

**DRAFT**

**Environmental Assessment**

For

The Texas Conservation Plan for the Dunes Sagebrush Lizard:

a Candidate Conservation Agreement with Assurances and/or

a Habitat Conservation Plan for the

Dunes Sagebrush Lizard (*Sceloporus arenicolus*)

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## 1.0 INTRODUCTION

This draft Environmental Assessment (draft EA) has been prepared in accordance with the requirements of the National Environmental Policy Act [42 USC 4321 *et seq.*](NEPA) to address the impacts on the environment from the implementation of the proposed *Texas Conservation Plan for the Dunes Sagebrush Lizard (Sceloporus arenicolus)*(Texas Conservation Plan DSL)(proposed action). The Texas Conservation Plan DSL has been developed to support:

- the issuance of a section 10(a)(1)(A) Enhancement of Survival Permit and implementation of the Texas Conservation Plan DSL as a Candidate Conservation Agreement with Assurances (CCAA) that would result in the conservation of the DSL in Texas; and,
- if the DSL becomes listed and if requested, the issuance of a section 10(a)(1)(B) Incidental Take Permit (ITP) and implementation of the Texas Conservation Plan DSL as Habitat Conservation Plan (HCP) for non-Federal activities affecting the DSL in Texas.

The proposed Federal action is whether to approve the Texas Conservation Plan DSL and one or both of the permits discussed above, as appropriate, pursuant to the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*)(Act). The Texas Comptroller of Public Accounts (TX CPA; Applicant; Permittee) has applied for the section 10(a)(1)(A) Enhancement of Survival Permit for the conservation activities to be implemented within the range of the DSL in Texas. The Service's Preferred Alternative would include the issuance of the section 10(a)(1)(A) Enhancement of Survival Permit, and if the DSL is listed, consider issuance of a section 10(a)(1)(B) ITP supported by the Texas Conservation Plan DSL.

If and when a species is proposed for listing, and ultimately listed pursuant to the Act, it triggers both a regulatory and a conservation responsibility for Federal, State, private landowners, or other cooperators, as appropriate. These responsibilities stem from section 9 of the Act that prohibits "take" (i.e., harass, harm, pursue, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct) of a listed species. Along with the section 9 prohibitions, Federal agencies must ensure that their actions will not jeopardize the continued existence of the listed species or destruction or adverse modification of designated critical habitat. Furthermore, under section 7(a)(1) Federal agencies shall utilize their authorities to further the purposes of the Act. The U. S. Fish and Wildlife Service (Service) represents the Federal action agency considering the proposed action.

In response to the Service's proposal to list the DSL (75 FR 77801) published on December 14, 2010, Texas representatives comprised of local, State, and Federal officials, along with private and commercial representatives (Stakeholders), convened in May 2011 to develop the Texas

Conservation Plan DSL prescribing conservation and management strategies for the DSL. Subsequently, the Stakeholders formed three committees to develop the Plan, a Steering Committee, a Policy and Administration Committee, and a Science Committee to address the needs of the DSL on non-Federal lands within Texas.

TX CPA proposes to utilize active cooperation with Stakeholders in the development and implementation of the Plan over a 30 year period. The Plan provides guidance in the development and implementation of the conservation strategy, sets minimum requirements to benefit the DSL while accommodating economic development, and includes an adaptive management strategy to address the concerns and future management of the DSL and its associated habitats in Texas. The Plan also proposes and contemplates a mechanism to provide incidental take authorization for the DSL, should the species become listed pursuant to the Act. As an outcome, the land use prescriptions contained in the Texas Conservation Plan DSL will serve as avoidance, minimization, and mitigation measures to non-Federal landowners, lessees, or operators.

The implementation of the Texas Conservation Plan DSL, and the approval of the requested permits, as appropriate, would provide a mechanism for implementing and monitoring conservation strategies for the DSL that are not explicitly addressed or applicable by any other mechanism in Texas. Consequently, any conservation strategies undertaken by non-Federal landowners, lessees, operators, or other eligible cooperators (Participants) would be measures above and beyond current conservation strategies. A future decision to list the species would take into consideration actions planned and/or implemented prior to listing pursuant to the Texas Conservation Plan DSL, as well as land use prescriptions contained in any associated documents and the likelihood that they would be implemented with emphasis on threats facing the DSL now and into the foreseeable future, consistent with the Service's Policy for Evaluating Conservation Effort (68 FR 15100).

The Texas Conservation Plan DSL would cover all lands currently occupied, potentially occupied, or may be considered as potential habitat for the DSL in Texas within 14 counties: Andrews, Bailey, Cochran, Crane, Ector, Gaines, Hale, Hockley, Lamb, Terry, Upton, Ward, Winkler, and Yoakum counties (Figure 1). The analysis of this EA will focus on a Permit Area where DSLs are known to occur and where impacts are likely to occur (Permit Area). The counties within the proposed Permit Area are: Andrews, Crane, Ector, Gaines, Ward, and Winkler counties covering approximately four million acres and including an estimated 197,600 acres of DSL habitat in Texas (Figure 2). However, to facilitate research and recovery activities in potential DSL habitat in the other eight counties, they, along with the counties in the proposed Permit Area, will be included in the Plan (Plan Area).

## 1.1 Description of the Proposed Action

### A. Implementation of the Texas Conservation Plan DSL as a CCAA

Due to the nature of land ownership in Texas (approximately 97% privately-owned), non-Federal landowners, lessees, and operators are seeking greater certainty that if the DSL is listed, it will be less likely they be required to change their activities in a way that could significantly impact their current land-use operations.

To provide an incentive for voluntary conservation of species that are candidates for listing and are located on non-Federal lands, the Service adopted a policy and regulations in 1999 for CCAAs under the authority of Section 10 of the Act (64 FR 32717 and 32706, 69 FR 24084). Under a CCAA, non-Federal Participants voluntarily commit to implement specific conservation measures on non-Federal lands for species covered by the CCAA. In exchange, they receive permit coverage from the Service which provides the level of incidental take coverage that is anticipated under the implementation of the CCAA and also, assurances that will not require the commitment of additional land, water, or financial compensation or additional restrictions on the use of land, water, or other natural resources beyond the level otherwise agreed upon for the species covered by the Agreement without the consent of the Permittee, should the species becomes listed in the future; provided the CCAA is being properly implemented (50 CFR 17.22(d)(5) and 17.32(d)(5)). These assurances provide considerable certainty to the Participants regarding their activity on non-Federal lands covered by the CCAA.

The proposed Federal action is the issuance of a section 10(a)(1)(A) Enhancement of Survival Permit and resulting implementation of the Texas Conservation Plan DSL as a CCAA for the conservation of the DSL in Texas per an application request by the TX CPA. As discussed above, the CCAA provisions would apply to Participants. The following is a brief description of the CCAA provisions in the Texas Conservation Plan DSL.

If the TX CPA's request for the permit is approved, they would be the holder of the section 10(a)(1)(A) Enhancement of Survival Permit and enroll Participants through issuance of Certificates of Inclusion (CI) pursuant to the Texas Conservation Plan DSL. The Participants would implement conservation measures for the DSL within the Permit Area. TX CPA would provide technical assistance through which cooperating Participants can implement these voluntary conservation measures for the DSL on their properties which could include the contribution of funds to have conservation measures implemented in other high priority areas. In return for implementing the conservation measures, the Service would provide the Participants assurances that, for the duration of the CCAA and its associated Section 10(a)(1)(A) Enhancement of Survival Permit, no additional conservation measures or additional land, water, or resource use restrictions beyond those voluntarily agreed to and described in the CI would be required by the Service for the DSL should they become listed in the future.

Under the CCAA, some examples of actions that may be taken on the ground include, but may not be limited to, the following:

- Avoid / minimize / mitigate surface disturbance within a specified distance from DSL habitat including dunes, dune complexes, and migration corridors;
- Avoid shinnery oak control within suitable DSL habitat or within corridors that connect dune complexes or within an appropriate buffer from DSL habitat ( minimum 100 feet from complex edges);
- Avoid off-road vehicle use in suitable DSL habitat including dunes, dune complexes, or migration corridors;
- Place, remove, or re-locate facilities (e.g. windmills, troughs, water lines, etc.) to outside of occupied and suitable DSL habitat;
- Use non-invasive on-site power sources to operate facilities;
- Utilize directional drilling or other strategies to minimize the number of well pads / acre in DSL habitat;
- Apply seasonal restrictions for activities occurring inside DSL habitat, as applicable; and,
- Utilize Natural Resource Conservation Service Prescribed Grazing Standard in or around DSL habitat.

A team composed of representatives from the Service, Federal, State, and other stakeholders will develop and review the CIs to ensure the greatest benefit is occurring for the DSL. The team will meet initially to review the participating cooperators application for a CI, as appropriate, and develop the appropriate CI for their lands.

Should the CCAA be approved and an Enhancement of Survival Permit be issued, meetings between the Service, TX CPA, and Stakeholders will be used to review the progress and success of the Plan under the CCAA including CIs and to review new applications for participation in the CCAA.

#### B. Approval and Implementation of a proposed HCP pursuant to the DSL Texas Conservation Plan

Section 10(a)(1)(B) defines incidental take as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity, and it provides for the issuance of ITPs to authorize such take. Under section 10(a)(2)(A), any application for an ITP must include a “conservation plan” that details, among other things, the impacts of the incidental take allowed by the ITP on affected species and how the impacts of the incidental take will be minimized and mitigated. Accordingly, the TX CPA may apply to the Service for an ITP in connection with planned and ongoing activities in Texas, and has prepared the Texas Conservation Plan DSL,

dated September 27, 2011, to support an application for an ITP, should one be submitted to the Service in the future.

Should the DSL become listed and the TX CPA apply for an ITP, the Texas Conservation Plan DSL would function as an HCP in support of the ITP. The second part of the proposed action under consideration in this EA is, therefore, the potential issuance of the ITP, if the DSL becomes listed and if requested by the Applicant, considered in light of the proposed implementation of the Texas Conservation Plan DSL as an HCP. Currently, the DSL is not listed under the Act and the HCP portion of the Texas Conservation Plan DSL may not be permitted until such time as the DSL may be listed and the Service determines that the permit application and supporting HCP meet issuance criteria pursuant to general permit issuance criteria described at 50 CFR 13.21 and criteria specific to section 10(a)(1)(B) permits described at 50 CFR 17.22(b)(2) and 50 CFR 17.32(b)(2).

The HCP encompasses two broad sets of activities: (1) those proposed by TX CPA including, certain agricultural (e.g. grazing) and recreational activities, oil and gas operations, and other activities as deemed appropriate under the HCP (referred to hereinafter as the “covered activities”; Section 6.1 of the Texas Conservation Plan DSL); and, (2) those activities proposed by the TX CPA to protect and conserve the DSL (covered species) in the course of carrying out the covered activities (Section 8.0 of the Texas Conservation Plan DSL).

Thus, the HCP, if approved, and the ITP, if issued, are designed to avoid and minimize take of the covered species and mitigate the effects of the take to the maximum extent practicable, but also the ITP would authorize the amount of incidental take that is unavoidable in carrying out the covered activities. Incidental take proposed by the HCP and authorized by the ITP, depending on the circumstances involved, could potentially include killing, injury, harm, and harassment<sup>1</sup> of the covered species (Section 9.1 of the Texas Conservation Plan DSL).

In accordance with NEPA, the purpose of this EA is to analyze the potential direct, indirect, and cumulative impacts of the proposed action (issuance of the requested ITP and approval of the proposed HCP) on the environment, including the impacts of this action on the DSL.

## **1.2 Description Of The Applicant**

TX CPA was created by the Republic of Texas provisional government as an appointed position on December 30, 1835. After statehood, the office became an elected position authorized by Article IV, Section 23, of the Texas Constitution of 1850. TX CPA serves as the chief financial officer for the state of Texas. Most of the powers and duties of TX CPA are enumerated in

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<sup>1</sup> Federal regulation (50 CFR 17.3) defines the term “harm” in the take definition to include “significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, and sheltering”; and the term “harass” to mean “an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding or sheltering.”

Chapter 403 of the Texas Government Code and the Texas Tax Code. The agency is the state's chief tax collector, accountant, revenue estimator, and purchasing manager.

In performing these functions, TX CPA provides assistance to local governments and aids local economic development efforts by promoting best practices among cities, counties, economic development officials and other entities. In 2009, the Texas Legislature assigned TX CPA to chair the Interagency Task Force on Economic Growth and Endangered Species to help local officials implement the regulatory programs of the Act and to coordinate economic development in conjunction with the implementation of the Act. TX CPA actively seeks to balance economic growth and endangered species regulation, and to do so by developing strategic alliances among ranchers, industry, conservation groups and agencies, universities and research institutions. To further this effort, Article 67 of Senate Bill 1 in the first called Special Session of the 82nd Texas Legislature (SB 1) authorizes TX CPA to apply for and receive permits under the Act. SB 1 further authorized the creation of a Habitat Protection Fund to be held in the Texas state treasury.

TX CPA will use its procurement authority to contract with qualified third parties for the administration and implementation of the Plan and to perform the necessary services to meet the terms of the Permit including the enrollment and participation process, tracking of the mitigation and recovery activities and funds, distribution of research funds, performance of research activities, and compliance monitoring and reporting. To obtain these services, TX CPA may execute contracts with other state agencies or entities in state government through interagency contracts. Another alternative available to TX CPA is to solicit qualifications and/or proposals from individuals or companies following state procurement requirements.

TX CPA will have the primary responsibility for enrolling Participants that voluntarily take part in the program and is the applicant for the section 10(a)(1)(A) Enhancement of Survival Permit. In the event that the DSL is listed as a threatened or endangered species, TX CPA will be the applicant for the section 10(a)(1)(B) ITP and will have the primary responsibility for the implementation of the Plan and ensuring compliance with the terms and conditions of the Permit. Please refer to Section 2.1.5 of the Texas Conservation Plan DSL for more information regarding TX CPA's role regarding the proposed action.

## **2.0 PURPOSE AND NEED FOR ACTION**

### **Purpose**

The purpose for which this EA is being prepared is to:

- Respond to TX CPA's application for an Enhancement of Survival Permit for the DSL related to activities identified in the draft Texas Conservation Plan DSL functioning as a CCAA, pursuant to section 10(a)(1)(A) of the Act and its implementing regulations and policies;
- Analyze the potential impacts associated with the activities in the draft Texas Conservation Plan DSL functioning as an HCP, pursuant to section 10(a)(1)(B) of the

Act and its implementing regulations and policies should the DSL be listed under the Act and an application for an ITP be filed by TX CPA or other potential applicant;

- Protect, conserve, and enhance the DSL and its habitat for the continuing benefit of the people of the United States;
- Provide a means and take steps to conserve the ecosystems upon which the DSL depends;
- Ensure the long-term survival of the DSL through protection and management of the species and its habitat; and,
- Ensure compliance with the Act, NEPA, and other applicable federal laws and regulations.

### **Need**

This action is needed to protect and conserve the DSL while providing a mechanism to authorize incidental take of DSL should it be listed pursuant to the Act.

For specific information regarding each permit, please refer to Section 1.1 A and B above.

### **2.1 Decision To Be Made By The Responsible Official**

The scope of the analysis in this EA covers the direct, indirect, and cumulative environmental effects of approving the Texas Conservation Plan DSL, issuing a section 10(a)(1)(A) Enhancement of Survival Permit and 10(a)(1)(B) ITP, as appropriate, and anticipated future effects of implementation of the Texas Conservation Plan DSL (including the incidental take authorizations). The Service must contemplate the current proposal and whether or not it currently meets Issuance Criteria for a CCAA (50 CFR 13.21, 50 CFR 17.22(d)(2), and 50 CFR 17.32(d)(2)) and HCP (ITP) (50 CFR 13.21, 50 CFR 17.22(b)(2), and 50 CFR 17.32(b)(2)), should the DSL be listed in the future.

Due to the Plan's innovative nature and due to the Applicant's intent to develop and include a robust research/feedback mechanism in the Plan, the Service will continue to participate in the advisory committee process established by the Applicant, including participation and deliberation with the Science, Policy, and Steering Committees. As part of the adaptive management strategy, the Applicant and the Service, as often as agreed to by both parties, will review the results of Baseline evaluations, compliance and effectiveness monitoring, ongoing research activities, and research design and implementation to ensure that the sum of the voluntary and/or required conservation measures implemented under the Plan are resulting in a net benefit to the DSL and that the sum of the mitigation measures, as appropriate, are commensurate with the sum of the impacts associated with incidental take occurring from those actions authorized by the Permit, to make adjustments, as necessary, and to evaluate changed circumstances.

The decisions to be made contemplate which Alternative to implement and whether the Alternative to be implemented will have a significant impact on the existing environment, which may require the preparation of an Environmental Impact Statement (EIS).

We invite public comment on:

- Whether the Plan meets the CCAA standard and policy (64 FR 32726),
- Whether the Plan meets Issuance Criteria for an ITP (if the DSL is listed in the future),
- The Conservation Recovery Award System, and
- Whether the Plan can be implemented as proposed.

### **3.0 DESCRIPTION OF ALTERNATIVES**

This section describes the proposed actions and alternatives to the proposed actions considered in the course of development of the Texas Conservation Plan DSL. These are: Alternative 1- the No Action Alternative; Alternative 2 - the Preferred Alternative; Alternative 3 - Issuance of a CCAA 10(a)(1)(A) Enhancement of Survival Permit only; and, Alternative 4 – Approval of an HCP and Issuance of a 10(a)(1)(B) ITP only, as appropriate.

#### **3.1 Alternative 1 - No Action**

Under the No Action Alternative, the Service would not approve the Texas Conservation Plan DSL. Subsequently, the Service and TX CPA would not enter into a CCAA. Further, the Service would not approve or issue an ITP pursuant to the HCP to accommodate Participants that may request incidental take coverage for their activities that may cause take to the DSL, if the species becomes listed. If the DSL becomes listed, non-Federal landowners, lessees, or operators implementing activities that may cause take of the DSL could be doing so in violation of section 9 of the Act. Under the Act, non-Federal landowners, lessees, or operators have the option of developing their own HCP with the Service, however, developing an individual HCP can be expensive, may cause delays to operations, and may require additional NEPA considerations.

Currently, the DSL is not a State-listed species in Texas and would continue to be afforded little protection on State lands. On private lands, where the State or Federal government has no authority to protect or direct the management of species' habitat, conservation activities would continue to be implemented entirely at the discretion of the non-Federal landowner, lessee, or operator.

Under the No Action Alternative, non-Federal landowners, lessees, or operators would have little economic or legal incentive to voluntarily initiate conservation or management activities to benefit the DSL. In addition, conservation measures prescribed in the Texas Conservation Plan DSL above and beyond those directed by existing Federal, State, and local laws, policies, or

regulations would not be implemented. The status quo with respect to planned and ongoing conservation activities on non-Federal lands in the Texas would be maintained. This does not mean that no such activities would be undertaken by landowners, but that conservation activities would occur at levels and under circumstances similar to the present.

### **3.2 Alternative 2 - Approval and Implementation of a CCAA and Approval and Implementation of an HCP, as appropriate (Preferred Alternative)**

The Preferred Alternative would involve the approval and implementation of the Texas Conservation Plan DSL to facilitate collaboration between the Service and Participants to address the conservation needs of and regulatory compliance regarding the DSL in Texas, pre- and post-listing, should the DSL become listed.

#### **A. Implementation of the Texas Conservation Plan DSL as a CCAA**

TX CPA would be responsible for enrolling Participants through the CI. A CI is the mechanism for Participants to voluntarily become part of a conservation agreement while the DSL is still in candidate status. The procedure would entail each Participant signing a CI for a particular parcel of land (enrolled property), and agreeing to implement conservation measures as prescribed by the CRA Strategy and as appropriate, provide funding for implementation of conservation measures for the species their actions may affect. Even though the Participants or Permittee may change over time, the CI would remain tied to the enrolled property described in the certificate if the new Participant or Permittee was interested in maintaining the agreement. It is also through the CI that incidental take authorization is provided to Participants from the section 10(a)(1)(A) Enhancement of Survival Permit, should DSL be listed.

Since the Service, TX CPA, and Stakeholders would work cooperatively to determine which conservation measures prescribed by the CRA Strategy are the highest priority, it is important to note that funds or in-kind work associated with a CI would not need to be used on the enrolled property as described under its corresponding certificate since that area may not encompass the highest priority area identified for conservation actions.

Participants would benefit from voluntarily enrolling in the CCAA in several ways. Under a CCAA, Participants would receive assurances that no additional restrictions would be required on non-Federal lands. Participants would continue working under the terms of the CI, should the DSL become listed.

Participants would agree to protect and enhance existing populations and habitats, restore degraded habitat, create new habitat, augment existing populations of DSLs, restore historic populations, or undertake other activities to improve the status of the DSL. The conservation measures prescribed by the CRA Strategy included in the CCAA would reduce and/or eliminate threats to the species (see section 12.0 of the DSL TX Conservation Plan). Each CI would be

negotiated on a case-by-case basis so that Participants could: 1) contribute funds to accomplish conservation measures; and, 2) implement agreed upon conservation measures. While it would not be necessary to conduct all conservation measures on every property enrolled under the CCAA, approved conservation measures would be undertaken as necessary to reduce and/or eliminate a particular threat. TX CPA would have the ability to use contributed funds on any lands where Participants agree to allow the implementation of conservation measures and provide written permission to do so. The goal would be to implement the highest priority conservation measures needed, which would be determined by the Service, TX CPA, and Stakeholders to reduce and/or eliminate threats to the species. As new information or empirical data becomes available, the CRA Strategy would be modified through adaptive management in order to achieve greater species conservation.

The ultimate goal of the CCAA would be to facilitate conservation of the DSL in Texas. The CRA Strategy, designed to benefit the DSL, would include, but may not be limited to, maintaining or improving existing habitat, preventing further habitat fragmentation, and conducting research conducive to adaptive management of the DSL. The proposed term of the CCAA and the associated Enhancement of Survival Permit is 30 years.

#### B. Implementation of the Texas Conservation Plan DSL as an HCP

Should the DSL become listed, the Texas Conservation Plan DSL would function as an HCP in support of application for a section 10(a)(1)(A) ITP. The Texas Conservation Plan DSL contains all of the components required in an HCP. The Plan would be available for any non-Federal landowner, lessee, or operator who may be implementing actions that could result in incidental take of DSL who has no incidental take coverage from section 10(a)(1)(A) Enhancement of Survival Permit by participating, prior to listing, in the Plan as it functions as a CCAA. This option to use the Texas Conservation Plan DSL as an HCP would also be used by Participants who are enrolled under the CCAA prior to listing, but now need to seek incidental take coverage for a new land use that may increase the level of incidental take above that anticipated under the CI for the CCAA.

The Texas Conservation Plan DSL contains all the necessary components of an HCP and adheres to the Service's Five Point Policy in consideration of: 1) biological goals and objectives (Section 8.1); 2) adaptive management (Section 8.3); 3) monitoring (Section 8.2); 4) permit duration (Section 5.0); and, 5) public participation (below). The two primary components are: (1) the proposed covered activities that are planned to meet the conservation needs of Participants in the Permit Area as a whole and the operational needs of the Stakeholders (Section 6.0); and, (2) the species conservation program which is proposed to protect the DSL in the course of carrying out the covered activities (Section 8.0 and Section 12.0).

Participants would agree to the terms of the ITP, including mitigation strategies commensurate with the impact proposed in the Texas Conservation Plan DSL, in exchange for incidental take authorization for the covered activities pursuant to the Act. The proposed term of the HCP and the associated ITP is thirty 30 years.

### **3.3 Alternative 3 - Approval and Implementation of the CCAA Only**

Alternative 3 would involve the approval and implementation of a CCAA between the Service, TX CPA and Participants to address the conservation needs of the DSL on non-Federal lands in Texas while the species is in candidate status. This alternative would be the same as Alternative 2, excluding the approval and implementation of the HCP should the DSL become listed. Consequently, should the DSL be listed, there would not be a mechanism in place to provide programmatic incidental take authorization for non-Federal landowners, lessees, or operators that do not choose to participate in the Texas Conservation Plan DSL implemented as a CCAA. Under this alternative, these non-participating landowners, lessees, or operators would need to seek their own authorization for any potential incidental take of DSL through their ongoing land uses that may cause take. Likewise, any Participants under the Texas Conservation Plan DSL implemented as a CCAA who wish or need to change land uses and this new use may rise the level of incidental take of DSL above that anticipated in their CI, would need to seek additional incidental take coverage independently. As a result, for any activities not covered by the CCAA that may result in incidental take of the DSL on non-Federal lands, each non-Federal landowner, lessee, or operator would be required to go through the standard section 10 habitat conservation planning process with the Service in order to obtain incidental take authorization. This may result in delays to their ongoing and future operations.

### **3.4 Alternative 4 - Approval and Implementation of an HCP Only**

If the DSL becomes listed, Alternative 4 would involve the approval of the HCP and issuance of an ITP. The ITP would be issued to the TX CPA for use by non-Federal landowners, lessees, or operators to address incidental take from covered activities with required avoidance and minimization measures and mitigation commensurate with the effects of any incidental take of DSL that is anticipated on non-Federal lands in Texas or approximately 197,600 acres. This alternative would be the same as Alternative 2, excluding the approval and implementation of the companion CCAA. As a result, there would not be a mechanism in place prior to listing to address the conservation needs of the DSL on non-Federal lands in order to reduce and/or eliminate threats to the species with a goal to remove or reduce threats and possibly preclude listing. Non-Federal landowners, lessees, or operators would not be given the opportunity to implement proactive conservation measures through the Texas Conservation Plan DSL as a CCAA, nor would they be provided post listing assurances or incidental take coverage for their

ongoing land uses through a section 10(a)(1)(A) Enhancement of Survival Permit, should the DSL be listed in the future.

## **4.0 AFFECTED ENVIRONMENT**

The Texas Conservation Plan DSL would cover all lands currently occupied, potentially occupied, or potential habitat for the DSL in Texas within 14 counties: Andrews, Bailey, Cochran, Crane, Ector, Gaines, Hale, Hockley, Lamb, Terry, Upton, Ward, Winkler, and Yoakum counties (Figure 1). The analysis of this EA will focus on the Permit Area where DSLs are known to occur and where impacts are likely to occur. The counties within the Permit Area: Andrews, Crane, Ector, Gaines, Ward, and Winkler counties. The Permit Area (approximately four million acres) includes an estimated 197,600 acres of DSL habitat (Figure 2). However, due to the presence of potential DSL habitat in the other counties, they will be included in the Plan Area.

Two major ecoregions occur in this portion of the Texas: High Plains and Chihuahuan Desert (Texas Parks and Wildlife Department [TPWD] online information 2011).

In west Texas, DSL habitat occurs in shinnery oak sand dune complexes (Axtell 1988, Laurencio et al. 2007, Laurencio and Fitzgerald 2010), specifically only in the microhabitat of dune “blowouts” (open, low lying areas between active dunes) in areas dominated by shinnery oak and scattered sand sagebrush. Please refer to Section 3.0 of the Texas Conservation Plan DSL for specific information about the DSL and its habitat.

Resources considered for analysis under this EA included soils, vegetation, wildlife, listed, proposed, and candidate species, land use and ownership, air quality, noise pollution, water resources, cultural resources, socioeconomics, and climate change. Of these, the resources selected for further evaluation include soils, vegetation, wildlife, listed, proposed, and candidate species, and land use and ownership. Climate change is discussed later in Cumulative Effects.

The remaining resources were excluded from further consideration because the proposed actions would be expected to have either no effect to these resources or the effects to these resources would be insignificant. Further, non-Federal landowners, lessees, and operators are and will continue to be required to comply with existing regulations associated with those resources independent of the outcome of the proposed action.

### **4.1 Soils**

The soils within the Plan Area can generally be described as mostly level with sandy textures and high concentrations of calcium carbonate in the substratum. They are used mainly for range,

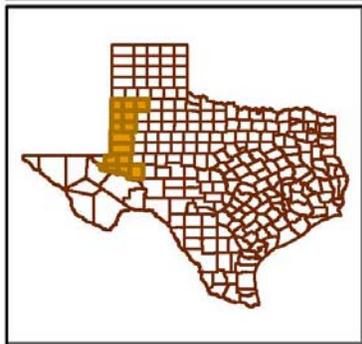
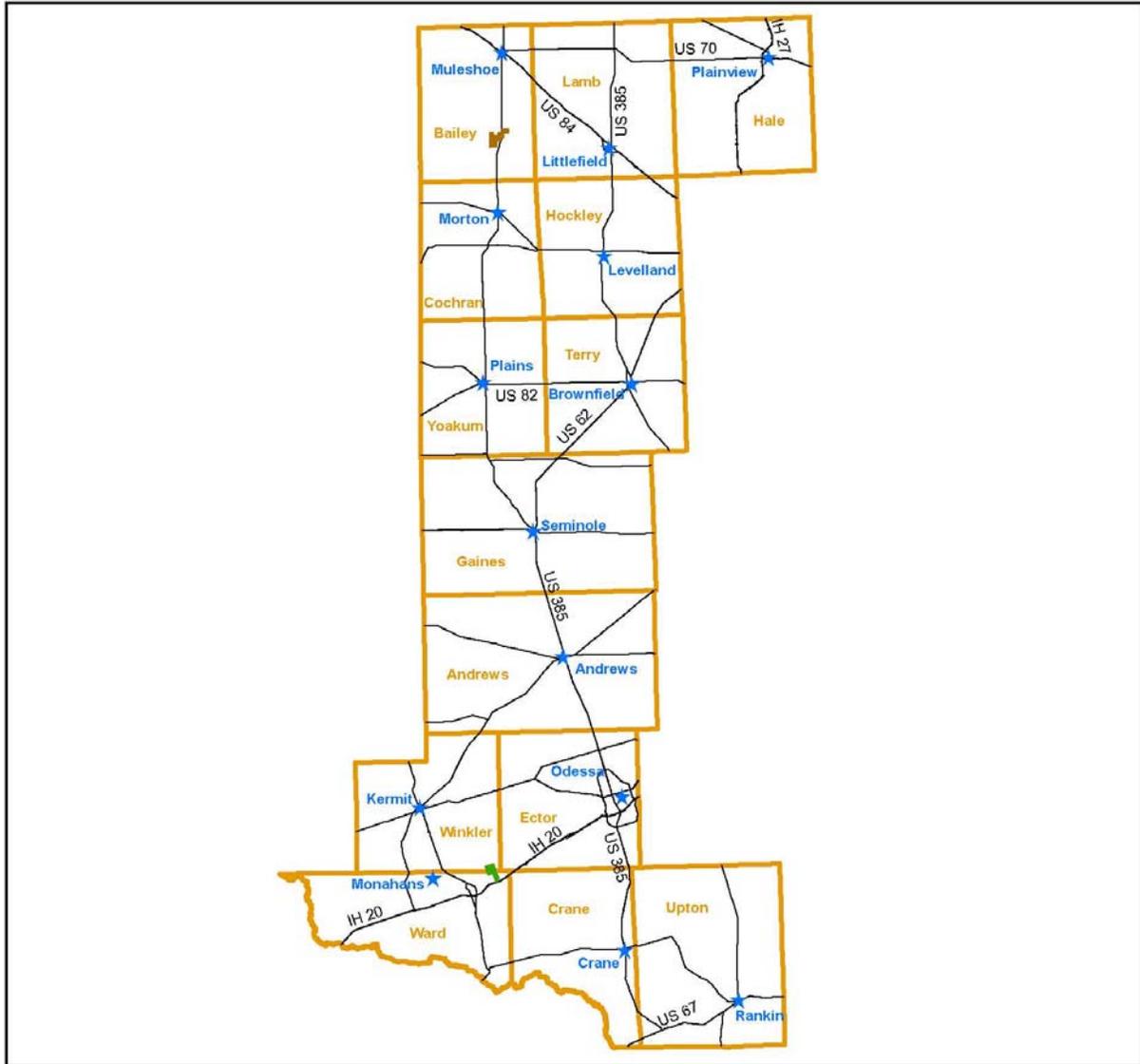
wildlife, and recreation. Soils associated with areas where DSL habitat may occur in Texas generally include the Penwell and Jalmar soils series comprised of soil types, including but may not be limited to, Jalmar-Penwell Association Undulating, Dune Land, Kermit - Dune Land Association, Penwell-Dune Land Association (FG Alliance, 2006d).

Jalmar-Penwell Association Undulating soils are located on uplands with slopes ranging from 1 to 8 percent. Local shifting of soil by wind is evident in some places including areas of Dune land and Pyote soils. Available water capacity is low, surface runoff is slow, permeability is moderate and internal drainage is medium in Jalmar soils. The soil-blowing hazard is severe, and water-erosion hazard is slight. The rooting zone is deep and easily penetrated by plant roots with an underlying layer that is a reddish yellow, calcareous sandy clay loam that contains 35 percent, by volume, calcium carbonate. Surface runoff is slow, internal drainage and permeability is rapid, and available water capacity is low in Penwell soils. The soil-blowing hazard is severe, and the water-erosion hazard is slight with a rooting zone that is deep and easily penetrated by plant roots. Penwell soils are sand dunes that have become stabilized and are producing vegetation. These soils are used mainly as rangeland with a medium potential for growing a mixture of tall and mid grasses. Careful management is needed to minimize soil blowing and proper stocking, controlled grazing, and brush management is needed. There is a high potential for urban use and a low potential for recreational use because soils are too sandy.

Dune Land soils are very deep, hummocky, eolian sand deposits on uplands. Available water capacity is low, permeability is rapid, and runoff is negligible. Soils are excessively drained with slight water erosion potential and severe wind erosion potential. Slopes generally range from 1 to 3 percent, and 2 to 35 percent on side slopes of sand dunes. Sand dunes are generally larger and

Figure 1. Map of the Planning Area

### Texas Conservation Plan for the Dunes Sagebrush Lizard



**Figure 1. Map of Planning Area**

- ★ Cities
- ▭ County Boundary
- ▭ Monahans State Park
- ▭ Muleshoe NWR
- SH, US Hwy, Interstate Hwy

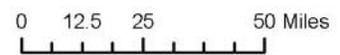
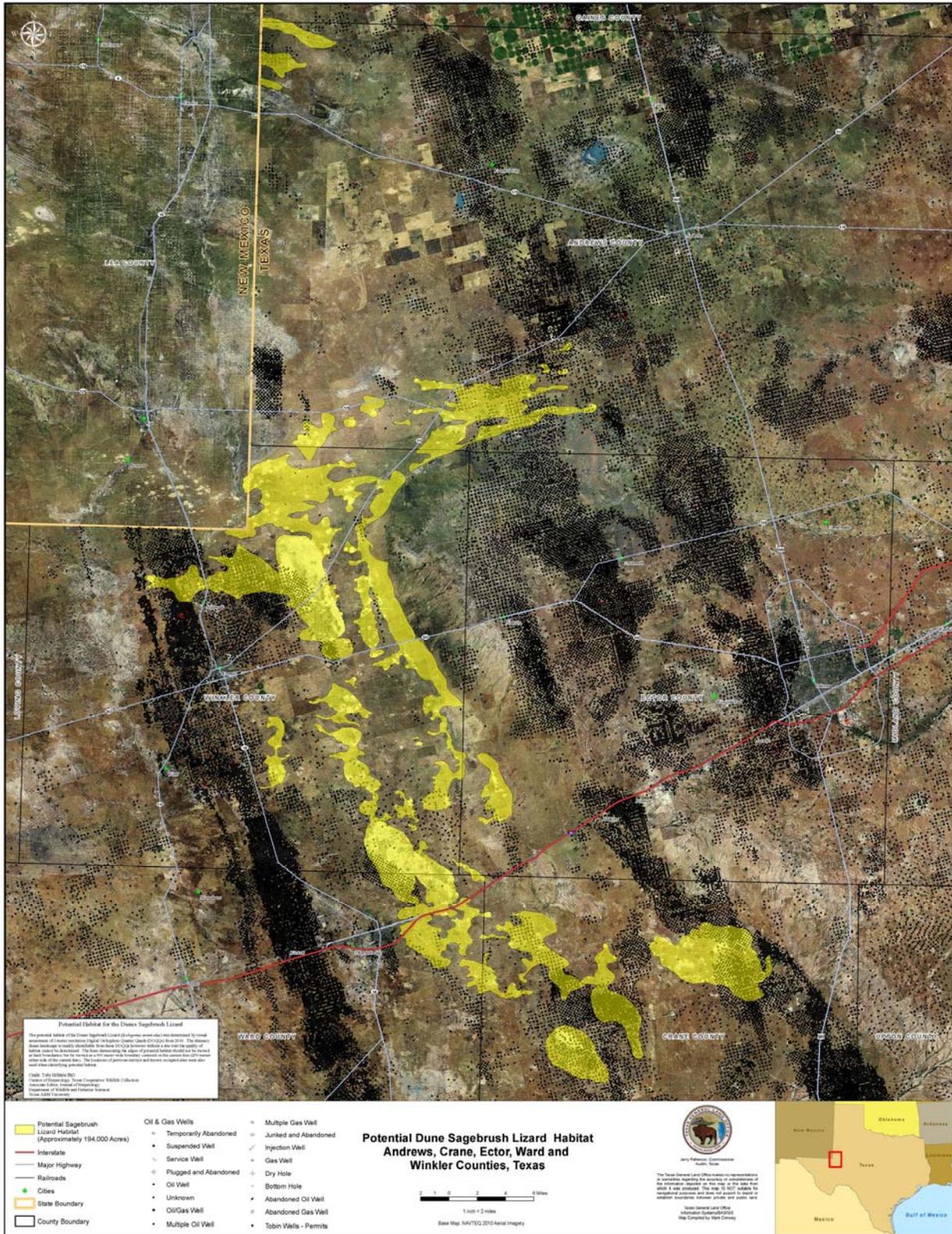


Figure 2. Map of Estimated Dunes Sagebrush Lizard Habitat in the Permit Area



more active on the northeastern side of the mapped areas and becoming more stabilized on the southwestern side. Included in this map unit are small, concave blowout areas. These areas receive more runoff water than the rest of the unit and remain moist for longer periods. Also included are small areas of Elgee and Penwell soils. These areas are used mainly as rangeland, but it provides very little forage for livestock. Not suitable for cultivation and poorly suited for urban and recreational uses because of the soil-blowing hazard.

Penwell - Dune Land Association, Rolling soils are located on uplands and most areas have a duned topography, but some are smooth. Slopes range from 5 to 16 percent. Local shifting of soil by wind is evident in some places. Internal drainage and permeability are rapid and surface runoff is slow. Soil blowing hazard is severe and water-erosion hazard is moderate. Soils are deep and easily penetrated by plant roots and available water capacity is very low. Included in mapping are small areas of Jalmar and Pyote soils and a soil that is similar to Reeves soils, but has a fine sand surface layer over gypsum. Penwell surface soils have a brown, noncalcareous, fine sand surface layer about 13 inches (33 centimeters) thick. The underlying layer, to a depth of 80 inches (203 centimeters), is noncalcareous fine sand that is light brown in the upper part and pink in the lower part.

Dune land surface consists of light colored, eolian sands that show little evidence of soil development. Dunes are active and are constantly shifted by the wind. They are especially unstable on the east and north sides. During years of low to normal rainfall these dunes have little vegetation except for shinnery and tall grasses on the outer edges and between the dunes. During consecutive years of above-average rainfall these dunes support sparse tall grasses and annuals.

## **4.2 Vegetation**

The Plan Area occurs within High Plains and the Chihuahuan Desert Ecological Regions and is composed of several specific ecological communities: the Western Great Plains Sandhill Steppe, Chihuahuan Stabilized Coppice Dune and Sand Flat Scrub, Chihuahuan Sandy Plains Semi-desert Grassland, Chihuahuan Sandy Plains Semi-desert Grassland, Western Great Plains Shortgrass Prairie, and North American Warm Desert Active and Stabilized Dune (TPWD 2011). This complex of ecological communities supports a diversity of plant communities adapted to life in the arid climate of the southwest. These communities are affected by a number of factors including soil composition, topography, temperature, precipitation, elevation, and land management practices.

## Western Great Plains Sandhill Steppe

This system is found mostly in south-central areas of the Western Great Plains Division ranging from southwestern Wyoming and southwestern Nebraska up into the Nebraska Sandhill region, south through eastern Colorado, and New Mexico to central Texas, although some examples may reach as far north as the Badlands of South Dakota. The climate is semi-arid to arid for much of the region in which this system occurs. This system is found on somewhat excessively to excessively well-drained, deep sandy soils that are often associated with dune systems and ancient floodplains. In some areas, this system may actually occur as a result of overgrazing in Western Great Plains Tallgrass Prairie or Western Great Plains Sand Prairie.

Typically, this system is characterized by a sparse to moderately dense woody layer dominated by *Artemisia filifolia* (sand sagebrush), but other characteristic species may be present, including *Amorpha canescens* (leadplant), *Prosopis glandulosa* (honey mesquite, southern stands), *Prunus angustifolia* (chickasaw plum), *Prunus pumila* var. *besseyi* (western sandcherry, northern stands), *Rhus trilobata* (skunkbush sumac), and *Yucca glauca* (soapweed yucca). Associated herbaceous species can vary with geography, amount and season of precipitation, disturbance, and soil texture. The herbaceous layer typically has a moderate to dense canopy but may include stands with sparse understory. Several mid- to tallgrass species characteristic of sand substrates are usually present to dominant, such as *Andropogon hallii* (sand bluestem), *Calamovilfa gigantea* (giant sandreed), *Calamovilfa longifolia* (prairie sandreed), *Schizachyrium scoparium* (little bluestem), *Sporobolus cryptandrus* (sand dropseed), *Sporobolus giganteus* (giant dropseed), or *Hesperostipa comata* (needle-and-thread grass).

In the southern range of this system, *Quercus havardii* (shinnery oak) may also be present to dominant and represents one succession pathway that develops over time following a disturbance. *Quercus havardii* is able to resprout following a fire and thus may persist for long periods of time once established forming extensive clones. Edaphic and climatic factors are the most important dynamic processes for this type, with drought and extreme winds impacting this system significantly in some areas. Because *Quercus havardii* is able to resprout rapidly following fire, fire tends to cause structural changes in the vegetation, and compositional shifts are less significant in most cases. Overgrazing can lead to decreasing dominance of some of the grass species such as *Andropogon hallii*, *Calamovilfa gigantea*, and *Schizachyrium scoparium*. In the western extent of this system in the shortgrass prairie, more xeric mid- and shortgrass species such as *Hesperostipa comata*, *Sporobolus cryptandrus* and *Bouteloua gracilis* (blue grama grass) often dominate the herbaceous layer. This system is found primarily in semi-arid to arid areas of the Western Great Plains Division. It occurs on somewhat excessively to excessively well-drained and deep sandy soils. This system is often found associated with dune systems and/or ancient floodplains but may occur in soils derived from sandstone residuum.

Agricultural fields are typically planted in corn, sorghum, peanuts, winter wheat, alfalfa, or cotton in the Permit Area. Within the Permit Area, approximately 12 % of the land cover is agricultural (cultivated) or approximately 482,000 acres.

#### Chihuahuan Stabilized Coppice Dune and Sand Flat Scrub

This ecological system includes the open desert scrub of vegetated coppice dunes and sandsheets found in the Chihuahuan Desert. Stands are usually dominated by *Prosopis glandulosa* or *Artemisia filifolia* but also include *Atriplex canescens* (four-winged saltbrush), *Ephedra torreyana* (Torrey's jointfir), *Ephedra trifurca* (longleaf jointfir or Mexican tea), *Poliomintha incana* (frosted mint), and *Rhus microphylla* (littleleaf sumac) coppice and sand flat scrub usually with 10-30% total vegetation cover. *Yucca elata* (soaptree yucca), *Gutierrezia sarothrae* (broom snakeweed), *Bouteloua eriopoda* (black grama), and *Sporobolus flexuosus* (mesa dropseed) are commonly present. In northern stands, *Artemisia filifolia* dominates and *Prosopis glandulosa* become less uncommon or absent. This system includes degraded sandy desert plains grasslands now dominated by *Artemisia filifolia*.

#### Chihuahuan Sandy Plains Semi-desert Grassland

This ecological system occurs across the Chihuahuan Desert and extends into the southern Great Plains where soils have a high sand content. These dry grasslands or steppe are found on sandy plains and sandstone mesas. The graminoid layer is typically dominated or codominated by *Bouteloua eriopoda* and *Sporobolus flexuosus* with characteristic Chihuahuan species. Other common species are *Achnatherum hymenoides*, *Aristida purpurea*, *Bouteloua gracilis*, *Hesperostipa neomexicana* (minor), *Muhlenbergia arenicola*, *Pleuraphis jamesii*, *Sporobolus airoides*, *Sporobolus constrictus*, and *Sporobolus cryptandrus*. Typically, there are scattered desert shrubs and stem succulents present, such as *Ephedra torreyana*, *Ephedra trifurca*, *Opuntia imbricata*, *Yucca baccata*, *Yucca elata*, and *Yucca torreyi*, that are characteristic of the Chihuahuan Desert. The widespread shrub *Artemisia filifolia* is also frequently present, especially in the northern extent.

#### Western Great Plains Shortgrass Prairie

This system is found primarily in the western half of the Western Great Plains Division in the rainshadow of the Rocky Mountains and ranges from the Nebraska Panhandle south into Texas and New Mexico, although grazing-impacted examples may reach as far north as southern Canada where it grades into Northwestern Great Plains Mixedgrass Prairie (CES303.674). This system occurs primarily on flat to rolling uplands with loamy, ustic soils ranging from sandy to clayey. In much of its range, this system forms the matrix system with *Bouteloua gracilis* dominating this system. Associated graminoids may include *Aristida purpurea*, *Bouteloua curtipendula*, *Bouteloua hirsuta*, *Buchloe dactyloides*, *Hesperostipa comata*, *Koeleria macrantha* (= *Koeleria cristata*), *Pascopyrum smithii* (= *Agropyron smithii*), *Pleuraphis jamesii*,

*Sporobolus airoides*, and *Sporobolus cryptandrus*. Although mid-height grass species may be present, especially on more mesic land positions and soils, they are secondary in importance to the sod-forming short grasses. Sandy soils have higher cover of *Hesperostipa comata*, *Sporobolus cryptandrus*, and *Yucca elata*. Scattered shrub and dwarfdwarf species such as *Artemisia filifolia*, *Artemisia frigida*, *Artemisia tridentata*, *Atriplex canescens*, *Eriogonum effusum*, *Gutierrezia sarothrae*, and *Lycium pallidum* may also be present. Also, because this system spans a wide range, there can be some differences in the relative dominance of some species from north to south and from east to west. Large-scale processes such as climate, fire and grazing influence this system. High variation in amount and timing of annual precipitation impacts the relative cover of cool- and warm-season herbaceous species.

In contrast to other prairie systems, fire is less important, especially in the western portion of this vegetation type, because the often dry and xeric climate conditions can decrease the fuel load and thus the relative fire frequency within the system. However, historically, fires that did occur were often very expansive. Currently, fire suppression and more extensive grazing in the region have likely decreased the fire frequency even more, and it is unlikely that these processes could occur at a natural scale. A large part of the range for this system (especially in the east and near rivers) has been converted to agriculture. Areas of the central and western range have been impacted by the unsuccessful attempts to develop dryland cultivation during the Dust Bowl of the 1930s. The short grasses that dominate this system are extremely drought and grazing tolerant. These species evolved with drought and large herbivores and, because of their stature, are relatively resistant to overgrazing. This system in combination with the associated wetland systems represents one of the richest areas for mammals and birds. Endemic bird species to the shortgrass system may constitute one of the fastest declining bird populations. In Texas, this system occurs on the Llano Estacado and extends to but does not include the Stockton Plateau.

This system is located on primarily flat to rolling uplands. Soils typically are loamy and rustic and range from sandy to clayey. Climate is continental with mean annual precipitation generally about 300 mm ranging to 500 mm to the south in Texas. Most of the annual precipitation occurs during the growing season as thunderstorms. Precipitation events are mostly <10 cm with occasional larger events.

#### North American Warm Desert Active and Stabilized Dune

This ecological system occurs across the warm deserts of North America and is composed of unvegetated to sparsely vegetated (generally <10% plant cover) active dunes and sandsheets derived from quartz or gypsum sands. Common vegetation includes *Ambrosia dumosa*, *Abronia villosa*, *Artemisia filifolia*, *Atriplex canescens*, *Eriogonum deserticola*, *Larrea tridentata*, *Pleuraphis rigida*, *Poliomintha* spp., *Prosopis* spp., *Psoralea* spp., *Rhus microphylla*, and *Sporobolus flexuosus*. Dune "blowouts" and subsequent stabilization through succession are characteristic processes.

### 4.3 Wildlife

A wide variety of wildlife species utilize the shinnery oak shrublands and grassland habitats of northwestern Texas. According to TPWD's Texas Wildlife Action Plan (under revision), which describes unique ecosystems in Texas and identifies areas of high conservation priority, approximately 12 species of reptiles, 104 species of birds, and 21 species of mammals are known to occur in this area, specifically in the High Plains Ecoregion of Texas (TPWD 2005).

Reptiles that may be found within the Plan Area include species such as the prairie rattlesnake (*Crotalus viridis*), long-nose leopard lizard (*Gambelia wislizeni*), slender glass lizard (*Ophisaurus attenuatus*), and the Texas horned lizard (*Phrynosoma cornutum*). Common bird species include the Northern harrier (*Circus cyaneus*), Swainsons hawk (*Buteo swainsoni*), burrowing owl (*Athene cunicularia*), curve-billed thrasher (*Toxostoma curvirostre*), loggerhead shrike (*Lanius ludovicianus*), and scissor-tailed flycatcher (*Tyrannus forficatus*). Mammals include the cave myotis (*Myotis velifer*), mountain lion (*Puma concolor*), badger (*Taxidea taxus*), Palo Duro mouse (*Peromyscus truei comanche*), black-tailed prairie dog (*Cynomys ludovicianus*), and porcupine (*Erethizon dorsatum*).

Hunting is a popular recreational activity within the Plan Area. Game species of interest include mule deer (*Odocoileus hemionus*), pronghorn (*Antilocapra americana*), javelina (*Dicotyles tajacu*), scaled quail (*Callipepla squamata*), bobwhite quail (*Colinus virginianus*), desert cottontail (*Sylvilagus audubonii*), and black-tailed jackrabbit (*Lepus californicus*).

### 4.4 Listed, Proposed, and Candidate Species

The Service has determined there are four other species of fish, wildlife, and plants listed pursuant to the Act that occur or historically occurred in or near the action area. Those species are:

- Lesser prairie-chicken (*Tympanuchus pallidicinctus*), candidate for listing. Known to occur in Bailey, Cochran, Gaines, Hockley, Lamb, Terry, and Yoakum counties. Currently there is no overlap between occupied DSL range and known occupied lesser prairie-chicken range;
- Sprague's Pipit (*Anthus spragueii*), candidate for listing. Range includes Andrews, Crane, Ector, Gaines, Upton, Ward, and Winkler counties and may occur during migration periods. Favors native upland prairie;
- Whooping Crane (*Grus Americana*), endangered. Range includes Andrews, Bailey, Cochran, Gaines, Hale, Hockley, Lamb, Terry, and Yoakum counties and may occur during migration periods. Favors croplands and wetland areas during migration; and,

- Black-footed ferret (*Mustela nigripes*), endangered. Extirpated in Andrews, Bailey, Cochran, Crane, Ector, Gaines, Hale, Hockley, Lamb, Terry, Upton, Ward, Winkler, and Yoakum counties. Favors prairie dog towns.

The Service does not anticipate adverse effects to these species from actions proposed in the Texas Conservation Plan DSL due to local extirpation, lack of overlapping suitable habitat within the Plan Area or Permit Area, and differences in habitat preferences. Therefore, these four species will not be addressed further in this draft EA. Should new information reveal that any of these species may be adversely affected by the proposed action while the permit(s) are in effect, the Service will address any concerns, as appropriate, at that time.

#### **4.5 Land Use and Ownership**

Lands within the 14 counties covered under the Texas Conservation Plan DSL can be divided into two general surface ownership categories: State trust and private. It is estimated that the total amount of acreage within the Permit Area is approximately four million acres, with an estimated 197,600 acres constituting DSL habitat (USDA 2008; Figure 2). The University of Texas Lands (University Lands) has surface ownership of approximately 432,233 acres in Andrews, Ector, Gaines, Ward, and Winkler counties. The Texas General Land Office's Permanent School Fund acreage constitutes approximately 51,685 acres in Andrews, Ector, Gaines, Ward, and Winkler counties. Most of the remaining land in the Plan Area is categorized as private ownership. There are no Federal mineral (oil and gas leases) in the Plan Area. Estimates of how much each landownership type is located on DSL habitat are being developed.

Land use within the Plan Area includes energy development activities, recreational use, livestock grazing, and agricultural activities. Energy development activities include the drilling of oil and gas wells, development of wind energy production sites, and the development of infrastructure (i.e. roads, power lines, and pipelines) associated with oil and gas wells and wind energy development. Recreational use within the Plan Area includes OHV use, hunting, fishing, hiking, watchable wildlife, and camping. For livestock grazing, approximately 4.4 million acres of grazeable lands occur within the Plan Area (14 counties) approximately three million acres in the Permit Area. Management of these lands is based on similar resource characteristics, management needs, and both resource and economic potential for improvement. Agricultural fields within the Plan Area are typically planted in corn, sorghum, peanuts, winter wheat, alfalfa, or cotton. Of the 197,600 acres of lands containing DSL habitat in the Permit Area, approximately 100 acres is classified as agricultural (cultivated)(USDA 2008).

The Permian Basin region in Texas is a major producer of onshore petroleum in the United States. The Rail Road Commission reported that approximately 94.5 million barrels of oil were

produced in the Permit Area (Andrews, Ector, Gaines, Crane, Ward, and Winkler counties) in 2010, worth approximately \$9 billion (Rail Road Commission online data, 2011).

### Modern and pre-historic land use

For more specific information regarding modern and pre-historic land uses in Texas, please refer to the Handbook of Texas.

Naturally and culturally, the northwestern counties of Texas are on the edge of the Southern High Plains where widely separated water sources have dictated modern land use. The first modern settlers were ranchers who took advantage of the extensive grasslands and open range to establish huge operations, beginning in the late 1880s. Windmill technology allowed them to expand into the more arid lands that were previously too dry to support herds of cattle and the ranching business became increasingly profitable despite the difficulties in reaching distribution hubs. Animal husbandry is still the dominant agricultural way of life although irrigation has promoted an increase in farming of staple crops such as corn, cotton and sorghum. A series of disastrous events, including droughts and pestilence, afflicted the area at the end of World War I, reducing the population to a minimum. Although oil was struck a few years later, energy production did not become a major economic factor until the 1940s. The economy of the region is now keyed to the extraction and transport of fossil fuels and the waxing and waning of the global market. The regional population has stayed low and is mainly concentrated in the small cities that are also the county seats.

The same area was also sparsely occupied in prehistory, with the majority of the archeological sites consisting of scatters of camp debris found in dune blowouts. The first people were the big-game hunters known by the names of their characteristic projectile point styles, Clovis and Folsom. The trend to aridity that began at the end of the Pleistocene introduced the Archaic period which, on the High Plains, is characterized by low population density and mobility. Sites are often found in the vicinity of small playa depressions, emphasizing the influence water exerted on settlement patterns. The introduction of the bow-and-arrow and ceramic technology marks the Late Prehistoric period. Interactions between Plains and Puebloan people are evidenced by the trade ceramics found on sites of this era. Presumably, the Plains people traded meat, hides and other animal products for goods manufactured by more sedentary western people. At the time of initial European contact, the region was occupied by displaced Apache and Comanche tribes who were eradicated or removed in the latter decades of the nineteenth century as the countryside was taken over by ranchers. The descendants of the native people still live in New Mexico and Oklahoma.

Table 1. Summary of Impacts to Resources

<i>Resources</i>	<i>No Action Alternative</i>	<i>Alternative 2 (Preferred Alternative)</i>	<i>Alternative 3</i>	<i>Alternative 4</i>
<b>Soils</b>	Impacts to soils would continue at current or similar levels. Impacts would be <b>moderate to major adverse and long-term.</b>	Conservation measures would be implemented that would minimize impacts to soils. Impacts would be <b>major beneficial and long-term.</b>	Similar to Alternative 2. However, only for the term of the CCAA. Impacts would be <b>moderate beneficial and long-term.</b>	Similar to Alternative 2. However, only if the DSL becomes listed and cooperators participate in the HCP. Impacts would be <b>moderate beneficial and long-term.</b>
<b>Vegetation</b>	Impacts to vegetation would continue at current or similar levels and be managed through existing regulatory mechanisms. Impacts would be <b>moderate to major adverse and long-term.</b>	Reclamation efforts within the Plan Area would address and reduce fragmentation, restore native habitat, and promote DSL habitat regardless of listing status ( <i>listed or candidate</i> ). Impacts would be <b>major beneficial and long-term.</b>	Similar to Alternative 2. However, only for the term of the CCAA. Impacts would be <b>moderate beneficial and long-term.</b>	Similar to Alternative 2. However, only if the DSL becomes listed and cooperators participate in the HCP. Impacts would be <b>moderate beneficial and long-term.</b>
<b>Wildlife</b>	Impacts to wildlife would continue at current or similar levels and would result in progressive habitat fragmentation. Impacts would be <b>moderate to major adverse and long-term.</b>	All wildlife species would benefit from additional conservation measures within the Plan Area through improvements in native communities regardless of DSL listing status ( <i>listed or candidate</i> ). Impacts would be <b>major beneficial and long-term.</b>	Similar to Alternative 2. However, only for the term of the CCAA. Impacts would be <b>moderate beneficial and long-term.</b>	Similar to Alternative 2. However, only if the DSL becomes listed and cooperators participate in the HCP. Impacts would be <b>moderate beneficial and long-term.</b>
<b>Listed, Proposed, or Candidate Species</b>	Management and protection of federally listed, proposed, and candidate species would continue at current or similar levels and be guided by existing State and Federal regulations, laws, and policies. Impacts would be <b>major adverse and long-term.</b>	All Status species would benefit from additional conservation measures within the Plan Area regardless of DSL listing status ( <i>listed or candidate</i> ). Impacts would be <b>major beneficial and long-term.</b>	Similar to Alternative 2. However, only for the term of the CCAA. Impacts would be <b>moderate beneficial and long-term.</b>	Similar to Alternative 2. However, only if the DSL becomes listed and cooperators voluntarily participate in the HCP. Impacts would be <b>moderate beneficial and long-term.</b>
<b>Land Use and Ownership</b>	There would continue to be little incentive for non-Federal landowners, lessees, or operators to engage in the voluntary conservation of proposed, candidate, or listed species. Without an HCP in place to provide a regulatory compliance mechanism to non-Federal landowners, lessees, or operators if the DSL becomes listed, impacts to current operations would be <b>moderate to major adverse and long-term.</b>	Would result in an opportunity for the Service, TX CPA, and Stakeholders to manage land use impacts to the DSL ( <i>listed or candidate</i> ) on a landscape level with minimal impacts to current operations. Operations would continue at current or similar levels. Impacts would be <b>major beneficial and long-term.</b>	Participants would be able to continue their activities on enrolled lands under the conditions of the CI for the DSL if the lands were enrolled while the DSL in <i>candidate status</i> . Additional land use restrictions would likely not be required if the DSL is listed under the Act. Impacts would be <b>moderate beneficial and long-term.</b> If the DSL becomes listed without an HCP, impacts could be <b>major adverse and long-term.</b>	Participants would be able to continue their activities under the conditions of the HCP for the DSL if it becomes a <i>listed species</i> . Impacts would be <b>moderate beneficial and long-term.</b> Opportunities would not be available to ease restrictions prior to listing.

## 5.0 ENVIRONMENTAL CONSEQUENCES

In this section, the beneficial and adverse effects of implementing the No Action and Action Alternatives (Alternatives 2, 3, and 4) are described. A summary of the potential impacts from these alternatives to the major resource areas chosen for analysis is included in Table 1 below.

### 5.1 Soils

Thresholds for Intensity, Duration, and Type of Effect:

- **Negligible** - Soils would not be affected or effects would be below or at the lower levels of detection. Any effects to soil resources would be slight and no long-term effects would occur.
- **Minor** - The effects to soil resources would be detectable. Effects to soil erosion potential or productivity would be small, as would be the area affected. If mitigation were needed to offset adverse effects, it would be relatively simple to implement and would likely be successful.
- **Moderate** - The effects on soil erosion potential or productivity would be readily apparent and likely long-term. The resulting change to soil character would cover a relatively wide area. Mitigation measures would probably be necessary to offset adverse effects and would likely be successful.
- **Major** - The effect on soil productivity would be readily apparent, long-term, and substantially change the character of the soils at a landscape level (i.e. occurring across several different major land resource areas or ecological units within the Plan Area). Mitigation measures to offset adverse effects would be needed, extensive, and their success could not be guaranteed.
- **Duration:**
  - **Short-Term** - Lasting only during the proposed action or no longer than the first growing season thereafter.
  - **Long-Term** - A permanent impact.

#### 5.1.1 Alternative 1 – No Action

Under the No Action Alternative, soils management and protection would continue to be guided by existing regulatory mechanisms. It is anticipated that impacts to soils from energy development activities, recreational use, livestock grazing, and agricultural activities within the Plan Area would continue at current levels. These impacts would continue to be managed on a

case-by-case basis. Impacts to soils under this alternative would be **moderate to major adverse and long-term**.

#### 5.1.2 Alternative 2 – Approval and Implementation of the Texas Conservation Plan DSL (Preferred Alternative)

Under the Preferred Alternative, conservation measures would be implemented on lands enrolled under the CCAA and/or Participants' lands or leases in the HCP that would minimize, and if the DSL is listed, mitigate impacts from land-use activities to soils. There would be an opportunity to manage and protect soil resources from a landscape perspective within the Plan Area. With input from the Service, TX CPA would develop requirements that would include conservation measures such as directing surface disturbing activities to those areas containing soils unsuitable for use by the DSL. Participants would also be required to protect or conserve soils through restoration, rehabilitation, erosion control, or any other means above and beyond that which is required under current regulations. The measures outlined in the Texas Conservation Plan DSL would result in fewer impacts to soils and improvements to soil conditions by minimizing and/or managing the number of well pads and associated development within oil and gas leases, managing livestock grazing to reduce impacts, limiting vegetation treatments, or restoring native plant communities. TX CPA and the Service would work with Participants to create land management plans that minimize habitat fragmentation while continuing to provide sufficient access and use of the land. Impacts to soils under this alternative would be **major beneficial and long-term** and possibly longer if the CCAA is renewed. Further, due to the mitigation standard associated with HCPs, effects of many impacts will likely be ongoing for a **longer term**, possibly in perpetuity.

#### 5.1.3 Alternative 3 – Approval and Implementation of a CCAA only

Under this Alternative, conservation measures would be implemented on lands enrolled in the CCAA that would minimize impacts from land-use activities to soils. Most of the impacts from implementing this Alternative would be the same as those described above for Alternative 2. Impacts would be restricted to those resulting from energy development activities, recreational use, livestock grazing, and agricultural activities conducted on non-Federal lands (100% of the Plan Area). However, if the DSL becomes listed, enrollment in the CCAA would not be available due to the change in legal status of the DSL. Impacts to soils under this alternative, for lands enrolled in the CCAA would be **moderate beneficial and long-term** for the duration of the CCAA up to 30 years or possibly longer if the CCAA is renewed. If the DSL becomes listed, participation under the CCAA will be limited to existing enrollees at the time of listing.

#### 5.1.4 Alternative 4 – Approval and Implementation of the HCP only

Under this Alternative, impacts to soils would be similar to those described for Alternative 2, should the DSL become listed and willing non-Federal landowners, lessees, or operators participate in the HCP. Impacts to soils under this alternative would be **moderate beneficial** and **long-term**. Due to the mitigation standard associated with HCPs, effects of many impacts will likely be ongoing for a **longer term**, possibly in perpetuity.

## 5.2 Vegetation

Thresholds for Intensity, Duration, and Type of Effect:

- **Negligible** – Direct or indirect impacts would have perceptible but small changes in the size, integrity, or continuity of vegetation within the Plan Area.
- **Minor** – Disturbance or protection, restoration, or rehabilitation of vegetation would be measurable or perceptible but limited in size. The overall viability of plant communities would not be affected and would recover.
- **Moderate** – Disturbance or protection, restoration, or rehabilitation of vegetation over a relatively wide area would occur. Impacts would cause a change in plant communities (e.g. abundance, distribution, quantity, or quality), but the impacts would remain localized.
- **Major** – Disturbance or protection, restoration, or rehabilitation of vegetation at a landscape level (i.e. occurring across several different major land resource areas or ecological units within the Plan Area). Any disturbance to federally listed plant species would be considered major adverse effects.
- **Duration:**
  - **Short-term** – The physical impact from the proposed actions would require less than one growing season for the full recovery of plant communities. Beneficial effects would be observed for one growing season.
  - **Long-term** – The physical impact from the proposed actions would require more than one growing season for the full recovery of plant communities. Beneficial effects would be observed for more than one growing season.

#### 5.2.1 Alternative 1 – No Action

Under the No Action Alternative, vegetation management would continue to be guided through existing regulatory mechanisms. Brush control methods such as herbicide application and

prescribed fire would continue to be implemented on non-Federal lands to improve forage for livestock and wildlife within the Plan Area. Impacts to vegetation from energy development activities, recreational use, livestock grazing, and agricultural activities would continue at current levels. These impacts would be managed on a case-by-case basis. There would continue to be little incentive for non-Federal landowners, lessees, or operators to voluntarily protect and manage plant communities and prevent habitat fragmentation for the benefit of the DSL. Reclamation efforts on abandoned pads, roads, and caliche pits may occur and would address and reduce habitat fragmentation, restore native habitat, and promote lesser prairie-chicken and sand dune lizard habitat, at the sole discretion of the non-Federal landowner, lessee, or operator. Impacts to vegetation under this alternative would be **moderate to major adverse** and **long-term**.

#### 5.2.2 Alternative 2 – Approval and Implementation of the Texas Conservation Plan DSL (Preferred Alternative)

The Preferred Alternative would result in the implementation of conservation measures aimed at restoring and protecting those plant communities preferred by the DSL on lands enrolled under the Texas Conservation Plan DSL. These measures would result in an increase in the amount of habitat available to the DSL within the Plan Area. In addition, habitat fragmentation and the direct loss of suitable habitat would be reduced on lands enrolled under the conservation agreements, on other lands that would be treated with contributed funds, or on lands owned by Participants' lands or leases in the HCP. Compared to lands not engaged in wildlife conservation strategies, this reduction would be significant. Impacts to vegetation from energy development activities, recreational use, livestock grazing, and agricultural activities would be managed through a comprehensive, landscape level approach. Large, contiguous blocks of suitable habitat would be targeted for improvement under the conservation agreements to provide the greatest benefit to the DSL. Participants would have an incentive to protect and manage plant communities and prevent habitat fragmentation for the benefit of the DSL. For Participants who enroll their lands in the CCAA, this incentive would remove the likelihood that their operational activities, on lands enrolled in a conservation agreement, would be disrupted in the future if the DSL was listed under the provisions of the Act. Reclamation efforts on abandoned pads, roads, and caliche pits within the Plan Area would address and reduce fragmentation, restore native habitat, reduce road mortality, and promote DSL habitats above and beyond that which is currently occurring. Impacts to vegetation under this alternative would be **major beneficial** and **long-term** up to 30 years and possibly longer if the CCAA or HCP are renewed. Further, due to the mitigation standard associated with HCPs, effects of many impacts will likely be ongoing for a **longer term**, possibly in perpetuity.

### 5.2.3 Alternative 3 – Approval and Implementation of a CCAA only

Under this Alternative, conservation measures would be implemented on lands enrolled in the CCAA that would minimize impacts from land-use activities to vegetation. Most of the impacts from implementing this Alternative would be the same as those described above for Alternative B. However, if the DSL becomes listed, enrollment in the CCAA would not be available due to the change in legal status of the DSL since enrollment would be available only while the DSL is in candidate status, therefore, participation may be limited. For enrolled lands, impacts to vegetation under this alternative would be **moderate beneficial** and **long-term** for the duration of the CCAA up to 30 years or possibly longer if CCAA is renewed. If the DSL becomes listed, participation under the CCAA will be limited to existing enrollees at the time of listing.

### 5.2.4 Alternative 4 – Approval and Implementation of the HCP

Under this Alternative, impacts to soils would be similar to those described for Alternative 2, should the DSL become listed and willing non-Federal landowners, lessees, or operators who participate in the HCP. Impacts to vegetation under this alternative would be **moderate beneficial**. However, due to the mitigation standard associated with HCPs, effects of many impacts will likely be ongoing for a **longer term**, possibly in perpetuity.

## 5.3 Wildlife

Thresholds for Intensity, Duration, and Type of Impact:

- **Negligible** - Wildlife would not be affected or the effects would be at or below the level of detection, would be short-term, and the changes would be so slight that they would not be of any measurable or perceptible consequence to the wildlife species' population.
- **Minor** - Disturbance or protection, restoration, or rehabilitation of wildlife habitat would be measurable and perceptible but limited in size.
- **Moderate** - Disturbance or protection, restoration, or rehabilitation of wildlife habitat would occur over a relatively wide area.
- **Major** - Disturbance or protection, restoration, or rehabilitation of wildlife habitat at a landscape level (i.e. occurring across several different major land resource areas or ecological units within the Plan Area).
- **Duration:**

- **Short-Term** - Complete disturbance recovery in less than five years. Beneficial impacts would occur for less than five years
- **Long-Term** - Disturbance recovery requiring more than five years to return to pre-disturbance levels. Beneficial impacts would occur for greater than five years.

### 5.3.1 Alternative 1 – No Action

Under the No Action Alternative, wildlife would continue to be impacted at current levels by energy development activities, recreational use, livestock grazing, and agricultural activities. These impacts would be indirect and primarily result from habitat fragmentation and habitat degradation. Additional protection would not be afforded wildlife above and beyond what is currently provided through state and Federal regulations, laws, and policies. Reclamation efforts on abandoned pads, roads, and caliche pits may occur at the discretion of the non-Federal landowner, lessee, or operator and would address and reduce habitat fragmentation, restore native habitat, and promote DSL habitat. Impacts to wildlife under this alternative would be **moderate to major adverse and long-term**.

### 5.3.2 Alternative 2 – Approval and Implementation of a CCAA and the HCP (Preferred Alternative)

The Preferred Alternative would result in the implementation of conservation measures aimed at protecting and managing the DSL. TX CPA with input from the Service and Stakeholders, would develop conservation strategies on lands participating in the Texas Conservation Plan DSL (CCAA or HCP, as appropriate) that would indirectly benefit all wildlife species occupying the shinnery oak shrublands and grasslands preferred by the DSL. These conservation strategies would include conservation measures such as protecting and enhancing habitat, restoring degraded habitat, creating new habitat, limiting development, treating undesirable vegetation, and developing noise abatement programs. The conservation measures implemented under this alternative would be above and beyond those activities currently being implemented through existing state and Federal regulations, laws, and policies. Therefore, this alternative would result in additional conservation and protection of all wildlife species within the Plan Area. Impacts to wildlife under this alternative would be **major beneficial and long-term** up to 30 years and possibly longer if the CCAA or HCP are renewed. Further, due to the mitigation standard associated with HCPs, effects of many impacts will likely be ongoing for a **longer term**, possibly in perpetuity.

### 5.3.3 Alternative 3 – Approval and Implementation of a CCAA only

Under this Alternative, conservation measures would be implemented on lands enrolled in the CCAA that would minimize impacts from land-use activities to wildlife. Most of the impacts from implementing this Alternative would be the same as those described above for Alternative 2. Impacts to wildlife under this alternative would be **moderate beneficial** and **long-term** for the duration of the CCAA, up to 30 years or possibly longer if CCAA is renewed. If the DSL becomes listed, participation under the CCAA will be limited to existing enrollees at the time of listing.

### 5.3.4 Alternative 4 – Approval and Implementation of the HCP

Under this Alternative, impacts to wildlife would be similar to those described for Alternative 2, should the DSL become listed and willing non-Federal landowners, lessees, or operators participate in the HCP. Impacts to wildlife under this alternative would be **moderate beneficial**. Further, due to the mitigation standard associated with HCPs, effects of many impacts will likely be ongoing for a **longer term**, possibly in perpetuity.

## 5.4 Listed, Proposed, and Candidate Species

Thresholds for Intensity, Duration, and Type of Impact:

- **Negligible:** When a proposed action would have no measurable effects to a listed, proposed or candidate species.
- **Minor:** Effects on listed, proposed, or candidate species are expected to be discountable or insignificant.
- **Moderate:** When an effect to a listed, proposed, or candidate species may occur as a direct or indirect result of the proposed action or its interrelated or interdependent actions, and the effect is not discountable or insignificant.
- **Major:** When proposed activities could jeopardize the continued existence of a listed, proposed, or candidate species or adversely modify critical habitat. A major impact would also occur if the beneficial effects of the proposed action would likely reduce the need for the species to be listed in its current category (i.e. de-list or down-list).
- **Duration:**
  - **Short-Term** - Impacts from the proposed action would occur for less than 5 years.

- **Long-Term** - Impacts from the proposed action would occur for greater than 5 years.

#### 5.4.1 Alternative 1 – No Action

The No Action Alternative would result in continued management and protection of federally listed, proposed, and candidate species within the Plan Area through existing State and Federal regulations, laws, and policies. These existing regulations, laws, and policies may not be sufficient to prevent the listing of candidate species under the Act without the voluntary cooperation of additional stakeholders. Reclamation efforts on abandoned pads, roads, and caliche pits on lands may occur at the discretion of the non-Federal landowner, lessee, or operator and would address and reduce habitat fragmentation, restore native habitat, and may promote DSL conservation. Effects to candidate species would continue to be analyzed on a case-by-case basis with limited opportunity to manage their conservation activities from a landscape level. Federally listed, proposed, and candidate species would not benefit from additional conservation measures implemented Texas Conservation Plan DSL. Any future proposed activities that may affect a listed or proposed species within the Plan Area would undergo Section 7 or Section 10 consultations under the Act, as appropriate. Impacts to listed, proposed, and candidate species under this alternative would be **major adverse** and **long-term**.

#### 5.4.2 Alternative 2 – Approval and Implementation of the Texas Conservation Plan DSL (Preferred Alternative)

Under the Preferred Alternative, candidate species would benefit directly from the conservation measures implemented by Participants' lands or leases under the Texas Conservation Plan DSL. Effects to Federally listed and proposed species would be considered under the Plan. Participants would collaborate with the Service, TX CPA, and Stakeholders to develop measures to minimize impacts from their oil and gas and other development activities, recreational use, livestock grazing, or agricultural activities on the DSL. The DSL would benefit from less habitat fragmentation, less disturbance in occupied or suitable habitats, restoration and enhancement of otherwise unsuitable habitat, and protection of large blocks of contiguous habitat. Participants under the CCAA would have an incentive to contribute to the protection and management of the DSL. This incentive would be the likelihood that their operational activities, on lands enrolled under the conservation agreements, would not be disrupted in the future if the DSL was listed under the provisions of the Act. Impacts to listed, proposed, and candidate species under this alternative would be **major beneficial** and **long-term** up to 30 years and possibly longer if the CCAA or HCP are renewed. Further, due to the mitigation standard associated with HCPs, effects of many impacts will likely be ongoing for a **longer term**, possibly in perpetuity.

### 5.4.3 Alternative 3 – Approval and Implementation of a CCAA only

Under this Alternative, conservation measures would be implemented on lands enrolled in the Texas Conservation Plan DSL functioning as a CCAA that would minimize and mitigate, as appropriate, impacts from land-use activities to listed, proposed, and candidate species. Most of the impacts from implementing this Alternative would be the same as those described above for Alternative 2. Due to the unavailability of the HCP, which may provide conservation measures to benefit all listed, proposed, and candidate species, impacts under this alternative would be **moderate beneficial** and **long-term** for the duration of the CCAA, up to 30 years or possibly longer if CCAA is renewed. If the DSL becomes listed, participation under the CCAA will be limited to existing enrollees at the time of listing.

### 5.4.4 Alternative 4 – Approval and Implementation of the HCP only

Under this Alternative, impacts to listed, proposed, and candidate species would be similar to those described for Alternative 2, should the DSL become listed and willing non-Federal landowners, lessees, or operators participate in the HCP. Impacts to listed, proposed, and candidate species under this alternative would be **moderate beneficial**. However, due to the mitigation standard associated with HCPs, effects of many impacts will likely be ongoing for a **longer term**, possibly in perpetuity.

## 5.5 Land Use and Ownership

Thresholds for Intensity, Duration, and Type of Effect:

- **Negligible** – Land owners or users would not likely be aware of the effects associated with the proposed action.
- **Minor** - Land owners or users would likely be aware of the effects associated with the proposed action; however the effects would be slight and likely short term.
- **Moderate** - Land owners or users would be aware of the effects associated with the proposed action. Effects would be readily apparent. Land owners or users may be subjected to use restrictions or delays in obtaining permits or leases. Beneficial moderate effects would occur when there are no use restrictions or delays and the impact is short-term.
- **Major** - Land owners or users would be highly aware of the effects of the proposed action and would likely be subjected to significant use restrictions or delays in obtaining permits or leases. Beneficial major effects would occur when there are no use restrictions or delays and the impact is long-term.

• **Duration:**

- **Short-Term** - Impacts from the proposed action would occur for less than one year.
- **Long-Term** - Impacts from the proposed action would occur for greater than one year.

5.5.1 Alternative 1 – No Action

Under the No Action Alternative, there would continue to be little incentive for non-Federal landowners, lessees, or operators to engage in the voluntary, proactive conservation of proposed, candidate, or listed species. Non-Federal landowners, lessees, and operators would continue to be concerned about the potential regulatory implications of having these species on their land or project sites inhibiting cooperation and collaboration regarding the conservation of proposed, candidate, or listed species. Reclamation efforts on abandoned pads, roads, and caliche pits on lands managed to reduce habitat fragmentation, restore native habitat, and promote the conservation of DSL habitat may occur but solely at the discretion of the non-Federal landowner, lessee, or operator. Oil and gas and other development, recreational use, livestock grazing, and agricultural activities on lands containing proposed, candidate, or listed species would have the potential to be delayed or restricted should species eventually become listed under the Act. If the DSL becomes listed in the absence of the Texas Conservation Plan DSL, there would be no certainty that additional restrictions would not be assessed on affected lands and there would be no regulatory mechanism in place to comply with the Act resulting in significant delays in operations while one is developed and made available. Impacts to land use and ownership under this alternative would be **moderate to major adverse** and **long-term**.

5.5.2 Alternative 2 – Approval and Implementation of Texas Conservation Plan DSL  
(Preferred Alternative)

Under the Preferred Alternative, the approval and implementation of the Texas Conservation Plan DSL would give non-Federal landowners, lessees, or operators an opportunity to receive assurances under the CCAA that more stringent restrictions or additional conservation measures would likely not be required of them in the event the DSL become listed under the Act. Further, if the DSL becomes listed, the HCP would afford non-Federal landowners, lessees, or operators the ability to obtain incidental take authorization with no or minimal delays to operations i.e. operations would continue at current or similar rates. This alternative would also provide an opportunity for the Service, TX CPA, and Stakeholders to manage land use impacts to listed or candidate species on a landscape level. In addition, Participants would gain public relations benefits from their contributions towards species conservation. Impacts to land use and ownership under this alternative would be **negligible or minor adverse in the short-term** but

**major beneficial** in the **long-term** up to 30 years and possibly longer if the CCAA or HCP are renewed.

### 5.5.3 Alternative 3 – Approval and Implementation of a CCAA only

Under this Alternative, Participants would be able to continue their activities under the conditions of the CI with assurances that additional restrictions would likely not be required of them in the future if either the DSL is listed under the Act. Many of the impacts from implementing this Alternative would be the same as those described above for Alternative 2. Impacts to land use and ownership under this alternative would be **moderate beneficial** and **long-term** for the duration of the CCAA up to 30 years or possibly longer if CCAA is renewed. If the DSL becomes listed, participation under the CCAA will be limited to existing enrollees at the time of listing. If the DSL becomes listed in the absence of an HCP, there would be no certainty that additional restrictions would not be assessed on affected lands and there would be no regulatory mechanism in place to comply with the Act resulting in considerable delays in operations while one is developed and made available. Impacts to land use and ownership under the latter scenario would be **major adverse** and **long-term** up to 30 years and possibly longer if the CCAA is renewed.

### 5.5.4 Alternative 4 – Approval and Implementation of the HCP only

Under this Alternative, impacts to non-Federal landowners, lessees, or operators would be similar to those described for Alternative 2, should the DSL become listed and willing non-Federal landowners, lessees, or operators participate in the HCP. However, due to an unavailability of a CCAA prior to listing, non-Federal landowners, lessees, or operators would not have an opportunity to implement conservation measures in an effort to preclude listing and they would not receive assurances under a CCAA that more stringent restrictions or additional conservation measures would likely not be required of them in the event the DSL become listed under the Act. Therefore, impacts to land use and ownership under this alternative would be **moderate to major adverse** in the **short and long-term** and **major beneficial** in the **long-term** and possibly longer if the HCP is renewed.

## 6.0 CUMULATIVE EFFECTS

Cumulative impacts include the combined effect of past and present activities, specific planned projects and other reasonably foreseeable future actions that are reasonably certain to occur, regardless of what agency or entity or person undertakes such other actions, within the Plan

Area. The Federal action agency (the Service) must determine whether impacts of the proposed action, in this case the approval and implementation of the Texas Conservation Plan DSL, when taken together with other actions would result in a significant environmental impact.

Ongoing activities within the Plan Area such as oil and gas development, livestock grazing, recreational use, and agricultural activities would continue to have adverse impacts on the resources (i.e. soils, vegetation, wildlife, listed, proposed, and candidate species, and land use and ownership) identified and analyzed in this draft EA, with or without the approval and implementation of the Texas Conservation Plan DSL. However, the conservation measures proposed in the Texas Conservation Plan DSL (Preferred Alternative) when considered in addition to other conservation strategies implemented in the Plan Area would have net beneficial impacts to all of the resources, specifically the DSL.

Potential adverse cumulative effects may occur throughout the Plan Area should the Texas Conservation Plan DSL not be implemented due to the lack of conservation efforts currently implemented in the affected area. Therefore, all actions which may occur in the area, including foreseeable non-Federal actions, may result in cumulative adverse impacts.

Whether or not the Texas Conservation Plan DSL is implemented, land use practices such as additional oil and gas production would increase overall surface disturbance. However, when proper reclamation of abandoned oil pads and associated disturbance are followed by adequate precipitation, vegetation responds naturally in three to five growing seasons. Additionally, livestock grazing in the Plan Area would likely increase overall surface disturbance, particularly if proper grazing management practices are not utilized. Consequently, habitat would decline in those areas. Habitat changes facilitated by cattle grazing can influence resource availability and habitat selection for associated wildlife. When proper stocking rates, pasture rotation, and well-managed grazing methods are adhered to, vegetation could be manipulated in a manner advantageous to associated wildlife.

By its very nature, implementation of the Texas Conservation Plan DSL would reduce the rate of increase and likely decrease the overall surface disturbance attributed to various current land use practices because it would be the only landscape scale effort providing conservation benefits to the DSL in Texas. These cumulative beneficial impacts would likely serve to minimize or completely eliminate some of the threats to the DSL. If a significant number of the threats are addressed, this has the potential to positively impact the status of the species before listing decisions on these species are made in the future. If the DSL becomes listed, conservation strategies would already be in place at listing to advance the species toward recovery with the goal of down-listing and/or de-listing as soon as feasible.

Further, the Texas Conservation Plan DSL will afford non-Federal landowners, lessees, and operators the ability to obtain incidental take authorization for activities that may result in take of the DSL with no anticipated delays to operations, should the species become listed.

## Climate change

In an October 8, 1997 memorandum, the Council on Environmental Quality (CEQ) issued draft guidelines on how global climate change should be treated in NEPA documents. The CEQ guidance called on Federal agencies to consider in NEPA documents how major Federal actions could affect sources and sinks of greenhouse gases and how climate change could potentially influence such actions. The CEQ bases this guidance on the NEPA regulations which mandate that all “reasonably foreseeable” environmental impacts of the proposed Federal action have to be considered in the NEPA document. The CEQ considers that there is adequate scientific evidence that indicates that climate change is a “reasonably foreseeable” impact of greenhouse gas emissions.

Furthermore, in November 2007, the Intergovernmental Panel on Climate Change (IPCC) issued its *Fourth Assessment Report*, which concluded that evidence of global warming is now “unequivocal.” Some of the IPCC’s findings in this report included rising temperatures, rising sea levels, and retreating arctic ice. The IPCC’s conclusions have been widely accepted as representing the consensus of opinion in the scientific community. According to the EPA (1997), global mean surface temperatures have increased 0.6 to 1.2 °F between 1890 and 1996. The nine warmest years in this century have all occurred within the last 14 years. Based on projections made by the IPCC and results from the Hadley Centre’s climate model (HadCM2), by the year 2100, temperatures in Texas could increase by approximately 3°F in spring and 4°F in other seasons, with variant ranges of 1 to 9°F (EPA 1997). According to the HadCM2 model, precipitation is estimated to decrease by five to 30 percent in winter and increase by about ten percent in other seasons. Increases in summer could be slightly larger (up to 30 percent) than in spring and fall. As a result, in regard to water resources in Texas, unless increased temperatures are coupled with a strong increase in rainfall, water could become scarcer. A warmer and drier climate would lead to greater evaporation and less water for recharging groundwater aquifers.

The frequency and intensity of extreme weather is of critical importance to ecological systems, and the ability of some plants and animals to migrate and adapt appears to be much slower than the predicted rate of climate change (EPA 1997). Climate change is among one of the greatest challenges facing conservation.

At a local level, anticipated population increases are expected to drive economic growth in Texas over the next 30 years. This increase in population will likely be accompanied by an increase in fossil fuel consumption and greenhouse gas emissions related to transportation, energy and heat production, commercial or industrial production, agriculture, and other sectors of the economy. At the same time, population increases will also drive land use changes in Texas and likely reduce the amount of forest cover present in Texas. Since mature forests can at least temporarily function as carbon sinks by converting carbon dioxide into stable plant materials (i.e., wood), reduction in forest cover can reduce the ability of the natural landscape to sequester carbon dioxide emitted from the burning of fossil fuels.

As such, the No Action alternative would be expected to contribute to the amount of greenhouse gas emissions in the atmosphere and the associated impacts of global climate change. The magnitude of any such contribution by activities in Plan Area to the adverse cumulative impacts of global climate change is likely to be minor on a global scale.

While future climate change in Texas may adversely affect the resources analyzed in this draft EA (particularly the covered species), as described above, the action alternatives are not expected to contribute cumulatively to such effects should they occur. As a result of climate change, proposed conservation and mitigation strategies under the action alternatives may increase or decrease in value to the relevant species over the next 30 years. The Service's Southwest Region has been working with the U.S. Geological Survey, the academic community, and other natural resource management agencies and interest groups to translate available and emerging science into concrete actions that reduce the impacts of a changing climate on the diverse ecosystems in Texas (USFWS 2008). However, at present, there is insufficient knowledge upon which to design alternative or additional mitigation measures within any of the four alternatives to compensate for any adverse effects of climate change. To help deal with this uncertainty, the proposed Texas Conservation Plan DSL includes adaptive management measures and procedures for dealing with changed circumstances such as climate change.

## **7.0 PUBLIC INVOLVEMENT**

### **7.1 Agency Involvement**

This draft EA was developed by a team of Service personnel in Texas and New Mexico with the assistance of TPWD, Texas Rail Road Commission, University Lands, Texas A&M University, the Natural Resources Conservation Service, and other Stakeholders.

The Texas Conservation Plan DSL was developed by a Technical Team assembled by TX CPA comprised of a Steering Committee, Science Committee, and a Policy Committee. Members included numerous Stakeholders involved in the agricultural, oil and gas, and recreational industries with the assistance of individuals from the Service, TPWD, Texas Rail Road Commission, the Natural Resources Conservation Service, Texas Farm Bureau, and other Stakeholders. In addition, TX CPA invited Texas A&M University to assist in the development of the draft Texas Conservation Plan DSL.

### **7.2 Public Review**

A 60-day public review and comment period is planned for document and the availability of the documents will be noticed in the Federal Register at the start of the public review and comment period.

## **8.0 COORDINATION AND PREPARATION**

The preparation of this draft EA was a coordinated effort between the Service, TX CPA, and the Stakeholders over a six month period comprised of numerous meetings held in Austin and Midland, Texas. Public notification of the availability of the draft EA and the Texas Conservation Plan DSL will be published in the *Federal Register*. All concerned individuals and agencies will be provided a hard copy upon request for review and comment.

The following individuals assisted in the preparation of this draft EA:

- Allison Arnold, Senior Fish and Wildlife Biologist, USFWS, Region 2
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- Debra Hill, Fish and Wildlife Biologist, USFWS, New Mexico Ecological Services
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Requests for additional information can be submitted to:

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Southern Edwards Plateau Ecological Services Sub-Office  
12861 Galm Road  
San Antonio, Texas 78254

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