United States Department of the Interior

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Dear Chief White:

This document transmits the Fish and Wildlife Service's (Service) Conference Report (Report) for the Natural Resources Conservation Service's (NRCS) Lesser Prairie-Chicken Initiative (LPCI) and associated procedures, conservation practices, and conservation measures. Our review is based on information provided by NRCS and is conducted in accordance with section 7 of the Endangered Species Act of 1973, as amended (ESA).

INTRODUCTION

The focus of this Report is the lesser prairie-chicken (*Tympanuchus pallidicinctus*), which is a candidate species under the ESA. The lesser prairie-chicken (LPC) is a species of prairie grouse that occupies a five-state range encompassing portions of Texas, New Mexico, Oklahoma, Kansas and Colorado. LPC populations need large tracts of relatively intact native grasslands and prairies to thrive. Significant threats to the LPC include habitat loss, modification, degradation, and fragmentation within its range. The vast majority (approximately 95 %) of LPC habitat occurs on privately owned and operated lands across the five-state range. Therefore, the voluntary actions of private landowners are the key to maintaining, enhancing, restoring and reconnecting habitat for the species.

Use of the conference procedures is only required when a Federal agency proposes an activity that is likely to jeopardize the continued existence of a species that has been proposed for listing under the ESA or the proposed activity is likely to destroy or adversely modify proposed critical habitat (see 50 CFR 402.10). However, as in this situation, the conference procedures may also be used to assist a Federal agency in planning a proposed action "... to conserve candidate species since these species by definition may warrant future protection under the Act." (see Consultation Handbook, section 6.2). The conference process is designed to assist the Federal agency in identifying and resolving potential conflicts at an early stage in the planning process. During the conference, the U.S. Fish & Wildlife Service (Service) may provide advisory recommendations on ways to minimize or avoid adverse effects. The conclusions reached during a conference and any recommendations are to be documented by the Service and provided to the action agency in a document whose style and magnitude is expected to vary based on the complexity of the conference (50 CFR 402.10(e)).

Chapter 6 of the Service's Consultation Handbook recommends the preparation of a "Conference Report" when a proposed Federal action may affect a proposed or candidate species but the action is not likely to jeopardize the continued existence of a proposed or candidate species. This Report contains the Service's analysis of the expected adverse, benign, and beneficial effects likely to result from implementation of LPCI within the Action Area (see Map 1).

This Report evaluates the collective effects of implementing all aspects of the LPCI and related planning processes on the LPC and its habitats. Overall effective implementation of the NRCS conservation practices and their associated conservation measures described in this Report are anticipated to result in a positive population response by the species by reducing or eliminating potential adverse effects. However, implementing the conservation practice standards and associated conservation measures may also result in short-term adverse effects to individual birds in order to secure long-term benefits to the species as a whole.

This Conference Report provides certainty to cooperators who voluntarily implement the NRCS-sponsored conservation practices and conservation measures covered in this Report that those actions will be in compliance with the ESA while the LPC is a candidate species (Appendix I). A Conference Opinion will be prepared, based on any additional information that may further refine the conservation practices and conservation measures, and will provide coverage for incidental take for landowners who implement these practices and measures should the LPC be listed as a threatened or endangered species. This Conference Report does not provide regulatory assurances such as those associated with Candidate Conservation Agreements with Assurances.

NRCS and the Service will use this Report as a foundation for continuing collaborative conservation efforts to address the declining status and habitat needs of the LPC. The agencies will develop a conference opinion that will be initiated in Fiscal Year 2012.

Background on the LPCI

The LPCI is a conservation initiative based upon a targeted conservation systems approach to implement specific conservation practices to manage and enhance the LPC and expand their habitats within the context of sustainable ranching. The LPCI focuses NRCS and partner resources on high priority regions within the LPCI Action Area (see Map 1).

NRCS sought the Service's assistance in determining what actions will result in avoiding or minimizing potential long-term adverse effects to the overall LPC population, and improve potential effectiveness of conservation practices that may result in a range-wide benefit to the species.

The Initiative includes the following components: (1) strategic focus of technical and financial resources on priority LPC areas; (2) the implementation of conservation practice standards to support the needs of the LPC; (3) the development of a science support plan which includes systematic monitoring and assessment of the results of on-the-ground actions; (4) a comprehensive training program; and (5) funding of both the technical and financial assistance.

LPCI Implementation

The LPCI is structured to facilitate landscape-level improvements across the species' range while recognizing that threats and opportunities differ among ecological zones and within priority areas. Close collaboration of many stakeholders, including local, State, and Federal agencies, tribes, and NGOs, will ensure that NRCS activities complement efforts already underway. The LPCI provides a multi-tiered framework that allows

coordination and implementation on a range-wide scale while ensuring input and control over actions in specific States. Appendix II contains a description of the NRCS planning process.

Core conservation practices implemented under the LPCI include Upland Wildlife Habitat (645) as the primary core management practice and Prescribed Grazing (528) as a secondary core management practice needed only when livestock are present. These core practices are required in order to develop a wildlife conservation system. Additional conservation practices may also be required to facilitate the implementation of the core practices. Technical and program assistance is a partnership effort under LPCI. The LPCI assessment and habitat tools and ranking tools for EQIP and WHIP applications have been developed jointly with NRCS' conservation partners. GIS information has been developed in order to assist in prioritizing LPCI planning and applications for funding.

NRCS has developed State-level Lesser Prairie-chicken Habitat Assessment Tools which are utilized by each of the five states encompassed by the LPC range (Appendix II). These tools are completed on-site by a range conservationist and a biologist. Utilization of these tools on-site facilitates making management adjustments to increase effectiveness in improving and maintaining habitat. NRCS has also worked with partners to develop complimentary prescribed grazing assessment and planning tools, which help in identifying and creating LPC habitat through prescribed grazing. LPCI habitat assessment and prescribed grazing tools document nesting and brood-rearing habitat needs and describe management systems that will target habitat restoration and enhancement based on the LPCI conservation goals.

Science Support, Monitoring and Assessment

NRCS will retain a science advisor to ensure that the LPCI's science support elements are implemented in a technically sound manner and monitoring efforts are scientifically valid. This advisor will help design studies, implement field-based assessments, and foster rigorous science through the peer-review process for publication in leading scientific journals. The advisor will also act as a point of contact for reporting of short- and long-term Initiative results to scientific and lay audiences.

NRCS and partners will conduct assessments to measure the biological response of LPC populations to conservation practices, assess the effectiveness of implementing conservation practices and measures, and adaptively improve program implementation each year. The five states have been monitoring and tracking lek (breeding) sites while conducting LPC population surveys. Monitoring and tracking will continue through the efforts of State and Federal wildlife agencies. Additional details can be found in Appendix III.

Training

NRCS has conducted training sessions in the five States to assist staff, partners, and clients to become better managers of LPC habitats, and has also worked with other partners to reach the public with the latest information on LPC conservation and the programs available to assist land owners. These efforts have resulted in a raised awareness of the importance in conserving this species as well as increasing implementation of conservation systems that have maintained and improved LPC habitat.

The Service and NRCS will host at least one training event focused on implementation of this Report, as well as meet at least annually to evaluate the relevancy and adequacy of the effort.

Also NRCS plans to facilitate at least two, three-day field sessions by the end of 2012 to provide technical assistance supporting LPCI to NRCS and partners. One session will be focused on mixed prairie ecosystems and another focused on the sand sagebrush and shinnery oak ecosystems due to differing management needs.

Delivery of Technical Assistance

As part of an effort to provide targeted technical assistance to accelerate implementation of conservation practices that will enhance and maintain LPC habitats, NRCS is currently in the process of entering into contribution agreements with partners to provide on-the-ground rangeland and LPC habitat management assistance using Strategic Watershed Action Team (SWAT) funds. Staff positions funded through SWAT will assist in conducting range and habitat inventories, implementing grazing plans, and evaluating range health and habitat expansion. The team will conduct outreach, assist in monitoring and evaluation, and support NRCS efforts to evaluate the effects of conservation practices on the LPC.

Funding

Two NRCS programs have initially been identified to provide cost-share assistance funding for the LPCI - the Environmental Quality Incentives Program (EQIP) and the Wildlife Habitat Incentive Program (WHIP). EQIP provides incentives for the application of farming and other land use practices that maintain or improve the condition of soil, water, air, and other natural resources. WHIP provides assistance to improve upland and wetland habitats to benefit priority wildlife species, including threatened, endangered and other at-risk species. Over the next four years of the LPCI, NRCS proposes to fund the proposed action with a combination of EQIP and WHIP dollars totaling $35 million.

LPCI Conservation Outcomes Expected

The overall goal of the Initiative is to increase LPC abundance and distribution through habitat improvements and by addressing local and landscape threats. Upland Wildlife Habitat Management will take place on all acres contracted through the LPCI. This core practice will be supplemented by the Prescribed Grazing core practice where livestock are present. The long-term implementation of these two practices is essential to the success of the LPCI. In addition, supporting practices such as brush control, water developments, fence, and associated practices will provide the tools producers need to properly implement their upland wildlife habitat management plan, and their prescribed grazing management plan where applicable.

In the short-term, the desired outcome is management and enhancement of habitats within the current LPC Action Area. Over the long-term it is anticipated that the LPCI will facilitate the expansion of this range into suitable portions of the historic range as habitat conditions improve and threats are reduced or eliminated. Many other species will benefit from this initiative. The restored native grass will provide habitat for a host of declining grassland birds including but not limited to the lark bunting, Cassin's sparrow, grasshopper sparrow, lark sparrow, western meadowlark, ferruginous hawk, Swainson's hawk, and short–eared owl. In addition, economically important species such as northern bobwhite and scaled quail, pronghorn antelope, and mule deer may benefit from the increased habitat.

DESCRIPTION OF THE PROPOSED ACTION

Action Defined

The action for the purposes of this Report includes the application of certain conservation practices incorporated into NRCS conservation plans and implemented by NRCS clients in the LPCI Action Area that follow the planning process and the conservation measures as described in this Report. Twenty-two conservation practice standards will be implemented by NRCS under the LPCI (Table 1).

Practices implemented under the LPCI consist of:

1. The core conservation management practice of Upland Wildlife Habitat Management, which will be supplemented by Prescribed Grazing as a core management practice when livestock are present, for the benefit of LPC and its habitat;

2. Practices that facilitate the application of the core conservation management practices that, in themselves, may or may not be beneficial to LPC and its habitat; and

3. Practice-specific conservation measures that can minimize or eliminate detrimental effects of conservation practices to LPC and its habitat.

Producers located within the LPCI Action Area that are not part of LPCI (i.e., not enrolled in LPCI and not receiving LPCI funding assistance) will be using conservation practices as modified by the conservation measures described in this Report, but are not required to implement these practices under a management plan developed in accordance with the Core Practice (645) Upland Wildlife Habitat Management (see examples of Scenarios in Table 2).

It is important to note that the proposed action does not involve the following elements or potential sources of adverse effects to the LPC.

- Commercial-scale energy development or associated infrastructure.
- Conversions of rangeland and other suitable LPC habitat types to crop production or development.
- Construction of new public roads or highways.
- Actions and programs managed by the Farm Service Agency (FSA) as the agency with responsibility for administration of the Conservation Reserve Program (CRP).

General Discussion of NRCS Conservation Planning Process

Local NRCS conservation planners develop conservation plans for clients that address environmental resource concerns on private, non-Federal, or Tribal lands. NRCS conservationists help individuals and communities to take a comprehensive approach to planning the sustainable use and protection of natural resources on these lands through a nine-step planning process described in the NRCS "National Planning Procedures Handbook."

As part of this conservation planning effort, individual environmental reviews called Environmental Evaluations (EE) are completed which inform the conservation planning effort and assist the Agency's compliance with NRCS regulations that implement the National Environmental Policy Act (NEPA) and the ESA. The EE is a concurrent part of the planning process in which the potential long-term and short-term impacts of an action on people, their physical surroundings, and the natural environment are evaluated and alternative actions explored. The EEs and conservation plans are developed to assist the client in making decisions and implementing the conservation practices identified in the conservation plan. A conservation plan is a record of the client's decision to implement one or more conservation practices which prescribe the actions necessary to address the identified resource concerns in need of treatment. Appendix I provides further information.

Conservation Practices

NRCS provides technical and financial assistance through the Farm Bill and initiatives such as LPCI to implement conservation plans based on standard conservation practice standards and specifications. These conservation practices are developed through a multi-disciplinary science-based process to maximize the success and minimize the risk of failure of the conservation practice. NRCS conservation practice standards are established at the national level and identify the minimum level of planning, designing, installation, operation, and maintenance required. Each conservation practice standard includes a definition and purpose, identifies conditions in which the conservation practice applies, and includes criteria to support each purpose.

Standards in the National Handbook of Conservation Practices are used and implemented by States, as needed, and may be modified to include additional requirements to meet State or local needs because of wide variations in soils, climate, and topography. Conservation practice standards are routinely reviewed and approved by State Technical Committees to ensure that appropriate criteria are included to cover State-specific interests. State laws and local ordinances or regulations may also dictate more stringent criteria; however in no case are the requirements of the national conservation practice standard to be reduced.

Step Down from National to State Standards

The NRCS offices in all five States will meet the minimal national conservation practice standard agreed to in this Report consistently. However, States may develop site-specific plans for clients that are more restrictive than the sideboards placed in the standards of this Report. A State has the option to work with the State Fish and Wildlife Agency and other credible entities to develop criteria that may further restrict the manner in which a practice is applied based on the best available science.

Implementing Core and Facilitating Practices

All conservation plans developed under the LPCI have Upland Wildlife Habitat Management (645) as the core practice. Implementing LPCI under 645 is essential because this core practice ensures that all other LPCI practices are implemented specifically to benefit LPC populations and their habitats. Implementing LPCI under 645 eliminates the possibility of using practices that benefit producers but not LPC. The Upland Wildlife Habitat Management practice standard requires an LPC habitat evaluation to be conducted and limiting factors be removed or reduced in their order of significance. The purpose of the practice is to treat upland wildlife habitat concerns identified during the conservation planning process to (1) provide shelter, cover, and food in proper amounts, locations and times to sustain LPC during all phases of its life cycle, or (2) enable movement. Specific practice standards will be used by NRCS to address the limiting factors to the species and will be implemented to achieve that objective. The identification of the species' limiting factors at the individual property owner level is essential to ensure that the goals of the use of the Upland Wildlife Habitat Management practice are being met under the LPCI.

All LPCI conservation plans will use the core practice of Upland Wildlife Habitat Management (645) and will add Prescribed Grazing (528), when livestock are present, in order to determine which, if any, facilitating conservation practices are needed, as well as the extent, location, and timing of facilitating practices to ensure that LPC habitat is maintained or improved following application.

NRCS will use a variety of support tools in achieving the implementation of the selected conservation practices under the 645 standard. For example, to assist with LPC management decisions, the Western Governors Association (WGA), the LPC Interstate Working Group (i.e., the 5 State Fish and Wildlife agencies), and the

Playa Lakes Joint Venture (PLJV) are collaborating on development of a range-wide decision support system (DSS) directed at targeting conservation efforts and siting of energy development. Large patches of native prairie and Conservation Reserve Program acreage (CRP) are important LPC habitats, and connections among those patches are also important. Managing for connected landscapes is particularly difficult in private land-dominated landscapes. Accomplishing landscape-level management requires state of the art tools, as well as coordination and engagement of agencies, NGO conservation partners, and industry. The WGAs effort to develop a DSS is on the verge of accomplishing both objectives for LPC conservation.

The LPC range-wide decision support system will incorporate predictive models using information from other modeling efforts to identify areas of conservation priority. The first iteration of this tool is scheduled for completion by August 2011 and will be made available to NRCS for use in the LPCI at that time; full public web deployment is planned for 2012. This DSS will be useful in developing landscape-level conservation priorities and strategies across the range of the species, and for targeting conservation funds available through the LPCI.

Core practices are critical to addressing the targeted resource concern(s) for the Initiative and achieving the desired environmental outcome(s). All conservation plans developed using LPCI funding must include documentation that an alternative containing the core practices was presented to the decision maker. Every contract developed under the LPCI must include Upland Wildlife Habitat Management (645). In cases where livestock are present, Prescribed Grazing (528) will be used to support Upland Wildlife Habitat Management. Contracts must be supported by a conservation plan that contains a core practice documented as either planned within the contract period or already applied on the land under contract.

Facilitating practices are those practices needed to make the core practices function properly or to address a specific site or condition related to the identified resource concern(s).

Example: All LPCI conservation plans will have LPC habitat assessments conducted to build the wildlife (LPC) plan under the 645 standard. This will be the primary inventory and assessment that drives the entire LPCI conservation plan. If livestock are present in the system, then the prescribed grazing standard will be required in order to plan grazing that either enhances or maintains the habitat needs of the system. In order to facilitate the proper implementation of these management practices, additional conservation practices such as obstruction removal, fencing, or prescribed burning may be needed to reach habitat goals for the planned system.

Only core and facilitating practices are eligible for funding through the LPCI. Both core and facilitating practices are part of a system of practices used to address the identified initiative resource concern(s). The principal purpose for identifying the practice as core or facilitating will be listed along with the practice name, practice code, and unit. Because the scope of the action within the Action Area includes the implementation of conservation practices on lands not enrolled in the LPCI, the scope of the action is program neutral (i.e., not exclusive to LPCI or a particular Farm Bill program such as EQIP or WHIP). The essential difference is that on lands not enrolled in LPCI, NRCS will not explicitly design and plan the affected practices using the core practice 645 as explained above. Rather, NRCS will offer technical assistance in the design, planning, and implementation of the selected conservation practice(s) to achieve the landowners' objective(s) which may or may not result in targeted benefits to the LPC. Regardless of whether an affected landowner is seeking assistance as part of the LPCI, NRCS will require the conservation practice standard to incorporate the conservation measures identified in this Report.

NRCS is committed to incorporating the identified conservation measures for each of the affected conservation practice standards as outlined in Appendix IV in the Action Area regardless of whether it is implemented under the LPCI.

The following table (Table 1) lists the Conservation Practice Standards to be used in the LPCI and corresponding type of practice. Three possible scenarios of clients located within the Action Area are given in Table 2 to illustrate the application of several conservation practices for those enrolled in the LPCI and those that are not. The definition, purpose, and resource concern(s) for each of the 22 Conservation Practice Standard follows Table 2, beginning on page 10.

Table 1. Conservation Practices Evaluated

Conservation Practice Name (hyperlinks may only be viewable using a Firefox browser)	**Conservation Practice Number**	**Conservation Practice Type**
Upland Wildlife Habitat Management	645	Core Management
Prescribed Grazing	528	Core Supporting Management
Restoration and Management of Rare and Declining Habitats	643	Facilitating Management
Access Control	472	Facilitating Management
Forage Harvest Management	511	Facilitating Management
Prescribed Burning	338	Facilitating Management
Brush Management	314	Facilitating Vegetative
Firebreak	394	Facilitating Vegetative
Cover Crop	340	Facilitating Vegetative
Critical Area Planting	342	Facilitating Vegetative
Forage and Biomass Planting	512	Facilitating Vegetative
Range Planting	550	Facilitating Vegetative
Watering Facility	614	Facilitating Structural
Spring Development	574	Facilitating Structural
Pumping Plant	533	Facilitating Structural
Water well	642	Facilitating Structural
Pipeline	516	Facilitating Structural
Grade Stabilization Structure	410	Facilitating Structural
Fence	382	Facilitating Structural
Obstruction Removal	500	Facilitating Structural
Herbaceous Weed Control	315	Facilitating Vegetative
Pond	378	Facilitating Structural

Table 2. LPCI scenarios and planned conservation practices.

Scenario	Planned Conservation Practices*				
	Upland wildlife habitat mgt. (645)	**Prescribed Grazing. (528)**	**Brush mgt. (314)**	**Watering facility (614)**	**Fence (382)**
Enrolled in LPCI (i.e., client is receiving funds through LPCI) - Client desires to manage for LPC and improve forage quantity and quality for livestock.	Habitat evaluation identified nesting cover and presence of cedar as limiting factors.	Implemented to provide adequate nesting cover.	Mechanical removal of cedar will be conducted outside of nesting season.	Implemented to facilitate Prescribed Grazing. Implemented in consideration of proximity of lek locations, escape ramps will be installed.	Implemented to facilitate Prescribed Grazing. Fences to be marked to prevent bird collisions in critical areas.
Not enrolled in LPCI (i.e., client is not receiving funds through LPCI but is within LPCI Action Area) - Client desires to control invasive cedar to improve range condition	(Not Required)	(Not Required)	Mechanical removal of cedar will be conducted outside of nesting season.	(Not Required)	(Not Required)
Not in LPCI - Client desires to install watering facility and fence to facilitate grazing mgt.	(Not Required)	(Not Required)	(Not Required)	Implemented in consideration of proximity of lek locations, escape ramps will be installed.	Implemented to facilitate Prescribed Grazing. Fences to be marked to prevent bird collisions in critical areas.

*Note: in all situations, all applicable conservation measures identified for each conservation practice will be required.

Conservation Practice Standard: Upland Wildlife Habitat Management (645) (CORE PRACTICE)

Definition: Provide and manage upland habitats and connectivity within the landscape for wildlife.

Purpose: This core management practice will be applied or maintained annually to treat and manage wildlife, in particular LPC resource concerns identified during the conservation planning process. Application of this practice shall remove or reduce habitat limiting factors, in their order of significance, as indicated by results of the LPC wildlife habitat evaluation guide (Appendix II) or other acceptable assessments. This practice alone, or in combination with facilitating practices, shall result in a conservation system that will enable the planning area to meet or exceed the minimum quality criteria for upland wildlife habitat.

Resource concern(s): Factors that reduce habitat quality or otherwise limit population growth of the targeted species.

Conservation Practice Standard: Prescribed Grazing (528) (CORE SUPPORTING PRACTICE)

Definition: Managing the harvest of vegetation with grazing and/or browsing animals.

Purpose: When livestock grazing is present or planned, this practice is applied or maintained annually as a part of a conservation management system to achieve one or more of the following: (A) Improve or maintain desired species composition and vigor of plant communities. (B) Improve or maintain quantity and quality of forage for grazing and browsing animals' health and productivity. (C) Improve or maintain surface and/or subsurface water quality and quantity. (D) Improve or maintain riparian and watershed function. (E) Reduce accelerated soil erosion, and maintain or improve soil condition. (F) Improve or maintain the quantity and quality of food and/or cover available for wildlife. (G) Manage fine fuel loads to achieve desired conditions. (H) Promote economic stability through grazing land sustainability and continued livestock production.

In addition to the purposes above; within the LPCI, this conservation practice standard shall only be selected to support the goals and objectives of core Conservation Practice Standard Upland Wildlife Habitat Management (645). At the individual project and landscape scale, the use of this practice standard under the LPCI is expected to produce a mosaic of vegetation structure and composition to benefit the LPC (e.g., create as needed at the appropriate scale areas of greater forb and resulting insect production, create areas of higher residual cover for nesting birds, or create open lek habitat).

Resource concern(s): Resource concerns addressed by this practice are lack of diverse species composition and vigor of plant communities, low quantity and quality of forage for grazing and browsing animals, water quality and quantity, soil erosion, quantity and quality of food and/or cover available for wildlife, and economic stability for continued livestock production. Within the LPCI, an additional resource concern is the identification of limiting biological conditions for the LPC and the creation of a grazing management system to address the limiting biological conditions for the LPC.

Conservation Practice Standard: Restoration and Management of Rare and Declining Habitats (643) (FACILITATING MANAGEMENT PRACTICE)

Definition: Restoring, conserving, and managing unique or diminishing native terrestrial and aquatic ecosystems.

Purpose: This facilitating management practice will be applied annually to those areas of unique or diminishing native terrestrial ecosystems; to restore their original or highest functioning condition. This practice will be used to improve the overall biodiversity of the LPC Action Area.

Resource concerns: The loss or degradation of rare or declining native habitats.

Conservation Practice Standard: Access Control (472) (FACILITATING MANAGEMENT PRACTICE)

Definition: The temporary or permanent exclusion of animals, people, vehicles, and/or equipment from an area.

Purpose: Prevent, restrict, or control access to an area in order to maintain or improve the quantity and quality of natural resources.

Resource concern(s): Habitat improvement and/or protection from excessive vehicle, domestic animal or human activities.

Conservation Practice Standard: Forage Harvest Management (511) (FACILITATING MANAGEMENT PRACTICE)

Definition: The timely cutting and removal of forages from the field as hay, green-chop or ensilage.

Purpose: This practice may be applied annually during the forage growing season (summer), to optimize yield and quality of forage at the desired levels; to promote vigorous plant re-growth; to manage for the desired species composition; to remove soil nutrients through uptake and harvest of forage plant biomass; to control insects, diseases and weeds; and to maintain or improve LPC habitat by providing a vigorous plant community with the composition and structure needed for nesting and brood-rearing activities. This practice is most commonly used to manage the timing, frequency, and extent of forage harvest in order to maintain plant production, health and vigor. Within the range of LPC, this practice would primarily be associated with native grass hay production, but could also apply to hay crops such as alfalfa and annually planted forage species.

Resource Concerns: Yield and quality of forage, plant vigor, timing of harvest, insects, diseases and weeds are typical concerns addressed by this practice.

Conservation Practice Standard: Prescribed Burning (338) (FACILITATING MANAGEMENT PRACTICE)

Definition: Controlled fire applied to a predetermined area.

Purpose: Create the desired plant community phase consistent with the ecological site description that is preferable LPC habitat. Control undesirable vegetation or to manipulate desired vegetation. Prepare sites for planting or seeding. Reduce wildfire hazards. Improve wildlife habitat specifically to enhance and produce desirable or needed plant communities for all phases of LPC life cycle. Improve forage production quantity and/or quality. Facilitate distribution of grazing to target the maintenance or creation of desired LPC habitat. Restore and/or maintain ecological sites.

Resource Concerns: Lack of prescribed burning activities results in ecological sites which are vastly different from historic plant communities for LPC and grazing by large ungulates such as livestock. Plant productivity, health, and vigor have been reduced due to a lack of fire. Increased fire return intervals have created a plant community less responsive to prescribed fire and have allowed for invasion of undesirable species such as Eastern Red Cedar and non-native grass species.

Conservation Practice Standard: Brush Management (314) (FACILITATING VEGETATIVE PRACTICE)

Definition: The management or removal of woody (non-herbaceous or succulent) plants including those that are invasive and noxious.

Purpose: To restore or enhance the desired native plant community which is consistent with the ecological site description, and which provides the most suitable habitat for the LPC and other wildlife species. Specifically, it may be used for the purpose of:

- Removing undesirable post-settlement conifers such as juniper, Eastern red cedar or deciduous species such as mesquite and black locust which have encroached into habitats being restored for LPC habitat.
- Improving the diversity of habitat to create a mosaic of irregular shaped grassland openings based on LPC home range, or to provide a release to allow for the native grass and forb community to be expressed.

Resource concerns: Habitat fragmentation and loss of suitable habitat for the LPC.

Conservation Practice Standard: Firebreak (394) (FACILITATING, VEGETATIVE PRACTICE)

Definition: A permanent or temporary strip of bare or vegetated land planned to retard fire.

Purpose: Reduce the spread of wildfire and contain prescribed burns to their targeted area.

Resource Concerns: The primary concerns that a firebreak addresses are the spread of fire beyond the targeted prescribed burn area and the spread of wildfires, resulting in large-scale, temporary alteration of the landscape.

Conservation Practice Standard: Cover Crop (340) (FACILITATING VEGETATIVE PRACTICE)

Definition: Crops including grasses, legumes, and forbs for seasonal cover and other conservation purposes.

Purpose: This practice will reduce soil erosion from wind and water, increase soil organic matter content, capture and recycle or redistribute nutrients in the soil profile, promote biological nitrogen fixation, increase biodiversity, weed suppression, provide supplemental forage, soil moisture management, reduce particulate emissions into the atmosphere, minimize and reduce soil compaction. Cover crops are typically used to provide ground cover until the permanent vegetation can be established when converting cropland to grass.

Resource concerns: The primary resource concerns addressed with the LPCI are wind and water erosion between harvesting of the crop and planting of the native grass. Limited LPC brood rearing habitat between site preparation and full establishment can reduce brood survival.

Conservation Practice Standard: Critical Area Planting (342) (FACILITATING VEGETATIVE PRACTICE)

Definition: Establishing permanent vegetation on sites that have, or are expected to have, high erosion rates, and on sites that have physical, chemical or biological conditions that prevent the establishment of vegetation with normal practices.

Purpose: This practice is applied as needed in order to stabilize erosion by the establishment of native and/or non-invasive vegetation in areas with disturbed soil from installation of other practices, such as grade stabilization structures or from long-term damage caused by oil and gas activities.

Resource concerns: Un-vegetated, disturbed soil creates sites for invasive plant species to colonize, promotes increased soil erosion, and reduces wildlife habitat quality.

Conservation Practice Standard: Forage and Biomass Planting (512) (FACILITATING VEGETATIVE PRACTICE)

Definition: Establishing adapted and/or compatible species, varieties, or cultivars of herbaceous species suitable for pasture, hay, or biomass production.

Purpose: This practice may be applied as needed to improve or maintain livestock nutrition and health, to provide or increase forage supply during periods of low forage production, to reduce soil erosion, improve soil and water quality, and to produce feedstock for bio-fuel or energy production. Within the Action Area, this practice is typically used to convert croplands to perennial grass and legume mixtures to increase forage hay production and grazing for livestock. More recently, some plantings have been established for the purpose of producing and harvesting biomass for fuels and energy.

Resource Concerns: This practice is most commonly used to convert cropland fields to permanent vegetative cover to prevent soil loss, improve soil conditions, improve wildlife cover, and improve water quality and quantity. This practice also address needs for adequate food for livestock and under the LPCI will provide adequate food for the LPC.

Conservation Practice Standard: Range Planting (550) (FACILITATING VEGETATION PRACTICE)

Definition: Establishment of adapted perennial or self-sustaining vegetation such as grasses, forbs, legumes, shrubs and trees.

Purpose: Applied to restore the native plant community to a condition similar to the ecological site description reference state for the site, provide or improve forages for livestock and browse or cover for wildlife, reduce erosion by wind and/or water, improve water quality and quantity, and increase carbon sequestration. This practice is used to restore important native habitats by converting cropland to grasslands, to meet habitat requirements for LPC.

Resource concerns: This practice is most commonly used to convert cropland fields to permanent vegetative cover to prevent soil loss, improve soil conditions, and improve water quality and quantity and create habitat for LPC. Cropland sites typically provide inadequate food and cover for LPC and other grassland species.

Conservation Practice Standard: Watering Facility (614) (FACILITATING STRUCTURAL PRACTICE)

Definition: A permanent or portable device to provide an adequate amount and quality of drinking water for livestock and/or wildlife.

Purpose: To provide access to drinking water for livestock and/or wildlife in order to meet daily water requirements and improve animal distribution. This practice will be applied in the Action Area to facilitate prescribed grazing (528) by providing access to drinking water for livestock in order to meet daily water requirements and improve animal distribution to conserve or enhance important LPC habitat.

Resource Concerns: The inability to provide adequate water supplies and to properly locate water supplies throughout grazing units can reduce the opportunity to manage livestock grazing distribution. As a result, forage may be over or under-utilized with resulting impacts on range health, livestock production and associated wildlife habitat. Livestock may be disproportionately concentrated near a water source and overgraze the surrounding area to the point where food producing forbs and legumes are eliminated, residual grasses are

inadequate for nesting cover, and protective cover provided by shrubs is reduced due to heavy browsing. Conversely, areas more distant from a water supply may be underutilized and in the absence of disturbance, the health and vigor of grasses for livestock grazing and the value of the habitat for LPC may be diminished through plant succession.

Conservation Practice Standard: Spring Development (574) (FACILITATING STRUCTURAL PRACTICE)

Definition: Collection of water from springs or seeps to provide water for a conservation need.

Purpose: Spring developments will be applied to improve the quantity and quality of water for livestock and wildlife or other agricultural uses. This practice will be used to facilitate prescribed grazing to improve water quality, reduce erosion, protect sensitive areas, and/or improve mesic habitat quality for LPC and broods.

Resource Concerns: The inability to provide adequate water supplies and to properly locate water supplies throughout grazing units can reduce the opportunity to manage livestock grazing distribution. As a result, forage may be over or under-utilized with resulting impacts on range health, livestock production and associated wildlife habitat. Livestock may be disproportionately concentrated near a water source and overgraze the surrounding area to the point where food producing forbs and legumes are eliminated, residual grasses are inadequate for nesting cover, and protective cover provided by shrubs is reduced due to heavy browsing. Conversely, areas more distant from a water supply may be underutilized and in the absence of disturbance, the health and vigor of grasses for livestock grazing and the value of the habitat for LPC may be diminished through plant succession.

Conservation Practice Standard: Pumping Plant (533) (FACILITATING STRUCTURAL PRACTICE)

Definition: A facility that delivers water at a designed pressure and flow rate. Includes the required pump(s), associated power unit(s), plumbing, appurtenances, and may include on-site fuel or energy source(s), and protective structures.

Purpose: This practice can achieve delivery of water to livestock watering facilities to facilitate prescribed grazing of livestock in a way that promotes rangeland sustainability and improves wildlife and LPC habitat.

Resource Concerns: The inability to provide adequate water supplies and to properly locate water supplies throughout grazing units can reduce the opportunity to manage livestock grazing distribution. As a result, forage may be over or under-utilized with resulting impacts on range health, livestock production and associated wildlife habitat. Livestock may be disproportionately concentrated near a water source and overgraze the surrounding area to the point where food producing forbs and legumes are eliminated, residual grasses are inadequate for nesting cover, and protective cover provided by shrubs is reduced due to heavy browsing. Conversely, areas more distant from a water supply may be underutilized and in the absence of disturbance, the health and vigor of grasses for livestock grazing and the value of the habitat for LPC may be diminished through plant succession.

Conservation Practice Standard: Water Well (642) (FACILITATING STRUCTURAL PRACTICE)

Definition: A hole drilled, dug, driven, bored, jetted or otherwise constructed to an aquifer for water supply.

Purpose: This practice will be applied to provide water for livestock to facilitate proper use of vegetation through grazing distribution and to provide alternative sources of livestock water to meet the daily animal requirements. The water provided by the well is also used as a part of a watering system that includes watering facilities, pipeline and pumping plant.

Resource Concerns: The inability to provide adequate water supplies and to properly locate water supplies throughout grazing units can reduce the opportunity to manage livestock grazing distribution. As a result, forage may be over or under-utilized with resulting impacts on range health, livestock production and associated wildlife habitat. Livestock may be disproportionately concentrated near a water source and overgraze the surrounding area to the point where food producing forbs and legumes are eliminated, residual grasses are inadequate for nesting cover, and protective cover provided by shrubs is reduced due to heavy browsing. Conversely, areas more distant from a water supply may be underutilized and in the absence of disturbance, the health and vigor of grasses for livestock grazing and the value of the habitat for LPC and other wildlife may be diminished through plant succession. These potential impacts on livestock grazing and wildlife habitat need to be considered when planning wells and other water supply sources.

Conservation Practice Standard: Pipeline (516) (FACILITATING STRUCTURAL PRACTICE)

Definition: Pipeline having an inside diameter of 8 inches or less.

Purpose: The purpose of this practice is to convey water from a source of supply to points of use for livestock, wildlife, or recreational purposes. Typically, the water conveyed by a pipeline originates from a well, spring, or in some cases, ponds and streams. The practice is most commonly used to facilitate proper use of vegetation through grazing distribution, to meet the daily water requirements of livestock, or to provide alternative sources of livestock water away from streams and aquatic habitats.

Resource Concerns: The inability to provide adequate water supplies and to properly locate water supplies throughout grazing units can reduce the opportunity to manage livestock grazing distribution. As a result, forage may be over or under-utilized with resulting impacts on range health, livestock production and associated wildlife habitat. Livestock may be disproportionately concentrated near a water source and overgraze the surrounding area to the point where food producing forbs and legumes are eliminated, residual grasses are inadequate for nesting cover, and protective cover provided by shrubs is reduced due to heavy browsing. Conversely, areas more distant from a water supply may be underutilized and in the absence of disturbance, the health and vigor of grasses for livestock grazing and the value of the habitat for LPC may be diminished through plant succession.

Conservation Practice Standard: Grade stabilization structure (410) (FACILITATING STRUCTURAL PRACTICE)

Definition: A structure used to control the grade and head cutting in natural or artificial channels.

Purpose: This practice may be applied to stabilize the grade and control erosion in natural or artificial channels; to prevent the formation or advance of gullies, restore associated hydrology to surrounding lands, and to enhance environmental quality by reducing siltation or pollution hazards.

Resource concerns: Erosion control.

Conservation Practice Standard: Fence (382) (FACILITATING STRUCTURAL PRACTICE)

Definition: A constructed barrier to animals or people.

Purpose: This practice facilitates the accomplishment of conservation objectives by providing a constructed means to control movement of animals and people, including vehicles. The need and extent of this practice is determined based on the particular management practice it facilitates, such as prescribed grazing or access control.

Resource Concerns: The concerns typically addressed by a constructed fence are plant health and vigor, soil erosion and condition, livestock health and vigor and wildlife habitat needs.

Conservation Practice Standard: Obstruction Removal (500) (FACILITATING STRUCTURAL PRACTICE)

Definition: Removal and disposal of buildings, structures, other works of improvement, vegetation, debris or other materials.

Purpose: This practice may be applied to remove and dispose of unwanted obstructions in order to apply conservation practices or facilitate the planned land use. The practice will be used to decrease availability of predator nests, dens, and perches, and reduce habitat fragmentation.

Resource concerns: Structures, including buildings, power poles, and fences can provide predator perches and nesting sites and can increase predation rates for wildlife including LPC and may cause wildlife to decrease use of otherwise suitable habitats. Additionally, these structures, particularly fences, can cause accidental mortality from collisions and can contribute to habitat fragmentation for LPC.

Conservation Practice Standard: Herbaceous Weed Control (315) (FACILITATING VEGETATIVE PRACTICE)

Definition: The removal or control of herbaceous weeds including invasive, noxious and prohibited plants.

Purpose: This practice may be applied to control or remove invasive and noxious weeds through chemical, biological, or mechanical means in order to restore native or desired plant communities and habitat for LPC consistent with the ecological site description. It secondarily protects soils, controls erosion, reduces fine-fuels fire hazards, and improves air quality.

Resource concerns: Invasive and noxious weeds degrade ecological sites by increasing competition with native and desirable plant species. This results in decreased sustainability and resiliency of the ecological sites and leads to reduced habitat quality and quantity for wildlife, including LPC.

Conservation Practice Standard: Pond (378) (FACILITATING STRUCTURAL PRACTICE)

Definition: A water impoundment made by constructing an embankment or by excavating a pit or dugout. In this standard, ponds constructed by the first method are referred to as embankment ponds, and those constructed by the second method are referred to as excavated ponds. Ponds constructed by both the excavation and the embankment methods are classified as embankment ponds if the depth of water impounded against the embankment at the auxiliary spillway elevation is 3 feet or more.

Purpose: The purpose of this practice is to provide water for livestock, fish and wildlife, recreation, fire control, and other related uses and to maintain or improve water quality.

Resource Concerns: The inability to provide adequate water supplies and to properly locate water supplies throughout grazing units can reduce the opportunity to manage livestock grazing distribution. As a result, forage may be over or under-utilized with resulting impacts on range health, livestock production and associated wildlife habitat. Livestock may be disproportionately concentrated near a water source and overgraze the surrounding area to the point where food producing forbs and legumes are eliminated, residual grasses are inadequate for nesting cover, and protective cover provided by shrubs is reduced due to heavy browsing. Conversely, areas more distant from a water supply may be underutilized and in the absence of disturbance, the

health and vigor of grasses for livestock grazing and the value of the habitat for LPC may be diminished through plant succession.

ENVIRONMENTAL BASELINE

Dispersal and Action Area Map

The Action Area includes all of the current estimated occupied range (LPCIWG 2011) and a surrounding buffer of 16 km (see Map 1). The buffer was based on a comparison of natal dispersal and other extensive movements of adult prairie chickens (Copelin 1963, Hagen 2003) that suggested that 16 km (approximately 10 miles) represents the average long-distance movements of the LPC in fragmented landscapes. The Action Area map is intended to be used as an interim product for this Conference Report until the LPC Decision Support System is finalized by State Fish and Wildlife Agencies and the Playa Lakes Joint Venture in August 2011.

Federally Listed, Proposed, and Candidate Species within the Action Area

Many of the practices implemented through the LPCI will have little or no effect on the other listed and candidate species within the Action Area and some practices will benefit these other species. Table 3 lists Federally listed, proposed and candidate species within the Action Area. The species on the list only include those that share habitat with the LPC and where the covered conservation standards may create effects. Table 4 indicates which of the covered conservation practices have the potential to affect these other species.

More complete descriptions of potential threats and conservation measures to these other species are found in Appendix V. A summary of the conservation measures associated with specific practices that may have adverse effects on these species are addressed below. Practices implemented through the LPCI that may adversely affect the species discussed below that cannot be avoided will need an individual or programmatic consultation.

While there are multiple conservation measures associated with the LPCI that landowners can implement to assist in the recovery of these species while carrying out normal daily activities, the most sensitive issues for listed and candidate species within the LPCI Action Area are water-related, followed closely by prescribed grazing.

Aquatic and Riparian Species

To avoid negative effects to aquatic, riparian, and species dependent upon aquifer-fed spring systems, avoid any LPCI practice that removes ground water or causes drying of surface water in the occupied habitat of Arkansas darter, Arkansas River shiner, Foster's spring snail, Noels' amphipod, Pecos assinine, Pecos gambusia, Roswell springsnail, Pecos sunflower, or Wright's marsh thistle.

Although unlikely to be directly affected, Rio Grande silvery minnow, Pecos bluntnose shiner, and Texas hornshell, which occupy continuous-flowing river reaches, and southwestern willow flycatcher, which occupies dense riparian habitats, could be indirectly affected by water related LPCI practices such as well development. To avoid impacts to these species, ensure that water withdrawals will not reduce quality of aquatic or riparian habitat. Avoid any LPCI practice that removes ground water or causes drying of surface water in the immediate area occupied by these species.

Conservation measures for Arkansas River shiners include protection and enhancement of riparian and stream habitat with riparian buffers, exclusion of livestock from streams, and control of salt cedar and other non-native vegetation. Avoid any practice that removes ground water or causes drying of surface water occupied by the species.

To provide conservation for Koster's springsnail, Noels' amphipod, Pecos assiminea, and Roswell springsnail, an additional buffer surrounding occupied habitat is needed to protect water quality and improve land management practices. Other measures include avoiding any practice that removes ground water or causes drying of surface water in the immediate area occupied by the species; restricting access to occupied habitat; and avoiding the use of prescribed burning to control invasive vegetation. For the Texas hornshell an additional conservation measure would be to restrict access to Texas hornshell beds.

Reptiles

Conservation measures for dunes sagebrush lizard include: allowing no surface occupancy within 200 meters of areas designated as occupied or suitable, unoccupied dune complexes or within delineated shinnery oak corridors. Areas should be determined at a landscape scale rather than a dune-by-dune scale and should also delineate corridors for movement between occupied and suitable dune complexes; prohibiting tebuthiuron spraying within 500 m of suitable and occupied habitat (dune complexes) or within corridors that connect dune complexes that are within 2,000 m of each other; and removing brush (**not** shinnery oak) that invades into the habitat preferred by sand dune lizards. Approved practices will avoid the critical periods of March 1st thru July 15th; to avoid disturbances. Avoid brush control treatments to large blocks or strips and no more than 50 percent of an individual management unit (pasture) will be treated during any two year period. Establish a grazing plan that ensures: stocking rates are in balance with the forage supply; season of use is rotated through pastures to ensure plants have adequate reproduction opportunity; and that the plan is implemented to increase residual cover of perennial grasses and forbs.

Mammals

Black-footed ferrets do not currently overlap with the current estimated occupied range of the LPC, except in Logan County, Kansas and possibly northeast New Mexico. Black-footed ferret recovery partners are working to develop measures that would facilitate private land black-footed ferret reintroductions. Habitat management, brush management, and good grazing practices may have beneficial effects to the black-footed ferret.

Birds

Interior least tern breeding and nesting sites within the range of the LPC are limited to the Red and Canadian Rivers and their major tributaries. Potential effects to interior least terns from ground disturbing practices (e.g., fencing, pipelines, and grade stabilization) in the bed and banks of these areas could be avoided by not conducting these practices in known nesting streams, and/or seasonal avoidance of interior least tern breeding or nesting habitat.

Of greatest importance to conservation efforts for the Northern Aplomado falcon is protection and restoration of pesticide- and lead-free grassland and wetland communities and associated forest, woodland, and thorn scrub. Human intrusions can cause nest abandonment and make Aplomado falcons more susceptible to detection and harm from potential predators. Restrict access to known or suspected nesting areas. Avoid any practice that removes ground water or causes drying of surface water in the immediate area occupied by the species.

Piping plovers require relatively barren, unvegetated salt flats, river sandbars and islands for nesting and foraging. A combination of watershed, riparian and stream restoration may provide the best means for improving stream habitat and watershed integrity as a whole. Land use practices that may adversely affect stream flows, channel morphology, and sediment transport should be avoided. Conservation measures include protection and enhancement of riparian and stream habitat with riparian buffers, protection from human disturbance (off-road vehicle use, etc.) exclusion of livestock from streams, control of salt cedar and other non-native vegetation to help restore historic levels of base flows and to reduce perch sites and habitat for potential predators.

Because the southwestern willow flycatcher breeds only in dense, mesic riparian, conservation measures may include: remove cattle from the riparian areas to enhance riparian habitat and prevent destruction of nests (although some light to moderate grazing during the winter in riparian areas is acceptable); restrict human access, including controlling off-road vehicles, to habitat during the breeding season; pole-plant willows where soils and hydrology are suitable for flycatchers; and construction of artificial oxbows as a means to stabilize eroded banks.

To conserve whooping cranes, limit activity within 0.5-miles of wetlands suitable as stopover sites during spring and fall migration periods. Autumn migration normally begins in mid-September, with most birds arriving on the Texas wintering grounds between late October and mid-November. Spring migration departure dates are normally between March 25 and April 15, with the last birds usually leaving by May 1. To determine what suitable whooping crane habitat is, look for shallow wetlands in open, non-wooded areas free from human disturbance, such as nearby roads or buildings with at least some water area less than 18 inches deep. This will include marshes, small ponds, lake edges, or rivers. Avoid any practice that removes ground water or causes drying of surface water in the immediate area of possible stopover sites and that increases the risks posed by new structures on the landscape. Other LPCI practices that may be beneficial to the whooping crane include watering facilities to provide livestock with reliable water resources outside of stopover sites, planting, and pond development.

Plants

Protection of habitat and individual Kuntzler hedgehog cactus plants, especially on private lands is of the highest priority for the recovery of this species. Grazing control may help to prevent erosion.

The single most important conservation measure for gypsum wild buckwheat is access control to prevent damage to individual plants.

Conservation measures for the Pecos sunflower include managing groundwater use in the surrounding area to assure adequate spring flows, but water could be exported after it has passed through Pecos sunflower habitat. Livestock grazing can damage Pecos sunflower plants, however, removal of competing grass cover and soil disturbance by livestock may help the germination and establishment of sunflower seeds. The effects of grazing season, frequency, intensity and duration need further study to develop recommendations for best management practices.

To conserve Wright's marsh thistle, grazing exclosures could be built in riparian areas to support protection and expansion of extant populations. Avoid any practice that removes ground water or causes drying of surface water in the immediate area occupied by the species.

Table 3: Federally Listed, Candidate, and Proposed Species within the LPCI Action Area

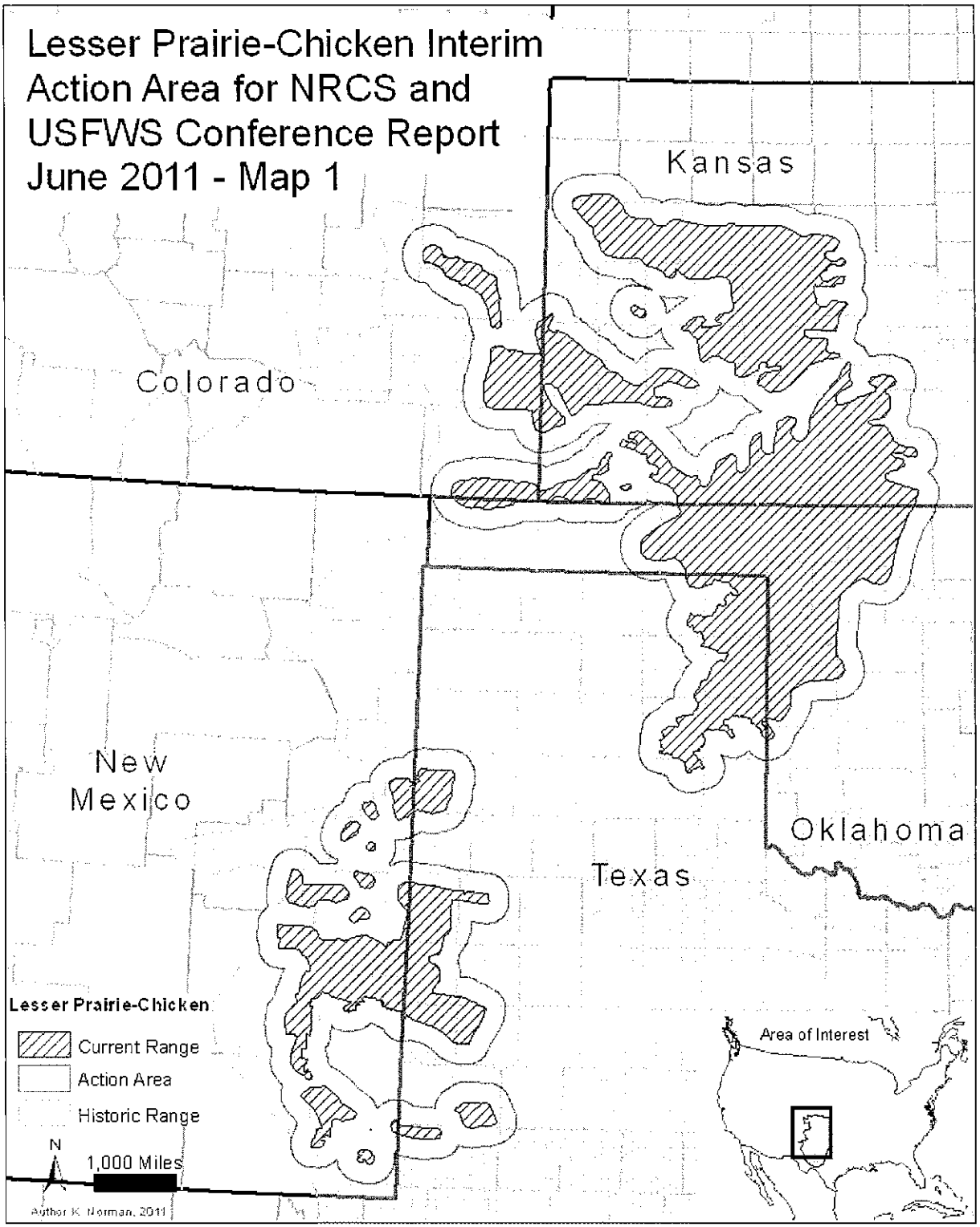
Common Name	Scientific Name	Federal Status[a]	Critical Habitat
Arkansas darter	*Etheostoma cragini*	C	N/A
Arkansas River shiner	*Notropis girardi*	T	Yes
Black-footed ferret	*Mustela nigripes*	E/EXPN	No
Dune sagebrush lizard	*Sceloporus arenicolus*	PE	No
Gypsum wild buckwheat	*Eriogonum gypsophilum*	T	Yes
Interior least tern	*Sterna antillarum athalassos*	E	No
Koster's springsnail	*Juturnia kosteri*	E	Yes
Kuenzler's hedgehog cactus	*Echinocereus fendleri var. kuenzleri*	E	No
Noel's amphipod	*Gammarus desperatus*	E	Yes
Northern Aplomado falcon	*Falco femoralis septentrionalis*	E	No
Pecos assiminea	*Assiminea pecos*	E	Yes
Pecos bluntnose shiner	*Notropis simus pecosensis*	T	Yes
Pecos gambusia	*Gambusia nobilis*	E	Yes
Pecos sunflower	*Helianthus paradoxus*	T	Yes
Piping plover	*Charadrius melodus*	E, T	Yes
Rio Grande silvery minnow	*Hybognathus amarus*	E, EXPN	Yes
Roswell springsnail	*Pyrgulopsis roswellensis*	E	Yes
Southwestern willow flycatcher	*Empidonax traillii extimus*	E	Yes
Texas hornshell	*Popenaias popeii*	C	N/A
Whooping crane	*Grus americana*	E	Yes
Wright's marsh thistle	*Cirsium wrightii*	C	N/A

[a] E – Endangered species; T - Threatened species; PE - Proposed endangered species; C – Candidate species

Table 4. Potential response of Species to Conservation Practices

Common Name	645 Upland Wildlife Management	528 Prescribed Grazing	643 Restoration & Mgmt of Rare & Declining Habitats	472 Access Control	511 Forage Harvest Management	338 Prescribed Burning	314 Brush Management	394 Firebreak	340 Cover Crop	342 Critical Area Planting	512 Forage & Biomass Planting	550 Range Planting	614 Watering Facility	574 Spring Development	533 Pumping Plant	642 Water Well	516 Pipeline	410 Grade Stabilization Structure	382 Fence	500 Obstruction Removal	315 Herbaceous Weed Control	378 Pond
Arkansas Darter														X		X					X	
Arkansas River shiner																X					X	
Black-footed ferret	+	+	+	+			+		X	X	X	X										
Dune sagebrush lizard							X														X	
Gypsum Wild Buckwheat		X		+																		
Interior Least Tern		X		+			+															
Koster's Springsnail						X	+							X								
Kuenzler's Hedgehog Cactus		X																				
Noel's Amphipod						X								X								
Northern Aplomado Falcon																						
Pecos Assiminea														X							X	
Pecos Bluntnose Shiner																X					X	
Pecos Gambusia				+										X								
Pecos Sunflower		±																				
Piping Plover				+																		
Rio Grande Silvery Minnow																X						
Roswell Springsnail														X							X	
Southwestern Willow Flycatcher		X												X								
Texas Hornshell																X					X	
Whooping Crane									+		+		+			X						+
Wright's Marsh Thistle		X												X								

+ = positive response anticipated from application of the conservation practice standard
X = negative response anticipated from application of the conservation practice standard
± = depending on the timing of application, response may be positive or negative
If no symbol, application of the conservation standard is not likely to have an effect



Map 1. Lesser Prairie-Chicken Initiative (LPCI) Interim Action Area.

LPCI Action Area

Status of the LPC (*Tympanuchus pallidicinctus*) within the Action Area

The following summary is based on information contained in Service files and the petition received on October 5, 1995. Additional information can be found in the 12-month finding published on June 7, 1998 (63 FR 31400) and the Service's Candidate Assessment and Listing Priority Assignment Form for the LPC produced in April 2010. This supporting information is incorporated by reference into this Conference Report.

Biologists estimate that the occupied range of LPC has declined by 92 percent since the 1800s. The most serious threats to the LPC are loss of habitat from conversion of native rangelands to introduced forages and cultivated crops, conversion of suitable restored habitat in the Conservation Reserve Program to cropland, cumulative habitat degradation caused by incompatible grazing practices, and energy development, including transmission, wind, oil, and gas development. Additional threats are woody plant invasion of open prairies due to fire suppression, incompatible herbicide use, and habitat fragmentation caused by structural and transportation developments. Many of these threats may exacerbate the normal effects of periodic drought on LPC populations. In many cases, the remaining suitable habitat has become fragmented by the spatial arrangement of these individual threats. Habitat fragmentation can be a threat to the species through several mechanisms: remaining habitat patches may become smaller than necessary to meet the requirements of individuals and populations, necessary habitat heterogeneity may be lost to areas of homogeneous habitat structure, and the probability of recolonization decreases as the distance between suitable habitat patches expands.

EFFECTS OF THE ACTION

Effects of the Action

The Service has evaluated the identified conservation practice standards in the context of how the individual standards have the potential to produce beneficial and adverse effects to the LPC – at the individual, population, and landscape scales. The Service worked in collaboration with the NRCS to develop specific conservation measures for the 22 conservation practice standards reviewed. The Service believes that, as implemented, the conservation measures will result in ameliorating, minimizing, or eliminating potential adverse effects. However, even with the implementation of the conservation measures, some remaining adverse effects will occur to the LPC. Nevertheless, the Service believes that the conservation measures, in concert with the goals and objectives of the LPCI, will cumulatively produce beneficial effects to the LPC.

Each conservation practice standard will be designed to work synergistically with other conservation practice standards under a conservation management system to achieve the purposes of the Upland Wildlife Habitat Management practice (645), which serves as the core management practice for landowners wanting to participate in the LPCI. This linkage between conservation practice standards produces benefits and minimizes adverse effects to the species. In some cases, application of several conservation practice standards at the local or landscape scale will produce benefits while simultaneously creating 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 LPC over the long-term, despite the potential for some level of temporary disturbance to the bird from the methods used.

Appendix IV provides a comprehensive narrative of each conservation practice standard covered in the Report, its purpose, the identification of any potential adverse effects and description of expected beneficial effects, and the identification of the appropriate conservation measure(s).

Adverse Effect: (I) Physical disturbance (including noise)

There is a paucity of empirical data on the impacts of disturbance associated with certain types of energy development on prairie grouse populations (Hagen 2010). Based on current research, direct impacts of project related activities (e.g., roads, transmission lines, pipelines, turbines, etc.) and disturbances associated with operation and maintenance activity are likely to be similar to those from energy developments throughout the Intermountain West (Becker et al. 2009, Hagen 2010). The ecological extent of the impacts of these activities has not been quantified. However, there is recent science that demonstrates the effects of noise on greater sage-grouse breeding behavior (Hunt 2004, Crompton and Mitchell 2005, Holloran 2005, Blickley and Patricelli *in press*). Sound levels >40 decibels (dbA) reduces breeding activity and increases stress levels (as measured by hormone levels) in sage-grouse (Blickley and Patricelli *in press*) and decrease in LPC lek activity (Hunt 2004). Given similarities in life history strategies (especially breeding behavior and spatial relationships of leks and nests) between sage-grouse and prairie-chickens, it is reasonable to implement a similar mitigative measure in the context of noise pollution at this threshold.

With respect to noise or physical disturbance, normal and routine use of equipment necessary to maintain ranching operations is not considered by the Service to be significant source of adverse effect to the species. We base this conclusion on the fact that the effects of commercial energy development create continuous and large areal effects on the landscape and the types of equipment and machinery are markedly different than equipment used implementing the covered conservation practice standards. However there is the potential for vehicle collisions from a variety of sources (discussed below) and that sources of noise in excess of 40dbA may be created during practice implementation.

All of the covered conservation practice standards, either directly or indirectly have the potential to produce some additional level of physical disturbance because they involve the physical presence of humans, livestock, and/or associated equipment, vehicles or machinery. Further, future periodic disturbances have the potential to occur as maintenance actions for the implemented practices may be needed over their operational life. Although effects are not quantitatively known, the literature suggests that some form of physical effects from presence and/or associated noise will create a disturbance response to individual birds. Most of this disturbance, however, will be localized to the immediate area where the work is occurring and is expected to be of limited duration and temporary in nature.

The presence of livestock may also create physical disturbance to LPC. Adverse consequences of grazing include livestock trampling of LPC nests. Although the effect of trampling at a population level is unknown, outright nest destruction has been documented. For example, Pitman et al. (2006) quantified nest loss over 6 breeding seasons and identified 1.9% of nest loss (n = 161) to trampling by livestock. The presence of livestock potentially could cause LPC to abandon their nests, but has not been documented.

The primary adverse effect of concern to the Service is physical disturbance during the LPC breeding and nesting season (considered March 1 through July 15). The bird's response ("flushing"/escape behavior) may place individual birds at greater risk to predation when they leave cover. If the equipment and actions occur close to occupied nests, the female may abandon the nest for some indeterminate period or permanently. The net effect of the physical disturbance including sustained sources of noise may be a localized reduction of survival or productivity, avoidance of otherwise suitable habitat, and/or reduction of breeding frequency. The adverse effect of noise is amplified if it is of significant volume or duration during the mating displays of males on leks. If noise interferes with mating displays, and thereby female attendance, younger males may not be drawn to the lek and eventually leks could become inactive (Hunt 2004).

Disturbance of some individual LPC may occasionally occur from feeding, calving, and herding of livestock. These effects are expected to rarely occur and are not expected to produce significant changes in species distribution and abundance. However some small level of mortality is expected.

Two conservation measures were specifically developed to minimize physical disturbances to LPC during the critical breeding and nesting season. The first conservation measure establishes a non-disturbance period and distance from known leks. The second relevant conservation measure facilitates the creation of site-specific criteria as needed when the specific local and landscape conditions for a particular site require a local conservation strategy. State Fish and Wildlife Agencies, NRCS state technical committee recommendations, the Service's Partners for Fish and Wildlife, and other local experts will assist NRCS in establishing a local solution where needed.

Cumulatively, the adverse effects of this concern are expected to be localized and temporary, and the use of the conservation measures will further reduce the risks of adverse effects at the scale upon which populations or the species will be negatively impacted. On balance, the long-term benefits of installation and application of a particular conservation practice standard under the LPCI is expected to exceed the temporary adverse effects created from their installation.

Adverse Effect: (II) Temporary soil disturbance and vegetation removal and (III) Increased potential of introduction of invasive plants

Temporary soil disturbance and vegetation removal are expected from the implementation of most of the conservation practice standards. This disturbance may result in loss of cover and increase the potential for invasive plants, especially woody plants like eastern red cedar and mesquite. For purposes of this analysis, the Service is combining these two conservation issues into a single discussion of their potential adverse effects.

Sources of the disturbance would include use of equipment (post-hole diggers, tractors, and other machinery) as well as practices that involve the planting or manipulation of vegetation (examples such as brush management, shrub control, and prescribed burning). Common potential adverse effects identified by the Service include degradation of habitat conditions and the potential for increased habitat fragmentation if the scale of the disturbance is large enough and the potential to create opportunities for colonization of these disturbed sites by invasive plants.

Temporary adverse effects on individuals can include increased levels of stress hormones, increased recesses during incubation (i.e., may increase detection by predators and predation risk), or disturbance/flushing of young broods. The latter may increase predator detection and predation risk as chicks increase the frequency of calling in attempt to rejoin with their brood and hen. If these risks are realized, individual fitness is reduced and may have population level effects if disturbance is over a broad enough spatial or temporal scale.

Collectively, these adverse effects can produce impacts to individual birds as well as at the population level. The primary adverse effect is the potential for habitat degradation from unsustainable or unmanaged livestock grazing – specific to temporary loss of nesting and brood-rearing habitat. A secondary adverse effect is the opportunity created for invasion of undesirable plants during practice implementation.

The conservation practice standards analyzed by the Service that could produce these potential sources of adverse effect (temporary soil disturbance and vegetation removal and increased potential of introduction of invasive plants) will be implemented by NRCS to conduct habitat management, restoration and enhancement actions which under the LPCI are designed specifically to meet the conservation needs of the LPC. If implemented outside of the LPCI, the focus will not be on directly benefiting the LPC (but as stated before, implementation outside of the LPCI using the conservation measures described in the Report will not create a

source of additional adverse effect). The net effect will be that practice installation and maintenance may result in short-term disturbance but produce long-term restoration, maintenance and enhancement gains for the LPC. If the conservation practices are implemented outside of the LPCI, the net effect for the LPC will also be positive or at least neutral because the expected long-term gain may not be realized as the practice will be implemented to support objectives other than explicit LPC conservation.

That said, the use of the conservation measures are expected to minimize the short-term adverse effects of practice installation. Conservation measures have been developed to manage the risk of soil erosion as well as the risk of invasive plants. These measures manage the risk during practice installation and require monitoring and subsequent redress of any created or emerging threat throughout the effective life of the conservation practice standard. A restoration strategy using native plants appropriate to the ecological site will be used to provide a temporary buffer in the establishment of native vegetation will further ameliorate these potential adverse effects.

The management practice Prescribed Grazing also deserves a special note here, as livestock management has the potential to create conditions for temporary soil disturbance and vegetation removal and increased potential of introduction of invasive plants. The conservation measure to address potential adverse effects from grazing ensures that a prescribed grazing system is designed and implemented in accordance with the identified conservation measures and recommendations from the affected State Fish and Wildlife Agency. The measures relating to timing, frequency, intensity and duration, and the targeting of stocking rates which produce a desired vegetative response that, upon implementation, will insure that a diversity of plants and cover types, including shrubs, remain on the landscape. Further, the outcome of a prescribed grazing plan will ensure livestock utilization levels leave sufficient cover in the spring to ensure that LPC nests are adequately concealed from predators. Although some level of adverse effect is anticipated from livestock operations in the short-term, the long-term benefits will manifest as species habitat will be maintained or improved following application and the expected species response will be positive.

Cumulatively, the long-term and landscape benefits of installation and application of the particular Conservation Practice Standards as conditioned by the conservation measures are expected to exceed any temporary adverse effects created from their installation.

Adverse Effect: (IV) Permanent Removal/loss of suitable habitat

This adverse effect is a result of permanent removal of habitat conditions and specific vegetative loss caused by the installation of the conservation practice standard or the expectation that, once implemented, permanent degradation of habitat conditions for the LPC will have resulted. Certain facilitating practices (firebreak, watering facility, spring development, pumping plant, water well, pipeline, grade stabilization structure, fence, and pond) covered in this Report have the potential to result in the permanent removal/loss of habitat for the LPC.

The primary adverse effect is the permanent loss of forage and nest habitat which can lead to a reduction of available habitat and subsequent decline in LPC populations. The Service believes that maintaining large areas (1,000 to 10,000 ha) of suitable habitat with appropriate connectivity is essential to LPC persistence (Giesen 1998, Bidwell *et al.* 2002, Hagen *et al.* 2004).

NRCS is not proposing to assist private landowners in converting LPC habitats to other uses, such as row-crops or "sod-busting". This was a primary concern raised by the Service at the time of the petition finding (63 FR 31400) but is not relevant to this analysis as it is not a covered action for this Conference Report. Consequently, any permanent loss of habitat and increases in rate/extent of habitat fragmentation under the conservation practices implemented as described in the proposed action is expected to be localized and minor.

Temporary adverse effects on individuals can include increased levels of stress hormones, increased recesses during incubation (i.e., may increase detection by predators and predation risk), or disturbance/flushing of young broods. The latter may increase predator detection and predation risk as chicks increase the frequency of calling in attempt to rejoin with their brood and hen. If these risks are realized, individual fitness is reduced and may have population level effects if disturbance is over a broad enough spatial or temporal scale.

Most of the structural practices will produce localized losses which can be minimized using the identified recommended conservation measure(s). The conservation measure(s) focus on design and planning aspects of the practice so as to avoid large expanses of habitat loss especially from linear practices (e.g., fence lines, water pipelines, etc.).

The management practice Prescribed Grazing also deserves a special note here, as livestock management has the potential to create conditions that are unsuitable to LPC persistence. The conservation measures for Prescribed Grazing include managing elements of livestock relating to timing, frequency, intensity and duration, and stocking rates. By addressing each of these elements, each prescribed grazing plan will result in a desired vegetative response that will insure that a diversity of plants and cover types, including shrubs, remain on the landscape and that livestock utilization levels leave sufficient cover in the spring to ensure that LPC nests are adequately concealed from predators. With the assistance from the State Fish and Wildlife Agency personnel and others, the landscape level benefits can also be identified and produced.

The long-term and cumulative benefits of installation and application of the particular Conservation Practice Standards as conditioned by the conservation measures are expected to exceed the temporary expected adverse effects created from their installation. Further, the use of the conservation measures will ensure that the species habitat is maintained or improved following application. Cumulatively, the expected species response will be positive as the extent of adverse effects are not expected to occur at the scale necessary to adversely impact population trends or to result in significant additional habitat fragmentation effects.

Adverse Effect: (V) Increased potential of accidental mortality to individuals

Several conservation practice standards (e.g., Watering Facility, Forage Harvest Management, Cover Crop, and Conservation Crop Rotation, Fencing) were identified as potentially causing mortality or injury to individual birds. These include accidental mortality from drowning in livestock water tanks, striking a fence, or vehicle collision. Any mechanized equipment operating at intensive levels in LPC habitat has the potential to create harm to individual birds as a result of accidental collisions with birds.

The use of specific conservation measures focusing on design, timing, and method of operation of machinery and the placement and management of water features (such as the use of escape ramps and individual site selection for proper placement) is expected to significantly reduce the potential adverse effects of these conservation practice standards.

The remaining source of adverse effects, the construction and placement of fences, however, remains as a primary concern to the Service. The effects of fencing on LPC include direct mortality through collisions, creation of raptor and corvid perch sites, and the potential creation of predator corridors along fences (particularly if a road is maintained next to the fence). From 1999 to 2004, researchers from the Sutton Center recovered 322 carcasses of radio marked LPC in New Mexico, Oklahoma, and portions of the Texas panhandle. For LPC in which the cause of death could be determined, 42 percent of mortality in Oklahoma was attributable to collisions with fences, power lines, or automobiles. In New Mexico, only 14 percent of mortality could be traced to collision. The difference in rate of observed collision between states is attributable to differences in the amount of fencing on the landscape resulting from differential land settlement patterns in the two states

(Patten *et al.* 2005). With between 14 and 42 percent of adult LPC mortality currently attributable to collision with human-induced structures, Wolfe *et al.* (2007) assert that fence collisions will negatively influence long-term population viability for LPC. However, the use of setbacks, buffers, and fence marking is expected to manage or reduce the risk of collisions (Wolfe *et al.* 2009).

The long-term population-level effects of loss of birds due to fence strikes are unknown. This uncertainty can only be addressed through development of a long-term research and monitoring program for the LPCI and related conservation efforts in the range of the species.

The proposed action will include the principle technique for minimizing the adverse effects of fencing to ensure that planning and design placement of new fences provides at least a 1/2 mile buffer from occupied and historic leks, unless the State Fish and Wildlife Agency recommends a different (larger) buffer. If this is not possible, a requirement to mark the fence to increase visibility will be implemented by NRCS. NRCS will identify existing fences that are within 1/2 mile of an occupied or historic lek and consider removing or relocating the fence to a site further from the lek. NRCS will require marking all existing fences within 1/2 mile from an occupied or historic lek, or in areas where collisions are known to occur.

Use of visible marking and strategic placement of fences have been shown to reduce sage-grouse mortalities by as much as 70% as compared to unmarked sections (Stevens 2011). The science support element (through monitoring and assessment) of the LPCI will provide important information on the overall effectiveness of marking fences and the long-term response of the species.

Fence strikes are a potential source of mortality influenced by location, design, density of fences, and other site specific factors. Cumulatively, the use of the recommended conservation measures will provide a net positive conservation outcome to the species, created through removal of existing fences in essential habitat features such as leks, the installation of escape ramps, and modifications of the installations of the other affected conservation practice standards.

Adverse Effect: (VI) Increased potential for predation

NRCS will implement conservation measures to address the potential for predation to the species as direct or indirect consequence of implementation of the proposed action.

Certain conservation practice standards may increase the potential for predation on individual birds through the installation of structures or modifying existing habitat conditions. For example, some installed practices may create habitat for raptor perching. In addition, some practices will temporarily reduce available cover and food sources, making LPCs more vulnerable to predation. Finally, the presence of humans during practice installation can temporarily create an artificial food source for predators (i.e., trash attracts predators such as foxes, coyotes, badgers). The affected conservation practice standards include those that involve the creation or maintenance of infrastructure or habitat manipulations associated with ranching operations.

The identified conservation measure suggests modifications to the design of fences, management of brush piles, and avoiding the use of tall structures in the species' habitat to the extent possible and practicable. Removing raptor perches such as trees, power poles, and fence posts is likely to lower predation risk more than any conventional predator removal methods (Wolfe *et al.* 2007). Cumulatively, the Service believes that the conservation measures will effectively reduce the risk of predation at the local and landscape scale to the extent to which it is not expected to have a detectable effect on the population or species.

SUMMARY OF EFFECTS

Implementation of the proposed action under the LPCI is intended to eliminate or reduce the threats to the LPC and to improve its conservation status. The targeted benefit of LPCI is to create strategic improvements to the status of the species on private ranching operations receiving NRCS cost share and technical assistance. The proposed action in conjunction with the integrated use of the conservation measures is expected to benefit the LPC by maintaining, enhancing, and restoring populations and their habitats as well as by reducing the threats of direct mortality. Landowners who are interested in participating in the LPCI must agree to contribute to the maintenance of LPC habitat on their enrolled lands, follow the recommended standards and specifications within the core Upland Wildlife Habitat Management Practice and each of the conservation practice standards used. The LPCI will result in restoration of habitat by either implementing grazing practices and land management measures to allow the natural reestablishment of suitable habitat conditions to occur (passive restoration) or by seeding/planting (active restoration) during the term of the individual contracts (between 2 and 10 years). The strategic nature of the LPCI will also focus financial and technical assistance to priority areas (e.g., as defined by lek counts). The strategic approach will also enhance the landscape level benefits of the proposed action. Implementation of the conservation practices within the LPCI Action Area but not enrolled in-the LPCI (i.e., receiving LPCI funds) are expected to avoid creating new adverse effects and otherwise maintain the conservation status of the species.

Conservation Measures are designed to maintain and enhance habitat and decrease fragmentation which is the greatest threat to LPC. Conservation Measures also include commitments to reduce direct mortality and conserve the natural landscape attributes required by the species. The LPCI will encourage that large expanses of connected private ranchlands will be involved in habitat creation, restoration and/or management to provide a substantial conservation benefit for the species. Because the species' persistence is dependent almost exclusively upon private lands, the targeted nature of the LPCI is expected to magnify these conservation benefits.

We expect that the majority of incidental take will be in the form of death, injury, or temporary harassment (via displacement) during conservation practice installation, operation, and maintenance. For some conservation practice standards, such as fences, some level of incidental take is expected over the life of the practice. The scale of the effect will be landscape specific, but will most likely involve mortality of adult birds, the destruction of nests, and loss of eggs.

The overwhelming conservation benefits of implementation of the proposed action within the selected priority areas, maintenance of existing habitat, and enhancement of marginal habitat will outweigh short-term negative impacts to individual LPC. Beyond lands covered by/enrolled in the LPCI, this beneficial effect will be less noticeable in a comparative sense but nonetheless expected. The implementation of the proposed action will result in more of the threats that adversely affect populations being managed, more habitat under the appropriate management prescriptions, and more information being developed and disseminated on the compatibility of sustainable ranching operations on the persistence of this species across the landscape.

The LPC rely upon landscapes rather than a single specific habitat to persist and the proposed action is an organized and strategic effort to support this level of focused conservation. That landscape objective can only be achieved by the cumulative results of individual actions occurring at the local and population level. A primary aspect of managing the species is the awareness and use of state-level partners, such as the State Fish and Wildlife Agency, NRCS State Technical Committee, and other recognized experts to ensure that the benefits to the species occur at the scale(s) necessary, as the LPCI matures and more landowners become engaged in LPC conservation in the context of managing private ranchland in the Action Area.

Land management in the range of the LPC has been heavily influenced by natural and economic forces. The arid ecosystem where the LPC lives is characterized by climatic extremes - from droughts to flash floods and extreme heat to bitter cold. Economic factors including fluctuating crop commodity prices and wind energy leases continue to impact landowners. While future conditions cannot be predicted, it is safe to assume that climatic and economic extremes may impact the ability to conserve and manage LPC populations.

Cumulatively, the Service finds that effective implementation of conservation practice standards and associated conservation measures are anticipated to result in a positive population response by the species. This positive response is expected as threats are reduced; notably in addressing habitat fragmentation and improvement of habitat conditions across the landscape.

Further, the proposed action is expected to limit unfavorable impacts to the species, and to maintain and enhance habitat at both the population and landscape level. In conclusion, the anticipated levels of adverse effects are more than offset by the implementation of conservation practices for the benefit of LPC as modified by the agreed-upon conservation measures.

CONCLUSION

After reviewing the current status of the LPC, the effects of the proposed action, and the expected cumulative effects, it is the Service's Conference Report determination is that the proposed action, which incorporates the procedures, practice standards, and conservation measures as identified here, is not likely to jeopardize the continued existence of the LPC.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the ESA directs Federal agencies to utilize their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency actions. The Service offers the following conservation recommendations:

- Meet with the Service on at least an annual basis to evaluate the progress, successes, and challenges of the implementation of the LPCI.

- Develop an implementation process to ensure local NRCS and affected Service offices have the appropriate level of training and understanding of the conservation measures, the use of the monitoring elements as proposed, and other operational components identified in the Conference Report. The Service's Partners for Fish and Wildlife Program will continue to closely coordinate with NRCS to help implement the LCPI and related conservation efforts.

- As the science support and monitoring elements of the LPCI begin to produce information and data, NRCS will share this information with a wide range and diverse collection of partners (State Fish and Wildlife Agencies, Association of Fish and Wildlife Agencies, Western Association of Fish and Wildlife Agencies, Western Governors Association, and others) to further enhance the conservation outcomes of the LPCI.

- Working lands easements such as the NRCS Farm and Ranchland Protection Program and the Grasslands Reserve Program would enhance current LPCI efforts by providing a mechanism for delivering long-term benefits to the LPC and sustainable ranching.

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REINITIATION-CLOSING STATEMENT

This concludes the Conference Report for the potential effects of the proposed action. The Conference Report will be used as the basis for the Agencies to cooperatively develop a Conference Opinion. The NRCS may request that we work together to prepare a Biological Opinion if the LPC is listed. The request for the Biological Opinion must be in writing. During review of the proposed action if the Service finds that there have been no significant changes in the expected benefits or adverse effects analyzed herein, or information used during the conference, the Service will modify the Conference Opinion to produce a Biological Opinion and no further section 7 consultations for the LPC will be necessary.

June 30, 2011

Dr. Benjamin N. Tuggle
Regional Director
U.S. Fish and Wildlife Service, Southwest Region

Date

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Appendix

I. **NRCS –Endangered Species Act (ESA) policy**

II. **NRCS - Conservation Planning**

III. **LPCI Science Support Element**

IV. **Comprehensive Analysis of Each Conservation Practice Standard in the Conference Report**

V. **Listed, Candidate, and Proposed Species Occurring in the LPCI Action Area**

VI. **Environmental Evaluation Worksheet (NRCS-CPA-52)**

APPENDIX I – NRCS Endangered Species Act (ESA) Policy

Section 7(a) (1)

- NRCS, as required by ESA, is committed to the utilization of its authorities in furtherance of the ESA purposes by carrying out programs for the conservation of threatened and endangered species.
- As appropriate, NRCS assists in the development of species recovery plans, develops National and State policy, and uses its conservation and technical assistance programs to conserve species and habitat protected by the ESA.
- NRCS meets much of its Section 7(a)(1) responsibilities to carry out programs for the conservation of endangered and threatened species on a programmatic basis by involving Fish and Wildlife Service and NMFS in NRCS State Technical Committee meetings and in local work group meetings. Their participation with these groups augments other discussions that NRCS has with the Fish and Wildlife Service and NMFS regarding the conservation of specific protected species.
- On a site-specific basis, NRCS also uses its authorities to support Section 7(a)(1) requirements by implementing conservation recommendations the Service makes during the Section 7(a)(2) consultation process.

Section 7(a)(2)

The following summarizes NRCS' consultation protocol under 2 scenarios: 1) Technical assistance only, and 2) in situations where NRCS in some way controls the action (includes financial assistance):

(1) NRCS Technical Assistance Only

- There is no requirement to consult on a site-specific basis when NRCS provides technical assistance only. NRCS technical assistance activities provide information and advice to recipients regarding the utilization of their resources. In such cases, NRCS does not control the action that is ultimately taken, and therefore technical assistance does not fall within the parameters of an agency action subject to section 7(a) (2) consultation.
- However, NRCS policy in GM 190 Part 410 B-22(e)(5)(ii) requires consultation when NRCS technical assistance provides the basis for NRCS financial assistance, and the proposed action(s) may affect listed species and/or critical habitat.
- When providing site-specific technical assistance, NRCS personnel must still refer to Section 2 of the Field Office Technical Guide, other existing maps, habitat criteria, and other available information to determine whether protected species or designated critical habitat are present. NRCS personnel must also refer to this information to determine whether proposed or State-listed species of concern or the habitats on which they depend, are also present.
- Circumstances that may prompt discontinuation of service to a client: If NRCS determines that there may be an adverse impact on a listed species or designated critical habitat as a result of the recipient voluntarily implementing a conservation system, NRCS will recommend an alternative conservation treatment that avoids the adverse impact. If the landowner pursues a conservation system that adversely affects a protected species, NRCS field staff will inform the client about their obligation to contact the Fish and Wildlife Service or NMFS, as appropriate, to determine whether there is a need for a Habitat Conservation Plan (HCP) (see Section 610.104) to avoid violating the ESA. NRCS will not provide assistance for those conservation practices or systems that will cause an adverse effect unless the landowner obtains an HCP and an incidental take permit.

(2) NRCS-Controlled Action (includes financial assistance)

- If a proposed action funded by NRCS may affect a listed species or designated critical habitat, NRCS must initiate consultation with the Fish and Wildlife Service or NMFS, as applicable. A table of listed and candidate species that occur within the LPC Action Area is found in Appendix V.
- Consultation may be formal or informal depending on the circumstances and shall be conducted whether the effect is beneficial or adverse. The consent of the landowner and land user shall be obtained before initiating site-specific consultation.
- Circumstances that may prompt discontinuation of service to a client: If the landowner or land user is unwilling to consent to NRCS initiating the consultation process, and decides to implement conservation practices or measures that will result in adverse effects to listed species or will modify designated critical habitat, NRCS will not provide financial or technical assistance for those conservation practices or systems that will cause the adverse effects.

NRCS personnel are responsible for determining whether or not a proposed action will have an effect on listed species or designated critical habitats.

In making a determination, field staffs should utilize existing resources such as maps identifying protected species' ranges and designated critical habitats, information from the Fish and Wildlife Service and NMFS regarding listed species and designated critical habitats, and any other appropriate, reliable information. The "best scientific and commercial data" must be considered in making this determination.

Landowner Consent Form

Before initiating site specific consultation, NRCS must obtain the written consent of the landowner and land user, or just the land user when the land user provides written indication of having complete control over the land. This signed form along with all other pertinent correspondence relevant to the consultation should be maintained in the "administrative file" that is kept with the client's conservation plan.

Addressing Candidate Species

Candidate Species are not protected under the ESA, although the Fish and Wildlife Service and NMFS encourage the formation of partnerships to conserve candidate species. NRCS policy also suggests that States set priorities for addressing candidate species. Conferencing for actions that may adversely impact a candidate species is optional. However, when considering impacts to candidate species it is important to note that:

- Some candidate species may be protected by State or Tribal law;
- NRCS policy requires that when providing technical and financial assistance NRCS will recommend only alternative conservation treatments that will avoid or minimize adverse effects, and to the extent practicable, provide long-term benefit to the species. If the landowner chooses not to accept and implement alternative conservation measures that would avoid or minimize adverse effects, then NRCS will terminate technical and financial assistance. (General Manual 190 Part 410.22(E)(7)); and
- If Conference Opinions or Reports exist between Fish and Wildlife Service and/or NMFS and NRCS that address candidate species in an area where NRCS may be asked for assistance, NRCS must follow and adhere to any conservation measures outlined in the Conference Opinion or Report. Should the client or landowner choose to apply conservation measures other than those outlined in the Conference Opinion or Report, NRCS will inform the client and landowner of the NRCS policy to adhere to Conference Opinion or Report conservation measures and shall terminate assistance for the action or portion of the action potentially affecting the candidate species, or NRCS may initiate a new Conference Opinion or Report with the appropriate Service(s).

- If a candidate species becomes federally listed, proposed for listing, or the critical habitat is federally designated or proposed prior to the completion of an action, the project will be halted while the necessary consultation or conferencing requirements are met.

APPENDIX II – NRCS Conservation Planning

Local NRCS conservation planners develop conservation plans for clients that address environmental resource concerns on private, non-Federal, or Tribal lands. NRCS conservationists help individuals and communities to take a comprehensive approach to planning the proper use and protection of natural resources on these lands through a nine-step planning process described in the NRCS "National Planning Procedures Handbook" and illustrated in Figure 1.

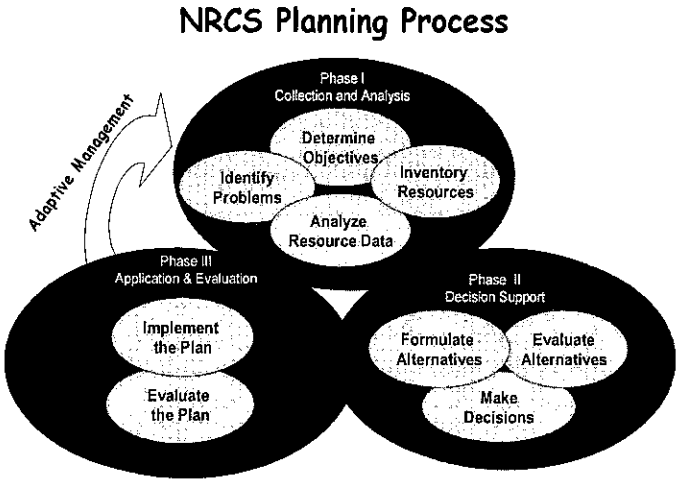

Figure 1. NRCS Planning Process

As part of this conservation planning effort, individual environmental reviews called Environmental Evaluations (EE) are completed which inform the conservation planning effort and assist the Agency's compliance with NRCS regulations that implement NEPA. See Environmental Evaluation Worksheet (NRCS-CPA-52) in Appendix VI. The EE is a concurrent part of the planning process in which the potential long-term and short-term impacts of an action on people, their physical surroundings, and the natural environment are, evaluated and alternative actions explored. The EEs and conservation plans are developed to assist the client in making decisions and implementing the conservation practices identified in the conservation plan. A Conservation plan is a record of the client's decision to implement of one or more conservation practices which prescribe the actions necessary to address the identified resource concerns in need of treatment.

Conservation Practices

NRCS provides technical and financial assistance by planning and designing conservation practices that achieve the identified conservation needs. Each conservation practice has an established standard, which is contained in the Field Office Technical Guide and includes the following elements:

- definition and purposes of the practice,
- conditions in which the practice applies,
- minimum criteria to be applied supporting each purpose,
- additional elements to be considered,
- required plans and specifications, and
- operation and maintenance requirements

See the conservation practices eligible for application in the LPCI area in Appendix IV.

NRCS practice standards are developed at the national level and establish the minimum level of acceptable quality for planning, designing, installing, operating, and maintaining a conservation practice. These standards are developed through a multi-disciplinary science-based process in order to maximize the success and

minimize the risk of failure of the conservation practice. When a conservation practice standard is developed or revised at the national level, NRCS publishes a notice in the Federal Register of the availability of the standard for review and comment for a period of not less than 30 days from the date of publication. Standards from the "National Handbook of Conservation Practices" and interim standards are used and implemented by States, as needed, and may be modified to include additional requirements to meet Federal, State, Tribal, or local needs. Because of wide variations in soils, climate, and topography, States can revise these national standards and develop specifications to add special provisions or provide additional details in the conservation practice standards. State laws and local ordinances or regulations may also dictate more stringent criteria; in no case, however, are the criteria of the national conservation practice standard reduced. For the LPCI, conservation practices have been modified to include additional conservation measures necessary to mitigate impact and/or to assist in the recovery of the species. See Appendix IV for conservation measures associated with each practice.

Conservation planning in the LPCI Action Area

Conservation planning will vary within the LPCI Action Area depending on whether the client chooses to participate in the Initiative or not. The scenarios presented in Table 2 provide an example of the level of conservation planning that would result.

Ecological Sites

An Ecological Site is a conceptual division of the landscape defined as "a distinctive kind of land with specific soil and physical characteristics that differs from other kinds of land in its ability to produce distinctive kinds and amounts of vegetation and in its ability to respond similarly to management actions and natural disturbances" (draft Interagency Ecological Site Handbook for Rangeland). The ecological site is used to define, quantify, and document relationships among local climate, landform, elevation, slope, aspect, parent material, soil, disturbance regimes, and vegetation. An ecological site description (ESD - hyperlinked) is a report containing the information and data associated with each ecological site.

The fundamental assumption underlying ecological sites is that soils, climate, and geomorphology can be correlated with sufficient precision to provide a site-specific basis for successful ecological predictions and management decisions. Knowledge of how management and disturbance processes interact with abiotic and biotic factors is critical to understanding ecological processes and relationships. A state-and-transition model (STM) within each ESD is a diagram displaying those relationships (Townsend 2010).

STMs are descriptions of the vegetation dynamics occurring within specific ecological sites. STMs consist of a diagram and associated narratives that describe these dynamics. STMs are organized as a collection of alternative stable states that represent the potential vegetation communities an individual ecological site may support. A state is defined as a suite of community phases occurring on similar soils that interact with the environment to produce persistent functional and structural attributes associated with a characteristic range of variability. Each state contains one or more community phases representing dynamics within that state. Dynamics among community phases may be driven independently or in combination by natural events or human activities. States are separated by thresholds that can be induced by natural or human events. Thresholds represent conditions sufficient to modify ecosystem structure and function beyond the limits of ecological resilience. Ecological resilience being defined as the amount of change or disruption that is required to transform a system from being maintained by one set of mutually reinforcing processes and structure to a different set of processes and structures. Ecological resilience of states can be reduced by improper land management practices (e.g., fire suppression, reduction of soil protection, and species introduction) or extreme environmental conditions (e.g., multiyear drought, intense storm events, insect and disease outbreaks), either independently or in combination (Briske et al. 2008).

The STM summarizes the existing knowledge and hypotheses of an ecological site's functional and structural attributes and its responses to disturbances and stresses. STMs can be used as guides in developing management strategies to maintain desired states, enhance movement from one state to another state, and to identify indicators to be monitored for the purpose of maintaining or changing states.

Ecological sites and their descriptions provide a consistent framework for stratifying landscapes and describing soil, vegetation, and abiotic features; delineating units that share similar capabilities to respond to management activities and disturbance processes; and estimating ecosystem services that can be expected from particular soil/vegetation combinations (Townsend 2010).

Wildlife Habitat Evaluation Guides (WHEG)

Wildlife Habitat Evaluation Guides (WHEG) are tools that are developed at the NRCS state level, and utilized by field personnel, to assess existing habitat conditions and identify limiting habitat factors in the planning area. WHEGs are species-specific. The objective of the WHEG is to evaluate habitat conditions that provide for the life requisites of the wildlife species under consideration and to inform alternative formulation and effects analysis. It is NRCS policy for each state to have a wildlife habitat evaluation protocol to be used in planning the upland Wildlife Habitat Management Standard (645). The standard also requires that the alternatives address the limiting factors in their order of significance, as indicated by the habitat evaluation. The WHEG's are named in a manner that may use terminology such as "evaluation", "appraisal"," assessment", or "habitat suitability model". They usually take a form similar to Habitat Suitability Index Models (F&WS Ecological Services Manual, Habitat as a Basis for Environmental Assessment, 1980) and often include variables that are relatively easy for non-biologist staff to collect while in the field. Many of these are species-specific for important wildlife common within each state, but there are also some "general" habitat assessment models that evaluate habitat on agricultural working lands where the landowner has not expressed an interest in a particular species.

Four (CO, KS, NM, and OK) of the five states in the LPCI have established WHEG's for Lesser Prairie Chicken. NRCS is working towards a more consistent approach across the range of this species.

Hyperlinks to state WHEGs
Oklahoma WHEG
Colorado WHEG
Kansas WHEG
New Mexico WHEG

APPENDIX III – LPCI Science Support Element

Monitoring LPCI Effectiveness

Monitoring the effectiveness of LPCI will occur at multiple scales and will address both vegetation and population responses. Evaluation tools will be developed to monitor outcomes and effectiveness.

At the broad scale, the area affected by a particular treatment will be documented to the smallest unit possible without violating privacy rules of NRCS. Affected area will be recorded in acres (e.g., prescribed fire), linear feet (e.g., marked fence), or numbers of units (e.g., escape ramps). Preferably these metrics would be based on geographic units (i.e., a watershed), or priority areas (per the DSS) and not administrative units. This framework will more directly link these affected areas to populations.

Changes in lek attendance (i.e., male abundance) and/or lek distribution will be used to assess the effects of conservation actions in specific priority areas or geographic units.

Rigorously designed research projects will be developed such that fine scaled habitat and population vital rate responses can be measured in relation to various conservation practices, and then extrapolated to the total area affected by the practices.

Baseline assessments of vegetation will be collected at project areas consistent with NRCS NRI protocols to assess vegetation response at the individual ranch level. In turn, as multiple projects are completed a portfolio of habitat change can readily be quantified and linked back to changes in abundance and/or distribution of populations.

NRCS will seek to develop Wildlife Habitat Evaluation Guidelines that are specific to the three major habitat types (i.e., mixed-grass prairie, sand sagebrush prairie, and shinnery oak grasslands) but are consistent across the range of the LPC. This approach will ensure that baseline information is reported consistently both internally and to partners.

Science Needs

The LPCI seeks to reduce primary threat factors to LPC and minimize the uncertainty associated with NRCS Conservation Practices that will be used to address the threats. The LPCI envisions 8 potential studies (replicated across ecological zones) to better inform the outcomes and effectiveness of Conservation Practices. LPCI is seeking partners and funding resources to initiate the following studies.

1) Delineate high priority LPC habitats across the species range. State Fish and Wildlife Agencies and Playa Lake Joint Ventures (PLJVs) are developing habitat maps on behalf of the Western Governors' Association Decision Support System (DSS) program. The resulting maps will provide the context for targeting conservation practices and investments. Additionally, these maps will aid in the reporting spatially based threat reductions to the species.

2) Evaluate the benefits of Prescribed Grazing (645) to LPC populations. LPCI will seek opportunities to study the effects of prescribed grazing on LPC in mixed-grass prairies, sand sagebrush, and shinnery oak vegetation communities.

3) Evaluate the benefits of eastern red cedar control (and methods thereof) on LPC populations. LPCI will seek opportunities to study the effectiveness of various types of cedar control on vegetation communities as well as the local LPC population.

4) Fire suppression has altered vegetation communities throughout LPC range, resulting in changes in the proportion and age structure of woody plants. The application of prescribed burning to improve LPC habitat is largely untested. Thus, LPCI will seek opportunities to evaluate methods (e.g., spring vs. fall burning) of patch burning and proportions of the landscape that provide the greatest benefit for LPC.

5) Because of fire suppression, woody vegetation (i.e., sand sagebrush and/or shinnery oak) may have transitioned across ecological thresholds and are now in a "steady ecological state" in various portions of the range. Restoration of ecological states where herbaceous vegetation is dominant or co-dominant with woody vegetation is an important goal in the conservation of LPC. Thus, LPCI will seek opportunities to evaluate methods of brush management (i.e., mechanical, chemical, or fire) and proportions of the landscape in woody vegetation that provide the greatest benefit for LPC.

6) Assess the mortality risk of LPC strikes to fences and determine how to reduce threats by marking fences, and develop predictive models to identify where fences may pose the greatest threat to species.

7) Assess the risk to LPC populations of loss of acres enrolled in CRP that are converted back to annual crop production. Seek opportunities to develop predictive models of population persistence as pertains to changes in CRP acreages and landscape connectivity.

8) Identify those landscapes most at risk of conversion from agricultural land use (i.e., ranching and farming) to others uses and evaluate benefits of easements to keep those lands in production.

9) Work with National Resources Inventory (NRI) personnel in NRCS to ensure that NRI sampling and LPCI habitat assessments are comparable within respective floristic/ecological provinces.

APPENDIX IV – Comprehensive Analysis of Each Conservation Practice Standard

NOTE: For practices implemented through the Lesser Prairie-chicken Initiative (LPCI), the core practices Upland Wildlife Habitat Management (645) and Prescribed Grazing (528), when livestock are present, shall be used in all LPCI conservation plans in order to determine which, if any, facilitating conservation practices are needed, as well as the extent, location, and timing of facilitating practices to ensure that LPC habitat is maintained or improved following application.

Conservation Practice Standard: Upland Wildlife Habitat Management (645) (Core Management Practice)

Definition: Provide and manage upland habitats and connectivity within the landscape for wildlife.
Purpose: This core management practice will be applied or maintained annually to treat and manage wildlife, in particular LPC resource concerns identified during the conservation planning process. Application of this practice shall remove or reduce habitat limiting factors, in their order of significance, as indicated by results of the LPC wildlife habitat evaluation guide (see Appendix II) or other acceptable assessments. This practice alone, or in combination with facilitating practices, shall result in a conservation system that will enable the planning area to meet or exceed the minimum quality criteria for upland wildlife habitat.

Practice Application: This management practice will be implemented on up to 760,000 acres of land per year throughout the Action Area as indicated in the table below.

645 Upland Wildlife Habitat Management average anticipated usage

State	Estimated LPC Population Size in 2011	Total ac/yr
Colorado	**< 1,500** [a]	70,000
Kansas	**19,700 - 31,100** [b]	30,000
Oklahoma	**< 3,000** [c]	420,000
Texas	**6000** [d]	190,000
New Mexico	**4968** [e]	50,000

a) Giesen 2000, p. 137; b) Rodgers 2007a, p. 1; c) Horton 2000, p. 189; d) Davis et al. 2008, p. 24; e) Beauprez 2009, p. 17

Resource concern(s): Factors that reduce habitat quality or otherwise limit population growth of the targeted species.

Potential beneficial effect(s) to LPC: This core management practice will be used to restore, enhance or create, and manage for suitable habitat for the LPC; to improve habitat conditions for all life cycles, including breeding, nesting, brood-rearing, and over-wintering and to provide adequate food, cover and shelter, and address the effects of habitat fragmentation by creating, maintaining, or restoring landscape connectivity for movement.

Potential adverse effect(s) to LPC: This core management practice was developed for the primary purpose of improving wildlife habitat. When applied and managed to the standards and specification of the practice, this practice should not result in adverse conditions to the LPC or associated wildlife species.

Conservation Measures:

1] NRCS shall coordinate with the affected State Fish and Wildlife Agency and confer with the State Technical Committees to identify appropriate restrictions on the placement, extent, configuration, and timing of this conservation practice standard and the area where these practice restrictions would apply so as to avoid or minimize adverse effects to the LPC and supporting habitat conditions.
2] The best scientific data available will guide the development of this practice; to ensure effectiveness, adaptability and increased knowledge.
3] Utilize acceptable habitat evaluation tools and monitoring protocol such as the WHEG (see Appendix II) to evaluate habitat conditions, on a regular basis, to ensure the conservation plan is adapted to meet the habitat and wildlife needs.
4] Ensure all facilitating practices include critical non-disturbance dates to minimize their effects on leks and nesting periods, as appropriate to the practice.
5] This practice may be used to modify existing infrastructure to reduce or eliminate potential adverse effects resulting from those structures; including installation of wildlife escape ramps in open water sources or in open trenches/pits, and marking fence lines to prevent bird collision in critical areas.
6] NRCS shall ensure that plans and specifications for this practice are prepared by persons with adequate training in the fields of wildlife management, biology or range ecology.
7] For the purposes of the LPCI, NRCS will encourage the establishment of "permanent" photo points to serve as visual documentation of changing habitat conditions over a period of time for the life of the management system.
8] NRCS will work with conservation partners to implement strategies to determine habitat use by wildlife species and/or to determine estimates/indices of abundance where possible.

Conservation Practice Standard: Prescribed Grazing (528) (CORE SUPPORTING MANAGEMENT PRACTICE)

Definition: Managing the harvest of vegetation with grazing and/or browsing animals.

Purpose: When livestock grazing is present or planned, this practice is applied or maintained annually as a part of a conservation management system to achieve one or more of the following: (A) Improve or maintain desired species composition and vigor of plant communities. (B) Improve or maintain quantity and quality of forage for grazing and browsing animals' health and productivity. (C) Improve or maintain surface and/or subsurface water quality and quantity. (D) Improve or maintain riparian and watershed function. (E) Reduce accelerated soil erosion, and maintain or improve soil condition. (F) Improve or maintain the quantity and quality of food and/or cover available for wildlife. (G) Manage fine fuel loads to achieve desired conditions. (H) Promote economic stability through grazing land sustainability and continued livestock production.

In addition to the purposes above; within the LPCI, this conservation practice standard shall only be selected to support the goals and objectives of core Conservation Practice Standard Upland Wildlife Habitat Management (645). At the individual and landscape scale, the use of this practice standard under the LPCI is expected to produce a mosaic of vegetation structure and composition to benefit the LPC (e.g. create areas of greater forb and resulting insect production, create areas of higher residual cover for nesting birds, and create open lek habitat).

Practice Application: In creating a prescribed grazing plan, NRCS integrates landowner objectives, local resource inventories, habitat needs assessments of LPC, forage balance sheets, and ecological site description information to plan and design the practice. Further, this conservation practice standard is a management practice and it depends upon the proper application of the facilitative vegetative and structural conservation practice standards. Infrastructure improvements (fencing, pipeline, water facilities, etc.), and the implementation of other vegetative manipulation practices (forage harvest management, herbaceous weed

control, prescribed fire, etc) may be implemented by NRCS to support the creation and use of a grazing management system.

Stocking rates of livestock is a fundamental component of developing a prescribed grazing plan. In additional to stocking rates, NRCS provides advice to landowners on other aspects of the management of livestock, including time of use, as well as grazing frequency, location, and duration on the property.

Using this practice standard, NRCS will work with the landowner to beneficially manage vegetation amount, structure, vigor, nutritional quality, and/or desired species composition. On-site grazing determination needs can address specific habitat targets immediately or as a part of a multi-year grazing system design which addresses long-term goals.

Throughout the Action Area, this practice will be implemented on up to 780,000 acres of land per year as indicated in the table below.

528 Prescribed Grazing average anticipated usage

State	Estimated LPC Population Size in 2011	Total ac/yr
Colorado	**< 1,500** [a]	60,000
Kansas	**19,700 - 31,100** [b]	420,000
Oklahoma	**< 3,000** [c]	90,000
Texas	**6000** [d]	170,000
New Mexico	**4968** [e]	40,000

a) Giesen 2000, p. 137; b) Rodgers 2007a, p. 1; c) Horton 2000, p. 189; d) Davis et al. 2008, p. 24; e) Beauprez 2009, p. 17

Resource concern(s): Resource concerns addressed by this practice are lack of diverse species composition and vigor of plant communities, low quantity and quality of forage for grazing and browsing animals, water quality and quantity, soil erosion, quantity and quality of food and/or cover available for wildlife, and economic stability for continued livestock production. Within the LPCI, an additional resource concern is the identification of limiting biological conditions for the LPC and the creation of a grazing management system to address the limiting biological conditions for the LPC.

Potential beneficial effect(s) to LPC: Practice assures that stocking rate is in balance with forage supply, season of use is rotated to ensure plants have adequate reproduction opportunity, and rangeland is monitored to inform adaptive management. These measures ensure that rangelands are managed sustainably to provide continued ecological processes, forage for livestock and wildlife, and habitat for wildlife, including LPC. Planned grazing systems within the LPCI are expected to increase residual cover of perennial grasses and forbs to improve the LPC nesting cover and success. Increased residual cover will also improve plant litter cover over the soil surface. Plant litter facilitates better moisture infiltration and produces more vegetative cover for nesting birds as well as increased forbs for brood habitat. Grazing system can also decrease the time any one pasture is exposed to grazing animals and people reducing the overall disturbance to individual birds.

Potential adverse effect(s) to LPC: Physical disturbance may be realized from livestock grazing or forage removal (short-term negative grazing impacts may temporarily cause birds to leave the immediate area or reduce availability of nesting cover). Additionally, mortality to individuals (adults, chicks, and/or eggs) is

possible as a result of trampling and indirectly due to a flushing response of individual birds that may result in the subsequent mortality event due to the presence of a chance/opportunistic predator.

Conservation Measures:

1] Implementation of grazing management plans, to the extent practicable, will meet habitat conditions for each habitat type as recommended by the affected State Fish and Wildlife Agency.
2] Frequency- Grazing recurrence will occur at a rate necessary to create or maintain desired habitat structure. Grazing systems which prescribe high intensity or rapid forage removal will allow for adequate recovery time (non-grazed periods) to meet LPC habitat needs as recommended by the affected State Fish and Wildlife Agency.
3] Duration- Grazing periods (days, weeks, or months) for scheduled grazing events will be designed to address limiting habitat factors as identified by the habitat assessments for the LPC. Scheduled grazing periods will also be used to manipulate or create desired or targeted habitat conditions as recommended by the affected State Fish and Wildlife Agency.
4] Timing- Grazing events will be scheduled when possible to avoid potential disturbance to known breeding or lek sites.
5] Intensity- The amount of forage removed (or left) during any particular grazing cycle will be in keeping with the specific life cycle requirements (i.e. nesting, leking, brood rearing, etc.)

Conservation Practice Standard: Restoration and Management of Rare and Declining Habitats (643) (FACILITATING MANAGEMENT PRACTICE)

Definition: Restoring, conserving, and managing unique or diminishing native terrestrial and aquatic ecosystems.

Purpose: This facilitating management practice will be applied annually to those areas of unique or diminishing native terrestrial ecosystems; to restore their original or highest functioning condition. This practice will be used to improve the overall biodiversity of the LPC Action Area.

Practice Application: This practice will be implemented on up to 6,000 acres of land per year throughout the Action Area as indicated in the table below. This practice is commonly used to convert cropland and pastureland to native habitat.

643 Restoration & Management of Rare and Declining Habitats average anticipated usage

State	**Estimated LPC Population Size in 2011**	**Total ac/yr**
Colorado	**< 1,500** [a]	0
Kansas	**19,700 - 31,100** [b]	5,000
Oklahoma	**< 3,000** [c]	250
Texas	**6000** [d]	0
New Mexico	**4968** [e]	0

a) Giesen 2000, p. 137; b) Rodgers 2007a, p. 1; c) Horton 2000, p. 189; d) Davis et al. 2008, p. 24; e) Beauprez 2009, p. 17

Resource concerns: The loss or degradation of rare or declining native habitats.

Potential beneficial effect(s) to LPC: This practice will help to ensure a diversity of native habitat types/components, such as native grasses, forbs, and shrubs, for the LPC and other wildlife.

Potential adverse effect(s) to LPC: Short-term and occasional physical disturbance (including noise); temporary soil and vegetation disturbances; increased potential for invasive plants.

Conservation Measures:

1] The conservation measures identified under the core practice of Upland Wildlife Habitat Management (645) shall be used. In addition, any vegetative or structural facilitating practices used to implement this management practice will follow the conservation measures of the practice used.

2] NRCS shall coordinate with the affected State Fish and Wildlife Agency and confer with the State Technical Committees to identify appropriate restrictions on the placement, extent, configuration, and timing of this conservation practice standard and the area where these practice restrictions would apply so as to avoid or minimize adverse effects to the LPC and supporting habitat conditions.

3] Defer implementation of this conservation practice within ½ mile to known leks and nest sites until all breeding and nesting activities are completed, typically March 1 through July 15, or as modified by State Fish and Wildlife Agency or State Technical Committee recommendations.

Conservation Practice Standard: Access Control (472) (FACILITATING MANAGEMENT PRACTICE)

Definition: The temporary or permanent exclusion of animals, people, vehicles, and/or equipment from an area.

Purpose: Prevent, restrict, or control access to an area in order to maintain or improve the quantity and quality of natural resources.

Practice Application: This practice is applied or maintained annually as needed to protect a designated area from disturbance by animals and/or humans. For example, this practice can be utilized while vegetation is becoming established and either prior to or after another management practice, such as prescribed burning, or following a wild fire, to produce selected habitat objectives. This practice will restrict access on up to 45,000 acres of land per year throughout the Action Area.

472 Access Control average anticipated usage

State	Estimated LPC Population Size in 2011	Total ac/yr
Colorado	**< 1,500** [a]	14,500
Kansas	**19,700 - 31,100** [b]	20,000
Oklahoma	**< 3,000** [c]	10,000
Texas	**6000** [d]	0
New Mexico	**4968** [e]	0

a) Giesen 2000, p. 137; b) Rodgers 2007a, p. 1; c) Horton 2000, p. 189; d) Davis et al. 2008, p. 24; e) Beauprez 2009, p. 17

Resource concern(s): Habitat improvement and/or protection from excessive vehicle, domestic animal or human activities.

Potential beneficial effect(s) to LPC: Practice can be an effective tool for reducing disturbance to LPCs and their habitats, such as lek areas. Access control in combination with prescribed grazing can be used to help improve vegetative structure and composition for nesting and brood rearing.

Potential Adverse Effects(s) to LPC: Reduced habitat quality may occur through long-term use of the practice without an active management strategy, which may include prescribed grazing or prescribed burning. Access control without active management could allow species such as Eastern Red Cedar, invasive shrubs and forbs, and non-native grasses to alter and degrade LPC habitat by altering species composition and structure. Practice may alter predator behavior and influence LPC survival or productivity.

Conservation Measures:

1] This practice standard will be designed to support other practices which will create the desired habitat conditions for the LPC as recommended by affected State Fish and Wildlife Agency.
2] Routine follow-up will occur to monitor the effectiveness of the practice, at least annually.
3] If fence construction is needed to facilitate this practice, use Conservation Practice Standard 382 Fence for specific conservation measures.

Conservation Practice Standard: Forage Harvest Management (511) (FACILITATING MANAGEMENT PRACTICE)

Definition: The timely cutting and removal of forages from the field as hay, green-chop or ensilage.

Purpose: This practice may be applied annually during the forage growing season (summer), to optimize yield and quality of forage at the desired levels; to promote vigorous plant re-growth; to manage for the desired species composition; to remove soil nutrients through uptake and harvest of forage plant biomass; to control insects, diseases and weeds; and to maintain or improve LPC habitat by providing a vigorous plant community with the composition and structure needed for nesting and brood-rearing activities. This practice is most commonly used to manage the timing, frequency, and extent of forage harvest in order to maintain plant production, health and vigor. Within the range of LPC, this practice would primarily be associated with native grass hay production, but could also apply to hay crops such as alfalfa and annually planted forage species.

Practice Application: This practice will be implemented on up to 27,000 of land per year throughout the Action Area.

511 Forage Harvest Management average anticipated usage

State	**Estimated LPC Population Size in 2011**	**Native ac/yr**	**Introduced Grass ac/yr**	**Alfalfa ac/yr**	**Total ac/yr**
Colorado	**< 1,500** [a]			2,000	2,000
Kansas	**19,700 - 31,100** [b]	9,000	600		9,600
Oklahoma	**< 3,000** [c]	8,500	6,000	500	15,000
Texas	**6000** [d]				0
New Mexico	**4968** [e]				0

a) Giesen 2000, p. 137; b) Rodgers 2007a, p. 1; c) Horton 2000, p. 189; d) Davis et al. 2008, p. 24; e) Beauprez 2009, p. 17

Resource Concerns: Yield and quality of forage, plant vigor, and timing of harvest, insects, diseases and weeds are typical concerns addressed by this practice.

Potential beneficial effect(s) to LPC: This practice will be used to insure that hay fields and forages used by LPC are not cut, harvested, or otherwise disturbed during reproductive and nesting periods. The practice can also be used to designate areas that will annually remain un-harvested and to retain site specific minimum

heights of residual vegetation for future use. Harvesting methods and techniques that allow LPCs to escape haying operations will also be incorporated into this practice. Finally, the practice can be used to maintain desirable plant composition and structure for food production, nesting cover, and brood rearing habitat.

Potential Adverse Effect(s) to LPC: Adverse impacts may result from cutting and harvesting forage during reproductive and nesting periods resulting in disturbance of breeding activities on lek sites and nesting hens, and the injury and mortality of hens, young brood, and eggs.

Conservation Measures:

1] Defer implementation of this conservation practice within ½ mile to known leks and nest sites until all breeding and nesting activities are completed, typically March 1 through July 15, or as modified by State Fish and Wildlife Agency or State Technical Committee recommendations.
2] Operate machinery in a manner that allows wildlife to flush and escape by methods such as starting operations in the middle of field and working outward, and/or by modify equipment with flush bar attachments.
3] Leave corners, field borders, and odd areas un-harvested for supplemental cover and brood rearing habitat.

Conservation Practice Standard: Prescribed Burning (338) (FACILITATING MANAGEMENT PRACTICE)

Definition: Controlled fire applied to a predetermined area.

Purpose: Create the desired plant community phase consistent with the ecological site description that is preferable LPC habitat. Control undesirable vegetation or to manipulate desired vegetation. Prepare sites for planting or seeding. Reduce wildfire hazards. Improve wildlife habitat specifically enhance and produce desirable or needed plant communities for all phases of LPC life cycle. Improve forage production quantity and/or quality. Facilitate distribution of grazing to target the maintenance or creation of desired LPC habitat. Restore and/or maintain ecological sites.

Practice Application: This practice will be implemented on up to 66,000 acres of land per year throughout the Action Area as indicated in the table below. This practice is typically applied in spring on a 3-10 year interval as determined by ecological and wildlife habitat evaluations (see Appendix II). Prescribed burning will be used within the LPCI to address specific on-site concerns such as producing a vegetative response and structural development that will increase available habitat in combination with prescribed grazing. Further, prescribed burning shall be limited to sites specifically identified with prescribed grazing or wildlife habitat objective(s) to be reached by using this practice.

338 Prescribed Burning anticipated average usage

State	Estimated LPC Population Size in 2011	Juniper ac/yr	Shinnery Oak ac/yr	Sagebrush ac/yr	Mequite/Cactus ac/yr	Total ac/yr
Colorado	**< 1,500** [a]	0	0	0		4,000
Kansas	**19,700 - 31,100** [b]	35,000		7,000		42,000
Oklahoma	**< 3,000** [c]	8,500	1,000	3,000		12,500
Texas	**6000** [d]	300	0	350	7,435	7,500
New Mexico	**4968** [e]					0

a) Giesen 2000, p. 137; b) Rodgers 2007a, p. 1; c) Horton 2000, p. 189; d) Davis et al. 2008, p. 24; e) Beauprez 2009, p. 17

Resource Concerns: Lack of prescribed burning activities results in ecological sites which are vastly different from historic plant communities for LPC and grazing by large ungulates such as livestock. Plant productivity, health, and vigor have been reduced due to a lack of fire. Increased fire return intervals have created a plant community less responsive to prescribed fire and have allowed for invasion of undesirable species such as Eastern Red Cedar and non-native grass species.

Potential beneficial effect(s) to LPC: With the use of prescribed burning plant communities can be altered to create brood-rearing habitat, increasing forbs and legumes while improving insect populations and succulent forbs needed by LPC in early life stages. Prescribed burning is also important in maintaining or restoring plant communities as described in ecological site descriptions. Prescribed burning can be used to manipulate grazing activities for the purpose of restoring, creating, or manipulating plant communities to meet the LPC habitat needs. Target areas and defined objective(s) will be clearly stated with intended goals to be addressed for each client defined management unit.

Potential Adverse Effect(s) to LPC: Accidental injury or mortality of nesting hens, eggs, or brood may occur if the burn is conducted during the nesting or brood-rearing seasons. In addition, a temporary reduction of cover for LPC may occur for one to three years.

Conservation Measures:

1] NRCS shall coordinate with the affected State Fish and Wildlife Agency and confer with the State Technical Committees to identify appropriate restrictions on the placement, extent, configuration, and timing of this conservation practice standard and the area where these practice restrictions would apply so as to avoid or minimize adverse effects to the LPC and supporting habitat conditions.

2] This practice standard will be designed to support other practices which will create the desired habitat conditions for the LPC as recommended by affected State Fish and Wildlife Agency.

3] Defer implementation of this conservation practice within ½ mile to known leks and nest sites until all breeding and nesting activities are completed, typically March 1 through July 15, or as modified by State Fish and Wildlife Agency or State Technical Committee recommendations.

Conservation Practice Standards – Vegetative Practices

Conservation Practice Standard: Brush Management (314) (FACILITATING VEGETATIVE PRACTICE)

Definition: The management or removal of woody (non-herbaceous or succulent) plants including those that are invasive and noxious.

Purpose: To restore or enhance the desired native plant community which is consistent with the ecological site description, and which provides the most suitable habitat for the LPC and other wildlife species. Specifically, it may be used for the purpose of:

- Removing undesirable post-settlement conifers such as juniper, Eastern red cedar or deciduous species such as mesquite and black locust which have encroached into habitats being restored for LPC habitat.
- Improving the diversity of habitat to create a mosaic of irregular shaped grassland openings based on LPC home range, or to provide a release to allow for the native grass and forb community to be expressed.

Practice Application: This practice will be applied as needed on up to 53,000 acres of land per year throughout the Action Area (see table for acres treated by brush species). The practice is implemented by:

- manual or mechanical means, such as: chainsaws, feller bunchers, hydrologic sheers, or masticators. Cut brush may be lopped-and-scattered, piled-and-burned, chipped, or hauled off. Brush will be felled unless other considerations necessitate leaving them standing, or
- dragging an anchor chain across the site (chaining). This practice is typically done on stands in later succession stages of encroachment where sagebrush and other native shrubs, grasses, and forbs are greatly reduced or absent, or
- herbicide application. When herbicides are applied for suppression of shinnery oak and sand sage, rates will be determined by desired ecological state for the LPC.
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314 Brush Management anticipated average usage

State	Estimated LPC Population Size in 2011	Juniper ac/yr	Shinnery Oak ac/yr	Sagebrush ac/yr	Mesquite ac/yr	Total ac/yr
Colorado	**< 1,500** [a]					0
Kansas	**19,700 - 31,100** [b]	2,100	2,100			4,200
Oklahoma	**< 3,000** [c]	18,000	1,500	500		20,000
Texas	**6000** [d]	3,500	600	600		4,700
New Mexico	**4968** [e]		3,070		20,396	23,467

a) Giesen 2000, p. 137; b) Rodgers 2007a, p. 1; c) Horton 2000, p. 189; d) Davis et al. 2008, p. 24; e) Beauprez 2009, p. 17

Resource concerns: Habitat fragmentation and loss of suitable habitat for the LPC.

Potential beneficial effect(s) to LPC: Removal of limiting habitat factor and creation of desired or targeted habitat conditions as recommended by the affected State Fish and Wildlife Agency.

Potential adverse effect(s) to LPC: Short-term effects may result from visual and physical disturbance (including noise) during implementation. Temporary soil and vegetation disturbances resulting from implementation and increased potential for invasive plants on disturbed areas. Increased fire hazard from equipment during implementation, or if slash remains on-site. There might be an increased potential for soil erosion, accidental mortality during implementation, and potential for damage to non-target shrub species during implementation.

Conservation Measures:

1] NRCS shall coordinate with the affected State Fish and Wildlife Agency and confer with the State Technical Committees to identify appropriate restrictions on the placement, extent, configuration, and timing of this conservation practice standard and the area where these practice restrictions would apply so as to avoid or minimize adverse effects to the LPC and supporting habitat conditions.

2] This practice standard will be designed to support other practices which will create the desired habitat conditions for the LPC as recommended by the affected State Fish and Wildlife Agency.

3] Defer implementation of this conservation practice within ½ mile to known leks and nest sites until all breeding and nesting activities are completed, typically March 1 through July 15, or as modified by State Fish and Wildlife Agency or State Technical Committee recommendations.

4] Minimize soil and vegetative disturbances during installation of conservation practices. Avoid disturbing the soil on sensitive areas with a high potential for soil erosion.

5] On disturbed areas, use site specific reclamation strategies developed using ecological site descriptions with consideration to LPC habitat needs.
6] Use the conservation measures provided for the facilitative practice of Critical Area Planting (342) in areas where reseeding disturbed areas is needed.
7] Regularly monitor the site after implementation to ensure erosion and weed issues are addressed quickly.
8] Evaluate the site's potential for soil erosion and invasion by undesirable plants during practice planning and design.
9] The practice will be designed to minimize or avoid unintentional damage to non-target plants.
10] The implementation plan shall clearly identify any special resources that need to be avoided; such as riparian areas, wetlands/playas, leks, or habitat of other at-risk species.
11] Large brush (>5 ft.) will be felled unless other considerations necessitate leaving them standing.
12] Woody slash shall be treated if significant buildup of fuels occurs. Slash piles shall be burned when wildfire risk is low (usually when soils are frozen or saturated). Follow state forestry laws, when applicable, for treating slash to minimize wildfire risk.
13] Treated sites may be deferred from livestock grazing for a period of time determined to be adequate based on pre and post site conditions (i.e. brush densities, potential for erosion, potential for plant community to improve in health, vigor and cover). NRCS with input from the State Technical Committee and the affected State Fish and Wildlife Agency will identify appropriate deferment periods.
14] This practice does not apply to removal of woody vegetation to facilitate a land use change.

Conservation Practice Standard: Firebreak (394) (FACILITATING, VEGETATIVE PRACTICE)

Definition: A permanent or temporary strip of bare or vegetated land planned to retard fire.

Purpose: Reduce the spread of wildfire and contain prescribed burns to their targeted area.

Practice Application: This practice will be implemented on up to 85 acres or approximately 29 miles (12-24 feet wide strips typically exterior property lines or along fence lines) of land per year throughout the Action Area as needed based on the Prescribed Burn plan. This practice is typically completed in the fall prior to or immediately prior to a spring burn. Firebreak site preparation may include the use of tillage and/or mowing and/or vegetative techniques.

394 Firebreak anticipated average usage

State	**Estimated LPC Population Size in 2011**	**Total ac/yr**
Colorado	**< 1,500** [a]	0
Kansas	**19,700 - 31,100** [b]	10
Oklahoma	**< 3,000** [c]	75
Texas	**6000** [d]	0
New Mexico	**4968** [e]	0

a) Giesen 2000, p. 137; b) Rodgers 2007a, p. 1; c) Horton 2000, p. 189; d) Davis et al. 2008, p. 24; e) Beauprez 2009, p. 17

Resource Concerns: The primary concerns that a firebreak addresses are the spread of fire beyond the targeted prescribed burn area and the spread of wildfires, resulting in large-scale, temporary alteration of the landscape.

Potential beneficial effect(s) to LPC: Practice can help reduce the spread of wildfires thus reducing the risk of large-scale, habitat loss. Firebreaks can provide a food source for LPC by stimulating annual forb growth.

Potential Adverse Effects(s) to LPC: Short-term physical disturbances, such as disking or mowing, may cause LPC to leave the area temporarily. Disked or mowed firebreaks disturb soil and vegetation and result in a temporary reduction of cover over a small area. Soil disturbance may also allow invasive plants to grow and alter the community structure.

Conservation Measures:

1] Defer implementation of this conservation practice within ½ mile to known leks and nest sites until all breeding and nesting activities are completed, typically March 1 through July 15, or as modified by State Fish and Wildlife Agency or State Technical Committee recommendations.
2] Disked firebreaks will be allowed to re-establish or be seeded to beneficial grasses, forbs and legumes to provide bugging or brood rearing habitat.
3] State-listed noxious and invasive plants will be identified and controlled following firebreak installation.
4] Firebreaks will only be installed as part of a grazing management or wildlife habitat plan.
5] Operate machinery in a manner that allows wildlife to flush and escape by methods such as starting operations in the middle of field and working outward, and/or by modify equipment with flush bar attachments.

Conservation Practice Standard: Cover Crop (340) (FACILITATING VEGETATIVE PRACTICE)

Definition: Crops including grasses, legumes, and forbs for seasonal cover and other conservation purposes.

Purpose: This practice will reduce soil erosion from wind and water, increase soil organic matter content, capture and recycle or redistribute nutrients in the soil profile, promote biological nitrogen fixation, increase biodiversity, weed suppression, provide supplemental forage, soil moisture management, reduce particulate emissions into the atmosphere, minimize and reduce soil compaction. Cover crops are typically used to provide ground cover until the permanent vegetation can be established when converting cropland to grass.

Practice Application: Use of a tractor and mechanical means to plant seeds. This practice will be implemented on up to 9,000 acres of land per year throughout the Action Area.

340 Cover Crop anticipated average usage

State	Estimated LPC Population Size in 2011	Native ac/yr	Introduced Grass ac/yr	Alfalfa ac/yr	Total ac/yr
Colorado	**< 1,500** [a]	2,000	500		2,500
Kansas	**19,700 - 31,100** [b]	3,750			3,750
Oklahoma	**< 3,000** [c]	2,250	250		2,500
Texas	**6000** [d]				0
New Mexico	**4968** [e]				0

a) Giesen 2000, p. 137; b) Rodgers 2007a, p. 1; c) Horton 2000, p. 189; d) Davis et al. 2008, p. 24; e) Beauprez 2009, p. 17

Resource concerns: The primary resource concerns addressed with the LPCI are wind and water erosion between harvesting of the crop and planting of the native grass. Limited LPC brood rearing habitat between site preparation and full establishment can reduce brood survival.

Potential beneficial effect(s) to LPC: Multi-species cover crops planted on cropland adjacent to LPC nesting habitat for a full growing season or planted after small grain harvest can create and improve brood-rearing habitat. Cover crops planted until permanent vegetation is established can provide stability in the ecosystem by improving soil quality, preventing erosion and providing limited cover for birds.

Potential Adverse Effect(s) to LPC: Short-term and occasional physical disturbance (including noise); temporary soil and vegetation disturbances; increased potential for invasive plants.

Conservation Measures:

1] NRCS shall coordinate with the affected State Fish and Wildlife Agency and confer with the State Technical Committees to identify appropriate restrictions on the placement, extent, configuration, and timing of this conservation practice standard and the area where these practice restrictions would apply so as to avoid or minimize adverse effects to the LPC and supporting habitat conditions.

2] Defer implementation of this conservation practice within ½ mile to known leks and nest sites until all breeding and nesting activities are completed, typically March 1 through July 15, or as modified by State Fish and Wildlife Agency or State Technical Committee recommendations.

3] Evaluate the site's potential for soil erosion. Minimize soil and vegetative disturbances during installation of conservation practices. During installation, utilize soil erosion protection measures if potential for off-site soil erosion exists.

4] Monitor, evaluate and control State listed invasive and noxious plants during practice planning and design.

5] Machinery associated with the practice should be clean and free of vegetative debris prior to use to prevent the spread of invasive plant species.

6] Where practicable use of more than one cover crop species will provide greater benefit to LPC.

Conservation Practice Standard: Critical Area Planting (342) (FACILITATING VEGETATIVE PRACTICE)

Definition: Establishing permanent vegetation on sites that have, or are expected to have, high erosion rates, and on sites that have physical, chemical or biological conditions that prevent the establishment of vegetation with normal practices.

Purpose: This practice is applied as needed in order to stabilize erosion by the establishment of native and/or non-invasive vegetation in areas with disturbed soil from installation of other practices, such as grade stabilization structures or from long-term damage caused by oil and gas activities.

Practice Application: Use of a tractor and mechanical means to plant seeds. This practice will be implemented on up to 160 acres of land per year throughout the Action Area.

342 Critical Area Planting anticipated average usage

State	**Estimated LPC Population Size in 2011**	**Total ac/yr**
Colorado	**< 1,500** [a]	25
Kansas	**19,700 - 31,100** [b]	100
Oklahoma	**< 3,000** [c]	30
Texas	**6000** [d]	0
New Mexico	**4968** [e]	0

a) Giesen 2000, p. 137; b) Rodgers 2007a, p. 1; c) Horton 2000, p. 189; d) Davis et al. 2008, p. 24; e) Beauprez 2009, p. 17

Resource concerns: Un-vegetated, disturbed soil creates sites for invasive plant species to colonize, promotes increased soil erosion, and reduces wildlife habitat quality.

Potential Beneficial Effect(s) to LPC: Establishment of permanent vegetation can provide stability in the ecosystem by improving soil quality, preventing erosion and providing limited cover for birds.

Potential Adverse Effect(s) to LPC: Short-term and occasional physical disturbance (including noise); temporary soil and vegetation disturbances; increased potential for invasive plants.

Conservation Measures:

1] NRCS shall coordinate with the affected State Fish and Wildlife Agency and confer with the State Technical Committees to identify appropriate restrictions on the placement, extent, configuration, and timing of this conservation practice standard and the area where these practice restrictions would apply so as to avoid or minimize adverse effects to the LPC and supporting habitat conditions.

2] Defer implementation of this conservation practice within ½ mile to known leks and nest sites until all breeding and nesting activities are completed, typically March 1 through July 15, or as modified by State Fish and Wildlife Agency or State Technical Committee recommendations.

3] Evaluate the site's potential for soil erosion. Minimize soil and vegetative disturbances during installation of conservation practices. During installation, utilize soil erosion protection measures if potential for off-site soil erosion exists.

4] Use site specific reclamation strategies developed using ecological site descriptions. Native species will be used whenever possible to meet practice objectives with preference to forbs, grasses and grass-like plants preferred by the LPC as well as those plants that reflect the potential of the specific ecological site to optimize LPC habitat needs. Seed mixes should be State-certified, meeting the appropriate State certification criteria as being free of state declared noxious and invasive vegetative material.

5] Monitor, evaluate and control State listed invasive and noxious plants during practice planning and design.

6] Machinery associated with the practice should be clean and free of vegetative debris prior to use to prevent the spread of invasive plant species.

7] Timing of planting and post-establishment vegetation management will be designed as per local site conditions to meet NRCS practice specifications.

8] Regularly monitor the site after implementation to ensure erosion and weed issues are addressed quickly.

Conservation Practice Standard: Forage and Biomass Planting (512) (FACILITATING VEGETATIVE PRACTICE)

Definition: Establishing adapted and/or compatible species, varieties, or cultivars of herbaceous species suitable for pasture, hay, or biomass production.

Purpose: This practice may be applied as needed to improve or maintain livestock nutrition and health, to provide or increase forage supply during periods of low forage production, to reduce soil erosion, improve soil and water quality, and to produce feedstock for bio-fuel or energy production. Within the Action Area, this practice is typically used to convert croplands to perennial grass and legume mixtures to increase forage hay production and grazing for livestock. More recently, some plantings have been established for the purpose of producing and harvesting biomass for fuels and energy.

Practice Application: Use of a tractor and mechanical means to plant forage and biomass. This practice will be implemented on up to 3,200 acres of land per year throughout the Action Area. Average field size of plantings under this practice is less than 160 acres. Forage and biomass plantings in the Action Area primarily consist of warm season grass plantings that are established February through June. Some cool season grasses

are planted under this practice such as wheatgrass, ryegrass, and brome grass from August through September. As indicated above, most of the plantings occur on old cropland fields that require only limited amounts of site preparation before plantings are made.

512 Forage and Biomass Planting anticipated average usage

State	**Estimated LPC Population Size in 2011**	**Native Grass ac/yr**	**Introduced Grass ac/yr**	**Alfalfa ac/yr**	**Total ac/yr**
Colorado	**< 1,500** [a]		500	150	650
Kansas	**19,700 - 31,100** [b]				0
Oklahoma	**< 3,000** [c]	500	2,000		2,500
Texas	**6000** [d]				0
New Mexico	**4968** [e]				0

a) Giesen 2000, p. 137; b) Rodgers 2007a, p. 1; c) Horton 2000, p. 189; d) Davis et al. 2008, p. 24; e) Beauprez 2009, p. 17

Resource Concerns: This practice is most commonly used to convert cropland fields to permanent vegetative cover to prevent soil loss, improve soil conditions, improve wildlife cover, and improve water quality and quantity. This practice also address needs for adequate food for livestock and within the LPCI will provide adequate food for the LPC.

Potential Beneficial Effect(s) to LPC: Many of these plantings can provide good quality nesting and brood-rearing habitat if haying and grazing are properly managed. The corresponding increase in available forage for livestock can also remove grazing pressure on existing native rangelands and lead to improved range condition.

Potential Adverse Effect(s) to LPC: Short-term adverse impacts may result from installing the practice during reproductive and nesting periods. However, this practice is typically implemented on cropland fields with limited prior value to LPC, so disturbance impacts would be minimal.

Conservation Measures:

1] NRCS shall coordinate with the affected State Fish and Wildlife Agency and confer with the State Technical Committees to identify appropriate restrictions on the placement, extent, configuration, and timing of this conservation practice standard and the area where these practice restrictions would apply so as to avoid or minimize adverse effects to the LPC and supporting habitat conditions.

2] Defer implementation of this conservation practice within ½ mile to known leks and nest sites until all breeding and nesting activities are completed, typically March 1 through July 15, or as modified by State Fish and Wildlife Agency or State Technical Committee recommendations.

3] Use site specific reclamation strategies developed using ecological site descriptions. Native species will be used whenever possible to meet practice objectives with preference to forbs, grasses and grass-like plants preferred by the LPC as well as those plants that reflect the potential of the specific ecological site to optimize LPC habitat needs. Seed mixes should be State-certified, meeting the appropriate State certification criteria as being free of state declared noxious and invasive vegetative material.

4] Timing of planting and post-establishment vegetation management will be designed as per local site conditions to meet NRCS practice specifications and NRCS biologist or State Fish and Wildlife Agency recommendations.

5] Monitor, evaluate and control State listed invasive and noxious plants during practice planning and design.

6] Machinery associated with the practice should be clean and free of vegetative debris prior to use to prevent the spread of invasive plant species.

7] Operate machinery in a manner that allows wildlife to flush and escape by methods such as starting operations in the middle of field and working outward, and/or by modify equipment with flush bar attachments.
8] Control livestock access as needed to allow for initial establishment of new vegetative plantings and control weeds through flash grazing.

Conservation Practice Standard: Range Planting (550) (FACILITATING VEGETATION PRACTICE)

Definition: Establishment of adapted perennial or self-sustaining vegetation such as grasses, forbs, legumes, shrubs and trees.
Purpose: Applied to restore the native plant community to a condition similar to the ecological site description reference state for the site, provide or improve forages for livestock and browse or cover for wildlife, reduce erosion by wind and/or water, improve water quality and quantity, and increase carbon sequestration. This practice is used to restore important native habitats by converting cropland to grasslands, to meet habitat requirements for LPC.

Practice Application: Use of a tractor and mechanical means to plant permanent native vegetation. This practice will be implemented on up to 12,000 acres of land per year throughout the Action Area.

550 Range Planting anticipated average usage

State	Estimated LPC Population Size in 2011	Native Grass ac/yr	Total ac/yr
Colorado	**< 1,500** [a]	2,000	2,000
Kansas	**19,700 - 31,100** [b]	5,000	5,000
Oklahoma	**< 3,000** [c]	2,500	2,500
Texas	**6000** [d]	1,750	1,750
New Mexico	**4968** [e]		0

a) Giesen 2000, p. 137; b) Rodgers 2007a, p. 1; c) Horton 2000, p. 189; d) Davis et al. 2008, p. 24; e) Beauprez 2009, p. 17

Resource concerns: This practice is most commonly used to convert cropland fields to permanent vegetative cover to prevent soil loss, improve soil conditions, and improve water quality and quantity and create habitat for LPC. Cropland sites typically provide inadequate food and cover for LPC and other grassland species.

Potential Beneficial Effect(s) to LPC: Practice increases habitat quality for LPC and restores diverse, permanent, native plant communities.

Potential Adverse Effect(s) to LPC: Short-term and occasional physical disturbance (including noise); temporary soil and vegetation disturbances; increased potential for invasive plants.

Conservation Measures:
1] NRCS shall coordinate with the affected State Fish and Wildlife Agency and confer with the State Technical Committees to identify appropriate restrictions on the placement, extent, configuration, and timing of this conservation practice standard and the area where these practice restrictions would apply so as to avoid or minimize adverse effects to the LPC and supporting habitat conditions.
2] Defer implementation of this conservation practice within ½ mile to known leks and nest sites until all breeding and nesting activities are completed, typically March 1 through July 15, or as modified by State Fish and Wildlife Agency or State Technical Committee recommendations.

3] Evaluate the site's potential for soil erosion and invasion by undesirable plants during practice planning and design. Minimize soil and vegetative disturbances during installation of conservation practices. Utilize soil erosion protection measures, if potential for soil erosion exists (silt fences etc.).
4] Use site specific reclamation strategies developed using ecological site descriptions. Native species will be used whenever possible to meet practice objectives with preference to forbs, grasses and grass-like plants preferred by the LPC as well as those plants that reflect the potential of the specific ecological site to optimize LPC habitat needs. Seed mixes should be State-certified, meeting the appropriate State certification criteria as being free of state declared noxious and invasive vegetative material.
5] Timing of planting and post-establishment vegetation management will be designed as per local site conditions to meet NRCS practice specifications and NRCS biologist or State Fish and Wildlife Agency recommendations.
6] Monitor, evaluate and control State listed invasive and noxious plants during practice planning and design.
7] Machinery associated with the practice should be clean and free of vegetative debris prior to use to prevent the spread of invasive plant species.
8] Control livestock access as needed to allow for initial establishment of new vegetative plantings and control weeds through flash grazing.

Conservation Practice Standards – Facilitating Structural Practices

Conservation Practice Standard: Watering Facility (614) (FACILITATING STRUCTURAL PRACTICE)

Definition: A permanent or portable device to provide an adequate amount and quality of drinking water for livestock and or wildlife.

Purpose: To provide access to drinking water for livestock and/or wildlife in order to meet daily water requirements and improve animal distribution. This practice will be applied in the Action Area to facilitate prescribed grazing (528) in order to provide access to drinking water for livestock in order to meet daily water requirements and improve animal distribution to conserve or enhance important LPC habitat.

Practice Application: Watering facilities are commonly designed using concrete, fiberglass, metal, or rubber tires. Each tank is typically fed by a pipeline and also contains an overflow for excess water. Winter tanks are routinely buried or covered to prevent freezing and have small drinking areas exposed. Up to 330 individual facilities will be installed each year throughout the Action Area.

614 Watering Facility anticipate average usage

State	**Estimated LPC Population Size in 2011**	**#/yr**
Colorado	**< 1,500** [a]	45
Kansas	**19,700 - 31,100** [b]	200
Oklahoma	**< 3,000** [c]	75
Texas	**6000** [d]	0
New Mexico	**4968** [e]	10

a) Giesen 2000, p. 137; b) Rodgers 2007a, p. 1; c) Horton 2000, p. 189; d) Davis et al. 2008, p. 24; e) Beauprez 2009, p. 17

Resource Concerns: The inability to provide adequate water supplies and to properly locate water supplies throughout grazing units can reduce the opportunity to manage livestock grazing distribution. As a result, forage may be over or under-utilized with resulting impacts on range health, livestock production and associated

wildlife habitat. Livestock may be disproportionately concentrated near a water source and overgraze the surrounding area to the point where food producing forbs and legumes are eliminated, residual grasses are inadequate for nesting cover, and protective cover provided by shrubs is reduced due to heavy browsing. Conversely, areas more distant from a water supply may be underutilized and in the absence of disturbance, the health and vigor of grasses for livestock grazing and the value of the habitat for LPC may be diminished through plant succession.

Potential Beneficial Effect(s) to LPC: Use of this practice can facilitate prescribed grazing by livestock and can provide water for some wildlife species, including LPC. This benefit may be especially pronounced during drought conditions.

Potential Adverse Effect(s) to LPC: Short-term and occasional physical disturbance (including noise) and temporary soil and vegetation disturbance during installation. There could also be an increased potential for invasive plants in the disturbed soil post installation. Direct mortality can occur due to drowning and increased predation.

Conservation measures:

1] NRCS shall coordinate with the affected State Fish and Wildlife Agency and confer with the State Technical Committees to identify appropriate restrictions on the placement, extent, configuration, and timing of this conservation practice standard and the area where these practice restrictions would apply so as to avoid or minimize adverse effects to the LPC and supporting habitat conditions.
2] Defer implementation of this conservation practice within ½ mile to known leks and nest sites until all breeding and nesting activities are completed, typically March 1 through July 15, or as modified by State Fish and Wildlife Agency or State Technical Committee recommendations.
3] Evaluate the site's potential for soil erosion and invasion by undesirable plants during practice planning and design. Minimize soil and vegetative disturbances during installation of conservation practices. Utilize soil erosion protection measures, if potential for soil erosion exists (silt fences etc.).
4] Design conservation practice to minimize or avoid loss of shrubs during practice installation.
5] If access for operation and maintenance is required, limit access to one side of disturbance and a limit access to one vehicle width.
6] Use site specific reclamation strategies developed using ecological site descriptions. Native species will be used whenever possible to meet practice objectives with preference to forbs, grasses and grass-like plants preferred by the LPC as well as those plants that reflect the potential of the specific ecological site to optimize LPC habitat needs. Seed mixes should be State-certified, meeting the appropriate State certification criteria as being free of state declared noxious and invasive vegetative material.
7] Monitor, evaluate and control State listed invasive and noxious plants during practice planning and design.
8] Machinery associated with the practice should be clean and free of vegetative debris prior to use to prevent the spread of invasive plant species.
9] Timing of planting and post-establishment vegetation management will be designed as per local site conditions to meet NRCS practice specifications.
10] Regularly monitor the site after implementation to ensure erosion and weed issues are addressed quickly.
11] Install wildlife escape ramps.
12] Limit duration of construction period to the minimum practicable.

Conservation Practice Standard: Spring Development (574) (FACILITATING STRUCTURAL PRACTICE)

Definition: Collection of water from springs or seeps to provide water for a conservation need.

Purpose: Spring developments will be applied to improve the quantity and quality of water for livestock and wildlife or other agricultural uses. This practice will be used to facilitate prescribed grazing to improve water quality, reduce erosion, protect sensitive areas, and/or improve mesic habitat quality for LPC and broods.

Practice Applications: Natural springs are developed to provide a clean source of water for livestock. Additionally, development of springs may protect the spring's water source from degradation caused by unrestricted livestock use and increase livestock distribution. The actual development of the spring includes installation of a collection point and pipeline for water delivery to a watering facility for livestock use. Light earth-moving equipment may be used implement this practice. Pipeline flow is achieved by gravity or pumping conditions. Up to 100 of these structures will be installed each year throughout the Action Area. Affected area is usually less than 1/8 acre.

574 Spring Development anticipate average usage

State	Estimated LPC Population Size in 2011	Total ac/yr
Colorado	**< 1,500** [a]	0
Kansas	**19,700 - 31,100** [b]	100
Oklahoma	**< 3,000** [c]	0
Texas	**6000** [d]	0
New Mexico	**4968** [e]	0

a) Giesen 2000, p. 137; b) Rodgers 2007a, p. 1; c) Horton 2000, p. 189; d) Davis et al. 2008, p. 24; e) Beauprez 2009, p. 17

Resource Concerns: The inability to provide adequate water supplies and to properly locate water supplies throughout grazing units can reduce the opportunity to manage livestock grazing distribution. As a result, forage may be over or under-utilized with resulting impacts on range health, livestock production and associated wildlife habitat. Livestock may be disproportionately concentrated near a water source and overgraze the surrounding area to the point where food producing forbs and legumes are eliminated, residual grasses are inadequate for nesting cover, and protective cover provided by shrubs is reduced due to heavy browsing. Conversely, areas more distant from a water supply may be underutilized and in the absence of disturbance, the health and vigor of grasses for livestock grazing and the value of the habitat for LPC may be diminished through plant succession.

Potential Beneficial Effect(s) to LPC: Practice may facilitate improved livestock grazing management, which allows for creation, enhancement or maintenance of nesting and brood-rearing habitat for LPC, and can provide improved water quality and water availability for other wildlife.

Potential Adverse Effect(s) to LPC: Temporary noise and minimal physical disturbance may occur during construction along with short-term reduction of cover that can result in invasive species and erosion problems. Affected area is usually less than 1/8 acre.

Conservation Measures:

1] NRCS shall coordinate with the affected State Fish and Wildlife Agency and confer with the State Technical Committees to identify appropriate restrictions on the placement, extent, configuration, and timing of this conservation practice standard and the area where these practice restrictions would apply so as to avoid or minimize adverse effects to the LPC and supporting habitat conditions.

2] Defer implementation of this conservation practice within ½ mile to known leks and nest sites until all breeding and nesting activities are completed, typically March 1 through July 15, or as modified by State Fish and Wildlife Agency or State Technical Committee recommendations.
3] Evaluate the site's potential for soil erosion and invasion by undesirable plants during practice planning and design. Minimize soil and vegetative disturbances during installation of conservation practices. Utilize soil erosion protection measures, if potential for soil erosion exists (silt fences etc).
4] Use site specific reclamation strategies developed using ecological site descriptions. Native species will be used whenever possible to meet practice objectives with preference to forbs, grasses and grass-like plants preferred by the LPC as well as those plants that reflect the potential of the specific ecological site to optimize LPC habitat needs. Seed mixes should be State-certified, meeting the appropriate State certification criteria as being free of state declared noxious and invasive vegetative material.
5] Monitor, evaluate and control State listed invasive and noxious plants during practice planning and design.
6] Machinery associated with the practice should be clean and free of vegetative debris prior to use to prevent the spread of invasive plant species.
7] Timing of planting and post-establishment vegetation management will be designed as per local site conditions to meet NRCS practice specifications.
8] Regularly monitor the site after implementation to ensure erosion and weed issues are addressed quickly.
9] Ingress/egress routes will avoid nesting/brood-rearing/lek areas as mortality may occur on routes resulting from bird-vehicle collisions.

Conservation Practice Standard: Pumping Plant (533) (FACILITATING STRUCTURAL PRACTICE)

Definition: A facility that delivers water at a designed pressure and flow rate. Includes the required pump(s), associated power unit(s), plumbing, appurtenances, and may include on-site fuel or energy source(s), and protective structures.

Purpose: This practice can achieve delivery of water to livestock watering facilities to facilitate prescribed grazing of livestock in a way that promotes rangeland sustainability and improves wildlife and LPC habitat.

Practice Application: Pumping plants installed in Action Area consist of a pump, with solar or fuel generated power sources. It is normally mounted on concrete or pilings. This practice is one part of a watering system that includes the following additional practices: well, pipeline, (to move the water to the desired location), and watering facility (tank/trough where livestock drink the water). NRCS will install up to 180 pumping plants per year in Action Area. This practice can be applied any time of the year when weather conditions allow. A pumping plant takes several days to install because the concrete needs time to cure.

533 Pumping Plant anticipated average usage

State	Estimated LPC Population Size in 2011	#/yr
Colorado	< 1,500 [a]	15

Kansas	**19,700 - 31,100** [b]	150
Oklahoma	**< 3,000** [c]	5
Texas	**6000** [d]	0
New Mexico	**4968** [e]	5

a) Giesen 2000, p. 137; b) Rodgers 2007a, p. 1; c) Horton 2000, p. 189; d) Davis et al. 2008, p. 24; e) Beauprez 2009, p. 17

Resource Concerns: The inability to provide adequate water supplies and to properly locate water supplies throughout grazing units can reduce the opportunity to manage livestock grazing distribution. As a result, forage may be over or under-utilized with resulting impacts on range health, livestock production and associated wildlife habitat. Livestock may be disproportionately concentrated near a water source and overgraze the surrounding area to the point where food producing forbs and legumes are eliminated, residual grasses are inadequate for nesting cover, and protective cover provided by shrubs is reduced due to heavy browsing. Conversely, areas more distant from a water supply may be underutilized and in the absence of disturbance, the health and vigor of grasses for livestock grazing and the value of the habitat for LPC may be diminished through plant succession.

Potential Beneficial Effect(s) to LPC:
Practice may facilitate improved livestock grazing management, which allows for creation, restoration or enhancement of nesting and brood-rearing habitat for LPC, and can provide water availability for other wildlife.

Potential Adverse Effect(s) to LPC: Temporary noise and minimal physical disturbance may occur during construction along with short-term reduction of cover that can result in invasive species and erosion problems. Large pumping plants may serve as a raptor perch. When a pumping plant is fuel-powered, there is the possibility of increased noise, human disturbance, and hazardous material spills.

Conservation measures:
1] NRCS shall coordinate with the affected State Fish and Wildlife Agency and confer with the State Technical Committees to identify appropriate restrictions on the placement, extent, configuration, and timing of this conservation practice standard and the area where these practice restrictions would apply so as to avoid or minimize adverse effects to the LPC and supporting habitat conditions.
2] Defer implementation of this conservation practice within ½ mile to known leks and nest sites until all breeding and nesting activities are completed, typically March 1 through July 15, or as modified by State Fish and Wildlife Agency or State Technical Committee recommendations.
3] Monitor, evaluate and control State listed invasive and noxious plants during practice planning and design.
4] Machinery associated with the practice should be clean and free of vegetative debris prior to use to prevent the spread of invasive plant species.
5] Limit construction and access footprint and future vehicle traffic access to one vehicle width.
6] Windmills for pumping or power generation will not be used within the Action Area (unless individually approved by the Service).
7] Design solar panel mounting pole as short as possible to avoid use as raptor perch.
8] Minimize noise levels of fuel- powered plants to less than 40dbA.

Conservation Practice Standard: Water Well (642) (FACILITATING STRUCTURAL PRACTICE)

Definition: A hole drilled, dug, driven, bored, jetted or otherwise constructed to an aquifer for water supply.

Purpose: This practice will be applied to provide water for livestock to facilitate proper use of vegetation through grazing distribution and to provide alternative sources of livestock water to meet the daily animal

requirements. The water provided by the well is also used as a part of a watering system that includes watering facilities, pipeline and pumping plant.

Practice Application: Up to 250 of these structures will be installed each year throughout the Action Area. Most water wells within the range of the LPC are dug with rotary drilling rigs where the disturbed site is confined to a small area (less than ¼ acre). Depending on the geology of the site and depth to water, it takes a few days to a few weeks to drill water wells. Well locations are primarily based on proximity to a reliable aquifer and secondly on the water distribution needs of livestock within the grazing units. Water wells can be constructed at any time of the year.

642 Water Well anticipated average usage

State	Estimated LPC Population Size in 2011	#/yr
Colorado	**< 1,500 [a]**	6
Kansas	**19,700 - 31,100 [b]**	150
Oklahoma	**< 3,000 [c]**	90
Texas	**6000 [d]**	0
New Mexico	**4968 [e]**	5

a) Giesen 2000, p. 137; b) Rodgers 2007a, p. 1; c) Horton 2000, p. 189; d) Davis et al. 2008, p. 24; e) Beauprez 2009, p. 17

Resource Concerns: The inability to provide adequate water supplies and to properly locate water supplies throughout grazing units can reduce the opportunity to manage livestock grazing distribution. As a result, forage may be over or under-utilized with resulting impacts on range health, livestock production and associated wildlife habitat. Livestock may be disproportionately concentrated near a water source and overgraze the surrounding area to the point where food producing forbs and legumes are eliminated, residual grasses are inadequate for nesting cover, and protective cover provided by shrubs is reduced due to heavy browsing. Conversely, areas more distant from a water supply may be underutilized and in the absence of disturbance, the health and vigor of grasses for livestock grazing and the value of the habitat for LPC and other wildlife may be diminished through plant succession. These potential impacts on livestock grazing and wildlife habitat need to be considered when planning wells and other water supply sources.

Potential Beneficial Effect(s) to LPC: If properly designed and installed, this practice can be implemented in a manner that will facilitate improved distribution of livestock grazing and result in improved vegetative diversity and structure of LPC habitat. The practice can also provide a supplemental water source for LPC and other wildlife. The disturbed area around the water well installation may re-vegetate with early succession forbs and legumes that can provide food and brood-rearing habitat for LPCs.

Potential Adverse Effect(s) to LPC: Adverse impacts may result from digging or drilling the water well during reproductive and nesting periods. These impacts could include disturbance of breeding activities on lek sites, disturbance of nesting hens, or physical destruction of nests and eggs. High profile pumping devices, housing structures, and electric poles/lines could provide vertical structure for raptor perch sites. These potential perch sites could contribute to habitat fragmentation by causing LPC to avoid areas around the structures that what would otherwise provide suitable habitat. Undesirable plants may become established on disturbed soils which could reduce the quality and quantity of LPC habitat. If improperly located and implemented without a grazing management plan, the increased water availability and distribution could alter livestock grazing patterns and change plant composition and structure with negative impacts on LPC habitat.

Conservation Measures:

1] NRCS shall coordinate with the affected State Fish and Wildlife Agency and confer with the State Technical Committees to identify appropriate restrictions on the placement, extent, configuration, and timing of this conservation practice standard and the area where these practice restrictions would apply so as to avoid or minimize adverse effects to the LPC and supporting habitat conditions.
2] Defer implementation of this conservation practice within ½ mile to known leks and nest sites until all breeding and nesting activities are completed, typically March 1 through July 15, or as modified by State Fish and Wildlife Agency or State Technical Committee recommendations.
3] Install low profile pumping devices and housings and use solar pumps whenever practicable, as the power source for wells rather than electric lines.
4] Place wells and infrastructure as close as possible to existing structures rather than creating new vertical structure in areas presently devoid of such features. These measures will reduce the presence of raptor perch sites and prevent habitat fragmentation by allowing continued use of suitable habitat.
5] Design the water well to minimize or avoid the loss of desirable shrubs during practice installation.
6] Use the conservation measures provided for the facilitative practice of Critical Area Planting (342) in areas where reseeding disturbed areas is needed.
7] Design solar panel mounting pole as short as possible to avoid use as raptor perch.

Conservation Practice Standard: Pipeline (516) (FACILITATING STRUCTURAL PRACTICE)

Definition: Pipeline having an inside diameter of 8 inches or less.

Purpose: The purpose of this practice is to convey water from a source of supply to points of use for livestock, wildlife, or recreational purposes. Typically, the water conveyed by a pipeline originates from a well, spring, or in some cases, ponds and streams. The practice is most commonly used to facilitate proper use of vegetation through grazing distribution, to meet the daily water requirements of livestock, or to provide alternative sources of livestock water away from streams and aquatic habitats.

Practice Applications: Up to 160,000 linear feet of pipelines will be installed each year throughout the Action Area. Pipelines are typically installed by laying steel or plastic pipe within a trench excavated by trenching machines or by bulldozer ripping. The pipe is buried below the frost line in order to avoid freezing and to prevent damage to the line. The combined width of the trench and area of soil disturbance is relatively narrow (typically less than 6 feet).

516 Pipeline anticipated average usage

State	**Estimated LPC Population Size in 2011**	**ft/yr**
Colorado	**< 1,500** [a]	50,000
Kansas	**19,700 - 31,100** [b]	20,000
Oklahoma	**< 3,000** [c]	65,000
Texas	**6000** [d]	0
New Mexico	**4968** [e]	21,000

a) Giesen 2000, p. 137; b) Rodgers 2007a, p. 1; c) Horton 2000, p. 189; d) Davis et al. 2008, p. 24; e) Beauprez 2009, p. 17

Resource Concerns: The inability to provide adequate water supplies and to properly locate water supplies throughout grazing units can reduce the opportunity to manage livestock grazing distribution. As a result, forage may be over or under-utilized with resulting impacts on range health, livestock production and associated wildlife habitat. Livestock may be disproportionately concentrated near a water source and overgraze the surrounding area to the point where food producing forbs and legumes are eliminated, residual grasses are inadequate for nesting cover, and protective cover provided by shrubs is reduced due to heavy browsing.

Conversely, areas more distant from a water supply may be underutilized and in the absence of disturbance, the health and vigor of grasses for livestock grazing and the value of the habitat for LPC may be diminished through plant succession.

Potential Beneficial Effect(s) to LPC: Practice may facilitate improved livestock grazing management, which allows for creation, maintenance or enhancement of nesting and brood-rearing habitat for LPC, and can provide water availability for other wildlife. The disturbed area created by construction activities along the pipeline route may support early succession forbs and legumes that can provide food and brood-rearing habitat for LPCs.

Potential Adverse Effect(s) to LPC: Temporary noise and minimal physical disturbance may occur during construction along with short-term reduction of cover that can result in invasive species and erosion problems. Adverse impacts may result from constructing and installing the pipeline during reproductive and nesting periods. Undesirable plants may become established on disturbed soils which could reduce the quality and quantity of LPC habitat. Beneficial shrubs such as sand sagebrush and shinnery oak could be removed during construction.

Conservation Measures:

1] NRCS shall coordinate with the affected State Fish and Wildlife Agency and confer with the State Technical Committees to identify appropriate restrictions on the placement, extent, configuration, and timing of this conservation practice standard and the area where these practice restrictions would apply so as to avoid or minimize adverse effects to the LPC and supporting habitat conditions.

2] Defer implementation of this conservation practice within ½ mile to known leks and nest sites until all breeding and nesting activities are completed, typically March 1 through July 15, or as modified by State Fish and Wildlife Agency or State Technical Committee recommendations.

3] Use site specific reclamation strategies developed using ecological site descriptions. Native species will be used whenever possible to meet practice objectives with preference to forbs, grasses and grass-like plants preferred by the LPC as well as those plants that reflect the potential of the specific ecological site to optimize LPC habitat needs. Seed mixes should be State-certified, meeting the appropriate State certification criteria as being free of state declared noxious and invasive vegetative material.

4] Design the pipeline route to minimize or avoid the loss of desirable shrubs during practice installation.

5] Monitor, evaluate and control State listed invasive and noxious plants during practice planning and design.

6] Machinery associated with the practice should be clean and free of vegetative debris prior to use to prevent the spread of invasive plant species.

7] Timing of planting and post-establishment vegetation management will be designed as per local site conditions to meet NRCS practice specifications.

8] Regularly monitor the site after implementation to ensure erosion and weed issues are addressed quickly.

9] Use the conservation measures provided for the facilitative practice of Critical Area Planting (342) in areas where reseeding disturbed areas is needed.

Conservation Practice Standard: Grade stabilization structure (410) (FACILITATING STRUCTURAL PRACTICE)

Definition: A structure used to control the grade and head cutting in natural or artificial channels.

Purpose: This practice may be applied to stabilize the grade and control erosion in natural or artificial channels; to prevent the formation or advance of gullies, restore associated hydrology to surrounding lands, and to enhance environmental quality by reducing siltation or pollution hazards. Up to 10 of these structures will be installed each year throughout the Action Area.

Practice Application: When used to restore hydrology to a degraded site: the water table in the incised channels and ditches will be elevated using a variety of approaches to reestablish the natural hydrology. The practice may include one or more of the following: (1) depositing and compacting appropriate fill material (soil) into these incised channels; (2) installation of hard structure (plastic sheet pile, rock, brush, or gabion structures) (3) planting of native or non- invasive introduced vegetation according to the 342 CPS will be used for vegetating any disturbed areas in association with the installation of grade stabilization structure.

410 Grade Stabilization Structure anticipated average usage

State	Estimated LPC Population Size in 2011	#/yr
Colorado	**< 1,500** [a]	0
Kansas	**19,700 - 31,100** [b]	0
Oklahoma	**< 3,000** [c]	10
Texas	**6000** [d]	0
New Mexico	**4968** [e]	0

a) Giesen 2000, p. 137; b) Rodgers 2007a, p. 1; c) Horton 2000, p. 189; d) Davis et al. 2008, p. 24; e) Beauprez 2009, p. 17

Resource concerns: Erosion control.

Potential Beneficial Effect(s) to LPC: This practice can control erosion that if left unchecked can result in habitat loss or degradation.

Potential Adverse Effect(s) to LPC: Temporary physical disturbance (including noise), soil and vegetation disturbance and increased potential for invasive plants. Individual mortality risk from vehicle strikes.

Conservation measures:

1] NRCS shall coordinate with the affected State Fish and Wildlife Agency and confer with the State Technical Committees to identify appropriate restrictions on the placement, extent, configuration, and timing of this conservation practice standard and the area where these practice restrictions would apply so as to avoid or minimize adverse effects to the LPC and supporting habitat conditions.

2] Defer implementation of this conservation practice within ½ mile to known leks and nest sites until all breeding and nesting activities are completed, typically March 1 through July 15, or as modified by State Fish and Wildlife Agency or State Technical Committee recommendations.

3] Evaluate the site's potential for soil erosion. Minimize soil and vegetative disturbances during installation of conservation practices. During installation, utilize soil erosion protection measures if potential for off-site soil erosion exists.

4] Use site specific reclamation strategies developed using ecological site descriptions. Native species will be used whenever possible to meet practice objectives with preference to forbs, grasses and grass-like plants preferred by the LPC as well as those plants that reflect the potential of the specific ecological site to optimize LPC habitat needs. Seed mixes should be State-certified, meeting the appropriate State certification criteria as being free of state declared noxious and invasive vegetative material.

5] Monitor, evaluate and control State listed invasive and noxious plants during practice planning and design.

6] Machinery associated with the practice should be clean and free of vegetative debris prior to use to prevent the spread of invasive plant species.

7] Timing of planting and post-establishment vegetation management will be designed as per local site conditions to meet NRCS practice specifications.
8] Regularly monitor the site after implementation to ensure erosion and weed issues are addressed quickly.
9] Ingress/egress routes will avoid nesting/brood-rearing/lek areas as mortality may occur on routes.
10] Use the conservation measures provided for the facilitative practice of Critical Area Planting (342) in areas where reseeding disturbed areas is needed.

Conservation Practice Standard: Fence (382) (FACILITATING STRUCTURAL PRACTICE)

Definition: A constructed barrier to animals or people.

Purpose: This practice facilitates the accomplishment of conservation objectives by providing a constructed means to control movement of animals and people, including vehicles. The need and extent of this practice is determined based on the particular management practice it facilitates, such as prescribed grazing or access control.

Practice Application: Up to 500 miles of fence will be installed each year throughout the Action Area. The practice application includes construction of barbed wire and electric fence.

382 Fence anticipated average usage

State	Estimated LPC Population Size in 2011	mi/yr
Colorado	**< 1,500** [a]	50
Kansas	**19,700 - 31,100** [b]	174
Oklahoma	**< 3,000** [c]	15
Texas	**6000** [d]	0
New Mexico	**4968** [e]	250

a) Giesen 2000, p. 137; b) Rodgers 2007a, p. 1; c) Horton 2000, p. 189; d) Davis et al. 2008, p. 24; e) Beauprez 2009, p. 17

Resource Concerns: The concerns typically addressed by a constructed fence are plant health and vigor, soil erosion and condition, livestock health and vigor and wildlife habitat needs.

Potential Beneficial Effect(s) to LPC: This practice can be an effective tool for managing wild and domestic animal disturbance to LPC habitat, including reseeded or reclaimed sites. Fence is typically used to facilitate prescribed grazing, to areas targeted for creation or protection of specific habitat needs.

Potential Adverse Effects(s) to LPC: Noise and physical disturbance during implementation; invasive plants following implementation; incidental damage or removal of desirable shrub during or prior to implementation; accidental mortality by way of collisions by flying LPC after implementation, and potentially altering predator routes during and after implementation.

Conservation Measures:

1] NRCS shall coordinate with the affected State Fish and Wildlife Agency and confer with the State Technical Committees to identify appropriate restrictions on the placement, extent, configuration, and timing of this conservation practice standard and the area where these practice restrictions would apply so as to avoid or minimize adverse effects to the LPC and supporting habitat conditions.

2] Defer implementation of this conservation practice within ½ mile to known leks and nest sites until all breeding and nesting activities are completed, typically March 1 through July 15, or as modified by State Fish and Wildlife Agency or State Technical Committee recommendations.
3] Alternatives to fencing will be evaluated prior to fence installation (e.g., water placement, placement of minerals, prescribed burning to achieve the desired outcome.
4] Machinery associated with the practice should be clean and free of vegetative debris prior to use to prevent the spread of invasive plant species.
5] Shrub removal will only occur in a < 15 ft. wide swath where fences are being constructed.
6] Mark fences or use high visibility designs within ½ mile of a known lek when construction can't be avoided or relocated.
7] Temporary electric fencing may be used in some cases to minimize potential collision fatalities.
8] Permanent interior fence requires a maximum of 4 strands of wire < 42 inches high.
9] Permanent exterior fencing must meet local fence laws and insurance liability clauses.
10] Use the conservation measures provided for the facilitative practice of Critical Area Planting (342) in areas where reseeding disturbed areas is needed.

Conservation Practice Standard: Obstruction Removal (500) (FACILITATING STRUCTURAL PRACTICE)

Definition: Removal and disposal of buildings, structures, other works of improvement, vegetation, debris or other materials.

Purpose: This practice may be applied to remove and dispose of unwanted obstructions in order to apply conservation practices or facilitate the planned land use. The practice will be used to decrease availability of predator nests, dens, and perches, and reduce habitat fragmentation.

Practice Application: Specifically, NRCS will use obstruction removal to remove unneeded fences, windmills, power poles, and buildings. Typical building site removals are less than 0.5 acres each. It is anticipated NRCS will remove 50,000 linear feet of fences and remove 30 of these other obstructions per year over the Action Area. Heavy machinery, chainsaws, haul trucks and hand labor are used to facilitate obstruction removal. This can occur any time of the year when weather conditions allow access to the site.

500 Obstruction Removal anticipated average usage

State	**Estimated LPC Population Size in 2011**	
Colorado	**< 1,500** [a]	5 ac/yr structures
Kansas	**19,700 - 31,100** [b]	25,000 linear ft/yr and 20 structures/yr
Oklahoma	**< 3,000** [c]	25,000 linear ft/yr and 10 structures/yr
Texas	**6000** [d]	0
New Mexico	**4968** [e]	0

a) Giesen 2000, p. 137; b) Rodgers 2007a, p. 1; c) Horton 2000, p. 189; d) Davis et al. 2008, p. 24; e) Beauprez 2009, p. 17

Resource concerns: Structures, including buildings, power poles, and fences can provide predator perches and nesting sites and can increase predation rates for wildlife including LPC and may cause wildlife to decrease use

of otherwise suitable habitats. Additionally, these structures, particularly fences, can cause accidental mortality from collisions and can contribute to habitat fragmentation for LPC.

Potential Beneficial Effect(s) to LPC: Practice will benefit LPC by removing unnecessary fences that contribute to fragmentation and direct mortality due to collisions; removing unneeded power poles or infrastructure that provides predator perches; and removing structures that serve as mammalian predator habitat and/or visual/psychological obstructions that cause LPC to partially or completely abandon otherwise suitable habitat.

Potential Adverse Effect(s) to LPC: Temporary physical disturbance (including noise), soil and vegetation disturbance and increased potential for invasive plants. Collisions with vehicles or other motorized equipment may result in individual mortality to LPC.

Conservation measure(s):

1] Defer implementation of this conservation practice within ½ mile to known leks and nest sites until all breeding and nesting activities are completed, typically March 1 through July 15, or as modified by State Fish and Wildlife Agency or State Technical Committee recommendations.
2] Evaluate the site's potential for soil erosion. Minimize soil and vegetative disturbances during installation of conservation practices. During installation, utilize soil erosion protection measures if potential for off-site soil erosion exists.
3] Use site specific reclamation strategies developed using ecological site descriptions. Native species will be used whenever possible to meet practice objectives with preference to forbs, grasses and grass-like plants preferred by the LPC as well as those plants that reflect the potential of the specific ecological site to optimize LPC habitat needs. Seed mixes should be State-certified, meeting the appropriate State certification criteria as being free of state declared noxious and invasive vegetative material.
4] Monitor, evaluate and control State listed invasive and noxious plants during practice planning and design.
5] Machinery associated with the practice should be clean and free of vegetative debris prior to use to prevent the spread of invasive plant species.
6] Regularly monitor the site after implementation to ensure erosion and weed issues are addressed quickly.
7] Ingress/egress routes will avoid nesting/brood-rearing/lek areas as mortality may occur on routes.
8] Use the conservation measures provided for the facilitative practice of Critical Area Planting (342) in areas where reseeding disturbed areas is needed.

Conservation Practice Standard: Herbaceous Weed Control (315) (FACILITATING VEGETATIVE PRACTICE)

Definition: The removal or control of herbaceous weeds including invasive, noxious and prohibited plants.

Purpose: This practice may be applied to control or remove invasive and noxious weeds through chemical, biological, or mechanical means in order to restore native or desired plant communities and habitat for LPC consistent with the ecological site description. It secondarily protects soils, controls erosion, reduces fine-fuels fire hazards, and improves air quality.

Practice Application: Specifically, this practice may be applied to control or remove invasive and noxious weeds through chemical, biological, or mechanical means in order to restore native or desired plant communities and habitat for LPC consistent with the ecological site. NRCS may apply up to 12,100 acres of herbaceous weed control annually in Action Area. This practice is applied during the growing season which will vary depending on species and method of control. For chemical applications, a tractor or ATV with a sprayer is typical. Mechanical application normally requires using a tractor and mower or disk. Biological application in LPC habitat will be limited to grazing animals at the best time of year to control the targeted weeds.

315 Herbaceous Weed Control anticipated average usage

State	Estimated LPC Population Size in 2011	ac/yr
Colorado	**< 1,500** [a]	15,000
Kansas	**19,700 - 31,100** [b]	2,100
Oklahoma	**< 3,000** [c]	5,000
Texas	**6000** [d]	0
New Mexico	**4968** [e]	0

a) Giesen 2000, p. 137; b) Rodgers 2007a, p. 1; c) Horton 2000, p. 189; d) Davis et al. 2008, p. 24; e) Beauprez 2009, p. 17

Resource concerns: Invasive and noxious weeds degrade ecological sites by increasing competition with native and desirable plant species. This results in decreased sustainability and resiliency of the ecological sites and leads to reduced habitat quality and quantity for wildlife, including LPC.

Potential Beneficial Effect(s) to LPC: Practice implementation removes or reduces invasive or other weed species that directly or indirectly limit LPC habitat quality and productivity. Practice can beneficially influence the vigor and establishment of native or desirable vegetation required to provide LPC habitat.

Potential Adverse Effect(s) to LPC: Temporary physical disturbance (including noise), soil and vegetation disturbance and increased potential for invasive plants. Destruction of nesting habitat and loss of nests and/or young when mechanical treatment coincides with nesting season. Temporary reduction of forage and prey availability for young birds.

Conservation measures:

1] NRCS shall coordinate with the affected State Fish and Wildlife Agency and confer with the State Technical Committees to identify appropriate restrictions on the placement, extent, configuration, and timing of this conservation practice standard and the area where these practice restrictions would apply so as to avoid or minimize adverse effects to the LPC and supporting habitat conditions.

2] Defer implementation of this conservation practice within ½ mile to known leks and nest sites until all breeding and nesting activities are completed, typically March 1 through July 15, or as modified by State Fish and Wildlife Agency or State Technical Committee recommendations.

3] Spot treatment should be utilized where practicable.

4] Use site specific reclamation strategies developed using ecological site descriptions. Native species will be used whenever possible to meet practice objectives with preference to forbs, grasses and grass-like plants preferred by the LPC as well as those plants that reflect the potential of the specific ecological site to optimize LPC habitat needs. Seed mixes should be State-certified, meeting the appropriate State certification criteria as being free of state declared noxious and invasive vegetative material.

5] Monitor, evaluate and control State listed invasive and noxious plants during practice planning and design.

6] Machinery associated with the practice should be clean and free of vegetative debris prior to use to prevent the spread of invasive plant species.

7] Use the conservation measures provided for the facilitative practice of Critical Area Planting (342) in areas where reseeding disturbed areas is needed.

8] Operate machinery in a manner that allows wildlife to flush and escape by methods such as starting operations in the middle of field and working outward, and/or by modify equipment with flush bar attachments.

Conservation Practice Standard: Pond (378) (FACILITATING STRUCTURAL PRACTICE)

Definition: A water impoundment made by constructing an embankment or by excavating a pit or dugout. In this standard, ponds constructed by the first method are referred to as embankment ponds, and those constructed by the second method are referred to as excavated ponds. Ponds constructed by both the excavation and the embankment methods are classified as embankment ponds if the depth of water impounded against the embankment at the auxiliary spillway elevation is 3 feet or more.

Purpose: The purpose of this practice is to provide water for livestock, fish and wildlife, recreation, fire control, and other related uses and to maintain or improve water quality.

Practice Application: Within the range of the LPC, ponds are typically installed by constructing embankments across upland drains and storing periodic runoff water for use by livestock. In some situations, pit ponds are excavated to collect runoff water or to expose the water table and allow for use by livestock. The average surface area of ponds within LPC range is 1 to 2 acres. This practice will be used very infrequently. The five participating states estimate that less than 10 structures per year will be constructed within the Action Area.

378 Pond anticipated average usage

State	Estimated LPC Population Size in 2011	#/yr
Colorado	**< 1,500** [a]	1
Kansas	**19,700 - 31,100** [b]	1
Oklahoma	**< 3,000** [c]	5
Texas	**6000** [d]	0
New Mexico	**4968** [e]	0

a) Giesen 2000, p. 137; b) Rodgers 2007a, p. 1; c) Horton 2000, p. 189; d) Davis et al. 2008, p. 24; e) Beauprez 2009, p. 17

Resource Concerns: The inability to provide adequate water supplies and to properly locate water supplies throughout grazing units can reduce the opportunity to manage livestock grazing distribution. As a result, forage may be over or under-utilized with resulting impacts on range health, livestock production and associated wildlife habitat. Livestock may be disproportionately concentrated near a water source and overgraze the surrounding area to the point where food producing forbs and legumes are eliminated, residual grasses are inadequate for nesting cover, and protective cover provided by shrubs is reduced due to heavy browsing. Conversely, areas more distant from a water supply may be underutilized and in the absence of disturbance, the health and vigor of grasses for livestock grazing and the value of the habitat for LPC may be diminished through plant succession.

Potential Beneficial Effect(s) to LPC: This practice facilitates improved distribution of livestock grazing and result in improved vegetative diversity and structure of LPC habitat. This practice can also provide a supplemental water source for some wildlife species.

Potential Adverse Effect(s) to LPC: Potentially there will be a small amount (10-20 acres per year cumulatively) of prairie-chicken nesting, brood-rearing, and foraging habitat permanently lost. Adverse impacts may result from constructing the pond during reproductive and nesting periods. Potential LPC habitat consisting of grasses and shrubs would be permanently replaced with water. Pond construction could result in the concentration of livestock activity near the pond which could make the habitat less attractive to LPCs. Undesirable plants, including woody vegetation may become established on disturbed soils which could reduce the quality and quantity of LPC habitat.

Conservation Measures:

1] NRCS shall coordinate with the affected State Fish and Wildlife Agency and confer with the State Technical Committees to identify appropriate restrictions on the placement, extent, configuration, and timing of this conservation practice standard and the area where these practice restrictions would apply so as to avoid or minimize adverse effects to the LPC and supporting habitat conditions.

2] Defer implementation of this conservation practice within ½ mile to known leks and nest sites until all breeding and nesting activities are completed, typically March 1 through July 15, or as modified by State Fish and Wildlife Agency or State Technical Committee recommendations.

3] Use site specific reclamation strategies developed using ecological site descriptions. Native species will be used whenever possible to meet practice objectives with preference to forbs, grasses and grass-like plants preferred by the LPC as well as those plants that reflect the potential of the specific ecological site to optimize LPC habitat needs. Seed mixes should be State-certified, meeting the appropriate State certification criteria as being free of state declared noxious and invasive vegetative material.

4] Monitor, evaluate and control State listed invasive and noxious plants during practice planning and design.

5] Machinery associated with the practice should be clean and free of vegetative debris prior to use to prevent the spread of invasive plant species.

6] Use the conservation measures provided for the facilitative practice of Critical Area Planting (342) in areas where reseeding disturbed areas is needed.

7] This practice will only be applied where needed to meet the daily water requirements of livestock and to facilitate prescribed livestock grazing distribution.

APPENDIX V –Listed and Candidate Species Occurring in the LPCI Action Area

Taxon: Fishes
Common Name: Arkansas Darter
Scientific Name: *Etheostoma cragini*
Federal Status: Candidate
Threats: Water depletion from groundwater pumping, drying of spring-fed streams and marshes, and stream dewatering reduces available habitat. Groundwater depletion (irrigation) and water quality degradation are tied to agricultural practices, such as CAFOs. Water quality parameters include nutrient enrichment and turbidity, which decreases dissolved oxygen and increases water temperatures. Declining peak flows cause vegetation encroachment into formerly un-vegetated portions of the stream channel. Sedimentation from crop field runoff and over-grazing of riparian areas impacts spawning habitat and water quality. Rapid urban and suburban development affects hydrology, and increases sedimentation, chemical pollution, and physical habitat destruction. Dams and their resulting reservoirs act as barriers to emigration upstream and downstream through the reservoir pool. Increased or protracted drought related to climate change also could exacerbate these impacts.
Conservation Measures: (1) Assist in implementing salt cedar control programs. (2) Avoid any LPCI practice that removes ground water or causes drying of surface water in the immediate area occupied by the species.
References: U.S. Fish and Wildlife Service – Species Assessment and Listing Priority Form – Arkansas Darter – October 22, 2010

Taxon: Fishes
Common Name: Arkansas River Shiner
Scientific Name: *Notropis girardi*
Federal Status: Threatened
Threats: Some agricultural practices have contributed to water quality degradation because such practices contribute excess nutrients, sediments, chemicals, and other types of non-point source pollutants through runoff from range, pastureland, and/or tilled fields.
Conservation Measures: (1) Protect and enhance riparian and stream habitat with riparian buffers, exclusion of livestock from streams, and control of salt cedar and other non-native vegetation. (2) Avoid any practice that removes ground water or causes drying of surface water occupied by the species.
References: U.S. Fish and Wildlife Service – Spotlight Species Action Plan, August 6, 2009

Taxon: Mammals
Common Name: Black-footed Ferret
Scientific Name: *Mustela nigripes*
Federal Status: Endangered/ Endangered Experimental Population
Threats: Prairie dog occupied habitat is highly fragmented and repeatedly impacted by poisoning and/or disease, with few complexes of a size adequate to support black-footed ferrets. The quality of the remaining black-footed ferret habitat has been adversely impacted by the presence of disease, poisoning, and recreational prairie dog shooting resulting in the loss of prey base. Additionally, several other diseases, including coccidiosis, cryptosporidiosis, and hemorrhagic syndrome sometimes affect captive populations. Climate change and the genetic fitness of black-footed ferrets are continuing threats.
Conservation Measure: (1) Avoid any vegetative management practices, such as planting, that would make the habitat potentially unsuitable for prairie dogs, and thus for black-footed ferrets. Note that habitat restoration, prescribed grazing, brush management, and access control may have beneficial effects to the black-footed ferret.
References: U.S. Fish and Wildlife Service – Black-footed Ferret (*Mustela nigripes*) 5-Year Status Review: Summary and Evaluation – November 2008

Taxon: Reptiles
Common Name: Dune sagebrush lizard
Scientific Name: *Sceloporus arenicolus*
Federal Status: Candidate
Threats: Large-scale habitat destruction is the major threat to the continued existence of *S. arenicolus* in southeastern New Mexico (Painter 2004). Widespread uses of herbicide for shinnery oak control and activities associated with oil/gas extraction have the greatest potential to cause significant Sand Dune Lizard population extinction or reduction (Peterson and Boyd 1998, Painter 2004). The short-term effect of these activities is lizard population decline resulting from development of a grassland habitat that is unsuitable for the lizard (unless this new habitat retains large blowouts, in which case it is capable of supporting very small populations of *Sceloporus arenicolus* for at least ten years after treatment; e.g., see Snell et al. 1993, Gorum et. al., 1995). The long-term effect of these habitat modifications are unknown, but increased habitat fragmentation results in increased probability of extinction of individual populations (Painter 2004). In the mid-1990s, the BLM Roswell Resource Area placed a moratorium on chemical treatment of shinnery oak - sand dune habitat. However, the long-term future of this moratorium is uncertain. Other activities with the potential for habitat destruction (i.e., ORV use, livestock grazing, and fire) have been little studied or are considered of lesser importance (Painter 2004).
Conservation Measures: (1) Avoid implementation of conservation practices during the critical periods of March 1st through July 15th to avoid disturbances. (2) Avoid brush control treatments to large blocks or strips and no more than 50 percent of an individual management unit (pasture) will be treated during any two year period. (3) Establish a grazing plan that ensures: stocking rates are in balance with the forage supply; season of use is rotated through pastures to ensure plants have adequate reproduction opportunity; and that the plan is implemented to increase residual cover of perennial grasses and forbs.
References: http://www.iucnredlist.org/apps/redlist/details/64087/0

Taxon: Plants
Common Name: Gypsum Wild Buckwheat
Scientific Name: *Eriogonum gypsophilum*
Federal Status: Threatened with Critical Habitat
Threats: *Eriogonum gypsophilum* was originally known from only one locality on BLM and BOR land (Seven River Hills, Eddy County). In 1988, two additional populations (Black River and Ben Slaughter Draw) were documented. Population abundance has remained stable since this species was first listed. Threats include off-road-vehicle (ORV) use, trampling and grazing by cattle, road improvements, oil and gas development, mineral extraction, and water level management in Brantley Reservoir.
Threats Citation: U.S Fish and Wildlife Service - Gypsum Wild Buckwheat (*Eriogonum gypsophilum*) Recovery Plan 1984
Conservation Measure: (1) Protection of habitat (gypsum soils and outcrops) and individual plants is the highest priority for the conservation of this species.
References: U.S. Fish and Wildlife Service - Gypsum Wild Buckwheat (Eriogonum gypsophilum) Recovery Plan 1984 and Gypsum Wild Buckwheat (*Eriogonum gypsophilum*) 5-Year Review: Summary and Evaluation 2007

Taxon: Birds
Common Name: Interior Least Tern
Scientific Name: *Sterna antillarum athalassos*
Federal Status: Endangered
Threats: Many nesting areas have been permanently flooded by reservoirs and channelization projects. Unpredictable water discharge patterns below dams flood nesting areas. Overgrowth of brush and trees also eliminates remaining habitat. This prevents terns from using these areas as nesting sites. The recreational use of sandbars by humans is a major threat to the tern's reproductive success.
Conservation Measures: (1) Protect and enhance riparian and stream habitat with riparian buffers, exclusion of livestock from streams, and control of salt cedar and other non-native vegetation. (2) Identify areas infested by saltcedar or Russian olive and assess which conservation measures would be the most practical and effective for restoring historic levels of base flows. (3) Reduce perching sites and habitat for potential predators.
References: Kevin Stubbs, Fish and Wildlife Biologist, U.S. Fish & Wildlife Service

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Taxon: Snails
Common Name: Koster's Springsnail
Scientific Name: *Juturnia kosteri*
Federal Status: Endangered
Threats: The loss or alteration of spring habitat continues to be the main threat with potential failure of spring flow due to excessive groundwater pumping or drought or both, which would result in total habitat loss for the species. Water contamination, particularly from oil and gas operations, is a significant threat. Fire suppression is largely restricted to established roads due to the safety hazards of transporting equipment over karst terrain, which severely limits the ability to quickly suppress fires that threaten fragile aquatic habitats. Springsnails and amphipods are a food source for other aquatic animals, such as crayfish, fish, and aquatic snails. Seeps and springs currently occupied have been perennial, even during times of drought, suggesting that these springs are relatively resilient to drought. However, climate change may test that resiliency.
Conservation Measures: (1) Protect water quality and improve land management practices surrounding occupied habitat. (2) Restrict access to occupied habitat. (3) Avoid use of prescribed burning to control invasive vegetation in occupied habitat. (4) Avoid any practice that removes ground water or causes drying of surface water in the immediate area occupied by the species.
References: U.S. Fish and Wildlife Service - Four Bitter Lake Invertebrates 5-Year Review, December 28, 2010

Taxon: Plants
Common Name: Kuenzler's Hedgehog Cactus
Scientific Name: *Echinocereus fendleri var. kuenzleri*
Federal Status: Endangered
Threats: *Echinocereus fendleri* var. *kuenzleri* was originally known from only two locations (Rio Hondo and Rio Penasco drainages) in Lincoln, Otero, and Chaves Counties. Threats include collecting for private and commercial use, road improvement and maintenance, and incompatible livestock grazing.
Conservation Measure: (1) Protection of habitat (pinon-juniper savanna) and individual plants is the highest priority for the conservation of this species.
References: U.S. Fish and Wildlife Service - Kuenzler's Hedgehog Cactus (*Echinocereus fendleri* var. *kuenzleri*) Recovery Plan 1985 and Kuenzler's Hedgehog Cactus (*Echinocereus fendleri* var. *kuenzleri*) 5-Year Review 2005

Taxon: Crustaceans
Common Name: Noel's Amphipod
Scientific Name: *Gammarus desperatus*
Federal Status: Endangered
Threats: The loss or alteration of spring habitat continues to be the main threat with potential failure of spring flow due to excessive groundwater pumping or drought or both, which would result in total habitat loss for the species. Fire suppression is largely restricted to established roads due to the safety hazards of transporting equipment over karst terrain, which severely limits the ability to quickly suppress fires that threaten fragile aquatic habitats. Springsnails and amphipods are a food source for other aquatic animals, such as crayfish, fish, and aquatic snails. Seeps and springs currently occupied have been perennial, even during times of drought, suggesting that these springs are relatively resilient to drought.
Conservation Measures: (1) Protect water quality and improve land management practices surrounding occupied habitat. (2) Restrict access to occupied habitat. (3) Avoid use of prescribed burning to control invasive vegetation in occupied habitat. (4) Avoid any practice that removes ground water or causes drying of surface water in the immediate area occupied by the species.
References: U.S. Fish and Wildlife Service - Four Bitter Lake Invertebrates 5-Year Review, December 28, 2010

Taxon: Birds
Common Name: Northern Aplomado Falcon
Scientific Name: *Falco femoralis septentrionalis*
Federal Status: Endangered
Threats: Brush encroachment, catastrophic channelization of desert streams that would have provided wetland communities for avian prey species, pesticide contamination, and collecting were cited as reasons for decline in the Recovery Plan. Currently, long-term drought, shrub encroachment in areas of Chihuahuan Desert grasslands, and the increased presence of the great horned owl, which preys upon the falcon, may be limiting recovery of this subspecies.
Conservation Measures: (1) Protection and restoration of pesticide- and lead-free grassland and wetland communities and associated forest, woodland, and thorn scrub. (2) Restrict access to known or suspected nesting areas. (3) Avoid any practice that removes ground water or causes drying of surface water in the immediate area occupied by the species.
References: U.S. Fish and Wildlife - Aplomado Falcon Recovery Plan 1990. Department of Defense and Department of Interior Fact Sheet: Northern Aplomado Falcon (*Falco femoralis septentrionalis*) July 2007. Keddy-Hector, Dean P. 2000. Aplomado Falcon (*Falco femoralis*), and The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: http://bna.birds.cornell.edu/bna/species/549

Taxon: Snails
Common Name: Assiminea *pecos*
Scientific Name: *Assiminea pecos*
Federal Status: Endangered
Threats: The loss or alteration of spring habitat continues to be the main threat with potential failure of spring flow due to excessive groundwater pumping or drought or both, which would result in total habitat loss for the species. Fire suppression is largely restricted to established roads due to the safety hazards of transporting

equipment over karst terrain, which severely limits the ability to quickly suppress fires that threaten fragile aquatic habitats. Springsnails and amphipods are a food source for other aquatic animals, such as crayfish, fish, and aquatic snails. Seeps and springs currently occupied have been perennial, even during times of drought, suggesting that these springs are relatively resilient to drought. However, climate change may test that resiliency.
Conservation Measures: (1) Secure conservation on additional lands surrounding occupied habitat to protect water quality and improve land management practices. (2) Restrict access to occupied habitat. (3) Avoid use of prescribed burning to control invasive vegetation. (4) Avoid any practice that removes ground water or causes drying of surface water in the immediate area occupied by the species.
References: U.S. Fish and Wildlife Service - Four Bitter Lake Invertebrates 5-Year Review, December 28, 2010

Taxon: Fishes
Common Name: Pecos Bluntnose Shiner
Scientific Name: *Notropis simus pecosensis*
Federal Status: Threatened
Threats: Reduced flow and associated altered riparian habitats and hydrographs remain the primary threats to the species. Dams have many downstream effects, including habitat fragmentation, a reduction in lateral channel migration, channel scouring, blockage of fish passage, channel narrowing, changes in the riparian community, diminished peak flows, changes in the timing of high and low flows, and a loss of connectivity between the river and its flood plain. Aerial and terrestrial piscivores may also threaten the species. The spread golden algae, the increased potential for drought, salinization, and nutrient concentrations over time are reasons for concern.
Conservation Measure: (1) The highest priority to facilitate recovery for the Pecos bluntnose shiner is maintaining a continuous river flow from the confluence of Taiban Creek to Brantley Reservoir and to continue habitat restoration projects that create favorable habitat for Pecos bluntnose shiner.
References: U.S. Fish and Wildlife Service - Pecos Bluntnose Shiner (*Notropis simus pecosensis*) 5-Year Review Summary and Evaluation – May 2010

Taxon: Fishes
Common Name: Pecos Gambusia
Scientific Name: *Gambusia nobilis*
Federal Status: Endangered
Threats: The species is facing extinction because of one or both of two major threats: (1) Loss of habitat and (2) the inability to interact successfully with nonnative fish species, especially mosquitofish. The species has become confined to spring-fed areas because it cannot compete with fish species nonnative to its habitat. Loss of habitat has occurred through water withdrawals for irrigation and dam construction. A total of five major dams and at least three lesser dams are on the mainstream Pecos River.
Conservation Measure: (1) Avoid any practice that removes ground water or causes drying of surface water in the immediate area occupied by the species.
References: U.S. Fish and Wildlife Service - Pecos Gambusia Recovery Plan 1983

Taxon: Plants
Common Name: Pecos Sunflower
Scientific Name: *Helianthus paradoxus*
Federal Status: Threatened
Threats: Loss and/or alteration of wetland habitat are the primary threat to Pecos sunflower, primarily by surface water diversion and wetland filling for agriculture and recreational uses, and groundwater pumping and aquifer depletion for municipal uses. In addition, the species is potentially out competed by nonnative invasive vegetation (tamarisk), and impacted by land management activities (unsuitable grazing systems, mowing, etc.).
Conservation Measures: (1) Groundwater use in the surrounding area should be managed in a way to assure adequate spring flows. (2) When developing a grazing system in occupied habitat, ensure grazing season, frequency, intensity and duration will provide the conservation of the species.
References: U.S. Fish and Wildlife Service - Pecos Sunflower (*Helianthus paradoxus*) September 2005. U.S. Fish and Wildlife Service - Pecos_Sunflower_FINAL_Recovery_Plan_Fact_Sheet.pdf

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Taxon: Birds
Common Name: Piping Plover
Scientific Name: *Charadrius melodus*
Federal Status: Endangered, Threatened
Threats: Reservoirs, channelization of rivers, and modification of river flows may result in reduction in sandbar riverine habitat, the flooding of remaining breeding habitat during the nesting season, and vegetation growth on sandbars that are rarely scoured by high flows. Other threats include commercial sand and gravel mining, freshening of alkali lakes, invasive exotics, particularly salt cedar, and even native species that are declining overall along channelized rivers, because flows are rarely sufficient to scour them from riverine islands. Oil spills in the wintering range may be a threat, but it does not address the potential impacts of oil and gas development on the breeding grounds. Oil development on the breeding grounds has increased dramatically since the 1988 and remains a threat today. The potential impacts of wind farms on piping plovers are unknown but may be significant. Impacts may occur through direct collision with turbines, or indirectly if plovers avoid previously used areas that now contain wind farms.
Conservation Measures: (1) Create, manage, or protect nesting and foraging habitats (relatively barren, unvegetated salt flats, river sandbars and islands). (2) Land use practices that may adversely affect stream flows, channel morphology, and sediment transport should be avoided. (3) Protect nesting and rearing habitats from human disturbance. (4) Exclude livestock from streams. (5) Control salt cedar and other non-native vegetation. (6) Identify areas infested by saltcedar or Russian olive and assess which conservation measures would be the most practical and effective for restoring historic levels of base flows. (6) Reduce perch sites and habitat for potential predators.
References: U.S. Fish and Wildlife Service - Piping Plover 5-Year Review, September 2009. Kevin Stubbs, Fish and Wildlife Biologist, US Fish & Wildlife Service, and Pompei V.D. and F.J. Cuthbert. 2007. Spring and Fall Distribution of Piping Plovers in North America: Implications for Migration Stopover Conservation. University of Minnesota. St. Paul, Minnesota. 28 p.

Taxon: Fishes
Common Name: Rio Grande Silvery Minnow
Scientific Name: *Hybognathus amarus*
Federal Status: Endangered, Endangered Experimental Population
Threats: Silvery minnow's decline has been attributed to decreased and interrupted stream flows caused by impoundments, water diversion for agriculture, and stream channelization. It may also be affected by

interactions with non-native fish and decreasing water quality in its native streams. It is believed that diversion dams on the middle Rio Grande act as barriers and prevent the silvery minnow from movement upstream of the diversion dams. Historically, after periods of low or no flow the silvery minnow may have been able to repopulate downstream habitat the following year by the drift of eggs from upstream populations. However, when the present-day middle Rio Grande dries and dams prevent upstream movement, the silvery minnow can become trapped in some areas and die in isolated pools before the river becomes wetted again. The inability of the population to find adequate refugia during prolonged periods of low or no flow and to repopulate extirpated reaches creates a very unstable population.
Conservation Measures: (1) Restore and protect the habitats used by the species. (2) Protect and expand existing populations by means of the following: strategic habitat modifications to provide proper habitat at low flows; new strategies to provide water needed by the species; habitat restoration activities; and a comprehensive program of propagation and augmentation. (3) Ensure that water withdrawals will not reduce quality of aquatic or riparian habitat.
References: U.S. Fish and Wildlife Service - Rio Grande Silvery Minnow Questions and Answers April 2002

Taxon: Snails
Common Name: Roswell Springsnail
Scientific Name: *Pyrgulopsis roswellensis*
Federal Status: Endangered
Threats: The loss or alteration of spring habitat continues to be the main threat with potential failure of spring flow due to excessive groundwater pumping or drought or both, which would result in total habitat loss for the species. Water contamination, particularly from oil and gas operations, is a significant threat. Fire suppression is largely restricted to established roads due to the safety hazards of transporting equipment over karst terrain, which severely limits the ability to quickly suppress fires that threaten fragile aquatic habitats. Springsnails and amphipods are a food source for other aquatic animals, such as crayfish, fish, and aquatic snails. Seeps and springs currently occupied have been perennial, even during times of drought, suggesting that these springs are relatively resilient to drought. However, climate change may test that resiliency.
Conservation Measures: (1) Secure conservation on additional lands surrounding occupied habitat to protect water quality and improve land management practices. (2) Restrict access to occupied habitat. (3) Avoid use of prescribed burning to control invasive vegetation. (4) Avoid any practice that removes ground water or causes drying of surface water in the immediate area occupied by the species.
References: U.S. Fish and Wildlife Service - Four Bitter Lake Invertebrates 5-Year Review, December 28, 2010

Taxon: Birds
Common Name: Southwestern Willow Flycatcher
Scientific Name: *Empidonax traillii extimus*
Federal Status: Endangered
Threats: The reasons for the decline of the southwestern willow flycatcher and current threats it faces are numerous, complex, and inter-related. Riparian ecosystems have declined from reductions in water flow, interruptions in natural hydrological events and cycles, physical modifications to streams, modification of native plant communities by invasion of exotic species, and direct removal of riparian vegetation. Habitat has been lost to fire, agricultural development, and urbanization. Unsuitable livestock grazing and recreation are also continuing threats (direct impacts to individuals as well as changes to habitat).
Conservation Measure: (1) Protection, manage and restore riparian habitat. (2) Remove livestock from the riparian areas to enhance riparian habitat and prevent destruction of nests (although some light to moderate

grazing during the winter in riparian areas is acceptable) and (3) Restrict human access to habitat during the breeding season.
References: U.S. Fish and Wildlife Service -Final Recovery Plan Southwestern Willow Flycatcher (*Empidonax traillii extimus*) – August 2002

Taxon: Clams
Common Name: Texas Hornshell
Scientific Name: *Popenaias popeii*
Federal Status: Candidate
Threats: The decline in freshwater mussel populations in New Mexico and Texas, including the Texas hornshell, can be directly attributed to human actions that modify physical conditions in streams, such as dams, water impoundment and diversion, certain flood control practices, water pollution, increased siltation and sedimentation, and climate change. The release of pollutants into streams from point and non-point sources has immediate impacts on water quality. Oil and gas industry operations (exploration, transfer, storage, and refining) are known to contaminate ground- and surface-waters. The potential effects of future climate change could reduce overall water availability and compound the threat of declining flows. Introduction of exotic bivalves and water soluble toxins produced by the invasive golden alga are also a threat.
Conservation Measures: (1) To avoid impacts to the species, ensure that water withdrawals will not reduce quality of aquatic or riparian habitat. (2) Restrict access to Texas hornshell beds.
References: U.S. Fish and Wildlife Service – Species Assessment and Listing Priority Form - Texas Hornshell – October 22, 2010

Taxon: Birds
Common Name: Whooping Crane
Scientific Name: *Grus americana*
Federal Status: Endangered
Threats: Ongoing and anticipated development of wind resources in the migration corridor of the AWBP is unprecedented and could place thousands more wind turbines, associated transmission lines, and other appurtenances in the Central Flyway path of the species in the coming decade. The whooping crane is a species with a low reproductive rate and limited genetic material derived from the 15 whooping cranes that remained in the 1940s. As more wind energy facilities are built, including turbines, transmission lines, power stations, and roads, it is incumbent on the industry, Federal action agencies, and U.S. Fish and Wildlife Service to provide the highest level of protection possible to whooping cranes, and to closely monitor the number of these birds killed and deterred from using preferred stopover locations. Other major threats to whooping cranes in the wild are the potential of a hurricane or contaminant spill destroying their wintering habitat on the Texas coast. The primary threats to captive birds are disease and parasites.
Conservation Measures: (1)To conserve whooping cranes, limit activity within 0.5-miles of wetlands suitable as stopover sites during spring and fall migration periods. To determine what suitable whooping crane habitat is, look for shallow wetlands in open, non-wooded areas free from human disturbance, such as nearby roads or buildings with at least some water area less than 18 inches deep. This will include marshes, small ponds, lake edges, or rivers. (2) Avoid any practice that removes ground water or causes drying of surface water in the immediate area of possible stopover sites. Note: other LPCI practices that may be beneficial to the whooping crane include watering facilities to provide livestock with reliable water resources outside of stopover sites, planting, and pond development.

References: Whooping Cranes and Wind Development – An Issue Paper – By Regions 2 and 6, U. S. Fish and Wildlife Service – December 2008. Also http://www.fws.gov/northflorida/WhoopingCrane/whoopingcrane-fact-2001.htm

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Taxon: Plants
Common Name: Wright's Marsh Thistle
Scientific Name: *Cirsium wrightii*
Federal Status: Candidate
Threats: *Cirsium wrightii* faces threats primarily from natural and human-caused modifications of its habitat due to ground and surface water depletion, drought, invasion of *Phragmites australis*, and from the inadequacy of existing regulatory mechanisms. The species occupies relatively small areas of seeps, springs, and wetland habitat in an arid region plagued by drought and ongoing and future water withdrawals. The species' highly specific requirements of saturated soils with surface or subsurface water flow make it particularly vulnerable. Long-term drought, in combination with ground and surface water withdrawal, pose a current and future threat to *C. wrightii* and its habitat.
Conservation Measures: (1) To conserve this species, grazing exclosures could be built in riparian areas to support protection and expansion of extant populations. (2) Avoid any practice that removes ground water or causes drying of surface water in the immediate area occupied by the species particularly the springs and cienagas in southeastern New Mexico.
References: http://www.fws.gov/southwest/es/arizona/Documents/SpeciesDocs/WrightsThistle/FR_12-month_Wright's_marsh_thistle.pdf

APPENDIX VI – NRCS Planning Tools: Environmental Evaluation Worksheet (NRCS-CPA-52)

U.S. Department of Agriculture NRCS-CPA-52 Natural Resources Conservation Service 10-03 **Environmental Evaluation Worksheet**	**A.** Client:	
	B. Plan ID No:	
	C. CMU/Fields:	
	D. Client's objective	**E.** Purpose and need for action

F. Resource Considerations	**H.** Alternatives and Effects (Attach additional pages as necessary)			
	Proposed Action	No Action	Alt 1	Alt 2
SOIL				
Erosion				
Condition				
Deposition				
WATER				
Quantity				
Quality				
AIR				
Quality				
Condition				
PLANT				
Suitability				
Condition				
Management				
ANIMAL				
Habitat				
Management				

G. Economic and Social Considerations	**I.** Effects			
	Proposed Action	No Action	Alt 1	Alt 2
Land use				
Capital				
Labor				
Management level				
Profitability				
Risk				

J. Special Environmental Concerns (See "Evaluation Procedure Guide Sheets")	K. Effects: Not Applicable (NA), Positive (+), Adverse/Potentially Adverse (--), Neutral (0)			
	Proposed Action	No Action	Alt 1	Alt 2
NRCS ENVIRONMENTAL COMPLIANCE HANDBOOK (NECH).				
CLEAN WATER ACT/WATERS of U.S.				
***COASTAL ZONE MANAGEMENTAREAS**				
***CULTURAL RESOURCES** Filling out CPA-052 for NEPA				
***ENDANGERED THREATENED SPECIES** eFOTG Section II				
ENVIRONMENTAL JUSTICE Executive Order				
***FISH AND WILDLIFE COORDINATION** (Stream channelization, impoundment etc)				
FLOODPLAIN MANAGEMENT Executive Order 11988				
INVASIVE SPECIES Executive Order 13112				
MIGRATORY BIRDS Executive Order 13186				
NATURAL AREAS National Natural Landmarks				
PRIME and UNIQUE FARMLANDS				
RIPARIAN AREAS				
SCENIC BEAUTY				
WETLANDS				
***WILD and SCENIC RIVERS** Minnesota				

* These items may require consultation or coordination between the lead agency/RFO and another governmental unit.

L. Easements, permissions, or permits. _____

M. Mitigation _____

_____

N. The information recorded above is based on the best available information:

_____ _____ _____

Signature Title Date

O. Agencies, persons, and references consulted _____

P. Findings. Indicate which of the alternatives from Section H is the preferred alternative.

_____

I have considered the effects of this action and the alternatives on the Resource, Economic, and Social Considerations; the Special Environmental Concerns; and the extraordinary circumstances criteria in the instructions for form NRCS-CPA-52. I find, for the reasons stated in (Q) below, that the selected alternative:

_____ is **not a Federal action** (NA, +, 0). No additional analysis is required.

_____ is **categorically excluded** from further environmental analysis and there are no extraordinary circumstances (see instructions). No additional analysis is required.

_____ has been **sufficiently analyzed** in an existing NRCS environmental document. No additional analysis is required.

____ may require preparation of an EA or EIS or formal consultation with another governmental unit (--). The action will be referred to the State Office.

Q. Rationale supporting the finding_____

R. _____ _____ _____

Signature Title Date

Instructions for Completing Form NRCS-CPA-52, "Environmental Evaluation Worksheet"

The form NRCS-CPA-52 is the instrument used to summarize the effects of conservation practices and systems. It also provides summary documentation of the environmental evaluation (EE) of the planned actions. The EE is "a concurrent part of the planning process in which the potential long-term and short-term impacts of an action on people, their physical surroundings, and nature are evaluated and alternative actions explored". The EE applies to all assistance provided by NRCS (GM190 Part 410.5).

The following are instructions for completing form **NRCS-CPA-52**:

A Record the client's name.

B Enter the conservation plan identification number.

C Enter the conservation management unit to which this evaluation applies. This may be done by field, pasture, tract, landuse (i.e. cropland, rangeland, woodland etc.), by resource area (i.e. riparian corridor or wetland area) or any other suitable geographic division.

D Briefly summarize the client's objective(s).

E Briefly identify the purpose and need for action. Reference the resource concern(s) to be addressed.

F, G Use the provided resource, economic, and social considerations or list considerations identified during scoping or by any existing area wide, watershed or other resource document appropriate for the planning area. The list of considerations may be expanded by listing subcategories, such as wind erosion, sheet erosion, gully erosion etc. Refer to the applicable quality criteria.

H, I Briefly summarize the practice/system of practices being proposed, as well as any alternatives being considered. Document the effects of the proposed action for the considerations listed in E and F. Reference applicable quality criteria, information in the CPPE, and quantify effects whenever possible. Consider both long-term and short-term effects. Consider any effects which may be individually minor but cumulatively significant at a larger scale or over an extended time period. At the request of the client, additional alternatives may be developed and their effects evaluated. This may be done in order to more fully inform the client about the decision to be made. In these cases, briefly describe alternatives to the proposed action, including the "no action" alternative. The no action alternative is the predicted future condition if no action is taken. Clearly define the differences between proposed action, no action, and the other alternatives if applicable.

J, K See the Special Environmental Concerns Evaluation Procedure Guide Sheets. Completion of Help Sheets is not required, but may provide additional documentation that the appropriate processes have been followed. Complete section J by documenting the effects of each alternative on the special environmental concerns listed in I. Quantify effects whenever possible. Consider both long-term and short-term effects. Consider any effects, which may be individually minor but cumulatively significant at a larger scale or over an extended time period. Indicate whether the practice affect will be; Positive (+), Neutral (0), or Adverse/ Potentially Adverse (--).

L List any necessary easements, permissions, or permits (i.e. 404, ESA section 10, State or county permits or requirements).

M Describe mitigation to be applied that will offset any adverse impacts. Attach documentation from other agencies.

N The individual responsible for completing the CPA-52 must sign and date the Form indicating they have used the best available information. This signature is particularly important when a TSP is completing the CPA-52 or when NRCS is providing technical assistance on behalf of another agency.

O Document contact and communications with USFWS, NOAA Fisheries, COE, EPA, NRCS State Biologist, State Environmental Agencies, or any others consulted. Include public participation activities, if applicable.

P Check the applicable finding being made.

- The practice is **not a Federal action** if <u>all</u> effects are Positive (+), Not Applicable (NA) or Neutral (0).
- The practice **may require preparation of an EA, EIS or require formal consultation with another governmental unit** if any effect is Adverse/Potentially Adverse (--).

Q Explain the reasons for making the finding identified in P. Cite any references, analysis, data, or documents which support the finding. Add additional pages as necessary. To find that an action has been sufficiently analyzed in an existing NRCS environmental document, the document must cover the area in which the action is being implemented.

R NRCS responsible official must sign and date for NRCS actions. The FSA or other Federal agency responsible official must sign and date for FSA or other agency funded activities.

CRITERIA FOR IDENTIFYING CATEGORICAL EXCLUSIONS AND EXTRAORDINARY CIRCUMSTANCES

NRCS Categorical Exclusions

1. Soil Survey
2. Snow Survey and Water Supply Forecasts
3. Plant Materials for Conservation
4. Inventory and Monitoring
5. River Basin Studies under Section 6 of Public Law (PL) 83–566 as amended

Extraordinary circumstances usually involve impacts on environmental concerns such as wetlands, floodplains, or cultural resources. The circumstances that may lead to a determination of extraordinary circumstances are the same factors used to make determinations of significance and include

1. Impacts that may be both beneficial and adverse and that significantly affect the quality of the human environment.
2. The degree to which the proposed action affects public health or safety.
3. Unique characteristics of the area, such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas.
4. The degree to which the effects on the quality of the human environment are likely to be controversial.
5. The degree to which the possible effects on the quality of the human environment are highly uncertain or involve unique or unknown risks.
6. The degree to which the action may establish a precedent for future actions with significant effects or represent a decision in principle about a future consideration.
7. Individually insignificant but cumulatively significant activities that have not been analyzed on a broader level, such as on a program-wide or priority area basis.
8. Adverse effects on areas listed in or eligible for listing in the National Register of Historic Places, or that may result in loss or destruction of significant scientific, cultural, or historical resources.
9. Adverse effects on an endangered or threatened species or its designated critical habitat.
10. Circumstances threatening the violation of Federal, State or local law or requirements imposed for the protection of the environment.

If one or more extraordinary circumstances are found to apply to the proposed action, determine whether the proposal can be modified to mitigate the adverse effects and prevent the extraordinary circumstances. If this can be done and the client agrees to the change, then the proposed action may be modified and categorically excluded. If the proposed action cannot be modified or the client refuses to accept a proposed change, prepare an EA or EIS as indicated above.

If none of the extraordinary circumstances are determined to apply to the proposed action (or modified action), then it may be categorically excluded. Document the rationale for the determination in Q.