This conservation plan provides several avenues to maintain, enhance, or restore LEPC habitat and populations to meet the objectives of the plan. Understanding and tracking progress towards those objectives is paramount. There are two types of monitoring relative to outputs and outcomes. Reporting outputs is relatively straightforward quantifying the number or areas treated with specific practices across the various programs. WAFWA will compile these data on an annual basis, and summarize actions and accomplishments by ecoregion and state as appropriate.

More importantly is the reporting of effectiveness or outcomes of conservation actions. Coordinated monitoring across agencies and programs is needed to evaluate which conservation practices under what standards are most effective in producing desired changes, with effectiveness monitoring providing that evaluation. For each practice, a decision point can be established that indicates whether the practice is achieving its objective or not, and if not, changes will be made to its implementation standards. The monitoring should use methods to see if they should be modified in some way to change the practice or its delivery, or if the lack of effectiveness is a matter of other outside influences that cannot be changed in the short term.

The Range-wide Plan has set population and habitat objectives at the scales of eco-regions and focal areas. The monitoring strategy is designed to evaluate outcomes at both of these scales.

### **Ecoregional Monitoring**

Population response to management activities should be monitored at the ecoregional scale. Decision points should be set for expected and minimum population sizes in each ecoregion, which if not achieved indicate a decision point for action. Conservation practices and development activities should be compiled and reported spatially at the 15 km<sup>2</sup> grid and summarized for each ecoregion. Progress towards population objectives should be rigorously evaluated every 5 years. An analysis using a 5-year moving average of estimated population size and its annual rates of change ( $(N_{year2} - N_{year1}) / N_{year1}$ ) can estimate trends relative to conservation actions for adaptive management. If the trend indicates an annual proportional decrease in a population of >25% for more than three consecutive years or a decline >15% for five or more consecutive years, then state agencies and partners will need to assess ongoing management actions (or impacts) to determine what may be limiting population growth. Adjustments to conservation measures or habitat protections may need to be adjusted based on those evaluations.

### Focal Area Monitoring

Conservation practices and development activities implemented within each focal area should be monitored. Where feasible, states should monitor population responses at the focal area scale. This may require an additional set of surveys to capture changes in bird numbers at this scale. In some states, existing surveys may be adequate to track changes in numbers of birds, in other states additional surveys will be necessary. A single methodology needs to be consistently applied across the range for tracking changes in populations at the focal area scale. Progress towards population objectives based on a focal area analysis should be rigorously evaluated every 5 years.

As an analysis method, each cell of 15 km<sup>2</sup> grid (that was designed for the range wide aerial survey) can be populated with a probability of occupancy (McDonald et al. in prep). On an annual basis an estimate of the average probability of occupancy for each focal area and connectivity zone can be recalculated to track changes. Comparisons of these probabilities considering the conservation efforts directed towards the focal area will be evaluated to ascertain effectiveness of programs.

Once baseline population information has been established for each focal area, a 5-year moving average of estimated population size can be used to determine annual rates of change ( $(N_{year2} - N_{year1}) / N_{year2}$ ) to estimate trend relative to conservation actions.

NRCS's mid-scale GIS tools can be used to measure the extent of eastern redcedar and mesquite encroachment or removal in LEPC range. These would provide meaningful assessments of effectiveness of this component of habitat improvement practices. Rerunning these models at 5 year intervals will quickly quantify the extent to which these invasive species have been reduced or not, and can be readily linked to population performance at a regional or focal area scale.

### Adaptive Management

This plan calls for 3 different types of regular monitoring that will guide future adaptive management decisions. First, detailed vegetation monitoring and habitat assessments as described in Appendix B will occur on all sites enrolled under a WAFWA management plan. Secondly, the amount of suitable habitat will be tabulated at the scale of focal areas and connectivity zones. These data will include the acreage being managed under approved management agreements, acreage in each land cover category (e.g. grassland, cropland, urban, etc.), and number of impacted acres due to development. Finally, population monitoring will occur at the ecoregion and range-wide scale as described in the population status section.

Each year two reports will be produced that summarize all the monitoring data at the appropriate scales. The first report will be produced by WAFWA and include a tabulation of all the managed acreage within each focal area and connectivity zone for each of the various types of agreements and for the specific practices contained within them. Habitat assessment scores collected from WAFWA contracted sites will also be summarized in that report along with the most recent estimates of land cover composition and impacted acreage. Trends in the habitat assessment scores, managed acreage,

and the land cover composition of the focal areas and connectivity zones will also be reported annually in the report after the first report. After every 5<sup>th</sup> year, the structural vegetation data collected from WAFWA contracted sites will also be summarized by practice and presented in the annual report. A second separate report will be produced annually by WAFWA or one of its contracted partners to summarize the results from the aerial population survey at the ecoregion and range-wide scales.

The two previously described reports will be provided to all plan cooperators annually and made publicly available. The data contained within the reports will be utilized by the WAFWA advisory board to develop their recommendations for the allocation of offset units toward the most needed practices and locations. Additionally, the WAFWA advisory board will annually assess changes in the 5-year average breeding population within each ecoregion and recommend corrective actions if any one of the following triggers is eclipsed: 1) declines of >20% for 3 consecutive years, 2) declines of >10% for 5 consecutive years, or 3) declines of >5% for 7 consecutive years. The 5-year moving average is being utilized to smooth out the erratic annual fluctuations that commonly occur to populations of gallinaceous game birds. All plan cooperators will take action to identify and address the factor(s) limiting population growth if any one of the listed triggers is eclipsed. Some potential actions would include shifting the location of focal areas and connectivity zones to capture areas with greater conservation opportunity, increased budget allocations or prioritization for needed conservation practices, or adjusting the WAFWA mitigation framework to further incentivize management activities and disincentivize development.

Every five years a rigorous review will occur to assess the each WAFWA prescribed conservation practices, the appropriateness of the focal area and connectivity zone locations, and progress towards achieving the stated population goals of the plan. The conservation practices that were prescribed during the previous 5 years will be evaluated by the WAFWA advisory board based on their ability to achieve the desired vegetation parameters. New standards will be considered for 1) practices that have not maintained optimal habitat quality in at least 3 of 5 years where it existed at baseline and 2) practices that have not resulted in at least a 25% improvement in habitat quality where such improvements were the desired outcome of a management plan. The composition of each focal area and connectivity zone will also be evaluated to assess progress towards achieving the stated habitat goals of 70% and 40% good to high quality habitat, respectively. Modifications to those priority areas will be considered if 1) the amount of impacted acres will prevent the goals of the plan from being achieved and 2) landowner participation has been poor and stagnant. At the ecoregional scale, upward trends in populations are expected to be seen within 5 years and the goals should be achieved by the 10<sup>th</sup> year of plan implementation. If these responses are not observed then the WAFWA advisory board will make recommendations to shift expenditures of mitigation dollars from ecoregions that are meeting their population objectives to other portions of the range that need additional improvements (in addition to previously mentioned adaptive management actions).

It should be noted that some of the guidelines and goals used in the plan are currently based primarily on expert opinion (such as impact buffer distances), and do not have strong empirical support. Research will be prioritized to provide better information for such guidelines. As new findings are

compiled, adjustments will be implemented through adaptive management. A range-wide LEPC science team will be maintained because it is expected that new information will need to be periodically evaluated and incorporated into the plan as appropriate. Thus, the science team will meet at least annually to review findings of monitoring or new research. When this team determines that a significant amount of new information is available, they can suggest changes or adjustments to the appropriate component of the plan. Those changes will be incorporated into the plan at the 5-year review. If the LEPC IWG determines that the changes recommended by the science team could influence the mitigation framework they will be reviewed by the WAFWA advisory board at the next annually scheduled meeting. All suggested changes to the mitigation framework will be reviewed by the WAFWA advisory board and they will make recommendations to the WAFWA board of directors for their approval prior to implementation. Changes to the mitigation framework will go into effect 90 days following approval by the WAFWA board of directors.

### **Research Needs**

Various components of LEPC ecology remain poorly documented by empirical data. As mentioned, LEPC avoidance of human structures and activities has relatively little empirical data for determining impact buffers. Various on-going research projects should provide additional information on these questions. Questions remain about densities of LEPC in habitat conditions of varying quality. Questions also remain about the effectiveness of different sizes of LEPC habitat blocks and their habitat quality in relation to sustainability of LEPC populations. Even broader questions remain including how will climate change affect LEPC? Will its primary effects be from increased temperatures, decreased annual precipitation, prolonged droughts, or increased storm intensities during critical times of the year? Movement capabilities and habitat characteristics that support movements through connectivity zones are very poorly understood. These and many other questions need additional research.

## **CONSERVATION STRATEGY SUMMARY AND THREAT REDUCTION ASSESSMENT**

The above conservation strategy is designed to provide LEPC the habitat needed to maintain the population with good numbers and distribution of birds. The greatest need is for habitat quality to be improved within sizable blocks of habitat well distributed throughout LEPC range. Public lands within LEPC range have made LEPC habitat management a high priority. This is especially true for BLM lands in NM which sustain a good population of LEPC and have been designated as a stronghold. Other USFS and state-owned lands are also targeted for LEPC management and some of these have been established as LEPC strongholds. With 95% of the lands in LEPC range being in private ownership, maintaining, enhancing, restoring, and preserving LEPC habitat on these lands is a primary conservation need. The two-pronged conservation strategy of the Range-wide Plan is designed to do this. The habitat improvement component focuses on coordinating delivery of habitat management actions through technical and financial assistance to landowners. Each state has established LEPC Implementation Teams that are working to deliver LEPC habitat improvements especially to focal areas and connectivity zones. None of these programs will be enhanced by regulatory actions, but instead

require voluntary engagement that is encouraged through economic incentives. The effectiveness of these programs is felt to be maximized when landowners perceive any potential negative consequences of their actions to their legitimate land uses to be minimized while also providing the technical and financial assistance to make LEPC habitat management economically feasible.

The second component of the conservation strategy is designed to avoid, minimize, and mitigate new impacts to LEPC from developments. The designation of focal areas and other CHAT categories highlights to development interests the areas where impacts to LEPC will be greatest and thus should be avoided, as well as areas where developments can occur with no or few impacts to LEPC. By engaging developers in the WAFWA Mitigation Framework, developers will be provided with greater certainty that their developments in appropriate locations can proceed, while developments that occur within LEPC areas will use practices that minimize their impacts and provide for replacement of their impacts through mitigation. The effectiveness of these programs will depend on the level of engagement of development companies in these agreements.

### **Conversion of Rangelands to Cropland**

Landowners convert lands to agricultural production for a real or perceived economic advantage for doing so. However, the amount of conversion within LEPC range has been relatively small in the past two decades. A recent analysis conducted by Mike Houts at Kansas Biological Survey using publically available datasets (1993 GAP analysis and 2005 Land Cover) found a net reduction in cropland of about 1033 sq. km from the 1990s to 2005. Further, the best native habitat for LEPC is associated with sandy soils which are not highly preferred for croplands. Thus, while conversion of rangelands to croplands has occurred in the past, it is not considered a significant threat today.

The conservation strategy in this plan provides programs that are designed to reverse the effects of conversion of rangelands to croplands. The plan includes programs to encourage reestablishment of native grasslands. Voluntary incentive programs including LPCI, GRP, WHIP, FFRP, state incentive programs, CRP, SAFE and others all provide economic incentives to either keep rangelands or restore native grasslands by offering landowners economic benefits for such actions. The strategy encourages maintaining and restoring large blocks of LEPC habitat by coordinating efforts to enhance LEPC habitat improvements in focal areas, connectivity zones, and other areas of high value to the species. Additional selection points for enrollment of lands occurring in important areas are being incorporated into program selection processes. Agencies and organizations are coordinating efforts to provide one-stop-shopping from any technical service provider to make it as easy for landowner engagement as possible.

In addition, the mitigation framework provides willing landowners with an even greater incentive to maintain native grass or shrublands or restore native grasslands through the payment of mitigation units. The structure of the mitigation system provides landowners with economic return for enrolling their lands into a LEPC mitigation agreement. These agreements will maintain and improve habitat for LEPC for varying lengths of time, with at least 25% of the mitigation units applied to permanent



conservation sites. The strategy specifically rewards landowners in the most important areas by paying higher rates for mitigation units earned in these areas so as to stimulate the establishment of large blocks of quality habitat. No better solution exists to encourage the restoration and enhancement of rangelands than the combined voluntary incentive programs and WAFWA Mitigation Framework.

An additional concern that has been expressed is the potential loss of CRP lands that contribute to LEPC habitat. Nationwide, CRP lands have decreased by nearly 10 million acres since 2007 (<http://www.bigpictureagriculture.com/2013/03/weve-lost-9-7-million-acres-of-crp-land-in-five-years-334.html>). However, reductions in LEPC range have been far lower than many other parts of the country. Interest in maintaining CRP in LEPC areas is encouraged through establishment of Conservation Priority Areas and use of SAFE, discussed under the existing programs section of this plan. These efforts will minimize any losses of existing CRP, and will encourage new enrollments of CRP in focal areas and other important LEPC locations. Expired CRP lands within LEPC range have been found to have a high percentage remaining in grassland. Figures 11-15 show the status of expired CRP lands within LEPC range. Finally, the WAFWA Mitigation Framework has included a specific mitigation unit category that is designed to help restore native grasslands and to maintain existing planted native grasslands such as expired CRP lands.

### **Livestock Grazing**

Grazing is a land use practice that is compatible with LEPC habitat, but that can reduce the quality of habitat, especially nesting habitat, if not applied with LEPC habitat needs in mind. The same programs identified above for addressing conversion of rangelands also provide the opportunity for incentives to landowners to incorporate LEPC habitat considerations into their grazing regimes. The voluntary incentive programs provide financial compensation to landowners for adjusting their grazing plans to accommodate LEPC habitat needs. Enrolling lands in a WAFWA mitigation agreement provides further opportunities to offer landowners additional compensation for improving LEPC habitat. Guidelines for LEPC grazing programs used in a mitigation framework are provided in the User's Manual (Appendix B). These voluntary approaches to addressing grazing threats to LEPC are the only effective ways of engaging landowners in making any needed adjustments to their grazing regimes to improve LEPC habitat. The Range-wide plan encourages the use of LEPC grazing management through incentive programs such as LPCI and through the WAFWA Mitigation Framework, and focuses the application of these programs in focal areas and other important locations for LEPC.

### **Shrub Control and Eradication**

Widespread herbicide application designed to control or eliminate sand sagebrush will have detrimental effects on LEPC habitat. Similarly, widespread application of tebuthiuron to control or eliminate sand shinnery oak will be detrimental to LEPC habitat. However, limited use of this herbicide at lower application rates can help restore over-grazed shinnery oak to desired reference community conditions (Haukos 2011). Recommended guidelines for use of herbicides in shinnery oak ecosystems are provided in the User's Manual (Appendix B). Haukos (2011) indicated that without government subsidies chemical control of sand shinnery oak was not cost effective in most locations in terms of

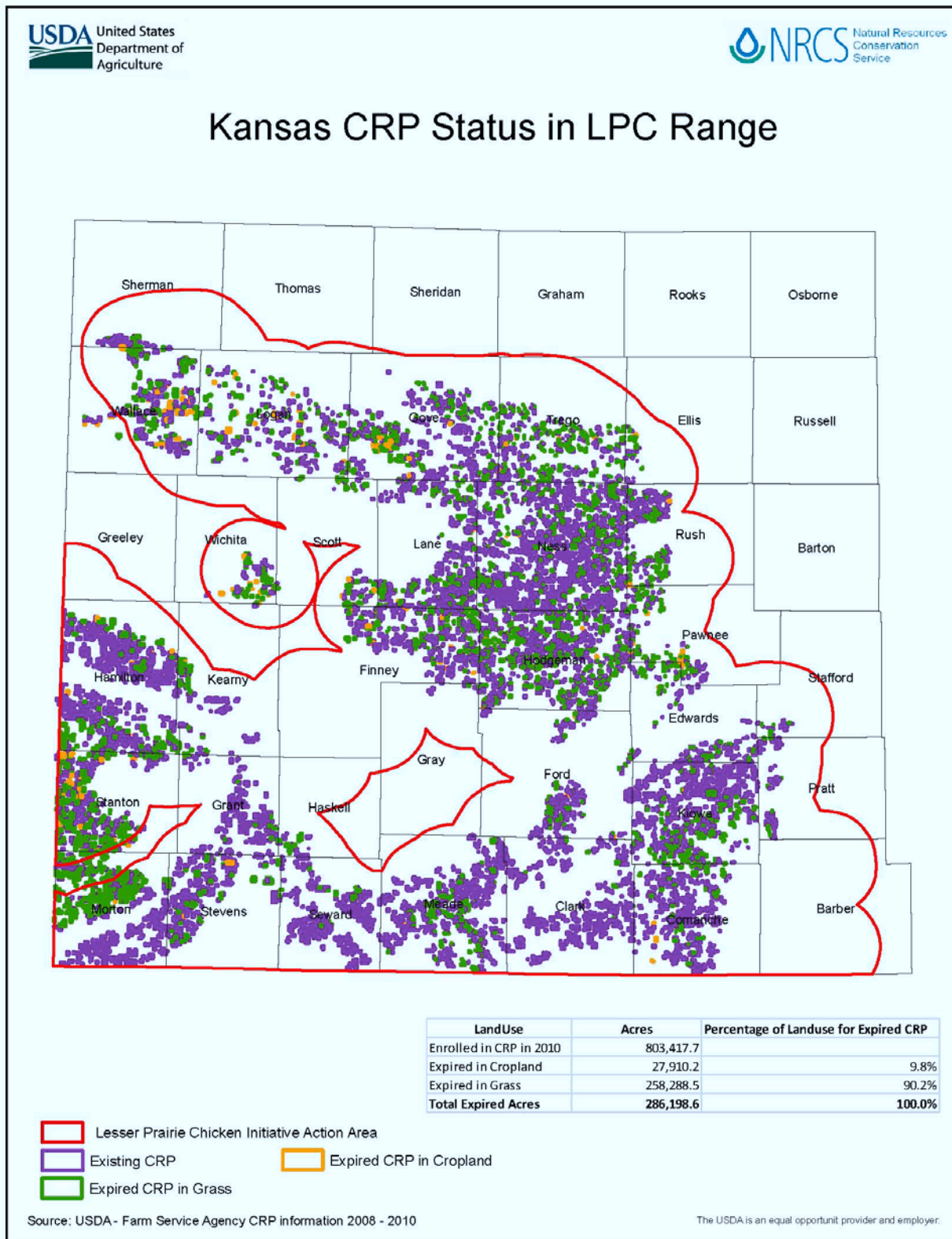


Figure 11. Status of expired CRP lands within Kansas.

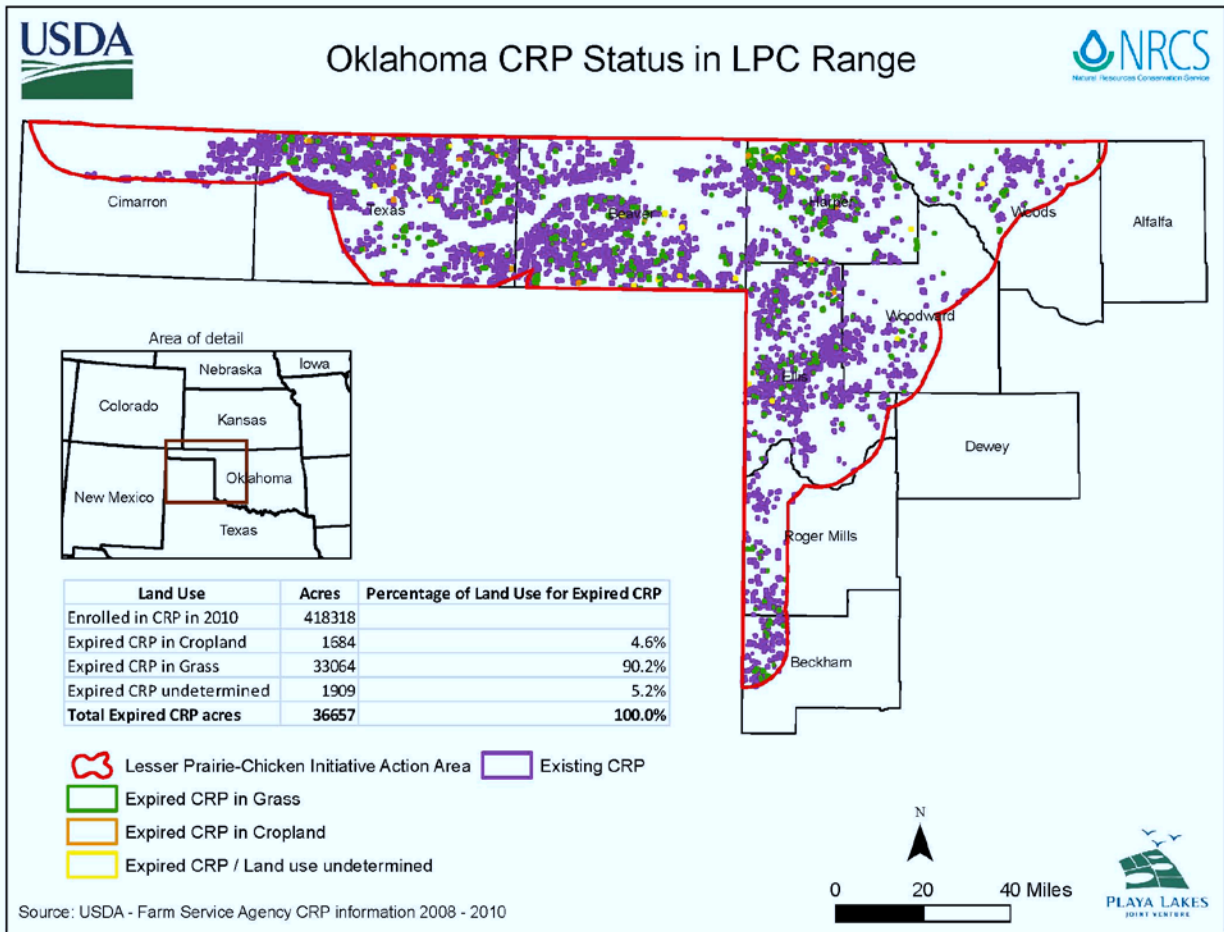


Figure 12. Status of expired CRP lands in Oklahoma.

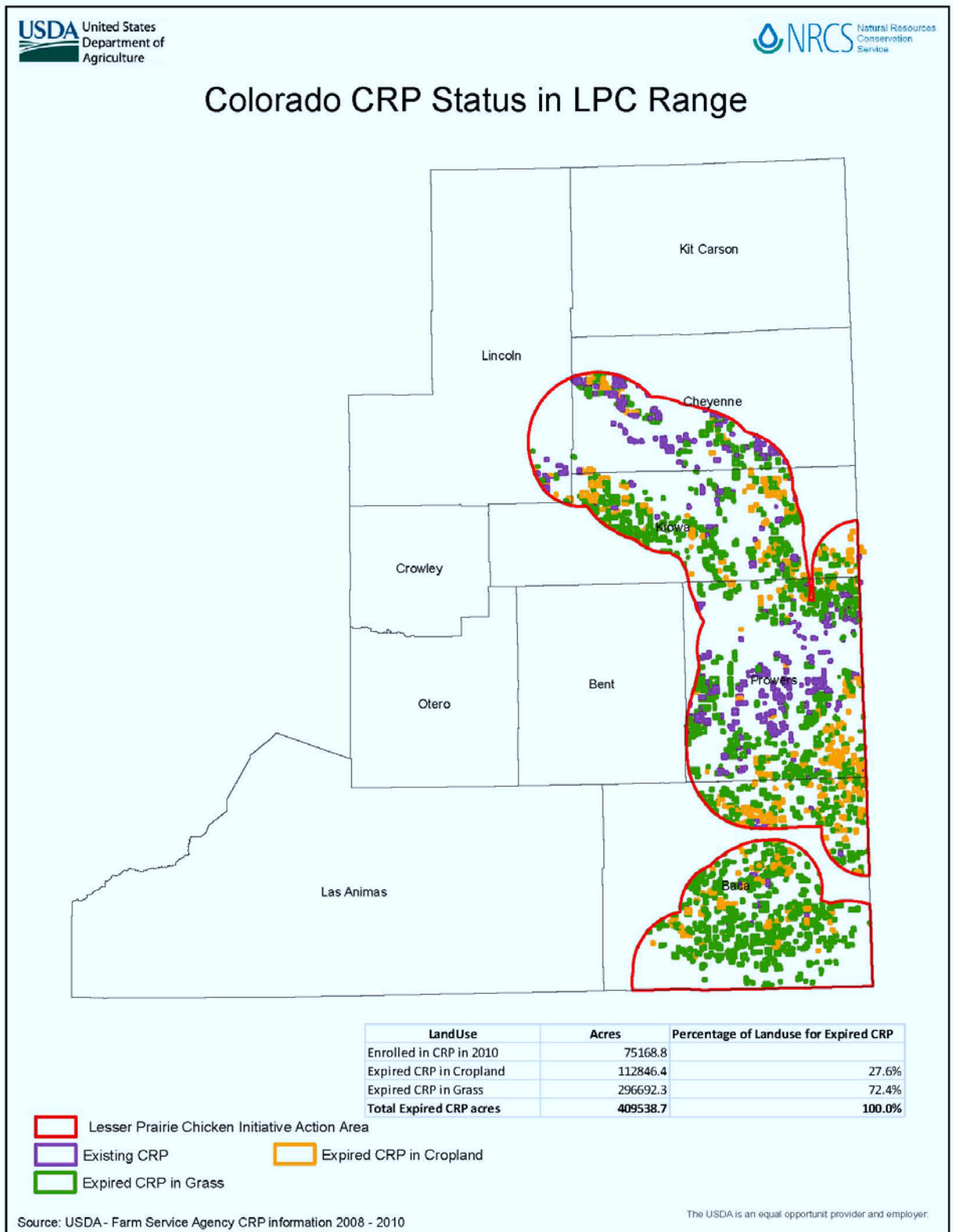


Figure 13. Status of expired CRP lands in Colorado.



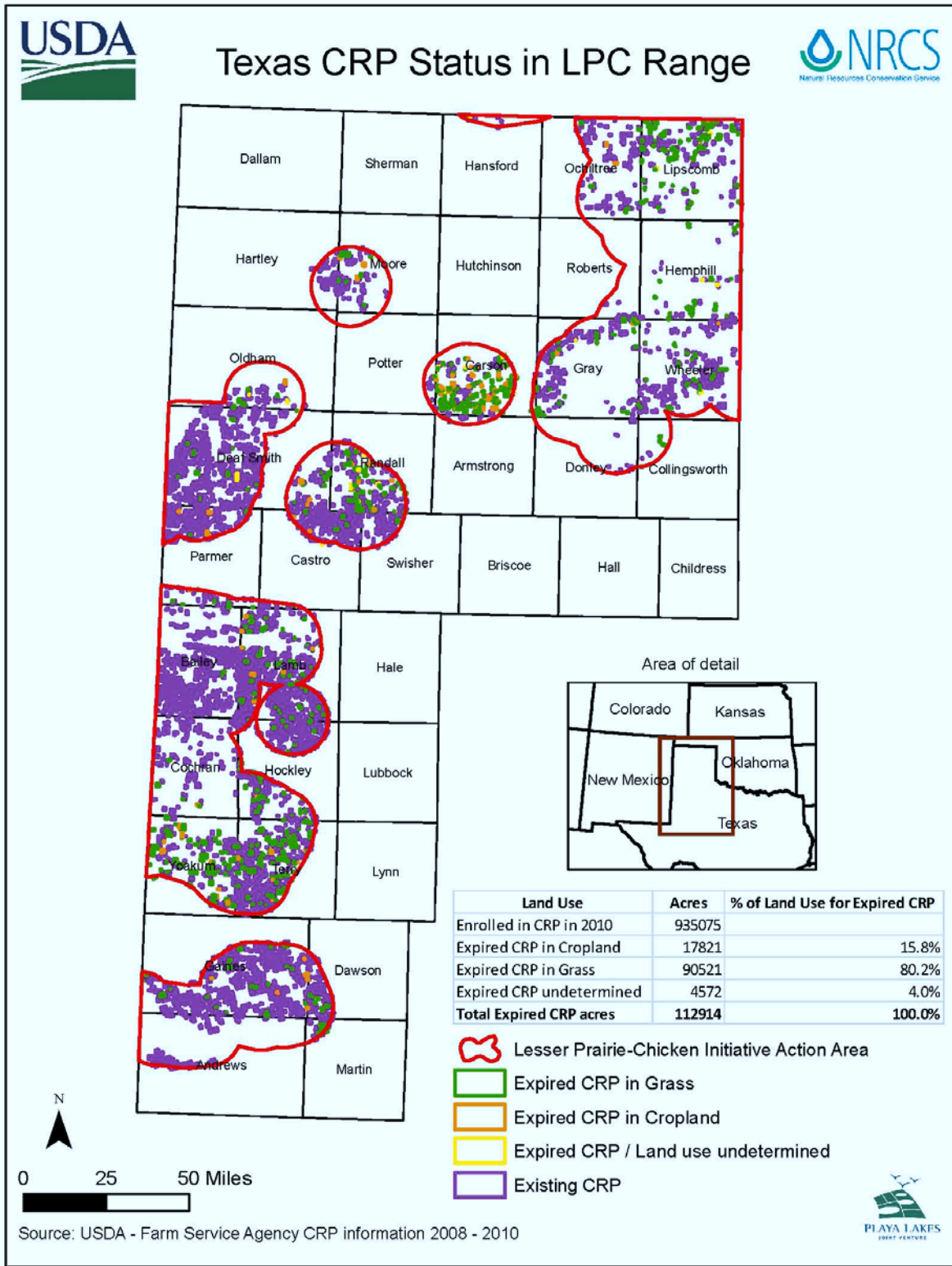


Figure 14. Status of expired CRP lands in Texas.

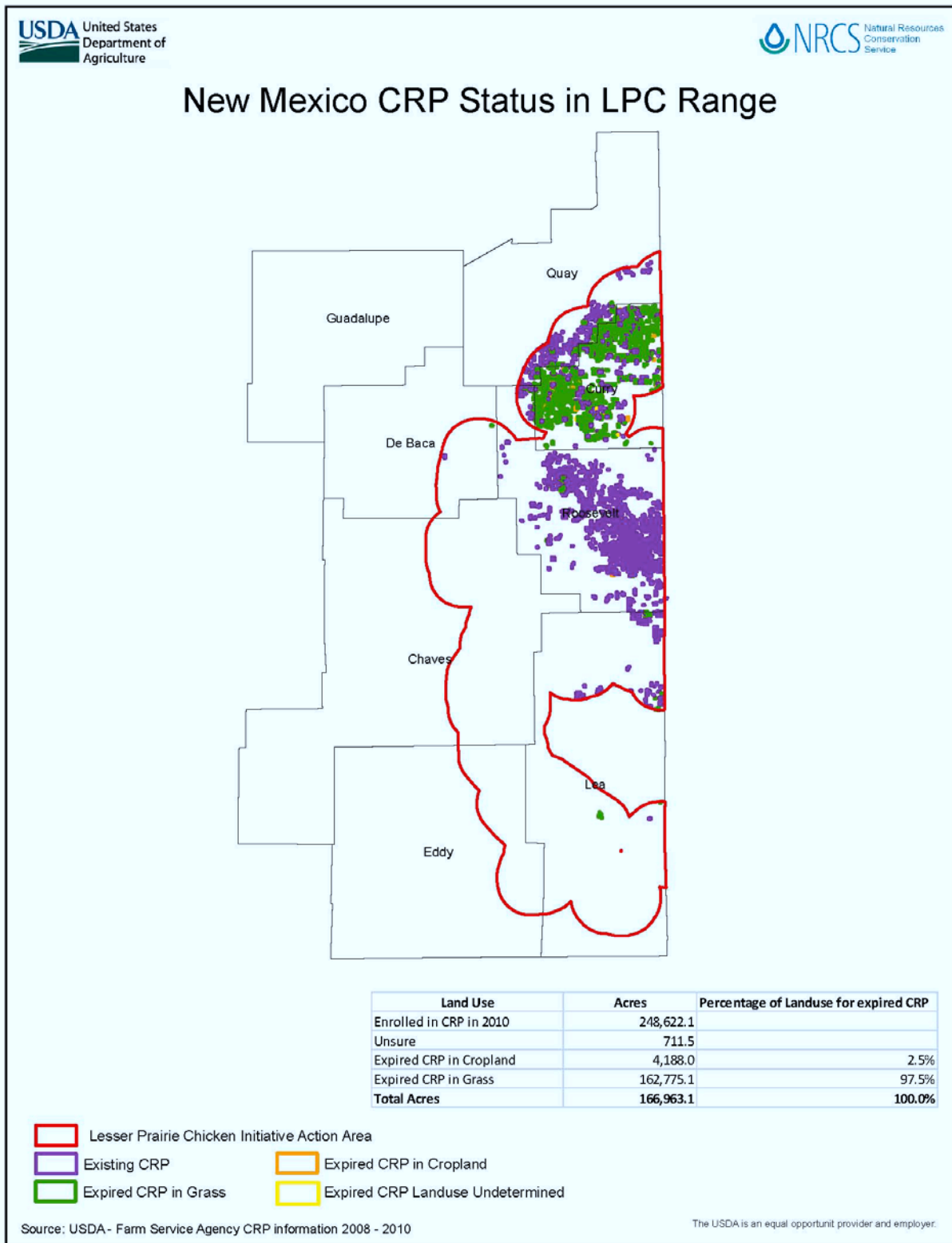


Figure 15. Status of expired CRP lands in New Mexico.



increases in grass production and associated weight gains by cattle in sand shinnery oak at current cattle prices. Government subsidies to private lands of widespread application of tebuthiuron in LEPC range should stop, and agency use of this practice for elimination of sand shinnery oak or sand sagebrush on public lands within LEPC range should cease. Use of herbicides to improve LEPC habitat according to a LEPC management plan and following recommended guidelines will allow for benefits to both LEPC habitat and rangeland conditions, where appropriate. Providing voluntary incentive programs for such programs is an appropriate approach. More importantly, encouraging the use of appropriate prescribed grazing and prescribed burning programs that improve and maintain LEPC habitat are included in both the voluntary incentive programs for landowners as well as the mitigation framework. Both of these programs provide technical and financial assistance to landowners for applying these management practices, with an expanded financial compensation for landowners engaging in a WAFWA mitigation agreement. Further demonstrations of the benefits of these types of management can help change the perception of the benefits of widespread herbicide use.

### **Altered Fire Regimes and Invasion of Woody Plants**

Increasing recognition and public knowledge of the important role that fire played historically in LEPC habitat and in maintaining productive sand shinnery oak, sand sagebrush, and mixed grass ecosystems are needed. Providing training and assistance in use of prescribed burning and increasing landowner assurances through cooperative burn associations and provision of appropriate liability insurance options would decrease fears of use of this practice. Cooperative efforts identified previously within each state are providing technical assistance from agencies, organizations, and universities to prescribed grazing associations and landowners in proper use of prescribed burning programs. Both the voluntary incentive programs and the mitigation framework provide technical and financial support for application of prescribed burning to improve LEPC habitat. Technical and financial assistance for mechanically controlling redcedar or mesquite where it has invaded to such an extent that burning may not be feasible with current conditions are also provided through these programs. Through these programs appropriate uses of prescribed burning and mechanical brush control can be applied to reverse the invasions of woody species and return fire to these ecosystems. As with livestock grazing, only voluntary incentive-based programs will be effective in expanding practices that address the threats of altered fire regimes and invasion of woody plants.

### **Wind Power and Energy Transmission**

Wind energy and the transmission capabilities to support its development are noted as a source of green energy that can help reduce greenhouse gas emissions and help address the long-term impacts of climate change. Threats of wind energy and transmission line development on LEPC populations were identified as significant concerns by the USFWS (2012a). Reduction of these threats can be accomplished by encouraging placement of these developments in areas that can avoid impacts to important LEPC habitat. Where this isn't possible, BMP's should be applied, and unavoidable impacts mitigated through off-site habitat improvements to offset the effects on LEPC populations. Engagement of industry in programs or initiatives that will allow for needed expansion of this renewable energy source while balancing this need with those of LEPC populations can reduce this threat. The

WAFWA Mitigation Framework provides an effective approach to accomplish this. Similarly, wind energy companies have expressed an interest in developing an HCP that would include LEPC. The HCP would strive to avoid impacts and where they can't be avoided to minimize these impacts. The WAFWA Mitigation Framework further provides the opportunity for off-site habitat improvement to compensate for any impacts to LEPC habitat that do occur. The level of interest shown by the wind energy industry indicates a serious intent to address the concerns over threats of wind energy development on LEPC.

Energy transmission companies have expressed an interest in working towards mutual solutions to avoiding, minimizing, and compensating for impacts associated with new transmission projects. Voluntary offset programs supported by OGE in OK are a good example. The WAFWA Mitigation Framework offers opportunities for engagement of transmission companies in LEPC conservation.

Through the WAFWA Mitigation Framework, wind developers and transmission companies would be provided assurances that their operations conducted under a WAFWA mitigation agreement would be exempt from Section 9 take provisions in exchange for use of BMP's in their wind energy and transmission developments and by providing compensation through off-site mitigation for unavoidable impacts. These mutual agreements offer the best solutions for addressing potential impacts of these activities on LEPC.

### **Petroleum Production**

The ability for regulatory control on oil and gas developments varies with the ownership of mineral rights as well as among the states. Where the Federal government owns mineral rights, such as in substantial areas in New Mexico, it can incorporate LEPC needs into its leasing agreements as the BLM programs discussed in the current programs section of this plan have done. Some states have the ability to regulate densities of wells if they fall into critical areas for species like LEPC, while other states lack this ability.

The solution with the greatest potential is to engage the oil and gas industry in the WAFWA Mitigation Framework that will accommodate their needs for development and production while addressing the needs of LEPC. Oil and gas would be provided assurances that their operations conducted under a WAFWA mitigation agreement would be exempt from Section 9 take provisions in exchange for avoidance of impacts, use of BMP's in development and production operations, and through compensation for off-site mitigation for unavoidable impacts.

### **Climate Change**

Climate change can affect LEPC through changes to habitat caused by changes in temperature or precipitation, impacts to local populations from extreme weather events, or stressors to populations from higher temperatures. However, there are actions that can be taken to minimize climate change threats to LEPC populations. Maintaining high quality habitat well distributed throughout the range of LEPC will ensure that populations will be robust and best able to respond to local extreme weather events. By providing adequate representation of high quality patches of habitat throughout the range

of the species that are of sufficient size to provide resilience in local LEPC populations and have sufficient redundancy in numbers, LEPC will be provided with conditions to resist climate change effects. Reducing potential fragmentation of LEPC habitats will allow for movements and shifts of LEPC populations. Recent expansions of LEPC in KS are an example of the ability of the species to move to new favorable environments. Should climate change require shifts in populations, maintaining connectivity zones that allow for movements will be important. The establishment of focal areas and connectivity zones and the concerted efforts to provide high quality habitat in these areas for population persistence as well as movements and dispersal are the best strategies available for addressing climate change. This strategy is consistent with the recommendations of the National Fish, Wildlife, and Plants Climate Change Strategy (<http://www.wildlifeadaptationstrategy.gov/public-review-draft.php>).

### **Collision Mortality**

Minimizing the presence of collision mortality factors, principally distribution lines and fences in close proximity to leks where LEPC may concentrate will reduce the threat of this mortality. Marking of fences that do occur near leks is another possible solution. Providing landowners with technical and financial assistance to remove fences in high risk areas or helping provide marking of fences can reduce this threat. These management actions are included in voluntary incentive programs and are a component of the required LEPC management plans under the WAFWA Mitigation Framework. These actions are also part of the BMP's identified in the WAFWA Mitigation Framework. BMP's in the WAFWA Mitigation Framework also include stipulations for power lines as part of developments covered by mitigation agreements.

### **Habitat Loss and Fragmentation**

Restoring, enhancing, maintaining and protecting high quality patches of LEPC habitat that are of adequate sizes, numbers, and distributions to provide population source areas and population movement capabilities to withstand periodic unfavorable weather and other conditions are the cumulative goal of this conservation strategy. Focal areas are designed to provide the needed habitat patches of sufficient size, quality, and distribution to provide the habitat needed for sustainable LEPC populations within each of the 4 LEPC ecoregions. The landowner incentive programs and WAFWA Mitigation Framework provide the tools to improve habitat quality in these areas, while the mitigation framework also engages development interests in avoiding and minimizing development in these areas by providing them with assurances for future development actions. Connectivity zones will enhance movement capabilities among focal areas through the same incentive and avoidance programs. These programs provide the best solutions to the concerns for loss, degradation, and fragmentation of LEPC habitat. Focal areas will provide areas of good to high quality habitat that will support populations with the best opportunities for high reproduction and survival rates and should serve as source areas for demographic support to surrounding habitat patches and for movements of birds into new areas. While weather events will still have an influence on actual reproduction and survival rates, the proposed plan provides the best solutions to addressing droughts and other extreme weather events.

## Additional Management Actions

Recognition and rewarding exceptional LEPC management programs has been identified as an additional action to further enhance landowner and industry engagement in LEPC conservation. Both landowner and industry reward programs have been suggested. The WAFWA Mitigation Framework could institute such an award program for companies or landowners who show exceptional efforts or results for LEPC conservation. A program to recognize outstanding accomplishments under voluntary landowner incentive programs could also be established. Specifics of these awards still need to be identified.

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## APPENDICES

## Appendix A – List of Ecological Sites Within LEPC Range and Their Potential Value As LEPC Habitat

Ecological Site Description	Major Land Resource Area (MLRA)	Landscape Description	LEPC Value (1-5 scale)	Production lbs/ac	Nesting Habitat	Brood Habitat	Limited Use
Choppy Sands	72, 73, 79	Dunes	5	1200-2500	X	X	
Limy Upland	72, 79, 73	Uplands	5	1500-3200	X	X	
Clay Upland	72, 73, 79	Uplands	5	1500-3000	X	X	
Loamy Upland	72, 79, 73	Uplands	5	2500-3500	X	X	
Sands	72, 73, 79	Uplands	5	1500-3000	X	X	
Sandy	72, 79, 73	Uplands	5	1500-2800	X	X	
Choppy Sands	67b, 69	Hills, dunes, ridges	5	700-2000	X	X	
Sands	67b, 69	Hills, dunes	5	1000-2400	X	X	
Sandy Bottomland	67b, 69	Terrace, drainageway	5	1000-2400	X	X	
Sandy Meadow	67b	Terrace, interdune	5	1000-2400	X	X	
Sandy	67b, 69	Interfluves, plains	5	1000-2400	X	X	
Deep Sand (FS)	78C	Uplands - Sandy	5	1000-2400	X	X	
Sand Hills (FS/LFS)	77A,77B,77C,77D,77E,78B,78C	Hills and Dunes - Sandy	5	1000-2400	X	X	
Sandy (LFS)	77A,77B,77D,77E,78B,78C	Uplands - Sandy	5	1000-2400	X	X	
Loamy Sand Prairie (LFS)	78C	Uplands - Sandy	5	1000-2400	X	X	
Deep Sand	42.3	Terraces/Piedmonts/ Dune fields/Plains	5	1000-2400	X	X	
Sandhills	42.3	Plains	5	1000-2400	X	X	

Ecological Site Description	Major Land Resource Area (MLRA)	Landscape Description	LEPC Value (1-5 scale)	Production lbs/ac	Nesting Habitat	Brood Habitat	Limited Use
Loamy Sand	42.3	Uplands/Plains/Dunes/fan Piedmonts/interdunal areas	5	1000-2400	X	X	
Sandy Plains	70B.1	Hillslopes/Alluvial fan terraces/valley slopes	5	1000-2400	X	X	
Sandhills	70B.1	Sand ridges/sand swales	5	1000-2400	X	X	
Deep Sand	70B.1	Upland Plains/Alluvial Fans/Valley side slopes	5	1000-2400	X	X	
Sand Hills 16-21" PZ	77C.2	Dune ridges/covex uplands/sideslopes/plains	5	1000-2400	X	X	
Sandy 16-21" PZ	77C.2	Undulating gently sloping plains/Basins/Swales	5	1000-2400	X	X	
Loamy Sand	77C.2	Nearly level/gently undulating Plains	5	1000-2400	X	X	
Sandy Plains	77C.2	Nearly level/gently undulating Plains	5	1000-2400	X	X	
Sandy 12-17" PZ	77D.1	Nearly level-Undulating Gently Sloping Plains	5	1000-2400	X	X	
Blue Shale	73	Uplands	4	1500-3500	X	X	
Shallow Limy	72, 73	Uplands	4	1000-2500	X	X	
Loamy Prairie (L/SiL)	78B	Uplands - Loamy	4	2400-3500	X	X	
Loamy Sand (LFS)	78B	Uplands - Sandy	4	1500-3300	X	X	
Mixedland Slopes (FSL)	77E	Uplands - Loamy	4	1600-3000	X	X	
Limy Upland (L)	77A,77B,77C,77E	Uplands - Loamy	4	1100-2200	X	X	
Sandy Plains (cool)	70B.1	Gently sloping Piedmont/Plains	4	810-2750	X	X	
Sandy Bottomland 12-18" PZ	70B.1	Fluvial terraces adjacent to streambed	4	1410-2781	X	X	

Ecological Site Description	Major Land Resource Area (MLRA)	Landscape Description	LEPC Value (1-5 scale)	Production lbs/ac	Nesting Habitat	Brood Habitat	Limited Use
Clay Terrace	73	Terraces	3	2500-4500	X	X	
Loamy Terrace	72, 73	Terraces	3	2000-4000	X	X	
Sandy Terrace	72	Terraces	3	1500-2500	X	X	
Gravel Breaks	67b, 69	fans, remnant terraces	3	500-1400	X	X	
Limestone Breaks	67b, 69	scarps, hills, ridges	3	550-1450	X	X	
Sandstone Breaks	67b, 69	Scarps, hills, ridges	3	600-1600	X	X	
Sandy Loam (FSL)	70B,77A,77B,77C,77D,77E,78B	Uplands - Loamy	3	1100-2500	X	X	
Shallow (CL/L/FSL)	77D,78B,78C	Uplands - Shallow	3	500-3000	X	X	
Closed Upland Dep	72, 73	Playa	2	1500-2500		X	X
Loess Breaks	67b, 72	Steep side slopes	2	1400-2500		X	X
Loamy Slopes	67b	Steep side slopes	2	500-1500		X	X
Salt Meadow	67b, 69	Floodplain	2	1500-4000		X	X
Sandy Salt Flat	67b, 69	Terrace, flooplain	2	800-2200		X	X
Loamy	67b, 69	Interfluves, plains	2	600-1800		X	X
Plains Swale	67b	Closed depression	2	800-1900		X	X
Draw (FSL/L/CL)	77A,77B,77C,77D,77E,78B,78C	Bottomlands - Loamy	2	2700-4500		X	X
Draw	42.3	Arroyo/Floodplain/Swale	2	1200-3500		X	
Sandy	42.3	Uplands/Plains/Dunes/Fan Piedmonts/Terraces/Inter dunal areas	2	600-1200		X	
Sandy Loam 12-17" PZ	77D.1	Nearly Level-Gently Sloping Plains	2	1000-2000		X	

Ecological Site Description	Major Land Resource Area (MLRA)	Landscape Description	LEPC Value (1-5 scale)	Production lbs/ac	Nesting Habitat	Brood Habitat	Limited Use
Populus fremontii - Populus sargentii /Salix exigua - Baccharis glutinosa/Pascopyrum smithii	70B.1	Riparian	2	no chart		X	
Sandy Loam 12-18" PZ	70B.1	Uplands	2	1000-1751		X	
Shale Breaks	72	Upland steep hillslopes	1	500-1300		X	X
Clay Lowland	72, 79	Floodplains	1	1000-3000			X
Loamy Lowland	72, 79, 73	Floodplains	1	3000-5500			X
Saline Lowland	72, 79	Floodplains	1	1400-3000			X
Saline Subirrigated	72, 79	Floodplains	1	5000-6500			X
Sandy Lowland	72, 73, 79	Floodplains	1	2000-4000			X
Subirrigated	73, 73, 79	Floodplains	1	3500-5500			X
Saline Overflow	67b, 69	Terrace, floodplain	1	750-2800			X
Overflow	67b	Terrace, floodplain	1	1200-2800			X
Clayey	67b	Interfluves, plains	1	500-1600		X	X
Shaly Plains	67b, 69	Ridge, hills, plains	1	400-1300		X	X
Salt Flat	67b, 69	Terrace, floodplain	1	500-1800			X
Gravelly (SL/L)	77E,78B,78C	Uplands - Shallow	1	1100-1800		X	
Breaks (L)	70B	Slopes/Breaks	1	400-900		X	
Clayey (C/CL)	70B	Alluvial Fans/Slopes	1	1000-2100		X	
Clayey Bottomland (C/CL)	78B,78C	Bottomlands - Loamy	1	700-3500			X
Clay Flat ( C )	78B,78C	Uplands - Loamy	1	1000-3400		X	
Clay Loam (CL)	70B,77D,77E,78B,78C	Uplands - Loamy	1	1000-3000		X	
Claypan Prairie ( C )	78C	Uplands - Loamy	1	1500-3000		X	

Ecological Site Description	Major Land Resource Area (MLRA)	Landscape Description	LEPC Value (1-5 scale)	Production lbs/ac	Nesting Habitat	Brood Habitat	Limited Use
Deep Hardland (CL)	77A,77B,77C	Uplands - Loamy	1	1000-2200		X	
Gyp (L/SiL)	77D,78B,78C	Uplands - Shallow	1	300-500		X	
Hardland Slopes (L)	77E	Alluvial Fans/Slopes	1	800-2200			X
High Lime (CL/L)	77B,77C,77D	Uplands - Loamy	1	800-1600		X	
Lakebed (C/CL)	77D,78B,78C	Enclosed Basins - Dry	1	1000-4000			X
Loamy (CL)	78B	Uplands - Loamy	1	1500-2400		X	
Playa ( C )	77A,77C	Enclosed Basins - Wet	1	1400-3300		X	X
Red Shale (SiCL)	70B	Uplands - Shallow	1	200-450		X	
Rough Breaks (L)	77E,78B	Breaks	1	600-1200		X	
Saline (CL)	78C	Enclosed Basins - Dry	1	400-1000			X
Shallow Clay (C)	78B,78C	Uplands - Shallow	1	600-2600		X	
Shallow Sandstone (FSL)	70B,78B,78C	Uplands - Shallow	1	600-1300		X	
Very Shallow (L/FSL)	77A,77C,77D,77E,78B,78C	Uplands - Shallow	1	600-1000		X	
Very Shallow Clay ( C )	78B,78C	Uplands - Shallow	1	400-1300		X	
Loamy Bottomland (SiL/L/CL)	77E,78B,78C	Bottomlands - Loamy	1	1600-8000			X
Sandy Bottomland (FSL/LFS)	70B,77B,77E,78B,78C	Bottomlands - Wet	1	1200-3000			X
Wet Bottomland (FSL/LFS)	77E,78B	Bottomlands - Wet	1	3000-9000			X
Wet Saline (CL/FSL/FS)	77C	Bottomlands - Wet	1	1100-1600			X
Bottomland	42.3	Broad Valleys/ Flood plains/Basins	1	2500-5000			X
Gravelly	42.3	Remnants/Piedmont/Fans/ Terraces	1	300-1000			X



Ecological Site Description	Major Land Resource Area (MLRA)	Landscape Description	LEPC Value (1-5 scale)	Production lbs/ac	Nesting Habitat	Brood Habitat	Limited Use
Gravelly (Desert Grassland)	42.3	Gravelly Alluvial Fans	1	200-400			X
Gyp Hills	42.3	Hills/Escarpments/Breaks	1	100-300			X
Gyp Upland	42.3	Valley Floors/Plains/ Piedmonts/ Relic Lakebeds	1	375-800			X
Igneous Hill & Mountain (Desert Grassland)	42.3	Rolling-Very Steep Hills/Mountains	1	600-1000			X
Limestone Hill & Mountain (Desert Grassland)	42.3	Limestone Hill/Mountain	1	555-740			X
Limestone Hills	42.3	Hills/Low Mountains-Footslopes	1	600-1400			X
Limy	42.3	Plains/Alluvial Fans/Fan Piedmont	1	500-1350			X
Loamy	42.3	Hill Slopes/Ridges/ Plains/Terraces	1	650-1200			X
Salt Flats	42.3	Terrace-Floodplains/Alluvial Flats/Fan Remnants	1	400-1100			X
Salt Meadow	42.3	Depressional Areas/Flood plains/Stream Terraces	1	1500-2500			X
Salty Bottomland	42.3	Alluvial fans/Flood plains/Stream terraces	1	1500-3000			X
Shallow	42.3	Knolls/Ridges/Hillslopes/ Alluvial fans/Escarpments	1	251-1800			X
Shallow Sandy	42.3	Plains/Alluvial fans/ Uplands/Fan piedmonts	1	600-1050			X
Sandstone Savanna	70B.1	Moderately Steep Canyon Walls/Hillsides/Mesa tops	1	400-1200			X
Swale	70B.1	Gently Sloping Swales/Playas/Drainages	1	1200-2800			X
Saline	70B.1	Large Enclosed Basins/Playas	1	600-2000			X

Ecological Site Description	Major Land Resource Area (MLRA)	Landscape Description	LEPC Value (1-5 scale)	Production lbs/ac	Nesting Habitat	Brood Habitat	Limited Use
Breaks north exposure	70B.1	Escarpment	1	600-1400			X
Breaks south exposure	70B.1	Escarpment	1	no chart			X
Shallow	70B.1	Plains	1	450-1400			X
Gravelly	70B.1	Plains	1	451-1451			X
Limy	70B.1	Mesas/Ridges/Fans of Broad Plains	1	500-1400			X
Gyp Hills	70B.1	Hills/Escarpments/Cliff's	1	251-600			X
Shallow Plains (cool)	70B.1	Shallow Sands	1	800-1570			X
Very Shallow	70B.1	Upland Plains/Mesas/Ridges	1	275-770			X
Shallow (cool)	70B.1	Upland Plains/Mesas/Ridges	1	384-1400			X
Wet Meadow	70B.1	Gently Sloping Depression/Stream Terraces	1	1860-3675			X
Breaks 12-18" PZ	70B.1	Steep Ridges/Knolls/Side Slopes	1	395-950			X
Clayey 12-18" PZ	70B.1	Plains	1	1030-2131			X
Clay Loam 12-18" PZ	70B.1	Footslope	1	815-1446			X
Red Shale 12-18" PZ	70B.1	Plains	1	510-875			X
Shallow Sandstone	70B.1	Drainages/Low Escarpments	1	440-775			X
Gyp Uplands	70B.1	Basins/Valley Floors-Terraces	1	351-900		X	
Deep Hardland 16-21" PZ	77C.2	Moderately Sloping Upland Plateau	1	1055-2215			X
Draw 16-21" PZ	77C.2	Valley Floors/Stream Floodplains	1	2765-4540			X
High Lime 16-21" PZ	77C.2	Gently Sloping/Strongly Sloping Calcareous	1	1500-1850			X

Ecological Site Description	Major Land Resource Area (MLRA)	Landscape Description	LEPC Value (1-5 scale)	Production lbs/ac	Nesting Habitat	Brood Habitat	Limited Use
Limy Upland 16-21" PZ	77C.2	Strongly Sloping Plains	1	1190-2030			X
Very Shallow 16-21" PZ	77C.2	Nearly Level/Gently Sloping Plains	1	650-1290			X
Wet Saline 16-12" PZ	77C.2	Bottomlands - Wet	1	1140-1621			X
Clay Loam 12-17: PZ	77D.1	Gently sloping plains	1	800-2000			X

\*\*MLRA = Major Land Resource Areas

## Appendix B - User's Manual for WAFWA LEPC Mitigation Framework

### Mitigation Framework Overview

Mitigation of development impacts starts with avoidance of impacts whenever possible, then engages BMP's to minimize impacts, and finally involves compensation of unavoidable impacts. Assurance that compensation is adequately addressing impacts depends on the quantification of impacts and the improvements produced through mitigation actions. This quantification requires a mitigation metric system that can ensure that equivalent biological compensation for the species has occurred.

The WAFWA Mitigation Framework has been developed and includes a metric system for quantifying impact units (debits) and mitigation units (credits). The metric system is designed to provide a science-based foundation upon which a compensatory offset program can be implemented for lesser prairie-chickens (LEPC). The metric system seeks to quantify impacts and to similarly measure conservation benefits achieved through mitigation actions. The metrics are designed to recognize that LEPC have habitat needs that are influenced at several scales and to recognize that LEPC populations and habitat vary annually with weather but can respond to favorable conditions relatively rapidly.

The mitigation metric system has the following characteristics:

- It evaluates impacts and mitigation at three scales: the evaluation site, the surrounding evaluation area, and the broader landscape (CHAT category) containing the evaluation site and area.
- Quantification of both impact and mitigation units is based on existing habitat quality, existing impacts, and the landscape context.
- Impact units are assessed one time at the initiation of development.
- Mitigation units are generated by protecting and maintaining LEPC habitat, improving the quality LEPC habitat, and by removing existing impacts and are earned annually.
- Vegetation sampling to document baseline habitat quality is required for both impacts and mitigation.
- Repeated vegetation monitoring for determination of habitat quality for mitigation units should occur at regular intervals specified in a management plan.

This document provides a description of the WAFWA Mitigation Framework and how to use the mitigation metrics to quantify impact units and mitigation units.

### *Initial Siting Tools*

The mitigation framework emphasizes and encourages actions that will maintain, improve, restore and protect large blocks of habitat in key locations and discourage development activities in these key locations. Multiple tools exist to assist with macro-siting to avoid and minimize impacts to LEPC. Key locations for LEPC are identified at a broad scale through the CHAT (<http://kars.ku.edu/geodata/maps/sgpchat/>) that identifies areas that are the most important for maintaining LEPC populations and the connectivity among these areas. The CHAT can be used at the broad scale to identify areas where development can occur with little or no impacts to LEPC as well as indicating those areas where development will need to pay increasing attention to potential impacts to

the species. Where development can be shifted to avoid the key locations, impacts are thus avoided or reduced. Additional tools which may assist with macro-siting include aerial photography such as Google earth, maps of ecological sites from the NRCS SSURGO site ([soils.usda.gov/survey/geography/ssurgo/](http://soils.usda.gov/survey/geography/ssurgo/)) that can help identify areas with higher LEPC habitat potential, land use/cover maps such as the gap analysis vegetation map ([gapanalysis.usgs.gov/](http://gapanalysis.usgs.gov/)) or the landfire vegetation map ([www.landfire.gov/library\\_maps.php](http://www.landfire.gov/library_maps.php)). For broad scale analyses, these maps can provide a good initial determination of potential impacts.

*Weightings of CHAT Categories for Impact and Mitigation*

The different CHAT categories receive different weightings for the cost or payment for impact and mitigation units, respectively. The weightings among the CHAT categories provide monetary incentives to locate developments outside of higher ranking categories as well as to encourage mitigation activities to occur in these higher categories. Table B1 identifies the CHAT weightings used in the WAFWA Mitigation Framework.

**The Mitigation Metric System**

The metric system is designed to evaluate the biological impacts to LEPC of a proposed or implemented development considering its direct and indirect effects and incorporating the three scales discussed above: the evaluation site, the surrounding evaluation area, and the CHAT category that contains the evaluation site. The metric system is designed to be rigorous and scientifically defensible, produce ecologically meaningful results for both impact and mitigation determinations, be flexible to support a number of potential conservation tools, yet be as simple to apply as possible.

Table B1. CHAT categories and their weightings for use in calculating costs and payments for impact units and mitigation units. EOR refers to the estimated occupied range, plus a 10 mile wide buffer around this range for population expansion. Leks refer to areas with known active leks. Maxent refers to areas identified through Maxent modeling as high value for their potential to provide quality LEPC habitat.

CHAT Category	CHAT Name	Multiplier
1	Focal area	2
2	Connectivity Zones	1.5
3	Maxent model areas	1.25
4	EOR+10	1
5	Outside EOR+10	0

The metric system operates by first determining the existing value (baseline score) of a site that may be the location for either a development activity or mitigation treatments. At each development or mitigation location, the existing vegetation conditions are mapped and delineated into homogeneous vegetation areas termed evaluation sites. Each evaluation site is then assessed using general

vegetation parameters to rate the conditions that are present and how these relate to nesting and brood habitat quality for LEPC. Each evaluation site is then assessed for its setting in terms of what is present in the surrounding evaluation area in terms of LEPC habitat. This assessment is done for a 1 mi radius from the centroid of the evaluation site. Based on the assessment of the vegetation conditions within the evaluation site and its surrounding evaluation area, a habitat score is determined for the evaluation site. The effects of existing impacts on the evaluation site are mapped and the impacted areas of the evaluation site removed for either impact or mitigation quantification. The habitat score times the unimpacted acres in the evaluation site determine the number of baseline habitat units for either impact or mitigation purposes.

### *Baseline Assessment Methods*

#### **Evaluation Site Habitat Variables**

Three habitat variables are used to quantify the vegetation conditions of an evaluation site.

Three variables quantify the existing vegetation conditions for an evaluation site:

1. **Vegetation Cover-** Total canopy cover of herbaceous and woody vegetation within the evaluation site.

A	Total plant cover is >45%	1.0
B	Total Plant cover is 30-45%	0.7
C	Total plant cover is 15-30%	0.4
D	Total plant cover is 5-15%	0.2
E	Total plant cover is <5%	0.0

2. **Vegetation Quality -** Relative cover of preferred native grasses and shrubs within the evaluation site. Relative cover of preferred species is the percentage of the total vegetation cover comprised of little bluestem, sideoats grama, big bluestem, indiagrass, sand bluestem, switchgrass, sand sagebrush, and sand shinnery oak.

A	>75% of vegetation is preferred species	1.0
B	50-75% of vegetation is preferred species	0.7
C	25-50% of vegetation is preferred species	0.4
D	< 25% of vegetation is preferred species	0.2
E	<5% of vegetation is preferred species	0.0

3. **Presence of Tall Woody Plants**

A	No woody plants >3ft tall in the evaluation site	1.0
B	Woody plants >3ft in height have a canopy cover of <1%	0.7
C	Woody plants >3ft in height have a canopy cover of 1-5%	0.4
D	Woody plants >3ft in height have a canopy cover >5%	0.0

The values assigned to each of these three variables are determined, and the evaluation site is assigned the value of the lowest score for the three variables. Each variable is considered to work independently in affecting the quality of the site as LEPC habitat, and the variable that has the lowest score will have the greatest limiting influence on the use of the site by LEPC, so that score is used.



However, the value of all three variables is recorded. If the conditions influencing the lowest score are changed, such as removal of trees, then the score of the site becomes the lowest remaining score of the 3 variables.

#### Evaluation Area

The vegetation value of an evaluation site is then considered in the context of the vegetation conditions that surround the evaluation site (the evaluation area). A 1 mi (1.6 km) radius from the centroid of the evaluation site is used to assess the surrounding evaluation area. This size area (2000 acres) is based on documented sizes of home ranges for LEPC. As discussed in the home range section of the Range-wide Plan, home ranges vary between less than 100 acres for some individuals to over 1,000 acres for others. Only 1 study reported home ranges larger than this, and this was for 3 immature males. Therefore, the 2000 acre area should evaluate the quality of an area for an individual (or multiple individuals) to meet their home range requirements. An evaluation site that is large enough may contribute most or all of this surrounding area. The evaluation area is assessed for the amount of area covered predominantly by preferred native grass or shrublands or that is planted to native tall warm season grasses. One small patch of even high quality vegetation (e.g., 80 acres of good vegetation) will not provide good habitat if it is surrounded by low quality conditions- the evaluation site would be too small to function well as LEPC habitat. By considering the amounts of potentially suitable vegetation in the evaluation area, the evaluation site will be weighted higher or lower in quality. The score of the evaluation area is then multiplied times the lowest score for the 3 variables of the evaluation site to produce the habitat score of the evaluation site, ranging from 0-1.

**Evaluation area:** Percent of Evaluation Area comprised of preferred species of native grasses (either in native rangelands or planted grasses). Do not include pastures, hayland, or CRP that is not composed primarily of native tall warm season grasses, or areas with >1% canopy cover of trees >3' tall.

A	>75% of area is in preferred vegetation	1.0
B	50 – 74% of area is in preferred vegetation	0.7
C	25 - 49 % of area is in preferred vegetation	0.4
D	5 – 24% of area is in preferred vegetation	0.2
E	<5% of area is in preferred vegetation	0.1

#### *Quantification of Existing Impacts*

Impacts from developments will be assessed both for their direct changes to LEPC habitat and to their indirect effects due to the presence of structures or human activities. Impacts from existing structures or activities will be determined and the baseline scores of evaluation sites reduced where existing impacts occur. Avoidance behavior impacts will be determined based on impact buffers placed around the impact. Buffer distances (Table B2) were recommended by the science team using their expert opinion and interpretation of the best available science (e.g., Hagen et al. 2010, 2011), acknowledging that many of these buffer distances lack good empirical data, and may need to be adjusted in the future if substantial new data become available. Impact units are quantified as the habitat score of an

evaluation site times the area directly impacted by a development or within an impact buffer around the development. Impact units will have a set price determined by the WAFWA Mitigation Framework that may be adjusted annually based on inflation or changes to costs of providing mitigation units.

Table B2. Impact buffers for human structures and disturbances.

Type of Impact	Buffer distance feet (meters)
Oil and gas pads	650 (200)
Wind farms and towers	2165 (667)
Transmission lines >69 kV	1300 (400)
Distribution lines	33 (10)
Tall vertical structures (>200 ft)	2165 (667)
Secondary roads	215 (67)
Primary roads	1625 (500)
Commercial buildings*	2165 (667)
Residential buildings (houses)	430 (133)
Private roads (ranch roads, etc.)	33 (10)

\*includes compressor stations

### *Generation of Mitigation Units*

Generation of mitigation units requires enrolling a property into a management agreement with WAFWA for a minimum duration of 5 years. The property will have a management plan developed by a WAFWA approved technical service provider that meets the specifications of such plans as described at the end of this manual, and mitigation units are earned annually for each year of the agreement as long as the specifications of the management plan are followed. Mitigation units for rangelands enrolled in a mitigation agreement will have a set price that will be paid for the duration of the agreement but that may be annually adjusted by the WAFWA Mitigation Framework based on inflation or changes in costs of practices required for mitigation units.

Mitigation units may be generated in three primary ways:

1. Mitigation units will be earned for the existing unimpacted habitat units within each evaluation site managed according to the approved management plan for LEPC habitat for each year that the site is under a WAFWA LEPC management agreement. The habitat score of the site times the area of the site is the basis for determining these mitigation units.
2. Mitigation units can be increased by improvements to the vegetation conditions from the treatments specified in the LEPC management plan that result in an increase in the habitat score of an evaluation site. Evaluation site habitat scores are also influenced by the quality of the evaluation area, so changes to the amounts of preferred native vegetation or planted tall warm season grasses in the surrounding area can change scores for an evaluation site. The ability of

the owner of the evaluation site to control the surrounding evaluation area or enter into agreements with neighbors to maintain the quality of the evaluation area should be considered when entering into a WAFWA mitigation agreement.

3. Mitigation units can be generated by removing an existing impact. The number of habitat units present in an evaluation site is decreased by the impact buffer applied around existing structures or developments. If an existing impact is removed, such as removing an oil well, then the habitat units under the impact buffer will be released from this impact and counted as mitigation units. Mitigation units created by the removal of existing developments will accrue to either the landowner or an identified party to be credited with the reclamation work for the duration of a mitigation agreement entered into for that property.

Mitigation units can also be generated in two additional ways through implementation of conservation practices that are exceptions to the above mitigation generation system.

Restoration of bare ground or similar sites through seeding of an approved mix of native grasses and forbs will receive 1 mitigation unit for each acre planted, and will receive a payment specified for this practice that will be different than the price of the rangeland mitigation unit identified above. Each mitigation unit in the restoration practice category is considered to be the ecological equivalent of an impact unit or a rangeland mitigation unit. Maintenance of existing planted native grass pastures also falls under the restoration practice category, but will have a different price than sites that have been seeded.

A site requiring substantial tree removal or mesquite control through an approved brush management treatment will also receive 1 mitigation unit for each acre fully treated according to brush removal standards at a price specified for this practice.

To qualify for restoration, planted grass, or tree/brush removal mitigation units, an evaluation site must be entered into a WAFWA mitigation agreement of at least 10 years in length.

Entering into a mitigation agreement will earn a landowner an initial signing bonus equal to the habitat units in an evaluation site times the proportional length of the agreement, where a 30 year agreement would earn 30%, a 10 year agreement 10%, and a 5 year agreement 5% of the baseline habitat units.

The above criteria apply to the short term market for mitigation units. Mitigation units earned in the permanent LEPC management market will be quantified in the same manner however the price for these units will be different as determined by this market. A fixed price for each permanent mitigation unit will be paid at the time of the initiation of the mitigation agreement. Initial signing bonuses do not apply to permanent mitigation units.

#### *Vegetation Monitoring in Mitigation Units*

Vegetation monitoring is required as part of the impact/mitigation tracking system. The vegetation monitoring required for the NRCS LPCI program is the minimum vegetation sampling required for mitigation monitoring. More detailed monitoring including detailed species compositions, vegetation heights, and similar measures of a site are encouraged but not required. The LEPC management plan

for a property entered into a mitigation agreement will specify the sampling design to be used and the number of monitoring plots within and across the various evaluation sites to be sampled. The frequency of sampling can be specified in the plan, but any changes to mitigation units being earned on an evaluation site (changes to the baseline score) must be documented through data generated through the vegetation sampling included in the management plan.

#### *Equivalency in Habitat Scores and Impact/Mitigation Duration*

Mitigation units must be generated from sites that have an evaluation site habitat score equal to or greater than the evaluation site score of the impact site. In this way, impacts to 100 acres of high quality habitat cannot be replaced by maintaining a large area (1000 acres) of low quality habitat (0.1). This expectation is included so that impacts to high quality habitat that may be a source area for population expansions are not mitigated with a much larger amount of low quality habitat that may function as population sinks during years with poor weather conditions or other factors.

Where possible, impacts of specified durations should be matched with mitigation of a similar duration. Thus, developments that are expected to be permanent changes are desired to be offset by mitigation that is permanent. Temporary impacts can be offset by temporary mitigation, but the mitigation should be designed to maintain mitigation unit production for the life of the development. Thus, front end loading (generating lots of mitigation units in a short timeframe) cannot offset a longer term impact.

#### *Service Area*

The ecoregion where impact units are generated is the service area where mitigation units must be created to offset the impacts (see ecoregion map, Figure 2 in the Range-wide plan).

#### *Minimum Sizes of Properties for Generation of Mitigation Units*

The minimum size of a property to include in generation of mitigation units is 160 acres for either one landowner or an aggregate of landowners working together.

### **Example of Metrics Calculation**

Figure B1 depicts an example ranch of approximately 7,600 acres in size running a cow-calf operation. This ranch supports potentially high quality habitat for LEPC, so is likely in a higher CHAT category. We will assume it is in a focal area. Impact or mitigation determinations will require property maps such as shown in this example.

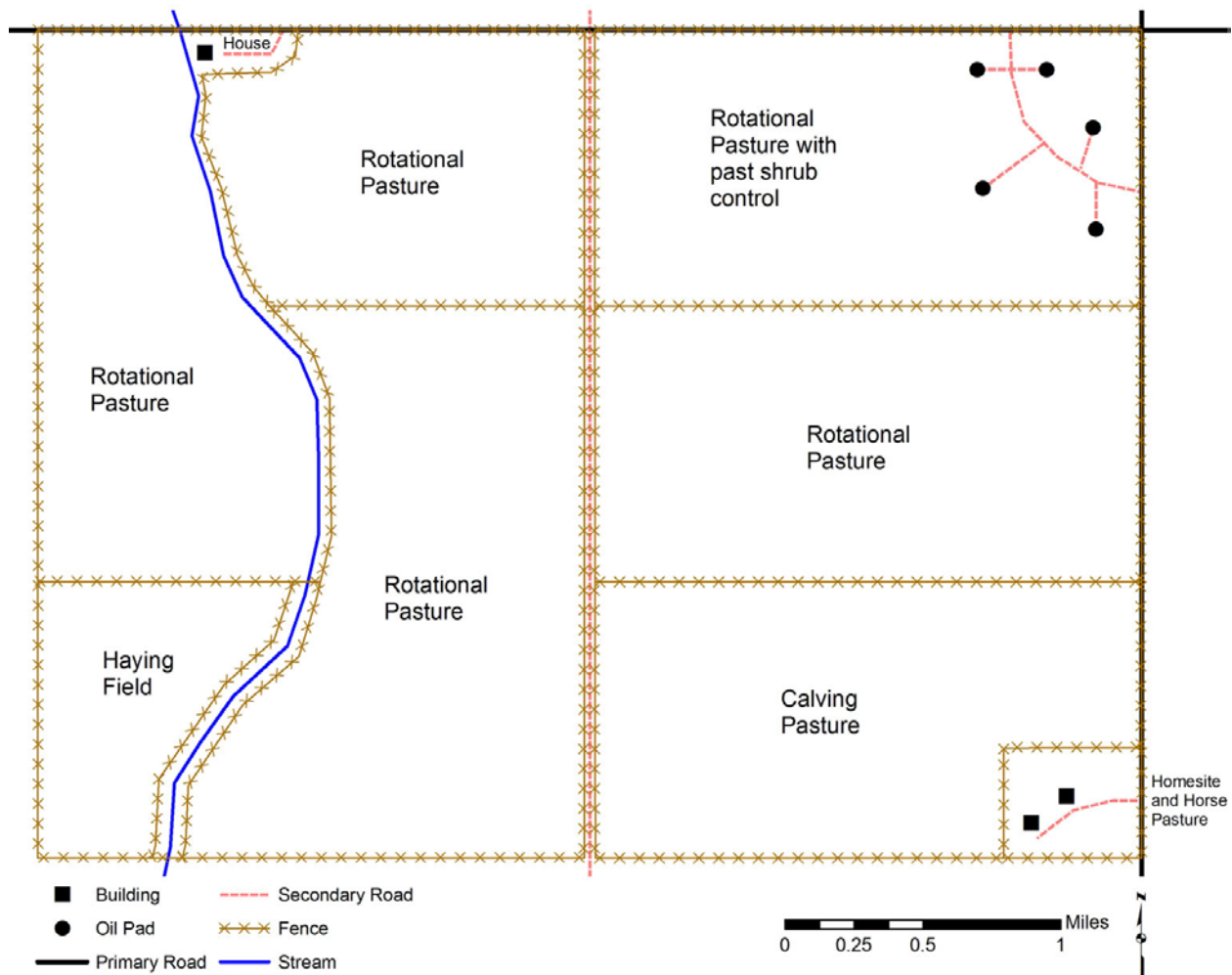


Figure B1. Map of the Chicken Ranch for demonstration of impact unit and mitigation unit calculations.

The property is then mapped for its existing vegetation conditions and determination of evaluation sites. Each evaluation site consists of a homogeneous vegetation condition. Figure B2 depicts an evaluation site map for the example ranch. The existing impacts (anthropogenic structures) are mapped and an impact buffer applied around each according to the distances in Table B2. The number of acres in each evaluation site is reduced by the number of impacted acres. Figure B2 shows a mapping of existing structures and their buffers.

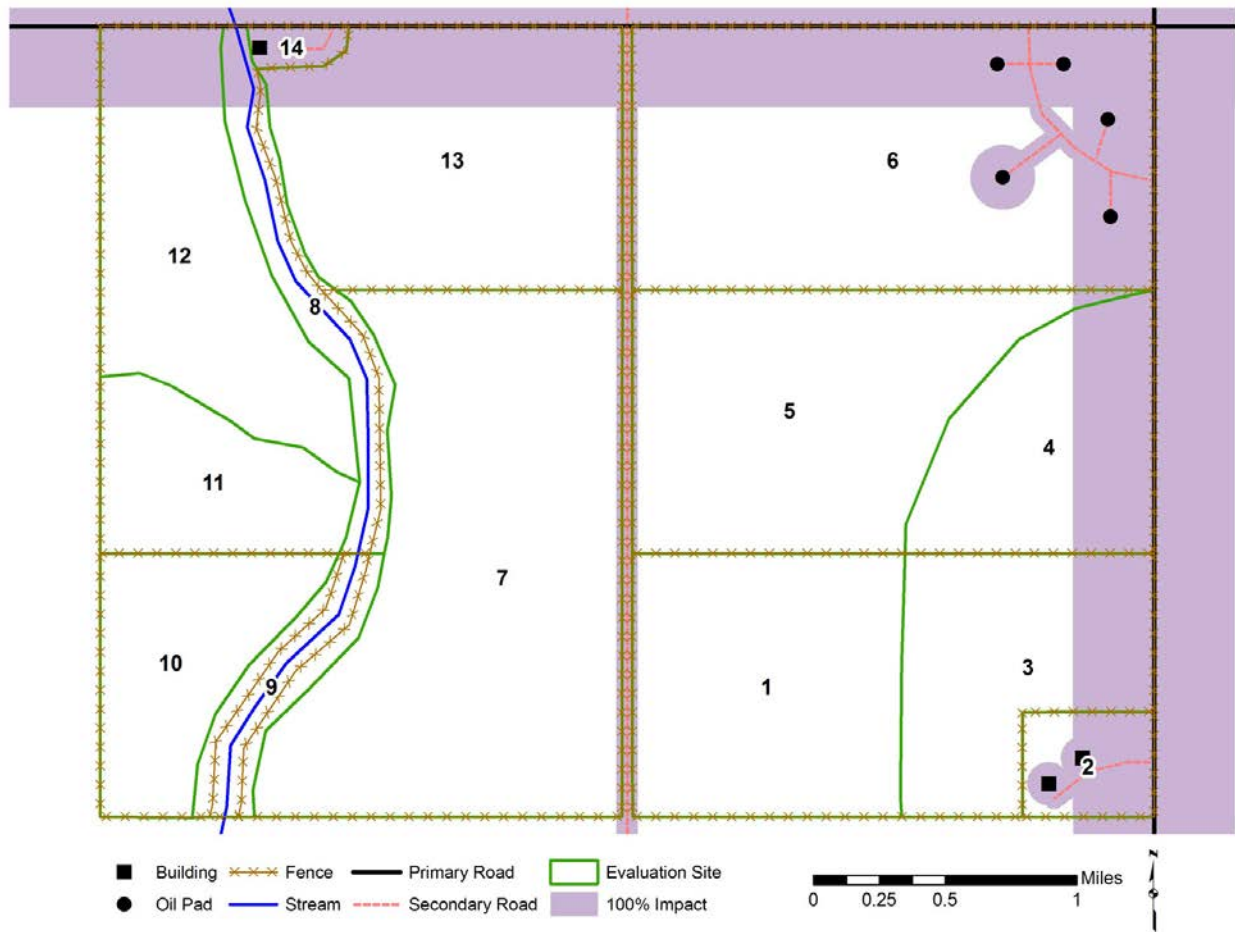


Figure B2. Map depicting evaluation sites (1-14) that are areas of homogeneous vegetation and also showing impact buffers for existing structures on the example Chicken Ranch.

### Baseline Condition Assessment

#### *Evaluation site vegetation assessment*

Each evaluation site is assessed for its current condition. The three vegetation variables (total vegetation canopy cover, relative cover of preferred species of vegetation, and amount of tree cover) are determined for the evaluation site. A landowner or natural resource professional could make a quick determination of the general value of an evaluation site for these 3 variables. For actual impact unit or mitigation unit calculation, vegetation plots would be established and sampled that would provide data to document the existing conditions.

In this example, this ranch is located in an area without any trees other than in the lowland area, so this variable would have a 1.0 value for all of the upland evaluation sites. The lowland area does not support suitable vegetation and has a 0 value for variable 2. All of the upland evaluation sites in this



example are considered to be in good vegetative condition, and thus all have >45% total canopy cover of vegetation- getting a 1.0 score for this variable. The composition of preferred species in this example does vary across the evaluation sites. The calving pasture (evaluation sites 1 and 3) has received consistent moderate to high grazing levels each year during calving season because this pasture is close to the homestead and thus facilitates the checking of the animals during this time. Consequently the level of preferred vegetation is lower in both of these sites, but especially in site 3 where the ecological site is deep hardland and supports larger amounts of blue grama, buffalo grass, and other less preferred species for LEPC. Both of these sites receive a score of 0.4 for this vegetation variable. Evaluation site 4, while on a better grazing regime, has a higher percentage of less preferred species because of its underlying ecological site, receiving a score of 0.4 for the relative cover. Sites 5, 7, and 13 all have high percentages of preferred species and receive scores of 1.0. Site 6 has been chemically treated in the past for reduction of sand sagebrush and reduced the relative cover of preferred species to a value of 0.7. The hayfield (site 10) receives a score of 0.0 because of its composition of non-native grasses, while sites 11 and 12 receive 0.7 scores for their composition of species. Site 2, the homestead and horse pasture receives a 0.4 for composition, and site 14 receives a 0 as it is a disturbed area around a barn and holding site. In this way, each site receives scores for each of the 3 vegetation variables, and the variable for each site with the lowest score becomes the vegetation score for that site (Table B3).

Table B3. Calculation of evaluation site values and determination of existing baseline habitat units.

Eval. Site	Site acres	Unimpacted Acres	Site Var. 1*	Site Var. 2*	Site Var. 3*	Min. Value**	Eval. Area Var.	Habitat score***	Base Habitat units****
1	655	642	1	0.4	1	0.4	1	0.4	257
2	128	31	1	0.4	1	0.4	0.7	0.3	9
3	485	367	1	0.4	1	0.4	1	0.4	147
4	449	259	1	0.4	1	0.4	1	0.4	104
5	820	799	1	1	1	1	1	1	799
6	1269	685	1	0.7	1	0.7	1	0.7	480
7	1329	1302	1	1	1	1	1	1	1302
8	209	184	1	0	0	0	1	0	0
9	160	160	1	0	0	0	1	0	0
10	360	361	1	0	1	0.7	1	0	0
11	313	313	1	0.7	1	0.7	1	0.7	219
12	602	511	1	0.7	1	0.7	1	0.7	358
13	797	549	1	1	1	1	1	1	549
14	35	0	0	0	0	0	1	0	0
Totals	7611								4224

\*Site variables are the 3 vegetation variables for an evaluation site.

\*\*Minimum value is the lowest value of the 3 vegetation variables for an evaluation site.

\*\*\*Habitat score is the minimum value of the 3 site variables X the evaluation area variable.

\*\*\*\*Habitat units are the unimpacted site acres X the habitat score.

### *Evaluation Area assessment*

Each site is then assessed relative to the surrounding evaluation area (2000 acres from the centroid of the site (Figure B3). The percentage of the area in preferred native grass/shrubland or planted tall, native warm season grasses determines the evaluation area score.

Each evaluation site is similarly assessed for the surrounding area that the site occurs within. For this example ranch, while the conditions on the lands bordering this ranch are not shown, the evaluation areas depicted all show a high percentage of desirable conditions.

### *Baseline habitat score calculation*

The minimum vegetation score for each of the 3 vegetation variables for an evaluation site is multiplied times the evaluation area score to calculate the habitat score of the evaluation site. The habitat score times the number of unimpacted acres in the evaluation site determines the number of baseline habitat units. (Table B3). The equation for this calculation is:

$$\begin{aligned} \text{Habitat score} &= (\text{Minimum score of vegetation variable 1, 2, or 3}) \times \text{Evaluation area score} \\ \text{Baseline habitat units} &= \text{Unimpacted acres in evaluation site} \times \text{Habitat score} \end{aligned}$$

### *Baseline assessment summary*

In this way, the current conditions for the example Chicken Ranch are evaluated for LEPC habitat. The 7,611 acre ranch is estimated to currently have 4,224 LEPC habitat units taking into account the current vegetation conditions and existing anthropogenic structures and activities on the ranch. This baseline condition is then considered in calculations of impact units or mitigation units if the ranch is used for either development or mitigation purposes.

### **Impact Unit Calculation**

Calculation of impacts units is a fairly simple process based on the baseline conditions. New impacts are mapped and their impact buffers applied. The existing habitat score under each impact buffer times the impacted acres determines the impact units.

Figure B4 shows a hypothetical addition of a new transmission line placed along the existing primary road as well as 6 new oil pads. Table B4 lists the impacts associated with this site.

This scenario shows how impacts can be avoided and minimized by placing new impacts adjacent to existing impacts. The transmission line placed along the primary road on the north side of the property added relative few new impact units. The new oil pads that weren't adjacent to the existing oil pads or to the roads added 160 impact units to evaluation sites 4 and 5 and 6. Figure B5 shows a hypothetical addition of a new transmission line across the Chicken Ranch, not placing it along an existing primary road, as well as the 6 new oil wells. Table B5 lists the resulting generation of impact units associated with these new developments. In this scenario, the transmission line placed through unimpacted areas generated 1,072 new impact units, demonstrating the different level of impacts associated with going through unimpacted high quality habitat.

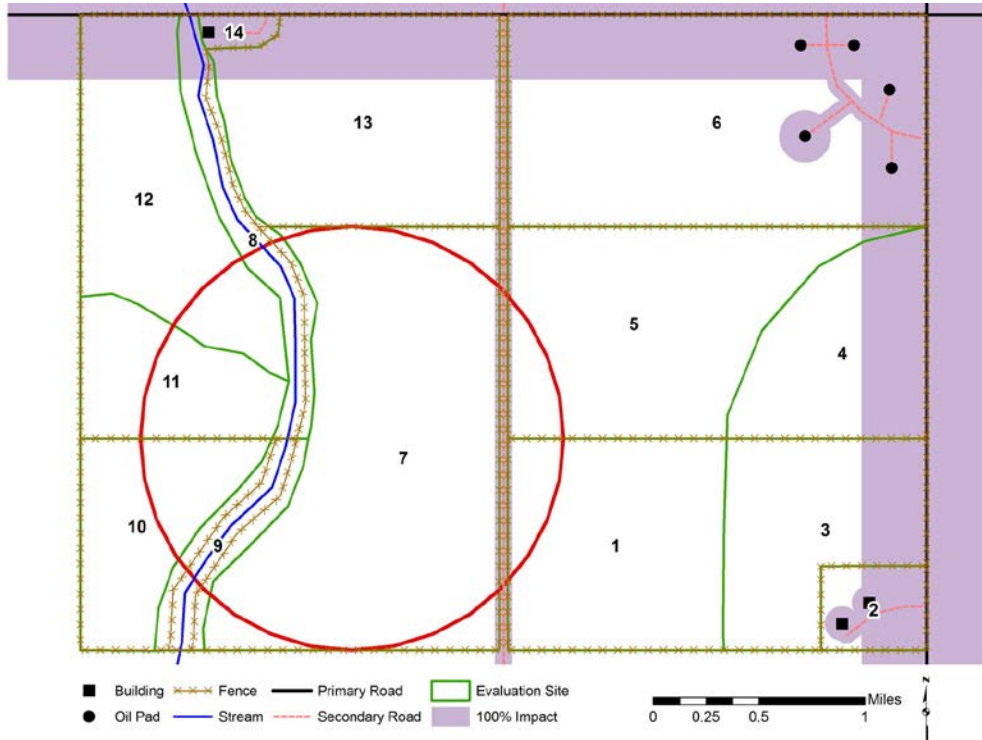


Figure B3. Map of the evaluation area for evaluation site 7. This evaluation area has >75% native grass/shrubland so would be scored a 1 for this variable.

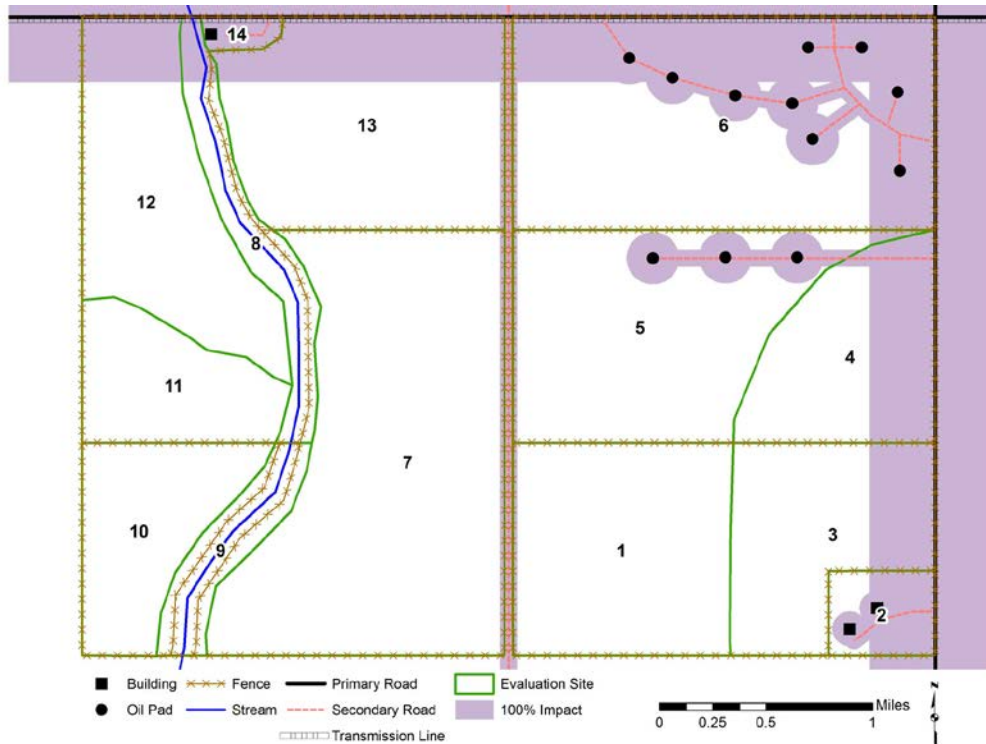


Figure B4. Example of impact buffers from a new transmission line placed across Chicken Ranch adjacent to an existing primary road, as well as the addition of 6 new oil wells to the ranch.

Table B4. Calculation of impact units from the transmission line and oil pads displayed in Figure B4 and B5.

Evaluation Site	New Impacted Acres Scenario 1	New Impacted Acres Scenario 2	Habitat Score	New Impact Units Scenario 1	New Impact Units Scenario 2
1	0	315	0.4	0	126
2	0	24	0.3	0	7
3	0	168	0.4	0	67
4	5	5	0.4	2	2
5	108	108	1	108	108
6	72	72	0.7	50	50
7	0	872	1	0	872
8	0	26	0	0	0
9	0	79	0	0	0
10	0	137	0	0	0
11	0	0	0.7	0	0
12	0	0	0.7	0	0
13	0	0	1	0	0
14	0	0	0	0	0
<b>Total</b>	<b>180</b>	<b>1806</b>		<b>160</b>	<b>1232</b>

### Generation of Mitigation Units

Mitigation units are generated based by entering into a WAFWA management agreement managing evaluation sites according to the specifications in a WAFWA approved management plan. The baseline habitat score (or adjusted habitat score as habitat conditions improve) is awarded times the number of unimpacted acres in each evaluation site managed specifically for LEPC under the LEPC management plan for each year that the site is included in a mitigation agreement.

Management that results in improvements to the habitat score for the evaluation site will result in additional mitigation units being earned for every year that the improved site conditions remain in a WAFWA mitigation agreement. Changes to the evaluation area will also affect the habitat score, so improvements in the amounts of surrounding area in native grass and shrublands or native CRP can increase the generation of mitigation units from an evaluation site. Changes to the evaluation area could also cause a decrease in the score of an evaluation site, so this potential should be considered in working on properties that may be quite small and not have any control over the area surrounding an evaluation site. Finally, mitigation units will be generated by removing and restoring existing impacts.

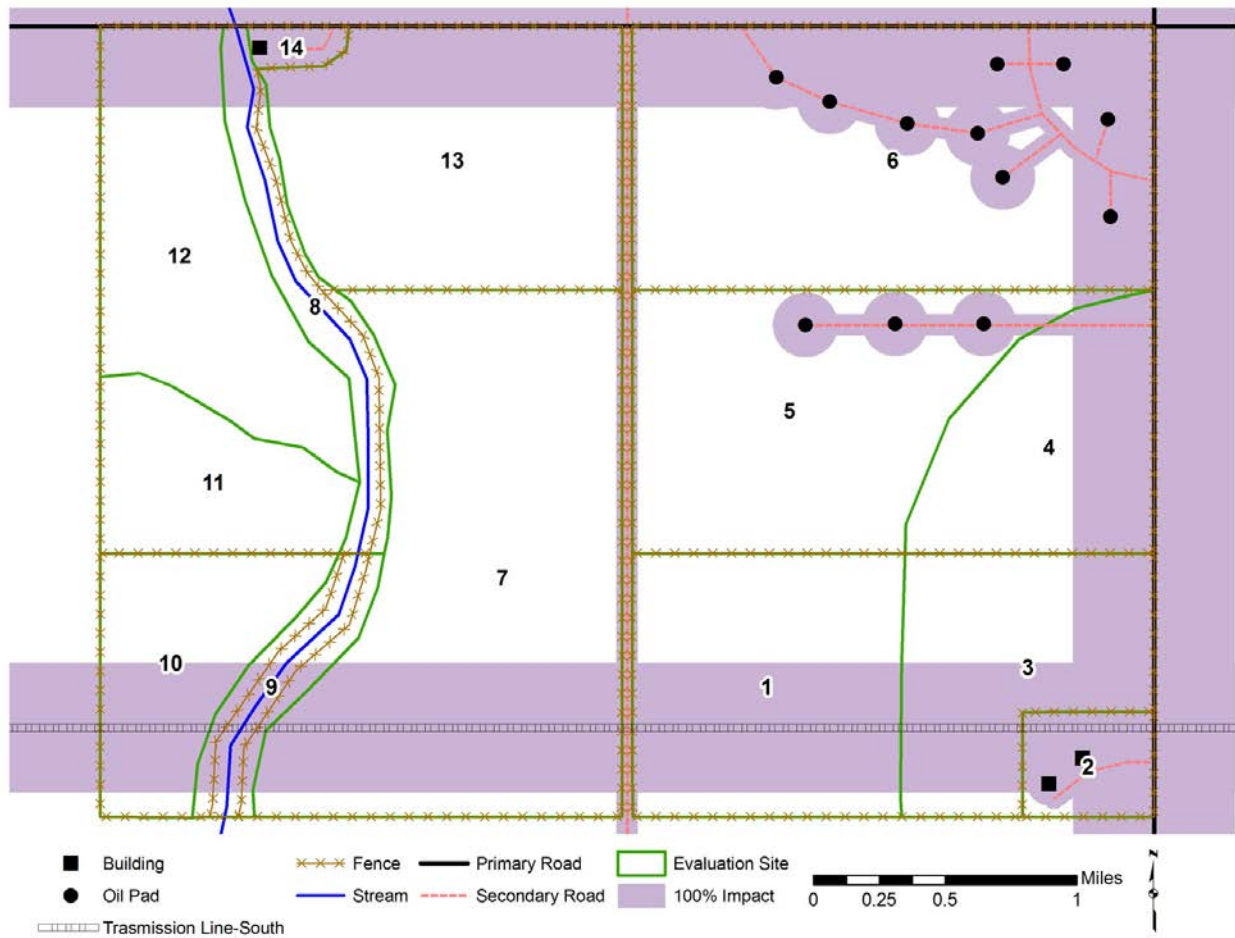


Figure B5. Example of impact buffers associated with a new transmission line across the southern part of the Chicken Ranch in relative un-impacted high quality habitat and the addition of 6 new oil wells.

The removal of an impact removes its impact buffer. The habitat score of the acres falling under impact buffers would be released from this impact reduction with the removal of the impact. If the property is enrolled in a mitigation agreement, then these evaluation sites can begin generating mitigation units for the duration of the mitigation agreement.

Each property enrolled in a WAFWA mitigation agreement will have an LEPC management plan prepared for that property by WAFWA approved technical service providers. The management plan will identify the desired conditions for the property, the management practices that must be applied, and the temporal components of their application to move the property towards the desired condition. It is understood that not every acre of a property will contribute to LEPC habitat or be able to be managed to maximize LEPC habitat quality, but for enrollment in a mitigation agreement for generation of mitigation units, the property must meet the required standards of an LEPC management plan and be able to make an appropriate contribution towards the goals of the location of the property relative to a CHAT category. If the property is within a focal area, it should be able to contribute to the goal of restoring

or maintaining at least 70% of the focal area in good to high quality LEPC habitat. Management plans must factor in other landowner needs and objectives, but if these are inconsistent with the mitigation planning guidelines or general landscape goals, then this property might be better qualified for an LEPC habitat incentive program rather than the WAFWA mitigation framework.

#### *Mitigation Unit Generation Example*

If the example Chicken Ranch was interested in generating LEPC mitigation units, it would enter into a WAFWA mitigation agreement. The rancher could have increased flexibility in his cow-calf operation through the income produced from the payment for mitigation units, but the ranch could still remain a working cow-calf operation. While the rancher may enroll the entire property into the program, s/he may keep evaluation sites 2 and 14 out as operational areas that are already impacted by homes and other activities. The rancher may keep evaluation site 10 out as a continuing hayfield, and may put up a fence between evaluation site 1 and 3 and keep site 3 as a calving pasture that would not be adhering to a prescribed grazing plan that would maximize LEPC habitat. The rest of the property could be managed to maintain and improve LEPC habitat while still providing for the cow-calf operation with a likely reduction in the number of animals maintained in order to meet the habitat goals for LEPC. Table B5 shows the mitigation units that would be generated from the Chicken Ranch, not counting additional units that might be generated as habitat quality for several of the evaluation sites would increase with application of practices according to the LEPC management plan.

Table B5 shows how the Chicken Ranch will generate 4,068 mitigation units/year based on its initial habitat conditions. As habitat conditions of some of the evaluation sites increase, this number would increase accordingly.

#### **Example Valuation of Impact Units and Mitigation Units**

In the example of the Chicken Ranch, the rancher could generate 4,068 mitigation units each year by enrolling the ranch into a WAFWA mitigation agreement and following the required actions specified in a WAFWA approved management plan. If the rancher entered into a 10 year agreement, s/he would be in the short term market. If the base value for a rangeland mitigation unit was \$30, then for the Chicken Ranch, being in a focal area (CHAT category 1), this would double this amount to \$60 per unit. As a sign-up bonus, the rancher would receive a payment of 10% of the baseline units, or \$24,408. At the end of each year, the rancher would receive a payment for the number of mitigation units generated. After year one, if no improvements to habitat scores occurred, the rancher would receive payment for 4,068 mitigation units or \$244,080. As habitat scores increased, the number of mitigation units generated would also increase. This scenario represents a high value mitigation site, having high quality habitat located in a focal area.

If the base value of a mitigation unit was \$30, the base value or an impact unit might be \$1,000, factoring in the addition of the inflation cost, the administration costs, the additional costs of special practices and permanent mitigation units, and the 20 multiplier. Each impact unit would be doubled to generate the 2:1 mitigation ratio for number of mitigation units produced. For impact scenario 1



Table B5. Example of mitigation unit generation from Chicken Ranch. Each mitigation unit is the habitat score of an evaluation site in each year it is enrolled in a mitigation agreement and has adhered to the WAFWA approved management plan times the unimpacted acres in the evaluation site. Rows in red are evaluation sites not included because they are being used for other landowner management purposes.

Evaluation Site	Acres	Unimpacted acres	Habitat Score	Annual Mitigation Units
1	655	642	0.4	257
2	128	31	0.3	0
3	485	367	0.4	0
4	449	259	0.4	104
5	820	799	1.0	799
6	1269	685	0.7	480
7	1329	1302	1.0	1302
8	209	184	0	0
9	160	160	0	0
10	360	361	0	0
11	313	313	0.7	219
12	602	511	0.7	358
13	797	549	1.0	549
14	35	0	0	0
<b>Totals</b>	<b>7611</b>			<b>4,068</b>

described above, there would be no cost to the transmission line placed along existing impacts, while the 6 new wells would generate 320 impact units with a onetime cost of \$320,000, or \$,53,333/well. If, as in this case, the development site was in a focal area, the cost would double. In scenario 2, the cost of the wells is the same, but the cost of the transmission line, going across several miles of high quality habitat within a focal area would generate 2,144 impact units and cost \$4,288,000 versus \$2,144,000 if placed in CHAT category 4. This scenario demonstrates the merits of avoiding both higher value CHAT categories and higher quality habitat and clustering developments around existing or other new developments when siting developments.

### LEPC Mitigation Agreements and Management Plan Guidelines

Each property earning mitigation units under WAFWA's mitigation framework must enter into a mitigation agreement. The minimum duration of the agreement will be 5 years. The agreement will specify the properties included in the mitigation credit program, duration of the agreement, penalties for any default in the agreement, reporting requirements, monitoring requirements including rights of WAFWA personnel or representatives to visit the property for monitoring purposes with due notice,

ability of landowner to control conflicting land uses, and procedures required for making any changes or adjustments to the agreement. Properties enrolled in a mitigation agreement must be at least 160 acres in size in one contiguous block. Multiple property owners can combine properties into one agreement, but it will be considered one property from an administrative standpoint.

Each property enrolled in a mitigation agreement must have as part of that agreement a LEPC management plan developed for the property by a LEPC plan provider approved by WAFWA. The management plan should use the following outline and describe in sufficient detail the various plan components.

A description of the property should be part of the plan including owner(s), legal description, existing land uses, structures or other developments, and pertinent information on past land uses or practices.

Maps of the property should be provided including:

- Property boundaries, buildings, roads, streams, terrain, and other physical features
- Ecological sites on and around the property
- Evaluation sites (areas with a similar ecological site, current vegetation conditions, and management capabilities. Evaluation sites must be at least 20 acres in size or the smaller patches should be aggregated into 20 acre units).
- Existing vegetation conditions (may be included with evaluation site map)
- Existing impacts and impact buffers
- Lek locations, if present and known
- Existing fences and any marking on existing fences

Each management plan should include pertinent data to be collected or compiled including:

- Vegetation data from permanent vegetation plots placed within each evaluation site generating mitigation units or impact units
- Acreage of each evaluation site and the amount of this acreage within each evaluation site included in existing impact buffers
- Baseline value of each evaluation site vegetation variables
- Baseline value of evaluation area rating for each evaluation site, and acreage estimates of surrounding land uses to support the evaluation area rating
- Ecological site rating for each evaluation site from LEPC ecological site tables
- Description of optimum nesting and brood habitat that could be provided for each evaluation site (desired species composition and structure based on the ESD for that site)

The management plan should evaluate the quality of each evaluation site as nesting or brood habitat, and identify the desired changes from existing vegetation conditions to desired vegetation conditions. The plan should indicate the specific management practices that should be applied to each evaluation site, and any temporal considerations in the application of these practices. A general timeline for application of practices should be included, recognizing that contingencies may occur due to weather patterns or unforeseen circumstances and identifying a course of action should these occur.

The management plan should identify how each evaluation site will fit into an overall plan to enhance and maintain optimum nesting habitat on 2/3 to 3/4 of the property, and maintain ¼ to 1/3 of the property in well dispersed brood habitat. In native grass/shrublands on ecological sites with high scores for LEPC, a temporal arrangement of nesting and brood habitat using prescribed fire, grazing, or other practices as appropriate is preferred. On lower quality ecological sites or where temporally variable LEPC habitat needs cannot be met, management practices that maintain a designated condition may be applied. Small properties may be managed to provide a mix of nesting or brood habitat, or the management plan provider may determine that the highest value of the property may be in just nesting or brood habitat, depending on the conditions in the evaluation area.

Management practices to be considered in the plan include prescribed grazing, prescribed burning including establishment of firebreaks, prescribed use of herbicides for thinning of sand shinnery oak or control of mesquite, prescribed use of herbicides for control of invasive or exotic species, water developments but only where these developments are deemed necessary to provide water sources or habitat diversity for LEPC habitat, fence removal or marking, fence construction but only where this construction is deemed necessary to produce specified improvements to LEPC habitat quality, planting of preferred species of native grasses, forbs and shrubs, interseeding of preferred species of native grasses, forbs and shrubs, brush management to control eastern redcedar or mesquite, and removal of existing structures or other existing impacts.

A vegetation sampling schedule should be identified with repeat sampling of the baseline plots occurring at a minimum at year 3, 5, 10 and every 5 years following. The vegetation monitoring will at a minimum meet the standards for vegetation sampling specified for the mitigation framework. If grazing is a component of the management plan, an approved set of grazing exclosures (10' X 10' area with a minimum 4-wire fence excluding livestock use) will be established.

The management plan will identify the various land uses being conducted on the property, and acknowledge the land uses that are incorporated into the LEPC management plan. The plan should specify that any new land uses not incorporated into the plan will need to be added into the plan by an approved LEPC plan provider.

Management plan standards:

- Properties earning credits within focal areas must enhance and maintain LEPC habitat quality to its maximum potential on a minimum of 70% of its available acreage.
- Properties earning credits within connectivity zones must enhance and maintain LEPC habitat quality to its maximum potential on a minimum of 40% of its available acreage.
- Properties enrolled in other CHAT categories must include a sufficient number of desired practices applied across a sufficient percentage of the property's acreage to make substantial contributions to LEPC habitat for that locale.
- All practices must be applied according to the practice standards specified for the LEPC mitigation framework.
- All changes to plan content must be incorporated by an approved plan provider.

Compensation for mitigation units earned in the short-term market according to the LEPC management plan will be paid to landowners each year that they have an active agreement in place with WAFWA or an approved sub-permittee, and have followed all of the agreed practices and conditions of the mitigation agreement and LEPC management plan. An initial signing bonus will be paid based on the duration of the signed agreement of the existing LEPC habitat value of evaluation sites included in the LEPC management plan. For example, a 5 year agreement will receive 5% of the existing habitat value while a 30 year agreement will receive 30% of the existing habitat value.

Only those evaluation sites that are included in the LEPC management plan and are following all of the appropriate management practices for that site as specified in the plan will earn credits. Areas under existing impacts (e.g., homesites), have reduced value as LEPC habitat according to the metric system, and receive no score for these areas. Areas within a property may be excluded from mitigation credit generation. For example a calving pasture that will not be managed according to the LEPC grazing standards will not receive mitigation units, but does not disqualify the remaining evaluation sites on the property from receiving credits as long as the overall plan meets the standards set for that locale.

### **LEPC Grazing Guidelines**

Two of the most commonly recommended and applied practices within the range-wide distribution of LEPC are prescribed burning and prescribed livestock grazing. While these practices are compatible, liability concerns significantly limit the application of prescribed burning across the range. Because of this limitation, the importance of grazing according to LEPC standards is intensified. For the purposes of this plan we are striving to provide optimum LEPC habitat that can be produced for a specific ecological site within an ecoregion. Each ecoregion or ecological site might need a different grazing prescription but should provide similar habitat components. Grazing is an important tool that can influence both nesting and brood rearing habitat.

LEPC grazing plans applied under the WAFWA Mitigation Framework and designed to generate mitigation units must follow standards designed to produce optimum LEPC habitat conditions, as described in the LEPC Range-wide Plan. This includes restoring, enhancing, or maintaining nesting habitat with optimal structure for LEPC, including residual cover remaining from the previous year. Providing optimal brood habitat is another important habitat need which requires producing adequate cover of forbs that in turn is associated with higher insect abundances.

Vavra (2005) stated that large pastures, common in the semiarid West, commonly display patchiness from grazing use. This gradient may go from ungrazed to >60% use. This allows for a variety of LEPC habitats; heavier grazed areas produce more forbs and may provide brood-rearing or lekking habitat while lighter grazed areas maintain more grass structure providing nesting cover. Even so, Holecheck et al. (1982) and others have cautioned that LEPC nesting habitat is sensitive to livestock grazing especially during drought. To ensure LEPC habitat is maintained and environmental factors such as drought are prepared for, a detailed LEPC grazing plan should be developed specific to an individual ranch that can increase the productivity of desirable plant species, increase the diversity of the habitat by providing the needed structure of the vegetation.

### Characteristics of LEPC nest sites

As rainfall patterns, growing season length and soil type varies across the range, so do predominate vegetation cover types. Because of these variations, LEPC nesting habitat varies across the range. The range-wide plan described nesting habitat for LEPC, and identified the importance of having good grass cover of sufficient height to provide the nesting structure desired by LEPC. Riley (1992) found successful nests in a shinnery oak grassland in New Mexico in bluestem clumps with a greater composition of sand bluestem around successful nests than unsuccessful nests. Plants surrounding successful nests averaged 26.2 inches, plants surrounding unsuccessful nests averaged 13.7 inches. In sand sagebrush dominated rangelands in Kansas, Pittman et al. (2006) took vegetative measurements at 130 LEPC nests. Sand sagebrush height at the nest averaged 17.2 inches, forb height averaged 6.4 inches and grass height averaged 7.6 inches. Sagebrush cover was 15.2 percent, forb cover was 8.4 percent, grass cover was 37.2 percent and bare ground cover was 37.8 percent. Finally, in sand sage/sand dropseed rangelands of Colorado, Giesen (1994) took vegetative measurements from 29 nests between 1986 and 1990. Sand sagebrush height at the nest averaged 18.7 inches, forb height averaged 8.3 inches and grass height averaged 14.2 inches. Sagebrush cover was 7.2 percent, forb cover was 1.4 percent, grass cover was 29.4 percent and bare ground cover was 69.5 percent.

To adjust for the varying nesting habitat conditions found range-wide, NRCS ecological site descriptions (ESD) should be used to determine the dominant grass species desired by LEPC for each ecological site when developing grazing management plans specific to LEPC. Comprehensive grazing management plans should provide the producer with a contingency strategy in case of prolonged drought to ensure that suitable nesting cover (height and density) is available the following nesting season.

### Continuous or Season-long Grazing

Continuous grazing can sustain LEPC populations when using light stocking rates. This strategy will provide patches of more heavily grazed conditions, patches with moderately grazed conditions, and lightly/ungrazed patches within a grazing unit, as cattle do not graze uniformly (Elmore et al. 2009). To promote diversity, a patch burn system can be used; cattle will be attracted to the new growth associated with recently burned acres. It is important to note that continuous grazing with an absence of prescribed fire is unlikely to maintain optimum LEPC habitat over time as juniper encroachment or other changes to the vegetation will eventually occur on most sites (Elmore et al. 2009). Grazing alone will not control this encroachment.

When grazing during the growing season, stocking rates will specify that no more than 33% of the current year's growth will be removed (including trampling and other species use) so that adequate nesting cover remains the following year. When grazing rangeland during the dormant season, for nesting habitat, sufficient residual cover must be left and be available for the next nesting season. Kansas NRCS recommended no more than 65% by weight of the current year's total growth be removed. They recommended the minimum residual herbage levels for ecological sites historically dominated by shortgrass species are 300 to 500 pounds per acre, 750 to 1,000 pounds per acre for ecological sites historically dominated by midgrass species and 1,200 to 1,500 pounds per acre for ecological sites historically dominated by tallgrass species.

### Rotational Grazing

Rotational grazing is a common practice throughout LEPC range. A popular rotational strategy includes “four pasture three herd” where 3 pastures are grazed and one pasture receives rest or deferment every year. “Rotational grazing systems for cattle have been promoted to mimic historical grazing patterns by large herbivores such as bison and elk. However, since there were no fences and wild animals moved freely to graze the highest quality forage, this idea is incomplete (Elmore et al. 2009).” While rotational grazing can create heterogeneous structure, it is important that pasture size is large enough that grasses are not uniformly grazed, and that pasture design allows for habitat interspersion. Regardless, stocking rate should be the emphasis such that appropriate structure and composition exists for LEPC. Additionally, excessive cross fencing only increases the probability of fence strikes and under appropriate stocking rates should not be necessary in most cases. This does not imply that fence construction should never be a tool for LEPC. Maintaining grasslands is of the utmost importance, thus some level of fencing is necessary to implement an appropriate LEPC grazing plan.

While some rotational grazing systems can provide suitable habitat for LEPC, high intensity/short duration cell grazing is not recommended as an LEPC grazing system. With high intensity grazing, grass heights are typically uniform, providing little structural diversity. Short duration grazing, as it is commonly practiced with multiple paddocks and frequent moves, will not provide the landscape diversity necessary for healthy LEPC populations” (Elmore et al. 2009).

### Deferred Grazing

Deferment can be an appropriate LEPC grazing practice. While deferment may be the best LEPC solution, especially during or following drought, vegetative disturbance is necessary for maintaining brood habitat. Extended periods of deferment could reduce the availability of brood habitat.

Because of the extent of the LEPC range, crossing multiple ecotypes, the variation in operator size and scope and varying histories of use, detailed “site specific” grazing plans should be developed for all landowners interested in LEPC management.

Deferment following fire should not be the default. Assuming adequate cover exists in close proximity to a burned area, deferment may not be recommended for LEPC management. Cattle will selectively graze on the burned areas creating a mosaic of habitat. Under some conditions, deferment may be desirable. This would include pastures where future burns were not planned and thus cattle concentration may persist on the burned area for many years.

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### **Prescribed Burning Guidelines for LEPC**

The Southern Great Plains has a long fire history. Multiple research studies have shown native vegetation responds favorably to fire and many wildlife species have adapted to regular vegetative disturbance. Like other prairie grouse, LEPC can benefit from well-planned prescribed burns. When conducted properly, prescribed burns can increase bare ground and forb density and maintain low-growing woody cover as well as native grass stands.

While prescribed burning is not applied as frequently or intensely as prescribed grazing within the estimated occupied range (EOR), this management tool can be used to alter habitat structure to increase and/or improve LEPC lekking, brood-rearing and nesting habitat on different temporal scales.

#### **Lekking Habitat**

Though leks are not considered a limiting factor, late winter and early spring burns can increase or maintain existing lek sites. Prescribed burns can effectively remove standing vegetation and produce the sparse, low growing grasses and increases visibility preferred by displaying males. When conducted prior to LEPC mating season, prescribed burning can effectively improve LEPC lekking habitat.

An example of prescribed burning increasing and improving lek sites was documented by Cannon and Knopf (1979). After an April 1978 burn, 12 birds abandoned a lek in an unburned little bluestem/sand shinnery rangeland to establish a new lek of 12 males and reoccupy a historic lek of six birds within the nearby burned units. Researchers concluded the greater number of birds displaying on the post burned area probably included previously non-territorial males located within the surrounding habitats.

Because nesting cover is often more of a limiting habitat factor than lek sites, managers should ensure no more than 50% of a property is burned in one year, unless the property is small and such a treatment is recommended as part of an LEPC management plan. Generally, no more than ¼ to 1/3 of a property should be burned in a year to provide the optimum mix of nesting and brood habitat (Hagen et al. in review).

### Brood-Rearing Habitat

Prescribed burning can also be used to increase forb production and density. When burns are conducted in late summer, fall, and winter, Bidwell et. al. (2009) stated this “higher proportion of forbs can act as a natural food plot”.

Boyd (2011) found that brood-rearing habitat could benefit from prescribed burning up to two years following a burn. Warm- and cool-season forb coverage increased during the first year post fire and grasshopper density increased during the first and second years post fire. Season of fire affected forb response, with warm-season forb coverage doubling in winter burned areas and tripling in fall or spring burned areas. Cool-season forbs saw the largest increase after fall burning (1,200 percent increase) but still increased 200 percent with winter or spring burning (Boyd 2011). Grasshopper density was also affected by season of burning, but densities within burned areas remained higher than densities within unburned areas regardless of burn season.

Travel corridors and forage availability for both LEPC chicks and adults are improved following a well-planned prescribed burn. “Increased bare ground associated with burning improves access to seeds and insects at ground level” (Boyd 2011).

### Nesting Habitat

The adverse impacts of prescribed burning on nesting habitat are primarily limited to the first 1-2 years post burn. As Bidwell et al. (2009) stated, “burning in any season will remove last-year’s growth and nesting habitat.” Bidwell et. al. also stated that the spatial connection of burned and unburned areas around the lek is significant.

Boyd (2011) found visual obstruction within the first 13 inches and percentage of overhead cover was inadequate for preferred LEPC nest locations the first year post fire. However, “by the second growing season post-fire, cover of nesting grasses was similar between burned and unburned areas” (Boyd 2011).

Because vegetation types, fuel loads, topography and climatic conditions vary across the LEPC range, burn plans will need to be tailored to each ecoregion and each ecological site. Similarly, fire return intervals may vary across the range. Managers should assess the results of previously conducted prescribed burns and the LEPC habitat objectives of the management unit to determine the appropriate return interval as frequency of burn has the most vegetative impact.

The Kansas NRCS Construction Specifications for Prescribed Burning acknowledge that prescribed burning is only one tool in an overall management plan. In many cases, prescribed burning can complement prescribed grazing. Bidwell et al. (2009) suggested the “right combination of fire and grazing at the landscape level provides the best potential to reverse the decline of LEPC’s.” Patch burning will alter grazing patterns and can be used to rotationally graze large pastures with few if any fences. When combining prescribed burning and grazing in LEPC management, care should be taken that all habitat requirements are met. Additionally, managers may need to alter stocking rates to ensure fuel loads are sufficient for scheduled prescribed burns.

The Kansas NRCS Construction Specifications for Prescribed Burning also offers recommendations for firebreak specifications, suggested climatic conditions for the burn and other considerations before conducting a prescribed burn. NRCS personnel can provide landowners with a “fillable” template prescribed burn plan. It is recommended landowners seek assistance from a qualified professional to ensure all components of a prescribed burn plan are met and that the ignition plan is sound.

### **Guidelines for Prescribed Herbicides for LEPC Habitat Improvement**

Herbicides are an effective, economical and efficient method for controlling brush and weeds that encroach into LEPC habitat. The practice of controlling shinnery oak and honey mesquite (*Prosopis glandulosa* Torr.) invasion within LEPC habitats is beneficial to the species by restoring the native plant communities and by removal of non-native, tall, vertical trees and shrubs. Removing the vertical structures reduces this limiting habitat factor, decreases predation, and restores the health of the grassland. While shinnery oak is a beneficial habitat component for the lesser prairie chicken, suitability significantly decreases when the grass and forb component are reduced and when woody cover dominates the site at >60% average cover. When taller (> 5 ft tall), tree-like formations (oak mottes) develop such as post oak or shin oak hybrids, or when mesquite invades the grassland, habitat quality decreases. In cases where shrubs dominate the plant composition and out-compete the grasses and forbs, suitability can be enhanced through this practice by increasing the plant community diversity and complexity of the site.

The following are guidelines for treating sand shinnery oak, mesquite, and herbaceous weeds in LEPC occupied range:

1. Herbicides should only be used when habitat goals cannot be achieved by other means, including grazing system management.
2. Correctly identify the plant species and evaluate the need for control.
3. Consider the expected benefits and costs of herbicide and alternative control practices, as well as alternative uses of funds.
4. Select and purchase the appropriate herbicide for the plant species.
5. Provide and require proper safety equipment.
6. Calibrate spray equipment to correctly apply the desired rate.
7. Mix herbicides in a well-ventilated area, preferably outside.
8. Spray under conditions that minimize drift.
9. Read and follow instructions on the label.
10. Keep a record of the herbicide used, time of application, weather conditions, rate of herbicide applied, date, location and applicator.
11. No herbicide treatments should be applied in dune complexes (NRCS sand hills ecological sites) and corridors between dune complexes.
12. An application buffer around dune complexes of 100 m should be maintained to ensure dune stability.
13. Where LEPC habitat overlaps with Dune Sagebrush Lizard habitat, a 500m buffer around dune complexes should be maintained and spraying should be prohibited in dune complexes or within corridors which connect dune complexes that are within 2000m of each other.

14. All applications of herbicide should be done by a licensed applicator and in accordance with state law.
15. For shinnery oak the goal is to temporarily reduce competition with grasses, allowing grass cover to increase naturally. Herbicides must be used at dosages that would defoliate shinnery oak, not kill it. Aerial applied 0.5 pounds of active ingredient Tebuthiuron is the appropriate rate for LEPC habitat management.
16. Large block and linear application of herbicides should be avoided. Application should follow the natural patterns on the landscape such that only patches needing treatment are treated.
17. For LEPC, herbicide treatment should not be applied around large oak motts.
18. Post-treatment grazing management is essential to success. Grazing should be deferred year round through at least two growing seasons after treatment. If vegetation response to treatment has been hindered due to drought or other factors additional deferments to ensure success of the treatment may be required. A post-treatment grazing management plan should be implemented to maintain a mosaic of habitats (nesting, brood-rearing, fall and winter).
19. No herbicide treatments should be applied during the LEPC breeding and nesting season (March 1 – July 15).
20. No more than 50 percent of the suitable LEPC habitat on an individual management unit should be treated during a two year period. This will reduce the impacts on forb production, loss of winter forage resources, and risk and uncertainty due to climatic factors.
21. Once grasses are re-established consider implementing a fire management plan to maintain a balance between shrubs and grasses.

Individual plant treatments are best suited for controlling thin stands of brush (usually less than 150 plants/acre) and for selective control. Broadcast treatments are useful for dense stands of target weed(s).

APPENDIX C. NRCS CONSERVATION PRACTICES

Prescribed Grazing (2010-2012) in Lesser Prairie-Chicken Initiative Action Area

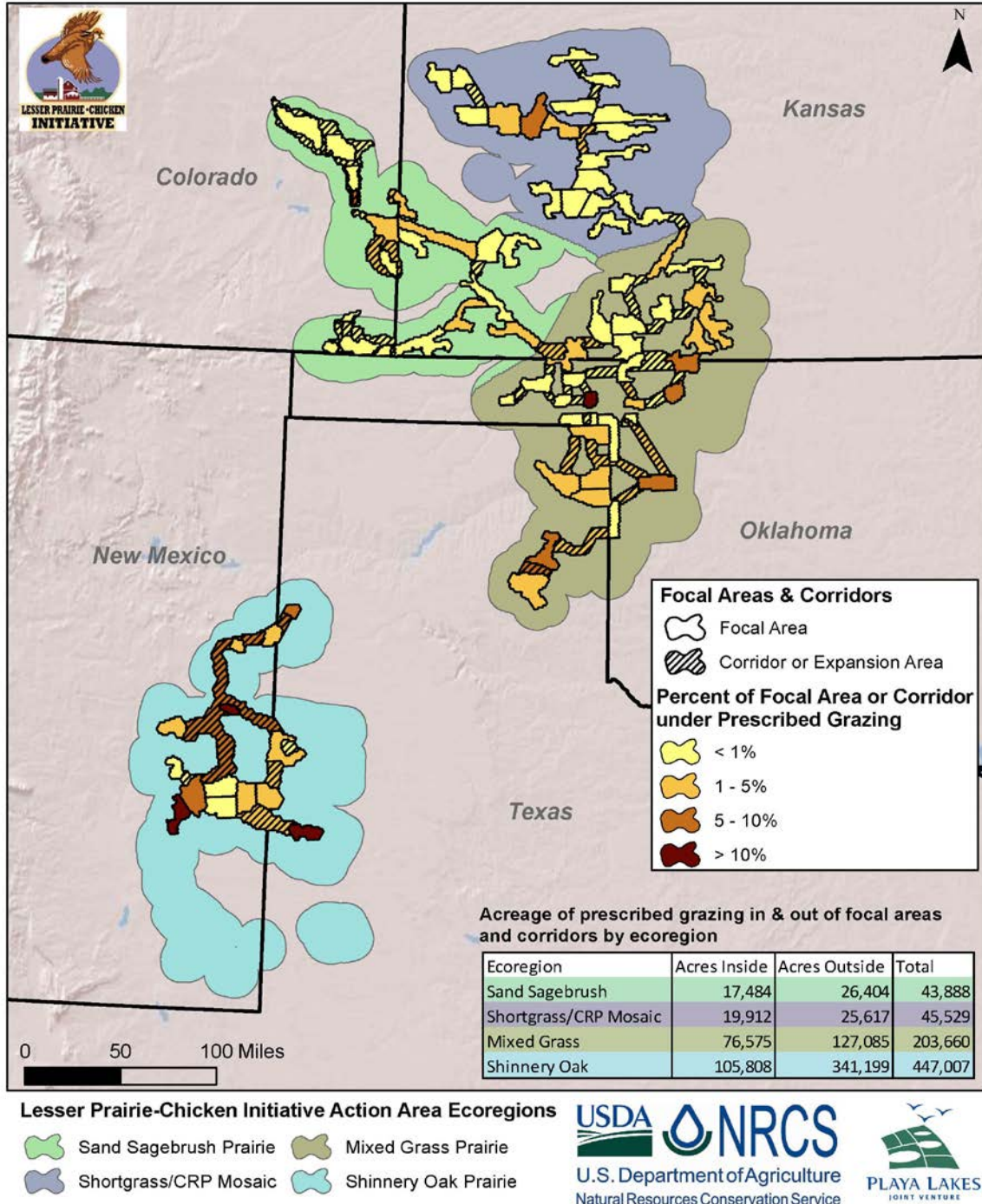


Figure C-1. NRCS conservation practice (528) Prescribed grazing implemented through all programs in LEPC Focal and Connectivity Zones, 2010-2012.



### Upland Wildlife Habitat Management (2010-2012) in Lesser Prairie-Chicken Initiative Action Area

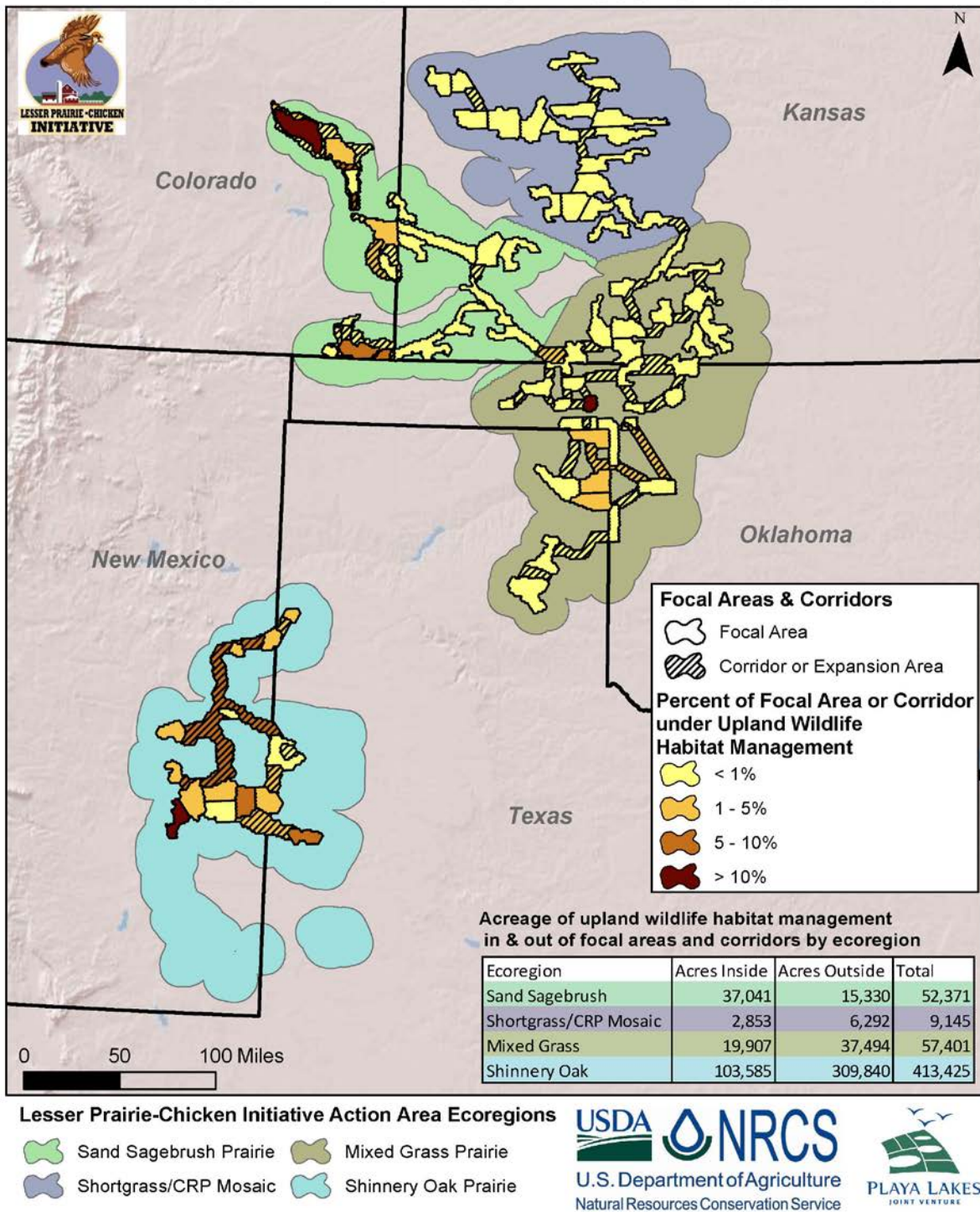
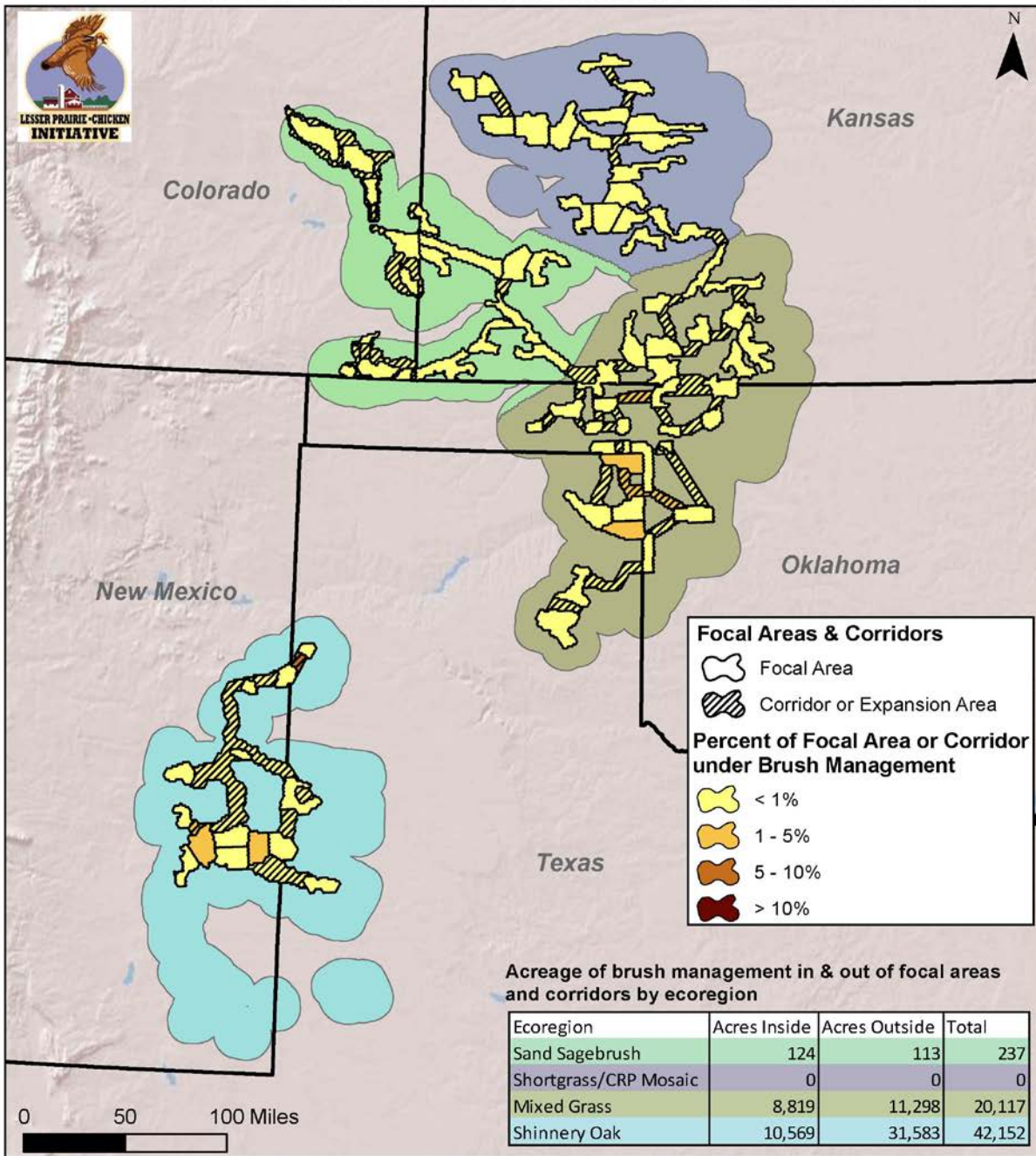


Figure C-2. NRCS conservation practice (645) Upland Wildlife Habitat implemented through all programs in LEPC Focal and Connectivity Zones, 2010-2012.



### Brush Management (2010-2012) in Lesser Prairie-Chicken Initiative Action Area



**Lesser Prairie-Chicken Initiative Action Area Ecoregions**

- Sand Sagebrush Prairie
- Mixed Grass Prairie
- Shortgrass/CRP Mosaic
- Shinnery Oak Prairie



Figure C-3. NRCS conservation practice (314) Brush Management implemented through all programs in LEPC Focal and Connectivity Zones, 2010-2012.

### Conservation Reserve Program (CRP) in Lesser Prairie-Chicken Initiative Action Area



Figure C-4. CRP acreage across all conservation practices in LEPC Focal and Connectivity Zones, 2011.

Table C-1. NRCS Conservation practices applied across LPCI but within focal areas (FA) and connectivity zones (CZ), within the Mixed Grass Ecoregion 2010-2012

		NRCS Conservation Practice <sup>a</sup>						
Area Type	Area ID	314 (ac.)	338 (ac.)	500 (objects)	528 (ac.)	550 (ac.)	643 (ac.)	645 (ac.)
FA	10	0	0	0	0	0	0	0
FA	11	0	0	0	0	0	0	0
FA	12	0	0	0	0	0	0	0
FA	13A	242	0	0	584	0	0	0
FA	13B	1,270	0	0	0	0	0	0
FA	13C	0	0	0	0	0	0	0
FA	13D	0	0	0	967	0	0	0
FA	14	0	0	0	0	0	0	0
FA	15	0	0	0	0	0	0	0
FA	16A	264	0	0	0	0	0	0
FA	16B	0	0	0	0	0	0	0
FA	16C	822	0	0	0	189	0	0
FA	17	0	0	0	0	0	0	0
FA	18	0	0	0	0	0	0	0
FA	19	0	0	0	0	0	0	0
FA	20	0	0	0	0	0	0	0
FA	21	0	0	0	0	0	0	0
FA	22	0	0	0	0	0	0	0
FA	23	0	0	0	0	0	0	0
FA	24	0	0	0	0	0	0	0
FA	27	0	0	0	0	0	0	65
FA	28A	0	0	0	0	0	0	0
FA	28B	0	0	0	0	0	0	0
FA	28C	0	0	0	0	0	0	0
FA	28D	0	0	0	0	0	0	0
FA	29A	0	0	0	82	0	0	0
FA	29B	0	0	0	1,811	0	0	17
FA	29C	0	0	0	1,083	0	0	0
FA	29D	138	1,156	0	0	0	0	0
FA	30	0	0	0	0	0	0	0
FA	33A	200	1,268	0	2,042	0	0	0
FA	33B	0	0	0	43	0	0	0
CZ	106	0	0	0	0	0	0	0
CZ	107	0	0	0	225	0	0	0
CZ	108	0	0	0	0	0	0	0
CZ	109	616	0	0	0	0	0	0
CZ	110	0	0	0	0	0	0	0
CZ	111	71	0	0	2,065	0	0	1,618
CZ	112	0	0	0	0	0	0	0
CZ	113	0	0	0	0	0	0	0
CZ	114	0	0	0	0	0	0	0
CZ	115	0	0	0	0	0	0	0
CZ	116	0	0	0	0	0	0	0
CZ	117	0	0	0	0	0	0	0
CZ	118	0	0	0	0	0	0	0
CZ	119	0	0	0	0	0	0	0

NRCS Conservation Practice <sup>a</sup>								
Area Type	Area ID	314 (ac.)	338 (ac.)	500 (objects)	528 (ac.)	550 (ac.)	643 (ac.)	645 (ac.)
CZ	120	0	0	0	0	0	0	0
CZ	121	419	0	0	0	0	0	0
CZ	122	0	0	0	0	0	0	0
CZ	123	0	0	0	0	0	0	0
CZ	126	0	0	0	0	0	0	0
CZ	128	0	0	0	0	0	0	0
CZ	130	54	0	0	0	0	0	0
CZ	132	0	153	0	195	0	0	0
CZ	133	0	0	0	0	0	0	0
CZ	134	0	0	0	249	0	0	0
Within Priority	N/A	4,096	2,577	0	9,345	189	0	1,700
Remaining EOR	N/A	2,636	526	0	5,092	0	0	4,006
Ecoregion Total	N/A	6,732	3,103	0	14,437	189	0	5,706

<sup>a</sup> 314 = brush management, 338 = prescribed burning, 500 = obstruction removal, 528 = prescribed grazing, 550 = range planting, 643 = restoration of rare and declining habitats, 645= upland wildlife habitat management

Table C-2. NRCS Conservation practices applied across LPCI but within focal areas (FA), expansion areas (EX) and connectivity zones (CZ), within the Sand Sagebrush Ecoregion 2010-2012

NRCS Conservation Practice <sup>a</sup>								
Area Type	Area ID	314 (ac.)	338 (ac.)	500 (objects)	528 (ac.)	550 (ac.)	643 (ac.)	645 (ac.)
FA	25	0	0	0	0	0	0	0
FA	26	0	0	0	0	0	0	0
FA	31A	0	0	2	0	0	0	6,336
FA	31B	0	0	0	0	0	0	0
FA	31C	0	0	0	0	0	0	0
FA	31D	0	0	0	0	0	0	0
FA	31E	0	0	0	499	0	0	0
FA	32	0	0	0	0	0	0	0
FA	35A	0	0	0	0	0	0	0
FA	35B	0	0	0	0	0	0	0
FA	35C	0	0	0	0	0	0	0
FA	35D	0	0	0	0	0	0	0
FA	35E	0	0	0	0	0	0	0
FA	35F	0	0	0	0	0	0	0
FA	36	0	0	0	0	0	0	0
FA	38	0	0	2	0	0	0	1,318
FA	40	0	0	0	0	0	0	4,225
EX	200	0	0	0	0	0	0	0
EX	201	0	0	0	0	0	0	0
EX	202	0	0	0	0	0	0	0
EX	203	0	0	0	0	0	0	0
EX	204	0	0	0	0	0	0	1,465
EX	205	0	0	0	0	0	0	0
EX	206	0	0	0	0	0	0	0



NRCS Conservation Practice <sup>a</sup>								
Area Type	Area ID	314 (ac.)	338 (ac.)	500 (objects)	528 (ac.)	550 (ac.)	643 (ac.)	645 (ac.)
EX	207	0	0	0	0	0	0	0
EX	208	0	0	0	0	0	0	0
EX	209	0	0	0	0	0	0	0
EX	210	0	0	0	0	0	0	0
EX	211	0	0	0	0	0	0	0
EX	212	0	0	0	0	0	0	0
EX	213	0	0	0	0	0	0	0
EX	214	0	0	0	0	0	0	0
EX	215	0	0	0	0	0	0	0
EX	216	0	0	0	0	0	0	640
EX	217	0	0	0	0	0	0	0
EX	218	0	0	0	0	0	0	844
CZ	124	0	0	0	0	0	0	0
CZ	125	0	0	0	0	0	0	0
CZ	127	0	0	0	0	0	0	0
CZ	129	0	0	0	0	0	0	0
CZ	131	0	0	0	0	0	0	0
CZ	135	0	0	0	0	0	0	0
CZ	136	0	0	0	0	0	0	0
CZ	138	0	0	0	0	0	0	0
CZ	139	0	0	0	0	0	0	0
CZ	140	0	0	0	0	0	0	1,732
CZ	142	0	0	0	0	0	0	495
Within Priority	N/A	0	0	4	499	0	0	17,054
Remaining EOR	N/A	0	0	0	10,956	0	0	6,215
Ecoregion Total	N/A	0	0	4	11,455	0	0	23,269

<sup>a</sup> 314 = brush management, 338 = prescribed burning, 500 = obstruction removal, 528 = prescribed grazing, 550 = range planting, 643 = restoration of rare and declining habitats, 645= upland wildlife habitat management

Table C-3. NRCS Conservation practices applied across LPCI but within focal areas (FA) and connectivity zones (CZ), within the CRP-Shortgrass Ecoregion 2010-2012

Area Type	Area ID	NRCS Conservation Practice <sup>a</sup>						
		314 (ac.)	338 (ac.)	500 (objects)	528 (ac.)	550 (ac.)	643 (ac.)	645 (ac.)
FA	34	0	0	0	155	0	0	0
FA	37A	0	0	0	451	0	0	0
FA	37B	0	0	0	0	0	0	0
FA	37C	0	0	0	0	0	0	0
FA	37D	0	0	0	0	0	0	0
FA	37E	0	0	0	874	0	0	0
FA	37F	0	0	0	0	0	0	0
FA	39A	0	0	0	0	0	0	0
FA	39B	0	0	0	44	0	0	0
FA	39C	0	0	0	0	0	0	0
FA	41A	0	0	0	0	0	0	0
FA	41B	0	0	0	0	0	0	0
FA	41C	0	0	0	3,024	0	0	0
FA	41D	0	0	0	17	0	0	0
FA	42	0	0	0	0	0	0	0
FA	43A	0	0	0	0	0	0	0
FA	43B	0	0	0	0	0	0	0
FA	44	0	0	0	0	0	0	0
CZ	137	0	0	0	0	0	0	0
CZ	141	0	0	0	0	0	0	0
CZ	143	0	0	0	79	0	0	0
CZ	144	0	0	0	0	0	0	0
CZ	145	0	0	0	0	0	0	0
Within Priority	N/A	0	0	0	4,644	0	0	0
Remaining EOR	N/A	0	0	0	2,572	0	0	0
Ecoregion Total	N/A	0	0	0	7,216	0	0	0

<sup>a</sup> 314 = brush management, 338 = prescribed burning, 500 = obstruction removal, 528 = prescribed grazing, 550 = range planting, 643 = restoration of rare and declining habitats, 645= upland wildlife habitat management



Table C-4. NRCS Conservation practices applied across LPCI but within focal areas (FA) and connectivity zones (CZ), within the Shinnery Oak Ecoregion 2010-2012

Area Type	Area ID	NRCS Conservation Practice <sup>a</sup>						
		314 (ac.)	338 (ac.)	500 (objects)	528 (ac.)	550 (ac.)	643 (ac.)	645 (ac.)
FA	1	0	0	0	0	0	0	0
FA	2A	169	0	0	0	0	684	0
FA	2B	2,176	0	1	0	0	0	3,895
FA	2C	645	0	22	0	0	0	582
FA	2D	10	0	0	0	0	0	2,054
FA	2E	0	0	0	0	0	0	0
FA	2F	0	0	0	0	0	0	0
FA	3	0	0	0	0	0	0	0
FA	4	0	0	0	0	0	0	0
FA	5	0	0	0	0	0	0	0
FA	6	0	0	0	0	0	0	0
FA	7	0	0	0	0	0	0	0
FA	8	330	0	0	0	0	0	0
FA	9	0	0	0	949	0	0	0
CZ	100	1,300	0	0	0	0	938	1,236
CZ	101	859	0	0	0	0	0	1,973
CZ	102	0	0	0	0	0	0	0
CZ	103	0	0	0	0	0	0	0
CZ	104	732	0	0	0	0	0	4,642
CZ	105	868	0	0	0	0	0	0
Within Priority	N/A	7,088	0	22	949	0	1,622	14,382
Remaining EOR	N/A	22,967	0	1	9,914	0	1,366	7,270
Ecoregion Total	N/A	30,054	0	23	10,864	0	2,987	21,652

<sup>a</sup> 314 = brush management, 338 = prescribed burning, 500 = obstruction removal, 528 = prescribed grazing, 550 = range planting, 643 = restoration of rare and declining habitats, 645= upland wildlife habitat management

Table C-5. NRCS Conservation practices applied across all programs but within focal areas (FA) and connectivity zones (CZ), within the Mixed Grass Ecoregion 2010-2012

Area Type	Area ID	NRCS Conservation Practice <sup>a</sup>						
		314 (ac.)	338 (ac.)	500 (objects)	528 (ac.)	550 (ac.)	643 (ac.)	645 (ac.)
FA	10	0	0	0	1,737	0	0	0
FA	11	0	0	0	7,577	0	0	0
FA	12	85	1	0	8,737	0	0	0
FA	13A	0	0	0	0	0	0	0
FA	13B	1,343	0	0	4,100	0	0	3,024
FA	13C	557	0	0	4,353	0	0	2,812
FA	13D	0	0	0	2,615	0	0	809
FA	14	0	0	0	0	0	0	0
FA	15	0	0	0	0	0	0	0
FA	16A	0	0	0	0	0	0	0
FA	16B	0	0	0	0	0	0	0
FA	16C	725	0	0	2,841	0	0	2,669
FA	17	0	0	0	1,189	0	0	0
FA	18	0	0	0	0	0	0	0
FA	19	0	0	0	0	0	0	0
FA	20	0	0	0	3,788	0	0	3,788
FA	21	0	0	0	3,881	0	0	0
FA	22	0	0	0	0	0	0	0
FA	23	0	0	0	0	0	0	0
FA	24	0	0	0	1,582	0	0	0
FA	27	54	0	0	387	0	0	394
FA	28A	38	0	0	0	0	199	0
FA	28B	0	0	0	0	0	0	0
FA	28C	0	0	0	0	0	0	0
FA	28D	0	0	0	157	0	0	0
FA	29A	0	0	0	1,193	0	0	0
FA	29B	98	0	0	631	0	0	0
FA	29C	126	0	0	3,029	0	0	0
FA	29D	0	0	0	5,644	0	0	0
FA	30	0	0	0	0	0	0	160
FA	33A	401	1,217	0	278	130	0	18
FA	33B	0	270	0	548	46	0	92
CZ	106	0	0	0	2,670	0	0	0
CZ	107	0	0	0	1,854	0	0	494
CZ	108	304	0	0	693	0	0	0
CZ	109	662	0	0	3,370	0	0	2,626
CZ	110	0	0	0	1,172	0	0	552
CZ	111	302	1,163	0	310	0	0	0
CZ	112	0	0	0	0	0	0	0
CZ	113	0	0	0	0	0	0	0
CZ	114	0	0	0	0	0	0	0
CZ	115	0	0	0	0	0	0	0
CZ	116	0	0	0	0	0	0	0
CZ	117	0	0	0	0	0	0	0
CZ	118	0	0	0	326	0	0	0
CZ	119	0	0	0	0	0	0	0

NRCS Conservation Practice <sup>a</sup>								
Area Type	Area ID	314 (ac.)	338 (ac.)	500 (objects)	528 (ac.)	550 (ac.)	643 (ac.)	645 (ac.)
CZ	120	0	0	0	0	0	0	0
CZ	121	330	0	0	0	0	0	0
CZ	122	0	0	0	0	0	0	0
CZ	123	0	0	0	392	0	0	0
CZ	126	0	0	0	1,218	0	0	770
CZ	128	0	0	0	1,213	0	0	0
CZ	130	0	0	0	0	0	0	0
CZ	132	0	0	0	177	0	0	0
CZ	133	0	0	0	0	0	0	0
CZ	134	0	0	0	221	0	0	0
Within Priority	N/A	5,026	2,651	0	67,883	176	199	18,207
Remaining EOR	N/A	8,753	1,734	0	122,746	347	404	33,765
Ecoregion Total	N/A	13,779	4,384	0	190,629	522	603	51,972

<sup>a</sup> 314 = brush management, 338 = prescribed burning, 500 = obstruction removal, 528 = prescribed grazing, 550 = range planting, 643 = restoration of rare and declining habitats, 645= upland wildlife habitat management

Table C-6. Acres of NRCS Conservation practices applied across all programs but within focal areas (FA), Expansion Areas (EX) and connectivity zones (CZ), within the Sand Sagebrush Ecoregion 2010-2012

Area Type	Area ID	NRCS Conservation Practice <sup>a</sup>						
		314 (ac.)	338 (ac.)	500 (objects)	528 (ac.)	550 (ac.)	643 (ac.)	645 (ac.)
FA	25	0	0	0	0	0	0	0
FA	26	0	0	0	0	0	0	0
FA	31A	0	0	2	0	0	0	0
FA	31B	0	0	0	312	0	0	156
FA	31C	0	0	0	1,532	0	0	18
FA	31D	0	0	0	138	0	0	0
FA	31E	0	0	0	974	0	0	828
FA	32	0	0	0	0	0	0	0
FA	35A	0	0	0	796	0	0	1
FA	35B	113	0	0	2,900	0	0	3,693
FA	35C	0	0	0	52	0	0	0
FA	35D	11	0	0	3,214	0	0	644
FA	35E	0	0	0	127	0	0	0
FA	35F	0	0	0	0	0	0	0
FA	36	0	0	0	0	0	0	0
FA	38	0	0	0	0	0	0	0
FA	40	0	0	0	0	0	0	11,719
EX	200	0	0	0	0	0	0	0
EX	201	0	0	0	0	0	0	0
EX	202	0	0	0	0	0	0	0
EX	203	0	0	0	0	0	0	0
EX	204	0	0	0	3,112	0	0	2,725
EX	205	0	0	0	0	0	0	0
EX	206	0	0	0	1,280	0	0	225
EX	207	0	0	0	0	0	0	0
EX	208	0	0	0	647	0	0	0
EX	209	0	0	0	0	0	0	0
EX	210	0	0	0	0	0	0	0
EX	211	0	0	0	0	0	0	0
EX	212	0	0	0	0	0	0	0
EX	213	0	0	0	0	0	0	0
EX	214	0	0	0	0	0	0	0
EX	215	0	0	0	0	0	0	0
EX	216	0	0	0	0	0	0	0
EX	217	0	0	0	0	0	0	49
EX	218	0	0	0	0	0	0	0
CZ	124	0	0	0	0	0	0	0
CZ	125	0	0	0	0	0	0	0
CZ	127	0	0	0	0	0	0	0
CZ	129	0	0	0	0	0	0	0
CZ	131	0	0	0	0	0	0	0
CZ	135	0	0	0	0	0	0	0
CZ	136	0	0	0	993	0	0	0
CZ	138	0	0	0	0	0	0	0
CZ	139	0	0	0	907	0	0	907
CZ	140	0	0	0	0	0	0	0

NRCS Conservation Practice <sup>a</sup>								
Area Type	Area ID	314 (ac.)	338 (ac.)	500 (objects)	528 (ac.)	550 (ac.)	643 (ac.)	645 (ac.)
CZ	142	0	0	0	0	0	0	0
Within Priority	N/A	124	0	2	16,985	0	0	20,965
Remaining EOR	N/A	113	0	3	15,448	0	0	8,930
Ecoregion Total	N/A	237	0	5	32,434	0	0	29,895

<sup>a</sup> 314 = brush management, 338 = prescribed burning, 500 = obstruction removal, 528 = prescribed grazing, 550 = range planting, 643 = restoration of rare and declining habitats, 645= upland wildlife habitat management

Table C-7. NRCS Conservation practices applied across all programs but within focal areas (FA) and connectivity zones (CZ), within the ShortGrass-CRP Ecoregion 2010-2012

NRCS Conservation Practice <sup>a</sup>								
Area Type	Area ID	314 (ac.)	338 (ac.)	500 (objects)	528 (ac.)	550 (ac.)	643 (ac.)	645 (ac.)
FA	34	0	0	0	89	0	0	163
FA	37A	0	0	0	202	0	0	361
FA	37B	0	0	0	605	0	0	822
FA	37C	0	0	0	78	0	0	59
FA	37D	0	0	0	0	0	0	0
FA	37E	0	0	0	162	0	0	0
FA	37F	0	0	0	0	0	0	68
FA	39A	0	0	0	0	0	0	0
FA	39B	0	0	0	0	0	0	5
FA	39C	0	0	0	951	0	0	479
FA	41A	0	0	0	0	0	0	82
FA	41B	0	0	0	1,936	0	0	372
FA	41C	0	0	0	7,719	0	0	0
FA	41D	0	0	0	1,624	0	0	0
FA	42	0	0	0	0	92	0	0
FA	43A	0	0	0	389	0	0	20
FA	43B	0	0	0	251	0	0	0
FA	44	0	0	0	653	0	0	422
CZ	137	0	0	0	0	0	0	0
CZ	141	0	0	0	609	0	0	0
CZ	143	0	0	0	0	0	0	0
CZ	144	0	0	0	0	0	0	0
CZ	145	0	0	0	0	0	0	0
Within Priority	N/A	0	0	0	15,268	92	0	2,853
Remaining EOR	N/A	0	0	0	23,645	509	0	6,217
Ecoregion Total	N/A	0	0	0	38,913	601	0	9,070

<sup>a</sup> 314 = brush management, 338 = prescribed burning, 500 = obstruction removal, 528 = prescribed grazing, 550 = range planting, 643 = restoration of rare and declining habitats, 645= upland wildlife habitat management

Table C-8. NRCS Conservation practices applied across all programs but within focal areas (FA) and connectivity zones (CZ), within the Shinnery Oak Ecoregion 2010-2012

NRCS Conservation Practice <sup>a</sup>								
Area Type	Area ID	314 (ac.)	338 (ac.)	500 (objects)	528 (ac.)	550 (ac.)	643 (ac.)	645 (ac.)
FA	1	23	0	0	6,978	0	0	4,763
FA	2A	0	0	0	1,109	0	2,274	1,171
FA	2B	267	0	50	2,662	53	396	4,250
FA	2C	0	0	0	0	0	0	0
FA	2D	46	0	0	501	0	823	1,048
FA	2E	1,253	0	0	12,128	0	0	2,655
FA	2F	0	0	0	17,381	0	0	17,371
FA	3	0	0	0	0	0	0	2,363
FA	4	101	0	0	2,436	0	3,167	563
FA	5	0	0	0	1,406	0	0	3,342
FA	6	0	0	0	3,018	0	0	0
FA	7	0	0	0	384	0	0	758
FA	8	0	0	0	2,419	9	433	2,418
FA	9	0	0	0	1,467	0	0	370
CZ	100	0	0	0	3,606	0	0	3,606
CZ	101	0	0	0	11	0	0	13
CZ	102	240	0	0	1,931	0	211	1,819
CZ	103	0	0	0	0	0	0	0
CZ	104	973	107	0	45,178	1,576	5,959	42,264
CZ	105	578	0	0	2,241	0	0	1,038
Within Priority	N/A	3,481	107	50	104,859	1,639	13,263	89,812
Remaining EOR	N/A	9,998	969	7	332,212	4,833	21,104	304,234
Ecoregion Total	N/A	13,479	1,075	57	437,070	6,472	34,368	394,046

<sup>a</sup> 314 = brush management, 338 = prescribed burning, 500 = obstruction removal, 528 = prescribed grazing, 550 = range planting, 643 = restoration of rare and declining habitats, 645= upland wildlife habitat management



Table C-9. Conservation Reserve Program acreage within focal areas (FA) and connectivity zones (CZ), within the Mixed Grass Ecoregion, 2011.

Area Type	Area ID	FSA Conservation Practice <sup>a</sup>													
		CP1	CP2	CP3	CP4	CP4C	CP4D	CP5	CP5A	CP8	CP8A	CP9	CP10	CP11	CP12
FA	10	0	0	0	0	0	0	0	0	0	0	0	304	0	0
FA	11	0	746	0	0	0	0	0	0	0	0	0	910	0	0
FA	12	0	725	0	0	0	0	0	0	0	0	0	1230	0	0
FA	13A	0	419	0	0	0	0	0	0	0	0	0	2875	0	0
FA	13B	0	277	0	0	0	0	0	0	0	0	0	78	0	0
FA	13C	0	855	0	0	0	0	0	0	0	0	0	639	0	0
FA	13D	0	3713	0	0	0	0	0	0	0	0	0	944	0	0
FA	14	0	1402	0	0	0	0	0	0	0	0	0	349	0	0
FA	15	0	854	0	0	0	0	0	0	0	0	0	975	0	0
FA	16A	55	2730	0	0	0	0	0	0	0	0	0	5353	0	0
FA	16B	88	2725	0	0	0	0	0	0	0	0	0	4454	0	0
FA	16C	0	2911	0	0	0	0	0	0	0	0	0	2303	0	0
FA	17	0	279	0	0	0	0	0	0	0	0	0	467	0	0
FA	18	48	1234	0	0	0	0	0	0	0	0	0	1182	0	0
FA	19	0	196	0	0	0	0	0	0	0	0	0	639	0	0
FA	20	0	0	0	0	0	0	0	0	0	0	0	512	0	0
FA	21	0	712	0	0	0	0	0	0	0	0	0	964	0	0
FA	22	0	2718	0	0	0	0	0	0	0	0	0	4586	0	0
FA	23	0	824	0	0	0	0	0	0	0	0	0	953	0	0
FA	24	0	1169	0	0	0	152	0	0	0	0	0	3596	0	7
FA	27	0	1870	0	0	0	499	0	5	0	0	0	2855	0	5
FA	28A	114	3369	0	0	0	0	0	0	0	0	0	4747	0	0
FA	28B	0	1674	0	0	0	2618	0	0	0	0	0	5959	31	0
FA	28C	0	613	0	0	0	583	0	0	0	0	0	2084	0	0
FA	28D	0	4400	0	0	0	1358	0	0	0	0	0	6658	0	74
FA	29A	0	2055	0	0	0	1119	6	0	0	0	0	6473	0	16
FA	29B	0	0	0	0	0	0	0	0	0	0	0	821	0	0
FA	29C	0	543	0	0	0	599	0	0	0	0	0	2910	0	0
FA	29D	0	677	0	0	0	615	0	0	0	0	0	2589	0	0

		FSA Conservation Practice <sup>a</sup>													
Area Type	Area ID	CP1	CP2	CP3	CP4	CP4C	CP4D	CP5	CP5A	CP8	CP8A	CP9	CP10	CP11	CP12
FA	30	0	6546	0	0	0	1285	0	14	0	73	0	4930	0	0
FA	33A	0	1810	0	1	0	305	0	22	0	0	0	3634	0	2
FA	33B	0	2353	0	0	0	0	1	0	0	0	0	7377	4	0
CZ	106	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CZ	107	107	485	0	0	0	0	0	0	0	0	0	1609	0	0
CZ	108	0	821	0	0	0	0	0	0	0	0	0	1268	0	0
CZ	109	81	5846	0	0	0	0	0	0	0	0	0	3020	0	0
CZ	110	0	898	0	0	0	0	0	0	0	0	0	1211	0	0
CZ	111	149	3602	0	0	0	0	0	0	0	0	0	5087	0	0
CZ	112	0	442	0	0	0	0	0	0	0	0	0	667	0	0
CZ	113	151	219	0	0	0	0	0	0	0	0	0	773	0	0
CZ	114	84	370	0	0	0	0	0	0	0	0	0	295	0	0
CZ	115	0	249	0	0	0	0	0	0	0	0	0	518	0	0
CZ	116	0	167	0	0	0	0	0	0	0	0	0	195	0	0
CZ	117	0	752	0	0	0	0	0	0	0	0	0	1722	0	0
CZ	118	0	523	0	0	0	0	0	0	0	0	0	1820	0	0
CZ	119	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CZ	120	0	226	0	0	0	0	0	0	0	0	0	57	0	0
CZ	121	114	1440	0	0	0	147	0	0	0	0	0	2260	0	0
CZ	122	262	1888	0	0	0	0	0	0	0	0	0	289	0	0
CZ	123	4	2771	0	0	0	0	0	0	0	0	0	3550	0	0
CZ	126	0	516	0	0	0	0	0	0	0	0	0	1342	0	0
CZ	128	0	1320	0	0	0	108	0	0	0	0	30	1814	0	0
CZ	130	0	147	0	0	0	1426	0	2	0	18	0	999	0	0
CZ	132	0	831	0	0	0	686	0	0	0	2	0	3430	0	5
CZ	133	0	509	0	0	0	410	0	7	0	40	0	1348	0	0
CZ	134	0	2262	0	0	0	224	0	0	0	0	0	5531	0	36
Within Priority	N/A	1256	76684	0	1	0	12137	8	49	0	133	30	123153	35	145
Remaining EOR	N/A	3989	217305	11	7	22	18254	39	141	36	559	147	256953	119	89
Ecoregion Total	N/A	5244	293989	11	8	22	30390	47	190	36	692	177	380105	154	234

Table C-9. continued.....

Area Type	Area ID	FSA Conservation Practice <sup>a</sup>													
		CP15	CP15A	CP15B	CP16	CP16A	CP17A	CP18A	CP18B	CP19	CP20	CP21	CP22	CP23	CP23A
FA	10	0	0	0	0	0	0	0	0	0	0	0	0	0	
FA	11	0	0	0	0	0	0	0	0	0	0	0	0	0	
FA	12	0	0	0	0	0	0	0	0	0	0	0	0	0	
FA	13A	0	0	0	0	0	0	0	0	0	0	0	0	0	
FA	13B	0	0	0	0	0	0	0	0	0	0	0	0	0	
FA	13C	0	0	0	0	0	0	0	0	0	0	0	0	0	
FA	13D	0	0	0	0	0	0	0	0	0	0	0	0	0	
FA	14	0	0	0	0	0	0	0	0	0	0	0	0	0	
FA	15	0	0	0	0	0	0	0	0	0	0	0	0	0	
FA	16A	0	0	0	0	0	0	0	0	0	0	0	0	0	
FA	16B	0	0	0	0	0	0	0	0	0	0	4	0	0	
FA	16C	0	0	0	0	0	0	0	0	0	0	90	0	0	
FA	17	0	0	0	0	0	0	0	0	0	0	0	0	0	
FA	18	0	0	0	0	0	0	0	0	0	0	0	0	0	
FA	19	0	0	0	0	0	0	0	0	0	0	0	0	0	
FA	20	0	0	0	0	0	0	0	0	0	0	0	0	0	
FA	21	0	0	0	0	0	0	0	0	0	0	0	0	0	
FA	22	0	0	0	0	0	0	0	0	0	0	0	0	0	
FA	23	0	0	0	0	0	0	0	0	0	0	0	0	0	
FA	24	0	0	0	0	0	0	0	0	0	0	0	0	0	
FA	27	0	0	0	0	0	0	0	0	0	2	0	0	0	
FA	28A	0	0	0	0	0	0	0	0	0	0	0	0	161	
FA	28B	0	0	0	0	0	0	0	0	0	0	0	0	0	
FA	28C	0	0	0	0	0	0	0	0	0	0	0	0	0	
FA	28D	0	0	0	0	0	0	0	0	0	0	0	0	0	
FA	29A	0	0	0	0	1	0	0	0	0	0	0	0	0	
FA	29B	0	0	0	0	0	0	0	0	0	0	0	0	0	
FA	29C	0	0	0	0	0	0	0	0	0	0	0	0	0	
FA	29D	0	0	0	0	0	0	0	0	0	0	0	0	0	

FSA Conservation Practice <sup>a</sup>															
Area Type	Area ID	CP15	CP15A	CP15B	CP16	CP16A	CP17A	CP18A	CP18B	CP19	CP20	CP21	CP22	CP23	CP23A
FA	30	0	0	0	0	0	0	0	0	0	0	14	0	0	0
FA	33A	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FA	33B	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CZ	106	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CZ	107	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CZ	108	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CZ	109	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CZ	110	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CZ	111	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CZ	112	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CZ	113	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CZ	114	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CZ	115	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CZ	116	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CZ	117	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CZ	118	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CZ	119	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CZ	120	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CZ	121	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CZ	122	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CZ	123	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CZ	126	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CZ	128	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CZ	130	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CZ	132	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CZ	133	0	0	0	0	1	0	0	0	0	0	0	0	0	0
CZ	134	0	0	0	0	7	0	0	0	0	0	0	0	0	0
Within Priority	N/A	0	0	0	0	9	0	0	0	0	0	16	95	0	161
Remaining EOR	N/A	0	1	0	1	23	2	0	31	15	99	240	63	2167	238
Ecoregion Total	N/A	0	1	0	1	32	2	0	31	15	99	255	158	2167	399

Tabla C-9. continued.....

Area Type	Area ID	FSA Conservation Practice <sup>a</sup>													Total
		CP24	CP25	CP26	CP27	CP28	CP29	CP33	CP35E	CP38A	CP38D	CP38E	CP40	CP42	
FA	10	0	0	0	0	0	0	0	0	0	0	0	0	0	304
FA	11	0	0	0	0	0	0	0	0	0	0	0	0	0	1657
FA	12	0	0	0	0	0	0	0	0	0	0	0	0	0	1955
FA	13A	0	0	0	0	0	0	0	0	0	0	0	0	0	3294
FA	13B	0	0	0	0	0	0	0	0	0	0	0	0	0	355
FA	13C	0	0	0	0	0	0	0	0	0	0	0	0	0	1494
FA	13D	0	0	0	0	0	0	0	0	0	0	0	0	0	4657
FA	14	0	0	0	0	0	0	0	0	0	0	0	0	0	1751
FA	15	0	217	0	0	0	0	0	0	0	0	0	0	0	2046
FA	16A	0	0	0	0	0	0	0	0	0	0	372	0	0	8510
FA	16B	0	0	0	0	0	0	0	0	0	0	0	0	0	7272
FA	16C	0	0	0	0	0	0	0	0	0	0	0	0	0	5304
FA	17	0	76	0	0	0	0	0	0	0	0	0	0	0	822
FA	18	0	0	0	0	0	0	0	0	0	0	0	0	0	2463
FA	19	0	0	0	0	0	0	0	0	0	0	0	0	0	835
FA	20	0	0	0	0	0	0	0	0	0	0	0	0	0	512
FA	21	0	0	0	0	0	0	0	0	0	0	0	0	0	1676
FA	22	0	0	0	0	0	0	0	0	0	0	0	0	0	7305
FA	23	0	0	0	0	0	0	0	0	0	0	0	0	0	1776
FA	24	0	792	0	0	0	0	0	0	0	0	0	0	0	5716
FA	27	0	15	0	0	0	0	0	0	0	0	95	0	0	5346
FA	28A	0	490	0	0	0	0	0	0	0	0	0	0	0	8881
FA	28B	0	0	0	0	0	0	0	0	0	0	0	0	0	10282
FA	28C	0	0	0	0	0	0	0	0	0	0	0	0	0	3279
FA	28D	0	246	0	0	0	0	0	0	0	0	0	0	11	12746
FA	29A	0	0	0	0	0	0	0	0	0	0	0	0	0	9671
FA	29B	0	119	0	0	0	0	3	0	0	0	0	0	0	943
FA	29C	0	78	0	0	0	0	0	0	0	0	0	0	0	4131
FA	29D	0	0	0	0	0	0	0	0	0	0	0	0	0	3881

FSA Conservation Practice <sup>a</sup>															
Area Type	Area ID	CP24	CP25	CP26	CP27	CP28	CP29	CP33	CP35E	CP38A	CP38D	CP38E	CP40	CP42	Total
FA	30	0	818	0	5	15	0	0	0	0	0	0	0	0	13701
FA	33A	0	29	0	1	6	0	17	0	0	0	0	0	0	5827
FA	33B	0	58	0	0	0	0	0	0	0	0	0	0	0	9793
CZ	106	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CZ	107	0	0	0	0	0	0	0	0	0	0	92	0	0	2292
CZ	108	0	35	0	0	0	0	0	0	0	0	0	0	0	2124
CZ	109	0	182	0	0	0	58	0	0	0	0	0	0	0	9187
CZ	110	0	0	0	0	0	0	0	0	0	0	0	0	0	2109
CZ	111	0	131	0	0	0	0	0	0	0	0	13	0	0	8982
CZ	112	0	0	0	0	0	0	0	0	0	0	0	0	0	1109
CZ	113	0	0	0	0	0	0	0	0	0	0	0	0	0	1143
CZ	114	0	0	0	0	0	0	0	0	0	0	0	0	0	749
CZ	115	0	0	0	0	0	0	0	0	0	0	0	0	0	767
CZ	116	0	0	0	0	0	0	0	0	0	0	0	0	0	363
CZ	117	0	0	0	0	0	0	0	0	0	0	0	0	0	2474
CZ	118	0	0	0	0	0	0	0	0	0	0	0	0	0	2343
CZ	119	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CZ	120	0	0	0	0	0	0	0	0	0	0	0	0	0	283
CZ	121	0	128	0	0	0	0	0	0	0	0	101	0	0	4189
CZ	122	0	0	0	0	0	0	0	0	0	0	0	0	0	2439
CZ	123	0	1112	0	0	0	0	0	0	0	0	179	0	0	7617
CZ	126	0	103	0	0	0	0	0	0	0	0	0	0	0	1961
CZ	128	0	893	0	0	0	0	0	0	0	0	0	0	0	4166
CZ	130	0	11	0	0	0	0	0	0	0	0	0	0	0	2603
CZ	132	0	5	0	0	0	0	0	0	0	0	0	0	0	4959
CZ	133	0	0	0	4	6	0	29	0	0	0	0	0	0	2353
CZ	134	0	0	0	5	16	0	37	0	0	0	24	0	0	8142
Within Priority	N/A	0	5539	0	15	43	58	85	0	0	0	875	0	11	220536
Remaining EOR	N/A	0	18159	79	24	128	113	693	0	0	10	3395	0	0	523152
Ecoregion Total	N/A	0	23697	79	39	171	171	778	0	0	10	4271	0	11	743688



Table C-10. Conservation Reserve Program acreage within focal areas (FA), Expansion Areas (EX) and connectivity zones (CZ), within the Sand Sagebrush Ecoregion, 2011.

Area Type	Area ID	FSA Conservation Practice <sup>a</sup>												CP11	CP12
		CP1	CP2	CP3	CP4	CP4C	CP4D	CP5	CP5A	CP8	CP8A	CP9	CP10		
FA	25	0	0	0	0	0	0	0	0	0	0	0	430	0	0
FA	26	0	85	0	0	0	0	0	0	0	0	0	2,539	0	0
FA	31A	0	1,049	0	0	0	0	0	0	0	0	0	5,683	0	0
FA	31B	0	1,112	0	0	0	73	0	0	0	0	0	17,699	0	0
FA	31C	0	4,847	0	0	0	196	0	0	0	0	0	8,014	0	0
FA	31D	0	4,743	0	0	0	208	0	0	0	0	0	10,992	0	0
FA	31E	0	2,957	0	0	0	736	0	0	0	0	0	1,317	0	0
FA	32	0	246	0	147	0	0	0	0	0	0	0	3,349	0	0
FA	35A	0	901	0	160	0	0	0	0	0	0	0	11,358	0	0
FA	35B	0	1,744	0	0	0	0	0	0	0	0	0	6,226	0	0
FA	35C	0	3,335	0	0	0	0	0	0	0	0	0	26,595	0	0
FA	35D	0	807	0	0	0	0	0	0	0	0	0	2,581	0	0
FA	35E	0	5,220	0	0	0	0	0	0	0	0	0	2,754	0	0
FA	35F	0	527	0	0	0	0	0	0	0	0	0	0	0	0
FA	36	0	686	0	0	0	0	0	0	0	0	0	2,940	0	0
FA	38	0	2,449	0	0	0	82	0	0	0	0	0	2,387	0	3
FA	40	0	11	0	0	0	820	0	0	0	0	0	262	0	0
EX	200	0	1,733	0	0	0	0	0	0	0	0	0	7,861	0	0
EX	201	0	134	0	0	0	0	0	0	0	0	0	3,806	0	0
EX	202	0	0	0	0	0	0	0	0	0	0	0	101	0	0
EX	203	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EX	204	0	396	0	0	0	0	0	0	0	5	0	4,727	0	0
EX	205	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EX	206	0	0	0	0	0	0	0	0	0	0	0	82	0	0
EX	207	0	0	0	0	0	0	0	0	0	0	0	275	0	0
EX	208	0	730	0	78	0	0	0	0	0	0	0	1,659	0	0
EX	209	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EX	210	0	0	0	0	0	0	0	0	0	0	0	316	0	0

FSA Conservation Practice <sup>a</sup>															
Area Type	Area ID	CP1	CP2	CP3	CP4	CP4C	CP4D	CP5	CP5A	CP8	CP8A	CP9	CP10	CP11	CP12
EX	211	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EX	212	0	0	0	0	0	0	0	0	0	0	0	99	0	0
EX	213	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EX	214	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EX	215	0	193	0	0	0	0	0	0	0	0	0	4,084	0	0
EX	216	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EX	217	0	280	0	0	0	0	0	0	0	0	0	369	0	0
EX	218	0	66	0	0	0	0	0	0	0	0	0	53	0	0
CZ	124	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CZ	125	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CZ	127	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CZ	129	0	115	0	0	0	0	0	0	0	0	0	1,355	0	0
CZ	131	0	39	0	0	0	0	0	0	0	0	0	5,091	0	0
CZ	135	0	1,487	0	36	0	0	0	0	0	0	0	1,750	0	0
CZ	136	0	1,332	0	0	0	0	0	0	0	0	0	3,667	0	0
CZ	138	0	0	0	0	0	0	0	0	0	0	0	217	0	0
CZ	139	0	0	0	0	0	0	0	0	0	0	0	140	0	0
CZ	140	0	596	0	0	0	0	0	0	0	0	0	132	0	0
CZ	142	0	312	0	0	0	97	0	0	0	0	0	2,117	0	0
Within Priority	N/A	0	38,135	0	421	0	2,212	0	0	0	5	0	143,028	0	3
Remaining EOR	N/A	783	187,640	0	3,033	0	14,466	1	12	0	136	530	368,468	167	18
Ecoregion Total	N/A	783	225,775	0	3,455	0	16,678	1	12	0	142	530	511,497	167	21

Table C-10. continued....

Area Type	Area ID	FSA Conservation Practice <sup>a</sup>													
		CP15	CP15A	CP15B	CP16	CP16A	CP17A	CP18A	CP18B	CP19	CP20	CP21	CP22	CP23	CP23A
FA	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FA	26	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FA	31A	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FA	31B	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FA	31C	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FA	31D	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FA	31E	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FA	32	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FA	35A	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FA	35B	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FA	35C	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FA	35D	0	0	0	0	0	0	0	0	0	0	0	0	0	54
FA	35E	0	0	0	0	0	0	0	0	128	0	0	0	0	0
FA	35F	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FA	36	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FA	38	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FA	40	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EX	200	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EX	201	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EX	202	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EX	203	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EX	204	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EX	205	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EX	206	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EX	207	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EX	208	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EX	209	0	0	0	0	0	0	0	0	0	0	0	0	0	0

		FSA Conservation Practice <sup>a</sup>													
Area Type	Area ID	CP15	CP15A	CP15B	CP16	CP16A	CP17A	CP18A	CP18B	CP19	CP20	CP21	CP22	CP23	CP23A
EX	210	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EX	211	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EX	212	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EX	213	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EX	214	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EX	215	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EX	216	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EX	217	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EX	218	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CZ	124	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CZ	125	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CZ	127	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CZ	129	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CZ	131	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CZ	135	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CZ	136	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CZ	138	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CZ	139	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CZ	140	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CZ	142	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Within Priority	N/A	0	0	0	0	0	0	0	0	128	0	0	0	0	54
Remaining EOR	N/A	52	6	6	25	22	2	0	7	0	0	0	0	298	542
Ecoregion Total	N/A	52	6	6	25	22	2	0	7	128	0	0	0	298	596

Table C-10. continued....

Area Type	Area ID	FSA Conservation Practice <sup>a</sup>													Total
		CP24	CP25	CP26	CP27	CP28	CP29	CP33	CP35E	CP38A	CP38D	CP38E	CP40	CP42	
FA	25	0	0	0	0	0	0	0	0	0	0	0	0	0	430
FA	26	0	0	0	0	0	0	0	0	0	0	0	0	0	2,625
FA	31A	0	0	0	0	0	0	0	0	0	0	0	0	0	6,733
FA	31B	0	171	0	0	0	0	0	0	0	0	36	0	0	19,092
FA	31C	9	1,984	0	0	0	0	0	0	0	0	0	0	0	15,050
FA	31D	0	3,728	0	0	0	0	0	0	0	0	0	0	0	19,671
FA	31E	0	271	0	0	0	0	0	0	0	0	0	0	0	5,282
FA	32	0	0	0	0	0	0	0	0	0	0	153	0	0	3,895
FA	35A	0	267	0	0	0	0	0	0	0	0	790	0	0	13,477
FA	35B	0	0	0	0	0	0	0	0	0	0	0	0	0	7,970
FA	35C	0	0	0	0	0	0	0	0	0	0	0	0	0	29,930
FA	35D	0	233	0	0	0	0	0	0	0	0	0	0	0	3,676
FA	35E	0	669	0	0	0	0	0	0	0	0	149	0	0	8,919
FA	35F	0	275	0	125	0	0	0	0	0	0	13	0	0	940
FA	36	0	0	0	0	0	0	0	0	0	0	0	0	0	3,626
FA	38	0	0	0	0	0	0	0	0	0	0	0	0	0	4,921
FA	40	0	0	0	0	0	0	0	0	0	0	0	0	0	1,093
EX	200	0	0	0	0	0	0	0	0	0	0	0	0	0	9,594
EX	201	0	0	0	0	0	0	0	0	0	0	0	0	0	3,940
EX	202	0	0	0	0	0	0	0	0	0	0	0	0	0	101
EX	203	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EX	204	0	0	0	0	0	0	0	0	0	0	0	0	0	5,128
EX	205	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EX	206	0	0	0	0	0	0	0	0	0	0	0	0	0	82
EX	207	0	0	0	0	0	0	0	0	0	0	0	0	0	275
EX	208	0	0	0	0	0	0	0	0	0	0	0	0	0	2,468
EX	209	0	0	0	0	0	0	0	0	0	0	0	0	0	0

		FSA Conservation Practice <sup>a</sup>													
Area Type	Area ID	CP24	CP25	CP26	CP27	CP28	CP29	CP33	CP35E	CP38A	CP38D	CP38E	CP40	CP42	Total
EX	210	0	0	0	0	0	0	0	0	0	0	0	0	0	316
EX	211	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EX	212	0	0	0	0	0	0	0	0	0	0	0	0	0	99
EX	213	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EX	214	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EX	215	0	0	0	0	0	0	0	0	0	0	0	0	0	4,277
EX	216	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EX	217	0	0	0	0	0	0	0	0	0	0	0	0	0	650
EX	218	0	0	0	0	0	0	0	0	0	0	0	0	0	119
CZ	124	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CZ	125	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CZ	127	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CZ	129	0	0	0	0	0	0	0	0	0	0	0	0	0	1,471
CZ	131	0	0	0	0	0	0	0	0	0	0	0	0	0	5,130
CZ	135	0	1,130	0	0	0	0	0	0	0	0	81	0	0	4,485
CZ	136	0	68	0	0	0	0	0	0	0	0	0	0	0	5,067
CZ	138	0	0	0	0	0	0	0	0	0	0	0	0	0	217
CZ	139	0	0	0	0	0	0	0	0	0	0	0	0	0	140
CZ	140	0	0	0	0	0	0	0	0	0	0	0	0	0	728
CZ	142	0	0	0	0	0	0	0	0	0	0	0	0	0	2,525
Within Priority	N/A	9	8,797	0	125	0	0	0	0	0	0	1,222	0	0	194,140
Remaining EOR	N/A	227	50,602	0	13	33	0	220	0	0	0	1,661	0	0	628,972
Ecoregion Total	N/A	236	59,400	0	138	33	0	220	0	0	0	2,883	0	0	823,112

Table C-11. Conservation Reserve Program acreage within focal areas (FA) and connectivity zones (CZ), within the Shortgrass-CRP Ecoregion, 2011.

Area Type	Area ID	FSA Conservation Practice <sup>a</sup>													
		CP1	CP2	CP3	CP4	CP4C	CP4D	CP5	CP5A	CP8	CP8A	CP9	CP10	CP11	CP12
FA	34	0	6,389	0	0	0	1,352	0	6	0	7	0	803	0	0
FA	37A	0	10,138	0	0	0	4,134	0	0	0	46	0	1,937	0	12
FA	37B	0	4,199	0	0	0	1,239	0	0	0	0	0	3,273	0	15
FA	37C	0	7,014	0	0	0	1,071	0	3	0	0	0	5,984	0	0
FA	37D	0	6,612	0	21	0	8	0	6	0	0	0	3,161	0	1
FA	37E	0	6,765	0	0	0	1,234	156	3	0	65	0	1,863	0	0
FA	37F	0	3,133	0	0	0	541	0	3	0	21	0	734	0	0
FA	39A	0	1,438	0	0	0	305	0	0	0	2	0	0	0	1
FA	39B	0	1,070	0	0	0	3,011	0	18	0	59	0	1,401	0	1
FA	39C	0	1,112	0	0	0	2,708	0	4	0	65	0	919	0	1
FA	41A	0	112	0	0	0	2,397	0	0	0	0	0	1,340	0	0
FA	41B	0	986	0	0	0	1,403	0	2	0	0	0	3,656	0	0
FA	41C	0	2,525	0	0	0	909	0	0	0	3	0	1,214	0	1
FA	41D	0	1,424	0	0	0	636	0	2	0	0	0	122	0	0
FA	42	0	1,077	0	0	0	775	0	2	0	9	0	323	0	0
FA	43A	0	678	0	0	0	705	0	0	0	48	0	4,197	0	0
FA	43B	0	79	0	0	0	287	0	0	0	17	0	1,263	0	0
FA	44	0	178	0	0	0	10	0	0	0	0	0	238	0	0
CZ	137	0	851	0	0	0	56	0	19	0	2	0	620	0	0
CZ	141	0	497	0	0	0	353	0	2	0	4	0	468	0	2
CZ	143	0	0	0	0	0	13	0	0	0	8	0	2	0	0
CZ	144	0	0	0	0	0	585	0	0	0	0	0	259	0	0
CZ	145	0	43	0	0	0	0	0	0	0	0	0	69	0	0
Within Priority	N/A	0	56,320	0	21	0	23,733	156	70	0	355	0	33,846	0	34
Remaining EOR	N/A	17	104,073	0	0	39	57,757	37	530	72	2,875	28	61,756	290	204
Ecoregion Total	N/A	17	160,393	0	21	39	81,490	193	600	72	3,230	28	95,602	290	238



Table C-11. continued...

Area Type	Area ID	FSA Conservation Practice <sup>a</sup>													
		CP15	CP15A	CP15B	CP16	CP16A	CP17A	CP18A	CP18B	CP19	CP20	CP21	CP22	CP23	CP23A
FA	34	0	0	0	0	7	0	0	0	0	0	0	0	0	0
FA	37A	0	38	0	0	6	0	0	0	0	0	48	0	0	0
FA	37B	0	0	0	0	0	0	0	0	0	0	26	0	15	0
FA	37C	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FA	37D	0	0	0	0	0	0	0	0	0	0	0	0	0	139
FA	37E	0	1	43	0	10	0	0	0	0	0	0	0	0	31
FA	37F	0	0	47	0	20	0	0	0	0	0	88	0	0	0
FA	39A	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FA	39B	0	0	113	0	7	0	0	0	0	0	20	0	78	0
FA	39C	0	0	49	0	1	0	0	0	0	0	0	0	0	0
FA	41A	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FA	41B	0	0	0	0	2	0	0	0	0	0	0	0	0	0
FA	41C	0	0	10	0	6	0	0	0	0	0	0	0	0	0
FA	41D	15	37	68	0	3	0	0	0	0	0	0	0	0	0
FA	42	0	0	45	0	0	0	0	0	0	0	0	0	0	0
FA	43A	0	0	0	0	6	0	0	0	0	0	0	0	0	0
FA	43B	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FA	44	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CZ	137	0	0	0	0	0	0	0	0	0	0	22	14	0	0
CZ	141	0	0	19	0	0	0	0	0	0	0	2	0	0	0
CZ	143	0	0	1	0	23	12	0	0	0	0	0	0	0	0
CZ	144	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CZ	145	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Within Priority	N/A	15	76	396	0	90	12	0	0	0	0	207	14	94	170
Remaining EOR	N/A	67	187	1,736	12	298	17	0	0	0	0	2,314	56	493	524
Ecoregion Total	N/A	82	263	2,132	12	388	29	0	0	0	0	2,521	70	587	693

Table C-11. continued...

Area Type	Area ID	FSA Conservation Practice <sup>a</sup>													Total
		CP24	CP25	CP26	CP27	CP28	CP29	CP33	CP35E	CP38A	CP38D	CP38E	CP40	CP42	
FA	34	0	1,719	0	0	0	0	0	0	0	0	307	0	0	10,589
FA	37A	0	1,201	0	0	0	0	91	0	0	0	775	0	0	18,427
FA	37B	0	1,948	0	0	0	0	0	0	0	0	1,144	0	0	11,859
FA	37C	0	8,853	0	0	0	0	0	0	0	0	84	0	0	23,009
FA	37D	0	6,128	0	0	0	0	0	0	0	0	78	0	0	16,155
FA	37E	0	16,278	0	0	0	0	7	0	0	0	140	0	0	26,594
FA	37F	0	5,655	0	0	0	0	100	0	0	0	1,142	0	0	11,485
FA	39A	0	3,213	0	0	0	0	0	0	0	0	263	0	0	5,221
FA	39B	9	851	0	0	0	0	70	0	0	0	1,448	0	0	8,156
FA	39C	3	2,659	0	0	0	0	120	0	0	0	1,070	0	0	8,711
FA	41A	0	1,878	0	0	0	0	26	25	0	0	0	0	0	5,779
FA	41B	0	3,382	0	0	0	0	9	4	0	0	118	0	0	9,562
FA	41C	0	6,774	0	0	0	0	0	0	0	0	481	0	0	11,923
FA	41D	0	7,905	0	0	0	0	0	0	0	0	233	0	0	10,445
FA	42	0	1,757	0	0	0	0	1	0	0	0	18	0	0	4,007
FA	43A	0	5,251	0	0	0	0	0	0	0	0	19	0	0	10,905
FA	43B	0	760	0	0	0	0	0	0	0	0	0	0	0	2,406
FA	44	0	1,504	0	0	0	0	82	0	0	0	16	0	0	2,028
CZ	137	0	579	0	0	0	0	14	0	0	0	91	0	0	2,267
CZ	141	0	5,570	0	0	0	0	0	0	0	0	30	0	0	6,948
CZ	143	0	171	0	0	0	0	0	0	0	0	0	0	0	229
CZ	144	0	1,006	0	0	0	0	4	0	0	0	8	0	0	1,862
CZ	145	0	820	0	0	0	0	0	0	0	0	0	0	0	932
Within Priority	N/A	12	85,861	0	0	0	0	523	30	0	0	7,465	0	0	209,498
Remaining EOR	N/A	328	209,088	0	72	88	0	5,213	141	16	3	6,689	164	13	455,196
Ecoregion Total	N/A	340	294,948	0	72	88	0	5,735	171	16	3	14,154	164	13	664,694

Table C-12. Conservation Reserve Program acreage within focal areas (FA) and connectivity zones (CZ), within the Shinnery Oak Ecoregion, 2011.

Area Type	Area ID	FSA Conservation Practice <sup>a</sup>													
		CP1	CP2	CP3	CP4	CP4C	CP4D	CP5	CP5A	CP8	CP8A	CP9	CP10	CP11	CP12
FA	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FA	2A	27	1,736	0	0	0	0	0	0	0	0	0	3,134	0	0
FA	2B	2,042	654	0	0	0	0	0	0	0	0	0	2,984	0	0
FA	2C	0	0	0	0	0	0	0	0	0	0	0	38	0	0
FA	2D	0	227	0	0	0	0	0	0	0	0	0	1,115	0	0
FA	2E	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FA	2F	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FA	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FA	4	0	12,299	0	0	0	0	0	0	0	0	0	25,016	0	0
FA	5	0	0	0	0	0	0	0	0	0	0	0	123	0	0
FA	6	0	244	0	0	0	0	0	0	0	0	0	1	0	0
FA	7	0	1,336	0	0	0	0	0	0	0	0	0	6,002	0	0
FA	8	0	4,269	0	0	0	0	0	0	0	0	0	10,589	0	0
FA	9	0	160	0	0	0	0	0	0	0	0	28	12,023	0	0
CZ	100	6,696	1,429	0	0	0	0	0	0	0	0	0	804	0	0
CZ	101	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CZ	102	0	2,386	0	0	0	0	0	0	0	0	0	6,160	0	0
CZ	103	0	1,747	0	0	0	0	0	0	0	0	0	3,090	0	0
CZ	104	191	26,895	0	0	0	0	0	0	0	0	56	43,199	0	159
CZ	105	0	3,047	0	0	0	0	0	0	0	0	0	10,526	0	0
Within Priority	N/A	8,956	56,428	0	0	0	0	0	0	0	0	84	124,801	0	159
Remaining EOR	N/A	5,315	279,141	0	182	0	284	0	0	57	0	991	491,937	350	0
Ecoregion Total	N/A	14,270	335,570	0	182	0	284	0	0	57	0	1,075	616,737	350	159

Table C-12. continued...

		FSA Conservation Practice <sup>a</sup>													
Area Type	Area ID	CP15	CP15A	CP15B	CP16	CP16A	CP17A	CP18A	CP18B	CP19	CP20	CP21	CP22	CP23	CP23A
FA	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FA	2A	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FA	2B	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FA	2C	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FA	2D	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FA	2E	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FA	2F	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FA	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FA	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FA	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FA	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FA	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FA	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FA	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CZ	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CZ	101	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CZ	102	0	0	0	0	0	0	0	0	9	0	0	0	0	0
CZ	103	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CZ	104	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CZ	105	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Within Priority	N/A	0	0	0	0	0	0	0	0	9	0	0	0	0	0
Remaining EOR	N/A	0	0	61	0	0	0	57	0	894	0	0	0	423	0
Ecoregion Total	N/A	0	0	61	0	0	0	57	0	903	0	0	0	423	0

Table C-12. continued...

		FSA Conservation Practice <sup>a</sup>													
Area Type	Area ID	CP24	CP25	CP26	CP27	CP28	CP29	CP33	CP35E	CP38A	CP38D	CP38E	CP40	CP42	Total
FA	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FA	2A	0	0	0	0	0	0	0	0	0	0	848	0	0	5,745
FA	2B	0	0	0	0	0	0	0	0	0	0	0	0	0	5,679
FA	2C	0	0	0	0	0	0	0	0	0	0	0	0	0	38
FA	2D	0	0	0	0	0	0	0	0	0	0	0	0	0	1,342
FA	2E	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FA	2F	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FA	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FA	4	0	0	0	0	0	0	0	0	0	0	0	0	0	37,315
FA	5	0	0	0	0	0	0	0	0	0	0	0	0	0	123
FA	6	0	0	0	0	0	0	0	0	0	0	0	0	0	245
FA	7	0	0	0	0	0	0	0	0	0	0	0	0	0	7,337
FA	8	0	0	0	0	0	0	0	0	0	0	0	0	0	14,858
FA	9	0	0	0	0	0	0	0	0	0	0	0	0	0	12,210
CZ	100	0	0	0	0	0	0	0	0	0	0	1,229	0	0	10,158
CZ	101	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CZ	102	0	0	0	0	0	0	0	0	0	0	1,269	0	0	9,824
CZ	103	0	0	0	0	0	0	0	0	0	0	0	0	0	4,837
CZ	104	0	0	0	0	0	0	0	0	0	0	0	0	34	70,535
CZ	105	0	0	0	0	0	0	0	0	0	0	0	0	0	13,573
Within Priority	N/A	0	0	0	0	0	0	0	0	0	0	3,346	0	34	193,817
Remaining EOR	N/A	6	0	0	0	0	0	0	0	0	0	9,089	0	0	788,787
Ecoregion Total	N/A	6	0	0	0	0	0	0	0	0	0	12,435	0	34	982,604

**APPENDIX D. AGRICULTURAL CCAA****RANGE-WIDE AGRICULTURAL  
CANDIDATE CONSERVATION AGREEMENT WITH ASSURANCES  
FOR LESSER PRAIRIE-CHICKENS**

**between  
WESTERN ASSOCIATION OF FISH AND WILDLIFE AGENCIES  
and  
U. S. FISH AND WILDLIFE SERVICE**

This Candidate Conservation Agreement with Assurances (CCAA), effective and binding on the date of the last signature below, is between the Western Association of Fish and Wildlife Agencies (WAFWA) and the U. S. Fish and Wildlife Service (USFWS). Participating landowners will be included under the CCAA by signing individual Certificates of Inclusion (CI; Appendix A), subject to approval by WAFWA and concurrence by the USFWS. Administrators of this CCAA are:

WAFWA: The WAFWA designates the following individual as the CCAA Administrator:

USFWS: The USFWS designates the following individual as the CCAA Administrator:

Tracking Number:

I. Responsibilities of the Parties

The WAFWA is proposed to be the sole non-federal permit holder in this CCAA, and will be responsible for implementing and administering the CCAA. The WAFWA will enroll non-federal agricultural property owners (hereafter referred to as participating landowners) under this CCAA through issuance of Certificates of Inclusion (CI; Appendix A) to those property owners who have entered into an WAFWA developed and approved Wildlife Management Plan (WMP) (Appendix B) for the lesser prairie-chicken (LEPC) (*Tympanuchus pallidicinctus*) and who are either actively implementing conservation measures for the species or are already providing habitat conditions favorable for LEPC. Appendix C provides a glossary of terms. The CI and Appendices A, B, and C contain the entirety of the landowner's responsibility, and in their entirety form the agreement between the landowner and the WAFWA. The individual site-specific WMPs are linked to this programmatic agreement through the CI, which conveys

the regulatory assurances provided in the Enhancement of Survival Permit (Permit) to the enrolled property owner. By signing the CI, the property owner agrees to implement or maintain the identified conservation measures associated with current and future management of the enrolled lands. The WAFWA, in cooperation with the USFWS, will process and monitor all CI to document that the conservation measures implemented on non-federal property are providing a high conservation benefit to LEPCs. A WAFWA representative will meet with participating landowners, at their request, to provide needed technical assistance, including discussions of funding options, for projects that improve and maintain LEPC habitat. The WAFWA will, dependent upon availability, provide funding under various programs to benefit LEPC habitat on non-federal lands within the Planning Area, as described under Part II. The WAFWA will prepare and submit an annual report to the USFWS that documents activities performed under this CCAA. WAFWA will annually lead a meeting with USFWS and all participating landowners enrolled under this CCAA to review progress from the previous year, discuss factors influencing LEPC conservation and management, and discuss actions that could benefit LEPC to be initiated in the upcoming year.

The USFWS will issue a Permit to WAFWA under section 10(a)(1)(A) of the Endangered Species Act of 1973, as amended (ESA) in accordance with 50 CFR 17.22(d) or 17.32(d), that will become effective if or when the LEPC is listed as threatened or endangered. The Permit will provide WAFWA and participating landowners with authorization for incidental take of LEPC and provide regulatory assurances should the LEPC be listed at some time in the future. The term of this CCAA is 25 years. The term of the Permit begins on the date of a final rule that lists the LEPC as threatened or endangered and continues through the end of the CCAA term. The term of the CI begins upon the date of the final signature and continues through the agreed upon term of the CI, but not past the term of the CCAA and permit. Both the CCAA and the CI are renewable at the end of the term. If this CCAA is modified at any time in the future, those modifications will not be required of landowners who possess a CI at the time of the modification, unless mutually agreed upon by the WAFWA and participating landowners. The Permit will authorize incidental take of LEPCs resulting from lawful activities (e.g., crop cultivation and harvesting, livestock grazing, farm equipment operation, recreation) on enrolled lands, consistent with the level anticipated under the CCAA as stipulated in the CI. USFWS will, within 45 days of receipt of a completed CI from WAFWA, notify WAFWA in writing (through signature on the CI) of the USFWS' determination of whether the proposed land(s) should be enrolled. If the USFWS does not agree to enrollment of the proposed lands, the USFWS will work with WAFWA to develop mutually agreeable measures that would create an adequate CI for USFWS signature. The USFWS will review reports submitted by WAFWA for compliance with the terms of the CCAA and the CIs in a timely manner.

Property Owners apply for coverage under the CCAA by agreeing to participate in an WAFWA-approved WMP and by completing and submitting a CI application. An approved CI will provide the property owner protection under the Permit associated with the CCAA (and having the same number as the CCAA tracking number above) if the species is listed under the ESA in the future. The property owner will complete and maintain the conservation measures outlined in the WMP in order to maintain a valid and approved CI. Participating landowners will allow WAFWA personnel (or an agreed upon designee) to



survey enrolled lands for the presence of LEPC, and for suitability as habitat. Participating landowners will allow WAFWA to record a baseline of appurtenances on the land, the quality of LEPC habitat and the presence of LEPC. Participating landowners will allow WAFWA personnel (or an agreed upon designee) access to the enrolled lands for purposes of monitoring LEPC populations and habitat and for ensuring compliance with agreement. Participating landowners will participate in discussions and meetings with WAFWA and other participating landowners, as needed, to discuss the status of LEPC management and conservation on enrolled lands.

## II. Planning Area, Covered Area, and Enrolled Lands

This CCAA pertains to non-federal lands in Colorado, Kansas, New Mexico, Oklahoma and Texas encompassed by the current distribution of LEPC, those non-federal lands that are unoccupied, but potentially suitable LEPC habitat, and those non-federal lands that could provide habitat should the current population and distribution of LEPC increase. Covered areas are eligible non-federal lands within the Planning Area that provide suitable habitat for LEPC, or have the potential to provide suitable LEPC habitat with the implementation of conservation measures. Enrolled lands (or properties) are those lands within the covered area that are included under this CCAA and the Permit, through the process of landowners signing and WAFWA issuing the CI. Legal descriptions of enrolled properties will be described on a plan-by-plan basis, and will be in the WMP for each enrolled property, as required for issuance of the CI.

The WAFWA may elect to include/enroll only a portion of a landowner's property as conservation lands if other areas of the property contain unsuitable habitat or activities that are incompatible with conservation lands. However, to provide assurances to the landowner and incidental take coverage on/for the landowners entire property, conservation lands and non-conservation lands (those areas which contain unsuitable habitat or activities that are incompatible with conservation lands), should be included/enrolled. It remains imperative that there must be a high conservation benefit for LEPC when considering the entire enrolled property.

## III. Authorities and Purpose

Sections 2, 4, 6, 7, and 10 of the ESA, allow the USFWS to enter into this CCAA. Section 2 of the ESA states that encouraging interested parties, through Federal financial assistance and a system of incentives, to develop and maintain conservation programs is a key to safeguarding the Nation's heritage in fish, wildlife, and plants.

Section 4 of the Act outlines guidelines for identifying species that are threatened or endangered under the Act. Section 4(h)(3) requires that the Service establish a ranking system to assist in identifying species that should receive priority review for listing. To fulfill these responsibilities, the Service developed a program to identify species that warrant protection under the Act (termed "candidates" or "candidate species") and to monitor and conserve those species for which protection is deemed

appropriate until listing can proceed. By entering into this CCAA, the USFWS is utilizing its Candidate Conservation Programs to further the conservation of the Nation's fish, wildlife, and plants. Section 6 of the Act provides for the cooperation with the States in endangered species conservation, including matching Federal funding. Collaborative stewardship with State agencies is important in the development of CCAAs, given the statutory role of State agencies and their traditional conservation responsibilities and authorities for resident species.

Section 7 of the ESA requires federal agencies, including the USFWS, to review programs that it administers and to utilize such programs in furtherance of the purposes of the ESA. Additionally, section 10(a)(1)(A) of the ESA authorizes the issuance of Permits to "enhance the survival" of a listed species.

Section 4(a)(1) of the ESA lists five factors that must be considered when determining if a species should be listed as threatened or endangered. A species may be listed due to one or more of these factors. These are:

- (A) present or threatened destruction, modification, or curtailment of its habitat or range;
- (B) over-utilization for commercial, recreational, scientific, or educational purposes;
- (C) disease or predation;
- (D) inadequacy of existing regulatory mechanisms; and
- (E) other natural or manmade factors affecting its continued existence.

The Range-wide Plan describes perceived threats to LEPC populations. Because this CCAA is intended to harmonize with and complement activities associated with the Range-wide Plan, as explained below, the descriptions perceived threats to LPC populations set forth in the Range-wide Plan are incorporated and adopted herein.

#### IV. Background and Description of Existing Condition

The Range-wide Plan contains detailed background information regarding the LPC, including information about the species' life history, habitat requirements, and population status. Because this CCAA is intended to harmonize with and complement activities associated with the Range-wide Plan, as explained below, the descriptions of LPC species information set forth in the Range-wide Plan are incorporated and adopted herein.

#### V. Potential Conservation Measures

This section includes the conservation measures available for consideration under this CCAA, many of which are based upon NRCS technical standards, LEPC CI, Conference Opinion, and WMP guidance. The standards are determined by the funding source (i.e. Partners for Fish and Wildlife funding stipulates certain standards and WHIP funding requires certain standards). The specific conservation measures implemented on a particular non-federal property need not include every single measure

identified here. The goal of the CCAA is to reduce threats to the species and conserve, restore, and/or enhance necessary non-federally owned LEPC habitats.

The CCAA conservation measures to be implemented or maintained are intended to conserve, restore, and/or enhance LEPC habitat so that progress toward sustainable population levels can occur. Use of these actions also is intended to reduce any unfavorable impacts to LEPC arising from the management and utilization of the enrolled lands. CI applications and the supporting WAFWA-approved WMPs will address the improvements to be made, sources of funding, responsibilities for completion of improvements, a time frame, and a monitoring plan to ascertain the success of improvements.

Although all seasonal habitat requirements of LEPC are necessary for their conservation and recovery, available data indicate that increasing breeding success (i.e., nest success, recruitment) is the primary key to increasing numbers of LEPC (and perhaps therefore, distribution) (Hagen et al. 2004). As a result, conservation measures implemented to improve, recover, and/or enhance LEPC habitat should focus on providing suitable nesting and brood-rearing habitat components (e.g. areas with light to moderate grazing pressure and dominant native shrub cover). The conservation measures outlined below are structured to first restore and then maintain native prairie habitats as nesting and brood-rearing habitat, and also will meet the habitat needs of many other short and midgrass-dependent species.

LEPC habitat types (e.g., nesting, foraging, and brood-rearing habitats) should be distributed in a mosaic over contiguous blocks of rangeland habitat. Heterogeneous or “patchy” landscapes encompassing multiple successional states that include tall grasses and shrubs (nesting habitat) in proximity to more open grasslands supporting forbs (brood-rearing habitat) with areas of short grass and bare ground (breeding habitat) support all of the habitat types used by LEPC throughout the year. Large habitat blocks dominated by a single successional state or smaller blocks that are not in proximity to other habitat types used by LEPC may not be suitable for use by LEPC. For example, nesting habitat (tall grass and shrubs approximately 18 inches in height) and brood-rearing habitat (forbs, sparsely distributed tall grass, patches of bare ground) should always be available within 1 mile of known leks. The locations of these patches may be rotated throughout the ranch or management unit, but planning to maintain this pattern and still provide necessary patchiness of all habitat components is the challenge and key to LEPC management. Another method to achieve patchiness on the landscape is through prescribed grazing and fire, the schedule of which would include considerations of forage quantity and location, livestock numbers, and drought. In addition, grazing plans related to LEPCs are intended to produce a variety of several habitat types on the landscape, and therefore must remain flexible to change. A grazing system that creates heterogeneity (i.e., patchiness) on the landscape (or within the management unit) by maintaining middle to late stages of plant succession interspersed with early successional stages, is optimal for LEPC (Hagen et al. 2004).

#### CONSERVATION MEASURES

The following are recommended conservation measures to facilitate LEPC habitat conservation, restoration, and/or enhancement within the Planning Area. The list is organized by general habitat management technique for ease of use. Flexibility exists within all techniques at the discretion of those involved in the WAFWA-approved WMP process. Although not included in the list, it is important to recognize that in addition to the listed techniques, a property covered by a CI that already has suitable LEPC habitat and would be managed “as is” or on which improvements to the habitat would be made, would also constitute an appropriate conservation measure within this CCAA. Sources for the list of conservation measures include Mote et al. (1999), NRCS and WHMI (1999), Jamison et al. (2002), Bidwell et al. (2003), Bidwell and Peoples (2004), Hagen et al. (2004), and Riley (2004). Background information and additional detail can be found within these resources. It should be noted that the list of conservation measures, provided in the following paragraphs, is a synthesis of available information, and reflects our current understanding of LEPC habitat requirements and population responses to available habitat. The monitoring component of this CCAA (see Section X Monitoring Provisions) is an important part of delivery of conservation measures in order for continued refinement of practices; it is strongly recommended that participating landowners and technical assistance providers (WAFWA, NRCS, USFWS biologists) evaluate and monitor LEPC habitat responses to implemented measures using the principles of adaptive resource management (Walters and Holling 1990).

#### Fire and Grazing

Using the appropriate stocking rate combined with proper fire frequency will produce desired habitat conditions for all life stages and seasonal uses for LEPC. These desired habitat conditions can be described as early, middle and late successional states for any plant community. Fire and grazing are the main habitat management tools that affect habitat structure and pattern on native prairies and shrublands. The frequency, size, and pattern of burning or grazing, and their relationship (fire-grazing interaction) must be considered and managed to meet the year-round habitat requirements of the lesser prairie-chicken.

*Stocking Rate - Stocking rate is defined as the number of grazing animals or animal units on a given amount of land over a certain period of time.*

- a. In order to provide simultaneous representation of multiple plant successional states, stocking rates should vary between light to moderate. Light to moderate stocking rates can be calculated using NRCS’s ecological site descriptions or using other conventional quantifying techniques. Multiple successive years of grazing too lightly or too heavily across a management area can reduce habitat quality and plant diversity.

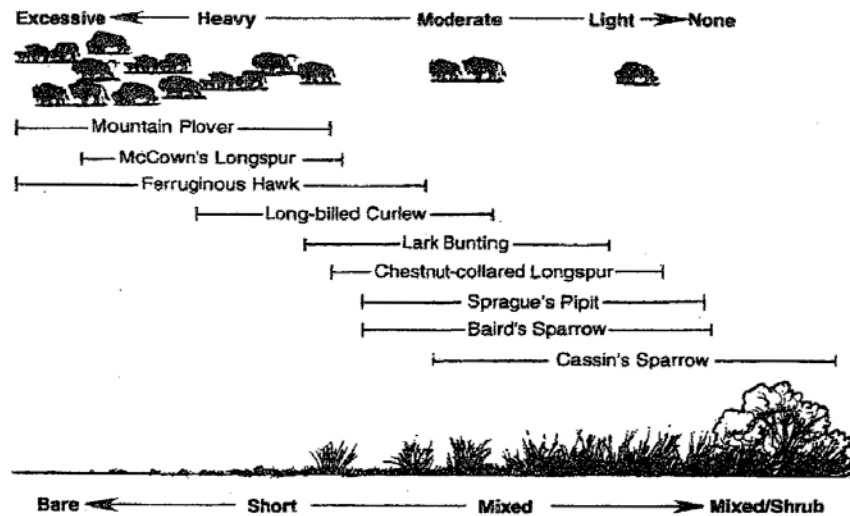
#### *Fire Frequency*

- b. Depending on rainfall, burning 20 to 30 % of a project area each year will allow the entire area to be burned within the desired 3- to 5-year interval and still maintain plant diversity. Burning more than 50 % of the project area in one year may temporarily diminish habitat

availability. August to April/May is the natural fire season; however, burning in other seasons offers opportunities to offset the inability to implement prescribed burns during less than favorable weather conditions (e.g., excessive wind speed, etc.), and can be an acceptable conservation measure. Burns can be scattered across the project area or in large blocks totaling 20 to 30 % of the overall project area per year. Unlike many western states where fire is thought to increase abundance of invasive species, this isn't an issue in the southern Great Plains.

#### Habitat Diversity

- c. By following an appropriate stocking rate and fire frequency strategy, 3 to 4 different plant successional states should be present at any given time. Plant succession should not exceed the natural variability of plant communities within the Southern Great Plains. See diagram below from Knopf (1996).



**Figure 11.2.** Distributions of endemic birds of prairie uplands on a shortgrass/mixed-grass and historical grazing pressure continua across the western landscapes of the Great Plains.

#### Fencing

- d. Permanent barbed-wire and some electric fences can be lethal to LEPC in flight, and should be used only when necessary to achieve other management objectives. The use and installation of fences should be coordinated with other practices such as water distribution and patch burning, to achieve desired prescribed grazing goals and minimize potential impacts to LEPC. **Any unneeded fences should be removed.** Barbed wire fences should be marked to reduce potential collisions and one-or-two wire electric fences should be substituted for barbed wire fences if conditions permit. On each project area to be covered under the CCAA the amount of fence should be minimized to the extent practicable and possible, and alternative measures (e.g. fire, mineral, water, and some electrical fences)

should be used to the extent practicable to manage livestock grazing. Where feasible, fences should be as low as possible while still maintaining their functionality. When no longer needed, fences should be removed. Information on fence marking is available from the Sutton Center ([www.suttoncenter.org/LPCH/fences](http://www.suttoncenter.org/LPCH/fences)).

#### Herbicides

- a. Herbicides should be used primarily as a tool to maintain cover and food producing plants such as shrubs and forbs, and the insects that require them. Herbicides should be used only when habitat goals cannot be achieved by other means. Where grazing management (i.e., stocking rate) is appropriate for the productive capabilities of the land and fire is periodically used to direct grazing and balance shrub canopy and height, herbicides should only be necessary to control invasive nonnative plants. Invasive, non-native plants, such as *Cynodon dactylon* (Bermuda grass), *Bothriochloa* spp. (Old World bluestems), *Elaeagnus angustifolia* (Russian olive), *E. umbellata* (autumn olive), and other exotic species are of no value to the LEPC, and as their density increases on the landscape, the value of the habitat for LEPC diminishes. Additionally chemical control of native brush species, like *Robinia pseudoacacia* (black locust) and *Maclura pomifera* (Osage orange), which did not historically occur in native prairies used by LEPC may be recommended (see also section on brush management below). If necessary to use herbicides on shinnery oak, the goal should be to temporarily reduce shinnery oak competition with grasses. Herbicides should be used only at dosages that would defoliate shinnery oak and not kill it. Application should follow natural landscape patterns and large block and linear applications should be avoided. When herbicide use is deemed appropriate, spot treatment of target plants (rather than broadcast application) is preferred.

#### Conservation Cover

- a. Areas of cropland, introduced grasses and other introduced forage plants, and similar disturbed sites (e.g., roads and well pads) should be converted into native warm season grasses and forbs, based upon site-specific recommendations (using USDA-NRCS Ecological Site Descriptions, historic plant community, and LEPC habitat needs) included in the WAFWA-approved WMP for the enrolled property. Restoration of these sites using a monoculture of grasses or through use of non-native species provides limited benefit to LEPC, and is discouraged. If a landowner decides against site restoration, the WAFWA may elect to exclude a portion of the property as conservation lands if the property contains unsuitable habitat or activities incompatible with conservation lands.

#### *Haying*

- b. Any haying near known leks and nest sites should be deferred until breeding and nesting activities are completed (no earlier than July 1<sup>st</sup>). Harvesting/cutting should be conducted in a manner that maintains adequate heights of residual vegetation and that allows

- adequate time for sufficient regrowth following harvest. Such measures ensure that the sites provide suitable LEPC habitat in the winter and following spring.
- c. Cutting of hay should be conducted in a manner that allows any birds using that field to flush or escape harm that could be caused by the action of machinery. Appropriate harvest options include initiating cutting on one side of a field and working back and forth across the field or starting harvest in the center of the field and working outward. Harvest methods that begin on the outside perimeter of the field and work inward toward the center of the field should be avoided. This method tends to push birds toward the center of the field and often results in birds becoming “trapped” in the center island of uncut vegetation. Adults and more frequently, young birds, are reluctant to escape by flushing or by running through the more open habitat left after harvest. Consequently these birds are at greater risk of being harmed by the machinery or of being captured by predators. Birds of prey often hunt on fields that are being harvested due to an increased ability to detect and capture prey. As birds flee the action of the machinery, lack of escape cover increases their risk of capture by birds of prey. In some cases modification of haying equipment by addition of a flush bar would be an acceptable alternative to center-out mowing.

*Conservation Reserve Program (CRP)*

- d. Farm Services Agency (FSA)-approved mid-contract management practices for CRP lands (which are mandatory for more recent signups, and allowed for earlier sign-ups with contract modification and NRCS technical assistance and FSA approval) should be implemented. Dependent upon whether the CRP acreage is planted to introduced grasses (CP-1) or native grass (CP-2), the management activities (e.g., prescribed burning, disking, interseeding with native grasses or perennial forbs, etc.) most beneficial to LEPC will be site-specific, and tailored to the property through the FSA CRP contract administration, NRCS technical assistance, and the WAFWA-approved WMP process.
- e. Properly managed native grasslands will include a forb and shrub component and should range in height from approximately 13.5 to 30 inches (Hagen et al. 2004). Objectives of CRP contracts should strive to replicate these conditions. The optimum CRP planting mixture would consist of native warm season perennial bunch grasses and include native legumes, forbs, and woody shrub plantings (Litton et al. 1994). Seeding with multiple native species helps re-create natural LEPC habitat conditions and provides important diversity of vegetation heights and growth-forms.
- f. Non-native grasslands established under CRP contract should be restored to a site-appropriate native plant community (based upon ecological site descriptions, historic plant community, USDA-NRCS Ecological Site Guides, and LEPC habitat needs) once the CRP contract expires (Bidwell et al. 2003), or excluded as an area inconsistent with conservation lands.

*Brush Management*



- g. Native shrubs (not trees) are a component of high quality native LEPC habitat. However, extensive areas of shrubs with little or no interspersed native warm season bunch grasses provides limited habitat value for LEPC. In such cases, brush management is a necessary management action to maximize LEPC habitat value.
- h. Trees and similar forms of woody (non-herbaceous or succulent) plants, such as *Juniperus virginiana* (eastern red cedar), black locust, osage orange, and *Prosopis glandulosa* (mesquite) are not native to grasslands used by LEPC. Management or removal of these species, either through manual/mechanical (chainsaws, feller bunchers, hydraulic shears, masticators, etc.) or chemical means may be necessary to restore or enhance grasslands to desired conditions. Chaining (dragging an anchor chain across a site) is sometimes appropriate for areas in later successional stages of encroachment where sagebrush and other desired native shrubs, grasses, and forbs are greatly reduced or absent. Cut brush may be lopped-and-scattered, piled-and-burned, chipped, or hauled off. Brush exceeding 5 ft. in height will be felled unless other considerations necessitate leaving them standing. Woody slash may be treated if significant buildup of fuels occurs. Slash piles shall be burned when the wildfire risk is low (usually when soils are frozen or saturated) and in accordance with state forestry laws, when applicable, for treating slash to minimize wildfire risk. Livestock grazing should be deferred on treated sites for a period of time determined to be adequate based on pre and post site conditions.
- i. Fire is one of the most cost effective means of managing brush, and is also an excellent tool for removal and exclusion of tree encroachment into LEPC habitat. Prescribed fire is the preferred tool for managing brush to desirable levels.
- j. Mechanical (mowing, discing, chopping, cutting or dozing) brush removal is another effective means of brush management. If mechanical brush management is used, care should be taken to avoid working during the nesting season, April-June, and the goal of mechanical brush management should be to reduce brush to desirable levels, as described in an approved WMP, and not to eliminate brush altogether. Mechanical treatments should maintain scattered brush and / or motts on the landscape if part of the ecological site description. Brushpiles created through mechanical brush management activities may serve as raptor perches or attract predators, and should be burned as soon as possible.
- k. The goal of chemical management should be to reduce the brush component to desirable levels, not to eliminate the brush altogether. Herbicide applications should be designed to reduce the brush component to desired levels and not eliminate it entirely. Spot treatment application is preferable over wide-scale aerial applications in order to reduce problems associated with chemical drift. Wide-scale aerial application may be appropriate if heavy infestations of invasive brush can be controlled more cost effectively..

#### *Range Planting*

- l. Planting/seeding may be necessary to improve degraded rangeland or to restore croplands, non-native pastures, and similarly disturbed sites areas to rangeland conditions preferred by LEPC. When restoring previously disturbed sites, seeding mixtures and techniques must be

- tailored to the ecological site. As stated above, plantings that use introduced non-native species or consist of single species monocultures will not be considered. Reseeding should use a mixture of suitable native warm season grasses, forbs and legumes that will provide the most suitable habitat for LEPC (NRCS 2001).
- m. More specifically, all lands that will be re-established to native grassland should use a specific mixture of native warm season bunch grasses, forbs and shrubs that are deep-rooted, drought-resistant, responsive to management with grazing and prescribed fire, and adapted to the appropriate ecological site. For example, a mixture that would be appropriate to seed sandy loam sites would be a combination of *Panicum virgatum* (switchgrass), *Schizachyrium scoparium* (little bluestem), *Bouteloua curtipendula* (sideoats grama), *Setaria vulpisetata* (plains bristlegrass), *Desmanthus illinoensis* Illinois bundleflower, and a shrub component [e.g., *Rhus trilobata* (fragrant sumac, *Prunus angustifolia* (sand plum))] (Litton et al. 1994).

### Upland Wildlife Habitat Management

#### *Cultivation and tillage practices*

- a. Cultivation practices that implement conservation tillage approaches, such as minimum till, mulch till, or no-till, **combined with minimal pesticide use** will provide additional and supplemental food supplies for LEPC (Litton et al. 1994). Cropland tillage practices that leave sufficient stubble (12 inches or more in height) and waste grain on the soil surface during winter periods enhance food availability for the LEPC (NRCS 2001). While not routinely necessary for survival of LEPC, during prolonged periods of abnormally extreme winter conditions (e.g., deep snow or ice cover for multiple subsequent days), these cropland areas may provide a temporary food source and enhance survival of LEPC. Plowing or burning these stubble fields during the fall and winter is discouraged.

#### *Food plots*

- b. In limited circumstances, primarily when and where native food sources are not available, small plots planted in supplemental foods (i.e., food plots) may be beneficial. In these situations, fallow discing to increase areas of native forbs is preferred, but cultivated areas of alfalfa, wheat, milo, grain sorghum, and oats may be considered as a means of providing food resources during fall and winter. Food plots should be planted within 1 mi. of leks, in areas adjacent to native prairie, and only in those areas where cropland or patches of native annual forbs are unavailable. Plots should be approximately 5 acres in size, oblong in shape, and planted on the contour. Domestic livestock should be excluded from these areas (Litton et al. 1994, NRCS 2001, Bidwell and Peoples 2004, Hagen et al. 2004). However, food plots are not an appropriate substitute for proper habitat management and are most effective when used in combination with other forms of habitat management. Food plots alone will not increase LEPC populations in the absence of adequate amounts of suitable LEPC habitat. Typically the expense of planting food plots will be the responsibility of the landowner.

*Other practices*

- c. Strip discing (fallow discing) and similar light, small-scale, shallow forms of soil disturbance can be used to stimulate growth of native foods for LEPC (Litton et al. 1994). These types of disturbances should be scattered across the landscape and the types of plants produced will vary with soil type, rainfall patterns, and past history of the land (Litton et al. 1994). Discing should be conducted near, but not immediately adjacent to leks on a 2 to 3-year rotation. While discing for native food management may be done at any time during the dormant season, discing during late March is generally best because soil disturbance during this period destroys a minimum of existing food and cover, and this is prior to the nesting season. If soil moisture is available, vegetative growth will quickly cover the disced area, reducing potential wind or water erosion problems.
- d. Any overgrown vegetation on lek sites should be managed to enhance the value and use of the lek.

VI. Benefits Expected to the LEPC and Landowners

Expected benefits to LEPC will accrue as a result of implementation of conservation measures. In general, expected benefits to LEPC will be realized through improvement in population numbers, performance and viability; expansion of occupied range; improvement, conservation, protection, maintenance, and restoration of habitat; and elimination or reduction of threats to the species (i.e., five listing factors/threats). For each CI issued, the USFWS must determine that the conservation measures and expected benefits, when combined with those benefits that would be achieved if it is assumed that similar conservation measures also were implemented on other necessary non-federal properties, would preclude or remove the need to list the LEPC as threatened or endangered (USFWS and NMFS 1999a).

Expected conservation benefits for LEPC from implementation of the conservation measures in this CCAA will be recognized through improved population performance. Specifically, this will entail expected increases in adult and juvenile survivorship, nest success, and recruitment rates. Because existing populations are so fragmented across the LEPC range, enhancement in one state may contribute to enhancement of populations (via connectivity of habitat) in other states. In addition, currently occupied, vacant, and potential LEPC habitats will be connected, protected, conserved, enhanced and/or restored through measures described in WAFWA-approved WMPs and issued CIs.

Furthermore, LEPC conservation will be enhanced by providing ESA regulatory assurances for participating landowners. There will be a measure of security for participating landowners in the knowledge that they will not incur additional land use restrictions if the species is listed under the ESA. The CCAA will provide benefits to conservation of the species by offering technical assistance, and in some cases potential state and Federal funding, to landowners for utilizing best management practices and conservation measures to protect and enhance LEPC habitat, and to sustain and improve population

performance (i.e., increased population numbers, increased survival, reduced mortality, expansion of occupied range).

The following activities are typically incompatible with areas to be enrolled as **conservation lands**. These activities may occur on other property owned by an applicant but not specifically on the conservation lands. Depending on the type of development, the actual footprint of a particular activity can extend well beyond the actual construction footprint. Recent research has demonstrated that LEPC exhibit a behavioral avoidance of many human-made structures, with the avoidance distance influenced by the type of development (Robel 2002, Hagen et al. 2004, Robel et al. 2004, Pitman et al. 2006, Chamberlain et al. 2006, Wolfe et al. 2007, Pruett et al. 2009). Collectively, these studies suggest that anthropogenic features can negatively influence habitat use, acting as barriers to otherwise suitable LEPC habitat. The influence of these various forms of development will be considered as we determine what areas should be included in conservation lands.

#### Oil and Gas Activities

This CCAA does not cover oil and gas activities. Oil and gas development is typically incompatible with areas to be enrolled as **conservation lands**. In cases where the landowner has no discretion/control over when and where sub-surface mineral resources may be developed and is required to open their lands to oil and gas development, any take associated with that activity is not the responsibility of the landowner. Generally a landowner has no discretion/control over when and where sub-surface mineral resources may be developed, and is required to open their lands to oil and gas development, exploration and operations. An oil and gas company operating on or near lands covered by this CCAA would be responsible for their activities and would need to pursue separate incidental take coverage, should the LEPC be listed in the future.

#### Conversion of Native Rangeland

Conversion of native grassland/rangeland to any other vegetation type (monocultures of any species, non-native grassland, cropland, etc.) is incompatible with areas to be enrolled as **conservation lands**, and is prohibited on all conservation lands enrolled in this CCAA. Areas that have been converted shall be enrolled as a portion of the area covered by a CI to provide assurances to the landowner over the entire property for incidental take coverage. These areas *may or may not* be eligible as conservation lands. This will be evaluated on a case-by-case basis because a high conservation benefit for LEPC must be met.

#### Tree Planting

Planting trees on **conservation lands** included in this CCAA is prohibited. Likewise, planting of trees on any enrolled land in a manner that constitutes a threat to the LEPC is prohibited.. This prohibition does

not apply to the planting of shrub species, such as sand plum, and sand sagebrush, if prescribed as a habitat management practice for inclusion in this CCAA.

#### Wind Power

This CCAA does not cover commercial or multi-turbine wind developments. Leasing of wind rights and wind power development for commercial purposes are typically incompatible with areas to be enrolled as **conservation lands**. Wind Turbines constitute a threat to LEPCs and hence will not be allowed on conservation lands. Existing limited infrastructure (electrical lines, substations, roads, single household wind turbine, etc), may not necessarily constitute a threat, and will be considered on a case-by-case basis, but a high conservation benefit for LEPC must be met. In cases where adjacent property owners develop wind and the landowner has no discretion/control over when and where new wind power development may occur in relation to his property boundaries, any take associated with that activity is not the responsibility of the landowner. The Wind Company would be responsible for their activities and would need to pursue incidental take coverage, should the LEPC get listed in the future.

#### Transmission Lines

The CCAA does not cover transmission lines as these are typically incompatible with areas to be enrolled as **conservation lands**. In cases where the landowner has no discretion/control over when and where transmission lines may be developed (i.e. eminent domain) and is required to open their lands to transmission development, any take associated with that activity is not the responsibility of the landowner. A landowner may not have discretion/control over when and where transmission lines may be developed, and is required to open their lands. The transmission company would be responsible for their activities and would need to pursue incidental take coverage, should the LEPC get listed in the future. Existing transmission lines on areas not enrolled as **conservation lands** may be allowable on other property owned by a landowner, but a high conservation benefit for LEPC must be met.

The USFWS and the WAFWA will examine new research and published literature regarding the prohibited activities, as it becomes available, to determine if any prohibited activities should be removed from the CCAA. If warranted, the USFWS and WAFWA will consider formally modifying the CCAA to address any new scientific findings regarding the LEPC.

#### VII. Type of Take/Level/Impacts

Should the LEPC be listed as threatened or endangered under the ESA, authorization for incidental take under the Section 10(a)(1)(A) Enhancement of Survival Permit is limited to habitat enhancement and restoration activities (e.g., prescribed burning, prescribed grazing, upland wildlife habitat management, conservation cover) and monitoring activities necessary to implement the CCAA; and agricultural (e.g., crop cultivation and harvesting, livestock grazing, farm equipment operation), recreational (e.g., viewing

or similar non-consumptive uses), and limited construction activities (e.g., construction of a storage building/barn). The Service anticipates incidental take of the LEPC will result from implementation of the CCAA on all enrolled lands throughout the action area. Take must be incidental to otherwise lawful ongoing activities on enrolled lands in the action area and consistent with implementation of the CCAA and the landowner's CI.

Incidental take in the form of harm or harassment may result from disturbance incidental to habitat improvement projects required to benefit the LEPC, and from other ongoing otherwise lawful agricultural, recreational, limited development, and other related activities. Direct take, in the form of incidental killing of adults, juveniles, chicks, or eggs, also may result from the implementation of conservation measures such as brush management practices, prescribed fire and grazing, fencing, and the collection of injured animals. Direct take, in the form of mortality, also may occur due to ongoing otherwise lawful agricultural, recreational, and other related activities such as the operation of vehicles and/or farm equipment. Some negligible disturbance is also possible from habitat monitoring activities.

Incidental take likely will occur sporadically, and is not expected to nullify the high conservation benefit anticipated to accrue under the CCAA. Application of a specific conservation measure at the local or landscape scale is expected to produce overall net benefits although it may simultaneously create a potential temporary source of risk to individual birds. For example, removal of encroaching eastern red cedar is likely to result in a positive population response by LEPC over the long term, despite the potential for some level of temporary disturbance to the bird from the machinery used. The overall net impact of these actions is positive and will result in beneficial effects to the species. Typically, implementation of this CCAA will result in fewer short-term adverse impacts to LEPC than would have otherwise occurred had this CCAA not been implemented.

The estimated anticipated level of incidental take associated with this CCAA is directly related to the number of landowners and amount and habitat quality of acreages covered under the management plans tiered to this agreement. Accurately estimating the total number of participants is impossible at this time.

Using the acreage figures from the Draft Conference Opinion between USFWS and NRCS on conservation practices under LPCI (2013) which was estimated by using the total number of acres for each practice implemented within the EOR since 2010. These acres were subdivided into each of the 4 eco-regions identified by the range wide plan (Table 1). Bird density (per eco-region) as estimated by range-wide aerial surveys in 2012 (McDonald et al. 2012) was then multiplied by acres affected to estimate the total numbers of birds "at risk" of being affected. Finally, using known rates of nest loss or were multiplied by the total "at risk" birds to estimate a minimum number affected. Because the future enrollment in LPCI is difficult to predict, this minimum number was doubled to account for significant increases in conservation actions in the future. The intent is provide an estimated take for the entire range, the regional estimates are provided only to demonstrate how the calculations were made.

Table 1. Acreages of practices implemented through Lesser Prairie-Chicken Initiative, LEPC density (birds/acre) used to estimate numbers of individuals “at risk” of adverse effect, and estimated incidental take.

	Birds/acre	Acres and Miles of Practices						Total
		Brush Mgmt	Pres. Burn	Pres. Graze	Range Plant	Forage Harvest	Fence	
Mix-Grass	0.0017	56,369	36,694	495,718	3,355	56,369	27	--
Shortgrass	0.0063	6,684	30,683	110,069	3,050	6,684	49	--
Shin-Oak	0.0016	90,837	49	335,277	4,885	90,837	7	--
Sandsage	0.0015	737	2,243	116,915	3,099	737	10	--
Total		154,627	69,669	1,057,979	14,388	154,627	93	--
Estimated numbers of adversely effected LEPC								
Mix-Grass	0.0017	96	62	843	6	96	17	1,120
Shortgrass	0.0063	42	195	698	19	42	32	1,029
Shin-Oak	0.0016	145	0	535	8	145	5	838
Sandsage	0.0015	1	3	175	5	1	6	191
Total		284	261	2,252	37	284	59	3,178
Estimated Incidental Take Annually								
Mix-Grass	0.0017	1	14	34	0	1	34	83
Shortgrass	0.0063	0	43	28	0	0	63	135
Shin-Oak	0.0016	1	0	21	0	1	9	33
Sandsage	0.0015	0	1	7	0	0	12	20
Total		2	57	90	0	2	119	272
Adjusted <sup>a</sup>		20	66	90	20	20	119	335

<sup>a</sup> Adjusted totals based on assuming at least 5 incidents of take occur in cells where calculations resulted in <5 incidents.

Using the numbers provided that 1,296,663 acres of habitat practices and an annual take of 355 birds it was determined that 1 bird per 4000 acres would be incidentally taken annually.

Generally, application of the management actions outlined in the “Conservation Measures” section will have the effect of minimizing any incidental take through improvements in habitat quality and condition. Specific measures which can be used to minimize incidental take include, but are not limited to:

- Balancing duration and intensity of grazing to increase or maintain good nesting and brood-rearing habitats, in addition to creating planned patterns of patchiness on the landscape.
- Deferring grazing, as needed, to increase habitat patchiness on the landscape will create suitable interspersions of different vegetation providing an interspersions of nesting and



brood-rearing habitats (Hagen et al. 2004), enhancing food species (forbs) and increasing nesting cover (mid-tall grasses) for LEPC (Litton et al. 1994).

- Implementing patch burning techniques to provide appropriate structural, compositional, and spatial diversity of habitat components on the landscape (Bidwell et al. 2003). Late winter-early spring burns are the preferred timing for LEPC and many other nesting grassland birds. Under certain circumstances, it may be appropriate to conduct summer burns. A late winter through early spring burn should be conducted once every 4-7 years to increase green forage and insect availability in subsequent spring and summer seasons. Annual burning of large areas should be avoided to conserve residual nesting cover.
- Eliminating the routine annual use of broadcast herbicides. If grazing management is appropriate for the productivity of the land, and fire is periodically used to direct grazing and maintain/balance brush canopy and density, then herbicides should only be necessary in limited applications to maintain and control brush species (Bidwell et al. 2003).
- Protecting sand plum thickets and areas of aromatic sumac for use as cover by LEPC (NRCS 2001).
- Removing all upland trees, including field windbreaks, from areas intended to be used by LEPC. LEPCs do not require trees, and strongly avoid them (Bidwell et al. 2003). Target species include black locust, Osage orange, hackberry (not to include Netleaf Hackberry), Russian olive, autumn olive, mesquite, Siberian elm, Lacebark elm, and eastern red cedar. Removing trees helps eliminate perching opportunities for avian predators of LEPC. Removal of shinnery oak motts of any size is **not** recommended.

CONSERVATION MEASURE	NATURE OF IMPACTS/TAKE	AMOUNT/EXTENT OF IMPACTS/TAKE	MINIMIZATION PRACTICE THAT MAY BE USED TO MINIMIZE ANTICIPATED ADVERSE EFFECTS
Prescribed Fire	<ul style="list-style-type: none"> <li>• Construction of fire breaks will cause temporary soil disturbance and remove cover/habitat, disturbance of nesting birds, invasive species establishment</li> <li>• Implementation of controlled burns will cause habitat loss and may temporarily disturb breeding activities or cause birds to be displaced</li> <li>• Motorized vehicular activity may cause individual birds to be displaced or result in</li> </ul>	<ul style="list-style-type: none"> <li>• Effects are expected to be short-term in duration and are not expected to produce significant, lasting changes in species distribution of abundance</li> <li>• Displaced individuals may have increased energy demands or be subjected to increased risk of predation but the effects are expected to be of short duration and</li> </ul>	<ul style="list-style-type: none"> <li>• Treat invasive species and noxious weeds that become established, unless WAFWA and Service biologists determine it is not necessary to minimize adverse effects. A written justification for exceptions must be provided.</li> <li>• Avoid burning within 4.8 km of an active lek during the breeding season (March to June). Burning within 4.8 km of leks may occur during other periods.</li> </ul>

CONSERVATION MEASURE	NATURE OF IMPACTS/TAKE	AMOUNT/EXTENT OF IMPACTS/TAKE	MINIMIZATION PRACTICE THAT MAY BE USED TO MINIMIZE ANTICIPATED ADVERSE EFFECTS
	collisions with vehicles	localized in extent	<p>Burning from February to March may be conducted after birds have ceased lekking activities in the morning.</p> <ul style="list-style-type: none"> <li>• Avoid burning during nesting season.</li> <li>• Ensure vehicles have sufficient noise suppression devices (mufflers)</li> <li>• Improve habitat conditions such that suitable resources are available to offset increased energy demands of LEPC.</li> <li>• Post fire erosion control devices need to be used where ash flows may impact surface water used by the interior least tern, Arkansas River shiner, and Arkansas darter, unless WAFWA and Service biologists determine such practices are not necessary to minimize adverse effects. A written justification for exceptions must be provided.</li> <li>• Use existing trails and roads as travel lanes</li> </ul>
Grazing	<ul style="list-style-type: none"> <li>• Livestock may trample nests or cause nesting birds to flush</li> <li>• Livestock may cause disruption of breeding and display activities</li> <li>• Construction of permanent fences may cause injury or death of individual birds due to</li> </ul>	<ul style="list-style-type: none"> <li>• Pitman et al. (2006) estimated nest loss from trampling by cattle to be about 1.9% of known nests.</li> <li>• Displaced individuals may have increased energy demands or be subjected to increased risk of predation but the</li> </ul>	<ul style="list-style-type: none"> <li>• Participating landowners will routinely monitor for appropriate grazing duration and intensity to ensure habitat quality objectives are met and over-utilization is avoided</li> <li>• Adhere to the grazing management strategy within the WMP.</li> </ul>

CONSERVATION MEASURE	NATURE OF IMPACTS/TAKE	AMOUNT/EXTENT OF IMPACTS/TAKE	MINIMIZATION PRACTICE THAT MAY BE USED TO MINIMIZE ANTICIPATED ADVERSE EFFECTS
	<p>collision. Fences also may facilitate predation by serving as travel lanes for predators. Fence posts may serve as raptor perches and facilitate hunting by avian predators</p> <ul style="list-style-type: none"> <li>• Feeding and herding of livestock may cause physical disturbance</li> <li>• Improper placement of salt and mineral supplements may cause habitat degradation</li> </ul>	<p>effects are expected to be of short duration and localized in extent</p> <ul style="list-style-type: none"> <li>• Livestock concentration at supplement stations can lead to trampling of vegetation but the effects should be very localized</li> </ul>	<ul style="list-style-type: none"> <li>• New fences in high risk areas will be marked. Existing fences with documented collision and within 4.8 km of known leks will be marked. Keep fence lines cleared of trees. Remove any unneeded fences.</li> <li>• Encourage new fences to be built to specifications to limit impact on the LEPC</li> <li>• Minimize pasture visits, particularly near leks and known nests during the breeding and nesting season.</li> <li>• Co-locate salt and mineral supplements in areas of other disturbance or in proximity to structures that LEPC tend to avoid.</li> </ul>
<p>Pesticide use in Cultivated Areas to Control Insects</p>	<ul style="list-style-type: none"> <li>• Application of insecticides to control grasshoppers and other pests can reduce food supplies or cause toxicity if treated insects are consumed</li> </ul>	<ul style="list-style-type: none"> <li>• Temporary loss of insect food resources</li> </ul>	<ul style="list-style-type: none"> <li>• Participating landowners will monitor areas where application occurred for signs of moribund LEPCs, and document and report any moribund LEPCs to WAFWA and the Service. Buffers around aquatic systems will be consistent with approved label instructions. Pesticides will be applied only by licensed applicators.</li> </ul>
<p>Brush Control – Mechanical</p>	<ul style="list-style-type: none"> <li>• Creation of brush piles which can serve as perches or shelter/attractant for other predators</li> <li>• Disturbance</li> </ul>	<ul style="list-style-type: none"> <li>• Increased energy use, nest abandonment, increased risk of predation</li> </ul>	<ul style="list-style-type: none"> <li>• Defer mechanical brush control during nesting season</li> <li>• Avoid or minimize creation of brush piles and burn any brush piles created as soon as possible</li> </ul>

CONSERVATION MEASURE	NATURE OF IMPACTS/TAKE	AMOUNT/EXTENT OF IMPACTS/TAKE	MINIMIZATION PRACTICE THAT MAY BE USED TO MINIMIZE ANTICIPATED ADVERSE EFFECTS
Brush control – Chemical	<ul style="list-style-type: none"> <li>• Creation of raptor perch sites (tree skeletons)</li> <li>• Direct elimination of food source (plants) or indirect removal of food source (insects) associated with treated/affected plant species</li> </ul>	<ul style="list-style-type: none"> <li>• Increased energy use, nest abandonment, increased risk of predation</li> </ul>	<ul style="list-style-type: none"> <li>• Defer treatment during mating/nesting season</li> <li>• Removal of raptor perch sites will reduce predation by raptors and facilitate long-term improvement in habitat quality</li> <li>• Spot treat problem areas, use specific (as opposed to broad spectrum) herbicides.</li> </ul>
Shrub management – Mechanical	<ul style="list-style-type: none"> <li>• Disturbance</li> <li>• Creation of brush piles which can serve as perches or shelter/attractant for other predators</li> </ul>	<ul style="list-style-type: none"> <li>• Increased energy use, nest abandonment, increased risk of predation</li> </ul>	<ul style="list-style-type: none"> <li>• Defer mechanical brush control during nesting season</li> </ul>
Shrub management – Chemical	<ul style="list-style-type: none"> <li>• Disturbance</li> <li>• Direct elimination of food source (plants) or indirect removal of food source (insects) associated with treated/affected plant species</li> </ul>	<ul style="list-style-type: none"> <li>• Increased energy use, nest abandonment, increased risk of predation</li> <li>• Diminished physiological condition, increased energy use and risk of predation due to longer travel distances to food resources or increased foraging/feeding times</li> </ul>	<ul style="list-style-type: none"> <li>• Defer treatment during mating/nesting season</li> <li>• Spot treat problem areas, using specific (as opposed to broad spectrum) herbicides.</li> <li>• Tebuthiuron will not be used to treat desirable shrubs unless other conservation measures would not achieve desired results.</li> <li>• Treat portions of pasture in successive years rather than entire ranch at one time, unless WAFWA and Service biologists determine it is not necessary to minimize adverse effects. A written justification for exceptions must be provided.</li> </ul>

CONSERVATION MEASURE	NATURE OF IMPACTS/TAKE	AMOUNT/EXTENT OF IMPACTS/TAKE	MINIMIZATION PRACTICE THAT MAY BE USED TO MINIMIZE ANTICIPATED ADVERSE EFFECTS
Revegetation	<ul style="list-style-type: none"> <li>Planting activities (including seedbed prep, cover crop establishment and actual planting)</li> </ul>	<ul style="list-style-type: none"> <li>May cause temporary disturbance (although LEPC use of areas requiring revegetation is expected to be minimal)</li> <li>Monocultures or non-native plants will provide minimal or no habitat for LEPC</li> </ul>	<ul style="list-style-type: none"> <li>Defer activities during nesting season</li> <li>Use only native mixtures in accordance with ecological site guidelines and incorporate shrubs and forbs when possible and treat any noxious weeds that become established</li> </ul>
Forage Harvest/Haying	<ul style="list-style-type: none"> <li>Temporary removal of brood-rearing habitat</li> <li>Destruction of nests</li> <li>Disturbance</li> </ul>	<ul style="list-style-type: none"> <li>Temporary harm and harassment</li> </ul>	<ul style="list-style-type: none"> <li>Harvest forage from inside out</li> <li>Defer haying until after nesting season</li> </ul>
Watering facilities	<ul style="list-style-type: none"> <li>Drowning may occur</li> <li>Some avoidance associated with use of elevated structures or electrical infrastructure may occur</li> </ul>	<ul style="list-style-type: none"> <li>Direct mortality as a result of drowning anticipated to be extremely rare.</li> </ul>	<ul style="list-style-type: none"> <li>Use suitable escape ramps</li> <li>Solar powered equipment will be used to replace windmill towers and/or associated powerlines. unless WAFWA and Service biologists determine it is not necessary to minimize adverse effects. A written justification for exceptions must be provided. Alternatively, associated powerlines may be buried.</li> </ul>
Wildlife Viewing	<ul style="list-style-type: none"> <li>Lek abandonment/disturbance</li> </ul>	<ul style="list-style-type: none"> <li>Temporary harm and harassment</li> </ul>	<ul style="list-style-type: none"> <li>Minimize disturbance to lek sites</li> </ul>
Collection of injured or deceased animals	<ul style="list-style-type: none"> <li>Probable mortality of injured animals.</li> </ul>	<ul style="list-style-type: none"> <li>Consider need for rehabilitators or use the services of known rehabilitators.</li> </ul>	<ul style="list-style-type: none"> <li>WAFWA or USFWS may necropsy deceased individuals to determine cause of mortality and take steps to reduce or eliminate causal agent.</li> </ul>
Rescue of individuals anticipated to be taken in accordance with Permit conditions	<ul style="list-style-type: none"> <li>Stress</li> <li>Possible injury or mortality of target animals</li> </ul>	<ul style="list-style-type: none"> <li>Rescue of individuals is anticipated</li> </ul>	<ul style="list-style-type: none"> <li>USFWS will implement measures to minimize that take which may include trapping / capturing and relocating to suitable habitat off-site.</li> </ul>

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VIII. Assurances Provided

Through this CCAA, the USFWS provides assurances to WAFWA and cooperating property owners with WAFWA-issued CI, that no additional conservation measures or additional land, water, or resource use restrictions, beyond those voluntarily agreed to and described in the Potential Conservation Measures (Section V) section of this CCAA or in the approved WMP, which will be required should the LEPC become listed as a threatened or endangered species in the future. Unless otherwise stated, these assurances will be authorized with the issuance of an Permit under section 10(a)(1)(A) of the ESA.

The USFWS will provide WAFWA and participating landowners with the ESA regulatory assurances found at 50 CFR 17.22(d)(5) or 17.32(d)(5), as applicable. Consistent with the USFWS's Candidate Conservation Agreement with Assurances Final Policy (USFWS and NMFS 1999), conservation measures and land, water, or resource use restrictions in addition to the measures and restrictions described in this CCAA will not be imposed with respect to legal activities on enrolled lands should the LEPC become listed under the ESA in the future. These assurances are authorized for the enrolled lands identified in the CI. In the event of unforeseen circumstances, the USFWS will not require the commitment of additional land, water, or other natural resources beyond the level otherwise agreed to for the species in this CCAA without written consent of WAFWA and participating landowners. The Permit will authorize participating landowners to incidentally take LEPC as long as such take is consistent with this CCAA and the associated Permit.

Coverage under the Permit will only apply to participating landowners who enroll lands under this CCAA prior to any future effective ESA listing date of LEPC. Future non-enrolled landowners wishing incidental take authorization for LEPC after any future effective ESA listing date could apply for authorization through the USFWS' Habitat Conservation Plan or Safe Harbor Agreement permitting programs, as appropriate.

IX. Assurances Provided to Property Owner in Case of Changed or Unforeseen Circumstances

"Changed circumstances" are those alterations in circumstances that can reasonably be anticipated and planned for in the CCAA (e.g., wildfire, drought). Changed circumstances might include minor wildfires that temporarily alter suitability of available breeding or winter habitat across portions of the landscape. "Unforeseen circumstances" are changes in circumstances that could not reasonably have been anticipated by the WAFWA and the USFWS at the time of the CCAA's negotiation and development, and that result in a substantial and adverse change in the status of the covered species. An example of an unforeseen circumstance might be a large, catastrophic wildfire that negatively alters a majority of LEPC habitat within the covered area. The assurances listed below apply to participating landowners. The assurances apply to the enrolled properties where the agreement is being properly implemented and are applicable only with respect to the species (LEPC) covered by this CCAA.

*Changed circumstances provided for in the CCAA.* The impacts of various factors (such as wildfire, drought, floods, tornados, and energy development), which are out of the landowners control, are addressed broadly by the conservation measures for LEPC utilized in this CCAA. Where a conservation measure is anticipated to have incidental take, conservation measures have been identified and made a part of that action, which will eliminate or minimize the potential adverse effects of the identified action, thereby reducing take. If additional conservation measures not provided for in the CCAA's operating conservation program are necessary to respond to changed circumstances, the USFWS will not require any conservation measures in addition to those provided for in the CCAA without the consent of WAFWA and the property owner, provided the CCAA is being properly implemented. Flexibility in the implementation of the conservation measures may be allowed should WAFWA determine that, based on ecological considerations, it would result in an overall net benefit for the LEPC. For example, although prescribed fire typically would not be implemented during the lekking period, there may be instances on certain enrolled properties where burning during the lekking period would result in minimal to no adverse effects, encourage heterogeneity on the landscape and provide an overall net benefit to the LEPC. The long-term benefits of the CCAA will not only offset but greatly outweigh the anticipated minor negative effects of anticipated take.

(a) **Wildfire.** Wildfire impacts affecting single or limited numbers (for purposes of this CCAA, fewer than 10% of the total number CI's in effect at the time) of individual CI's will be handled on a case by case basis with the individual landowners to determine the management practices to be applied. If one or more wildfires destroys or effectively eliminates more than 50% of lesser prairie-chicken habitat covered by one or more CI's, to the extent that the ability to reach the protected habitat objective is not possible within the CCAA time frame, WAFWA will notify the Service within 30 days of that determination. Within 90 days of notification, the affected parties will meet and evaluate the conservation measures and identify potential actions which could be employed to address the change in circumstances. The Parties will meet with the CI holder and develop habitat restoration plans to be implemented voluntarily on an agreed upon schedule. Adaptive management approaches will maximize likelihood of success.

(b) **Drought.** Variation in precipitation amounts is not an uncommon event, within LEPC range. Annual monitoring and conservation measures in the CCAA and CIs are expected to address minor year to year variations in precipitation amounts. However, severe and prolonged droughts over much of an ecoregion may create conditions that reduce seasonally available habitat beyond normal annual variation and cause changed circumstances on the landscape. Severe droughts are defined here as the occurrence of Palmer Drought Severity Index (PDSI) of -3 and below in August over 25% or more of an ecoregion. Prolonged droughts are defined here as having average PDSI values of -2 or lower over the preceding 24 month period for 25% or more of an ecoregion. We recommend that CI holders track drought conditions on their own property and make appropriate changes in grazing practices. However, in the event of severe or prolonged drought, WAFWA will notify the Service within 30 days of that determination.



Within 90 days of notification, the parties will evaluate the drought conditions and, if opportunities exist, employ changes to the conservation measures to address local conditions. The Parties will identify potential actions which could be employed to address the change in circumstances for enrolled lands within the identified drought area. The Parties will contact CI holders that graze their lands to evaluate if current livestock grazing practices should be temporarily modified and if the CI holder would be willing to do so. Conservation measures that may be used to address drought conditions include grazing deferment, rotation, or other management changes designed to retain residual and live vegetation; development of grass banks for use during drought conditions; development of additional water sources for livestock and LEPC and prescribed fire management or similar vegetation management to minimize effects of additive impacts.

(c) Energy development. Much, if not all, of the planning area identified in this CCAA has, or is believed to have, the potential for energy development. In cases where the landowner controls only surface rights and is required to open their lands to energy development after the CI is signed, all efforts to apply the Conservation Measures identified within the LEPC Range-wide Conservation Plan will be made. Determination of the impact of energy development on individual CIs will be made by the WAFWA through the monitoring process. Modifications or additions to management practices may be adopted for the individual CI, in concert with the CI holder, based on the adaptive management approach and the circumstances on each CI. If, however, extensive development of energy resources begins to occur where the landowners do not hold the mineral rights, and the mineral owner or energy developer is unwilling to voluntarily implement the Conservation Measures on sufficient habitat areas, and the WAFWA estimates that the ability to achieve the habitat protection targets (overall high conservation gain) could be compromised, then a changed circumstance is deemed to be in effect. The WAFWA will notify the Service within 30 days of that determination. Within 90 days of notification, the parties will meet and evaluate the circumstances in the population area and determine if opportunities exist to change the conservation measures to address the habitat protection target.

The Parties may determine that the cumulative energy development affects the potential to reach the habitat protection objectives. The Parties would seek to develop additional or modified conservation measures that could be applied outside the CCAA process or additional conservation measures to be considered by the CI holders or in future CIs. If the landowner or the WAFWA are unable get the energy developer to implement the recommended conservation measures, that portion of acreage affected by the changed circumstances may be excluded from the conservation land, but if it is out of the landowner's control, the landowners incidental take coverage will remain for their activities. However, if the species is listed the O&G operators will need to seek incidental take coverage, as the coverage under the CCAA is only available to the landowner.

(d) Flooding. Flooding impacts affecting single or limited numbers of individual CI's will be handled on a case by case basis with the individual landowners to determine the management practices to be applied. If one or more flood events destroys or effectively eliminates more than 50% of lesser prairie-chicken habitat covered by one or more CI's, to the extent that the ability to reach the protected habitat objective is not possible within the CCAA time frame, WAFWA will notify the Service within 30 days of that determination. Within 90 days of notification, the affected parties will meet and evaluate the conservation measures and identify potential actions which could be employed to address the change in circumstances. The Parties will meet with the CI holder and develop habitat restoration plans to be implemented voluntarily on an agreed upon schedule. Adaptive management approaches will maximize likelihood of success.

(e) Tornadoes. Tornado impacts affecting single or limited numbers of individual CI's will be handled on a case by case basis with the individual landowners to determine the management practices to be applied. If one or more tornadoes destroys or effectively eliminates more than 50% of lesser prairie-chicken habitat covered by one or more CI's, to the extent that the ability to reach the protected habitat objective is not possible within the CCAA time frame, WAFWA will notify the Service within 30 days of that determination. Within 90 days of notification, the affected parties will meet and evaluate the conservation measures and identify potential actions which could be employed to address the change in circumstances. The Parties will meet with the CI holder and develop habitat restoration plans to be implemented voluntarily on an agreed upon schedule. Adaptive management approaches will maximize likelihood of success.

(f) Broadcast Herbicides.

Broadcast of herbicides should only be used when habitat goals cannot be achieved by other means to control invasive, non-native plants and other exotic species in situations where their density increases on the landscape to the level that the habitat for LEPC is threatened.

*Changed circumstances not provided for in the CCAA.* If additional conservation measures not provided for in the CCAA's operating conservation program are necessary to respond to changed circumstances, the USFWS will not require any conservation measures in addition to those provided for in the CCAA without the consent of WAFWA and the property owner, provided the CCAA is being properly implemented.

*Unforeseen circumstances.* If additional conservation measures are necessary to respond to unforeseen circumstances, the Director of the USFWS may require additional measures of WAFWA and the participating landowner, but only if such measures maintain the original terms of the CCAA. These additional conservation measures will not involve the commitment of additional land, water, financial compensation, or additional restrictions on the use of land, water, or other natural resources available for development or use under the original terms of the CCAA without the consent of WAFWA and the participating landowner. Public funds to support implementation of these additional conservation measures may not be available and

the landowner could be responsible for the cost of implementing these additional voluntary measures.

The USFWS will have the burden of demonstrating that unforeseen circumstances exist, using the best scientific and commercial data available. These findings must be clearly documented and based upon reliable technical information regarding the status and habitat requirements of LEPC. The USFWS will consider, but not be limited to, the following factors:

- Size of the current range of LEPC;
- Percentage of range affected by the need for additional conservation measures and covered by the CCAA;
- Percentage of range conserved by the CCAA;
- Ecological significance of that portion of the range covered by the CCAA;
- Level of knowledge about LEPC; and
- Whether failure to adopt additional conservation measures would appreciably reduce the likelihood of survival and recovery of LEPC in the wild.

X. Monitoring and Reporting

WAFWA will be responsible for annual monitoring through its WMP process and WAFWA will be responsible for annual reporting requirements related to this CCAA. These annual monitoring and reporting activities by WAFWA will fulfill the compliance and biological monitoring requirements of the CCAA. Information in annual reports will include, but not be limited to, the following: (1) summary and brief description of landowners enrolled under the CCAA during the reporting year, including copies of completed CIs; (2) a digital polygon of each enrolled property that is compatible with common mapping programs (e.g. ArcMap); (3) summary and brief description of habitat management activities and habitat conditions in the CCAA area, including all enrolled lands (acres); (4) evaluation of effectiveness of habitat management activities implemented on enrolled lands during the reporting year at meeting the intended conservation benefits of the CCAA; (5) if herbicides are used to manage shinnery oak, an evaluation of the use of herbicides on shinnery oak to ensure application rates defoliate but do not kill shinnery oak; (6) population surveys conducted during the reporting year on enrolled non-federal lands; (7) amount of incidental take described by number acres of suitable habitat converted to unsuitable, and all dead or injured LEPCs, including lost nests with eggs or broods/year, reported or documented; and (8) funds used for habitat conservation (implementation of conservation measures) on enrolled non-federal lands. Reports will be due January 31 of each year to the Administrators of this CCAA, and to any participating landowners.

Landowners need to report all dead or injured LEPCs to WAFWA in a timely manner (preferably within 48 hours). This will allow WAFWA to monitor the level of birds killed. This will also allow WAFWA or the USFWS the opportunity to collect specimens for research purposes. Further, this will allow WAFWA to become aware of any problem areas if multiple birds are injured or killed in a certain area.

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XI. Notification Requirement for Planned actions that might result in Take

By signature of this CCAA and associated CIs, participating landowners and WAFWA agree to provide the USFWS with an opportunity to evaluate any planned action that potentially would result in authorized take in the form of direct mortality or injury of LEPCs before that action is implemented and the potential for take occurs. Notification that such take may occur must be provided to the USFWS at least 30 days in advance of the action. The USFWS will consider annual reports and WMPs sufficient notification for permitted take that occurs on an ongoing basis, such as temporary disturbances from the implementation of various conservation measures and from otherwise lawful ongoing agricultural, recreational, and limited-development actions.

XII. Duration of CCAA and Permit

This CCAA will be for a duration of 25 years from the date the CCAA is signed by WAFWA and the USFWS. The associated Permit will become effective on the date of a final rule that lists LEPC as threatened or endangered and continues through the end of the CCAA term. Any CI that has been approved begins upon the date of the final signature and continues through the end of the CCAA term. If the CCAA is modified at any time in the future, those modifications will not be required of landowners who possess a CI at the time of the modification, unless mutually agreed upon by the WAFWA and participating landowners. The Permit will cover participating landowners from the date their lands are enrolled under the CCAA. Enrolled lands will be maintained in their existing and/or improved states (as outlined in the WMP that accompanies the CI for the enrolled property) from the date the land is enrolled under the CCAA.

XIII. Modifications

After approval of the CCAA, the USFWS may not impose any new requirements or conditions on, or modify any existing requirements or conditions applicable to, a participating landowner or successor in interest to the participating landowner, to compensate for changes in the conditions or circumstances of any species or ecosystem, natural community, or habitat covered by the CCAA except as stipulated in 50 CFR 17.22(d)(5) and 17.32(d)(5). If the LEPC is listed and then later becomes delisted due to recovery, WAFWA may discuss with the Service any potential changes or amendments to the CCAA or Permit conditions that may be appropriate.

XIV. Modification of the CCAA

Any party may propose modifications or amendments to this CCAA by providing written notice to, and obtaining the written concurrence of, the other parties. Such notice shall include a statement of the proposed modification, the reason for it, and its expected results. The parties will use their best efforts to respond to proposed modifications within 60 days of receipt of such notice. Proposed modifications will become effective upon the other parties' written concurrence. Participating landowners enrolled

prior to a modification or amendment will not be required to implement additional conservation, but they may voluntarily choose to do so. Participating landowners enrolling after a modification or amendment will be required to implement the Plan as amended at the time of enrollment.

XV. Amendment of the Permit

The Permit, if issued, may only be amended in writing and with notification to WAFWA stating the proposed amendment or modification. The Permit may be amended by the USFWS to accommodate changed circumstances in accordance with all applicable legal requirements including, but not limited to the ESA, the National Environmental Policy Act, and the USFWS' permit regulations at 50 CFR 13 and 50 CFR 17, but such amendment shall require the agreement of WAFWA. WAFWA can propose an amendment to its Permit by providing a statement describing the proposed amendment and the reasons for it to the USFWS. Upon issuance of a proposed amendment or modification, WAFWA will coordinate a meeting with, or conference call to, the affected parties (CI holders) and discuss and provide explanation of the amendment. Amendments or modifications made in accordance with Section 10 of the ESA will become final when signed by the WAFWA (Permit Holder) and the Service. Approved amendments shall be attached to the original CCAA. Amendments or modifications to CIs will become final when signed by the affected parties and attached to the original CCAA.

XVI. Withdrawal from CI

Due to the voluntary nature of this agreement, the participating landowner may withdraw from this agreement at any time without penalty, with 10 days written notification to the WAFWA. Withdrawal does not negate or diminish the benefits or assurances provided to the participating landowner under the CI for Covered Activities prior to the date of the withdrawal from CCAA participation. Any authorization to cause incidental take of lesser prairie-chickens as a result of activities identified in section VII of the CCAA on the enrolled lands identified in the Wildlife Management Plan, as well as any regulatory assurances will be revoked from the effective withdrawal date.

XVII. Termination of the CCAA

As provided for in Part 8 of the USFWS' Candidate Conservation Agreement with Assurances Policy (64 FR 32726, June 17, 1999), WAFWA may, for good cause, terminate implementation of the CCAA's voluntary management actions prior to the CCAA's expiration date, even if the expected benefits have not been realized. If the CCAA is terminated, however, WAFWA is required to surrender the Permit at termination, thus relinquishing take authority (if the LEPC has become listed at time of termination) and the assurances granted by the Permit. WAFWA is required to give 60 days written notice to the other parties of intent to terminate the CCAA, and must give the USFWS an opportunity to find and transfer the Permit to an alternative Permittee or issue individual Permits to landowners to continue the CCAAs conservation program within 90 days of the notice.

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XVIII. Permit Suspension or Revocation

The USFWS may suspend or revoke the Permit for cause in accordance with the laws and regulations in force at the time of such suspension or revocation (50 CFR 13.28(a)).

XIX. Remedies

Each party shall have all remedies otherwise available to enforce the terms of this CCAA and the Permit, except that no party shall be liable in damages for any breach of this CCAA, any performance or failure to perform an obligation under this CCAA or any other cause of action arising from this CCAA.

XX. Dispute Resolution

The USFWS, WAFWA, and Participating Landowners agree to work together in good faith to resolve any disputes, using dispute resolution procedures agreed upon by all parties.

XXI. Succession and Transfer

This CCAA shall be binding on and shall inure to the benefit of participating landowners and their respective successors and transferees in accordance with applicable regulations (50 CFR 13.24 and 13.25). The rights and obligations under this CCAA are transferable to subsequent non-federal Cooperators pursuant to 50 CFR 13.25. The Permit (if issued) is also transferable to the new non-federal Cooperator pursuant to 50 CFR 13.25. If the CCAA and Permit are transferred, the new non-federal Cooperator will have the same rights and obligations with respect to enrolled lands as the original Cooperator.

Participating Landowners (i.e., enrollees) shall notify the WAFWA or any subsequent non-federal Cooperator in writing of any transfer of ownership, so that WAFWA or other non-federal Cooperator can attempt to contact the new owner, explain the responsibilities applicable to the enrolled land, benefits, and seek to interest the new owner in adopting the existing WMP with a transfer of the CI. Once the landowners' property is no longer in their possession, their requirements under the CI are discharged. Alternatively, prior to a potential listing decision, the new owner may develop a new WMP and sign a new CI to enroll the property formerly enrolled. Assignment or transfer of CI shall be governed by federal statutes and USFWS regulations in force at the time. If new landowners do not become party to this or another CCAA through the issuance of CI, they will not receive the benefits of the Permit authorizing incidental take of LEPC.

XXII. Availability of Funds

Funding to recruit (including outreach and education activities) willing landowners, identify appropriate lands for enrollment, survey for LEPC, prepare CCAA CI, plan for habitat conservation and management,

and implement conservation measures is not included in this CCAA. However, the State Fish and Wildlife Agencies of Colorado, Kansas, New Mexico, Oklahoma and Texas have committed significant resources to the LEPC in the past decade and will continue to use those resources to implement this CCAA. Nothing in this CCAA prevents State Fish and Wildlife Agencies or the USFWS from obligating additional funding for this CCAA in the future.

Implementation of this CCAA is subject to the requirements of the Anti-Deficiency Act and the availability of appropriated funds. Nothing in this CCAA will be construed by the parties to require the obligation, appropriation, or expenditure of any money from the U.S. Treasury. The parties acknowledge that the USFWS will not be required under this CCAA to expend any federal agency's appropriated funds unless and until an authorized official of that agency affirmatively acts to commit to such expenditures as evidenced in writing.

In the event that Participating Landowners in this agreement elect to enroll in the WAFWA Range-wide Plan Mitigation Framework to generate credits, funding from that program can be made available to address LEPC habitat and threats to that habitat on properties enrolled in the CCAA.

#### XXIII. Relationship to Other Agreements

The terms of this CCAA shall be governed by and implemented in accordance with applicable Federal law. Nothing in this CCAA is intended to limit the authority of the USFWS to fulfill its responsibilities under federal laws. All activities undertaken pursuant to this CCAA or the Permit must be in compliance with all applicable state and federal laws and regulations.

Similar Agreements currently exist in New Mexico, Texas, and Oklahoma within this CCAA's plan and Permit area and others may be developed. Each of the existing options addresses the same threats to the species and none of those options generate funding streams. Therefore, this Agreement does not compete with the existing Agreements and will provide landowners with an option as to which Agreement they wish to participate in. In some circumstances, it may be more appropriate to participate in another agreement based upon land use activities, such as O&G, wind or electric transmission development. Any future agreements will need to recognize pre-existing agreements and not conflict with the terms and conditions in their Permits.

#### XXIV. No Third-Party Beneficiaries

This CCAA does not create any new right or interest in any member of the public as a third-party beneficiary, nor shall it authorize anyone not a party to this CCAA to maintain a suit for personal injuries or damages pursuant to the provisions of this CCAA. The duties, obligations, and responsibilities of the parties to this CCAA with respect to third parties shall remain as imposed under existing law.

#### XXV. Notices and Reports



Any notices and reports, including monitoring and annual reports, required by this CCAA shall be delivered to the persons listed below, as appropriate:

WAFWA designee:

USFWS designee:

IN WITNESS WHEREOF, THE PARTIES HERETO have, as of the last signature date below, executed this Candidate Conservation Agreement with Assurances to be in effect as of that date.

\_\_\_\_\_  
Director  
WAFWA Representative

\_\_\_\_\_  
Date

\_\_\_\_\_  
Deputy Regional Director  
U.S. Fish and Wildlife Service

\_\_\_\_\_  
Date

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#### **CERTIFICATE OF INCLUSION (Appendix A)**

##### **In The Agricultural**

##### **Candidate Conservation Agreement with Assurances for the Lesser Prairie Chicken (*Tympanuchus pallidicinctus*) Between the Western Association of Fish and Wildlife Agencies and the U.S. Fish and Wildlife Service**

This certifies that the Participating Landowner of the property described in the attached and referenced Western Association of Fish and Wildlife Agencies (WAFWA)-approved Wildlife Management Plan [attach completed Plan] (reference #: \_\_\_\_\_) are included within the scope of the attached Permit No. \_\_\_\_\_ which will become effective, if and when the lesser prairie-chicken is listed as endangered or threatened, to the Western Association of Fish and Wildlife Agencies (WAFWA) under the authority of Section 10(a)(1)(A) of the Endangered Species Act of 1973, as amended 16 U.S.C. 1539(a)(1)(B). Such Permit authorizes incidental take of lesser prairie-chickens by participating landowners, as part of a Candidate Conservation Agreement with Assurances (CCAA), to support WAFWA's ongoing and future efforts to manage, conserve, and recover lesser prairie-chickens. Pursuant to that Permit and this certificate, the participating landowner is authorized for incidental take of lesser prairie-chickens as a result of activities identified in section VII of the CCAA on the enrolled

lands identified in the Wildlife Management Plan. Permit authorization is subject to carrying out conservation measures identified in the Wildlife Management Plan, the terms and conditions of the Permit, and the terms and conditions of the CCAA, entered into pursuant thereto by WAFWA and the U.S. Fish and Wildlife Service. By signing this Certificate of Inclusion, the participating landowner agrees to carry out the conservation measures described in the attached Wildlife Management Plan. Due to the voluntary nature of this agreement, the participating landowner may withdraw from this agreement at any time without penalty, with 30 days written notification to the WAFWA and the USFWS. Any authorization to cause incidental take of lesser prairie-chickens as a result of activities identified in section VII of the CCAA on the enrolled lands identified in the Wildlife Management Plan will be revoked from the date of notification, as will any regulatory assurances within the CCAA and Permit. Any CI that has been approved begins upon the date of the final signature and continues through the end of the CCAA term. If this CCAA is modified at any time in the future, those modifications will not be required of landowners who possess a CI at the time of the modification, unless mutually agreed upon by the WAFWA and participating landowners

Participating Landowner	Date
WAFWA Representative	Date
USFWS Representative	Date

Appendix B.

Reference#: \_\_\_\_\_

**WAFWA-APPROVED WILDLIFE MANAGEMENT PLAN**

**FOR AGRICULTURAL LAND**

as referenced in the

**Candidate Conservation Agreement with Assurances for the Lesser Prairie-chicken (*Tympanuchus pallidicinctus*) Between the Western Association of Fish and Wildlife Agencies and the U.S. Fish and Wildlife Service**

**Wildlife Habitat Improvement Plan**

Landowner Name: \_\_\_\_\_ Date: \_\_\_\_\_

Address: \_\_\_\_\_  
\_\_\_\_\_

County: \_\_\_\_\_

Legal Description of enrolled lands: \_\_\_\_\_

Telephone #: \_\_\_\_\_

\_\_\_\_\_

Goals and Objectives

Describe the landowner's wildlife management goals and objectives

Property Description and Suitability

Describe current habitat conditions and their ability/inability to reach management goals. Describe limiting factor(s) for species managing for (LEPC).

Describe all ongoing land management activities (existing conditions), including any that may be detrimental to LEPC.

Describe existing infrastructure (roads, houses, oil and gas structures, fences, etc.)

### Other Management Considerations

Describe tasks outside of the Plan of Operations or contractual obligations that could help landowner/operator reaching their stated management goal(s). This is also an opportunity to identify other resource concerns outside of the stated objectives. Be sure to determine if landowner has leased the wind rights to property. Be sure to identify if the landowner is also the mineral rights owner.

### Other Resource Considerations

Describe other species of concern (i.e. federally listed, proposed for listing, candidate or state listed species). Describe how this species will be beneficially or negatively impacted.

### Wildlife Habitat Plan of Operations

Describe in detail task/projects that are to be done as prescribed. A plan map that will identify project boundary, field identifiers and individual project locations should be reference. Also reference a list of conservation practices that will include practice name, treatment amount, field location and timing (see below).

#### Plan Map

- Copy of the most recent aerial photography available. Current digital photography is available in each field office.
- Title Block – showing “Wildlife Habitat Management Plan Map”, client’s name, the name of the conservation district (if applicable), county, state, approximate total acres, and date prepared
- Map scale
- North arrow
- Legal description
- Boundary lines of the planning unit outlined
  - Clear delineation of Conservation Lands
  - Obvious distinction between Conservation Lands and Enrolled Lands
- Field boundaries and numbers
- Map symbol legend

Plan of Operations Practice List and Timeline, including all maintenance necessary to maintain high conservation value for the duration of the CI.

## Example:

Year One					
Conservation Measure	NRCS Practice Code	Practice Description	Field	Amount	Month
Brush Management	314.	Cutting and	2	4.7 ac	June
Firebreak	394	Spraying—High density Installed using normal farm equipment such as tractor and disk	1	2.9 ac	November
Firebreak	394	Installed using normal farm equipment such as tractor and disk	1	0.6 ac	November
Year Two					
Prescribed burn	338	Applied to open grasslands and wooded areas with some volatile woody species	1	422.5	February
Firebreak	394	Installed using normal farm equipment such as tractor and disk	4, 5	2.5 ac	October
Firebreak	394.	Installed using normal farm equipment such as tractor and disk	4,5	0.6 ac	October
Prescribed burn	338	Applied to open grasslands and wooded areas with some volatile woody species	4	445 ac	December
Year Three					
Brush Management	314	Cutting and	4	6 ac	June
Prescribed burn	338	Spraying—High density Applied to open grasslands and wooded areas with some volatile woody species	5	265.9 ac	December
Year Four					
Firebreak	394	Installed using normal farm equipment such as tractor and disk	2	0.8 ac	January
Prescribed burn	338	Applied to open grasslands and wooded areas with some volatile woody species	2	146.4 ac	February
Brush Management	314	Cutting and Spraying—High density	4	6.8 ac	June



Individual Preparing Plan:

Name:

Address:

Phone(s):

2. Landowner/Agent Affidavit

*By my signature below, I certify that I am the landowner of the above described property or a specifically authorized agent for the landowner. Authorized agent is defined as any person with verbal or written authorization to make decisions on behalf of the landowner. I also certify that the above information is true and correct to the best of my knowledge. I authorize WAFWA to use this information for its purposes, including reporting to USFWS, but not to release it to other parties or agencies without my approval.*

\_\_\_\_\_  
Landowner/Agent Signature



WESTERN ASSOCIATION OF FISH AND WILDLIFE AGENCIES CERTIFICATION

Check One:  Approved  Disapproved

\_\_\_\_\_  
Authorized WAFWA Signature

\_\_\_\_\_  
Date

Name:

Title:

\_\_\_\_\_  
*Certification provides that this Wildlife Management Plan was reviewed and is found to be biologically and technically sound with regard to management of wildlife populations and habitats.*



U.S. FISH AND WILDLIFE SERVICE CERTIFICATION

Check One:  Approved  Disapproved

\_\_\_\_\_  
Authorized USFWS Signature

\_\_\_\_\_  
Date

Name:

Title:

\_\_\_\_\_  
*Certification provides that this Wildlife Management Plan was reviewed and is found to be biologically and technically sound with regard to management of wildlife populations and habitats.*

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**GLOSSARY OF TERMS**

as referenced in the  
**Candidate Conservation Agreement with Assurances for the Lesser Prairie Chicken (*Tympanuchus pallidicinctus*) Between the Western Association of Fish and Wildlife Agencies (WAFWA) and the U.S. Fish and Wildlife Service (USFWS)**

**Candidate Conservation Agreement with Assurances:** Formal agreement between the USFWS and one or more parties to address the conservation needs of proposed or candidate species, or species likely to become candidates, before they become listed as endangered or threatened. This approach provides non-federal property owners who voluntarily agree to manage their lands or waters to remove threats to candidate or proposed species assurances that their conservation efforts will not result in future regulatory obligations in excess of those they agree to at the time they enter into the agreement. The goal of the CCAA is to conserve, restore, and/or enhance necessary non-federally owned LEPC habitats.

**Candidate Species:** Species for which USFWS has sufficient information on file relative to status and threats to support issuance of proposed listing rules.

**CCAA:** see Candidate Conservation Agreement with Assurances

**Certificate of Inclusion:** Certificate issued to a participating landowner that includes the enrolled lands in the assurances of the CCAA (through the Enhancement of Survival Permit associated with the CCAA) that no additional conservation measures or additional land, water, or resource use restrictions, beyond those voluntarily agreed to and described in the "Conservation Measures" section of the CCAA, will be required should the addressed candidate species become listed as a threatened or endangered species in the future.

**CI:** see Certificate of Inclusion

**Conservation Lands:** Those lands on which management practices will be implemented and/or maintained.

**Conservation measures for lesser prairie-chickens:** Actions that a non-federal property owner voluntarily agrees to undertake when entering into a CCAA.

**Conservation Reserve Program:** A Farm Service Agency (FSA) program created to provide technical and financial assistance to eligible farmers and ranchers to address soil, water, and related natural resource concerns on their lands in an environmentally beneficial and cost-effective manner.

**CRP:** see Conservation Reserve Program

**Enhancement of Survival Permit:** A permit issued by the USFWS under the authority of section 10(a)(1)(A) of the Endangered Species Act. It allows an otherwise prohibited action that benefits the conservation of a listed species. These permits are issued as part of a CCAA.

**Enrolled lands:** Lands that have been enrolled in this CCAA that have been issued a Certificate of Inclusion.

**Fire Frequency:** Fire return interval, or a measure of how often fire returns to a particular landscape, property, or habitat. Fire frequency influences what plant community persists on a particular landscape.

- ESA:** The Endangered Species Act of 1973. The purposes of this Act are to provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved, to provide a program for the conservation of such endangered species and threatened species, and to take such steps as may be appropriate to achieve the purposes of the treaties and conventions set forth.
- Escape Ramps:** A device placed in a water tank to allow any wildlife that might fall into that tank a means of escape, to prevent accidental drowning.
- Habitat Conservation Plan (HCP):** A USFWS management plan designed to offset any harmful effects the proposed activity might have on a species that is listed as endangered or threatened. The HCP process allows development to proceed while promoting listed species conservation.
- Habitat Diversity:** A term describing the amount of heterogeneity on a landscape. Increased habitat diversity tends to meet more of a species' habitat needs throughout all seasons.
- High Conservation Benefit:** The benefits of the conservation measures implemented by a property owner under the CCAA, when combined with those benefits that would be achieved if it assumed that conservation measures were also to be implemented on other necessary properties, would preclude or remove any need to list the covered species (*i.e.*, the LEPC)
- Incidental take:** When lawful, non-federal activities result in "take" of threatened or endangered wildlife. "Take" is defined in the Endangered Species Act (ESA) as harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect any threatened or endangered species.
- Invasive species:** A species that is not indigenous to a landscape, and which, if not managed or treated, will eventually replace the native plant community on that landscape.
- Lek:** Traditional display ground where male LEPC traditionally gather in the spring to perform courtship displays. Also referred to as booming ground or display ground.
- LEPC:** Lesser Prairie Chicken
- Natural Resources Conservation Service:** A Federal government agency within the U.S. Department of Agriculture that provides technical assistance and incentives to private landowners and manager toward the private landowner's goals to conserve their soil, water, and other natural resources.
- Non-federal cooperator:** Includes, but is not limited to, states, local governments, Native American tribes, businesses, organizations, and private individuals, and includes owners of land as well as owners of water or other natural resources.
- NRCS:** *see* Natural Resources Conservation Service
- Participating landowner:** Agricultural landowners who have entered into a WAFWA-approved Wildlife Management Plan for lesser prairie-chickens and are actively implementing conservation measures for the species.
- Plant Successional States:** The predictable change in vegetation that follows disturbance (wildfire, clearing, excessive herbivory, etc.) on a site, progressing from bare ground to climax plant community. In the planning area for this CCAA, early states of succession are characterized by lower plant density, lots of bare ground and numerous annual forbs, while the climax community is characterized by native warm season grasses, perennial forbs and shrubs, with minimal bare ground.
- Regulatory assurances:** Assurances that provide non-federal property owners who voluntarily agree to manage their lands or waters to remove threats to candidate or proposed species that their

conservation efforts will not result in future regulatory obligations in excess of those they agree to at the time they enter into the Agreement.

**Safe Harbor Agreement:** A voluntary arrangement between the USFWS with the purpose to promote voluntary management for listed species on non-federal property while giving assurances to participating landowners that no additional future regulatory restrictions will be imposed.

**Stocking Rate:** Stocking rate is defined as the number of grazing animals or animal units on a given amount of land over a certain period of time.

**Technical assistance providers:** Agencies that provide technical management assistance to landowners. These include WAFWA, NRCS, and USFWS.

**WAFWA-approved WMP:** A wildlife management plan that has been approved by WAFWA.

**USFWS:** United States Fish and Wildlife Service

**Wildlife Management Plan:** A management plan designed to provide assistance to landowners upon request for voluntary conservation, management, or restoration of wildlife habitat. It is designed to meet landowner goals while conserving biodiversity.

**WMP:** see Wildlife Management Plan

APPENDIX E. OIL AND GAS CCAA

Range-Wide Oil and Gas  
Candidate Conservation Agreement  
with Assurances

for the

Lesser Prairie-Chicken  
(*Tympanuchus pallidicinctus*)

In Colorado, Kansas, New Mexico, Oklahoma  
And Texas

DOI-FWS-\_\_-2012-XXXX

Between the:  
U.S. Fish and Wildlife Service  
And the  
Western Association of Fish and Wildlife Agencies Foundation

March 31, 2013

## Executive Summary

In 1995, the U.S. Fish and Wildlife Service (FWS) was petitioned to list the lesser prairie-chicken (*Tympanuchus pallidicinctus*) (LEPC) as threatened under the authority of the Endangered Species Act of 1973, as amended. The FWS ruled that listing of the LEPC was warranted but precluded because of other higher priority species. The LEPC was then designated as a candidate for listing as threatened or endangered in 1997. On December 11, 2012, the FWS issued a proposed rule to list the LEPC as threatened. 77 Fed. Reg. 73,828 (Dec. 11, 2012).

This Candidate Conservation Agreement with Assurances (CCAA) for the LEPC represents a collaborative effort between the FWS and WAFWA, the Western Association of Fish and Wildlife Agencies Foundation (WAFWA). The terms of this CCAA are intended to harmonize with and complement the conservation strategy set forth in the Range-wide Plan.

The CCAA is a voluntary agreement, administered by the signatory parties and WAFWA. It will be the responsibility of WAFWA to work with and enroll Participants using Certificates of Inclusion (CIs) (see Appendix A) which will facilitate the voluntary cooperation of the oil and gas industry and other interested stakeholders, thereby providing conservation benefits to the LEPC. When fully implemented, this CCAA will provide guidance for the conservation and management of the LEPC, by reducing and/or eliminating threats to this species associated with non-Federal mineral development. Participants will implement conservation measures and contribute funding for conservation for unavoidable impacts as part of their CIs. Funds contributed as part of this CCAA may or may not be used on the enrolled property since other habitat areas may be a higher priority for implementation of habitat improvement projects. The conservation measures implemented by Participants would generally consist of habitat restoration and enhancement activities, and minimize habitat fragmentation to preclude or remove current threats to the species.

This CCAA is based on adaptive management principals. Using adaptive management principals, and with the consent of all the signatory parties to this CCAA, if new conservation measures are deemed to be necessary in the future, the parties to the CCAA can modify the template Certificate of Inclusion attached hereto to include additional measures that would apply to all future enrollments to facilitate the continued conservation of the LEPC.

## I. INTRODUCTION

If and when a species becomes listed under the Endangered Species Act of 1973 (ESA), as amended (16 U.S.C. § 1531, *et seq.*), that listing action triggers both a regulatory and a conservation responsibility for Federal, State, and private landowners. These responsibilities stem from Section 9 of the ESA that prohibits “take” (i.e., harass, harm, pursue, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct) of listed species. Along with the Section 9 prohibitions, Federal agencies must ensure that their actions will not jeopardize the continued existence of the listed species and carry out programs for the conservation of listed species.



In the western United States many species that are candidates for listing under the ESA occur on both Federal and non-Federal lands. Non-Federal property owners whose operations may have impacts on candidate species on private lands may have the opportunity to voluntarily enter into a CCAA in order to implement conservation measures aimed at reducing and/or eliminating threats to candidate species and to ensure that their land operations can continue unaffected if the species is listed in the future.

This CCAA and its associated Enhancement of Survival permit, issued pursuant to Section 10(a)(1)(A) of the ESA, would provide Participants regulatory assurances that should they cooperate and follow the measures in their Certificate of Inclusion (CI) (appendix A), they will not incur additional land-use restrictions on their property should the LEPC become listed.

This CCAA and associated CI, in conjunction with the Range-Wide Plan and other conservation efforts, will address the conservation needs of the LEPC. Through this CCAA, WAFWA will work with Participants who voluntarily commit to implementing conservation actions that will reduce and/or eliminate threats to this species.

#### *Benefits of this CCAA*

The most significant benefit of this CCAA is that it will provide additional conservation efforts and guide conservation actions for the LEPC in order to improve the status of the species within the LEPC range. This CCAA, in conjunction with the Range-Wide Plan, provides a comprehensive and strategic landscape level approach to addressing the conservation needs of the LEPC. Although the FWS cannot absolutely guarantee that listing will never be necessary, this CCAA seeks to implement conservation measures on State and private property, which, when combined with those benefits that would be achieved if conservation measures were to also be implemented on other necessary properties (such as but not limited to any properties affiliated with a companion CCA for Federal mineral activities), would preclude or remove any need to list the LEPC. It is important to note that a federal decision not to list the LEPC would be based upon the removal of threats and stabilization or improvement of the species. The decision to list is a regulatory process and no CCAA or CCA can predetermine the outcome. The actions and successes of this CCAA will be evaluated in accordance with FWS Policy for Evaluation of Conservation Efforts (2003) and factored into the five-factor analysis of the listing decision.

This CCAA is designed to include conservation measures that reduce and/or eliminate threats by land uses including mineral development on State and private property. If enough Participants implement conservation measures on this property through their participation in the CCAA, the likelihood that the species will be listed will be greatly reduced. The implementation of conservation measures through the CCAA and CI insures that Participants will not bear additional conservation burdens on State and private property.

## **II. PURPOSE OF THE CCAA**

The primary purposes of this CCAA are to:

- develop, coordinate, and implement conservation actions to reduce and/or eliminate known threats to the LEPC within its range;
- support ongoing efforts to maintain viable populations of LEPC in occupied and suitable habitat.;
- serve as a range wide document for oil and gas conservation measures implemented by WAFWA and Participants;
- encourage development and protection of suitable LEPC habitat by giving Participants incentives to implement specific conservation measures (as described in their CI);
- provide Participants assurance that the conservation measures agreed to in the CI would be sufficient, and thus assure them that no additional land use restrictions or financial commitments would be required of them should the LEPC become listed; and
- allow Participants to continue operations while protecting and improving habitat conditions for the LEPC.

### III. AUTHORITY

Sections 2, 7, and 10 of the Endangered Species Act (Act) of 1973, as amended, allow the FWS to enter into this CCAA. Section 2 of the Act states that encouraging interested parties, through Federal financial assistance and a system of incentives, to develop and maintain conservation programs is a key to safeguarding the Nation's heritage in fish, wildlife, and plants. Section 7 of the Act requires the FWS to review programs that it administers and to utilize such programs in furtherance of the purposes of the Act. By entering into this CCAA, the FWS is utilizing its Candidate Conservation Programs to further the conservation of the Nation's fish and wildlife. Lastly, Section 10(a)(1)(A) of the Act authorizes the issuance of permits for acts that would otherwise be prohibited by Section 9 if such acts are expected to enhance the propagation or survival of the affected species.

### IV. THE LESSER PRAIRIE-CHICKEN AND CONSERVATION EFFORTS

The LEPC is a species of prairie grouse endemic to the southern high plains of the United States, commonly recognized for its feathered feet, stout build, ground-dwelling habit, and elaborate breeding behavior. The Range-wide Plan contains detailed background information regarding the LEPC, including information about the species' life history, habitat requirements, and population status. Because this CCAA is intended to harmonize with and complement activities associated with the Range-wide Plan, as explained below, the descriptions of LEPC species information set forth in the Range-wide Plan are incorporated and adopted herein.

### V. THREATS

Section 4(a)(1) of the ESA lists five factors that must be considered when determining if a species should be listed as threatened or endangered. A species may be listed due to one or more of these factors. These are:

- (A) present or threatened destruction, modification, or curtailment of its habitat or range;
- (B) over-utilization for commercial, recreational, scientific, or educational purposes;

- (C) disease or predation;
- (D) inadequacy of existing regulatory mechanisms; and
- (E) other natural or manmade factors affecting its continued existence.

The Range-wide Plan describes perceived threats to LEPC populations. Because this CCAA is intended to harmonize with and complement activities associated with the Range-wide Plan, as explained below, the descriptions perceived threats to LEPC populations set forth in the Range-wide Plan are incorporated and adopted herein.

## VI. CONSERVATION EFFORTS

In order to issue an enhancement of survival permit, the FWS must find that implementation of the terms of the CCAA will not conflict with any ongoing conservation programs for the LEPC. 50 C.F.R. § 17.22(d)(2)(v), 17.32(d)(2)(v). The FWS has recognized that although the terms of CCAAs may not conflict with ongoing conservation programs, there are numerous conservation programs ongoing for the LEPC, including programs administered by the Natural Resources Conservation Service and CCAAs that will reduce or eliminate threats to the LEPC associated with agricultural practices in Texas and Oklahoma. These ongoing conservation efforts are more fully described in the Range Wide Plan.

With respect to oil and gas development, there are two ongoing conservation programs for the LEPC. First, the FWS has approved a CCAA in New Mexico with the Center of Excellence for Hazardous Materials Management (CEHMM) and a companion CCA between the Bureau of Land Management (BLM) and CEHMM. The CCAA and CCA facilitate the voluntary cooperation of the oil and gas industry, livestock producers, and other interested stakeholders to provide conservation benefits to the LEPC. Oil and gas operators that participate in the CCAA and CCA commit to implement a suite of avoidance and minimization measures. Additionally, participants contribute funds to assist in restoration or protection and habitat.

Second, the Lesser Prairie-Chicken Interstate Working Group of the Western Association of Fish and Wildlife Agencies (WAFWA) has developed a Range-wide Conservation Plan for the LEPC (“Range-wide Plan”) that outlines a conservation strategy for the LEPC that identifies and coordinates conservation actions that can be implemented to ensure the continued sustainability of the species throughout its current or expanded range. The Range-wide Plan emphasizes tools and incentives to encourage landowners and others to voluntarily partner with agencies in LEPC habitat to implement conservation efforts, while also achieving land use needs. One of these tools is a range-wide framework for avoidance, minimization, and mitigation of impacts to LEPCs and their habitat. The terms of this CCAA are intended to harmonize with and complement the conservation strategy set forth in the Range-wide Plan.

## VII. NEED FOR THIS AGREEMENT

The ESA authorizes the FWS to prohibit activities on private property that result in the take of listed species.

This CCAA and its associated Enhancement of Survival permit, issued pursuant to Section 10(a)(1)(A) of the ESA, would provide Participants regulatory assurances that should they cooperate and protect LEPC habitat on their property, they will not incur additional land-use restrictions on enrolled property should the LEPC be listed. To receive this assurance, Participants must enroll their property under the CCAA by signing a CI (see Appendix A).

### **The Western Association of Fish and Wildlife Agencies**

WAFWA is a non-profit organization representing 23 states and Canadian provinces, advocating appropriate management of fish and wildlife within the borders of member states. Since WAFWA's establishment in 1922, WAFWA has been innovative in its approach to identifying and pursuing meaningful applied research that has resulted in practical solutions in the environment. WAFWA has a broad capacity in these areas due to the combined experience of its member organizations and its directors and staff members. WAFWA has also been able to develop strong partnerships with universities, agencies, research institutions, and private industry to bring together additional expertise as needed to meet challenges of various endeavors.

WAFWA will maintain positions for biologists to facilitate enrollment of property and distribution of funds for conservation efforts through coordination with other state and federal agency staff and outreach to property owners as more fully described below. WAFWA has developed a conservation fund which in part will be used to further the effort of the CCAA in conserving the LEPC. WAFWA may designate one or more entities ("designees") to administer the permit. WAFWA and/or its designee(s) will use funds contributed by Participants to implement conservation activities to benefit the LEPC such as habitat restoration, habitat enhancement, and removal of threats.

### **Participants**

Any State or private property owner may enroll their property under the CCAA. A "property owner" includes any person or entity with a fee simple, leasehold, or other property interest sufficient to carry out the conservation measures described in this CCAA and the attached CI, subject to applicable State law, on non-Federal land. By executing the attached CI or a version thereof, the Participant commits to implement, and assumes responsibility for implementing, the conservation measures identified therein.

### **Process of Enrolling**

An interested Property Owner (a person with a fee simple, leasehold, or other property interest (including owners of water or other natural resources), or any other entity that may have a property interest, sufficient to carry out the conservation measures described in this CCAA and the attached CI, subject to applicable State law, on non-Federal land) would initially contact WAFWA to enroll. Once the initial contact is made, WAFWA and the interested Property Owner would look at a map of the property and determine where the property is located and what other activities are occurring on the property. Next, WAFWA and interested Property Owner would establish what conservation role the property may provide. Next, a CI is written (see Appendix A) that documents the conservation measures the interested Property Owner is committing to implementing or abiding by. If the interested Property Owner agrees to participate, he or she can sign the CI. Next, WAFWA signs the CI,

and it is then forwarded to the FWS for its concurrence and signature. Once the FWS concurs, the Property Owner becomes a Participant.

## VIII. COVERED AREA AND ENROLLED PROPERTY

The Covered Area includes private and state property that currently provides or could potentially provide suitable habitat for the LEPC within the current range of the LEPC and ten miles around that range. The Covered Area is represented in the CHAT (<http://kars.ku.edu/maps/sgpchat/>) as the Estimated Occupied Range plus 10 miles (EOR+10). Enrolled property is the property identified on all signed CIs of all Participants under this CCAA. Participants may amend their CIs to enroll additional property at any time before the effective date of any final rule listing the LEPC as threatened or endangered. After listing, existing Participants may amend their CIs to enroll additional property that was evaluated at the time of permit issuance within the covered area.

## IX. DURATION OF THE AGREEMENT AND ENHANCEMENT OF SURVIVAL PERMIT

This CCAA will have a duration of 30 years from the date the CCAA is signed by WAFWA and the FWS, and may be renewed before it expires. The CCAA will cover a Participant's enrolled property from the date such Participant executes a CI (unless the FWS fails to subsequently execute such CI) until the CI terminates. Should the LEPC become listed as threatened or endangered, and all other requirements are met, the enhancement of survival permit (permit) will become effective and all Participants will be covered from that date until the end of their participation in this CCAA or until the CI is terminated. The minimum duration of participation will be three years by enrolled Participants (unless enrolled property is transferred prior to the end of the three-year period), but can be the full duration of the CCAA if the Participant wishes coverage by the permit. Prior to the expiration of the initial 30 year period or any extension period thereafter, WAFWA may extend the CCAA for a ten year period.

Coverage under the enhancement of survival permit will only apply to those Participants who enroll property under this CCAA prior to any future ESA listing date of the LEPC and their transferees who enter into a CI. The permit coverage is for incidental take associated with the Participant's activities on enrolled properties as long as the Participant is in compliance with the relevant CI. Any incidental take of LEPC resulting from activities not covered in the Participant's CI will not be covered by the permit except as provided herein.

## X. CONSERVATION MEASURES AND OBLIGATIONS OF THE PARTIES

WAFWA will implement and administer the CCAA. Participants can sign up under the CCAA and be covered under the associated permit through a CI.

### 1) Obligations Common to all Participants:

- a) Enter into a CI (Appendix A) that contains the following conservation measures, which are detailed in the Range-wide plan including a discussion of how each these measures address specific threats to the species. Only the measures that relate specifically to oil and gas development and related infrastructure are included in this document.

*Pre-project planning*

- i. Utilize the Southern Great Plains CHAT (<http://kars.ku.edu/geodata/maps/sgpchat/>) for initial LEPC-related project siting review along with impact area maps, ecological site maps, land cover maps, and aggregated CRP maps provided in the CHAT. Participants should consider examining the WGA west-wide CHAT and State Fish and Wildlife agencies for information related to other state or federal threatened, endangered, or candidate species and species of greatest conservation need.
- ii. If surveys of proposed project sites have not been conducted within the previous 5 years, and the project sites are within CHAT categories 1-3, Participants have the option of conducting surveys themselves according to WAFWA protocols, allowing state or WAFWA affiliated personnel to conduct surveys of the site prior to project initiation, or considering the sites as occupied with active leks.

*Avoidance*

- i. Use available options to avoid focal areas, connectivity zones, or within 1 1/4 mi of known leks that have been active at least once within the previous 5 years, as well as tracts of native grass and shrublands (see CHAT and State Fish and Wildlife Agency staff for more information). If these areas cannot be avoided, Participants shall minimize and mitigate the impacts of development as described in beneath the headings "Minimization" and "Mitigation." Participants shall focus development on lands already impacted, altered or cultivated (such as row-crop agriculture, developed oilfields, or existing power line impact buffers), and away from areas of intact and healthy native grass or shrublands. Similarly, Participants shall select fragmented or degraded habitats over unfragmented areas, and select sites with lower LEPC habitat potential over sites with greater habitat potential.
- ii. Participants shall avoid locating roads, fences, power lines, well pads, turbines and other infrastructure within focal areas, connectivity zones, or in other areas identified as LEPC habitat by the CHAT categories 1-3. If these areas cannot be avoided, Participants shall minimize and mitigate the impacts of development as described in beneath the headings "Minimization" and "Mitigation."
- iii. Participants shall utilize existing corridors or infrastructure when siting new distribution power lines. When Participants cannot utilize existing corridors or infrastructure, Participants shall bury distribution power lines if within 1 1/4 mi of leks active within the previous five years. If new distribution power lines are constructed outside of existing corridors and within 1 1/4 mi of leks active within the previous five years but are not buried, Participants shall minimize and mitigate the impacts of development as described in beneath the headings "Minimization" and "Mitigation."
- iv. During lekking, nesting, and brooding season (Mar 1–Jul 15), construction and maintenance activities shall not be conducted between the hours of 3:00 am and 9:00 am within 1 1/4 mi of leks recorded active within the previous five years if such activities require a human presence. Emergency operations, construction and maintenance



activities that are direct human or environmental safety concerns or that relate directly to operational continuity are allowed. Participants shall record the dates, duration and purpose of any emergency operations, construction and maintenance activities during the breeding season within 1 ¼ miles of leks and shall provide that documentation with its annual reporting.

#### *Minimization*

- i. If roads, fences, power lines, well pad, and other infrastructure cannot be located to avoid focal areas, connectivity zones, or other areas identified as high probability lek and nest habitat by the CHAT categories 1-3, Participants shall use existing corridors for multiple types of infrastructure. If Participants cannot use existing corridors for such infrastructure, Participants shall mitigate the impacts of new habitat disturbance as described in beneath the heading "Mitigation."
- ii. Participants shall site projects to minimize new habitat disturbance by increasing the amount of overlap between existing fragmentation and associated impact buffers. If projects cannot be sited to minimize new habitat disturbance, Participants shall mitigate the impacts of new habitat disturbance as described in beneath the heading "Mitigation."
- iii. Participants shall attempt to site multiple wells on single pads and co-locate facilities to reduce habitat loss and fragmentation of habitat.
- iv. Participants may use herbicide treatment on areas on impacted areas but shall limit such use to the impact area. Within CHAT categories 1-3, these treatments shall not be applied during the lekking, nesting and brooding season (March 1-July 15) except for the spot treatment of noxious weeds. Where practical and applicable, Participants shall utilize an herbicide that is targeted for specific use and spot treatments as opposed to a broadband herbicide and broadcast treatments. Apply in conditions that minimize drift.
- v. Install appropriate fence markings along new fences under the control of the participant within one quarter (1/4) mile of a lek that has been recorded as active within the previous 5 years.
- vi. Participants shall minimize their traffic volume, control their vehicle speed, control access, and minimize their off-road travel within focal areas and areas identified as high probability lek and nest habitat by the CHAT categories 1-3.
- vii. Within 1 ¼ mi of leks, install raptor deterrents on new electrical distribution and transmission poles that are under the control of the Participant as indicated by Avian Power Line Interaction Committee (APLIC) Suggested Practices for Raptor Protection on Power Lines: The State of the Art in 2006, as amended.
- viii. Provide escape ramps, rafts or ladders, depending on configuration, in new exposed, manmade water containment sources that are under control of the Participant.
- ix. Institute noise abatement year-round for new facilities located within 1 ¼ mi of high quality LEPC habitat in focal areas and connectivity zones or to a lek recorded as active within the previous five years. Noise from these new facilities shall not exceed 75 db when measured at the Participant's property line or any point greater than 30 meters from the facility boundary, whichever is closest.



*Mitigation*

- i. For impacts that cannot be avoided or minimized, Participants shall adhere to the provisions in the Certificate of Inclusion that describe the amount of fees necessary to mitigate such impacts.
- ii. Mitigation may include reclaiming or remediating inactive or abandoned facilities and infrastructure under the control of the Participant in compliance with applicable state rules and regulations. This in-lieu remediation of facilities will be subject to the metrics system outlined in Appendix B of the Range-wide Plan. Remediation proposals shall be submitted to WAFWA for review and approval and those proposals must demonstrate that they support the population and habitat goals of the range-wide plan with respect to habitat focal areas and connectivity zones.

As described in Section XVII, below, the effectiveness of these conservation measures will be reviewed by WAFWA and Participants periodically over the life of the CCAA. However, new conservation measures may only be implemented through future CIs if WAFWA and FWS find such measures to be necessary to facilitate the continued conservation of the LEPC. Conservation measures agreed upon in existing CIs may only be modified through the written consent of the Participants through the amendment procedures described in the CI.

- b) Comply with the terms of the CI and implement the conservation measures identified therein. Enrollment under this CCAA and coverage of the enrolled property will begin once the CCAA is effective and the Participant executes the CI, provided that such CI is subsequently approved and executed by the FWS. The CI is valid until the end of the CCAA either through expiration or termination, or until termination of the CI.
- c) Allow WAFWA access to the enrolled property for purposes of monitoring compliance with terms of the CI so long as WAFWA provides notice at least one week in advance. The access allowed by the Participant is limited to enrolled property. In order to access lands that are not enrolled by the Participant, WAFWA must independently obtain landowner permission.
- d) Allow WAFWA, with prior notification, access to survey enrolled property for the presence of LEPCs and for habitat suitability for the species to the extent of the Participant's control as provided by applicable law, contracts, or leases. Any access allowed by the Participant is limited to enrolled property. In order to access lands that are not enrolled by the Participant, WAFWA must independently obtain landowner permission.
- e) Allow WAFWA access to the enrolled property for purposes of monitoring LEPC populations and habitat to the extent of the Participant's control as provided by applicable law, contracts, or leases. Any access allowed by the Participant is limited to enrolled property. In order to access lands that are not enrolled by the Participant, WAFWA must independently obtain landowner permission.
- f) Provide information on an annual basis to WAFWA on implementation of conservation measures in their CI, observations of LEPC on enrolled property, and any observed mortality of the species.

- 
- 2) **Obligations of the Permit Holder:**
- a) Implement and administer this CCAA;
  - b) Enroll Participants in accordance with this CCAA via CIs;
  - c) Conduct compliance reviews of projects being implemented by Participants;
  - d) Use funds contributed in accordance with Appendix B of the CI to implement conservation activities to benefit the LEPC such as habitat restoration, habitat enhancement, and removal of threats.
  - e) Monitor projects in order to determine success and adaptations needed;
  - f) Conduct outreach and public education efforts to promote conservation of the LEPC;
  - g) Secure permission to complete projects on private and State lands, where appropriate;
  - h) Establish a committee (“Advisory Committee”) as described in Section (5), below.
  - i) Schedule an Advisory Committee meeting in each state at least once per year (but may hold meetings more often, if needed or requested), and coordinate the locations, dates and times of the Advisory Committee meetings;
  - j) Track expenditure of funds and preparing an annual report on implementation of this CCAA;
  - k) Maintain a digital photo database to document project (i.e., conservation measure) performance;
  - l) Audit, at WAFWA’s expense, by an independent party annually to account for expenditures and accomplishments;
  - m) Maintain the confidentiality of certain information as described in Section XVI;
  - n) Hold the CIs for each enrolled properties, with copies being provided to all Parties; and,
  - o) Expend monies for potential species research.
- 3) **Obligations of the FWS:**
- a) Provide technical assistance in CCAA and permit application development.
  - b) When available, provide funding through appropriate FWS programs and assist in securing funding from other sources, as applicable, to improve LEPC habitat on private and state lands within the range.
  - c) After approval of the CCAA, the FWS may not impose any new requirements or conditions on, or modify any existing requirements or conditions applicable to, a Participant or successor in interest to the Participant, to compensate for changes in the conditions or circumstances of any species or ecosystem, natural community, or habitat covered by the CCAA except as stipulated in 50 CFR §§ 17.22(c)(5) and 17.32(c)(5).
  - d) The FWS may suspend the permit in accordance with 50 C.F.R. § 13.27 and may revoke the permit in accordance with 50 C.F.R. § 13.26. Prior to initiating the respective procedures for permit suspension and revocation specified in 50 C.F.R. §§13.27(b) and 13.28(b), the FWS will exercise all possible measures to remedy the situation, including at least one in-person meeting with WAFWA and all Participants that wish to attend.
- 4) **Obligations of All Parties:**
- a) In the event the Participant elects to sell enrolled property prior to the expiration of the agreement, they will notify WAFWA so their CI can be modified. The Participant will also notify the new owner of the opportunity to enroll or transfer the property in a CI of their own by
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working with WAFWA. If the new owner opts not to participate in the CCAA, he/she will not receive the benefits of the permit authorizing incidental take of LEPC. If the new owner opts to participate in the CCAA, the new owner may also opt to enroll additional property not previously included in a CI by amending the CI to include the additional property.

- b) Any Party may propose amendments to this CCAA by providing written notice to the other Parties. If WAFWA is the recipient of this notice, it will forward copies to the Participants within 10 days of receipt of the notice. If WAFWA provided written notice to the other Parties, it will provide such written notice to the Participants at the same time notice is provided to the other Parties. Such notice shall include a description of the proposed amendment, the justification for it, and its expected results. Upon issuance of the notice, the party proposing the amendment will coordinate a meeting or conference call between the other Parties and Participants to discuss and explain the proposal. The Parties will use their best efforts to respond in writing or electronic mail to proposed amendments within 60 days of receipt of such notice.

For each proposed amendment, the FWS will determine whether it is a minor (administrative) amendment or a major amendment of the CCAA. Proposed amendments will become effective upon the Parties' written concurrence. Approved amendments shall be attached to the original CCAA. In addition to amending the CCAA itself, the permit may be amended in accordance with all applicable legal requirements, such as the ESA, NEPA, the general permitting regulations at 50 CFR parts 13 and 17, and formal FWS policy. Participants enrolled prior to an amendment of the CCAA and/or the Permit will not be required to amend their CIs to accommodate an amendment that requires the commitment of additional land, water, or financial compensation or additional restrictions on the use of land, water, or other natural resources beyond the level otherwise agreed upon in the CCAA prior to the amendment. Participants, however, may voluntarily choose to adopt such amendments by amending their CIs.

- c) Each Party shall have all remedies otherwise available to enforce the terms of this CCAA and the permit, except that no Party shall be liable in damages for any breach of this CCAA, any performance or failure to perform an obligation under this CCAA or any other cause of action arising from this CCAA.
- d) The FWS, Permit Holder and Participants agree to work together in good faith to resolve any disputes, using dispute resolution procedures agreed upon by all Parties.
- e) Implementation of this CCAA is subject to the requirements of the Anti-Deficiency Act and the availability of appropriated funds. Nothing in this CCAA will be construed by the Parties to require the obligation, appropriation, or expenditure of any money from the U.S. Treasury. The Parties acknowledge that neither the FWS will be required under this CCAA to expend any Federal agency's appropriated funds unless and until an authorized official of that agency affirmatively acts to commit to such expenditures in writing.
- f) This CCAA does not create any new right or interest in any member of the public as a third-party beneficiary, nor shall it authorize anyone not a party to this CCAA to maintain a suit for personal injuries or damages pursuant to the provisions of this CCAA. The duties, obligations, and responsibilities of the Parties to this CCAA with respect to third Parties shall remain as imposed under existing law.
- g) The terms of this CCAA shall be governed by and construed in accordance with applicable

Federal law. Nothing in this CCAA is intended to limit the authority of the FWS to fulfill its responsibilities under Federal laws. All activities undertaken pursuant to this CCAA or its associated permit must be in compliance with all applicable local, state, and Federal laws and regulations.

- h) This CCAA shall be binding on and shall inure to the benefit of the Parties and their respective successors and transferees, in accordance with applicable regulations (currently codified at 50 CFR 13.24 and 13.25) for the duration of the CCAA.
- i) Any notices or reports required by this CCAA shall be delivered in writing to WAFWA.

**5) Obligations of Cooperating Agencies and Parties:**

- a) WAFWA will hold the Permit and will hold positions for biologists to facilitate enrollment of property and distribution of funds for conservation efforts through coordination with other state and federal agency staff and outreach to property owners.
- b) The Advisory Committees established by WAFWA in each state may include representatives from the following entities within the LEPC five-state range: state wildlife agencies, FWS, Natural Resources Conservation Service, Farm Service Agency, BLM, universities with departments or faculty actively engaged in academic research related to the LEPC, state oil and gas regulatory agencies, oil and gas trade associations, wind energy associations, public utility commissions or associations, state school and/or trust land administrators, Participants, and others as appropriate. The Advisory Committees may facilitate communication among Participants and offer feedback and recommendations to WAFWA regarding various aspects of the implementation and administration of the CCAA, including, but not limited to, new scientific information through the Adaptive Management process, amendments to the CCAA and CI, dispute resolution, prioritization and implementation of conservation measures and research activities, and other similar issues.

## **XI. EXPECTED CONSERVATION BENEFITS**

As identified in the FWS's Candidate Conservation Agreement with Assurances Final Policy (USFWS and NMFS 1999), the FWS "must determine that the benefits of the conservation measures to be implemented, when combined with those benefits that would be achieved if it is assumed that conservation measures were also implemented on other necessary properties, would preclude or remove any need to list" the LEPC (64 FR 32726).

Implementation of this CCAA results in a variety of conservation benefits to the LEPC in the form of avoidance of negative impacts and enhancement and restoration of habitat intended to contribute to establishing or augmenting, and maintaining viable populations of LEPCs. Conservation measures that minimize new surface disturbance thus minimize habitat fragmentation and preserve contiguous expanses of LEPC habitat. Conservation measures that require the removal of existing equipment and infrastructure and reclamation of existing disturbance restore and enhance LEPC habitat. LEPC reproductive behavior is promoted by conservation measures that limit activities and operations during lekking, nesting, and brooding season. Similarly, threats to the LEPC are removed by conservation measures that require removal of existing vertical structures, limit the possibility of LEPC

becoming trapped in open water sources, and require marked fences. Furthermore, the conservation activities implemented with funds contributed by Participants are expected to further enhance LEPC habitat. When considered together, the conservation measures and provisions of the CCAA are expected to preserve, enhance, and restore LEPC habitat and remove threats to the LEPC, which are expected to yield increases to LEPC populations. In addition, conservation of LEPCs would be enhanced by improving and encouraging cooperative management efforts between WAFWA, FWS, and Participants who own and control LEPC habitat.

Under this CCAA, LEPC conservation will be enhanced by providing ESA regulatory assurances such that, should Participants have or attract LEPCs on enrolled properties, they will not incur additional land use restrictions. This CCAA is intended to provide incentives to property owners to initiate conservation measures for this species.

## **XII. ASSURANCES PROVIDED**

Through this CCAA, the FWS provides the Participants the regulatory assurances at 50 CFR 17.32(2)(5) and consistent with the FWS's Candidate Conservation Agreement with Assurances Final Policy (USFWS and NMFS's 1999) conservation measures and land, water, or resource use restrictions, in addition to the measures and restrictions described in this CCAA, will not be imposed with respect to local activities on enrolled property should the LEPC become listed under the ESA in the future. These assurances are authorized by the enhancement of survival permit issued under Section 10(a)(1)(A) of the ESA for the enrolled property identified in the CI. In the event of unforeseen circumstances, the FWS will not require the commitment of additional land, water, or other natural resources beyond the level otherwise agreed to or for the species in this CCAA. The FWS may request additional conservation but since it is voluntary on the part of Permit Holder and Participants, consent of the affected parties must be in writing. The permit, if issued, will authorize the incidental take of LEPCs by Participants as long as "take" is consistent with this CCAA and relevant CI.

The FWS recognizes the commitments in this agreement are consistent with the overall goal of precluding the need to list the species, if it is assumed that conservation measures were also to be implemented on other necessary properties.

### **Assurances Provided to Participant in Case of Changed or Unforeseen Circumstances**

The assurances listed below apply to Participants with an enhancement of survival permit associated with this CCAA where the CCAA is being properly implemented. The assurances apply only with respect to species adequately covered by the CCAA.

"Changed circumstances" are those alterations in circumstances that can reasonably be anticipated and planned for in the CCAA (e.g., wildfire, drought). Changed circumstances might include minor wildfires that temporarily alter suitability of available breeding or winter habitat across portions of the landscape. "Unforeseen circumstances" are changes in circumstances that could not reasonably have been anticipated by WAFWA and the FWS at the time of the CCAA's negotiation and development, and that result in a substantial and adverse change in the status of the covered

species. The assurances listed below apply to Participants. The assurances apply to the enrolled property where the agreement is being properly implemented and are applicable only with respect to the species (LEPC) covered by this CCAA.

*Changed circumstances provided for in the CCAA.* If additional conservation measures not provided for in the CCAA are necessary to respond to the changed circumstances listed herein, the USFWS will not require any conservation measures in addition to those provided for in the CCAA and associated CI without the consent of WAFWA and Participant, provided the CCAA and associated CI are being properly implemented.

a) Stochastic Events—Extreme weather events and wildfire have the potential to create changed circumstances on the landscape at the scale of individual ranches, habitat focal areas, ecoregions, and the entire range of the LEPC. However, the intent of the Range-wide Plan and the conservation delivery system within the WAFWA Mitigation Framework described in the Range-wide Plan is to produce high-quality, connected LEPC habitat in habitat focal areas and connectivity zones across each ecoregion and, where possible, between ecoregions. Accomplishing that goal will increase the stability of LEPC populations and the resiliency of those populations to stochastic events such as extreme weather events and wildfire. Mitigation funding will be one of the a primary pathways to achieve these goals, and therefore these stochastic events should not affect participants enrolled in this agreement. However stochastic events may affect credit generation required to offset impacts. In instances where these stochastic events or combination of events occur on scales large enough to effect the ecoregional goals for credit generation required to offset industry impacts or create changed circumstances on the landscape, WAFWA will notify the FWS within 30 days of that determination. Within 90 days of notification, the parties will evaluate those conditions and, if opportunities exist, identify potential changes to the conservation measures for offsets and credit generation or other actions to address local conditions. These stochastic events include but are not limited to:

(ii) Drought—Substantial variation in annual precipitation is not an uncommon event, within LEPC range and the species is adapted to withstand that variation. The Habitat Impact Assessment Guide that defines debit and credit generation is robust to periodic short-term drought, ensuring the stability of credit generation in the face of these events. However, drought can occur at scales ranging from local to ecoregional to range-wide, and severe and prolonged droughts at local and ecoregion scales may create conditions that, if management conditions are not adjusted, could significantly impact available habitat for the species, limit credit generation required for offsetting impacts, and cause changed circumstances on the landscape. Severe droughts are defined here as the occurrence of Palmer Drought Severity Index (PDSI) of -3 and below in August over 25% or more of an ecoregion. Prolonged droughts are defined here as having average PDSI values of -2 or lower over the preceding 24 month period for 25% or more of an ecoregion. Credit Generation Contract Holders are incentivized to track drought conditions on their own property and make appropriate changes in grazing practices as needed. Contract Holders who graze livestock will also receive notification of drought conditions from WAFWA noting potential reductions in credits generated and annual payments if those changes are not made.



(i) Wildfire—Wildfires generally affect single or limited numbers of landowners, but in drought years, substantial percentages of an ecoregion may be affected by wildfire. LEPCs are adapted to periodic wildfire, and these events can result in significant habitat benefits such as control of woody invasives, increased forb cover for brood habitat, and result in significant credit generation. However, large-scale, drought and wind-driven fires may reduce available nesting, foraging, and escape cover across large areas and may interact with management activities such as grazing to reduce further reduce available habitat. Management plans developed for Credit Generation Contract Holders will include guidance for deferment following both prescribed fire and wildfire to maximize habitat quality and annual credit generation. WAFWA will also track reported wildfire acreage on an ecoregional basis in drought years and will include this information in notices of drought information to inform landowners about grazing practices and maximizing habitat quality and annual payments.

(iii) Flooding.—In this arid region, floods may have significant localized impacts. However, it is unlikely that flooding alone could affect the ecoregional goals for credit generation to offset industry impacts or created landscape-level changed circumstances. Flooding impacts affecting single or limited numbers of Contract Holders will be handled on a case by case basis with the individual landowners to determine the management practices to be applied.

(iv) Tornadoes—Like floods, tornadoes may have significant localized impacts. However, it is unlikely that these events alone could significantly affect the ecoregional goals for credit generation. Tornado impacts affecting single or limited numbers of Contract Holders will be handled on a case by case basis with the individual landowners to determine the management practices to be applied.

(b) Changed Technology Associated with Oil and Gas Exploration and Production—Technology related to the exploration and production of oil and gas is not static. The techniques and technology used in the exploration and production of oil and gas may evolve over the duration of the CCAA in a manner not presently anticipated. Changes in technology will not constitute a changed circumstance if the new technology results in impacts to the LEPC that are similar in nature to the impacts resulting from the technology in place when the CCAA is executed. If WAFWA, in consultation with the Participants, determines that the technology associated with oil and gas exploration and production has changed so dramatically that the new technology results in impacts to the LEPC of a substantially different nature than the impacts resulting from oil and gas exploration and production when the CCAA was executed, WAFWA will notify the FWS within 30 days of that determination. WAFWA and FWS will meet with the Participants to identify potential actions which could be taken to address the change in circumstances.

*Changed circumstances not provided for in the CCAA.* If additional conservation measures not provided for in the CCAA and associated CIs are necessary to respond to changed circumstances, the FWS will not require any conservation measures in addition to those provided for in the CCAA or the associated CI without the consent of WAFWA and Participant, provided the CCAA and the associated CI are being properly implemented.



*Unforeseen circumstances.* If additional conservation measures are necessary to respond to unforeseen circumstances, the FWS may require additional measures of WAFWA and Participant, but only if such measures maintain the original terms of the CCAA and associated CI. These additional conservation measures will not involve the commitment of additional land, water, financial compensation, or additional restrictions on the use of land, water, or other natural resources available for development or use under the original terms of the CCAA and associated CI without the consent of Permit Holder and Participant.

The FWS will have the burden of demonstrating that unforeseen circumstances exist, using the best scientific and commercial data available. These findings must be clearly documented and based upon reliable technical information regarding the status and habitat requirements of LEPC. The FWS will consider, but not be limited to, the following factors:

- a) Size of the current range of LEPC;
- b) Percentage of range affected by the need for additional conservation measures and covered by the CCAA;
- c) Percentage of range conserved by the CCAA;
- d) Ecological significance of that portion of the range covered by the CCAA;
- e) Level of knowledge about LEPC; and
- f) Whether failure to adopt additional conservation measures would appreciably reduce the likelihood of survival and recovery of LEPC in the wild.

### **XIII. FUNDING**

Funding for the implementation and administration of this CCAA is more fully described in the CI. Briefly, Participants will pre-pay funds for the restoration, reclamation, and protection of suitable LEPC habitat over a minimum three-year period that begins with the execution of the CI and will continue until the CI is terminated.

The funds will be used to pay Habitat Conservation Fees, which are fees based on the amount of habitat disturbed by oil and gas operations. The Participant will remit funds to WAFWA. WAFWA will maintain the funds in a Habitat Conservation Fund Account specific to this CI. The purpose of the Habitat Conservation Fund Account is to meet the Participant's obligations under the CCAA.

Funds contributed by Participants will be contributed to, held and utilized by WAFWA to accomplish conservation measures. A team consisting of biologists and specialists from appropriate organizations will meet regularly with WAFWA to determine with appropriate input from the Advisory Committee the highest priority conservation projects to be completed using contributed funds. Final prioritization of conservation projects will be the responsibility of this ranking team. The criteria for determining priority conservation areas will include occupancy by the LEPC, the potential for occupancy by the LEPC (e.g., focal areas, connectivity, absence of major threats to the species) on a given site, as well as quality and quantity of suitable habitat for the species. The ranking team will coordinate actions with other, ongoing conservation activities to provide the greatest benefit to the

LEPC. Although conservation activities should receive priority for use of funds, the team can also use a portion of the contributed funds for research, monitoring, and education each year, as appropriate

Participants will make annual pre-payments for the first three years, and the first prepayment will be made into the Habitat Conservation Fund Account at the date of execution of the CI with the second and third payments made on the first and second anniversary of the CI. Participants will make pre-payments for the first three years so that fees can be immediately used to implement conservation activities to benefit the LEPC before surface disturbing activities are proposed.

After the CI is executed, WAFWA will calculate the applicable Habitat Conservation Fee associated with any new surface disturbance using the methodology shown on Exhibit B of the CI. WAFWA will deduct the resulting Habitat Conservation Fee from a Participant's Habitat Conservation Fund Account balance. The Habitat Conservation Fees may be adjusted in accordance with the CI.

Habitat Conservation Fees will remain in ecoregion (identified in Figure 2, page 15 in the Range-wide Plan) in which the associated property is enrolled or surface disturbance occurs. In the event that the habitat goals under the Range-wide Plan have been met for that ecoregion and the attainment of that goal can be documented, then funds generated in that ecoregion may be made available for use in other ecoregions that have not reached their habitat goals under the Range-wide Plan.

#### **XIV. LEVEL OF INCIDENTAL TAKE**

Under this CCAA, should the LEPC be listed under the ESA, authorization for incidental take under Permit is limited to oil and gas exploration and development activities on, or related to such activities occurring on, Participants' enrolled property. Such activities include:

- a) Drilling of oil and gas wells, completion activities, production, recompletion activities, and closure activities (i.e., plugging, abandonment, and remediation);
- b) Construction of well pads, and access roads;
- c) Construction of structures such as pipelines, distribution lines, well infrastructure, and well markers;
- d) Construction of gathering lines and compressor stations;
- e) Routine operations such as daily inspections and maintenance and flowline repairs;
- f) On and off-highway vehicle traffic;
- g) Geophysical activities;
- h) Use of reserve pits and other open water sources;
- i) Emergency response;
- j) Spills of hydrocarbons or chemicals and remediation of such spills;
- k) Weed control;
- l) Other activities typically necessary to conduct oil and gas exploration and production; and
- m) Activities necessary to implement the conservation measures identified in individual CIs (e.g., removal of existing infrastructure).

Incidental take could occur in a variety of forms from these oil and gas activities. For example, incidental take may result from vehicle traffic (off-highway and road vehicle traffic) associated with oil and gas exploration and production, due to either noise that disrupts reproductive behavior or collisions. Similarly, activities that result in noise and dust, such as drilling of oil and gas wells, rig mobilization, and completion activities (such as hydraulic fracturing), that disrupt reproductive behavior may result in incidental take. Noise and human activities associated with geophysical activities that disrupt reproductive behavior may result in incidental take. Incidental take may also result from habitat disturbance and noise associated with the construction of well pads, reserve pits, and access roads. Incidental take may also result from LEPC that become trapped in manmade water structures. The construction of vertical structures including power lines, well markers, and well structures may result in LEPC avoidance behavior causing avoidance behavior that could indirectly impact reproduction and result in incidental take. Unmarked fences that cause collision mortality can also result in incidental take. Finally, incidental take can result from routine operations such as daily inspections and maintenance, flowline repairs, emergency response and remediation of spills, workovers (recompletions), and weed control. Take authorized by the Permit must be incidental to otherwise lawful activities and consistent with implementation of the CCAA and Participant's CI.

The implementation of the CCAA will avoid and minimize incidental take from each of the above listed activities and reduce the threats to the LEPC. For example, conservation measures that limit activities and operations during lekking, nesting, and brooding season will reduce the amount of incidental take that may occur. Similarly, conservation measures that limit the possibility of LEPC becoming trapped in open water sources, minimize the amount of new surface disturbance that will occur, and minimize new vertical structures will reduce the incidental take associated with oil and activities. Marking fences will also minimize incidental take. When surface impacts are offset by habitat enhancements, conservation benefits for LEPCs under the CCAA will likely accrue well beyond the duration of the conservation period. This should result in reduced impacts and incidental take of these species. Overall, although impacts and incidental take are expected to occur, impacts are not expected to be great enough to compromise the viability of LEPC populations in the states.

Implementation of this CCAA is expected to result in fewer adverse impacts to the LEPC than would have otherwise occurred had this CCAA not been implemented.

Activity	Nature of Impacts/Take	Amount/Extent of Impacts/Take	Conservation Measures
Drilling of oil and gas wells, completion activities, production, recompletion activities, and closure activities (i.e., plugging, abandonment, and remediation);	<ul style="list-style-type: none"> <li>• Construction of well pad will result in a reduction of available habitat during construction</li> <li>• Noise from construction may cause LEPC avoidance behavior that may reduce</li> </ul>	<ul style="list-style-type: none"> <li>• Extent of impact can be estimated based on number of wells and well pad area</li> </ul>	<ul style="list-style-type: none"> <li>• Locate well sites a minimum of x feet from active leks;</li> <li>• Reduce well pad size to minimum required to safely perform activities;</li> <li>• Use advanced drilling techniques to drill multiple wells</li> </ul>

	<p>mating and broods</p> <ul style="list-style-type: none"> <li>• Tall structures may cause LEPC avoidance behavior that may reduce mating and broods</li> </ul>		<p>from a single pad;</p> <ul style="list-style-type: none"> <li>• Cluster disturbance activities to minimize fragmentation;</li> <li>• Limit activities March through July;</li> <li>• Etc.</li> </ul>
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The estimated anticipated level of incidental take associated with this CCAA is directly related to the number of Participants. Accurately estimating the total number of Participants is not possible at this time. However, the maximum number of wells and associated infrastructure that may occur throughout the estimated occupied range over the lifetime of the CCAA may be projected. This projection reflects the maximum amount of incidental take of LEPC that could occur from oil and gas activities if LEPC and occupied LEPC habitat existed everywhere within the estimated occupied range; however, because LEPC and occupied LEPC habitat do not exist throughout all estimated occupied range, any resulting incidental take will then be less than this estimate. Furthermore, the conservation measures will avoid and minimize the amount of incidental take that will occur.

NO REQUIREMENT IS MADE IN THIS CCAA FOR PARTICIPANTS TO NOTIFY WAFWA, ADMINISTRATORS OR FWS PRIOR TO ANY EXPECTED INCIDENTAL TAKE OF LEPCS. FOR PURPOSES OF THIS CCAA, THE FWS DOES NOT BELIEVE THAT SUCH A NOTIFICATION REQUIREMENT IS PRACTICABLE OR APPROPRIATE.

**XV. MONITORING AND REPORTING**

Permit Holder will be responsible for annual monitoring and reporting related to the CCAA. To the extent consistent with applicable state law, information in annual reports will include, but is not limited to:

- a) Participants enrolled under the CCAA over the past year, including copies of the completed CI, excluding Exhibit A;
- b) A summary of habitat management and habitat conditions in the covered area and on all enrolled property over the past year with any identifying information related to Participants removed;
- c) Effectiveness of habitat management activities implemented in previous years at meeting the intended conservation benefits;
- d) Population surveys and studies conducted over the past year with any identifying information related to Participants removed;
- e) Any mortality or injury that are observed of the species over the previous year; and
- f) A discussion on the funds used for habitat conservation on private/state lands in the states.

**XVI. CONFIDENTIALITY**

The Parties recognize that fee leasehold and mineral ownership information is confidential and sensitive information held by a Participant. In addition to any obligations imposed by state law on WAFWA not to disclose confidential information, WAFWA will not disclose the following information to FWS or any other individual or entity except the Participant that provided the information:

- a) Exhibit A of the CI;
- b) Any maps depicting lands enrolled by an individual Participant that specifically identify that Participant;
- c) Identifying information about an individual Participant's acreage position; or
- d) The location of any individual Participant's enrolled property that references the Participant individually.

The Parties understand that the FWS generally does not require this information to enforce the Permit and monitor compliance. If the FWS and Permit Holder determine that disclosure of this information to the FWS is necessary for the FWS to enforce the Permit and/or monitor compliance, WAFWA will contact the Participant to determine whether and how this information can be disclosed to FWS in a form that best protects the Participant's interest. WAFWA may only disclose this information to the FWS with the Participant's written consent. Any information provided to WAFWA or FWS in order to fulfill the Participant's obligations in this CCAA and associated CI is presumed to be confidential information that is exempt from public disclosure under state or federal Freedom of Information Act or sunshine laws, as applicable.

Reports will be due March 30 of each year to the FWS and any Participant.

## **XVII. ADAPTIVE MANAGEMENT**

This CCAA is based on adaptive management principals. The FWS and WAFWA agree and recognize that implementation of the conservation measures herein must be consistent with the concepts and principals of adaptive management. The effectiveness of the conservation measures, monitoring methods, and new technologies will be reviewed by WAFWA and Participants periodically over the life of the CCAA. Upon such evaluation, appropriate modifications to the conservation strategy may be incorporated to further enhance the goals of this CCAA. Additionally, research projects that are designed to determine the effectiveness of management practices will be encouraged and utilized to determine what adaptive management is necessary.

Using adaptive management principals, Participants can agree to add or make necessary modifications to existing conservation measures currently found in this CCAA and CI based on peer-reviewed science. New conservation measures can be implemented through future CIs if WAFWA and FWS find such measures to be necessary to facilitate the continued conservation of the LEPC. Any adaptive management modifications may only be applied to existing CIs upon the written consent of the Participants through the amendment procedures described in the CI.

## **XVIII. SIGNATURES**

IN WITNESS WHEREOF, THE PARTIES HERETO have, as of the last signature below, executed this CCAA to be in effect as of the date of the last signature.

\_\_\_\_\_  
Date: \_\_\_\_\_  
Director  
Western Association of Fish and Wildlife Agencies

\_\_\_\_\_  
Date: \_\_\_\_\_  
Regional Director  
U.S. Fish and Wildlife Service

\_\_\_\_\_

**CERTIFICATE OF INCLUSION (Appendix A)**  
in the  
**Range-wide Oil and Gas**  
**Candidate Conservation Agreement with Assurances for the**  
**Lesser Prairie-Chicken (*Tympanuchus pallidicinctus*)**

**CI Tracking Number DOI-FWS-2-2012-XXXX-YYYY**

This certifies that the owner of the property described herein (“Participant”) is included within the scope of the above-named Candidate Conservation Agreement (CCA) for the lesser prairie-chicken (LPC) under the authority of Section 10(a)(1)(A) of the Endangered Species Act of 1973, as amended (ESA), 16 U.S.C. 1531-1544. A property owner, as defined by 50 CFR §17.3, is a person with a fee simple, leasehold, or property interest (including owners of water or other natural resources), or any other entity that may have a property interest, sufficient to carry out the proposed management activities, subject to applicable State law, on non-Federal land.

The goal of the U.S. Fish and Wildlife Service (FWS), the Western Association of Fish and Wildlife Agencies and/or its designee (“Permit Holder” or “WAFWA”), and the Participant is to reduce and/or eliminate threats to the LPC. By agreeing to conduct the conservation measures described herein, the FWS will provide Participants with regulatory certainty (assurances) concerning land use restrictions that might otherwise apply should the LPC become listed as a threatened or endangered species under the ESA.

This Certificate of Inclusion (CI) is a voluntary agreement between the FWS, the Permit Holder, and the Participant. Through this CI, the Participant voluntarily commits to implement or fund specific conservation actions that will reduce and/or eliminate threats to the LPC. By signing below, the Participant acknowledges that they have read and understand the CCA and this CI. They further acknowledge that this CCA may not be sufficient to prevent the listing of the LPC.

Participant’s Name: \_\_\_\_\_

Address: \_\_\_\_\_

**The following Conservation Measures are to be accomplished as described below on the enrolled property in CHAT 1-4 identified on Exhibit A:**

- a. *Pre-project planning*



i. Utilize the Southern Great Plains CHAT (<http://kars.ku.edu/geodata/maps/sgpchat/>) for initial LEPC-related project siting review along with impact area maps, ecological site maps, land cover maps, and aggregated CRP maps provided in the CHAT. Participants should consider examining the WGA west-wide CHAT and State Fish and Wildlife agencies for information related to other state or federal threatened, endangered, or candidate species and species of greatest conservation need.

ii. If surveys of proposed project sites have not been conducted within the previous 5 years, and the project sites are within CHAT categories 1-3, Participants have the option of conducting surveys themselves according to WAFWA protocols, allowing state or WAFWA affiliated personnel to conduct surveys of the site prior to project initiation, or considering the sites as occupied with active leks.

**b. Avoidance**

i. Use available options to avoid focal areas, connectivity zones, or within 1 1/4 mi of known leks that have been active at least once within the previous 5 years, as well as tracts of native grass and shrublands (see CHAT and State Fish and Wildlife Agency staff for more information). If these areas cannot be avoided, Participants shall minimize and mitigate the impacts of development as described in beneath the headings “Minimization” and “Mitigation.” Participants shall focus development on lands already impacted, altered or cultivated (such as row-crop agriculture, developed oilfields, or existing power line impact buffers), and away from areas of intact and healthy native grass or shrublands. Similarly, Participants shall select fragmented or degraded habitats over unfragmented areas, and select sites with lower LEPC habitat potential over sites with greater habitat potential.

ii. Participants shall avoid locating roads, fences, power lines, well pads, turbines and other infrastructure within focal areas, connectivity zones, or in other areas identified as LEPC habitat by the CHAT categories 1-3. If these areas cannot be avoided, Participants shall minimize and mitigate the impacts of development as described in beneath the headings “Minimization” and “Mitigation.”

iii. Participants shall utilize existing corridors or infrastructure when siting new distribution power lines. When Participants cannot utilize existing corridors or infrastructure, Participants shall bury distribution power lines if within 1 1/4 mi of leks active within the previous five years. If new distribution power lines are constructed outside of existing corridors and within 1 1/4 mi of leks active within the previous five years but are not buried, Participants shall minimize and mitigate the impacts of development as described in beneath the headings “Minimization” and “Mitigation.”

iv. During lekking, nesting, and brooding season (Mar 1–Jul 15), construction and maintenance activities shall not be conducted between the hours of 3:00 am and 9:00 am within 1 1/4 mi of leks recorded active within the previous five years if such activities require a human presence. Emergency operations, construction and maintenance activities that are direct human or environmental safety concerns or that relate directly to operational continuity are allowed. Participants shall record the dates, duration and purpose of any emergency operations, construction and maintenance activities during the breeding season within 1 1/4 miles of leks and shall provide that documentation with its annual reporting.

**c. Minimization**

i. If roads, fences, power lines, well pad, and other infrastructure cannot be located to avoid focal areas, connectivity zones, or other areas identified as high probability lek and nest habitat by the CHAT categories 1-3, Participants shall use existing corridors for multiple types of infrastructure. If Participants cannot use existing corridors for such infrastructure, Participants shall mitigate the impacts of new habitat disturbance as described in beneath the heading "Mitigation."

ii. Participants shall site projects to minimize new habitat disturbance by increasing the amount of overlap between existing fragmentation and associated impact buffers. If projects cannot be sited to minimize new habitat disturbance, Participants shall mitigate the impacts of new habitat disturbance as described in beneath the heading "Mitigation."

iii. Participants shall attempt to site multiple wells on single pads and co-locate facilities to reduce habitat loss and fragmentation of habitat.

iv. Participants may use herbicide treatment on areas on impacted areas but shall limit such use to the impact area. Within CHAT categories 1-3, these treatments shall not be applied during the lekking, nesting and brooding season (March 1-July 15) except for the spot treatment of noxious weeds. Where practical and applicable, Participants shall utilize an herbicide that is targeted for specific use and spot treatments as opposed to a broadband herbicide and broadcast treatments. Apply in conditions that minimize drift.

v. Install appropriate fence markings along new fences under the control of the participant within one quarter (1/4) mile of a lek that has been recorded as active within the previous 5 years.

vi. Participants shall minimize their traffic volume, control their vehicle speed, control access, and minimize their off-road travel within focal areas and areas identified as high probability lek and nest habitat by the CHAT categories 1-3.

vii. Within 1 ¼ mi of leks, install raptor deterrents on new electrical distribution and transmission poles that are under the control of the Participant as indicated by Avian Power Line Interaction Committee (APLIC) Suggested Practices for Raptor Protection on Power Lines: The State of the Art in 2006, as amended.

viii. Provide escape ramps, rafts or ladders, depending on configuration, in new exposed, manmade water containment sources that are under control of the Participant.

ix. Institute noise abatement year-round for new facilities located within 1 ¼ mi of high quality LEPC habitat in focal areas and connectivity zones or to a lek recorded as active within the previous five years. Noise from these new facilities shall not exceed 75 db when measured at the Participant's property line or any point greater than 30 meters from the facility boundary, whichever is closest.

**d. *Mitigation***

i. For impacts that cannot be avoided or minimized, Participants shall adhere to the provisions in the Certificate of Inclusion that describe the amount of fees necessary to mitigate such impacts.

ii. Mitigation may include reclaiming or remediating inactive or abandoned facilities and infrastructure under the control of the Participant in compliance with applicable state rules and regulations. This in-lieu remediation of facilities will be subject to the metrics system outlined in Appendix B of the Range-wide Plan. Remediation proposals shall be submitted to WAFWA for

review and approval and those proposals must demonstrate that they support the population and habitat goals of the range-wide plan with respect to habitat focal areas and connectivity zones.

As described in Section XVII, below, the effectiveness of these conservation measures will be reviewed by WAFWA and Participants periodically over the life of the CCAA. However, new conservation measures may only be implemented through future CIs if WAFWA and FWS find such measures to be necessary to facilitate the continued conservation of the LEPC. Conservation measures agreed upon in existing CIs may only be modified through the written consent of the Participants through the amendment procedures described in the CI.

#### **I. ENROLLED PROPERTY.**

Participant will provide a list of properties (leases or portions of leases) including detailed legal description, acreage, and state lease number (as applicable) to be enrolled in this CI (see Exhibit A). Enrollment of property does not guarantee approval of an application to conduct oil and gas exploration and production operations on the enrolled property and still requires approval by the appropriate regulatory agency. The Participant is responsible for ensuring that all provisions of this CI are implemented by its agents and/or sub-contractors, and other interest holders under its control on all property enrolled under this CI.

#### **II. SUSPENSION FOR NONPAYMENT.**

The Participant hereby agrees that the Permit Holder, in coordination with the FWS, can suspend the CI on the enrolled property identified in Exhibit A until the Habitat Conservation Fee associated with that CI is paid.

#### **III. HABITAT CONSERVATION FEES AND PAYMENTS.**

The Participant will pre-pay funds for the restoration, reclamation, and protection of suitable LPC habitat over a minimum three-year period that begins with the execution of this CI and will continue until the CI is terminated as provided herein. The funds will be used to pay Habitat Conservation Fees, which are fees based on the amount of area disturbed by oil and gas operations. The Participant will remit funds to the Permit Holder. The Permit Holder will maintain the funds in a Habitat Conservation Fund Account specific to this CI. The purpose of the Habitat Conservation Fund Account is to meet the Participant's obligations under the CCAA.

The Participant will make annual pre-payments for the first three years only, and the first prepayment will be made into the Habitat Conservation Fund Account at the date of execution of this CI. The second and third payments will be made on the first and second anniversary of the execution date of this CI. For each of the three years, the annual prepayment will be calculated at \$2 **[Note: enrollment fee may require adjustment]** per gross acre for all property enrolled in this CI and will be deposited each year into each Participant's habitat conservation fund account. The Participant agrees to make pre-payments for the first three years so that fees can be immediately used to implement conservation activities to benefit the LPC before surface disturbing activities are proposed.

The Participant may, at their sole option, pay more than the required amount into their Habitat Conservation Fund Account during any prepayment period but never less than the required amount as described herein.

Prepayment of any new property added by addendum to this CI will be calculated at \$2 per gross acre and be due at the time the property is added to the CI. The total property enrolled in this CI, and the resulting annual prepayment, will be recalculated on the remaining anniversary dates of the 3 year cycle. No annual prepayment (\$2 per acre) will be required after the initial 3 year period, but the Participant will pay Habitat Conservation Fees in accordance with Exhibit B as surface disturbing activities are proposed. The Permit Holder will use Habitat Conservation Fees to implement conservation activities to benefit the LPC.

After this CI is executed, the Permit Holder will calculate the applicable Habitat Conservation Fee associated with any new surface disturbance using the methodology shown on Exhibit B. The obligation to pay Habitat Conservation Fees will be satisfied by the prepaid funds in a Participant's habitat conservation fund until such prepaid funds are exhausted. Prepaid funds that are not used in a calendar year will be available to satisfy the obligation to pay Habitat Conservation Fees in subsequent calendar years; however, the Participant must continue to make annual prepayments for the first three years as described above even if all prepaid funds are not used in the previous calendar year. The Habitat Conservation Fees may be adjusted as described in Exhibit B. The Permit Holder will provide written notice of any adjustments to Habitat Conservation Fees to the Participant.

The Participant will notify the Permit Holder of new surface disturbing activities in accordance with Exhibit B. The Permit Holder will deduct the resulting Habitat Conservation Fee from the Participant's Habitat Conservation Fund Account balance within 10 working days after receiving notification from the Participant. If the Participant's remaining Habitat Conservation Fund Account balance is less than the resulting Habitat Conservation Fee, the Participant will pay the remainder of the Habitat Conservation Fee. When the Permit Holder deducts fees from the Participant's account, they will notify the Participant within 30 days detailing the:

- Amount of the Habitat Conservation Fee associated with the application,
- Remaining Habitat Conservation Fund Account balance, and
- Payment due, if any.

The Participant's obligation to make payments as described above shall be suspended if any administrative or judicial challenge prevents the implementation of this CI.

#### **IV. HABITAT CONSERVATION ACCOUNT FUNDS.**

The Participant is responsible for providing permit approval information to the Permit Holder in accordance with Exhibit B. Habitat Conservation Fees generated from any activity on any enrolled property, and for activities occurring on non-enrolled property that are needed to develop the enrolled property (i.e., pipelines, roads, and seismic activities), will be debited from funds paid into the Habitat Conservation Fund Account under this CI within 10 working days after receiving project approval.

#### **V. LAND TRANSFERS AND ADDITIONS.**

**Transfers**

This CI shall be binding on and shall inure to the benefit of the Parties to the CI and their successors and transferees (i.e., new owners). The rights and obligations under this CI shall run with the enrolled property and are transferable to subsequent non-Federal property owners. The enhancement of survival permit issued to the Permit Holder shall extend to the new owner(s). As a party to the original CCAA and permit, the new owner(s) shall have the same rights and obligations with respect to the enrolled property as the original owner. The new owner(s) also shall have the option of receiving CCAA assurances by signing a new CI and receiving a new permit. The Permit Holder shall notify the FWS of any transfer of the enrolled property, so that the FWS can attempt to contact the new property owner, explain the baseline responsibilities applicable to the property, and seek to interest the new property owner in signing the existing CI or a new one to benefit listed species on the property.

Ownership interest in the enrolled property can be transferred before or after a decision to list the species occurs. Notification of the transfer of any enrolled property shall be transmitted to the Permit Holder for approval within 30 days after the closing of such transfer. The notification shall include the detailed legal description(s), acreage of the enrolled property involved, and state lease numbers (as applicable).

After a listing decision, an interested party may become a Participant if it acquires a property interest in the enrolled property and wishes to continue enrollment of the property. The new property owner must sign a new CI (if the new property owner is not a Participant) or an amended CI (if the new property owner is an existing Participant) within 30 days after notice is provided to the Permit Holder and prior to conducting any new operation, maintenance, or disturbance on the transferred enrolled property. Upon becoming a Participant, conservation measures, all terms and conditions of the CCAA and CI, and the payment schedule shall be assumed by the receiving Participant.

Any funds that were prepaid into the Habitat Conservation Fund Account prior to the transfer of enrolled lands will not be refunded. Upon mutual agreement of the transferor and new property owner, the Permit Holder will transfer funds that were prepaid into the transferor's Habitat Conservation Fund Account into the new property owner's Habitat Conservation Fund Account for the new property owner's use if the new property owner is or becomes a Participant. The transferor and new property owner will identify to the Permit Holder the amount of funds to be transferred. Subsequent prepayments for the transferred enrolled lands will be the responsibility of the new property owner.

**Additions**

The Participant may amend this CI to add property at any time before or after the LPC is listed. This right to add newly acquired lands to this CI exists without regard to the method of acquiring the property (whether by merger, purchase, etc.). Fees for property added within the prepayment period will be assessed according to the schedule described in Section IV and Exhibit B.

**VI. TERMINATION.**

The Participant agrees that it shall not terminate this CI until after the third prepayment period ends (unless the enrolled property is transferred prior to the end of the three-year period). Any time after

the third prepayment period ends, the Participant may terminate any or all of the enrolled property in this CI by giving thirty (30) days written notice to the Permit Holder and FWS as to any or all of the enrolled property. Operations on the terminated property for which the Participant has not paid the Habitat Conservation Fee at the time of termination may proceed as if the CI did not exist. Any funds remaining in Participant's Habitat Conservation Fund Account at the time of termination, voluntary or for cause, will be donated to the Permit Holder for conservation efforts to support the LPC, and will not be refunded.

FWS may terminate the CI for a Participant's failure to pay the Habitat Conservation Fee (including failing to prepay amounts into the Habitat Conservation Fund Account during the first three years) or for the Participant's failure to implement the conservation measures documented in this CI. However, the Permit Holder shall first provide notice of any deficiency to the Participant and give them the opportunity to cure. If the deficiency is not corrected, or due diligence is not being shown to correct the deficiency within sixty (60) days of the receipt of the letter, the property involved will be terminated from this CI.

**VII. NO WAIVER.**

The Participant, by entering into this CI, does not concede its agreement with, or endorsement of, all underlying studies and conclusions in the CCAA. Further, the Participant does not waive any legal rights or remedies that may exist outside of this CI. The Participant is also not responsible for work being accomplished by the FWS or the Permit Holder using contributed funds.

**VIII. RELEASE.**

If at any time any administrative or legal challenge prevents the implementation of this Certificate of Inclusion, the Participant agrees to release the signatory parties of the CCAA and CI from any legal claims related to this CI and CCAA. All funds remaining in the Habitat Conservation Fund Account will be retained by the Permit Holder and be used for conservation of the covered species.

**AMENDMENT.**

As described in Section XVII of the CCAA, the effectiveness of the conservation measures in the CCAA will be reviewed by the Permit Holder and Participants periodically over the life of the CCAA. However, conservation measures agreed upon in this CI may only be modified through the written consent of the Participants through the amendment procedures described below.

This CI, except for Exhibit A, may be amended with the written consent of each of the parties hereto. The parties agree to process requests for amendments in a timely manner. This CI will only be amended upon written agreement of all parties. This CI may be amended to accommodate changed circumstances in accordance with all applicable legal requirements, including but not limited to the Endangered Species Act, the National Environmental Policy Act, and the Service's permit regulations at 50 CFR 13 and 50 CFR 17. The party proposing the amendment shall provide a statement describing the proposed amendment and the reasons for it.

Exhibit A may be revised by the Participant and submitted to the Permit Holder to reflect additions to, transfers of, or terminations of the enrolled property that are consistent with the applicable terms of

this CI. The Permit Holder may accept revisions to Exhibit A without written consent of the parties to this CI so long as changes in the enrolled property are consistent with the terms of this CI.

**IX. MULTIPLE ORIGINALS.**

This CI may be executed in any number of multiple originals. A complete original of this CI shall be maintained in the records of each of the Parties hereto.

**X. REPORTING REQUIREMENTS.**

By March 31 of each year the CI is in effect, the Participant will provide the Permit Holder with an end of year report that summarizes activities that have occurred on their enrolled property (Exhibit A) in the previous calendar year. The reports should detail the activities undertaken on the enrolled property. The report provided by the Participant will aid the Permit Holder in meeting its annual reporting requirements under the CCAA and its accompanying permit. For purposes of compliance monitoring of conservation commitment, the Permit Holder or Administrator may access the enrolled property with at least one week prior notification to the Participant (see CCAA, Section X.1.c).

**XI. CONFIDENTIALITY.**

The Parties to this CI recognize that fee leasehold and mineral ownership information is confidential and sensitive information held by a Participant. In addition to any obligations imposed by state law on the Permit Holder not to disclose confidential information, the Permit Holder will not disclose the information identified in Section XVI of the CCAA.

**XII. NOTICE.**

Any notice permitted or required by this CI shall be transmitted within any time limits described in this CI to the persons set forth below or shall be deemed given five (5) days after deposit in the United States mail, certified and postage prepaid, return receipt requested, and addressed as follows or at such other address as any party may from time to time specify to the other parties in writing:

**Participant:**

Contact Name \_\_\_\_\_

Title \_\_\_\_\_

Address: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Telephone: \_\_\_\_\_

Fax: \_\_\_\_\_

E-Mail: \_\_\_\_\_

**WAFWA/Permit Holder Representative:**



Contact Name \_\_\_\_\_

Title \_\_\_\_\_

Address: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Telephone: \_\_\_\_\_

Fax: \_\_\_\_\_

E-Mail: \_\_\_\_\_

**US Fish and Wildlife Representative:**

Contact Name \_\_\_\_\_

Title \_\_\_\_\_

Address: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Telephone: \_\_\_\_\_

Fax: \_\_\_\_\_

E-Mail: \_\_\_\_\_

**XIII. SIGNATURES**

IN WITNESS WHEREOF THE PARTIES HERETO have executed this Certificate of Inclusion to be in effect on the date of the Participant's signature, unless the FWS fails to execute this Certificate of Inclusion, in which case it shall not take effect.

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Participant and Affiliation

Date\_\_\_\_\_

---

WAFWA/Permit Holder Representative

Date\_\_\_\_\_

---

FWS Authorized Officer

Date\_\_\_\_\_

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EXHIBIT A  
Property Description for Enrolled Property

*[To be developed with oil and gas industry involvement]*

## EXHIBIT B

### Habitat Conservation Fees

The Habitat Conservation Fee for new surface disturbance associated with oil and gas development activities will be calculated using the following fee structure. These Habitat Conservation Fees will apply to oil and gas activities conducted on the enrolled property s, as well as those oil and gas activities conducted off enrolled property that are associated with activities on the enrolled property (such as power lines and road construction). The structure shall also apply to third parties doing work for the Participant, regardless of who constructs or operates the associated facilities. The Participant must notify the Permit Holder before it or its third-party subcontractors conduct any surface disturbing activities associated with this CI that are subject to Habitat Conservation Fees. Within 30 working days of receiving approval documents for surface disturbing activity from a regulatory agency with jurisdiction, if any, the Participant will provide the Permit Holder with copies of such documents.

The Habitat Conservation Fee is based both on the conservation strategy for the LPC set forth in the Range-wide Conservation Plan for the LPC (“Range-wide Plan”). The Range-wide Plan identifies numerous “focal areas” for the LPC, which the Range-wide Plan defines as the areas of greatest importance to the LPC and where habitat enhancement, maintenance, and protection should be focused. The Range-wide Plan also calls for the establishment of “connectivity zones” to allow linkage among focal areas.

Fees for new impacts are a function of three factors:

1. The crucial habitat index (CHI) for the LPC as defined by the Southern Great Plains Crucial Habitat Assessment Tool (CHAT)
2. The site condition score as defined by the Habitat Impact Assessment Guide (HIAG)
3. The impacted acreage based on the impact buffers defined within the Range-wide Plan

The CHAT tool was developed to model crucial habitat for the LPC throughout its historical range and to be available online to identify priority habitat for the conservation of the LPC. This was accomplished by using spatial models to analyze multiple data sets (some of which include LPC lek locations, land cover, topography, roads, transmission lines, oil and gas development) which ultimately resulted in a crucial habitat data layer for the LPC. This data layer classifies habitat within the estimated occupied range of the LPC plus a 10 mile buffer (EOR+10) using a CHI which places areas into one of the four following categories based on the locations value to the LPC.

- CHI 1 = Habitat Focal Areas
- CHI 2 = Connectivity Zones
- CHI 3 = Predicted LEPC Habitat within the EOR+10
- CHI 4 = Other within the EOR+10

For further information on the CHAT and further definitions of the four different CHI visit [http://kars.ku.edu/media/uploads/maps/sgpchat/SGPCHAT\\_Summary.pdf](http://kars.ku.edu/media/uploads/maps/sgpchat/SGPCHAT_Summary.pdf). To view the CHAT visit <http://kars.ku.edu/maps/sgpchat/>.

The HIAG is a rapid assessment method to assess site condition or LEPC habitat quality (0 to 1) based on four variables:

1. Vegetation Cover- Non-overlapping canopy cover of herbaceous plants and woody shrubs within evaluation unit
2. Vegetation Quality – Non-overlapping canopy cover of preferred native grasses and shrubs within the evaluation unit. These include little bluestem, sideoats grama, big bluestem, indiagrass, sand bluestem, switchgrass, sand sagebrush, and sand shinnery oak.
3. Presence of Tall Woody Plants- Greater than 3 feet in height
4. Availability of Desired Plant Cover - Proportion of area consisting of native prairie and planted grass stands with <1% canopy cover of trees >3 ft. in height estimated within a one mile radius of the center of the evaluation unit.

Impacted acreage is calculated based a buffer of new impacts minus the acreage of pre-existing impacts. If new impact buffers can be located entirely within any pre-existing impact buffers, there will be no cost assessed for those new impacts. The impact buffer distances are described in Appendix B of the Range-wide Plan, Table B2 on page 117.

Impact units are calculated as:

$$\text{Impact units} = \text{impact acreage} \times \text{site quality} \times \text{offset ratio} \times \text{duration}.$$

Where:

$$\begin{aligned} \text{Offset ratio} &= 2, \text{ resulting in two acres of conservation for every acre of new impact, and} \\ \text{Duration} &= 20 \text{ years} \end{aligned}$$

The cost for a given impact is assessed as:

$$\text{Impact cost} = \text{impact units} \times \text{lifetime unit cost}.$$

Where:

*The lifetime unit cost is based on practice costs defined annually by the Natural Resources Conservation Service (NRCS) for habitat maintenance and restoration costs for practices identified in the NRCS LEPC Conference Report.*

All impacts are assessed based on 20 year duration. This duration provides sufficient resources to fund an endowment managed by WAFWA that will provide for in-perpetuity conservation. In the event that impacts paid for are remediated to pre-impact or better conditions based on the HIAG site condition score, funds originally paid for that impact may be applied to new impact costs elsewhere. This remediation must be documented based on a re-evaluation of the HIAG for that site by WAFWA, who will maintain site-specific information for all impacts.

**1) Fees for new well location in previously unimpacted acreage<sup>1</sup>**

<u>Habitat Area</u>	<u>Conservation Fee Range<sup>2</sup></u>
CHI 1	\$0 to \$116,501.59 per location
CHI 2	\$0 to \$93,201.27 per location
CHI 3	\$0 to \$77,667.72 per location
CHI 4	\$0 to \$58,250.79 per location

<sup>1</sup> Based on an impact buffer of the centroid of a 3 acre or smaller well pad. Larger well pads will be assessed based on an impact buffer of the pad. If the site is located within buffers of pre-existing impacts, costs are reduced according to the percent of overlap of impact buffers.

<sup>2</sup> Cost range represents the habitat quality gradient as defined by the HIAG from a cropland site with no rangeland or CRP within a 1 mile radius up to the highest quality.

**2) Fees for compressor stations or other commercial buildings in previously impacted acreage<sup>3</sup>**

<u>Habitat Area</u>	<u>Conservation Fee Range<sup>4</sup></u>
CHI 1	\$0 to \$1,292,471.34 per location
CHI 2	\$0 to \$1,033,977.07 per location
CHI 3	\$0 to \$861,647.56 per location
CHI 4	\$0 to \$646,235.67 per location

<sup>3</sup> Based on an impact buffer of the centroid of a 10 acre or smaller footprint. Larger sites will be assessed based on an impact buffer of the site. If the site is located within buffers of pre-existing impacts, costs are reduced according to the percent of overlap of impact buffers.

<sup>4</sup> Cost range represents the habitat quality gradient as defined by the HIAG from a cropland site with no rangeland or CRP within a 1 mile radius up to the highest quality.

**3) Fees for new privately maintained roads and distribution power line construction for previously unimpacted acreage<sup>5</sup>**

<u>Habitat Area</u>	<u>Conservation Fee<sup>5</sup></u>
CHI 1	\$0 to \$30,586.73 per mile
CHI 2	\$0 to \$24,469.39 per mile
CHI 3	\$0 to \$20,391.16 per mile
CHI 4	\$0 to \$15,293.37 per mile

<sup>5</sup> Based on the impact buffer of the centerline. If that right of way overlaps prior impact buffers, costs are reduced by the percent of overlap.

<sup>6</sup> Cost range represents the habitat quality gradient as defined by the HIAG from a cropland site with no rangeland or CRP within a 1 mile radius up to the highest quality.

Construction of roads on the enrolled property may also disturb the surface of other property not enrolled in the CI. The Habitat Conservation Fee calculated for new road construction includes disturbances occurring on both enrolled and non-enrolled property.

Well pad or commercial facility acreage and road length will be calculated based on information received and/or on-the-ground observation. Should the Participant disagree with the estimate of the area disturbed, they have the right to challenge the estimate and provide supporting data. The Permit Holder will have the responsibility for the final determination of the area disturbed.

Habitat Conservation Fees will not be charged for any buried infrastructure.

#### **Adjustment of Fees**

The Habitat Conservation Fees described in this Exhibit may be adjusted annually to reflect inflation based on NRCS practice costs, which are calculated based on the average cost for a given habitat management practice paid by landowners during the previous year.

If at any time while this plan remains in effect the Habitat Conservation Fees become inadequate, the Participant and the Permit Holder will confer to identify potential adjustments to be made to the Habitat Conservation Fees.



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APPENDIX F. WIND ENERGY CCAA

**Range-wide  
Wind Energy Candidate  
Conservation Agreement with Assurances**

**for the**

**Lesser Prairie-Chicken  
(*Tympanuchus pallidicinctus*)**

**In Colorado, Kansas, New Mexico Oklahoma  
And Texas**

**DOI-FWS-\_\_-2013-XXXX**

**Between the:  
U.S. Fish and Wildlife Service  
And  
Western Association of Fish and Wildlife Agencies Foundation**

**March 31, 2013**

## Executive Summary

In 1995, the U.S. Fish and Wildlife Service (FWS) was petitioned to list the lesser prairie-chicken (*Tympanuchus pallidicinctus*) (LEPC) as threatened under the authority of the Endangered Species Act of 1973, as amended. The FWS ruled that listing of the LEPC was warranted but precluded because of other higher priority species. The LEPC was then designated as a candidate for listing as threatened or endangered in 1997. On December 11, 2012, the FWS issued a proposed rule to list the LEPC as threatened. 77 Fed. Reg. 73,828 (Dec. 11, 2012).

This Candidate Conservation Agreement with Assurances (CCAA) LEPC represents a collaborative effort between the FWS and WAFWA Western Association of Fish and Wildlife Agencies. The terms of this CCAA are intended to harmonize with and complement the conservation strategy set forth in the Range-wide Plan.

The CCAA is a voluntary agreement, administered by the signatory parties and WAFWA. It will be the responsibility of WAFWA to work with and enroll Participants using Certificates of Inclusion (CIs) (see Appendix A) which will facilitate the voluntary cooperation of wind industry thereby providing conservation benefits to the LEPC. When fully implemented, this CCAA will provide guidance for the conservation and management of the LEPC, by reducing and/or eliminating threats to this species associated with wind energy development. Participants will implement conservation measures and contribute funding for conservation for unavoidable impacts as part of their CIs. Funds contributed as part of this CCAA may or may not be used on the enrolled property since other habitat areas may be a higher priority for implementation of habitat improvement projects. The conservation measures implemented by Participants would generally consist of habitat restoration and enhancement activities, and minimize habitat fragmentation to preclude or remove current threats to the species.

This CCAA is based on adaptive management principals. Using adaptive management principals, and with the consent of all the signatory parties to this CCAA, if new conservation measures are deemed to be necessary in the future, the parties to the CCAA can modify the template Certificate of Inclusion attached hereto to include additional measures that would apply to all future enrollments to facilitate the continued conservation of the LEPC.

## I. INTRODUCTION

If and when a species becomes listed under the Endangered Species Act of 1973 (ESA), as amended (16 U.S.C. § 1531, *et seq.*), that listing action triggers both a regulatory and a conservation responsibility for Federal, State, and private landowners. These responsibilities stem from Section 9 of the ESA that prohibits “take” (i.e., harass, harm, pursue, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct) of listed species. Along with the Section 9 prohibitions, Federal agencies must ensure that their actions will not jeopardize the continued existence of the listed species and carry out programs for the conservation of listed species.

In the western United States many species that are candidates for listing under the ESA occur on both Federal and non-Federal lands. Non-Federal property owners whose operations may have impacts on candidate species on private lands may have the opportunity to voluntarily enter into a CCAA in order to implement conservation measures aimed at reducing and/or eliminating threats to candidate species and to ensure that their land operations can continue unaffected if the species is listed in the future.

This CCAA and its associated Enhancement of Survival permit, issued pursuant to Section 10(a)(1)(A) of the ESA, would provide Participants regulatory assurances that should they cooperate and follow the measures in their Certificate of Inclusion (CI) (appendix A), they will not incur additional land-use restrictions on their property should the LEPC become listed.

This CCAA and associated CI, in conjunction with the Range-Wide Plan and other conservation efforts, will address the conservation needs of the LEPC. Through this CCAA, WAFWA will work with Participants who voluntarily commit to implementing conservation actions that will reduce and/or eliminate threats to this species.

### *Benefits of this CCAA*

The most significant benefit of this CCAA is that it will provide additional conservation efforts and guide conservation actions for the LEPC in order to improve the status of the species within the LEPC range. This CCAA, in conjunction with the Range-Wide Plan, provides a comprehensive and strategic landscape level approach to addressing the conservation needs of the LEPC. Although the FWS cannot absolutely guarantee that listing will never be necessary, this CCAA seeks to implement conservation measures on State and private property, which, when combined with those benefits that would be achieved if conservation measures were to also be implemented on other necessary properties (such as but not limited to any properties affiliated with a companion CCA for Federal mineral activities), would preclude or remove any need to list the LEPC. It is important to note that a federal decision not to list the LEPC would be based upon the removal of threats and stabilization or improvement of the species. The decision to list is a regulatory process and no CCAA or CCA can predetermine the outcome. The actions and successes of this CCAA will be evaluated in accordance with FWS Policy for Evaluation of Conservation Efforts (2003) and factored into the five-factor analysis of the listing decision.

This CCAA is designed to include conservation measures that reduce and/or eliminate threats by land uses associated with wind energy development on State and private property. If enough Participants implement conservation measures on this property through their participation in the CCAA, the likelihood that the species will be listed will be greatly reduced. The implementation of conservation measures through the CCAA and CI insures that Participants will not bear additional conservation burdens on State and private property.

## II. PURPOSE OF THE CCAA

The primary purposes of this CCAA are to:

- develop, coordinate, and implement conservation actions to reduce and/or eliminate known threats to the LEPC within its range;
- support ongoing efforts to maintain viable populations of LEPC in occupied and suitable habitat.;
- serve as a range wide document for wind energy conservation measures implemented by WAFWA and Participants;
- encourage development and protection of suitable LEPC habitat by giving Participants incentives to implement specific conservation measures (as described in their CI);
- provide Participants assurance that the conservation measures agreed to in the CI would be sufficient, and thus assure them that no additional land use restrictions or financial commitments would be required of them should the LEPC become listed; and
- allow Participants to continue operations while protecting and improving habitat conditions for the LEPC.

## III. AUTHORITY

Sections 2, 7, and 10 of the Endangered Species Act (Act) of 1973, as amended, allow the FWS to enter into this CCAA. Section 2 of the Act states that encouraging interested parties, through Federal financial assistance and a system of incentives, to develop and maintain conservation programs is a key to safeguarding the Nation's heritage in fish, wildlife, and plants. Section 7 of the Act requires the FWS to review programs that it administers and to utilize such programs in furtherance of the purposes of the Act. By entering into this CCAA, the FWS is utilizing its Candidate Conservation Programs to further the conservation of the Nation's fish and wildlife. Lastly, Section 10(a)(1)(A) of the Act authorizes the issuance of permits for acts that would otherwise be prohibited by Section 9 if such acts are expected to enhance the propagation or survival of the affected species.

## IV. THE LESSER PRAIRIE-CHICKEN AND CONSERVATION EFFORTS

The LEPC is a species of prairie grouse endemic to the southern high plains of the United States, commonly recognized for its feathered feet, stout build, ground-dwelling habit, and elaborate breeding behavior. The Range-wide Plan contains detailed background information regarding the LEPC, including information about the species' life history, habitat requirements, and population status. Because this CCAA is intended to harmonize with and complement activities associated with the Range-wide Plan, as explained below, the descriptions of LEPC species information set forth in the Range-wide Plan are incorporated and adopted herein.

## V. THREATS

Section 4(a)(1) of the ESA lists five factors that must be considered when determining if a species should be listed as threatened or endangered. A species may be listed due to one or more of these factors. These are:

- (A) present or threatened destruction, modification, or curtailment of its habitat or range;
- (B) over-utilization for commercial, recreational, scientific, or educational purposes;
- (C) disease or predation;
- (D) inadequacy of existing regulatory mechanisms; and
- (E) other natural or manmade factors affecting its continued existence.

The Range-wide Plan describes perceived threats to LEPC populations. Because this CCAA is intended to harmonize with and complement activities associated with the Range-wide Plan, as explained below, the descriptions perceived threats to LEPC populations set forth in the Range-wide Plan are incorporated and adopted herein.

## **VI. CONSERVATION EFFORTS**

In order to issue an enhancement of survival permit, the FWS must find that implementation of the terms of the CCAA will not conflict with any ongoing conservation programs for the LEPC. 50 C.F.R. § 17.22(d)(2)(v), 17.32(d)(2)(v). The FWS has recognized that although the terms of CCAAs may not conflict with ongoing conservation programs, there are numerous conservation programs ongoing for the LEPC, including programs administered by the Natural Resources Conservation Service and CCAAs that will reduce or eliminate threats to the LEPC associated with agricultural practices in Texas and Oklahoma. These ongoing conservation efforts are more fully described in the Range Wide Plan.

There are two ongoing industry conservation programs for the LEPC and both are related to oil and gas development. First, the FWS has approved a CCAA with the Center of Excellence for Hazardous Materials Management (CEHMM) and a companion CCA between the Bureau of Land Management (BLM) and CEHMM. The CCAA and CCA facilitate the voluntary cooperation of the oil and gas industry, livestock producers, and other interested stakeholders to provide conservation benefits to the LEPC. Oil and gas operators that participate in the CCAA and CCA commit to implement a suite of avoidance and minimization measures. Additionally, participants contribute funds to assist in restoration or protection and habitat.

Second, the Lesser Prairie-Chicken Interstate Working Group of the Western Association of Fish and Wildlife Agencies (WAFWA) is developing a Range-wide Conservation Plan for the LEPC ("Range-wide Plan") that outlines a conservation strategy for the LEPC that identifies and coordinates conservation actions that can be implemented to ensure the continued sustainability of the species throughout its current or expanded range. The draft plan is expected to be finalized in the spring of 2013. The Range-wide Plan emphasizes tools and incentives to encourage landowners and others to voluntarily partner with agencies in LEPC habitat to implement

conservation efforts, while also achieving land use needs. The terms of this CCAA are intended to harmonize with and complement the conservation strategy set forth in the Range-wide Plan.

## **VII. NEED FOR THIS AGREEMENT**

The ESA authorizes the FWS to prohibit activities on private property that result in the take of listed species.

This CCAA and its associated Enhancement of Survival permit, issued pursuant to Section 10(a)(1)(A) of the ESA, would provide Participants regulatory assurances that should they cooperate and protect LEPC habitat on their property, they will not incur additional land-use restrictions on enrolled property should the LEPC be listed. To receive this assurance, Participants must enroll their property under the CCAA by signing a CI (see Appendix A).

### **The Western Association of Fish and Wildlife Agencies**

WAFWA is a non-profit organization representing 23 states and Canadian provinces, advocating appropriate management of fish and wildlife within the borders of member states. Since WAFWA's establishment in 1922, WAFWA has been innovative in its approach to identifying and pursuing meaningful applied research that has resulted in practical solutions in the environment. WAFWA has a broad capacity in these areas due to the combined experience of its member organizations and its directors and staff members. WAFWA has also been able to develop strong partnerships with universities, agencies, research institutions, and private industry to bring together additional expertise as needed to meet challenges of various endeavors.

WAFWA will maintain positions for biologists to facilitate enrollment of property and distribution of funds for conservation efforts through coordination with other state and federal agency staff and outreach to property owners as more fully described below. WAFWA has already developed a conservation fund which in part will be used to further the effort of the CCAA in conserving the LEPC. WAFWA may designate one or more entities ("designees") to administer the permit. WAFWA and/or its designee(s) will use funds contributed by Participants to implement conservation activities to benefit the LEPC such as habitat restoration, habitat enhancement, and removal of threats.

### **Participants**

Any State or private property owner may enroll their property under the CCAA. A "property owner" includes any person or entity with a fee simple, leasehold, or other property interest sufficient to carry out the conservation measures described in this CCAA and the attached CI, subject to applicable State law, on non-Federal land. By executing the attached CI or a version thereof, the Participant commits to implement, and assumes responsibility for implementing, the conservation measures identified therein.

### **Process of Enrolling**

An interested Property Owner (a person with a fee simple, leasehold, or other property interest (including owners of water or other natural resources), or any other entity that may have a property interest, sufficient to carry out the conservation measures described in this CCAA and the attached CI, subject to applicable State law, on non-Federal land) would initially contact WAFWA to enroll. Once the initial contact is made, WAFWA and the interested Property Owner would look at a map of the property and determine where the property is located and what other activities are occurring on the property. Next, WAFWA and interested Property Owner would establish what conservation role the property may provide. Next, a CI is written (see Appendix A) that documents the conservation measures the interested Property Owner is committing to implementing or abiding by. If the interested Property Owner agrees to participate, he or she can sign the CI. Next, WAFWA signs the CI, and it is then forwarded to the FWS for its concurrence and signature. Once the FWS concurs, the Property Owner becomes a Participant.

### **VIII. COVERED AREA AND ENROLLED PROPERTY**

The Covered Area includes private and state property that currently provides or could potentially provide suitable habitat for the LEPC within the current range of the LEPC and ten miles around that range. The Covered Area is represented in the CHAT (<http://kars.ku.edu/maps/sgpchat/>) as the Estimated Occupied Range plus 10 miles (EOR+10). Enrolled property is the property identified on all signed CIs of all Participants under this CCAA. Participants may amend their CIs to enroll additional property at any time before the effective date of any final rule listing the LEPC as threatened or endangered. After listing, existing Participants may amend their CIs to enroll additional property that was evaluated at the time of permit issuance within the covered area.

### **IX. DURATION OF THE AGREEMENT AND ENHANCEMENT OF SURVIVAL PERMIT**

This CCAA will have a duration of 30 years from the date the CCAA is signed by WAFWA and the FWS, and may be renewed before it expires. The CCAA will cover a Participant's enrolled property from the date such Participant executes a CI (unless the FWS fails to subsequently execute such CI) until the CI terminates. Should the LEPC become listed as threatened or endangered, and all other requirements are met, the enhancement of survival permit (permit) will become effective and all Participants will be covered from that date until the end of their participation in this CCAA or until the CI is terminated. The minimum duration of participation will be three years by enrolled Participants (unless enrolled property is transferred prior to the end of the three-year period), but can be the full duration of the CCAA if the Participant wishes coverage by the permit. Prior to the expiration of the initial 30 year period or any extension period thereafter, WAFWA may extend the CCAA for a ten year period.

Coverage under the enhancement of survival permit will only apply to those Participants who enroll property under this CCAA prior to any future ESA listing date of the LEPC and their transferees who enter into a CI. The permit coverage is for incidental take associated with the Participant's activities on enrolled properties as long as the Participant is in compliance with the relevant CI. Any



incidental take of LEPC resulting from activities not covered in the Participant's CI will not be covered by the permit except as provided herein.

## X. CONSERVATION MEASURES AND OBLIGATIONS OF THE PARTIES

WAFWA will implement and administer the CCAA. Participants can sign up under the CCAA and be covered under the associated permit through a CI.

### 1) Obligations Common to all Participants:

- a) Enter into a CI (Appendix A) that contains the following conservation measures, which are detailed in the Range-wide plan including a discussion of how each these measures address specific threats to the species. Only the measures that relate specifically to electric transmission, distribution, and related infrastructure are included in this document.

#### *Pre-project planning*

- i. Utilize the Southern Great Plains CHAT (<http://kars.ku.edu/geodata/maps/sgpchat/>) for initial LEPC-related project siting review along with impact area maps, ecological site maps, land cover maps, and aggregated CRP maps provided in the CHAT. We also recommend that developer examine the WGA west-wide CHAT and State Fish and Wildlife agencies for information related to other state or federal threatened, endangered, or candidate species and species of greatest conservation need.
- ii. Once a set of potential project sites are identified, developers shall consult with cooperating State Fish and Wildlife Agency staff to assess the potential impacts to LEPC habitat associated with each site. These agencies have access to additional data sources beyond those available in the CHAT, including lek data, and will assist in make recommendations to reduce potential impacts to LEPCs and their habitat and to reduce potential mitigation costs.
- iii. If surveys of proposed project sites have not been conducted within the previous 5 years, and the project sites are within a focal areas, connectivity zones, or within areas identified as high probability lek habitat based on the CHAT (categories 1-3), the developer has the option of conducting surveys themselves according to WAFWA protocols, allowing state or WAFWA affiliated personnel to conduct surveys of the site prior to project initiation, or considering the sites as occupied with active leks.

#### *Avoidance*

- v. Use available options to avoid focal areas, connectivity zones, or within 1 1/4 mi of known leks that have been active at least once within the previous 5 years, as well as tracts of native grass and shrublands (see CHAT and State Fish and Wildlife Agency staff for more information). If these areas cannot be avoided, Participants shall minimize and mitigate the impacts of development as described in beneath the headings "Minimization" and "Mitigation." Participants shall focus development on lands already impacted, altered or cultivated (such as row-crop agriculture, developed oilfields, or existing power line impact buffers), and away from areas of

- intact and healthy native grass or shrublands. Similarly, Participants shall select fragmented or degraded habitats over unfragmented areas, and select sites with lower LEPC habitat potential over sites with greater habitat potential.
- vi. Participants shall avoid locating roads, fences, power lines, and other infrastructure within focal areas, connectivity zones, or in other areas identified as high probability lek and nest habitat by the CHAT categories 1-3. If these areas cannot be avoided, Participants shall minimize and mitigate the impacts of development as described in beneath the headings “Minimization” and “Mitigation.”
  - vii. Participants shall utilize existing corridors or infrastructure when siting new distribution power lines. When Participants cannot utilize existing corridors or infrastructure, Participants shall bury distribution power lines if within 1 1/4 mi of leks active within the previous five years. If new distribution power lines are constructed outside of existing corridors and within 1 1/4 mi of leks active within the previous five years but are not buried, Participants shall minimize and mitigate the impacts of development as described in beneath the headings “Minimization” and “Mitigation.”
  - viii. During lekking, nesting, and brooding season (Mar 1–Jul 15), construction and maintenance activities shall not be conducted between the hours of 3:00 am and 9:00 am within 1 1/4 mi of leks recorded active within the previous five years if such activities require a human presence. Emergency operations, construction and maintenance activities that are direct human or environmental safety concerns or that relate directly to operational continuity are allowed. Participants shall record the dates, duration and purpose of any emergency operations, construction and maintenance activities during the breeding season within 1 1/4 miles of leks and shall provide that documentation with its annual reporting.

#### *Minimization*

- i. If roads, fences, power lines, and other infrastructure cannot be located to avoid focal areas, connectivity zones, or other areas identified as high probability lek and nest habitat by the CHAT categories 1-3, Participants shall use existing corridors for multiple types of infrastructure. If Participants cannot use existing corridors for such infrastructure, Participants shall mitigate the impacts of new habitat disturbance as described in beneath the heading “Mitigation.”
- ii. Participants shall site projects to minimize new habitat disturbance by increasing the amount of overlap between existing fragmentation and associated impact buffers. If projects cannot be sited to minimize new habitat disturbance, Participants shall mitigate the impacts of new habitat disturbance as described in beneath the heading “Mitigation.”
- iii. Participants may use herbicide treatment on areas on impacted areas but shall limit such use to the impact area. Within CHAT categories 1-3, these treatments shall not be applied during the lekking, nesting and brooding season (March 1-July 15) except for the spot treatment of noxious weeds. Where practical and applicable, Participants shall utilize an herbicide that is targeted for specific use and spot treatments as opposed to a broadband herbicide and broadcast treatments. Apply in conditions that minimize drift.
- iv. Install appropriate fence markings along new fences under the control of the participant within one quarter (1/4) mile of a lek that has been recorded as active within the previous 5 years.

- v. Participants shall minimize their traffic volume, control their vehicle speed, control access, and minimize their off-road travel within focal areas and areas identified as high probability lek and nest habitat by the CHAT categories 1-3.
- vi. Within 1 ¼ mi of leks, install raptor deterrents on new electrical distribution and transmission poles that are under the control of the Participant as indicated by Avian Power Line Interaction Committee (APLIC) Suggested Practices for Raptor Protection on Power Lines: The State of the Art in 2006, as amended.
- vii. Provide escape ramps, rafts or ladders, depending on configuration, in new exposed, manmade water containment sources that are under control of the Participant.

As described in Section XVII, below, the effectiveness of these conservation measures will be reviewed by WAFWA and Participants periodically over the life of the CCAA. However, new conservation measures may only be implemented through future CIs if WAFWA and FWS find such measures to be necessary to facilitate the continued conservation of the LEPC. Conservation measures agreed upon in existing CIs may only be modified through the written consent of the Participants through the amendment procedures described in the CI.

#### *Mitigation*

- i. For impacts that cannot be avoided or minimized, Participants shall adhere to the provisions in the Certificate of Inclusion that describe the amount of fees necessary to mitigate such impacts.
- ii. Mitigation may include reclaiming or remediating inactive or abandoned facilities and infrastructure under the control of the Participant in compliance with applicable state rules and regulations. This in-lieu remediation of facilities will be subject to the metrics system outlined in Appendix B of the Range-wide Plan. Remediation proposals shall be submitted to WAFWA for review and approval and those proposals must demonstrate that they support the population and habitat goals of the range-wide plan with respect to habitat focal areas and connectivity zones.

As described in Section XVII, below, the effectiveness of these conservation measures will be reviewed by WAFWA and Participants periodically over the life of the CCAA. However, new conservation measures may only be implemented through future CIs if WAFWA and FWS find such measures to be necessary to facilitate the continued conservation of the LEPC. Conservation measures agreed upon in existing CIs may only be modified through the written consent of the Participants through the amendment procedures described in the CI.

- b) Comply with the terms of the CI and implement the conservation measures identified therein. Enrollment under this CCAA and coverage of the enrolled property will begin once the CCAA is effective and the Participant executes the CI, provided that such CI is subsequently approved and executed by the FWS. The CI is valid until the end of the CCAA either through expiration or termination, or until termination of the CI.
- c) Allow WAFWA access to the enrolled property for purposes of monitoring compliance with terms of the CI so long as WAFWA provides notice at least one week in advance. The access allowed by the Participant is limited to enrolled property. In order to access lands

that are not enrolled by the Participant, WAFWA must independently obtain landowner permission.

- d) Allow WAFWA, with prior notification, access to survey enrolled property for the presence of LEPCs and for habitat suitability for the species to the extent of the Participant's control as provided by applicable law, contracts, or leases. Any access allowed by the Participant is limited to enrolled property. In order to access lands that are not enrolled by the Participant, WAFWA must independently obtain landowner permission.
  - e) Allow WAFWA access to the enrolled property for purposes of monitoring LEPC populations and habitat to the extent of the Participant's control as provided by applicable law, contracts, or leases. Any access allowed by the Participant is limited to enrolled property. In order to access lands that are not enrolled by the Participant, WAFWA must independently obtain landowner permission.
  - f) Provide information on an annual basis to WAFWA on implementation of conservation measures in their CI, observations of LEPC on enrolled property, and any observed mortality of the species.
- 2) **Obligations of WAFWA:**
- a) Implement and administer this CCAA;
  - b) Enroll Participants in accordance with this CCAA via CIs;
  - c) Conduct compliance reviews of projects being implemented by Participants;
  - d) Use funds contributed in accordance with Appendix B of the CI to implement conservation activities to benefit the LEPC such as habitat restoration, habitat enhancement, and removal of threats.
  - e) Monitor projects in order to determine success and adaptations needed;
  - f) Conduct outreach and public education efforts to promote conservation of the LEPC;
  - g) Secure permission to complete projects on private and State lands, where appropriate;
  - h) Establish a committee ("Advisory Committee") as described in Section (5), below.
  - i) Schedule an Advisory Committee meeting in each state at least once per year (but may hold meetings more often, if needed or requested), and coordinate the locations, dates and times of the Advisory Committee meetings;
  - j) Track expenditure of funds and preparing an annual report on implementation of this CCAA;
  - k) Maintain a digital photo database to document project (i.e., conservation measure) performance;
  - l) Audit, at WAFWA's expense, by an independent party annually to account for expenditures and accomplishments;
  - m) Maintain the confidentiality of certain information as described in Section XVI;
  - n) Hold the CIs for each enrolled properties, with copies being provided to all Parties; and,
  - o) Expend monies for potential species research.
- 3) **Obligations of the FWS:**
- a) Provide technical assistance in CCAA and permit application development.
  - b) When available, provide funding through appropriate FWS programs and assist in securing funding from other sources, as applicable, to improve LEPC habitat on private and state

lands within the range.

- c) After approval of the CCAA, the FWS may not impose any new requirements or conditions on, or modify any existing requirements or conditions applicable to, a Participant or successor in interest to the Participant, to compensate for changes in the conditions or circumstances of any species or ecosystem, natural community, or habitat covered by the CCAA except as stipulated in 50 CFR §§ 17.22(c)(5) and 17.32(c)(5).
- d) The FWS may suspend the permit in accordance with 50 C.F.R. § 13.27 and may revoke the permit in accordance with 50 C.F.R. § 13.26. Prior to initiating the respective procedures for permit suspension and revocation specified in 50 C.F.R. §§13.27(b) and 13.28(b), the FWS will exercise all possible measures to remedy the situation, including at least one in-person meeting with WAFWA and all Participants that wish to attend.

#### 4) Obligations of All Parties:

- a) In the event the Participant elects to sell enrolled property prior to the expiration of the agreement, they will notify WAFWA so their CI can be modified. The Participant will also notify the new owner of the opportunity to enroll or transfer the property in a CI of their own by working with WAFWA. If the new owner opts not to participate in the CCAA, he/she will not receive the benefits of the permit authorizing incidental take of LEPC. If the new owner opts to participate in the CCAA, the new owner may also opt to enroll additional property not previously included in a CI by amending the CI to include the additional property.
- b) Any Party may propose amendments to this CCAA by providing written notice to the other Parties. If WAFWA is the recipient of this notice, it will forward copies to the Participants within 10 days of receipt of the notice. If WAFWA provided written notice to the other Parties, it will provide such written notice to the Participants at the same time notice is provided to the other Parties. Such notice shall include a description of the proposed amendment, the justification for it, and its expected results. Upon issuance of the notice, the party proposing the amendment will coordinate a meeting or conference call between the other Parties and Participants to discuss and explain the proposal. The Parties will use their best efforts to respond in writing or electronic mail to proposed amendments within 60 days of receipt of such notice.

For each proposed amendment, the FWS will determine whether it is a minor (administrative) amendment or a major amendment of the CCAA. Proposed amendments will become effective upon the Parties' written concurrence. Approved amendments shall be attached to the original CCAA. In addition to amending the CCAA itself, the permit may be amended in accordance with all applicable legal requirements, such as the ESA, NEPA, the general permitting regulations at 50 CFR parts 13 and 17, and formal FWS policy. Participants enrolled prior to an amendment of the CCAA and/or the Permit will not be required to amend their CIs to accommodate an amendment that requires the commitment of additional land, water, or financial compensation or additional restrictions on the use of land, water, or other natural resources beyond the level otherwise agreed upon in the CCAA prior to the amendment. Participants, however, may voluntarily choose to adopt such amendments by amending their CIs.

- c) Each Party shall have all remedies otherwise available to enforce the terms of this CCAA and the permit, except that no Party shall be liable in damages for any breach of this CCAA, any performance or failure to perform an obligation under this CCAA or any other cause of action

arising from this CCAA.

- d) The FWS, Permit Holder and Participants agree to work together in good faith to resolve any disputes, using dispute resolution procedures agreed upon by all Parties.
  - e) Implementation of this CCAA is subject to the requirements of the Anti-Deficiency Act and the availability of appropriated funds. Nothing in this CCAA will be construed by the Parties to require the obligation, appropriation, or expenditure of any money from the U.S. Treasury. The Parties acknowledge that neither the FWS will be required under this CCAA to expend any Federal agency's appropriated funds unless and until an authorized official of that agency affirmatively acts to commit to such expenditures in writing.
  - f) This CCAA does not create any new right or interest in any member of the public as a third-party beneficiary, nor shall it authorize anyone not a party to this CCAA to maintain a suit for personal injuries or damages pursuant to the provisions of this CCAA. The duties, obligations, and responsibilities of the Parties to this CCAA with respect to third Parties shall remain as imposed under existing law.
  - g) The terms of this CCAA shall be governed by and construed in accordance with applicable Federal law. Nothing in this CCAA is intended to limit the authority of the FWS to fulfill its responsibilities under Federal laws. All activities undertaken pursuant to this CCAA or its associated permit must be in compliance with all applicable local, state, and Federal laws and regulations.
  - h) This CCAA shall be binding on and shall inure to the benefit of the Parties and their respective successors and transferees, in accordance with applicable regulations (currently codified at 50 CFR 13.24 and 13.25) for the duration of the CCAA.
  - i) Any notices or reports required by this CCAA shall be delivered in writing to WAFWA.
- 5) **Obligations of Cooperating Agencies and Parties:**
- a) WAFWA] will hold the Permit and will hold positions for biologists to facilitate enrollment of property and distribution of funds for conservation efforts through coordination with other state and federal agency staff and outreach to property owners.
  - b) The Advisory Committees established by WAFWA in each state may include representatives from the following entities within the LEPC five-state range: state wildlife agencies, FWS, NRCS, BLM, universities with departments or faculty actively engaged in academic research related to the LEPC, state oil and gas regulatory agencies, oil and gas trade associations, wind energy associations, and electric utilities commissions or associations state school and/or trust land administrators, Participants, and others as appropriate. The Advisory Committees may facilitate communication among Participants and offer feedback and recommendations to WAFWA regarding various aspects of the implementation and administration of the CCAA, including, but not limited to, new scientific information through the Adaptive Management process, amendments to the CCAA and CI, dispute resolution, prioritization and implementation of conservation measures and research activities, and other similar issues.

## **XI. EXPECTED CONSERVATION BENEFITS**

As identified in the FWS's Candidate Conservation Agreement with Assurances Final Policy (USFWS and NMFS 1999), the FWS "must determine that the benefits of the conservation measures to be



implemented, when combined with those benefits that would be achieved if it is assumed that conservation measures were also implemented on other necessary properties, would preclude or remove any need to list” the LEPC (64 FR 32726).

Implementation of this CCAA results in a variety of conservation benefits to the LEPC in the form of avoidance of negative impacts and enhancement and restoration of habitat intended to contribute to establishing or augmenting, and maintaining viable populations of LEPCs. Conservation measures that minimize new surface disturbance thus minimize habitat fragmentation and preserve contiguous expanses of LEPC habitat. Conservation measures that require the removal of existing equipment and infrastructure and reclamation of existing disturbance restore and enhance LEPC habitat. LEPC reproductive behavior is promoted by conservation measures that limit activities and operations during lekking, nesting, and brooding season. Similarly, threats to the LEPC are removed by conservation measures that require removal of existing vertical structures, limit the possibility of LEPC becoming trapped in open water sources, and require marked fences. Furthermore, the conservation activities implemented with funds contributed by Participants are expected to further enhance LEPC habitat. When considered together, the conservation measures and provisions of the CCAA are expected to preserve, enhance, and restore LEPC habitat and remove threats to the LEPC, which are expected to yield increases to LEPC populations. In addition, conservation of LEPCs would be enhanced by improving and encouraging cooperative management efforts between WAFWA, FWS, and Participants who own and control LEPC habitat.

Under this CCAA, LEPC conservation will be enhanced by providing ESA regulatory assurances such that, should Participants have or attract LEPCs on enrolled properties, they will not incur additional land use restrictions. This CCAA is intended to provide incentives to wind industry to initiate conservation measures for this species.

## **XII. ASSURANCES PROVIDED**

Through this CCAA, the FWS provides the Participants the regulatory assurances at 50 CFR 17.32(2)(5) and consistent with the FWS’s Candidate Conservation Agreement with Assurances Final Policy (USFWS and NMFS’s 1999) conservation measures and land, water, or resource use restrictions, in addition to the measures and restrictions described in this CCAA, will not be imposed with respect to local activities on enrolled property should the LEPC become listed under the ESA in the future. These assurances are authorized by the enhancement of survival permit issued under Section 10(a)(1)(A) of the ESA for the enrolled property identified in the CI. In the event of unforeseen circumstances, the FWS will not require the commitment of additional land, water, or other natural resources beyond the level otherwise agreed to or for the species in this CCAA. The FWS may request additional conservation but since it is voluntary on the part of Permit Holder and Participants, consent of the affected parties must be in writing. The permit, if issued, will authorize the incidental take of LEPCs by Participants as long as “take” is consistent with this CCAA and relevant Q.



The FWS recognizes the commitments in this agreement are consistent with the overall goal of precluding the need to list the species, if it is assumed that conservation measures were also to be implemented on other necessary properties.

#### **Assurances Provided to Participant In Case of Changed or Unforeseen Circumstances**

The assurances listed below apply to Participants with an enhancement of survival permit associated with this CCAA where the CCAA is being properly implemented. The assurances apply only with respect to species adequately covered by the CCAA.

“Changed circumstances” are those alterations in circumstances that can reasonably be anticipated and planned for in the CCAA (e.g., wildfire, drought). Changed circumstances might include minor wildfires that temporarily alter suitability of available breeding or winter habitat across portions of the landscape. “Unforeseen circumstances” are changes in circumstances that could not reasonably have been anticipated by WAFWA and the FWS at the time of the CCAA’s negotiation and development, and that result in a substantial and adverse change in the status of the covered species. The assurances listed below apply to Participants. The assurances apply to the enrolled property where the agreement is being properly implemented and are applicable only with respect to the species (LEPC) covered by this CCAA.

*Changed circumstances provided for in the CCAA.* If additional conservation measures not provided for in the CCAA are necessary to respond to the changed circumstances listed herein, the USFWS will not require any conservation measures in addition to those provided for in the CCAA and associated CI without the consent of the Permit Holder and Participant, provided the CCAA and associated CI are being properly implemented.

a) **Stochastic Events**—Extreme weather events and wildfire have the potential to create changed circumstances on the landscape at the scale of individual ranches, habitat focal areas, ecoregions, and the entire range of the LEPC. However, the intent of the Range-wide Plan and the conservation delivery system within the WAFWA Mitigation Framework described in the Range-wide Plan is to produce high-quality, connected LEPC habitat in habitat focal areas and connectivity zones across each ecoregion and, where possible, between ecoregions. Accomplishing that goal will increase the stability of LEPC populations and the resiliency of those populations to stochastic events such as extreme weather events and wildfire. Mitigation funding will be one of the a primary pathways to achieve these goals, and therefore these stochastic events should not affect participants enrolled in this agreement. However stochastic events may affect credit generation required to offset impacts. In instances where these stochastic events or combination of events occur on scales large enough to effect the ecoregional goals for credit generation required to offset industry impacts or create changed circumstances on the landscape, the Permit Holder will notify the FWS within 30 days of that determination. Within 90 days of notification, the parties will evaluate those conditions and, if opportunities exist, identify potential changes to the conservation measures for offsets and credit generation or other actions to address local conditions. These stochastic events include but are not limited to:

(ii) **Drought**—Substantial variation in annual precipitation is not an uncommon event, within LEPC range and the species is adapted to withstand that variation. The Habitat Impact Assessment Guide that defines debit and credit generation is robust to periodic short-term drought, ensuring the stability of credit generation in the face of these events. However, drought can occur at scales ranging from local to ecoregional to range-wide, and severe and prolonged droughts at local and ecoregion scales may create conditions that, if management conditions are not adjusted, could significantly impact available habitat for the species, limit credit generation required for offsetting impacts, and cause changed circumstances on the landscape. Severe droughts are defined here as the occurrence of Palmer Drought Severity Index (PDSI) of -3 and below in August over 25% or more of an ecoregion. Prolonged droughts are defined here as having average PDSI values of -2 or lower over the preceding 24 month period for 25% or more of an ecoregion. Credit Generation Contract Holders are incentivized to track drought conditions on their own property and make appropriate changes in grazing practices as needed. Contract Holders who graze livestock will also receive notification of drought conditions from the Permit Holder noting potential reductions in credits generated and annual payments if those changes are not made.

(i) **Wildfire**—Wildfires generally affect single or limited numbers of landowners, but in drought years, substantial percentages of an ecoregion may be affected by wildfire. LEPCs are adapted to periodic wildfire, and these events can result in significant habitat benefits such as control of woody invasives, increased forb cover for brood habitat, and result in significant credit generation. However, large-scale, drought and wind-driven fires may reduce available nesting, foraging, and escape cover across large areas and may interact with management activities such as grazing to further reduce available habitat. Management plans developed for Credit Generation Contract Holders will include guidance for deferment following both prescribed fire and wildfire to maximize habitat quality and annual credit generation. WAFWA will also track reported wildfire acreage on an ecoregional basis in drought years and will include this information in notices of drought information to inform landowners about grazing practices and maximizing habitat quality and annual payments.

(iii) **Flooding**.—In this arid region, floods may have significant localized impacts. However, it is unlikely that flooding alone could affect the ecoregional goals for credit generation to offset industry impacts or created landscape-level changed circumstances. Flooding impacts affecting single or limited numbers of Contract Holders will be handled on a case by case basis with the individual landowners to determine the management practices to be applied.

(iv) **Tornados**—Like floods, tornados may have significant localized impacts. However, it is unlikely that these events alone could significantly affect the ecoregional goals for credit generation. Tornado impacts affecting single or limited

numbers of Contract Holders will be handled on a case by case basis with the individual landowners to determine the management practices to be applied.

(b) Changed Technology Associated with Electric Transmission and Distribution—Technology related to power lines and electric transmission is not static. The techniques and technology used in this industry may evolve over the duration of the CCAA in a manner not presently anticipated. Changes in technology will not constitute a changed circumstance if the new technology results in impacts to the LPC that are similar in nature to the impacts resulting from the technology in place when the CCAA is executed. If the Permit Holder, in consultation with the Participants, determines that the technology associated with electric transmission and distribution has changed so dramatically that the new technology results in impacts to the LPC of a substantially different nature than the impacts resulting from oil and gas exploration and production when the CCAA was executed, the Permit Holder will notify the FWS within 30 days of that determination. The Permit Holder and FWS will meet with the Participants to identify potential actions which could be taken to address the change in circumstances.

*Changed circumstances not provided for in the CCAA.* If additional conservation measures not provided for in the CCAA and associated CIs are necessary to respond to changed circumstances, the FWS will not require any conservation measures in addition to those provided for in the CCAA or the associated CI without the consent of WAFWA and Participant, provided the CCAA and the associated CI are being properly implemented.

*Unforeseen circumstances.* If additional conservation measures are necessary to respond to unforeseen circumstances, the FWS may require additional measures of WAFWA and Participant, but only if such measures maintain the original terms of the CCAA and associated CI. These additional conservation measures will not involve the commitment of additional land, water, financial compensation, or additional restrictions on the use of land, water, or other natural resources available for development or use under the original terms of the CCAA and associated CI without the consent of WAFWA and Participant.

The FWS will have the burden of demonstrating that unforeseen circumstances exist, using the best scientific and commercial data available. These findings must be clearly documented and based upon reliable technical information regarding the status and habitat requirements of LEPC. The FWS will consider, but not be limited to, the following factors:

- a) Size of the current range of LEPC;
- b) Percentage of range affected by the need for additional conservation measures and covered by the CCAA;
- c) Percentage of range conserved by the CCAA;
- d) Ecological significance of that portion of the range covered by the CCAA;
- e) Level of knowledge about LEPC; and
- f) Whether failure to adopt additional conservation measures would appreciably reduce the likelihood of survival and recovery of LEPC in the wild.

### **XIII. FUNDING**

Funding for the implementation and administration of this CCAA is more fully described in the CI. Briefly, Participants will pre-pay funds for the restoration, reclamation, and protection of suitable LEPC habitat over a minimum three-year period that begins with the execution of the CI and will continue until the CI is terminated.

The funds will be used to pay Habitat Conservation Fees, which are fees based on the amount of habitat disturbed by wind operations. The Participant will remit funds to WAFWA. WAFWA will maintain the funds in a Habitat Conservation Fund Account specific to this CI. The purpose of the Habitat Conservation Fund Account is to meet the Participant's obligations under the CCAA.

Funds contributed by Participants will be contributed to, held and utilized by WAFWA to accomplish conservation measures. A Team consisting of biologists and specialists from appropriate organizations will meet regularly with WAFWA to determine with appropriate input from the Advisory Committee the highest priority conservation projects to be completed using contributed funds. Final prioritization of conservation projects will be the responsibility of this ranking team. The criteria for determining priority conservation areas will include occupancy by the LEPC, the potential for occupancy by the LEPC (e.g., focal areas, connectivity, absence of major threats to the species) on a given site, as well as quality and quantity of suitable habitat for the species. The ranking team will coordinate actions with other, ongoing conservation activities to provide the greatest benefit to the LEPC. Although conservation activities should receive priority for use of funds, the team can also use a portion of the contributed funds for research, monitoring, and education each year, as appropriate

Participants will make annual pre-payments for the first three years, and the first prepayment will be made into the Habitat Conservation Fund Account at the date of execution of the CI with the second and third payments made on the first and second anniversary of the CI. Participants will make pre-payments for the first three years so that fees can be immediately used to implement conservation activities to benefit the LEPC before surface disturbing activities are proposed.

After the CI is executed, WAFWA will calculate the applicable Habitat Conservation Fee associated with any new surface disturbance using the methodology shown on Exhibit B of the CI. WAFWA will deduct the resulting Habitat Conservation Fee from a Participant's Habitat Conservation Fund Account balance. The Habitat Conservation Fees may be adjusted in accordance with the CI.

Habitat Conservation Fees will remain in ecoregion (identified in Figure 2, page 15 in the Range-wide Plan) in which the associated property is enrolled or surface disturbance occurs. In the event that the habitat goals under the Range-wide Plan have been met for that ecoregion and the attainment of that goal can be documented, then funds generated in that ecoregion may be made available for use in other ecoregions that have not reached their habitat goals under the Range-wide Plan.

#### **XIV. LEVEL OF INCIDENTAL TAKE**

Under this CCAA, should the LEPC be listed under the ESA, authorization for incidental take under Permit is limited to wind development and production activities on, or related to such activities occurring on, Participants' enrolled property. Such activities include:

- a) Construction of meteorological (met) towers;
- b) Construction of turbine pads;
- c) Construction of electric cables from the wind turbines to the substation;
- d) Construction of access roads;
- e) Construction of transmission lines;
- f) Construction of permanent met-towers;
- g) Assembly of turbine towers and generators;
- h) Construction of a sub-station;
- i) On and off-highway vehicle traffic;
- j) Maintenance of turbines, roads, substations, and associated facilities;
- k) Activities involved in decommissioning the wind farm including dismantling turbines and pads, and reclaiming roads;
- l) Emergency response;
- m) Weed control;
- n) Other activities typically necessary to conduct wind development and production; and
- o) Activities necessary to implement the conservation measures identified in individual CIs (e.g., removal of existing infrastructure).

Incidental take could occur in a variety of forms from wind energy activities. Physical disturbance affected by the construction of turbines, turbine noise, and physical movement of turbines during operation have the potential to disturb nesting LEPC. However, behavioral avoidance of these facilities by LEPC has the potential to exacerbate the negative impacts of the project area. The effects of habitat fragmentation may indirectly affect local LEPC populations by decreasing the area of habitat available for nesting and brood-rearing. Nesting and brood-rearing hens may also exhibit avoidance behavior due to large wind turbines which could indirectly impact reproduction and result in incidental take. Fragmentation and changes in habitat structure may increase the amount of edge, which serve as lanes for terrestrial predators and are consequently avoided by nesting LEPC. In addition to the effects of habitat fragmentation and LEPC avoidance of vertical structures, human disturbance activities may further impact LEPC movements and habitat use. Unmarked fences that cause collision mortality can also result in incidental take. Finally, incidental take can result from routine operations such as daily inspections and maintenance, emergency response, and weed control. Take authorized by the Permit must be incidental to otherwise lawful activities and consistent with implementation of the CCAA and Participant's CI.

The implementation of the CCAA will avoid and minimize incidental take from each of the above listed activities and reduce the threats to the LEPC. For example, conservation measures that limit activities and operations during lekking, nesting, and brooding season will reduce the amount of incidental take that may occur. Similarly, conservation measures that minimize the amount of new surface disturbance that will occur, and minimize new vertical structures will reduce the incidental take associated with wind energy activities. Marking fences will also minimize incidental take. When surface impacts are offset by habitat enhancements, conservation benefits for LEPCs under the CCAA will likely accrue well beyond the duration of the conservation period. This should result in reduced impacts and incidental take of these species. Overall, although impacts and incidental take are expected to occur, impacts are not expected to be great enough to compromise the viability of LEPC populations in the states. Implementation of this CCAA is expected to result in fewer adverse impacts to the LEPC than would have otherwise occurred had this CCAA not been implemented.

Activity	Nature of Impacts/Take	Amount/Extent of Impacts/Take	Conservation Measures
<p>Construction, maintenance, and deconstruction activities of met towers, turbine pads, turbines, roads, substations, transmission lines</p>	<ul style="list-style-type: none"> <li>• Disturbance from construction of turbines, turbine noise, and physical movement of turbines during operation have the potential to disturb nesting LEPC</li> <li>• Construction of turbine pads and roads may further fragment habitat and reduce nesting and brood rearing success</li> <li>• Tall structures may cause LEPC avoidance behavior that may reduce mating and nesting success</li> </ul>	<ul style="list-style-type: none"> <li>• Extent of impact can be estimated based on number of turbines, roads, transmission lines, and avoidance buffers;</li> </ul>	<ul style="list-style-type: none"> <li>• Avoid non-emergency construction and maintenance activities during lekking, nesting, and brooding season (Mar 1–Jul 15) between the hours of 3:00am and 9:00 am within 1.2 miles of leks</li> <li>• avoid fragmenting large, contiguous tracts of grassland, particularly within designated LEPC focal areas, connectivity zones, or within 1.2 miles of known leks</li> <li>• focus development on lands already altered and away from areas of intact and healthy native</li> </ul>

			<p>grasslands.</p> <ul style="list-style-type: none"> <li>• Reduce the number of turbines required;</li> <li>• Reclaim a decommissioned site by removing old infrastructure and revegetating area with native grasses, shrubs, and forbs.</li> </ul>
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The estimated anticipated level of incidental take associated with this CCAA is directly related to the number of Participants. Accurately estimating the total number of Participants is not possible at this time. However, the maximum number of wells and associated infrastructure that may occur throughout the estimated occupied range over the lifetime of the CCAA may be projected. This projection reflects the maximum amount of incidental take of LEPC that could occur from wind activities if LEPC and occupied LEPC habitat existed everywhere within the estimated occupied range; however, because LEPC and occupied LEPC habitat do not exist throughout all estimated occupied range, any resulting incidental take will then be less than this estimate. Furthermore, the conservation measures will avoid and minimize the amount of incidental take that will occur

NO REQUIREMENT IS MADE IN THIS CCAA FOR PARTICIPANTS TO NOTIFY WAFWA, ADMINISTRATORS OR FWS PRIOR TO ANY EXPECTED INCIDENTAL TAKE OF LEPCs. FOR PURPOSES OF THIS CCAA, THE FWS DOES NOT BELIEVE THAT SUCH A NOTIFICATION REQUIREMENT IS PRACTICABLE OR APPROPRIATE.

## XV. MONITORING AND REPORTING

Permit Holder will be responsible for annual monitoring and reporting related to the CCAA. To the extent consistent with applicable state law, information in annual reports will include, but is not limited to:

- g) Participants enrolled under the CCAA over the past year, including copies of the completed CI, excluding Exhibit A;
- h) A summary of habitat management and habitat conditions in the covered area and on all enrolled property over the past year with any identifying information related to Participants removed;
- i) Effectiveness of habitat management activities implemented in previous years at meeting the intended conservation benefits;
- j) Population surveys and studies conducted over the past year with any identifying information related to Participants removed;



- k) Any mortality or injury that are observed of the species over the previous year; and
- l) A discussion on the funds used for habitat conservation on private/state lands in the states.

## **XIX. CONFIDENTIALITY**

The Parties recognize that fee leasehold and mineral ownership information is confidential and sensitive information held by a Participant. In addition to any obligations imposed by state law on WAFWA not to disclose confidential information, WAFWA will not disclose the following information to FWS or any other individual or entity except the Participant that provided the information:

- e) Exhibit A of the CI;
- f) Any maps depicting lands enrolled by an individual Participant that specifically identify that Participant;
- g) Identifying information about an individual Participant's acreage position; or
- h) The location of any individual Participant's enrolled property that references the Participant individually.

The Parties understand that the FWS generally does not require this information to enforce the Permit and monitor compliance. If the FWS and Permit Holder determine that disclosure of this information to the FWS is necessary for the FWS to enforce the Permit and/or monitor compliance, WAFWA will contact the Participant to determine whether and how this information can be disclosed to FWS in a form that best protects the Participant's interest. WAFWA may only disclose this information to the FWS with the Participant's written consent. Any information provided to WAFWA or FWS in order to fulfill the Participant's obligations in this CCAA and associated CI is presumed to be confidential information that is exempt from public disclosure under state or federal Freedom of Information Act or sunshine laws, as applicable.

Reports will be due March 30 of each year to the FWS and any Participant.

## **XX. ADAPTIVE MANAGEMENT**

This CCAA is based on adaptive management principals. The FWS and WAFWA agree and recognize that implementation of the conservation measures herein must be consistent with the concepts and principals of adaptive management. The effectiveness of the conservation measures, monitoring methods, and new technologies will be reviewed by WAFWA and Participants periodically over the life of the CCAA. Upon such evaluation, appropriate modifications to the conservation strategy may be incorporated to further enhance the goals of this CCAA. Additionally, research projects that are designed to determine the effectiveness of management practices will be encouraged and utilized to determine what adaptive management is necessary.

Using adaptive management principals, Participants can agree to add or make necessary modifications to existing conservation measures currently found in this CCAA and CI based on

peer-reviewed science. New conservation measures can be implemented through future CIs if WAFWA and FWS find such measures to be necessary to facilitate the continued conservation of the LEPC. Any adaptive management modifications may only be applied to existing CIs upon the written consent of the Participants through the amendment procedures described in the CI.

**XVI. SIGNATURES**

IN WITNESS WHEREOF, THE PARTIES HERETO have, as of the last signature below, executed this CCAA to be in effect as of the date of the last signature.

\_\_\_\_\_

Date: \_\_\_\_\_

Permit Holder Representative

Western Association of Fish and Wildlife Agencies

\_\_\_\_\_

Date: \_\_\_\_\_

Regional Director

U.S. Fish and Wildlife Service

\_\_\_\_\_

## Appendix A

**CERTIFICATE OF INCLUSION**

in the

**Range-wide Wind Energy****Candidate Conservation Agreement with Assurances for the****Lesser Prairie-Chicken (*Tympanuchus pallidicinctus*)****CI Tracking Number DOI-FWS-2-2012-XXXX-YYYY**

This certifies that the owner of the property described herein ("Participant") is included within the scope of the above-named Candidate Conservation Agreement (CCA) for the lesser prairie-chicken (LEPC) under the authority of Section 10(a)(1)(A) of the Endangered Species Act of 1973, as amended (ESA), 16 U.S.C. 1531-1544. A property owner, as defined by 50 CFR §17.3, is a person with a fee simple, leasehold, or property interest (including owners of water or other natural resources), or any other entity that may have a property interest, sufficient to carry out the proposed management activities, subject to applicable State law, on non-Federal land.

The goal of the U.S. Fish and Wildlife Service (FWS), the Western Association of Fish and Wildlife Agencies and/or its designee ("Permit Holder" or "WAFWA"), and the Participant is to reduce and/or eliminate threats to the LEPC. By agreeing to conduct the conservation measures described herein, the FWS will provide Participants with regulatory certainty (assurances) concerning land use restrictions that might otherwise apply should the LEPC become listed as a threatened or endangered species under the ESA.

This Certificate of Inclusion (CI) is a voluntary agreement between the FWS, the Permit Holder, and the Participant. Through this CI, the Participant voluntarily commits to implement or fund specific conservation actions that will reduce and/or eliminate threats to the LEPC. By signing below, the Participant acknowledges that they have read and understand the CCA and this CI. They further acknowledge that this CCA may not be sufficient to prevent the listing of the LEPC.

Participant's Name: \_\_\_\_\_

Address: \_\_\_\_\_

The following Conservation Measures are to be accomplished as described below on the enrolled property in CHAT 1-4 identified on Exhibit A:

**a. Pre-project planning**

- i. Utilize the Southern Great Plains CHAT (<http://kars.ku.edu/geodata/maps/sgpchat/>) for initial LEPC-related project siting review along with impact area maps, ecological site maps, land cover maps, and aggregated CRP maps provided in the CHAT. We also recommend that developer examine the WGA west-wide CHAT and State Fish and Wildlife agencies for information related to other state or federal threatened, endangered, or candidate species and species of greatest conservation need.
- ii. Once a set of potential project sites are identified, developers shall consult with cooperating State Fish and Wildlife Agency staff to assess the potential impacts to LEPC habitat associated with each site. These agencies have access to additional data sources beyond those available in the CHAT, including lek data, and will assist in make recommendations to reduce potential impacts to LEPCs and their habitat and to reduce potential mitigation costs.
- iii. If surveys of proposed project sites have not been conducted within the previous 5 years, and the project sites are within a focal areas, connectivity zones, or within areas identified as high probability lek habitat based on the CHAT (categories 1-3), the developer has the option of conducting surveys themselves according to WAFWA protocols, allowing state or WAFWA affiliated personnel to conduct surveys of the site prior to project initiation, or considering the sites as occupied with active leks.

**b. Avoidance**

- i. Use available options to avoid focal areas, connectivity zones, or within 1 1/4 mi of known leks that have been active at least once within the previous 5 years, as well as tracts of native grass and shrublands (see CHAT and State Fish and Wildlife Agency staff for more information). If these areas cannot be avoided, Participants shall minimize and mitigate the impacts of development as described in beneath the headings "Minimization" and "Mitigation." Participants shall focus development on lands already impacted, altered or cultivated (such as row-crop agriculture, developed oilfields, or existing power line impact buffers), and away from areas of intact and healthy native grass or shrublands. Similarly, Participants shall select fragmented or degraded habitats over unfragmented areas, and select sites with lower LEPC habitat potential over sites with greater habitat potential.
- ii. Participants shall avoid locating roads, fences, power lines, and other infrastructure within focal areas, connectivity zones, or in other areas identified as high probability lek and nest habitat by the CHAT categories 1-3. If these areas cannot be avoided, Participants shall minimize and mitigate the impacts of development as described in beneath the headings "Minimization" and "Mitigation."
- iii. Participants shall utilize existing corridors or infrastructure when siting new distribution power lines. When Participants cannot utilize existing corridors or infrastructure, Participants shall bury distribution power lines if within 1 1/4 mi of leks active within the previous five years. If new distribution power lines are constructed outside of existing corridors and within 1 1/4 mi of leks active within the previous five years but are not buried, Participants shall minimize and mitigate the impacts of development as described in beneath the headings "Minimization" and "Mitigation."

- iv. During lekking, nesting, and brooding season (Mar 1–Jul 15), construction and maintenance activities shall not be conducted between the hours of 3:00 am and 9:00 am within 1 ¼ mi of leks recorded active within the previous five years if such activities require a human presence. Emergency operations, construction and maintenance activities that are direct human or environmental safety concerns or that relate directly to operational continuity are allowed. Participants shall record the dates, duration and purpose of any emergency operations, construction and maintenance activities during the breeding season within 1 ¼ miles of leks and shall provide that documentation with its annual reporting.

**c. Minimization**

- i. If roads, fences, power lines, turbines and other infrastructure cannot be located to avoid focal areas, connectivity zones, or other areas identified as high probability lek and nest habitat by the CHAT categories 1-3, Participants shall use existing corridors for multiple types of infrastructure. If Participants cannot use existing corridors for such infrastructure, Participants shall mitigate the impacts of new habitat disturbance as described in beneath the heading “Mitigation.”
- ii. Participants shall site projects to minimize new habitat disturbance by increasing the amount of overlap between existing fragmentation and associated impact buffers. If projects cannot be sited to minimize new habitat disturbance, Participants shall mitigate the impacts of new habitat disturbance as described in beneath the heading “Mitigation.”
- iii. Participants may use herbicide treatment on areas on impacted areas but shall limit such use to the impact area. Within CHAT categories 1-3, these treatments shall not be applied during the lekking, nesting and brooding season (March 1-July 15) except for the spot treatment of noxious weeds. Where practical and applicable, Participants shall utilize an herbicide that is targeted for specific use and spot treatments as opposed to a broadband herbicide and broadcast treatments. Apply in conditions that minimize drift.
- iv. Install appropriate fence markings along new fences under the control of the participant within one quarter (1/4) mile of a lek that has been recorded as active within the previous 5 years.
- v. Participants shall minimize their traffic volume, control their vehicle speed, control access, and minimize their off-road travel within focal areas and areas identified as high probability lek and nest habitat by the CHAT categories 1-3.
- vi. Within 1 ¼ mi of leks, install raptor deterrents on new electrical distribution and transmission poles that are under the control of the Participant as indicated by Avian Power Line Interaction Committee (APLIC) Suggested Practices for Raptor Protection on Power Lines: The State of the Art in 2006, as amended.
- vii. Provide escape ramps, rafts or ladders, depending on configuration, in new exposed, manmade water containment sources that are under control of the Participant.

As described in Section XVII, below, the effectiveness of these conservation measures will be reviewed by WAFWA and Participants periodically over the life of the CCA. However, new conservation measures may only be implemented through future CIs if WAFWA and FWS find such measures to be necessary to facilitate the continued conservation of the LEPC. Conservation measures agreed upon in existing CIs may only be modified through the written consent of the Participants through the amendment procedures described in the CI.

**d. Mitigation**

- i. For impacts that cannot be avoided or minimized, Participants shall adhere to the provisions in the Certificate of Inclusion that describe the amount of fees necessary to mitigate such impacts.
- ii. Mitigation may include reclaiming or remediating inactive or abandoned facilities and infrastructure under the control of the Participant in compliance with applicable state rules and regulations. This in-lieu remediation of facilities will be subject to the metrics system outlined in Appendix B of the Range-wide Plan. Remediation proposals shall be submitted to WAFWA for review and approval and those proposals must demonstrate that they support the population and habitat goals of the range-wide plan with respect to habitat focal areas and connectivity zones.
- iii.

As described in Section XVII, below, the effectiveness of these conservation measures will be reviewed by WAFWA and Participants periodically over the life of the CCAA. However, new conservation measures may only be implemented through future CIs if WAFWA and FWS find such measures to be necessary to facilitate the continued conservation of the LEPC. Conservation measures agreed upon in existing CIs may only be modified through the written consent of the Participants through the amendment procedures described in the CI.

**XIV. ENROLLED PROPERTY.**

Participant will provide a list of properties (leases or portions of leases) including detailed legal description, acreage, and state lease number (as applicable) to be enrolled in this CI (see Exhibit A).

Enrollment of property does not guarantee approval of an application to conduct wind energy exploration and production operations on the enrolled property and still requires approval by the appropriate regulatory agency. The Participant is responsible for ensuring that all provisions of this CI are implemented by its agents and/or sub-contractors, and other interest holders under its control on all property enrolled under this CI.

**XV. SUSPENSION FOR NONPAYMENT.**

The Participant hereby agrees that the Permit Holder, in coordination with the FWS, can suspend the CI on the enrolled property identified in Exhibit A until the Habitat Conservation Fee associated with that CI is paid.

**XVI. HABITAT CONSERVATION FEES AND PAYMENTS.**

The Participant will pre-pay funds for the restoration, reclamation, and protection of suitable LEPC habitat over a minimum three-year period that begins with the execution of this CI and will continue until the CI is terminated as provided herein. The funds will be used to pay Habitat Conservation Fees, which are fees based on the amount of area disturbed by wind energy operations. The Participant will remit funds to the Permit Holder. The Permit Holder will maintain the funds in a Habitat Conservation Fund Account specific to this CI. The purpose of the Habitat Conservation Fund Account is to meet the Participant's obligations under the CCAA.

The Participant will make annual pre-payments for the first three years only, and the first prepayment will be made into the Habitat Conservation Fund Account at the date of execution of this CI. The second and third payments will be made on the first and second anniversary of the execution date of this CI. For each of the three years, the annual prepayment will be calculated at \$2 [Note: enrollment fee may require adjustment] per gross acre for all property enrolled in this CI and will be deposited each year into each Participant's habitat conservation fund account. The Participant agrees to make pre-payments for the first three years so that fees can be immediately used to implement conservation activities to benefit the LEPC before surface disturbing activities are proposed.

The Participant may, at their sole option, pay more than the required amount into their Habitat Conservation Fund Account during any prepayment period but never less than the required amount as described herein.

Prepayment of any new property added by addendum to this CI will be calculated at \$2 per gross acre and be due at the time the property is added to the CI. The total property enrolled in this CI, and the resulting annual prepayment, will be recalculated on the remaining anniversary dates of the 3 year cycle. No annual prepayment (\$2 per acre) will be required after the initial 3 year period, but the Participant will pay Habitat Conservation Fees in accordance with Exhibit B as surface disturbing activities are proposed. The Permit Holder will use Habitat Conservation Fees to implement conservation activities to benefit the LEPC.

After this CI is executed, the Permit Holder will calculate the applicable Habitat Conservation Fee associated with any new surface disturbance using the methodology shown on Exhibit B. The obligation to pay Habitat Conservation Fees will be satisfied by the prepaid funds in a Participant's habitat conservation fund until such prepaid funds are exhausted. Prepaid funds that are not used in a calendar year will be available to satisfy the obligation to pay Habitat Conservation Fees in subsequent calendar years; however, the Participant must continue to make annual prepayments for the first three years as described above even if all prepaid funds are not used in the previous calendar year. The Habitat Conservation Fees may be adjusted as described in Exhibit B. The Permit Holder will provide written notice of any adjustments to Habitat Conservation Fees to the Participant.

The Participant will notify the Permit Holder of new surface disturbing activities in accordance with Exhibit B. The Permit Holder will deduct the resulting Habitat Conservation Fee from the Participant's Habitat Conservation Fund Account balance within 10 working days after receiving notification from the Participant. If the Participant's remaining Habitat Conservation Fund Account balance is less than the resulting Habitat Conservation Fee, the Participant will pay the remainder of the Habitat Conservation Fee. When the Permit Holder deducts fees from the Participant's account, they will notify the Participant within 30 days detailing the:

- Amount of the Habitat Conservation Fee associated with the application,
- Remaining Habitat Conservation Fund Account balance, and
- Payment due, if any.



The Participant's obligation to make payments as described above shall be suspended if any administrative or judicial challenge prevents the implementation of this CI.

#### **XVII. HABITAT CONSERVATION ACCOUNT FUNDS.**

The Participant is responsible for providing permit approval information to the Permit Holder in accordance with Exhibit B. Habitat Conservation Fees generated from any activity on any enrolled property, and for activities occurring on non-enrolled property that are needed to develop the enrolled property (i.e., pipelines, roads, and seismic activities), will be debited from funds paid into the Habitat Conservation Fund Account under this CI within 10 working days after receiving project approval.

#### **XVIII. LAND TRANSFERS AND ADDITIONS.**

##### **Transfers**

This CI shall be binding on and shall inure to the benefit of the Parties to the CI and their successors and transferees (i.e., new owners). The rights and obligations under this CI shall run with the enrolled property and are transferable to subsequent non-Federal property owners. The enhancement of survival permit issued to the Permit Holder shall extend to the new owner(s). As a party to the original CCAA and permit, the new owner(s) shall have the same rights and obligations with respect to the enrolled property as the original owner. The new owner(s) also shall have the option of receiving CCAA assurances by signing a new CI and receiving a new permit. The Permit Holder shall notify the FWS of any transfer of the enrolled property, so that the FWS can attempt to contact the new property owner, explain the baseline responsibilities applicable to the property, and seek to interest the new property owner in signing the existing CI or a new one to benefit listed species on the property.

Ownership interest in the enrolled property can be transferred before or after a decision to list the species occurs. Notification of the transfer of any enrolled property shall be transmitted to the Permit Holder for approval within 30 days after the closing of such transfer. The notification shall include the detailed legal description(s), acreage of the enrolled property involved, and state lease numbers (as applicable).

After a listing decision, an interested party may become a Participant if it acquires a property interest in the enrolled property and wishes to continue enrollment of the property. The new property owner must sign a new CI (if the new property owner is not a Participant) or an amended CI (if the new property owner is an existing Participant) within 30 days after notice is provided to the Permit Holder and prior to conducting any new operation, maintenance, or disturbance on the transferred enrolled property. Upon becoming a Participant, conservation measures, all terms and conditions of the CCAA and CI, and the payment schedule shall be assumed by the receiving Participant.

Any funds that were prepaid into the Habitat Conservation Fund Account prior to the transfer of enrolled lands will not be refunded. Upon mutual agreement of the transferor and new property owner, the Permit Holder will transfer funds that were prepaid into the transferor's Habitat

Conservation Fund Account into the new property owner's Habitat Conservation Fund Account for the new property owner's use if the new property owner is or becomes a Participant. The transferor and new property owner will identify to the Permit Holder the amount of funds to be transferred. Subsequent prepayments for the transferred enrolled lands will be the responsibility of the new property owner.

#### **Additions**

The Participant may amend this CI to add property at any time before or after the LEPC is listed. This right to add newly acquired lands to this CI exists without regard to the method of acquiring the property (whether by merger, purchase, etc.). Fees for property added within the prepayment period will be assessed according to the schedule described in Section IV and Exhibit B.

#### **XIX. TERMINATION.**

The Participant agrees that it shall not terminate this CI until after the third prepayment period ends (unless the enrolled property is transferred prior to the end of the three-year period). Any time after the third prepayment period ends, the Participant may terminate any or all of the enrolled property in this CI by giving thirty (30) days written notice to the Permit Holder and FWS as to any or all of the enrolled property. Operations on the terminated property for which the Participant has not paid the Habitat Conservation Fee at the time of termination may proceed as if the CI did not exist. Any funds remaining in Participant's Habitat Conservation Fund Account at the time of termination, voluntary or for cause, will be donated to the Permit Holder for conservation efforts to support the LEPC, and will not be refunded.

FWS may terminate the CI for a Participant's failure to pay the Habitat Conservation Fee (including failing to prepay amounts into the Habitat Conservation Fund Account during the first three years) or for the Participant's failure to implement the conservation measures documented in this CI. However, the Permit Holder shall first provide notice of any deficiency to the Participant and give them the opportunity to cure. If the deficiency is not corrected, or due diligence is not being shown to correct the deficiency within sixty (60) days of the receipt of the letter, the property involved will be terminated from this CI.

#### **XX. NO WAIVER.**

The Participant, by entering into this CI, does not concede its agreement with, or endorsement of, all underlying studies and conclusions in the CCAA. Further, the Participant does not waive any legal rights or remedies that may exist outside of this CI. The Participant is also not responsible for work being accomplished by the FWS or the Permit Holder using contributed funds.

#### **XXI. RELEASE.**

If at any time any administrative or legal challenge prevents the implementation of this Certificate of Inclusion, the Participant agrees to release the signatory parties of the CCAA and CI from any legal claims related to this CI and CCAA. All funds remaining in the Habitat Conservation Fund Account will be retained by the Permit Holder and be used for conservation of the covered species.

**AMENDMENT.**

As described in Section XVII of the CCAA, the effectiveness of the conservation measures in the CCAA will be reviewed by the Permit Holder and Participants periodically over the life of the CCAA. However, conservation measures agreed upon in this CI may only be modified through the written consent of the Participants through the amendment procedures described below.

This CI, except for Exhibit A, may be amended with the written consent of each of the parties hereto. The parties agree to process requests for amendments in a timely manner. This CI will only be amended upon written agreement of all parties. This CI may be amended to accommodate changed circumstances in accordance with all applicable legal requirements, including but not limited to the Endangered Species Act, the National Environmental Policy Act, and the Service's permit regulations at 50 CFR 13 and 50 CFR 17. The party proposing the amendment shall provide a statement describing the proposed amendment and the reasons for it.

Exhibit A may be revised by the Participant and submitted to the Permit Holder to reflect additions to, transfers of, or terminations of the enrolled property that are consistent with the applicable terms of this CI. The Permit Holder may accept revisions to Exhibit A without written consent of the parties to this CI so long as changes in the enrolled property are consistent with the terms of this CI.

**XXII. MULTIPLE ORIGINALS.**

This CI may be executed in any number of multiple originals. A complete original of this CI shall be maintained in the records of each of the Parties hereto.

**XXIII. REPORTING REQUIREMENTS.**

By March 31 of each year the CI is in effect, the Participant will provide the Permit Holder with an end of year report that summarizes activities that have occurred on their enrolled property (Exhibit A) in the previous calendar year. The reports should detail the activities undertaken on the enrolled property. The report provided by the Participant will aid the Permit Holder in meeting its annual reporting requirements under the CCAA and its accompanying permit. For purposes of compliance monitoring of conservation commitment, the Permit Holder or Administrator may access the enrolled property with at least one week prior notification to the Participant (see CCAA, Section X.1.c).

**XXIV. CONFIDENTIALITY.**

The Parties to this CI recognize that fee leasehold and mineral ownership information is confidential and sensitive information held by a Participant. In addition to any obligations imposed by state law on the Permit Holder not to disclose confidential information, the Permit Holder will not disclose the information identified in Section XVI of the CCAA.

**XXV. NOTICE.**

Any notice permitted or required by this CI shall be transmitted within any time limits described in this CI to the persons set forth below or shall be deemed given five (5) days after deposit in the United States mail, certified and postage prepaid, return receipt requested, and addressed as follows or at such other address as any party may from time to time specify to the other parties in writing:

**Participant:**

Contact Name \_\_\_\_\_

Title \_\_\_\_\_

Address: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Telephone: \_\_\_\_\_

Fax: \_\_\_\_\_

E-Mail: \_\_\_\_\_

**WAFWA/Permit Holder Representative:**

Contact Name \_\_\_\_\_

Title \_\_\_\_\_

Address: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Telephone: \_\_\_\_\_

Fax: \_\_\_\_\_

E-Mail: \_\_\_\_\_

**US Fish and Wildlife Representative:**

Contact Name \_\_\_\_\_

Title \_\_\_\_\_

Address: \_\_\_\_\_

Telephone:

Fax:

E-Mail:

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**SIGNATURES**

IN WITNESS WHEREOF THE PARTIES HERETO have executed this Certificate of Inclusion to be in effect on the date of the Participant's signature, unless the FWS fails to execute this Certificate of Inclusion, in which case it shall not take effect.

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Participant and Affiliation

Date \_\_\_\_\_

---

WAFWA/Permit Holder Representative

Date \_\_\_\_\_

---

FWS Authorized Officer

Date \_\_\_\_\_

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EXHIBIT A

**Property Description for Enrolled Property**

*[To be developed with wind energy industry involvement]*

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**EXHIBIT B****Habitat Conservation Fees**

The Habitat Conservation Fee for new surface disturbance associated with wind energy development activities will be calculated using the following fee structure. These Habitat Conservation Fees will apply to wind energy activities conducted on the enrolled property s, as well as those wind energy activities conducted off enrolled property that are associated with activities on the enrolled property (such as power lines and road construction). The structure shall also apply to third parties doing work for the Participant, regardless of who constructs or operates the associated facilities. The Participant must notify the Permit Holder before it or its third-party subcontractors conduct any surface disturbing activities associated with this CI that are subject to Habitat Conservation Fees. Within 30 working days of receiving approval documents for surface disturbing activity from a regulatory agency with jurisdiction, if any, the Participant will provide the Permit Holder with copies of such documents.

The Habitat Conservation Fee is based both on the conservation strategy for the LEPC set forth in the Range-wide Conservation Plan for the LEPC (“Range-wide Plan”). The Range-wide Plan identifies numerous “focal areas” for the LEPC, which the Range-wide Plan defines as the areas of greatest importance to the LEPC and where habitat enhancement, maintenance, and protection should be focused. The Range-wide Plan also calls for the establishment of “connectivity zones” to allow linkage among focal areas.

Fees for new impacts are a function of three factors:

1. The crucial habitat index (CHI) for the LEPC as defined by the Southern Great Plains Crucial Habitat Assessment Tool (CHAT)
2. The site condition score as defined by the Habitat Impact Assessment Guide (HIAG)
3. The impacted acreage based on the impact buffers defined within the Range-wide Plan

The CHAT tool was developed to model crucial habitat for the LEPC throughout its historical range and to be available online to identify priority habitat for the conservation of the LEPC. This was accomplished by using spatial models to analyze multiple data sets (some of which include LEPC lek locations, land cover, topography, roads, transmission lines, wind energy development) which ultimately resulted in a crucial habitat data layer for the LEPC. This data layer classifies habitat within the estimated occupied range of the LEPC plus a 10 mile buffer (EOR+10) using a CHI which places areas into one of the four following categories based on the locations value to the LEPC.

- CHI 1 = Habitat Focal Areas
- CHI 2 = Connectivity Zones
- CHI 3 = Predicted LEPC Habitat within the EOR+10
- CHI 4 = Other within the EOR+10



For further information on the CHAT and further definitions of the four different CHI visit [http://kars.ku.edu/media/uploads/maps/sgpchat/SGPCHAT\\_Summary.pdf](http://kars.ku.edu/media/uploads/maps/sgpchat/SGPCHAT_Summary.pdf). To view the CHAT visit <http://kars.ku.edu/maps/sgpchat/>.

The HIAG is a rapid assessment method to assess site condition or LEPC habitat quality (0 to 1) based on four variables:

1. Vegetation Cover- Non-overlapping canopy cover of herbaceous plants and woody shrubs within evaluation unit
2. Vegetation Quality - Non-overlapping canopy cover of preferred native grasses and shrubs within the evaluation unit. These include little bluestem, sideoats grama, big bluestem, indiagrass, sand bluestem, switchgrass, sand sagebrush, and sand shinnery oak.
3. Presence of Tall Woody Plants- Greater than 3 feet in height
4. Availability of Desired Plant Cover - Proportion of area consisting of native prairie and planted grass stands with <1% canopy cover of trees >3 ft. in height estimated within a one mile radius of the center of the evaluation unit.

Impacted acreage is calculated based a buffer of new impacts minus the acreage of pre-existing impacts. If new impact buffers can be located entirely within any pre-existing impact buffers, there will be no cost assessed for those new impacts. The impact buffer distances are described in Appendix B of the Range-wide Plan, Table B2 on page 117.

Impact units are calculated as:

$$\text{Impact units} = \text{impact acreage} \times \text{site quality} \times \text{offset ratio} \times \text{duration}.$$

Where:

*Offset ratio = 2, resulting in two acres of conservation for every acre of new impact, and*

*Duration = 20 years*

The cost for a given impact is assessed as:

$$\text{Impact cost} = \text{impact units} \times \text{lifetime unit cost}.$$

Where:

*The lifetime unit cost is based on practice costs defined annually by the Natural Resources Conservation Service (NRCS) for habitat maintenance and restoration costs for practices identified in the NRCS LEPC Conference Report.*

All impacts are assessed based on 20 year duration. This duration provides sufficient resources to fund an endowment managed by WAFWA that will provide for in-perpetuity conservation. In the event that impacts paid for are remediated to pre-impact or better conditions based on the HIAG site condition score, funds originally paid for that impact may be applied to new impact costs elsewhere. This remediation must be documented based on a re-evaluation of the HIAG for that site by WAFWA, who will maintain site-specific information for all impacts.

**4) Fees for new turbine locations in previously unimpacted acreage<sup>1</sup>**

<u>Habitat Area</u>	<u>Conservation Fee Range<sup>2</sup></u>
CHI 1	\$0 to \$1,292,471.34 per location
CHI 2	\$0 to \$1,033,977.07 per location
CHI 3	\$0 to \$861,647.56 per location
CHI 4	\$0 to \$646,235.67 per location

<sup>1</sup> Based on an impact buffer of the coordinate of the turbine location. If the site is located within buffers of pre-existing impacts, costs are reduced according to the percent of overlap of impact buffers.

<sup>2</sup> Cost range represents the habitat quality gradient as defined by the HIAG from a cropland site with no rangeland or CRP within a 1 mile radius up to the highest quality.

**5) Fees for commercial buildings in previously impacted acreage<sup>3</sup>**

<u>Habitat Area</u>	<u>Conservation Fee Range<sup>4</sup></u>
CHI 1	\$0 to \$1,292,471.34 per location
CHI 2	\$0 to \$1,033,977.07 per location
CHI 3	\$0 to \$861,647.56 per location
CHI 4	\$0 to \$646,235.67 per location

<sup>3</sup> Based on an impact buffer of the centroid of a 10 acre or smaller footprint. Larger sites will be assessed based on an impact buffer of the site. If the site is located within buffers of pre-existing impacts, costs are reduced according to the percent of overlap of impact buffers.

<sup>4</sup> Cost range represents the habitat quality gradient as defined by the HIAG from a cropland site with no rangeland or CRP within a 1 mile radius up to the highest quality.

**6) Fees for new privately maintained roads and distribution power line construction for previously unimpacted acreage<sup>5</sup>**

<u>Habitat Area</u>	<u>Conservation Fee<sup>5</sup></u>
CHI 1	\$0 to \$30,586.73 per mile
CHI 2	\$0 to \$24,469.39 per mile
CHI 3	\$0 to \$20,391.16 per mile
CHI 4	\$0 to \$15,293.37 per mile

<sup>5</sup> Based on the impact buffer of the centerline. If that right of way overlaps prior impact buffers, costs are reduced by the percent of overlap.

<sup>6</sup> Cost range represents the habitat quality gradient as defined by the HIAG from a cropland site with no rangeland or CRP within a 1 mile radius up to the highest quality.

**7) Fees for new transmission line (>69kV) construction for previously unimpacted acreage<sup>5</sup>**

<u>Habitat Area</u>	<u>Conservation Fee<sup>5</sup></u>
CHI 1	\$0 to \$1,204,931.95 per mile
CHI 2	\$0 to \$963,945.56 per mile
CHI 3	\$0 to \$803,287.96 per mile
CHI 4	\$0 to \$602,456.97 per mile

<sup>5</sup> Based on the impact buffer of the centerline. If that right of way overlaps prior impact buffers, costs are reduced by the percent of overlap.

<sup>6</sup> Cost range represents the habitat quality gradient as defined by the HIAG from a cropland site with no rangeland or CRP within a 1 mile radius up to the highest quality.

Construction of roads and power lines on the enrolled property may also disturb the surface of other property not enrolled in the CI. The Habitat Conservation Fee calculated for new road construction includes disturbances occurring on both enrolled and non-enrolled property.

Commercial facility acreage and road length will be calculated based on information received and/or on-the-ground observation. Should the Participant disagree with the estimate of the area disturbed, they have the right to challenge the estimate and provide supporting data. The Permit Holder will have the responsibility for the final determination of the area disturbed.

Habitat Conservation Fees will not be charged for any buried infrastructure.

**Adjustment of Fees**

The Habitat Conservation Fees described in this Exhibit may be adjusted annually to reflect inflation based on NRCS practice costs, which are calculated based on the average cost for a given habitat management practice paid by landowners during the previous year.

If at any time while this plan remains in effect the Habitat Conservation Fees become inadequate, the Participant and the Permit Holder will confer to identify potential adjustments to be made to the Habitat Conservation Fees.

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APPENDIX G. CIVIL INFRASTRUCTURE CCAA

Range-wide  
Civil Infrastructure  
Candidate Conservation Agreement  
with Assurances  
for the  
Lesser Prairie-Chicken  
(*Tympanuchus pallidicinctus*)

In Colorado, Kansas, New Mexico,  
Oklahoma  
And Texas

DOI-FWS-\_\_-2012-XXXX

Between the:  
U.S. Fish and Wildlife Service  
And  
Western Association of Fish and Wildlife Agencies Foundation

March 31, 2013

## Executive Summary

In 1995, the U.S. Fish and Wildlife Service (FWS) was petitioned to list the lesser prairie-chicken (*Tympanuchus pallidicinctus*) (LEPC) as threatened under the authority of the Endangered Species Act of 1973, as amended. The FWS ruled that listing of the LEPC was warranted but precluded because of other higher priority species. The LEPC was then designated as a candidate for listing as threatened or endangered in 1997. On December 11, 2012, the FWS issued a proposed rule to list the LEPC as threatened. 77 Fed. Reg. 73,828 (Dec. 11, 2012).

This Candidate Conservation Agreement with Assurances (CCAA) for the LEPC represents a collaborative effort between the FWS and Western Association of Fish and Wildlife Agencies Foundation (WAFWA). The terms of this CCAA are intended to harmonize with and complement the conservation strategy set forth in the Range-wide Plan.

The CCAA is a voluntary agreement, administered by the signatory parties and WAFWA. It will be the responsibility of WAFWA to work with and enroll Participants using Certificates of Inclusion (CIs) (see Appendix A) which will facilitate the voluntary cooperation of the electric utility and transmission industry as well as city, county, and state infrastructure organizations and other interested stakeholders, thereby providing conservation benefits to the LEPC. When fully implemented, this CCAA will provide guidance for the conservation and management of the LEPC, by reducing and/or eliminating threats to this species associated with non-Federal mineral development. Participants will implement conservation measures and contribute funding for conservation for unavoidable impacts as part of their CIs. Funds contributed as part of this CCAA may or may not be used on the enrolled property since other habitat areas may be a higher priority for implementation of habitat improvement projects. The conservation measures implemented by Participants would generally consist of habitat restoration and enhancement activities, and minimize habitat fragmentation to preclude or remove current threats to the species.

This CCAA is based on adaptive management principals. Using adaptive management principals, and with the consent of all the signatory parties to this CCAA, if new conservation measures are deemed to be necessary in the future, the parties to the CCAA can modify the template Certificate of Inclusion attached hereto to include additional measures that would apply to all future enrollments to facilitate the continued conservation of the LEPC.

## XVII. INTRODUCTION

If and when a species becomes listed under the Endangered Species Act of 1973 (ESA), as amended (16 U.S.C. § 1531, *et seq.*), that listing action triggers both a regulatory and a conservation responsibility for Federal, State, and private landowners. These responsibilities stem from Section 9 of the ESA that prohibits “take” (i.e., harass, harm, pursue, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct) of listed species. Along with the Section 9 prohibitions, Federal agencies must ensure that their actions will not jeopardize the continued existence of the listed species and carry out programs for the conservation of listed species.

In the western United States many species that are candidates for listing under the ESA occur on both Federal and non-Federal lands. Non-Federal property owners whose operations may have impacts on candidate species on private lands may have the opportunity to voluntarily enter into a CCAA in order to implement conservation measures aimed at reducing and/or eliminating threats to candidate species and to ensure that their land operations can continue unaffected if the species is listed in the future.

This CCAA and its associated Enhancement of Survival permit, issued pursuant to Section 10(a)(1)(A) of the ESA, would provide Participants regulatory assurances that should they cooperate and follow the measures in their Certificate of Inclusion (CI) (appendix A), they will not incur additional land-use restrictions on their property should the LEPC become listed.

This CCAA and associated CI, in conjunction with the Range-Wide Plan and other conservation efforts, will address the conservation needs of the LEPC. Through this CCAA, WAFWA will work with Participants who voluntarily commit to implementing conservation actions that will reduce and/or eliminate threats to this species.

### *Benefits of this CCAA*

The most significant benefit of this CCAA is that it will provide additional conservation efforts and guide conservation actions for the LEPC in order to improve the status of the species within the LEPC range. This CCAA, in conjunction with the Range-Wide Plan, provides a comprehensive and strategic landscape level approach to addressing the conservation needs of the LEPC. Although the FWS cannot absolutely guarantee that listing will never be necessary, this CCAA seeks to implement conservation measures on State and private property, which, when combined with those benefits that would be achieved if conservation measures were to also be implemented on other necessary properties would preclude or remove any need to list the LEPC. It is important to note that a federal decision not to list the LEPC would be based upon the removal of threats and stabilization or improvement of the species. The decision to list is a regulatory process and no CCAA or CCA can predetermine the outcome. The actions and successes of this CCAA will be evaluated in accordance with FWS Policy for Evaluation of Conservation Efforts (2003) and factored into the five-factor analysis of the listing decision.

This CCAA is designed to include conservation measures that reduce and/or eliminate threats by land uses including mineral development on State and private property. If enough Participants implement conservation measures on this property through their participation in the CCAA, the likelihood that the species will be listed will be greatly reduced. The implementation of conservation measures through the CCAA and CI insures that Participants will not bear additional conservation burdens on State and private property.

## **XVIII. PURPOSE OF THE CCAA**

The primary purposes of this CCAA are to:

- develop, coordinate, and implement conservation actions to reduce and/or eliminate known threats to the LEPC within its range;
- support ongoing efforts to maintain viable populations of LEPC in occupied and suitable habitat.;
- serve as a range wide document for civil infrastructure measures implemented by WAFWA and Participants;
- encourage development and protection of suitable LEPC habitat by giving Participants incentives to implement specific conservation measures (as described in their CI);
- provide Participants assurance that the conservation measures agreed to in the CI would be sufficient, and thus assure them that no additional land use restrictions or financial commitments would be required of them should the LEPC become listed; and
- allow Participants to continue operations while protecting and improving habitat conditions for the LEPC.

## **XIX. AUTHORITY**

Sections 2, 7, and 10 of the Endangered Species Act (Act) of 1973, as amended, allow the FWS to enter into this CCAA. Section 2 of the Act states that encouraging interested parties, through Federal financial assistance and a system of incentives, to develop and maintain conservation programs is a key to safeguarding the Nation's heritage in fish, wildlife, and plants. Section 7 of the Act requires the FWS to review programs that it administers and to utilize such programs in furtherance of the purposes of the Act. By entering into this CCAA, the FWS is utilizing its Candidate Conservation Programs to further the conservation of the Nation's fish and wildlife. Lastly, Section 10(a)(1)(A) of the Act authorizes the issuance of permits for acts that would otherwise be prohibited by Section 9 if such acts are expected to enhance the propagation or survival of the affected species.

## **XX. THE LESSER PRAIRIE-CHICKEN AND CONSERVATION EFFORTS**

The LEPC is a species of prairie grouse endemic to the southern high plains of the United States, commonly recognized for its feathered feet, stout build, ground-dwelling habit, and elaborate breeding behavior. The Range-wide Plan contains detailed background information regarding the LEPC, including information about the species' life history, habitat requirements, and population status. Because this CCAA is intended to harmonize with and complement activities associated with the Range-wide Plan, as explained below, the descriptions of LEPC species information set forth in the Range-wide Plan are incorporated and adopted herein.

## **XXI. THREATS**



Section 4(a)(1) of the ESA lists five factors that must be considered when determining if a species should be listed as threatened or endangered. A species may be listed due to one or more of these factors. These are:

- (A) present or threatened destruction, modification, or curtailment of its habitat or range;
- (B) over-utilization for commercial, recreational, scientific, or educational purposes;
- (C) disease or predation;
- (D) inadequacy of existing regulatory mechanisms; and
- (E) other natural or manmade factors affecting its continued existence.

The Range-wide Plan describes perceived threats to LEPC populations. Because this CCAA is intended to harmonize with and complement activities associated with the Range-wide Plan, as explained below, the descriptions perceived threats to LEPC populations set forth in the Range-wide Plan are incorporated and adopted herein.

## XXII. CONSERVATION EFFORTS

In order to issue an enhancement of survival permit, the FWS must find that implementation of the terms of the CCAA will not conflict with any ongoing conservation programs for the LEPC. 50 C.F.R. § 17.22(d)(2)(v), 17.32(d)(2)(v). The FWS has recognized that although the terms of CCAAs may not conflict with ongoing conservation programs, there are numerous conservation programs ongoing for the LEPC, including programs administered by the Natural Resources Conservation Service and CCAAs that will reduce or eliminate threats to the LEPC associated with agricultural practices in Texas and Oklahoma. These ongoing conservation efforts are more fully described in the Range Wide Plan.

There are two existing agreements that address electrical distribution and its effects on LEPCs, although only with respect to its use in oil and gas development and production. First, the FWS has approved a CCAA in New Mexico with the Center of Excellence for Hazardous Materials Management (CEHMM) and a companion CCA between the Bureau of Land Management (BLM) and CEHMM. The CCAA and CCA facilitate the voluntary cooperation of the oil and gas industry, livestock producers, and other interested stakeholders to provide conservation benefits to the LPC. Oil and gas operators that participate in the CCAA and CCA commit to implement a suite of avoidance and minimization measures. Additionally, participants contribute funds to assist in restoration or protection and habitat.

The Lesser Prairie-Chicken Interstate Working Group of the Western Association of Fish and Wildlife Agencies (WAFWA) has developed a Range-wide Conservation Plan for the LEPC (“Range-wide Plan”) that outlines a conservation strategy for the LEPC that identifies and coordinates conservation actions that can be implemented to ensure the continued sustainability of the species throughout its current or expanded range. . The Range-wide Plan emphasizes tools and incentives to encourage landowners and others to voluntarily partner with agencies in LEPC habitat to implement conservation

efforts, while also achieving land use needs. The terms of this CCAA are intended to harmonize with and complement the conservation strategy set forth in the Range-wide Plan.

### **XXIII. NEED FOR THIS AGREEMENT**

The ESA authorizes the FWS to prohibit activities on private property that result in the take of listed species.

This CCAA and its associated Enhancement of Survival permit, issued pursuant to Section 10(a)(1)(A) of the ESA, would provide Participants regulatory assurances that should they cooperate and protect LEPC habitat on their property, they will not incur additional land-use restrictions on enrolled property should the LEPC be listed. To receive this assurance, Participants must enroll their property under the CCAA by signing a CI (see Appendix A).

#### **The Western Association of Fish and Wildlife Agencies**

WAFWA is a non-profit organization representing 23 states and Canadian provinces, advocating appropriate management of fish and wildlife within the borders of member states. Since WAFWA's establishment in 1922, WAFWA has been innovative in its approach to identifying and pursuing meaningful applied research that has resulted in practical solutions in the environment. WAFWA has a broad capacity in these areas due to the combined experience of its member organizations and its directors and staff members. WAFWA has also been able to develop strong partnerships with universities, agencies, research institutions, and private industry to bring together additional expertise as needed to meet challenges of various endeavors.

WAFWA will maintain positions for biologists to facilitate enrollment of property and distribution of funds for conservation efforts through coordination with other state and federal agency staff and outreach to property owners as more fully described below. WAFWA has already developed a conservation fund which in part will be used to further the effort of the CCAA in conserving the LEPC. WAFWA may designate one or more entities ("designees") to administer the permit. WAFWA and/or its designee(s) will use funds contributed by Participants to implement conservation activities to benefit the LEPC such as habitat restoration, habitat enhancement, and removal of threats.

#### **Participants**

Any State or private property owner may enroll their property under the CCAA. A "property owner" includes any person or entity with a fee simple, leasehold, or other property interest sufficient to carry out the conservation measures described in this CCAA and the attached CI, subject to applicable State law, on non-Federal land. By executing the attached CI or a version thereof, the Participant commits to implement, and assumes responsibility for implementing, the conservation measures identified therein.

#### **Process of Enrolling**

An interested Property Owner (a person with a fee simple, leasehold, or other property interest (including owners of water or other natural resources), or any other entity that may have a property interest, sufficient to carry out the conservation measures described in this CCAA and the attached CI, subject to applicable State law, on non-Federal land) would initially contact WAFWA to enroll. Once the initial contact is made, WAFWA and the interested Property Owner would look at a map of the property and determine where the property is located and what other activities are occurring on the property. Next, WAFWA and interested Property Owner would establish what conservation role the property may provide. Next, a CI is written (see Appendix A) that documents the conservation measures the interested Property Owner is committing to implementing or abiding by. If the interested Property Owner agrees to participate, he or she can sign the CI. Next, WAFWA signs the CI, and it is then forwarded to the FWS for its concurrence and signature. Once the FWS concurs, the Property Owner becomes a Participant.

#### **XXIV. COVERED AREA AND ENROLLED PROPERTY**

The Covered Area includes private and state property that currently provides or could potentially provide suitable habitat for the LEPC within the current range of the LEPC and ten miles around that range. The Covered Area is represented in the CHAT (<http://kars.ku.edu/maps/sgpchat/>) as the Estimated Occupied Range plus 10 miles (EOR+10). Enrolled property is the property identified on all signed CIs of all Participants under this CCAA. Participants may amend their CIs to enroll additional property at any time before the effective date of any final rule listing the LEPC as threatened or endangered. After listing, existing Participants may amend their CIs to enroll additional property that was evaluated at the time of permit issuance within the covered area.

#### **XXV. DURATION OF THE AGREEMENT AND ENHANCEMENT OF SURVIVAL PERMIT**

This CCAA will have a duration of 30 years from the date the CCAA is signed by WAFWA and the FWS, and may be renewed before it expires. The CCAA will cover a Participant's enrolled property from the date such Participant executes a CI (unless the FWS fails to subsequently execute such CI) until the CI terminates. Should the LEPC become listed as threatened or endangered, and all other requirements are met, the enhancement of survival permit (permit) will become effective and all Participants will be covered from that date until the end of their participation in this CCAA or until the CI is terminated. The minimum duration of participation will be three years by enrolled Participants (unless enrolled property is transferred prior to the end of the three-year period), but can be the full duration of the CCAA if the Participant wishes coverage by the permit. Prior to the expiration of the initial 30 year period or any extension period thereafter, WAFWA may extend the CCAA for a ten year period.

Coverage under the enhancement of survival permit will only apply to those Participants who enroll property under this CCAA prior to any future ESA listing date of the LEPC and their transferees who enter into a CI. The permit coverage is for incidental take associated with the Participant's activities on enrolled properties as long as the Participant is in compliance with the relevant CI. Any incidental

take of LEPC resulting from activities not covered in the Participant's CI will not be covered by the permit except as provided herein.

## XXVI. CONSERVATION MEASURES AND OBLIGATIONS OF THE PARTIES

WAFWA will implement and administer the CCAA. Participants can sign up under the CCAA and be covered under the associated permit through a CI.

### 4) Obligations Common to all Participants:

- g) Enter into a CI (Appendix A) that contains the following conservation measures, which are detailed in the Range-wide plan including a discussion of how each these measures address specific threats to the species. Only the measures that relate specifically to civil infrastructure are included in this document.

#### Pre-project planning

- iv. Utilize the Southern Great Plains CHAT (<http://kars.ku.edu/geodata/maps/sgpchat/>) for initial LEPC-related project siting review along with impact area maps, ecological site maps, land cover maps, and aggregated CRP maps provided in the CHAT. We also recommend that developer examine the WGA west-wide CHAT and State Fish and Wildlife agencies for information related to other state or federal threatened, endangered, or candidate species and species of greatest conservation need.
- v. Once a set of potential project sites are identified, developers shall consult with cooperating State Fish and Wildlife Agency staff to assess the potential impacts to LEPC habitat associated with each site. These agencies have access to additional data sources beyond those available in the CHAT, including lek data, and will assist in make recommendations to reduce potential impacts to LEPCs and their habitat and to reduce potential mitigation costs.
- vi. If surveys of proposed project sites have not been conducted within the previous 5 years, and the project sites are within a focal areas, connectivity zones, or within areas identified as high probability lek habitat based on the CHAT (categories 1-3), the developer has the option of conducting surveys themselves according to WAFWA protocols, allowing state or WAFWA affiliated personnel to conduct surveys of the site prior to project initiation, or considering the sites as occupied with active leks.

#### Avoidance

- ix. Use available options to avoid focal areas, connectivity zones, or within 1 1/4 mi of known leks that have been active at least once within the previous 5 years, ~~as well as tracts of native grass and shrublands (see CHAT and State Fish and Wildlife Agency staff for more information).~~ If these areas cannot be avoided, Participants shall minimize and mitigate the impacts of development as described in beneath the headings "Minimization" and "Mitigation." Participants shall focus development on lands already impacted, altered or cultivated (such as row-crop agriculture, developed

- oilfields, or existing power line impact buffers), and away from areas of intact and healthy native grass or shrublands. Similarly, Participants shall select fragmented or degraded habitats over unfragmented areas, and select sites with lower LEPC habitat potential over sites with greater habitat potential.
- x. Participants shall avoid locating roads, fences, power lines, and other infrastructure within focal areas, connectivity zones, or in other areas identified as high probability lek and nest habitat by the CHAT categories 1-3. If these areas cannot be avoided, Participants shall minimize and mitigate the impacts of development as described in beneath the headings “Minimization” and “Mitigation.”
  - xi. Participants shall utilize existing corridors or infrastructure when siting new distribution power lines. When Participants cannot utilize existing corridors or infrastructure, Participants shall bury distribution power lines if within 1 1/4 mi of leks active within the previous five years. If new distribution power lines are constructed outside of existing corridors and within 1 1/4 mi of leks active within the previous five years but are not buried, Participants shall minimize and mitigate the impacts of development as described in beneath the headings “Minimization” and “Mitigation.”
  - xii. During lekking, nesting, and brooding season (Mar 1–Jul 15), construction and maintenance activities shall not be conducted between the hours of 3:00 am and 9:00 am within 1 ¼ mi of leks recorded active within the previous five years if such activities require a human presence. Emergency operations, construction and maintenance activities that are direct human or environmental safety concerns or that relate directly to operational continuity are allowed. Participants shall record the dates, duration and purpose of any emergency operations, construction and maintenance activities during the breeding season within 1 ¼ miles of leks and shall provide that documentation with its annual reporting.

#### *Minimization*

- i. If roads, fences, power lines, and other infrastructure cannot be located to avoid focal areas, connectivity zones, or other areas identified as high probability lek and nest habitat by the CHAT categories 1-3, Participants shall use existing corridors for multiple types of infrastructure. If Participants cannot use existing corridors for such infrastructure, Participants shall mitigate the impacts of new habitat disturbance as described in beneath the heading “Mitigation.”
- ii. Participants shall site projects to minimize new habitat disturbance by increasing the amount of overlap between existing fragmentation and associated impact buffers. If projects cannot be sited to minimize new habitat disturbance, Participants shall mitigate the impacts of new habitat disturbance as described in beneath the heading “Mitigation.”
- iii. Participants may use herbicide treatment on areas on impacted areas but shall-limit such use to the impact area. Within CHAT categories 1-3, these treatments shall not be applied during the lekking, nesting and brooding season (March 1-July 15) except for the spot treatment of noxious weeds. Where practical and applicable, Participants shall utilize an herbicide that is targeted for specific use and spot treatments as opposed to a broadband herbicide and broadcast treatments. Apply in conditions that minimize drift.
- iv. Install appropriate fence markings along new fences under the control of the participant within one quarter (1/4) mile of a lek that has been recorded as active within the previous 5 years.

- v. Participants shall minimize their traffic volume, control their vehicle speed, control access, and minimize their off-road travel within focal areas and areas identified as high probability lek and nest habitat by the CHAT categories 1-3.
  - vi. Within 1 ¼ mi of leks, install raptor deterrents on new electrical distribution and transmission poles that are under the control of the Participant as indicated by Avian Power Line Interaction Committee (APLIC) Suggested Practices for Raptor Protection on Power Lines: The State of the Art in 2006, as amended.
  - vii. Provide escape ramps, rafts or ladders, depending on configuration, in new exposed, manmade water containment sources that are under control of the Participant.
- As described in Section XVII, below, the effectiveness of these conservation measures will be reviewed by WAFWA and Participants periodically over the life of the CCAA. However, new conservation measures may only be implemented through future CIs if WAFWA and FWS find such measures to be necessary to facilitate the continued conservation of the LEPC. Conservation measures agreed upon in existing CIs may only be modified through the written consent of the Participants through the amendment procedures described in the CI.

#### *Mitigation*

- i. For impacts that cannot be avoided or minimized, Participants shall adhere to the provisions in the Certificate of Inclusion that describe the amount of fees necessary to mitigate such impacts.
- ii. Mitigation may include reclaiming or remediating inactive or abandoned facilities and infrastructure under the control of the Participant in compliance with applicable state rules and regulations. This in-lieu remediation of facilities will be subject to the metrics system outlined in Appendix B of the Range-wide Plan. Remediation proposals shall be submitted to WAFWA for review and approval and those proposals must demonstrate that they support the population and habitat goals of the range-wide plan with respect to habitat focal areas and connectivity zones.

As described in Section XVII, below, the effectiveness of these conservation measures will be reviewed by WAFWA and Participants periodically over the life of the CCAA. However, new conservation measures may only be implemented through future CIs if WAFWA and FWS find such measures to be necessary to facilitate the continued conservation of the LEPC. Conservation measures agreed upon in existing CIs may only be modified through the written consent of the Participants through the amendment procedures described in the CI.

- h) Comply with the terms of the CI and implement the conservation measures identified therein. Enrollment under this CCAA and coverage of the enrolled property will begin once the CCAA is effective and the Participant executes the CI, provided that such CI is subsequently approved and executed by the FWS. The CI is valid until the end of the CCAA either through expiration or termination, or until termination of the CI.
- i) Allow WAFWA access to the enrolled property for purposes of monitoring compliance with terms of the CI so long as WAFWA provides notice at least one week in advance. The access allowed by the Participant is limited to enrolled property. In order to access lands that are not enrolled by the Participant, WAFWA must independently obtain landowner permission.



- j) Allow WAFWA, with prior notification, access to survey enrolled property for the presence of LEPCs and for habitat suitability for the species to the extent of the Participant's control as provided by applicable law, contracts, or leases. Any access allowed by the Participant is limited to enrolled property. In order to access lands that are not enrolled by the Participant, WAFWA must independently obtain landowner permission.
  - k) Allow WAFWA access to the enrolled property for purposes of monitoring LEPC populations and habitat to the extent of the Participant's control as provided by applicable law, contracts, or leases. Any access allowed by the Participant is limited to enrolled property. In order to access lands that are not enrolled by the Participant, WAFWA must independently obtain landowner permission.
  - l) Provide information on an annual basis to WAFWA on implementation of conservation measures in their CI, observations of LEPC on enrolled property, and any observed mortality of the species.
- 5) Obligations of the Permit Holder:
- p) Implement and administer this CCAA;
  - q) Enroll Participants in accordance with this CCAA via CIs;
  - r) Conduct compliance reviews of projects being implemented by Participants;
  - s) Use funds contributed in accordance with Appendix B of the CI to implement conservation activities to benefit the LEPC such as habitat restoration, habitat enhancement, and removal of threats.
  - t) Monitor projects in order to determine success and adaptations needed;
  - u) Conduct outreach and public education efforts to promote conservation of the LEPC;
  - v) Secure permission to complete projects on private and State lands, where appropriate;
  - w) Establish a committee ("Advisory Committee") as described in Section (5), below.
  - x) Schedule an Advisory Committee meeting in each state at least once per year (but may hold meetings more often, if needed or requested), and coordinate the locations, dates and times of the Advisory Committee meetings;
  - y) Track expenditure of funds and preparing an annual report on implementation of this CCAA;
  - z) Maintain a digital photo database to document project (i.e., conservation measure) performance;
  - aa) Audit, at WAFWA's expense, by an independent party annually to account for expenditures and accomplishments;
  - bb) Maintain the confidentiality of certain information as described in Section XVI;
  - cc) Hold the CIs for each enrolled properties, with copies being provided to all Parties; and,
  - dd) Expend monies for potential species research.
- 6) Obligations of the FWS:
- e) Provide technical assistance in CCAA and permit application development.
  - f) When available, provide funding through appropriate FWS programs and assist in securing funding from other sources, as applicable, to improve LEPC habitat on private and state lands



within the range.

- g) After approval of the CCAA, the FWS may not impose any new requirements or conditions on, or modify any existing requirements or conditions applicable to, a Participant or successor in interest to the Participant, to compensate for changes in the conditions or circumstances of any species or ecosystem, natural community, or habitat covered by the CCAA except as stipulated in 50 CFR §§ 17.22(c)(5) and 17.32(c)(5).
- h) The FWS may suspend the permit in accordance with 50 C.F.R. § 13.27 and may revoke the permit in accordance with 50 C.F.R. § 13.26. Prior to initiating the respective procedures for permit suspension and revocation specified in 50 C.F.R. §§13.27(b) and 13.28(b), the FWS will exercise all possible measures to remedy the situation, including at least one in-person meeting with WAFWA and all Participants that wish to attend.

#### 4) Obligations of All Parties:

- j) In the event the Participant elects to sell enrolled property prior to the expiration of the agreement, they will notify WAFWA so their CI can be modified. The Participant will also notify the new owner of the opportunity to enroll or transfer the property in a CI of their own by working with WAFWA. If the new owner opts not to participate in the CCAA, he/she will not receive the benefits of the permit authorizing incidental take of LEPC. If the new owner opts to participate in the CCAA, the new owner may also opt to enroll additional property not previously included in a CI by amending the CI to include the additional property.
- k) Any Party may propose amendments to this CCAA by providing written notice to the other Parties. If WAFWA is the recipient of this notice, it will forward copies to the Participants within 10 days of receipt of the notice. If WAFWA provided written notice to the other Parties, it will provide such written notice to the Participants at the same time notice is provided to the other Parties. Such notice shall include a description of the proposed amendment, the justification for it, and its expected results. Upon issuance of the notice, the party proposing the amendment will coordinate a meeting or conference call between the other Parties and Participants to discuss and explain the proposal. The Parties will use their best efforts to respond in writing or electronic mail to proposed amendments within 60 days of receipt of such notice.

For each proposed amendment, the FWS will determine whether it is a minor (administrative) amendment or a major amendment of the CCAA. Proposed amendments will become effective upon the Parties' written concurrence. Approved amendments shall be attached to the original CCAA. In addition to amending the CCAA itself, the permit may be amended in accordance with all applicable legal requirements, such as the ESA, NEPA, the general permitting regulations at 50 CFR parts 13 and 17, and formal FWS policy. Participants enrolled prior to an amendment of the CCAA and/or the Permit will not be required to amend their CIs to accommodate an amendment that requires the commitment of additional land, water, or financial compensation or additional restrictions on the use of land, water, or other natural resources beyond the level otherwise agreed upon in the CCAA prior to the amendment. Participants, however, may voluntarily choose to adopt such amendments by amending their CIs.

- l) Each Party shall have all remedies otherwise available to enforce the terms of this CCAA and the permit, except that no Party shall be liable in damages for any breach of this CCAA, any performance or failure to perform an obligation under this CCAA or any other cause of action

arising from this CCAA.

- m) The FWS, Permit Holder and Participants agree to work together in good faith to resolve any disputes, using dispute resolution procedures agreed upon by all Parties.
  - n) Implementation of this CCAA is subject to the requirements of the Anti-Deficiency Act and the availability of appropriated funds. Nothing in this CCAA will be construed by the Parties to require the obligation, appropriation, or expenditure of any money from the U.S. Treasury. The Parties acknowledge that neither the FWS will be required under this CCAA to expend any Federal agency's appropriated funds unless and until an authorized official of that agency affirmatively acts to commit to such expenditures in writing.
  - o) This CCAA does not create any new right or interest in any member of the public as a third-party beneficiary, nor shall it authorize anyone not a party to this CCAA to maintain a suit for personal injuries or damages pursuant to the provisions of this CCAA. The duties, obligations, and responsibilities of the Parties to this CCAA with respect to third Parties shall remain as imposed under existing law.
  - p) The terms of this CCAA shall be governed by and construed in accordance with applicable Federal law. Nothing in this CCAA is intended to limit the authority of the FWS to fulfill its responsibilities under Federal laws. All activities undertaken pursuant to this CCAA or its associated permit must be in compliance with all applicable local, state, and Federal laws and regulations.
  - q) This CCAA shall be binding on and shall inure to the benefit of the Parties and their respective successors and transferees, in accordance with applicable regulations (currently codified at 50 CFR 13.24 and 13.25) for the duration of the CCAA.
  - r) Any notices or reports required by this CCAA shall be delivered in writing to WAFWA.
- 5) **Obligations of Cooperating Agencies and Parties:**
- c) WAFWA will hold the Permit and will hold positions for biologists to facilitate enrollment of property and distribution of funds for conservation efforts through coordination with other state and federal agency staff and outreach to property owners.
  - d) The Advisory Committees established by WAFWA in each state may include representatives from the following entities within the LEPC five-state range: state wildlife agencies, FWS, NRCS, BLM, universities with departments or faculty actively engaged in academic research related to the LEPC, state oil and gas regulatory agencies, electric utilities commissions or trade associations, wind energy associations, oil and gas trade associations, state school and/or trust land administrators, Participants, and others as appropriate. The Advisory Committees may facilitate communication among Participants and offer feedback and recommendations to WAFWA regarding various aspects of the implementation and administration of the CCAA, including, but not limited to, new scientific information through the Adaptive Management process, amendments to the CCAA and CI, dispute resolution, prioritization and implementation of conservation measures and research activities, and other similar issues.

## XXVII. EXPECTED CONSERVATION BENEFITS

As identified in the FWS's Candidate Conservation Agreement with Assurances Final Policy (USFWS and NMFS 1999), the FWS "must determine that the benefits of the conservation measures to be

implemented, when combined with those benefits that would be achieved if it is assumed that conservation measures were also implemented on other necessary properties, would preclude or remove any need to list” the LEPC (64 FR 32726).

Implementation of this CCAA results in a variety of conservation benefits to the LEPC in the form of avoidance of negative impacts and enhancement and restoration of habitat intended to contribute to establishing or augmenting, and maintaining viable populations of LEPCs. Conservation measures that minimize new surface disturbance thus minimize habitat fragmentation and preserve contiguous expanses of LEPC habitat. Conservation measures that require the removal of existing equipment and infrastructure and reclamation of existing disturbance restore and enhance LEPC habitat. LEPC reproductive behavior is promoted by conservation measures that limit activities and operations during lekking, nesting, and brooding season. Similarly, threats to the LEPC are removed by conservation measures that require removal of existing vertical structures, limit the possibility of LEPC becoming trapped in open water sources, and require marked fences. Furthermore, the conservation activities implemented with funds contributed by Participants are expected to further enhance LEPC habitat. When considered together, the conservation measures and provisions of the CCAA are expected to preserve, enhance, and restore LEPC habitat and remove threats to the LEPC, which are expected to yield increases to LEPC populations. In addition, conservation of LEPCs would be enhanced by improving and encouraging cooperative management efforts between WAFWA, FWS, and Participants who own and control LEPC habitat.

Under this CCAA, LEPC conservation will be enhanced by providing ESA regulatory assurances such that, should Participants have or attract LEPCs on enrolled properties, they will not incur additional land use restrictions. This CCAA is intended to provide incentives to property owners to initiate conservation measures for this species.

## **XXVIII. ASSURANCES PROVIDED**

Through this CCAA, the FWS provides the Participants the regulatory assurances at 50 CFR 17.32(2)(5) and consistent with the FWS’s Candidate Conservation Agreement with Assurances Final Policy (USFWS and NMFS’s 1999) conservation measures and land, water, or resource use restrictions, in addition to the measures and restrictions described in this CCAA, will not be imposed with respect to local activities on enrolled property should the LEPC become listed under the ESA in the future. These assurances are authorized by the enhancement of survival permit issued under Section 10(a)(1)(A) of the ESA for the enrolled property identified in the CI. In the event of unforeseen circumstances, the FWS will not require the commitment of additional land, water, or other natural resources beyond the level otherwise agreed to or for the species in this CCAA. The FWS may request additional conservation but since it is voluntary on the part of Permit Holder and Participants, consent of the affected parties must be in writing. The permit, if issued, will authorize the incidental take of LEPCs by Participants as long as “take” is consistent with this CCAA and relevant CI.

The FWS recognizes the commitments in this agreement are consistent with the overall goal of precluding the need to list the species, if it is assumed that conservation measures were also to be implemented on other necessary properties.

### Assurances Provided to Participant in Case of Changed or Unforeseen Circumstances

The assurances listed below apply to Participants with an enhancement of survival permit associated with this CCAA where the CCAA is being properly implemented. The assurances apply only with respect to species adequately covered by the CCAA.

“Changed circumstances” are those alterations in circumstances that can reasonably be anticipated and planned for in the CCAA (e.g., wildfire, drought). Changed circumstances might include minor wildfires that temporarily alter suitability of available breeding or winter habitat across portions of the landscape. “Unforeseen circumstances” are changes in circumstances that could not reasonably have been anticipated by WAFWA and the FWS at the time of the CCAA’s negotiation and development, and that result in a substantial and adverse change in the status of the covered species. The assurances listed below apply to Participants. The assurances apply to the enrolled property where the agreement is being properly implemented and are applicable only with respect to the species (LEPC) covered by this CCAA.

*Changed circumstances provided for in the CCAA.* If additional conservation measures not provided for in the CCAA are necessary to respond to the changed circumstances listed herein, the USFWS will not require any conservation measures in addition to those provided for in the CCAA and associated CI without the consent of the Permit Holder and Participant, provided the CCAA and associated CI are being properly implemented.

a) Stochastic Events—Extreme weather events and wildfire have the potential to create changed circumstances on the landscape at the scale of individual ranches, habitat focal areas, ecoregions, and the entire range of the LEPC. However, the intent of the Range-wide Plan and the conservation delivery system within the WAFWA Mitigation Framework described in the Range-wide Plan is to produce high-quality, connected LEPC habitat in habitat focal areas and connectivity zones across each ecoregion and, where possible, between ecoregions. Accomplishing that goal will increase the stability of LEPC populations and the resiliency of those populations to stochastic events such as extreme weather events and wildfire. Mitigation funding will be one of the primary pathways to achieve these goals, and therefore these stochastic events should not affect participants enrolled in this agreement. However stochastic events may affect credit generation required to offset impacts. In instances where these stochastic events or combination of events occur on scales large enough to effect the ecoregional goals for credit generation required to offset industry impacts or create changed circumstances on the landscape, the Permit Holder will notify the FWS within 30 days of that determination. Within 90 days of notification, the parties will evaluate those conditions and, if opportunities exist, identify potential changes to the conservation measures for offsets and credit generation or other actions to address local conditions. These stochastic events include but are not limited to:

(ii) Drought—Substantial variation in annual precipitation is not an uncommon event, within LEPC range and the species is adapted to withstand that variation. The Habitat Impact Assessment Guide that defines debit and credit generation is robust to periodic short-term drought, ensuring the stability of credit generation in the face of these events. However, drought can occur at scales ranging from local to ecoregional

to range-wide, and severe and prolonged droughts at local and ecoregion scales may create conditions that, if management conditions are not adjusted, could significantly impact available habitat for the species, limit credit generation required for offsetting impacts, and cause changed circumstances on the landscape. Severe droughts are defined here as the occurrence of Palmer Drought Severity Index (PDSI) of -3 and below in August over 25% or more of an ecoregion. Prolonged droughts are defined here as having average PDSI values of -2 or lower over the preceding 24 month period for 25% or more of an ecoregion. Credit Generation Contract Holders are incentivized to track drought conditions on their own property and make appropriate changes in grazing practices as needed. Contract Holders who graze livestock will also receive notification of drought conditions from the Permit Holder noting potential reductions in credits generated and annual payments if those changes are not made.

(i) Wildfire—Wildfires generally affect single or limited numbers of landowners, but in drought years, substantial percentages of an ecoregion may be affected by wildfire. LEPCs are adapted to periodic wildfire, and these events can result in significant habitat benefits such as control of woody invasives, increased increased forb cover for brood habitat, and result in significant credit generation. However, large-scale, drought and wind-driven fires may reduce available nesting, foraging, and escape cover across large areas and may interact with management activities such as grazing to reduce further reduce available habitat. Management plans developed for Credit Generation Contract Holders will include guidance for deferment following both prescribed fire and wildfire to maximize habitat quality and annual credit generation. WAFWA will also track reported wildfire acreage on an ecoregional basis in drought years and will include this information in notices of drought information to inform landowners about grazing practices and maximizing habitat quality and annual payments.

(iii) Flooding.—In this arid region, floods may have significant localized impacts. However, it is unlikely that flooding alone could affect the ecoregional goals for credit generation to offset industry impacts or created landscape-level changed circumstances. Flooding impacts affecting single or limited numbers of Contract Holders will be handled on a case by case basis with the individual landowners to determine the management practices to be applied.

(iv) Tornados—Like floods, tornados may have significant localized impacts. However, it is unlikely that these events alone could significantly affect the ecoregional goals for credit generation. Tornado impacts affecting single or limited numbers of Contract Holders will be handled on a case by case basis with the individual landowners to determine the management practices to be applied.

(b) Changed Technology Associated with Civil Infrastructure—Technology related to civil infrastructure including roads and power lines is not static. The techniques and technology used in this field may evolve over the duration of the CCAA in a manner not presently anticipated. Changes in technology will not constitute a changed circumstance if the new

technology results in impacts to the LPC that are similar in nature to the impacts resulting from the technology in place when the CCAA is executed. If the Permit Holder, in consultation with the Participants, determines that the technology associated with civil infrastructure has changed so dramatically that the new technology results in impacts to the LPC of a substantially different nature than the impacts resulting from civil infrastructure development and operations when the CCAA was executed, the Permit Holder will notify the FWS within 30 days of that determination. The Permit Holder and FWS will meet with the Participants to identify potential actions which could be taken to address the change in circumstances.

*Changed circumstances not provided for in the CCAA.* If additional conservation measures not provided for in the CCAA and associated CIs are necessary to respond to changed circumstances, the FWS will not require any conservation measures in addition to those provided for in the CCAA or the associated CI without the consent of WAFWA and Participant, provided the CCAA and the associated CI are being properly implemented.

*Unforeseen circumstances.* If additional conservation measures are necessary to respond to unforeseen circumstances, the FWS may require additional measures of WAFWA and Participant, but only if such measures maintain the original terms of the CCAA and associated CI. These additional conservation measures will not involve the commitment of additional land, water, financial compensation, or additional restrictions on the use of land, water, or other natural resources available for development or use under the original terms of the CCAA and associated CI without the consent of Permit Holder and Participant.

The FWS will have the burden of demonstrating that unforeseen circumstances exist, using the best scientific and commercial data available. These findings must be clearly documented and based upon reliable technical information regarding the status and habitat requirements of LEPC. The FWS will consider, but not be limited to, the following factors:

- g) Size of the current range of LEPC;
- h) Percentage of range affected by the need for additional conservation measures and covered by the CCAA;
- i) Percentage of range conserved by the CCAA;
- j) Ecological significance of that portion of the range covered by the CCAA;
- k) Level of knowledge about LEPC; and
- l) Whether failure to adopt additional conservation measures would appreciably reduce the likelihood of survival and recovery of LEPC in the wild.

## XXIX. FUNDING

Funding for the implementation and administration of this CCAA is more fully described in the CI. Briefly, Participants will pre-pay funds for the restoration, reclamation, and protection of suitable LEPC habitat over a minimum three-year period that begins with the execution of the CI and will continue until the CI is terminated.



The funds will be used to pay Habitat Conservation Fees, which are fees based on the amount of habitat disturbed by civil infrastructure and operations. The Participant will remit funds to WAFWA. WAFWA will maintain the funds in a Habitat Conservation Fund Account specific to this CI. The purpose of the Habitat Conservation Fund Account is to meet the Participant's obligations under the CCAA.

Funds contributed by Participants will be contributed to, held and utilized by WAFWA to accomplish conservation measures. A Team consisting of biologists and specialists from appropriate organizations will meet regularly with WAFWA to determine with appropriate input from the Advisory Committee the highest priority conservation projects to be completed using contributed funds. Final prioritization of conservation projects will be the responsibility of this ranking team. The criteria for determining priority conservation areas will include occupancy by the LEPC, the potential for occupancy by the LEPC (e.g., focal areas, connectivity, absence of major threats to the species) on a given site, as well as quality and quantity of suitable habitat for the species. The ranking team will coordinate actions with other, ongoing conservation activities to provide the greatest benefit to the LEPC. Although conservation activities should receive priority for use of funds, the team can also use a portion of the contributed funds for research, monitoring, and education each year, as appropriate.

Participants will make annual pre-payments for the first three years, and the first prepayment will be made into the Habitat Conservation Fund Account at the date of execution of the CI with the second and third payments made on the first and second anniversary of the CI. Participants will make pre-payments for the first three years so that fees can be immediately used to implement conservation activities to benefit the LEPC before surface disturbing activities are proposed.

After the CI is executed, WAFWA will calculate the applicable Habitat Conservation Fee associated with any new surface disturbance using the methodology shown on Exhibit B of the CI. WAFWA will deduct the resulting Habitat Conservation Fee from a Participant's Habitat Conservation Fund Account balance. The Habitat Conservation Fees may be adjusted in accordance with the CI.

Habitat Conservation Fees will remain in ecoregion (identified in Figure 2, page 15 in the Range-wide Plan) in which the associated property is enrolled or surface disturbance occurs. In the event that the habitat goals under the Range-wide Plan have been met for that ecoregion and the attainment of that goal can be documented, then funds generated in that ecoregion may be made available for use in other ecoregions that have not reached their habitat goals under the Range-wide Plan.

### **XXX. LEVEL OF INCIDENTAL TAKE**

Under this CCAA, should the LEPC be listed under the ESA, authorization for incidental take under Permit is limited to civil infrastructure development activities on, or related to such activities occurring on, Participants' enrolled property. Such activities include:

- p) Construction of transmission or distribution lines: assemble and place support structures; string conductors and install other hardware on structures
- q) Construction of substations/switching stations
- r) Installation of underground lines



- s) Upgrading equipment, including adding additional circuit on existing structure, replacing structures and conductors with higher voltage equipment, expanding substations and switching stations
- t) Maintenance, including replacement of above and below ground conductors, replacing old transmission/distribution structures/conductors, insulator replacement
- u) Construction and maintenance of roads and rights of way

Incidental take could occur in a variety of forms from these civil infrastructure activities. For example, incidental take may result from vehicle traffic (off-highway and road vehicle traffic) associated with civil infrastructure development, due to either noise that disrupts reproductive behavior or collisions. Similarly, activities that result in noise and dust, such as the use of heavy equipment to clear rights of way (ROW), and site preparation for steel structures or wooden poles, that disrupt reproductive behavior may result in incidental take. Noise and human activities associated with civil infrastructure activities that disrupt reproductive behavior may result in incidental take. Incidental take may also result from habitat disturbance and noise associated with the construction of transmission/distribution lines and substations and roads. The construction of vertical structures including transmission/distribution lines may result in LEPC avoidance behavior causing avoidance behavior that could indirectly impact reproduction and result in incidental take. Finally, incidental take can result from routine operations such as daily inspections and maintenance, routine and emergency repairs due to adverse weather, and maintenance of rights of way. Take authorized by the Permit must be incidental to otherwise lawful activities and consistent with implementation of the CCAA and Participant's CI.

The implementation of the CCAA will avoid and minimize incidental take from each of the above listed activities and reduce the threats to the LEPC. For example, conservation measures that limit activities and operations during lekking, nesting, and brooding season will reduce the amount of incidental take that may occur. Similarly, conservation measures that minimize the amount of new surface disturbance that will occur, and minimize new vertical structures will reduce the incidental take associated with civil infrastructure activities. When surface impacts are offset by habitat enhancements, conservation benefits for LEPCs under the CCAA will likely accrue well beyond the duration of the conservation period. This should result in reduced impacts and incidental take of these species. Overall, although impacts and incidental take are expected to occur, impacts are not expected to be great enough to compromise the viability of LEPC populations in the states. Implementation of this CCAA is expected to result in fewer adverse impacts to the LEPC than would have otherwise occurred had this CCAA not been implemented.

Activity	Nature of Impacts/Take	Amount/Extent of Impacts/Take	Conservation Measures
Construction of transmission/distribution lines	Construction of new transmission/distribution lines may result in indirect or direct take <ul style="list-style-type: none"> <li>• Land survey by</li> </ul>	Extent of impact can be estimated based on number and extent of transmission/distr	<ul style="list-style-type: none"> <li>• Avoid non-emergency construction and maintenance activities during</li> </ul>

	<p>small vehicle and foot traffic, and minor vegetation clearing in rights of way may result in temporary flushing and avoidance</p> <ul style="list-style-type: none"> <li>• Vegetation clearing in ROW (hand clearing, mowing, complete removal of vegetation (herbicides, chainsaws, heavy equipment)) may result in temporary flushing and avoidance, and permanent habitat loss</li> <li>• Site preparation (including sediment control, land grading, concrete foundations and direct embedded wooden poles will require heavy equipment and may result in flushing, avoidance, and permanent habitat loss</li> <li>• Installation of electrical equipment, including support structure, conductors and other hardware may result in potential direct take, flushing and avoidance</li> </ul>	<p>istribution lines</p>	<p>lekking, nesting, and brooding season (Mar 1– Jul 15) between the hours of 3:00am and 9:00 am within 1.2 miles of leks</p> <ul style="list-style-type: none"> <li>• Avoid fragmenting large, contiguous tracts of grassland, particularly within designated LEPC focal areas, connectivity zones, or within 1.2 miles of known leks</li> <li>• Focus development on lands already altered and away from areas of intact and healthy native grasslands.</li> <li>• Reduce the number and length of transmission/distribution lines required;</li> <li>• Install raptor deterrents on electrical distribution and transmission poles as indicated by Avian Power Line Interaction Committee (APLIC) Suggested Practices for Raptor Protection on</li> </ul>
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			<p>Power Lines: The State of the Art in 2006.</p> <ul style="list-style-type: none"> <li>• Where possible, utilize mono-pole construction for new electrical transmission lines to minimize visual impacts within the estimated occupied range (EOR) and 10 miles outside of that range</li> <li>• Reclaim a decommissioned site by removing old infrastructure and revegetating area with native grasses, shrubs, and forbs.</li> </ul>
<p>Construction of substations/switching stations</p>	<p>Construction of new substations/switching stations may result in indirect or direct take</p> <ul style="list-style-type: none"> <li>• Land survey by small vehicle and foot traffic, and minor vegetation clearing in rights of way may result in temporary flushing and avoidance</li> <li>• Vegetation clearing in ROW (hand clearing, mowing, complete removal of vegetation (herbicides, chainsaws, heavy equipment)) may result in temporary flushing and avoidance, and permanent habitat loss</li> </ul>	<p>Extent of impact can be estimated based on number and extent of substations/switching stations</p>	<ul style="list-style-type: none"> <li>• Avoid non-emergency construction and maintenance activities during lekking, nesting, and brooding season (Mar 1–Jul 15) between the hours of 3:00am and 9:00 am within 1.2 miles of leks</li> <li>• Avoid fragmenting large, contiguous tracts of grassland, particularly within designated LEPC focal areas, connectivity zones, or within 1.2 miles of</li> </ul>

	<ul style="list-style-type: none"> <li>• Site preparation (including sediment control, land grading, concrete foundations and direct embedded wooden poles will require heavy equipment and may result in flushing, avoidance, and permanent habitat loss</li> <li>• Installation of electrical equipment, including support structure, conductors and other hardware may result in potential direct take, flushing and avoidance</li> </ul>		<p>known leks</p> <ul style="list-style-type: none"> <li>• Focus development on lands already altered and away from areas of intact and healthy native grasslands.</li> <li>• Reduce the number and length of substations/swit ching stations required;</li> <li>• Reclaim a decommissioned site by removing old infrastructure and revegetating area with native grasses, shrubs, and forbs.</li> </ul>
<p>Construction of underground lines</p>	<p>Construction of new underground lines may result in indirect or direct take</p> <ul style="list-style-type: none"> <li>• Land survey by small vehicle and foot traffic, and minor vegetation clearing in rights of way may result in temporary flushing and avoidance</li> <li>• Vegetation clearing in ROW (hand clearing, mowing, complete removal of vegetation (herbicides, chainsaws, heavy equipment)) may result in temporary flushing and avoidance, and permanent habitat loss</li> <li>• Site preparation</li> </ul>	<p>Extent of impact can be estimated based on number and extent of underground lines</p>	<ul style="list-style-type: none"> <li>• Avoid non-emergency construction and maintenance activities during lekking, nesting, and brooding season (Mar 1– Jul 15) between the hours of 3:00am and 9:00 am within 1.2 miles of leks</li> <li>• Avoid fragmenting large, contiguous tracts of grassland, particularly within designated LEPC focal areas, connectivity zones, or within 1.2 miles of known leks</li> </ul>

	<p>(including sediment control, land grading, , trenching, boring and directional drillins will require heavy equipment and may result in flushing, avoidance, and permanent habitat loss</p> <ul style="list-style-type: none"> <li>• Installation of electrical equipment, including support structure, conductors and other hardware may result in potential direct take, flushing and avoidance</li> </ul>		<ul style="list-style-type: none"> <li>• Focus development on lands already altered and away from areas of intact and healthy native grasslands.</li> <li>• Reduce the number and length of buried lines required;</li> <li>• Bury new distribution power lines that are planned within 1.2 miles of leks active within the previous 5 years.</li> <li>• Avoid non-emergency construction and maintenance activities during lekking, nesting, and brooding season (Mar 1– Jul 15) between the hours of 3:00am and 9:00 am within 1.2 miles of leks</li> </ul>
<p>Upgrading of equipment, including adding additional circuits on existing structures, replacing structures and conductors with higher voltage equipment, expanding substations and switching stations.</p>	<p>Upgrading of existing equipment may result in indirect or direct take</p> <ul style="list-style-type: none"> <li>• Vegetation management in ROW (hand clearing, mowing, complete removal of vegetation (herbicides, chainsaws, heavy equipment)) may result in temporary flushing and avoidance, and permanent habitat</li> </ul>	<p>Extent of impact can be estimated based on number and extent of upgrades required</p>	<ul style="list-style-type: none"> <li>• Avoid non-emergency construction and maintenance activities during lekking, nesting, and brooding season (Mar 1– Jul 15) between the hours of 3:00am and 9:00 am within 1.2 miles of leks</li> <li>• Avoid non-emergency construction and</li> </ul>

	<p>loss</p> <ul style="list-style-type: none"> <li>• Site preparation (including sediment control, land grading, concrete foundations and direct embedded wooden poles will require heavy equipment and may result in flushing, avoidance, and permanent habitat loss</li> <li>• Installation of electrical equipment, including support structure, conductors and other hardware may result in potential direct take, flushing and avoidance</li> </ul>		<p>maintenance activities during lekking, nesting, and brooding season (Mar 1–Jul 15) between the hours of 3:00am and 9:00 am within 1.2 miles of leks</p>
<p>Maintenance, including above and below ground conductor replacement, replacement of old transmission/distribution structures/conductor, and insulator replacement</p>	<ul style="list-style-type: none"> <li>• Vegetation management in ROW (hand clearing, mowing, complete removal of vegetation (herbicides, chainsaws, heavy equipment)) may result in temporary flushing and avoidance, and permanent habitat loss</li> <li>• Storm damage repair of transmission and distribution structures/conductors, and substations/switching station, and underground repair will include vegetation clearing and excavation and</li> </ul>	<p>Extent of impact can be estimated based on number and extent and estimated frequency of required maintenance</p>	<ul style="list-style-type: none"> <li>• Avoid non-emergency construction and maintenance activities during lekking, nesting, and brooding season (Mar 1–Jul 15) between the hours of 3:00am and 9:00 am within 1.2 miles of leks</li> <li>• Avoid non-emergency construction and maintenance activities during lekking, nesting, and brooding season (Mar 1–Jul 15) between the hours of 3:00am and 9:00 am within 1.2 miles of leks</li> </ul>

	<p>may result in temporary flushing and avoidance</p>		
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The estimated anticipated level of incidental take associated with this CCAA is directly related to the number of Participants. Accurately estimating the total number of Participants is not possible at this time. However, the maximum number of transmission/distribution lines and associated infrastructure that may occur throughout the estimated occupied range over the lifetime of the CCAA may be projected. This projection reflects the maximum amount of incidental take of LEPC that could occur from electrical transmission activities if LEPC and occupied LEPC habitat existed everywhere within the estimated occupied range; however, because LEPC and occupied LEPC habitat do not exist throughout all estimated occupied range, any resulting incidental take will then be less than this estimate. Furthermore, the conservation measures will avoid and minimize the amount of incidental take that will occur

NO REQUIREMENT IS MADE IN THIS CCAA FOR PARTICIPANTS TO NOTIFY WAFWA, ADMINISTRATORS OR FWS PRIOR TO ANY EXPECTED INCIDENTAL TAKE OF LEPCS. FOR PURPOSES OF THIS CCAA, THE FWS DOES NOT BELIEVE THAT SUCH A NOTIFICATION REQUIREMENT IS PRACTICABLE OR APPROPRIATE.

**XXXI. MONITORING AND REPORTING**

Permit Holder will be responsible for annual monitoring and reporting related to the CCAA. To the extent consistent with applicable state law, information in annual reports will include, but is not limited to:

- m) Participants enrolled under the CCAA over the past year, including copies of the completed CI, excluding Exhibit A;
- n) A summary of habitat management and habitat conditions in the covered area and on all enrolled property over the past year with any identifying information related to Participants removed;
- o) Effectiveness of habitat management activities implemented in previous years at meeting the intended conservation benefits;
- p) Population surveys and studies conducted over the past year with any identifying information related to Participants removed;
- q) Any mortality or injury that are observed of the species over the previous year; and
- r) A discussion on the funds used for habitat conservation on private/state lands in the states.

**XXI. CONFIDENTIALITY**



The Parties recognize that fee leasehold and mineral ownership information is confidential and sensitive information held by a Participant. In addition to any obligations imposed by state law on WAFWA not to disclose confidential information, WAFWA will not disclose the following information to FWS or any other individual or entity except the Participant that provided the information:

- i) Exhibit A of the CI;
- j) Any maps depicting lands enrolled by an individual Participant that specifically identify that Participant;
- k) Identifying information about an individual Participant's acreage position; or
- l) The location of any individual Participant's enrolled property that references the Participant individually.

The Parties understand that the FWS generally does not require this information to enforce the Permit and monitor compliance. If the FWS and Permit Holder determine that disclosure of this information to the FWS is necessary for the FWS to enforce the Permit and/or monitor compliance, WAFWA will contact the Participant to determine whether and how this information can be disclosed to FWS in a form that best protects the Participant's interest. WAFWA may only disclose this information to the FWS with the Participant's written consent. Any information provided to WAFWA or FWS in order to fulfill the Participant's obligations in this CCAA and associated CI is presumed to be confidential information that is exempt from public disclosure under state or federal Freedom of Information Act or sunshine laws, as applicable.

Reports will be due March 30 of each year to the FWS and any Participant.

## XXII. ADAPTIVE MANAGEMENT

This CCAA is based on adaptive management principals. The FWS and WAFWA agree and recognize that implementation of the conservation measures herein must be consistent with the concepts and principals of adaptive management. The effectiveness of the conservation measures, monitoring methods, and new technologies will be reviewed by WAFWA and Participants periodically over the life of the CCAA. Upon such evaluation, appropriate modifications to the conservation strategy may be incorporated to further enhance the goals of this CCAA. Additionally, research projects that are designed to determine the effectiveness of management practices will be encouraged and utilized to determine what adaptive management is necessary.

Using adaptive management principals, Participants can agree to add or make necessary modifications to existing conservation measures currently found in this CCAA and CI based on peer-reviewed science. New conservation measures can be implemented through future CIs if WAFWA and FWS find such measures to be necessary to facilitate the continued conservation of the

LEPC. Any adaptive management modifications may only be applied to existing CIs upon the written consent of the Participants through the amendment procedures described in the CI.

**XXXII. SIGNATURES**

IN WITNESS WHEREOF, THE PARTIES HERETO have, as of the last signature below, executed this CCAA to be in effect as of the date of the last signature.

\_\_\_\_\_ Date: \_\_\_\_\_

Director

Western Association of Fish and Wildlife Agencies

\_\_\_\_\_ Date: \_\_\_\_\_

Regional Director

U.S. Fish and Wildlife Service

\_\_\_\_\_

## Appendix A

## CERTIFICATE OF INCLUSION

in the

## Range-wide Civil Infrastructure

## Candidate Conservation Agreement with Assurances for the

Lesser Prairie-Chicken (*Tympanuchus pallidicinctus*)

## CI Tracking Number DOI-FWS-2-2012-XXXX-YYYY

This certifies that the owner of the property described herein ("Participant") is included within the scope of the above-named Candidate Conservation Agreement (CCA) for the lesser prairie-chicken (LEPC) under the authority of Section 10(a)(1)(A) of the Endangered Species Act of 1973, as amended (ESA), 16 U.S.C. 1531-1544. A property owner, as defined by 50 CFR §17.3, is a person with a fee simple, leasehold, or property interest (including owners of water or other natural resources), or any other entity that may have a property interest, sufficient to carry out the proposed management activities, subject to applicable State law, on non-Federal land.

The goal of the U.S. Fish and Wildlife Service (FWS), the Western Association of Fish and Wildlife Agencies and/or its designee ("Permit Holder" or "WAFWA"), and the Participant is to reduce and/or eliminate threats to the LEPC. By agreeing to conduct the conservation measures described herein, the FWS will provide Participants with regulatory certainty (assurances) concerning land use restrictions that might otherwise apply should the LEPC become listed as a threatened or endangered species under the ESA.

This Certificate of Inclusion (CI) is a voluntary agreement between the FWS, the Permit Holder, and the Participant. Through this CI, the Participant voluntarily commits to implement or fund specific conservation actions that will reduce and/or eliminate threats to the LEPC. By signing below, the Participant acknowledges that they have read and understand the CCA and this CI. They further acknowledge that this CCA may not be sufficient to prevent the listing of the LEPC.

Participant's Name: \_\_\_\_\_

Address: \_\_\_\_\_

The following Conservation Measures are to be accomplished as described below on the enrolled property in CHAT 1-4 identified on Exhibit A:

**a. Pre-project planning**

- i. Utilize the Southern Great Plains CHAT (<http://kars.ku.edu/geodata/maps/sgpchat/>) for initial LEPC-related project siting review along with impact area maps, ecological site maps, land cover maps, and aggregated CRP maps provided in the CHAT. We also recommend that developer examine the WGA west-wide CHAT and State Fish and Wildlife agencies for information related to other state or federal threatened, endangered, or candidate species and species of greatest conservation need.
- ii. Once a set of potential project sites are identified, developers shall consult with cooperating State Fish and Wildlife Agency staff to assess the potential impacts to LEPC habitat associated with each site. These agencies have access to additional data sources beyond those available in the CHAT, including lek data, and will assist in make recommendations to reduce potential impacts to LEPCs and their habitat and to reduce potential mitigation costs.
- iii. If surveys of proposed project sites have not been conducted within the previous 5 years, and the project sites are within a focal areas, connectivity zones, or within areas identified as high probability lek habitat based on the CHAT (categories 1-3), the developer has the option of conducting surveys themselves according to WAFWA protocols, allowing state or WAFWA affiliated personnel to conduct surveys of the site prior to project initiation, or considering the sites as occupied with active leks.

**b. Avoidance**

- i. Use available options to avoid focal areas, connectivity zones, or within 1 1/4 mi of known leks that have been active at least once within the previous 5 years, as well as tracts of native grass and shrublands (see CHAT and State Fish and Wildlife Agency staff for more information). If these areas cannot be avoided, Participants shall minimize and mitigate the impacts of development as described in beneath the headings "Minimization" and "Mitigation." Participants shall focus development on lands already impacted, altered or cultivated (such as row-crop agriculture, developed oilfields, or existing power line impact buffers), and away from areas of intact and healthy native grass or shrublands. Similarly, Participants shall select fragmented or degraded habitats over unfragmented areas, and select sites with lower LEPC habitat potential over sites with greater habitat potential.
- ii. Participants shall avoid locating roads, fences, power lines, and other infrastructure within focal areas, connectivity zones, or in other areas identified as high probability lek and nest habitat by the CHAT categories 1-3. If these areas cannot be avoided, Participants shall minimize and mitigate the impacts of development as described in beneath the headings "Minimization" and "Mitigation."
- iii. Participants shall utilize existing corridors or infrastructure when siting new distribution power lines. When Participants cannot utilize existing corridors or infrastructure, Participants shall bury distribution power lines if within 1 1/4 mi of leks active within the previous five years. If new distribution power lines are constructed outside of existing corridors and within 1 1/4 mi of leks active within the previous five years but are not buried, Participants shall minimize and mitigate the impacts of development as described in beneath the headings "Minimization" and "Mitigation."
- iv. During lekking, nesting, and brooding season (Mar 1–Jul 15), construction and maintenance activities shall not be conducted between the hours of 3:00 am and 9:00 am within 1 1/4 mi of leks recorded active within the previous five years if such activities require a human presence. Emergency operations, construction and maintenance activities that are direct human or environmental safety concerns or that relate directly to operational continuity are allowed.

Participants shall record the dates, duration and purpose of any emergency operations, construction and maintenance activities during the breeding season within 1 ¼ miles of leks and shall provide that documentation with its annual reporting.

**c. Minimization**

- i. If roads, fences, power lines, and other infrastructure cannot be located to avoid focal areas, connectivity zones, or other areas identified as high probability lek and nest habitat by the CHAT categories 1-3, Participants shall use existing corridors for multiple types of infrastructure. If Participants cannot use existing corridors for such infrastructure, Participants shall mitigate the impacts of new habitat disturbance as described in beneath the heading "Mitigation."
- ii. Participants shall site projects to minimize new habitat disturbance by increasing the amount of overlap between existing fragmentation and associated impact buffers. If projects cannot be sited to minimize new habitat disturbance, Participants shall mitigate the impacts of new habitat disturbance as described in beneath the heading "Mitigation."
- iii. Participants may use herbicide treatment on areas on impacted areas but shall limit such use to the impact area. Within CHAT categories 1-3, these treatments shall not be applied during the lekking, nesting and brooding season (March 1-July 15) except for the spot treatment of noxious weeds. Where practical and applicable, Participants shall utilize an herbicide that is targeted for specific use and spot treatments as opposed to a broadband herbicide and broadcast treatments. Apply in conditions that minimize drift.
- iv. Install appropriate fence markings along new fences under the control of the participant within one quarter (1/4) mile of a lek that has been recorded as active within the previous 5 years.
- v. Participants shall minimize their traffic volume, control their vehicle speed, control access, and minimize their off-road travel within focal areas and areas identified as high probability lek and nest habitat by the CHAT categories 1-3.
- vi. Within 1 ¼ mi of leks, install raptor deterrents on new electrical distribution and transmission poles that are under the control of the Participant as indicated by Avian Power Line Interaction Committee (APLIC) Suggested Practices for Raptor Protection on Power Lines: The State of the Art in 2006, as amended.
- vii. Provide escape ramps, rafts or ladders, depending on configuration, in new exposed, manmade water containment sources that are under control of the Participant.
- viii. As described in Section XVII, below, the effectiveness of these conservation measures will be reviewed by WAFWA and Participants periodically over the life of the CCAA. However, new conservation measures may only be implemented through future CIs if WAFWA and FWS find such measures to be necessary to facilitate the continued conservation of the LEPC. Conservation measures agreed upon in existing CIs may only be modified through the written consent of the Participants through the amendment procedures described in the CI.

**d. Mitigation**

- i. For impacts that cannot be avoided or minimized, Participants shall adhere to the provisions in the Certificate of Inclusion that describe the amount of fees necessary to mitigate such impacts.
- ii. Mitigation may include reclaiming or remediating inactive or abandoned facilities and infrastructure under the control of the Participant in compliance with applicable state rules and regulations. This in-lieu remediation of facilities will be subject to the metrics system outlined in Appendix B of the Range-wide Plan. Remediation proposals shall be submitted to

WAFWA for review and approval and those proposals must demonstrate that they support the population and habitat goals of the range-wide plan with respect to habitat focal areas and connectivity zones.

As described in Section XVII, below, the effectiveness of these conservation measures will be reviewed by WAFWA and Participants periodically over the life of the CCAA. However, new conservation measures may only be implemented through future CIs if WAFWA and FWS find such measures to be necessary to facilitate the continued conservation of the LEPC. Conservation measures agreed upon in existing CIs may only be modified through the written consent of the Participants through the amendment procedures described in the CI.

**XXVI. ENROLLED PROPERTY.**

Participant will provide a list of properties (leases or portions of leases) including detailed legal description, acreage, and state lease number (as applicable) to be enrolled in this CI (see Exhibit A).

Enrollment of property does not guarantee approval of an application to conduct civil infrastructure development and operations on the enrolled property and still requires approval by the appropriate regulatory agency. The Participant is responsible for ensuring that all provisions of this CI are implemented by its agents and/or sub-contractors, and other interest holders under its control on all property enrolled under this CI.

**XXVII. SUSPENSION FOR NONPAYMENT.**

The Participant hereby agrees that the Permit Holder, in coordination with the FWS, can suspend the CI on the enrolled property identified in Exhibit A until the Habitat Conservation Fee associated with that CI is paid.

**XXVIII. HABITAT CONSERVATION FEES AND PAYMENTS.**

The Participant will pre-pay funds for the restoration, reclamation, and protection of suitable LEPC habitat over a minimum three-year period that begins with the execution of this CI and will continue until the CI is terminated as provided herein. The funds will be used to pay Habitat Conservation Fees, which are fees based on the amount of area disturbed by civil infrastructure operations. The Participant will remit funds to the Permit Holder. The Permit Holder will maintain the funds in a Habitat Conservation Fund Account specific to this CI. The purpose of the Habitat Conservation Fund Account is to meet the Participant's obligations under the CCAA.

The Participant will make annual pre-payments for the first three years only, and the first prepayment will be made into the Habitat Conservation Fund Account at the date of execution of this CI. The second and third payments will be made on the first and second anniversary of the execution date of this CI. For each of the three years, the annual prepayment will be calculated at \$2 [**Note: enrollment fee may require adjustment**] per gross acre for all property enrolled in this CI and will be deposited each year into each Participant's habitat conservation fund account. The Participant agrees to make pre-payments for the first three years so that fees can be immediately used to implement conservation activities to benefit the LEPC before surface disturbing activities are proposed.

The Participant may, at their sole option, pay more than the required amount into their Habitat Conservation Fund Account during any prepayment period but never less than the required amount as described herein.

Prepayment of any new property added by addendum to this CI will be calculated at \$[X] per linear mile of existing roads and power lines and be due at the time the property is added to the CI. The total property enrolled in this CI, and the resulting annual prepayment, will be recalculated on the remaining anniversary dates of the 3 year cycle. No annual prepayment (\$x per linear mile) will be required after the initial 3 year period, but the Participant will pay Habitat Conservation Fees in accordance with Exhibit B as surface disturbing activities are proposed. The Permit Holder will use Habitat Conservation Fees to implement conservation activities to benefit the LEPC.

After this CI is executed, the Permit Holder will calculate the applicable Habitat Conservation Fee associated with any new surface disturbance using the methodology shown on Exhibit B. The obligation to pay Habitat Conservation Fees will be satisfied by the prepaid funds in a Participant's habitat conservation fund until such prepaid funds are exhausted. Prepaid funds that are not used in a calendar year will be available to satisfy the obligation to pay Habitat Conservation Fees in subsequent calendar years; however, the Participant must continue to make annual prepayments for the first three years as described above even if all prepaid funds are not used in the previous calendar year. The Habitat Conservation Fees may be adjusted as described in Exhibit B. The Permit Holder will provide written notice of any adjustments to Habitat Conservation Fees to the Participant.

The Participant will notify the Permit Holder of new surface disturbing activities in accordance with Exhibit B. The Permit Holder will deduct the resulting Habitat Conservation Fee from the Participant's Habitat Conservation Fund Account balance within 10 working days after receiving notification from the Participant. If the Participant's remaining Habitat Conservation Fund Account balance is less than the resulting Habitat Conservation Fee, the Participant will pay the remainder of the Habitat Conservation Fee. When the Permit Holder deducts fees from the Participant's account, they will notify the Participant within 30 days detailing the:

- Amount of the Habitat Conservation Fee associated with the application,
- Remaining Habitat Conservation Fund Account balance, and
- Payment due, if any.

The Participant's obligation to make payments as described above shall be suspended if any administrative or judicial challenge prevents the implementation of this CI.

#### **XXIX. HABITAT CONSERVATION ACCOUNT FUNDS.**

The Participant is responsible for providing permit approval information to the Permit Holder in accordance with Exhibit B. Habitat Conservation Fees generated from any activity on any enrolled property, and for activities occurring on non-enrolled property that are needed to develop the enrolled property (i.e., pipelines, roads, and seismic activities), will be debited from funds paid into the Habitat Conservation Fund Account under this CI within 10 working days after receiving project approval.



**XXX. LAND TRANSFERS AND ADDITIONS.****Transfers**

This CI shall be binding on and shall inure to the benefit of the Parties to the CI and their successors and transferees (i.e., new owners). The rights and obligations under this CI shall run with the enrolled property and are transferable to subsequent non-Federal property owners. The enhancement of survival permit issued to the Permit Holder shall extend to the new owner(s). As a party to the original CCAA and permit, the new owner(s) shall have the same rights and obligations with respect to the enrolled property as the original owner. The new owner(s) also shall have the option of receiving CCAA assurances by signing a new CI and receiving a new permit. The Permit Holder shall notify the FWS of any transfer of the enrolled property, so that the FWS can attempt to contact the new property owner, explain the baseline responsibilities applicable to the property, and seek to interest the new property owner in signing the existing CI or a new one to benefit listed species on the property.

Ownership interest in the enrolled property can be transferred before or after a decision to list the species occurs. Notification of the transfer of any enrolled property shall be transmitted to the Permit Holder for approval within 30 days after the closing of such transfer. The notification shall include the detailed legal description(s), acreage of the enrolled property involved, and state lease numbers (as applicable).

After a listing decision, an interested party may become a Participant if it acquires a property interest in the enrolled property and wishes to continue enrollment of the property. The new property owner must sign a new CI (if the new property owner is not a Participant) or an amended CI (if the new property owner is an existing Participant) within 30 days after notice is provided to the Permit Holder and prior to conducting any new operation, maintenance, or disturbance on the transferred enrolled property. Upon becoming a Participant, conservation measures, all terms and conditions of the CCAA and CI, and the payment schedule shall be assumed by the receiving Participant.

Any funds that were prepaid into the Habitat Conservation Fund Account prior to the transfer of enrolled lands will not be refunded. Upon mutual agreement of the transferor and new property owner, the Permit Holder will transfer funds that were prepaid into the transferor's Habitat Conservation Fund Account into the new property owner's Habitat Conservation Fund Account for the new property owner's use if the new property owner is or becomes a Participant. The transferor and new property owner will identify to the Permit Holder the amount of funds to be transferred. Subsequent prepayments for the transferred enrolled lands will be the responsibility of the new property owner.

**Additions**

The Participant may amend this CI to add property at any time before or after the LEPC is listed. This right to add newly acquired lands to this CI exists without regard to the method of acquiring the property (whether by merger, purchase, etc.). Fees for property added within the prepayment period will be assessed according to the schedule described in Section IV and Exhibit B.

**XXXI. TERMINATION.**

The Participant agrees that it shall not terminate this CI until after the third prepayment period ends (unless the enrolled property is transferred prior to the end of the three-year period). Any time after the third prepayment period ends, the Participant may terminate any or all of the enrolled property in this CI by giving thirty (30) days written notice to the Permit Holder and FWS as to any or all of the enrolled property. Operations on the terminated property for which the Participant has not paid the Habitat Conservation Fee at the time of termination may proceed as if the CI did not exist. Any funds remaining in Participant's Habitat Conservation Fund Account at the time of termination, voluntary or for cause, will be donated to the Permit Holder for conservation efforts to support the LEPC, and will not be refunded.

FWS may terminate the CI for a Participant's failure to pay the Habitat Conservation Fee (including failing to prepay amounts into the Habitat Conservation Fund Account during the first three years) or for the Participant's failure to implement the conservation measures documented in this CI. However, the Permit Holder shall first provide notice of any deficiency to the Participant and give them the opportunity to cure. If the deficiency is not corrected, or due diligence is not being shown to correct the deficiency within sixty (60) days of the receipt of the letter, the property involved will be terminated from this CI.

**XXXII. NO WAIVER.**

The Participant, by entering into this CI, does not concede its agreement with, or endorsement of, all underlying studies and conclusions in the CCAA. Further, the Participant does not waive any legal rights or remedies that may exist outside of this CI. The Participant is also not responsible for work being accomplished by the FWS or the Permit Holder using contributed funds.

**XXXIII. RELEASE.**

If at any time any administrative or legal challenge prevents the implementation of this Certificate of Inclusion, the Participant agrees to release the signatory parties of the CCAA and CI from any legal claims related to this CI and CCAA. All funds remaining in the Habitat Conservation Fund Account will be retained by the Permit Holder and be used for conservation of the covered species.

**AMENDMENT.**

As described in Section XVII of the CCAA, the effectiveness of the conservation measures in the CCAA will be reviewed by the Permit Holder and Participants periodically over the life of the CCAA. However, conservation measures agreed upon in this CI may only be modified through the written consent of the Participants through the amendment procedures described below.

This CI, except for Exhibit A, may be amended with the written consent of each of the parties hereto. The parties agree to process requests for amendments in a timely manner. This CI will only be amended upon written agreement of all parties. This CI may be amended to accommodate changed circumstances in accordance with all applicable legal requirements, including but not limited to the Endangered Species Act, the National Environmental Policy Act, and the Service's permit regulations

at 50 CFR 13 and 50 CFR 17. The party proposing the amendment shall provide a statement describing the proposed amendment and the reasons for it.

Exhibit A may be revised by the Participant and submitted to the Permit Holder to reflect additions to, transfers of, or terminations of the enrolled property that are consistent with the applicable terms of this CI. The Permit Holder may accept revisions to Exhibit A without written consent of the parties to this CI so long as changes in the enrolled property are consistent with the terms of this CI.

**XXXIV. MULTIPLE ORIGINALS.**

This CI may be executed in any number of multiple originals. A complete original of this CI shall be maintained in the records of each of the Parties hereto.

**XXXV. REPORTING REQUIREMENTS.**

By March 31 of each year the CI is in effect, the Participant will provide the Permit Holder with an end of year report that summarizes activities that have occurred on their enrolled property (Exhibit A) in the previous calendar year. The reports should detail the activities undertaken on the enrolled property. The report provided by the Participant will aid the Permit Holder in meeting its annual reporting requirements under the CCAA and its accompanying permit. For purposes of compliance monitoring of conservation commitment, the Permit Holder or Administrator may access the enrolled property with at least one week prior notification to the Participant (see CCAA, Section X.1.c).

**XXXVI. CONFIDENTIALITY.**

The Parties to this CI recognize that fee leasehold and mineral ownership information is confidential and sensitive information held by a Participant. In addition to any obligations imposed by state law on the Permit Holder not to disclose confidential information, the Permit Holder will not disclose the information identified in Section XVI of the CCAA.

**XXXVII. NOTICE.**

Any notice permitted or required by this CI shall be transmitted within any time limits described in this CI to the persons set forth below or shall be deemed given five (5) days after deposit in the United States mail, certified and postage prepaid, return receipt requested, and addressed as follows or at such other address as any party may from time to time specify to the other parties in writing:

**Participant:**

Contact Name \_\_\_\_\_

Title \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

Telephone: \_\_\_\_\_

Fax: \_\_\_\_\_

E-Mail: \_\_\_\_\_

**WAFWA/Permit Holder Representative:**

Contact Name \_\_\_\_\_

Title \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_

Telephone: \_\_\_\_\_

Fax: \_\_\_\_\_

E-Mail: \_\_\_\_\_

**US Fish and Wildlife Representative:**

Contact Name \_\_\_\_\_

Title \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_

Telephone: \_\_\_\_\_

Fax: \_\_\_\_\_

E-Mail: \_\_\_\_\_

\_\_\_\_\_

**XXXVIII. SIGNATURES**

IN WITNESS WHEREOF THE PARTIES HERETO have executed this Certificate of Inclusion to be in effect on the date of the Participant's signature, unless the FWS fails to execute this Certificate of Inclusion, in which case it shall not take effect.

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Participant and Affiliation

Date\_\_\_\_\_

---

WAFWA/Permit Holder Representative

Date\_\_\_\_\_

---

FWS Authorized Officer

Date\_\_\_\_\_

EXHIBIT A

Property Description for Enrolled Property

*[To be developed with civil infrastructure involvement]*

**EXHIBIT B****Habitat Conservation Fees**

The Habitat Conservation Fee for new surface disturbance associated with civil infrastructure development activities will be calculated using the following fee structure. These Habitat Conservation Fees will apply to civil infrastructure activities conducted on the enrolled property s, as well as those civil infrastructure activities conducted off enrolled property that are associated with activities on the enrolled property (such as power lines and road construction). The structure shall also apply to third parties doing work for the Participant, regardless of who constructs or operates the associated facilities. The Participant must notify the Permit Holder before it or its third-party subcontractors conduct any surface disturbing activities associated with this CI that are subject to Habitat Conservation Fees. Within 30 working days of receiving approval documents for surface disturbing activity from a regulatory agency with jurisdiction, if any, the Participant will provide the Permit Holder with copies of such documents.

The Habitat Conservation Fee is based both on the conservation strategy for the LEPC set forth in the Range-wide Conservation Plan for the LEPC (“Range-wide Plan”). The Range-wide Plan identifies numerous “focal areas” for the LEPC, which the Range-wide Plan defines as the areas of greatest importance to the LEPC and where habitat enhancement, maintenance, and protection should be focused. The Range-wide Plan also calls for the establishment of “connectivity zones” to allow linkage among focal areas.

Fees for new impacts are a function of three factors:

4. The crucial habitat index (CHI) for the LEPC as defined by the Southern Great Plains Crucial Habitat Assessment Tool (CHAT)
5. The site condition score as defined by the Habitat Impact Assessment Guide (HIAG)
6. The impacted acreage based on the impact buffers defined within the Range-wide Plan

The CHAT tool was developed to model crucial habitat for the LEPC throughout its historical range and to be available online to identify priority habitat for the conservation of the LEPC. This was accomplished by using spatial models to analyze multiple data sets (some of which include LEPC lek locations, land cover, topography, roads, transmission lines, civil infrastructure development) which ultimately resulted in a crucial habitat data layer for the LEPC. This data layer classifies habitat within the estimated occupied range of the LEPC plus a 10 mile buffer (EOR+10) using a CHI which places areas into one of the four following categories based on the locations value to the LEPC.

- CHI 1 = Habitat Focal Areas
- CHI 2 = Connectivity Zones
- CHI 3 = Predicted LEPC Habitat within the EOR+10
- CHI 4 = Other within the EOR+10



For further information on the CHAT and further definitions of the four different CHI visit [http://kars.ku.edu/media/uploads/maps/sgpchat/SGPCHAT\\_Summary.pdf](http://kars.ku.edu/media/uploads/maps/sgpchat/SGPCHAT_Summary.pdf). To view the CHAT visit <http://kars.ku.edu/maps/sgpchat/>.

The HIAG is a rapid assessment method to assess site condition or LEPC habitat quality (0 to 1) based on four variables:

5. Vegetation Cover- Non-overlapping canopy cover of herbaceous plants and woody shrubs within evaluation unit
6. Vegetation Quality – Non-overlapping canopy cover of preferred native grasses and shrubs within the evaluation unit. These include little bluestem, sideoats grama, big bluestem, indianguass, sand bluestem, switchgrass, sand sagebrush, and sand shinnery oak.
7. Presence of Tall Woody Plants- Greater than 3 feet in height
8. Availability of Desired Plant Cover - Proportion of area consisting of native prairie and planted grass stands with <1% canopy cover of trees >3 ft. in height estimated within a one mile radius of the center of the evaluation unit.

Impacted acreage is calculated based a buffer of new impacts minus the acreage of pre-existing impacts. If new impact buffers can be located entirely within any pre-existing impact buffers, there will be no cost assessed for those new impacts. The impact buffer distances are described in Appendix B of the Range-wide Plan, Table B2 on page 117.

Impact units are calculated as:

$$\text{Impact units} = \text{impact acreage} \times \text{site quality} \times \text{offset ratio} \times \text{duration}.$$

Where:

*Offset ratio = 2, resulting in two acres of conservation for every acre of new impact, and*

*Duration = 20 years*

The cost for a given impact is assessed as:

$$\text{Impact cost} = \text{impact units} \times \text{lifetime unit cost}.$$

Where:

*The lifetime unit cost is based on practice costs defined annually by the Natural Resources Conservation Service (NRCS) for habitat maintenance and restoration costs for practices identified in the NRCS LEPC Conference Report.*

All impacts are assessed based on 20 year duration. This duration provides sufficient resources to fund an endowment managed by WAFWA that will provide for in-perpetuity conservation. In the event that impacts paid for are remediated to pre-impact or better conditions based on the HIAG site condition score, funds originally paid for that impact may be applied to new impact costs elsewhere. This remediation must be documented based on a re-evaluation of the HIAG for that site by WAFWA, who will maintain site-specific information for all impacts.

**8) Fees for new secondary road locations in previously unimpacted acreage<sup>1</sup>**

<u>Habitat Area</u>	<u>Conservation Fee Range<sup>2</sup></u>
CHI 1	\$0 to \$199,277.21 per mile
CHI 2	\$0 to \$159,421.77 per mile
CHI 3	\$0 to \$132,851.47 per mile
CHI 4	\$0 to \$99,638.60 per mile

<sup>1</sup> Based on an impact buffer of the center line of the road. If the site is located within buffers of pre-existing impacts, costs are reduced according to the percent of overlap of impact buffers.

<sup>2</sup> Cost range represents the habitat quality gradient as defined by the HIAG from a cropland site with no rangeland or CRP within a 1 mile radius up to the highest quality.

**9) Fees for new primary road locations in previously unimpacted acreage<sup>2</sup>**

<u>Habitat Area</u>	<u>Conservation Fee Range<sup>3</sup></u>
CHI 1	\$0 to \$1,506,164.93 per mile
CHI 2	\$0 to \$1,204,931.95 per mile
CHI 3	\$0 to \$1,004,109.95 per mile
CHI 4	\$0 to \$753,082.47 per mile

<sup>2</sup> Based on an impact buffer of the center line of the road. If the site is located within buffers of pre-existing impacts, costs are reduced according to the percent of overlap of impact buffers.

<sup>3</sup> Cost range represents the habitat quality gradient as defined by the HIAG from a cropland site with no rangeland or CRP within a 1 mile radius up to the highest quality.

**10) Fees for commercial buildings in previously unimpacted acreage<sup>4</sup>**

<u>Habitat Area</u>	<u>Conservation Fee Range<sup>5</sup></u>
CHI 1	\$0 to \$1,292,471.34 per location
CHI 2	\$0 to \$1,033,977.07 per location
CHI 3	\$0 to \$861,647.56 per location
CHI 4	\$0 to \$646,235.67 per location

<sup>4</sup> Based on an impact buffer of the centroid of a 10 acre or smaller footprint. Larger sites will be assessed based on an impact buffer of the site. If the site is located within buffers of pre-existing impacts, costs are reduced according to the percent of overlap of impact buffers.

<sup>5</sup> Cost range represents the habitat quality gradient as defined by the HIAG from a cropland site with no rangeland or CRP within a 1 mile radius up to the highest quality.

**11) Fees for new distribution power line construction for previously unimpacted acreage<sup>6</sup>**

<u>Habitat Area</u>	<u>Conservation Fee<sup>7</sup></u>
CHI 1	\$0 to \$30,586.73 per mile
CHI 2	\$0 to \$24,469.39 per mile
CHI 3	\$0 to \$20,391.16 per mile
CHI 4	\$0 to \$15,293.37 per mile

<sup>6</sup> Based on the impact buffer of the centerline. If that right of way overlaps prior impact buffers, costs are reduced by the percent of overlap.

<sup>7</sup> Cost range represents the habitat quality gradient as defined by the HIAG from a cropland site with no rangeland or CRP within a 1 mile radius up to the highest quality.

**12) Fees for new transmission line (>69kV) construction for previously unimpacted acreage<sup>8</sup>**

<u>Habitat Area</u>	<u>Conservation Fee<sup>9</sup></u>
CHI 1	\$0 to \$1,204,931.95 per mile
CHI 2	\$0 to \$963,945.56 per mile
CHI 3	\$0 to \$803,287.96 per mile
CHI 4	\$0 to \$602,456.97 per mile

<sup>8</sup> Based on the impact buffer of the centerline. If that right of way overlaps prior impact buffers, costs are reduced by the percent of overlap.

- <sup>9</sup> Cost range represents the habitat quality gradient as defined by the HIAG from a cropland site with no rangeland or CRP within a 1 mile radius up to the highest quality.

Construction of roads and power lines on the enrolled property may also disturb the surface of other property not enrolled in the CI. The Habitat Conservation Fee calculated for new road construction includes disturbances occurring on both enrolled and non-enrolled property.

Commercial facility acreage and road length will be calculated based on information received and/or on-the-ground observation. Should the Participant disagree with the estimate of the area disturbed, they have the right to challenge the estimate and provide supporting data. The Permit Holder will have the responsibility for the final determination of the area disturbed.

Habitat Conservation Fees will not be charged for any buried infrastructure.

#### **Adjustment of Fees**

The Habitat Conservation Fees described in this Exhibit may be adjusted annually to reflect inflation based on NRCS practice costs, which are calculated based on the average cost for a given habitat management practice paid by landowners during the previous year.

If at any time while this plan remains in effect the Habitat Conservation Fees become inadequate, the Participant and the Permit Holder will confer to identify potential adjustments to be made to the Habitat Conservation Fees.