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Candidate Conservation Agreement with Assurances for the Dunes Sagebrush Lizard (*Sceloporus arenicolus*)

Submitted by
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2020

List of Acronyms

CCA.....Candidate Conservation Agreement

CCAA.....Candidate Conservation Agreement with Assurances

CDA.....Change Detection Analysis

CEHMM ..... Center for Excellence for Hazardous Material Management

CFR ..... Code of Federal Regulations

CI.....Certificate of Inclusion

CMV.....Conservation Measure Violation

CPA.....Texas Comptroller of Public Accounts

DSL.....Dunes Sagebrush Lizard

ERCOT..... Electric Reliability Council of Texas

ESA..... Endangered Species Act

FOIA ..... Freedom of Information Act

FWS..... U.S. Fish and Wildlife Service

NEPA .....National Environmental Policy Act

NRCS..... Natural Resources Conservation Services

OHV..... Off-Highway Vehicle

SCADA..... Supervisory Control and Data Acquisition System

SGCA.....Species of Greatest Conservation Need

SSA .....Species Status Assessment

TDS..... Total Dissolved Solids

TCP.....Texas Conservation Plan

TPRA.....Texas Public Records Act

TPWD.....Texas Parks and Wildlife Department

TRRC..... Texas Railroad Commission

TWDB.....Texas Water Development Board

Executive Summary

The Dunes Sagebrush Lizard (*Sceloporus arenicolus*) (DSL) is known to be present in southeastern New Mexico and western Texas. In 2008, the U.S. Fish and Wildlife Service (FWS), in collaboration with the Bureau of Land Management (BLM) and the Center of Excellence for Hazardous Materials Management (CEHMM) developed a Candidate Conservation Agreement (CCA) and Candidate Conservation Agreement with Assurances (CCAA) for the Lesser Prairie Chicken and the DSL in New Mexico. The New Mexico CCA applies to federal land and the New Mexico CCAA applies to private land. Collectively, the voluntary agreements provide conservation benefits to the DSL by reducing or eliminating threats to the species through the funding and implementation of Conservation Measures.

In 2011, the Texas Comptroller of Public Accounts (the Comptroller or CPA), in collaboration with the FWS, representatives from the oil and gas, agricultural and ranching sectors, as well as other stakeholders, submitted a plan to FWS, the Texas Conservation Plan for the Dunes Sagebrush Lizard (TCP), in support of a CCAA for the DSL, applicable to private land in Texas. The TCP is a flexible, voluntary conservation program that incentivizes private landowner participation through avoidance of DSL Habitat and the funding and implementation of Conservation Measures.

While the TCP has successfully minimized Participant disturbance of areas suitable as DSL Habitat and restored and enhanced areas suitable to the DSL, the TCP generally does not cover the sand mining industry, which began operating in the Permian Basin in 2017. Accordingly, various stakeholders including representatives from the sand mining industry developed this additional voluntary conservation plan, in consultation with the FWS, which hereinafter referred to as the 2020 DSL CCAA. The 2020 DSL CCAA is designed to work in conjunction with ongoing conservation under the TCP as an integrated, holistic voluntary conservation program for the net conservation benefit of the DSL.

The 2020 DSL CCAA is a voluntary conservation plan that focuses on all components of the mitigation hierarchy, including avoidance, minimization, and mitigation, as appropriate for all industry sectors conducting activities in DSL Habitat. In addition, when legally, technically, and economically feasible, avoidance of oil and gas well development in High and Intermediate Suitability areas of DSL Habitat may also be appropriate where the well density is equal to or greater than four well pads/mi^2 but less than 13 well pads/mi^2. Exceptions to avoidance are available for these activities if the Participant satisfies specific conditions. New Surface Disturbances that occur in DSL Habitat trigger the payment of Habitat Conservation Fees and the implementation of Conservation Measures to minimize the impacts of the disturbance.

The 2020 DSL CCAA's Conservation Strategy in Section 8.0 will guide the implementation of the Conservation Actions to address the potential impacts to the DSL resulting from the Covered Activities. This strategy was developed with input from scientists with expertise on the DSL and its habitat and in consultation with FWS. The strategy sets goals (desired biological outcome for the species), objectives (conditions necessary for achieving the goal in terms of reduction or elimination of threats), and criteria (values for determining that an objective has been met) for the 2020 DSL CCAA. The Administrator will establish annual priorities for implementing Conservation Actions based on the recommendations of the Adaptive Management Committee and input from FWS.

The 2020 DSL CCAA includes a process for identifying High Priority Areas of DSL Habitat for long term conservation and to address habitat fragmentation. Participants in the 2020 DSL CCAA are obligated to work across industry sectors and with the Administrator to develop strategies for the conservation of High Priority Areas and to use available tools and measures to prioritize these areas of DSL Habitat for protection from disturbance and fragmentation.

The 2020 DSL CCAA recognizes that Adaptive Management is an ongoing process and will play a central role throughout the implementation of the 2020 DSL CCAA including the Conservation Measures and Actions. Using Adaptive Management principles, the Administrator, with input from FWS and the Adaptive Management Committee, may add or make necessary modifications to the Conservation Measures and Actions currently found in this 2020 DSL CCAA. New Conservation Measures and Actions that address Changed Circumstances in this 2020 DSL CCAA are part of the Conservation Strategy that the Permit Holder and the Participants agree to implement. Any New Conservation Measures and Actions not addressed by the Changed Circumstances in the 2020 DSL CCAA can be addressed through amendments to the agreement and permit, as appropriate; and subject to the No Surprises Assurances for Participants in compliance with their CIs. The Administrator would not voluntarily relinquish the 2020 DSL CCAA or its associated permit without prior notice to, and consulting with, the Participants.

The 2020 DSL CCAA includes an "All Activities" enrollment process for the oil and gas, sand mining, renewable energy, and pipeline sectors. Alternatively, the agriculture and ranching sector and oil and gas companies with an aggregate property interest equal to or less than 500 acres may enroll one or more individual properties through a Parcel-by-Parcel enrollment. The CCAA contains a centralized program for Conservation Actions implemented by the Administrator, as the Permittee, and funded through Enrollment Fees and Habitat Conservation Fees.

Under the 2020 DSL CCAA, fees are collected from participants to provide for conservation of the DSL and implementation of this agreement. All sectors, with the exception of the agriculture and ranching Sector, pay an enrollment fee under an "All Activities" option in

equal payments over three years. Participants enrolled under a "Parcel-by-Parcel" option pay an enrollment fee based on the acreage of the enrolled properties. All Participants, except the agriculture and ranching Participants, pay a Habitat Conservation Fee for any impacts in the DSL Habitat, as set out in Appendix D. Finally, all oil and gas, sand mining, and renewable energy Participants pay an Implementation Fee, as set out in Appendix D, that provides funding for research, monitoring, surveys, and administration of the 2020 DSL CCAA. The funding for research and surveys may be augmented by funding from other sources.

A CI will memorialize the obligations of the Participants to the 2020 DSL CCAA. A CI will require, among other things, the Participants to provide the Administrator access to enrolled properties, to conduct monitoring, and surveys. In addition, the CI will provide the Administrator access to implement Conservation Actions and conduct research. In the case of the oil and gas sector, the latter requirement may be limited by the Participant's statutory and legal ability to do so. For enrolled Property that is severed from the surface estate, the Participant agrees to work with the Administrator and the surface estate owner to provide surface access to the Administrator.

DSL Habitat has been initially defined through the application of a geospatial model, derived from available information, and it maps the potential geographic extent of DSL Habitat in Texas (the "Covered Area"). This model also characterizes areas within the Covered Area as High, Intermediate I and II (collectively Intermediate), or Low suitability DSL Habitat. The model is not complete and is undergoing ongoing refinements. Information about groundcover types, disturbed or degraded potential habitat, and the presence or absence of DSL developed through implementation of this 2020 DSL CCAA will contribute to the scientific information supporting the modeling and mapping of DSL Habitat in Texas. Moreover, the Adaptive Management Committees under the TCP and 2020 DSL CCAA will review and refine the DSL Habitat model and map as more information becomes available and better mapping methodologies are developed, which will contribute to the accuracy, transparency, and inclusiveness of the model. Participants and potential Participants may use the DSL Habitat map or invest in site-specific surveys to verify the classification of properties for purposes of delineating potential habitat within Enrolled Properties and calculating the payment of Habitat Conservation Fees and offsets under Appendix D for surface disturbances.

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1.0. INTRODUCTION

In the western United States, many species that are candidates or potential candidates for listing under the Endangered Species Act of 1973 (ESA) exist on both Federal and non-Federal lands. Non-Federal Property Owners have the opportunity to enter voluntarily into a Candidate Conservation Agreement with Assurances (CCAA) to implement Conservation Measures aimed at reducing or eliminating threats to candidate species. If a Participant's Certificate of Inclusion (CI) is consistent with this CCAA and is fully implemented at the time of a future listing of the Dunes Sagebrush Lizard (*Sceloporus arenicolus*) (DSL), the Service will not come back and require additional commitment of land, water or financial resources above what was committed to under the CCAA consistent with 50 Code of Federal Regulations (CFR), Parts 17.22(d)(5) and 17.32(d)(5).

This 2020 DSL CCAA between the U.S. Fish and Wildlife Service (FWS) and the Administrator, with the voluntary participation of non-Federal Property Owners, will address some of the conservation needs of the DSL, a terrestrial species found in New Mexico and Texas. FWS is currently considering a petition to list the DSL because of the impacts of various activities, including the development of sand mining operations, continued oil and gas operations, ongoing agriculture and ranching activities in DSL Habitat. Voluntary conservation on non-Federal lands in west Texas under this 2020 DSL CCAA will be considered by the FWS's ongoing species status assessment (SSA) process for the DSL.

A Participant in the 2020 DSL CCAA is a Property Owner, as defined by 50 CFR § 17.3, who has signed a CI and is fully implementing its CI. According to 50 CFR § 17.3, a Property Owner is a person with a fee simple, leasehold, or property interest (including owners of water or other natural resources), or any other entity that may have a property interest, sufficient to carry out the proposed management activities, subject to applicable state law, on non-Federal land.

The 2020 DSL CCAA is designed to work in conjunction with ongoing conservation under the TCP as an integrated, holistic voluntary conservation program for the net conservation benefit of the DSL. As part of the SSA process and any future decision to list the DSL, FWS would evaluate existing threats, now and into the future, and consider both the TCP's and the 2020 DSL CCAA's conservation measures and success of implementation, as appropriate. The 2020 DSL CCAA would apply to non-Federal properties and requires implementation of uniform Conservation Measures and funding of Conservation Actions to protect the DSL and its habitat in the Permian Basin in Texas.

The Administrator will hold the Enhancement of Survival Permit for the CCAA and will oversee its implementation. The Participants in this 2020 DSL CCAA will include entities in the following sectors: oil and gas, sand Mining operations, renewable energy operations, pipelines, and agriculture and ranching. Through this 2020 DSL CCAA, the Administrator will

work with Participants who voluntarily commit to avoid, minimize, and offset impacts, as well as fund specific Conservation Actions to reduce or eliminate threats to the DSL.

The Administrator will oversee implementation of the 2020 DSL CCAA and work in coordination with the FWS, the Adaptive Management and Participant Committees, Participants, and other stakeholders consistent with the responsibilities described in Section 2.0 below. The Administrator may use both internal and third party resources to enroll Participants, administer the 2020 DSL CCAA, and engage with stakeholders. The Administrator is expected to be organized as a non-profit entity with oversight from a board of directors.

1.1 Benefits of this 2020 DSL CCAA

This 2020 DSL CCAA anticipates that the FWS will transfer the TCP and related Enhancement of Survival Permit from the CPA to a qualified non-profit entity established for the purpose of administering the TCP on an ongoing basis. Activities for the conservation of the DSL and its habitat have been continuous under the TCP and related permit.

This 2020 DSL CCAA is designed to work with the TCP as an integrated conservation program for the net conservation benefit of the DSL. The DSL Habitat model underlying the TCP will continue to guide conservation activities under the TCP. The TCP and 2020 DSL CCAA Administrators, the Adaptive Management Committee under the TCP, the Adaptive Management Committee under this CCAA, and interested Participants will coordinate with the FWS to review and refine the applicable DSL Habitat model and map as more information becomes available and better mapping methodologies are developed, including through the potential use of a third party academic institution.

The 2020 DSL CCAA requires implementation of Conservation Measures on non-Federal lands to benefit the DSL. These Measures include avoidance and minimization to eliminate or reduce threats to the DSL. The Participants agree to implement these measures through CIs that set out the Participants' obligations under the 2020 DSL CCAA. Property Owners already enrolled as Participants under the TCP also may enroll as Participants under the 2020 DSL CCAA under a CI.

The 2020 DSL CCAA is between the FWS and the Administrator, and is a collaborative effort between the FWS, the Administrator, and Participants in the 2020 DSL CCAA. The 2020 DSL CCAA provides protections not otherwise available through regulatory means to the DSL and its habitat on private property while balancing the need for economic development in an area important to the nation's domestic energy production, among other activities.

A significant benefit of this 2020 DSL CCAA is that it generally avoids, minimizes, and offsets impacts to DSL and its habitat on private lands, which are not otherwise subject to management for the conservation of a species that is not listed under the ESA. Further it generates substantial funding for Conservation Actions for the DSL to improve the status of

this species. Conservation Actions are actions that preclude or reduce threats to the DSL and may include such things as restoration of DSL Habitat, acquisition of Conservation Easements, and other actions. These actions are funded by Participants and implemented by the Administrator. The Administrator, working with Participants and others, will implement a comprehensive and strategic landscape-level approach in identifying the actions to address the conservation needs of the DSL while allowing for continued economic development. Participants may also implement Conservation Actions that are pre-approved by the Administrator and concurred with by the FWS.

Finally, the 2020 DSL CCAA, through Habitat Conservation Fees and Implementation Fees, provides funding for research, monitoring and surveys to increase scientific understanding of the DSL and its habitat, as well as the effectiveness of the Conservation Measures and Actions and Adaptive Management. The 2020 DSL CCAA contemplates joint surveys in Texas and New Mexico that will provide a more comprehensive understanding of the DSL's status.

FWS has determined that a 10(a)(1)(A) Enhancement of Survival Permit can be issued to persons or entities that enter into a CCAA with the FWS. If the DSL is subsequently listed under the ESA, the Enhancement of Survival Permit becomes effective and authorizes take of the species that is incidental to otherwise-lawful activities on Enrolled Properties as specified in the 2020 DSL CCAA, provided the activities are performed in accordance with the 2020 DSL CCAA's terms. The 2020 DSL CCAA and the associated Permit also provide, if the species is listed, the Permit Holder with regulatory assurances that are passed down to the Participants, so long as they comply with the terms of this 2020 DSL CCAA and their CI. This regulatory assurance consists of the Service not requiring "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" and Participants, 50 CFR parts 17.22(d)(5) and 17.33(d)(5). This assurance is intended to provide regulatory certainty to ensure the continued vitality of this important segment of the Texas economy and the nation's energy security.

1.2 Purpose of this 2020 DSL CCAA

The primary purposes of this 2020 DSL CCAA are to:

- Guide and provide funding for Conservation Actions for the DSL in order to improve the status of this species within Texas;
- Implement Conservation Measures to reduce or eliminate potential threats to the DSL in Texas;
- Identify High Priority Areas of DSL Habitat for conservation and to incentivize conservation and reduce the effects of habitat fragmentation;
- Support surveys and research to increase scientific understanding of the DSL, DSL Habitat, and effectiveness of conservation efforts;

- Provide Participants assurances that if the species is listed, the Service 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" and Participants (50 CFR §17.22(d)(5) and 17.33(d)(5)) so long as Participants properly implement their CIs consistent with the conservation program in this 2020 DSL CCAA; and,
- Allow industrial and agricultural development to continue to grow while protecting and improving habitat conditions for the DSL.

2.0. GOVERNANCE

A collaborative governance structure is one of the key elements to the successful implementation of a durable conservation agreement. The 2020 DSL CCAA's governance structure recognizes the integral role that the Administrator, FWS, and Participants have in the success of the conservation agreement. As described in Sections 2.1 and 10.0, the Administrator has the responsibility for implementing and administering this CCAA and the associated CIs in accordance with the provisions of each. While this is the Administrator's responsibility, it will work collaboratively with FWS to fulfill the conservation objectives of the CCAA. Nothing herein is intended to diminish FWS's authority to enforce the terms and conditions of this 2020 DSL CCAA and permit. Participant fees pay to provide for conservation, research, monitoring, survey and implementation of the 2020 DSL CCAA. The cooperation and participation of Ranching and Agriculture sectors is critical because property owners engaged in these activities own and control a landscape that includes DSL habitat.

The 2020 DSL CCAA establishes a governance structure to assist the Administrator in the implementation and administration of the CCAA. This structure consists of both an Adaptive Management and Participant Committee. The Administrator, in coordination with FWS, evaluates and makes decisions on the recommendations submitted by these committees.

The Adaptive Management Committee is comprised of scientists and experts from relevant state and federal agencies, Participants, and other organizations. With its scientific expertise, the committee will identify issues and make recommendations to the Administrator. The Adaptive Management Committee may develop a solution or set of recommendations for a particular issue.

The Participants represent their individual and respective industry segments through the Participant Committee. The Participant Committee will identify issues and make recommendations to the Administrator regarding the administration and implementation of the CCAA. The Administrator and the Adaptive Management Committee will provide representatives to report at the Participant Committee meetings.

The committee composition and responsibilities are explained below.

Additionally, as part of managing and coordinating the conservation programs for the DSL, the Administrator, TCP Administrator, and any other future voluntary conservation plan administrators, must report disturbance of DSL Habitat to the USFWS on an annual basis so that USFWS can aggregate disturbance by participants in all DSL voluntary conservation plans for enrolled property in Texas to track program implementation, ensure disturbance and conservation measures are being accurately reported and implemented within the DSL range in Texas, and, in cooperation with the Administrators, as well as the Adaptive Management and Participant Committees, determine whether any adaptive management provisions may be required.

2.1 The Administrator

The Administrator, after considering input from FWS, may take actions to further the implementation and administration of this 2020 DSL CCAA, subject to any limitations contained within the CCAA and any affected CI. Further, nothing in this CCAA or any CI shall prohibit the Administrator from requesting or receiving direct communications from the Participants.

Specific actions that the Administrator, in coordination with FWS, must take include:

- Implementing and administering this 2020 DSL CCAA;
- Retaining qualified personnel and/or contractors to administer the on-the-ground implementation of the 2020 DSL CCAA;
- Enrolling Participants in accordance with this 2020 DSL CCAA via CIs;
- Reviewing, at least annually, the implementation status of the 2020 DSL CCAA;
- Reviewing, at least annually, the financial condition of the 2020 DSL CCAA, including fees received, conservation funds expended, and administrative costs paid to Administrator, including for third-party contractors;
- Reviewing and approving funding for Conservation Actions;
- Providing reports to the Participant Committee;
- Approving Adaptive Management changes recommended by the Adaptive Management and Participant Committees, but only if consistent with the terms of this 2020 DSL CCAA and any affected CIs;
- Initiating the amendment process outlined in Section 15.0, if amendment of the 2020 DSL CCAA, Permit, or CI is necessary to implement an Adaptive Management change;
- Approving other changes to the CI template and 2020 DSL CCAA document. Either the Administrator or Adaptive Management Committee may initiate the amendment process outlined in Section 22.0, if amendment of the 2020 DSL CCAA or Permit is necessary to implement such changes;
- Reviewing and resolving appeals of deficiency notices and Conservation Measure Violations;
- Terminating CIs in accordance with Section 12.0; and,

- Resolving disputes consistent with Section 24.0.

Specific responsibilities of the Administrator are set out in Section 10.0.

2.2 Adaptive Management Committee

The Adaptive Management Committee will be composed of scientists familiar with the DSL or with extensive background in rare species conservation. Each of the following entities will provide representatives for the Adaptive Management Committee:

- One representative from Texas Parks and Wildlife Department;
- One representative from FWS;
- One representative each from two academic institutions;
- Two representatives from the Participant Committee; and,
- One representative from the Texas Railroad Commission.

The Adaptive Management Committee, in conjunction with the Administrator, may consult with other entities to support the DSL conservation goals and objectives of this 2020 DSL CCAA, including the Center for Excellence Hazardous Materials Management (CEHMM), academic institutions, and other bodies. Members of the Adaptive Management Committee shall serve two-year terms and may be reappointed or, if necessary to ensure active participation, replaced by the Administrator. It is anticipated that the Adaptive Management Committee may need input from specialized scientific and technical resources when making recommendations on specific issues. As such, the Committee may request the Administrator to obtain assistance from scientific and technical experts that are experienced with the DSL or related species or at-risk species conservation and management. Where an issue directly involves a sector enrolled in this 2020 DSL CCAA, the Committee also may request input from Participants' technical professionals such as engineers, scientists, and/or consultants familiar with a particular issue.

The Administrator and its staff and/or contractors will serve as a resource to the Adaptive Management Committee and attend meetings as necessary. The Adaptive Management Committee will select a chairperson and adopt such rules as are appropriate for the Committee. The chairperson or his or her designee will serve as the Adaptive Management Committee's representative at the Participant Committee meetings.

The Adaptive Management Committee will meet at least semiannually. It must review, study or otherwise act on issues identified by itself or sent to it by the Administrator and/or the Participant Committee, and report back to them with its findings. The Committee may by its own initiative act on either issues it identifies or issues brought to its attention by the Participant.

The purpose of the Adaptive Management Committee is to serve as a scientific advisor to the Administrator by making recommendations through a consensus process. In the event that

consensus cannot be reached, the Adaptive Management Committee will provide the Administrator with a written description and explanation of the differing viewpoints.

The Adaptive Management Committee will be responsible for:

- Reviewing biological reports and other information pertaining to the DSL and Conservation Strategy;
- Making recommendations to the Administrator regarding High Priority Areas of DSL Habitat for acquiring Conservation Easements and other protections and implementing Conservation Actions to conserve habitat and reduce habitat fragmentation;
- Developing recommendations for DSL Habitat restoration opportunities and opportunities for DSL translocation;
- Conducting annual evaluations comparing the habitat loss caused by Covered Activities on enrolled property in DSL Habitat with the habitat reclaimed and restored or preserved through Conservation Easements and other protections;
- Evaluating the progress of the Conservation Program towards achieving and maintaining the net conservation benefit, and report their findings to the Administrator and Service at the end of the first 3 years and then every two years thereafter for the next 10 years of the Agreements, and every 5 years thereafter;
- Developing, reviewing, and prioritizing proposals for Conservation Actions;
- Making recommendations to the Administrator for any proposed changes to Conservation Measures that are contained within the 2020 DSL CCAA or CI template, based on new science;
- Making recommendations to the Administrator for any proposed changes to the CI template;
- Participating in the ongoing effort to further develop and refine modeling of DSL Habitat and making recommendations to the Administrator for any proposed changes to the definition of DSL Habitat based on new science;
- Making recommendations to the Administrator on adaptive management changes, based on new science;
- Reviewing the implementation and effectiveness of current Conservation Measures and Conservation Actions and developing recommendations for the Administrator;
- Making recommendations to the Administrator for any proposed changes to the Covered Activities including evaluating impacts and conservation measures;
- Making recommendations to the Administrator for (1) An on-going methodology to evaluate the extent of stratification and to identify any trends in the amount of stratification; (2) Management considerations for allowing development by multiple stratified mineral estates to minimize surface impacts on the surface estate; and (3) A written report setting out the findings to be disseminated to the relevant communities;

- Recommending study of drought-related conditions.

2.3 Participant Committee

The Participant Committee will be composed of Participants in the 2020 DSL CCAA. The members of the Committee may select one of the Participants to serve as the Committee Chair, the Administrator, the Administrator's staff and/or Qualified Third-Party Contractors, and the chair of the Adaptive Management Committee will serve as resources to the Participant Committee. The Participant Committee Chair and/or Participants will schedule and set agendas for semiannual meetings of the committee. The Participant Committee will review the administration of the 2020 DSL CCAA and implementation issues that affect Participants. If the Committee identifies potential changes related to the implementation of the 2020 DSL CCAA, it will make recommendations to the Administrator, and, as appropriate, the Adaptive Management Committee. The Participant Committee will elect two representatives to serve on the Adaptive Management Committee.

Specific actions that the Participants may take include, but are not limited to:

- Making recommendations on any proposed changes to the Conservation Measures that are contained within the 2020 DSL CCAA or CIs;
- Making recommendations to the Administrator regarding High Priority Areas of DSL Habitat for acquiring Conservation Easements and other protections and implementing Conservation Actions;
- Making recommendations with regard to the Participants' documentation of compliance with Conservation Measures;
- Making recommendations on the 2020 DSL CCAA fee structure, enrollment process, or other administrative process or implementation issues related to the Participants' responsibilities under the CCAA and CIs;
- Making non-binding recommendations to the Administrator on appointing/replacing representatives on the Adaptive Management Committee;
- Developing, reviewing, and making recommendations on Conservation Actions; and,
- Reviewing recommendations from the Adaptive Management Committee and providing input to the Administrator.

It is anticipated that the Participant Committee may need input from specialized scientific and technical resources when making recommendations on specific issues. As such, the Committee may request that Administrator obtain assistance for the Committee from scientific and technical experts that are experienced with the DSL or related species or at-risk species conservation and management.

3.0. AUTHORITY

Sections 2, 7, and 10 of the ESA of 1973, as amended, 16 USC § 1531, 1536, 1539, and the Fish and Wildlife Coordination Act, allow the FWS to enter into this 2020 DSL CCAA. Section 2 of the ESA states that encouraging parties, through Federal financial assistance and a system of incentives, to develop and maintain conservation programs is a key to safeguarding the nation's heritage in fish, wildlife, and plants. Section 7 of the ESA requires the FWS to review programs that it administers and to utilize such programs in furtherance of the purposes of the ESA. Section 10(a)(1)(A) of the ESA authorizes the issuance of permits to "enhance the survival" of a listed species for acts that would otherwise be prohibited by Section 9 if such acts are expected to enhance the propagation or survival of the affected species. However, Enhancement of Survival permits issued for candidate or other non-listed species do not become effective unless and until those species are listed as "threatened" or "endangered" under the ESA.

4.0. COVERED SPECIES

The species covered by this 2020 DSL CCAA is the Dunes Sagebrush Lizard (*Sceloporus arenicolus*) (DSL).

Life History and Habitat

The DSL is a small, brown phrynosomatid lizard (family Phrynosomatidae, genus Sceloporus) with a maximum snout-to-vent length (SVL) of 2.9 inches (in.) for males and 2.5 in. for females (Fitzgerald *et al*. 2011). The physical description of this species is summarized from Fitzgerald et al. (2011). All demographic stages of the DSL have a brown or tan dorsum that lacks a pattern, and a narrow grayish-brown band on the flanks extending from the upper margin of each ear opening to the tail. Adult males have small widely separated blue patches on the venter. Females develop small yellow-orange patches starting on throat or posterior margins of the mouth that suffuse to the venter and tail when they are reproductively active. Females that are not reproductively active, juveniles (SVL range: 1.5 in. to 1.9 in.) and hatchlings (SVL range: 0.7 in. to 1.4 in.) have a white or cream-colored venter (Degenhardt et. al 1996; Fitzgerald and Painter 2009; Sena 1985). The prairie lizard (*Sceloporus consobrinus*) and the side-blotched lizard (*Uta stansburiana*) may be mistaken as DSL. The DSL has 8 or more scales between the femoral pores on the venter just above the cloaca. The prairie lizard has 7 or fewer scales between the femoral pores. The side-blotched lizard has a darker brown and patterned dorsum and a dark blotch on the flank just behind the front limbs.

DSLs are active at or above the ground surface when substrate temperatures range between 60˚Farenheit (F) and 120˚F (Degenhardt et al. 1996; Grant 1990, Radder et al. 2005; Sartorius

et al. 2002; Sena 1985, Smolensky and Fitzgerald 2006). This typically occurs after sunrise to mid-day and early afternoon to dusk (i.e., 0700 to 1200 and 1400 to 1800) during DSL's seasonal activity period. DSL may be active any month if environmental conditions are suitable, but are most active between April and November (Degenhardt et al. 1996; Fitzgerald and Painter 2009; Texas A&M University [TAMU] 2016a; Walkup et al. 2017).

Breeding occurs from May to early July (Fitzgerald and Painter 2009). Females can reach sexual maturity during their first spring following hatching and produce one to two clutches per year between June and August, typically with three to six eggs per clutch (Degenhardt and Jones 1972; Cole 1975; Fitzgerald and Painter 2009). Only three DSL nests have been documented *in situ* on the slopes of blowouts (wind-hollowed depressions of sand dunes vegetated dominantly with shinnery oak (*Quercus harvardii*) in New Mexico (Hill and Fitzgerald 2007; Ryberg *et al.* 2012). Documented nest chambers were small, between 0.7 in. and 1.8 in. wide and located between 4.3 in. and 8 in below the sand surface (Hill and Fitzgerald 2007; Ryberg *et al.* 2012). Hatchlings emerge about 30 days after the eggs are laid, thus emerging between July and September.

DSLs usually live two to four years (Snell *et al*. 1997; Fitzgerald and Painter 2009). DSL forage on a variety of insects, including ants, small beetles, crickets, grasshoppers, and spiders (Degenhardt and Jones 1972; TAMU 2016a). DSLs have small home ranges that average 0.25 acre for males and 0.15 acre for females (Hill and Fitzgerald 2007; Young et al. 2018. On a daily basis, DSL make very localized movements between 65 feet (ft) to 100 ft within these home ranges (Ryberg et al. 2013; TAMU 2016a). Males are territorial but females may have home ranges that overlap with other females and males (Fitzgerald and Painter 2009; Hill and Fitzgerald 2007; Ryberg et al. 2013; TAMU 2016a).

Population size estimates and trends are lacking throughout most of the DSL range, but baseline density estimates are available for some areas in New Mexico. In New Mexico, DSL density appears to range between 30 and 260 DSL per hectare (Smolensky and Fitzgerald 2010; Ryberg et al. 2013). Populations of DSL are patchily distributed across the range and may not occur in all areas of potentially suitable habitat (Fitzgerald et al. 1997; Fitzgerald et al. 2011; Johnson et al. 2016; Laurencio et. al. 2007; Smolensky and Fitzgerald 2010; Walkup et al. 2018; Walkup et al. 2019).

The location and distribution of known DSL populations appear to be related to proximity of existing DSL populations and to certain characteristics of land cover such as presence of shinnery oak dunes, complex shape and large extent of blowouts in shinnery oak dunes, the absence of mesquite (*Prosopis* species) encroachment, and absence of land development (Fitzgerald et al. 1997; Johnson et. al. 2016; Ryberg et al. 2014; Snell et al. 1997; Walkup et al. 2017; Walkup et al. 2019). Additional characteristics of the species such as dispersal ecology may also play a role, but there may be additional undetermined factors that affect

the distribution of populations at different spatial scales (Ryberg and Fitzgerald 2015; Snell et al. 1997; Walkup et al. 2019).

There are very few studies investigating dispersal of DSL. Thus the details of when dispersal occurs, where it occurs, and the demographic groups involved are largely unknown. But empirical data from three DSLs captured and recaptured in pitfall traps documented long distance movements of 1,125 ft, 1,512 ft, and 2,772 ft, in shinnery oak sand dune complexes, shinnery oak flats, or shinnery-oak mesquite flats (Fitzgerald et al. 2005; Hill and Fitzgerald 2007; Leavitt et al. 2011; TAMU 2016a). Pitfall trap data also suggest that male and juvenile DSLs move longer distances than females. Juvenile DSLs are detected or captured at relatively greater frequencies than adults on the edges of shinnery oak dune complexes and in shinnery oak flats between these complexes and thought to be primary demographic group associated with dispersal (Fitzgerald et al. 2005; Ryberg et al. 2013; Sena 1985; TAMU 2016a). Juveniles are also infrequently recaptured (Ryberg et al. 2013; TAMU 2016a). The low recapture rate of DSL at the edges of shinnery oak sand dune complexes suggests either that these individuals have left the areas being studied, they were depredated, or that the rate of capture was initially low resulting in subsequent low recapture rates.

DSL genetics studies have found measurable gene flow among populations separated by miles of land covers lacking shinnery oak sand dunes, suggesting occasional long-distance dispersal events as contributors to gene flow among populations over time (Chan *et al*. 2009, 2011). But Chan and colleagues (2009) hypothesize that gene flow among DSL populations is mostly maintained by cumulative short distance movements of individuals among populations across many generations and occasionally long distance dispersal of individuals (Chan *et al*. 2009).

The DSL is endemic to the Mescalero Sands of New Mexico and Monahans Sandhills of Texas (Axtell 1988; Degenhardt and Jones 1972; Fitzgerald et al. 1997); collectively referred to as the 'Mescalero-Monahans Shinnery Dune System' (e.g., Fitzgerald et al. 2011) or 'Mescalero-Monahans Sandhills Ecosystem' (Walkup et al. 2018). The Mescalero-Monahans Shinnery Dune System is an eolian sand dune system patchily distributed in Chaves, Eddy, Lea and Roosevelt Counties in New Mexico, and Andrews, Gaines, Crane, Ector, Ward and Winkler Counties in Texas (Henderson 2006; Johnson et al. 2016; Muhs and Holliday 1995).

This ecosystem is heterogeneous containing a variety of dune types (e.g., coppice dunes, parabolic dunes, barchanoid ridges) and land covers (e.g., grasslands, mesquite dominated shrublands, shinnery oak dunes, unvegetated dunes) (Fitzgerald et al. 1997; Fitzgerald et al. 2011; Hardy et al. 2018; Johnson et al. 2016; Muhs and Holliday 2001). The dunes are generally arranged in east-west trending and north-south trending dune belts (Muhs and Holliday 1995). Within the Mescalero dune fields the dunes are relatively stabilized by shinnery oak and grasslands and within the Monahans dune fields the dunes are relatively

active (Muhs and Holliday 1995). Although the dunes may be stabilized by vegetation, sand is still removed by wind in unvegetated portions of the dunes creating the hollowed out depressions known as blowouts. A series of abutting dunes, the vegetation that encircles them, and their blowouts form a "dune complex." Dune complexes are patchily distributed in a matrix of flat areas dominated by shinnery oak or other woody or herbaceous scrub-shrub vegetation. At the landscape scale, dune complexes may occur as a fragmented "chain" of dune complexes across the landscape. There are large contiguous areas of shinnery oak shrubland and shinnery oak dune complexes throughout the portion of the DSL range in New Mexico (Dzialak et al. 2013; Johnson et al. 2016). Whereas in Texas, the extent and contiguity of shinnery oak shrubland and shinnery oak dune complexes is reduced (Dzialak et al. 2013). The Monahans and Kermit dune fields contain thousands of acres of unvegetated or sparsely vegetated dunes and grass dunes, and shinnery oak dunes on the periphery.

Wind, water, sand, and vegetation interact creating complex spatial dynamics of the dunes and surrounding land covers such that vegetated dunes, such as shinnery oak dunes, may increase or decrease in size, or shift in location across the landscape over time (Muhs and Holliday 1995, 2001; Dzialak et al. 2013). For example, between 1986 and 2011 Dzialak and colleagues (2013) detected net decreases in the sizes of shinnery oak sand patches in New Mexico and net increases in the sizes of shinnery oak patches in Texas. Several studies indicate that the heterogeneity of land covers and the complex dynamics of the Mescalero-Monahans Shinnery Dune System affect the distribution of DSL populations (Fitzgerald et al. 1997; Johnson et. al. 2016; Ryberg et al. 2014; Snell et al. 1997; Walkup et al. 2017, Walkup et al. 2019).

The extent of the Mescalero-Monahans Shinnery Dune System that encompasses the range of DSL is 1,447,137.3 acres in New Mexico (Johnson et al. 2016) and 12,206,080 acres in Texas (Griffith et al. 2007). Within the Mescalero-Monahans Shinnery Dune System, habitat that is occupied by DSL contains eolian sand dunes, blowouts, and shinnery oak (Degenhardt and Jones 1972; Fitzgerald et al. 1997; Fitzgerald et al. 2011; Johnson et al. 2016; Laurencio et al. 2007; Sena 1985; Walkup et al. 2018).

Several authors describe the DSL as a habitat specialist based on findings from visual encounter surveys, microhabitat selection studies, and population demographics studies (Degenhardt and Jones 1972; Fitzgerald et al. 1997; Fitzgerald et al. 2011; Johnson et al. 2016; Laurencio et al. 2007; Leavitt and Fitzgerald 2013; Ryberg et al. 2013, 2014; Sena 1985; TAMU 2016a; Walkup et al. 2017, 2018). All observations of DSL from visual encounter surveys were located in shinnery oak sand dunes with blowouts or shinnery oak hummocks that may or may not be interspersed with mesquite hummocks (Degenhardt and Jones 1972; Fitzgerald et al. 1997; Fitzgerald et al. 2011; Johnson et al. 2016; Sena 1985; Walkup et al. 2018). Within these shinnery oak dunes the DSL selected moderate to large complex shaped blowouts, with steep sparsely vegetated slopes, few grasses, little leaf litter,

few mesquite, low soil compaction and medium coarse sand grain size (Fitzgerald et al. 1997; Fitzgerald et al. 2011; Hibbitts et al. 2013; Ryberg et al. 2013, 2014; Walkup et al. 2018). DSL population presence, size and vital rates (e.g., juvenile survival) were positively related to the aforementioned features preferentially selected by DSL (Ryberg et al. 2013, 2014; Snell et al. 1997).

It is unclear whether the floristic composition in dunes affects DSL occurrence. Snell et al. (1997) documented declines in DSL densities at study areas where shinnery oak was removed via herbicide application, but DSL persisted at these sites devoid of shinnery oak, nine years after being treated. There was also no correlation between the openness and depth of blowouts, and DSL numbers (Snell et al. 1997). More recent studies suggest that attributes of the blowouts (e.g., spatial extent, shape, depth, slope angle, aspect, soil compaction) are correlated to DSL occurrence and population sizes (e.g., Ryberg et al. 2013, 2014; Smolensky and Fitzgerald 2011; Walkup et al. 2019). Blowouts provide sites for thermoregulation, feeding, and display while the nearby vegetation provides shade also for thermoregulation and a refuge from predators (Axtell 1988; Degenhardt and Jones 1972; Fitzgerald and Painter 2009; Fitzgerald *et al*. 1997; Sartorius *et al*. 2002; Sena 1985). These studies indicate that sand dunes and blowouts are key elements of suitable habitat, and when shinnery oak is present, DSL prefer shinnery oak relative to grasses or mesquite (Fitzgerald et al. 2011; Hibbitts et al. 2013).

DSL have been documented in other land covers aside from shinnery oak sand dunes in New Mexico. Juvenile DSL have been documented in shinnery oak shrublands up to 138 feet from a shinnery oak sand dune complex (Fitzgerald et al. 2005). Shinnery oak shrublands, also known as shinnery oak flats, are shinnery oak dominated areas on eolian sandy plains with little to no topographic relief, and few, small, scattered patches of blowouts (Fitzgerald et al. 1997; Johnson et al. 2016). Thus, shinnery oak shrublands may also be used by the DSL and could represent suitable habitat. In Texas, juvenile DSL have been captured in areas where the shinnery oak dune complexes transition to mesquite flats, specifically up to 164 feet from a shinnery oak sand dune complex (TAMU 2016a). Mesquite flats, also known as mesquite shrublands, or as mesquite grasslands and mesquite scrub, are dominated by mesquite and associated with mid-grasses and short-grasses and are also on sandy soils with little to no topographic relief (Fitzgerald et al. 1997; Johnson et al. 2016). Additional shrub species including shinnery oak, four-wing saltbush (*Atriplex canescens*)) and snakeweed (*Gutierrezia* spp.) are minor components of this land cover (Fitzgerald et al. 1997; Johnson et al. 2016). Captures and recaptures of DSL in habitat transitions are rare and, when recaptured, DSL are recaptured back in shinnery oak dunes (TAMU 2016a). Thus, the available science demonstrates that 164-foot-wide habitat transition areas from shinnery oak dune complexes may be suitable habitat occasionally used by the DSL.

It is plausible that additional land covers may be suitable for the DSL given the interspersion and heterogeneity of land covers that may be traversed by the DSL during gene flow between documented populations (Chan et al. 2009, 2011; Fitzgerald et al. 1997, 2011; Johnson et al. 2016; Laurencio et al. 2007; TAMU 2016a, 2016b). Ecological information for the DSL in other land covers currently is lacking, and the extent of use and level of suitability of these land covers for supporting DSL populations is also lacking in the available scientific literature.

DSL Status in Texas

In Texas, DSL historically occurred in Gaines, Andrews, Winkler, Ward and Crane Counties, but there are no recent records of the DSL in Crane County despite extensive surveys of this county (Axtell 1988; Degenhardt and Jones 1972; Laurencio et al. 2007; Painter and Sias 1998; Fitzgerald et al. 2011; Walkup et al. 2018). The historical occurrence of DSL in Crane County is based on a single specimen (Degenhardt and Jones 1972), but land covers present in the county are comparable to those found in areas of recent occurrences, thus it is unclear why DSL have not been documented in the county recently (Fitzgerald et al. 2011).

Most of the DSL's range in New Mexico (approximately 76%) is located on federal or state lands, and 24% is located on private lands (Johnson et al. 2016). In Texas, nearly all of the DSL range is on private lands (US Geological Survey 2019). The Monahans Sandhills State Park, is a 3,840-acre park in Winkler and Ward Counties, leased by the Texas Parks and Wildlife Department (TPWD). Ward County owns 300 acres, the Sealy-Smith Foundation owns 3,000 acres, and the Williams family of Monahans owns 800 acres of the park (TPWD 2019). Consequently, many areas in Texas remain unsurveyed due to limited access, which is a factor in the incomplete nature of current DSL Habitat models for West Texas. Laurencio *et al*. (2007) conducted surveys in 2006 and 2007 to determine the distribution of the DSL in Texas. They conducted 32 visual encounter surveys at 27 sites (including 19 historic localities) that contained potential habitat for the DSL (e.g., shinnery oak sand dunes) in Andrews, Crane, Cochran, Gaines, Ward, and Winkler County. They found DSLs at three sites in Andrews, Gaines, and Winkler Counties, and detection of DSL were in microhabitat classified as shinnery oak sand dunes. Laurencio et al. (2007) conducted 2 surveys at the Monahans Sandhills State Park but did not detect any DSL. DSL have been detected within Monahans Sandhills State Park both prior to and subsequent to those surveys (Fitzgerald et al. 2011), suggesting that DSL may not always be detected when present.

In June 2011, Fitzgerald et al. (2011) conducted surveys for the DSL in Texas to create a baseline map of the range and known occurrences to be used in conservation planning (Fitzgerald et al. 2011; TAMU 2016a). Fitzgerald et al. (2011) conducted 51 visual encounter surveys at 50 sites in Andrews, Crane, Ector, Ward, and Winkler Counties. DSLs were found at 28 of the 50 sites. Data from these surveys including the occurrences, habitat condition,

and connectivity between areas of potentially suitable habitat, were used to create a map of the likelihood of occurrence of DSL in an area (Fitzgerald et al. 2011). The map served as the baseline for the location of DSL Habitat and the Permit Area in the TCP (*See* TCP Fig. 1.2.) and is referred to as the TCP Permit Area/Likelihood of Occurrence Map or the "Hibbitts" Map. The authors note the map was based on coarse criteria of known occupancy and recommend refinement of habitat occupancy maps as more information becomes available (e.g., site-specific survey data) (Fitzgerald et al. 2011).

TAMU conducted additional surveys for the DSL in Texas over a four-year period from June 2012 through August 2016 to augment the baseline data on occupancy and occurrence and validate the Likelihood of Occurrence Map (TAMU 2016a, 2016b; Walkup et al 2018). TAMU conducted 366 visual encounter surveys across 126 sites located inside and outside of areas classified as being likely to be occupied, as shown as on the map (TAMU 2016a, 2016b; Walkup et al. 2018). The survey effort resulted in 83 DSL observations distributed across 27 surveys at 13 sites (TAMU 2016b). TAMU documented DSL during 16 of 208 surveys in Andrews County, one of 31 surveys in Ward County, and eight of 59 surveys in Winkler County. No DSLs were detected during the 66 surveys in Crane County. All 27 survey locations where DSL were detected were within areas classified as having "very high" or "high" likelihood of occurrence of the DSL in the Hibbitts Likelihood of Occurrence Map. None of the DSL detections occurred in areas with other classifications.

The current range of the DSL in Texas includes Crane County based on historical records of DSL presence and presence of potentially suitable habitat. In 2016, CPA funded a four-year research project with TAMU to determine the feasibility and best methodology for translocating DSLs to reintroduce populations of DSL to Crane County. During 2016 and 2017, TAMU translocated 76 DSL from Winkler and Andrews Counties, where there is believed to be a healthy population (Parker et al. 2018), to a test site in Crane County with historical records of DSL. This site appears to have the necessary habitat but had no recent records of DSL. TAMU has documented gravid females laying eggs that produced hatchlings at this site in 2016 and 2018 (Parker et al. 2018), and results from this project will indicate whether translocation is a viable conservation measure.

There are three maps depicting the locations and extent where DSL are either likely to occur or where potentially suitable habitat may be present in Texas, and one map of potentially suitable habitat for the DSL in New Mexico (Fitzgerald et al. 2011; Hardy et al. 2018; Johnson et al. 2016; TAMU 2016a, 2016b). The first map is the Hibbitts Likelihood of Occurrence Map described above created in 2011. Two additional maps that model the extent and categories of potentially suitable habitat for the DSL in Texas were created by TAMU (TAMU 2016a, 2016b) and Texas State University (Hardy et al. 2018). The map created by Texas State University, which is undergoing further development and refinement, serves as the baseline for the location of potentially suitable DSL Habitat in this 2020 DSL CCAA.

For the DSL populations of New Mexico, there is one model of potentially suitable habitat created by Kristine Johnson and colleagues (2016). This model was developed from data on DSL occurrences, imagery and spatial data on vegetation, landforms and anthropogenic disturbances. Johnson et al. 2016 created a base map then used the literature to determine which vegetation or land cover classes are positively, negatively, or unassociated with DSL occurrence that subsequently guided the suitable habitat classification of their Model. Their base map included 15 land cover map units produced from their land cover classification. Four of the 15 were categorized as suitable habitat (i.e., shin-oak duneland, blowout, small patches of disturbed blowouts when associated with shin-oak duneland, and shin-oak shrubland when surrounded by shin-oak duneland. Johnson et al. (2016) define unsuitable habitat as areas with human disturbance (e.g., well pads, roads, treated areas with vegetation removed) or habitats not defined as suitable (e.g., the remaining 11 map units, such as shin-oak honey mesquite duneland, blowouts densely covered with grasses and mesquite, and open sand dunes). Johnson et al. (2016) eliminated or masked all unsuitable elements from their model to exclude features for which DSL has been negatively correlated with. Johnson and colleagues created additional models of treated/fragmented, potentially restorable, occupied habitat, and connectivity habitats to further classify and categorize the land covers present throughout the range of the DSL and identify areas conservation of the DSL. The models and approach used by Johnson et al. (2016) are consistent with and corroborated by the literature. Their models are mapped at appropriate spatial scales and maintain appropriate resolution relevant to the biology of the DSL.

TAMU (2016a, 2016b) prepared a habitat suitability model for the DSL in May 2016 and subsequently revised it in September 2016. TAMU used data from the surveys of DSL occurrence and habitat conditions, remote sensing, Geographic Information Systems, and image classification methods to develop the model (TAMU 2016a, 2016b). The habitat suitability model predicted the presence and acreages of four categories suitable habitat. This model estimated 459,102 acres of potentially suitable habitat in Texas located in areas similar to what is shown in the Hibbitts Likelihood of Occurrence Map. Subsequent analysis identified several technical issues with the model including: (1) a lack of independence among sites (68 % of sites used in the model were within 1,312 ft (400 meters) of each other; (2) non-detections were assumed to be true absences; and, (3) low sampling effort in low detection probability areas (Hardy 2017). The model of suitable habitat has a lack of coherence between habitat polygons and landscape features and inconsistent classification of suitability for similar features. This resulted in the categorization of land covers that are inconsistent with literature on what qualifies as suitable habitat, and the model was not ground-truthed (Aurora et al. 2018; Hardy 2016; Hardy et al. 2018).

In November 2016, Texas State University, under contract with CPA, began the development of a habitat suitability model and survey protocols for conservation planning of the CPA's

proposed CCAA. Texas State University used data of recent and historical occurrences of the DSL, remote sensing, Geographic Information Systems, image classification methods and ground-truthed data (where access could be obtained) to develop the model. They generated a detailed base map of land covers and classified these covers into eight map units: developed, sand, mesquite, shinnery oak, other vegetation, cultivated, barren/gravel, and water. They then used these maps units to define the boundaries of suitable habitat.

This model estimated 287,327 acres of potentially suitable habitat in Texas located in areas similar to what is shown in the Hibbitts Likelihood of Occurrence Map and TAMU's habitat suitability map. This model also has technical issues in the coherence between habitat polygons and landscape features that result in the categorization of land covers that are inconsistent with literature on what qualifies as suitable habitat. The aggregations of land covers into the eight map units, and then into four categories of suitable habitat creates too coarse of a model relative to the heterogeneity of the landscape. Land covers containing grass dunes, mesquite shrublands, unvegetated dunes, and high densities of oil and gas development are grouped with shinnery oak dunes and categorized as highly suitable / shinnery oak duneland. The scientific literature does not have data to support the designation of all these lands covers as comparable and highly suitable for the DSL. Open unvegetated sand dunes are not comparable to shinnery oak dunes in geomorphology, floristic composition, or biotic communities (Johnson et al. 2016; Muhs and Holliday 2001; Peterson and Boyd 1998; Sena 1985).

Thus, while this model establishes some parameters for determining what constitutes potential DSL Habitat, it requires significant additional survey work and data collection to refine the model and distinguish the presence of potentially suitable habitat from other land covers and altered landscapes (i.e., roads and well pads) not preferentially used by the DSL according to the scientific literature. Consequently, the results of model should be cautiously used to approximate the location, acreages and loss of suitable habitat for the DSL. This model is used to provide the potential geographic range of what constitutes potential DSL Habitat for purposes of this 2020 DSL CCAA (Hardy *et al.*, 2018), recognizing that continued refinement and the development of additional scientific information is needed. This preliminary habitat model will continue to be refined and developed, and as discussed above will be reviewed through the Adaptive Management processes of the 2020 DSL CCAA and the TCP.

5.0. COVERED AREA

Non-Federal properties within the Covered Area are eligible for enrollment in this 2020 DSL CCAA. For purposes of this 2020 DSL CCAA, this Covered Area is defined as Andrews, Gaines, Winkler, Ward, Ector, and Crane counties in Texas. DSL Habitat in the Covered Areas has been defined through the application of a geospatial model developed by Texas State

University (Hardy 2018) and derived from the available literature, New Mexico DSL collection data, New Mexico DSL Habitat model, DSL collections in Texas, Hibbitts Likelihood of Occurrence Map in Texas, and the Texas A&M suitability model (2016). As discussed, this model is undergoing further development and refinement.

The geospatial model developed by Texas State University (Hardy 2018) and used to define the Covered Area also attempts to map DSL Habitat (e.g., shinnery oak dune structures and shinnery oak flats) and broadly classifies the potential range of the DSL into High, Intermediate I and II (collectively Intermediate), or Low Suitability categories. The results of the model should be cautiously used to approximate the location, acreages and loss of suitable habitat for the DSL given the technical issues in modeling potentially suitable habitat for the DSL described above (see Section 4.0 Covered Species). Because the model coarsely approximates potentially suitable habitat, Participants seeking more precise and refined information on presence and location of potentially suitable habitat may use site-specific surveys to verify or reclassify the habitat classification of specific sites for purposes of enrollment and surface disturbances. Protocols for the site-specific surveys are provided below in Appendix A to assist in the development of additional scientific and site-specific information to be used to implement the 2020 CCAA and Adaptive Management. Moreover, additional survey work and refinements will be performed through the Adaptive Management process and in collaboration with the TCP permit holder and TCP participants to contribute to refinement of the mapping effort.

The Texas State Map defined by Hardy and colleagues (2018) and protocols defining survey requirements (Protocols) are set out in Appendix A.

6.0. COVERED ACTIVITIES

This 2020 DSL CCAA and the associated Enhancement of Survival Permit will enroll Participants in the following industry or enrollment sectors: oil and gas development; sand mining; renewable energy; pipeline construction; and agriculture and ranching. Activities under general construction (section 6.6) would be covered under any of the industry or enrollment sectors listed above. In addition, any of the activities involved in the 2020 DSL CCAA's Conservation Strategy, including Conservation Measures and Actions, monitoring, and research are included as Covered Activities (Section 6.7)

The following Covered Activities are organized by enrollment or industry sector, but may be conducted by any Participant.

6.1 Oil and Gas Activities

Covered Activities for oil and gas operations include the following:

- Seismic and Land Surveying: Seismic activities are generally performed in the exploration phase of oil and gas development or in areas of existing development for refining knowledge of the geology and improving well siting. Seismic activities are conducted for periods of short duration (i.e., typically less than 30 days) in any given area. Activities may utilize large equipment to induce seismic pulses. Additionally, activities may include limited clearing of vegetation to allow equipment access for seismic work and consist of a small crew laying/stringing cables on foot or possibly using off-highway vehicles (OHVs). A crew removes cables when the project is complete. Land surveying is a low-impact, temporary activity and may require some truck and/or foot traffic.
- Construction: Construction includes, but is not limited to, construction of facility sites and associated infrastructure and access roads, which involves the use of heavy equipment and trucking activities in clearing vegetation, contouring, compacting, stabilizing soils and installing erosion control (including silt fencing, earthen berms, etc. per Clean Water Act permitting requirements). Well site construction may include pit construction and closure, as well as temporary fencing and/or netting around pits, locations, or portions thereof, for livestock and wildlife protection. A water well, disposal well and/or injection well may be drilled near the location and possible boring and trenching related activities associated with installation of flowlines, pipelines, and utilities may occur. Associated infrastructure for compressor facilities and gathering/processing facilities may also be constructed on site or at adjacent sites. Where practical, equipment may be electrified (which greatly reduces noise and emissions from gas/diesel-driven equipment), which involves the installation of in-field electrical distribution systems (poles, transformers and overhead wires). Activities may be conducted to plug and abandon a well, which may involve workover rig mobilization, removal of facility equipment and associated infrastructure, access roads, abandonment in place of subsurface lines, and reclamation pursuant to lease and regulatory requirements. Construction may also include activities associated with Emergency Operations such as mobilization of heavy equipment, building structures, and any associated reclamation activities.
- Drilling, Completion, and Workovers (Recompletion): Drilling, completion, recompletion, and workover activities may include rig mobilization, which involves the use of heavy equipment and frequent traffic. These activities are not expected to directly impact dune complexes because the activities are confined to locations with existing surface disturbances (e.g., existing well pads and access roads). Recompletions and workovers typically do not increase existing well pad size and typically utilize smaller rigs and equipment,

require less time for onsite activities, and involve less vehicular traffic. Well site fencing may be utilized after completion of operations for security and to limit access.

- Routine Production Operation and Maintenance: Routine production operation and maintenance may include, but is not limited to, stimulations; wellbore repair; daily site inspections and maintenance; testing; pipeline, gathering line and flow line repairs; right-of-way and road maintenance; unloading of storage tanks; truck traffic for removal of product or waste; emergency activities; workovers; recompletions; flaring; weed control; pipeline pigging activities; and regulatory inspections.
- Remediation and Reclamation Activities: Remediation activities and Reclamation Activities include, but are not limited to, assessment, removal and reclamation of access roads, fences, well pads, reserve pits and other facilities for the disposal of waste; tanks and storage facilities; treaters, separators, dehydrators, electric and other utility lines and pipelines (e.g., gathering lines, flow lines, distribution lines, and waterlines); and associated infrastructure for compressor facilities and gathering/processing facilities. Reclamation Activities, which may be subject to requirements in surface use agreements, also may include the implementation of Conservation Measures and Actions that benefit the DSL and its habitat.

6.2 Sand Mining

Excavation and processing of sand, the development of roads, processing plants and other infrastructure, drilling of water wells, and the use of roads for truck and other traffic in areas of DSL Habitat are Covered Activities for sand mining companies as long as they comply with the Conservation Measures described in this Agreement.

6.3 Renewable Energy Operations

Covered Activities for solar and wind energy companies include the construction and maintenance of power lines and appurtenant structures in Low Suitability areas of DSL Habitat as long as they comply with the Conservation Measures described in this agreement. The construction, maintenance, or operation of solar or wind energy facilities including power lines and appurtenant structures in High and Intermediate areas of DSL Habitat are not Covered Activities.

6.4 Pipeline Construction and Operation

Pipeline construction and operation for industrial purposes will be a Covered Activity if done in accordance with applicable statutory and regulatory standards and the Conservation Measures described in this agreement. This activity includes pipeline and appurtenant structures (e.g., pipe yards, interconnects, compressor stations) construction, operation, repairs, and maintenance.

6.5 Agricultural Activities

Covered Activities for the agriculture and ranching sector include:

- Brush management: Brush management may consist of using approved herbicide, mechanical, and prescribed burning practices to control or suppress shinnery oak in accordance with this CCAA, and mesquite and other brush in DSL Habitat if done in accordance with Conservation Measures described in the CCAA.
- Grazing: Livestock grazing methods, which include approved Natural Resources Conservation Service (NRCS) prescribed grazing practices, may occur in DSL Habitat.
- Building and maintaining fences and livestock structures: Construction and maintenance of new and existing fences and/or livestock structures may occur in DSL Habitat if done in accordance with Conservation Measures described in the CCAA.
- Water/windmill: Water storage facilities, agricultural water pipelines, windmills and water trough construction, maintenance and placement may occur in DSL Habitat.
- Farming and Irrigation: Farming and irrigation for agricultural purposes will be a Covered Activity if done in accordance with NRCS standards and the Conservation Measures described in this agreement.

6.6 General Construction Activities

For the enrollment sectors identified in 6.1 to 6.5 above, there are general construction activities that are included, but not limited to construction of facility sites, associated infrastructure, access roads, and implementation of best management practices, which involves the use of heavy equipment and trucking activities in clearing vegetation, contouring, compacting, stabilizing soils, constructing and maintaining roads and electrical transmission facilities, and installing erosion control (including silt fencing, earthen berms,

etc.). Construction activities typically engaged in by each listed industry sector are described above, but are not intended to be exhaustive.

6.7 Conservation, Research, and Monitoring

Conservation, research, and monitoring projects performed or approved under the 2020 DSL CCAA include, but are not limited to, surveys for DSL, refinement of models of potential habitat, captive breeding and reintroduction, temporal, spatial, and geomorphological dynamics of dune systems and stability, relationships between water use, hydrogeology and dune systems, and other similar activities to study, monitor, and assess the species, and the efficacy of and compliance with the 2020 DSL CCAA. Additionally, research projects should review the Hibbitts and Texas State University habitat models to contribute to the further development and refinement of DSL Habitat modeling.

7.0 THREATS

There are multiple activities in the Covered Area that, if not avoided, minimized or mitigated, may threaten the DSL and its habitat. Threats to the species include habitat loss, modification, fragmentation, and loss of habitat connectivity; increased predation; inadequacy of existing regulatory mechanisms; and other natural and manmade factors.

7.1 Impacts of Habitat Loss, Modification, and Fragmentation

Impacts related to the Covered Activities may include loss, modification, or fragmentation of DSL Habitat. As described above DSL presence is correlated to sand dunes with blowouts, and when present, shinnery oak (Fitzgerald *et al.* 2011; Hibbitts *et al.* 2013). Removal of shinnery oak vegetation has been correlated with reductions in DSL abundance, though DSL have been documented in areas subsequent to removal of shinnery oak (Snell *et al*., 1997). Because vegetation including shinnery oak affect dune geomorphology, the removal of shinnery oak "fails to meet the basic needs of the [DSL]" according to FWS (See 77 Fed. Reg. at 36,892).

Disturbance of DSL Habitat and development of infrastructure on the landscape may fragment DSL Habitat into smaller patches. In disturbed landscapes with shinnery oak dunes the DSL may occur in relatively lower abundances centered in areas of remaining shinnery oak dunes with relatively large blowouts (Sias and Snell 198; Smolensky and Fitzgerald 2011; Walkup *et al.* 2017; Walkup *et al.* 2019). The lowered relative abundance and general avoidance of modified landscapes (e.g., roads) may affect or disrupt the dynamic of populations but predicting extirpation is impossible at this time as DSL have been detected in oil fields that are 40 years old (Sias and Snell 1998; Walkup *et al.* 2017; Walkup *et al.* 2019). DSL are not known to disperse across large expanses of unsuitable habitat, thus

fragmentation of DSL Habitat that results in isolation of DSL population may threaten its genetic diversity as gene flow may be maintained by cumulative short distance movements of individuals among populations (Chan *et al*., 2009). Because the Mescalero-Monahans Shinnery Dune System is spatially and temporally dynamic with complex interactions between wind, water, sand, and vegetation it is difficult to predict how disturbance and development will disrupt the dynamics of the dune-blowout ecosystem. Areas with active dunes devoid of vegetation will have different responses to disturbance compared to areas with semi-stabilized dunes anchored by stabilizing vegetation such as shinnery oak due to differences in local sand supply, wind erosion, water availability and vegetation (Muhs and Holliday 1995, 2001). Though effects of disturbance on open sand dunes in inland systems is largely unknown, inferences may be drawn for vegetated dunes from previous studies and anecdotal observations of shinnery oak removal and effects to DSL populations. Chemical removal of shinnery oak results in a floral community shift toward grass species, a decrease in openness of blowouts and decreased rugosity across the landscape (Davis 2013; Peterson and Boyd 1998; Ryberg *et al.* 2015; Snell *et al.* 1997). Recovery rates of shinnery oak and by extension, the dynamics of the surrounding dune system are influenced by the mechanisms of shinnery oak removal (e.g., mechanical, chemical, fire) (Davis 2013; Peterson and Boyd 1998). If the below ground roots system is left in-tact, shinnery oak may re-sprout within a few months and corresponding wind erosion of the area may be limited (Peterson and Boyd 1998). Conversely, several years may pass before shinnery oak can recolonize an area after removal of the below ground root system allowing for shifts in floral community composition and landform.

7.1.1 Oil and Gas Activities

Fragmentation, and the subsequent subdivision of populations into smaller, more vulnerable groups, is often attributed to high densities of caliche well pads and the extensive network of roads associated with oil and gas activity. New technologies, including directional drilling has allowed the oil and gas industry to reduce the overall footprint and habitat fragmentation associated with exploration and development, by drilling numerous wells from a single pad.

7.1.1.1 Well Density

In 2016, Johnson *et al*. (2016) found a marked decline in DSL occurrence at well densities of eight well pads/mi^2; nonetheless, they suggested that 13 well pads/mi^2 should be considered to be "degraded" habitat because it was generally accepted as a standard in the scientific literature.

Leavitt and Fitzgerald (2013) found that fragmented areas (i.e., areas with 13 well pads/mi^2 or greater) had considerably lower abundance of DSL than non-fragmented sites. Further, they found that high well and road density at the landscape scale resulted in smaller, fewer, and more dispersed sand dune blowouts that are less suited to DSL persistence (Leavitt and Fitzgerald, 2013; Walkup *et al.*, 2017).

Walkup *et al*., (2017) found that DSL had a relatively high susceptibility to local extinction in landscapes with 13 or more well pads/mi^2 — there were too few DSL to "maintain the demographic structure of a self-sustaining population." *Id.* at 10. They concluded that the network-like development of well pads and their connecting roads both isolates populations and disrupts the underlying geomorphologic processes that maintain the shinnery oak dune blowout formations. *Id.*

The 2020 DSL CCAA addresses the potential impacts of well pad development by limiting new oil and gas development in areas of High and Intermediate Suitability habitat and concentrating development in Low Suitability habitat areas, where legally, technically, and economically feasible, and where additional well pad development is not expected to have a significant impact on the DSL or its habitat.

To determine habitat areas where development may continue, the CPA analyzed oil and gas well development in the defined habitat. The CPA reports that there are 2,849 oil and gas wells in DSL Habitat as defined by the Texas State Map (*See* Appendices E and G.). Wells and wells densities are not distributed uniformly through DSL Habitat (*See* Appendix E.). Many of the wells are in Low Suitability Habitat in Crane County and the western part of Winkler County. Wells are also aggregated in part of the High Suitability habitat in Andrews, Winkler and Ward counties (See Appendices E and G).

7.1.1.2 Seismic Activity

Seismic exploration is conducted prior to the development of oil and gas fields to determine the below surface availability of oil or gas and refine the placement of wells. It uses the different reflection properties of soundwaves to identify rock strata. The reflected waves are picked up by lines of geophones (sensors) on the surface and transmitted back to a mobile unit for analysis. The primary threats are vehicular traffic, the noise and vibration from the creation of the sound waves ("thumpers") or the less favored use of explosives and the laying of geophone lines. It is considered to be a "periodic, localized activity" (*See* 77 Fed. Reg. at 36,890).

In the 2020 DSL CCAA, seismic activities will be limited to areas outside of High and Intermediate Suitability DSL Habitat unless walk-in geophonic or other smaller seismic survey equipment is utilized or activities are limited to periods of DSL inactivity. Existing roads, pads, or utility easements in High or Intermediate Suitability DSL Habitat will be identified that would permit OHV and/or equipment to induce seismic pulses to be used without corresponding impacts to the DSL. Where avoidance is not feasible, these limitations will minimize the impacts of vehicular traffic and surface disturbance. Seismic activities in Low Suitability DSL Habitat are allowed, but existing roads, pads or easements will be utilized to minimize potential impact to the habitat. Because seismic activities are temporal in nature, unless there are documented permanent impacts, seismic activities will not

require mitigation and associated Habitat Conservation Fees. Where the Administrator identifies permanent impacts from a Participant's seismic activities, the Participant will work with the Administrator to identify and provide mitigation equal to the permanent impacts.

7.1.1.3 Oil and Gas Enrollment and Stratification

The percentage of DSL Habitat enrolled is one indices of the protection afforded the species. A second, and perhaps more meaningful measure, is the amount of high priority habitat (i.e., areas likely to be most beneficial to the conservation of the species) potentially protected.

The calculation of the percentage of habitat enrollment under the TCP did not take into account that some mineral leases in the Permian Basin are severed from the surface estate where DSL Habitat is located. A "split estate" is when ownership of the surface estate and mineral estate are severed, *i.e.,* the surface owner does not own any rights to the underlying mineral estate, which is owned by another individual(s). Under long-established Texas legal precedent, for split estates, the mineral estate is dominant, where the mineral owner (or lessee of the mineral owner) has a right to enter and use as much of the surface as is reasonably necessary to produce and remove the minerals. *See, e.g., Getty Oil Co. v. Jones,* 470 S.W.2d 618, 621 (Tex. 1971). Multiple distinguishable geologic strata containing oil and gas reservoirs or "plays" often have independent surface access rights via the same surface acreage. Thus, the enrollment of a property by a participant does not necessarily preclude development or surface disturbances by a non-participant who is not bound by the conservation measures. When non-participants share access to the same surface as an enrolled Participant, the situation is referred to as stratification.

An analysis of the magnitude of stratification in DSL Habitat using records of well development from the Texas Railroad Commission from 2012 through 2017 is summarized in Table 1, below.

Table 1. Summary of Stratification Observed During the TCP Implementation by Year.

Amount of Stratification in DSL Habitat (Hibbitts Map) 2012-2017[1]			
	TCP Participant Wells on TCP Enrolled Property	Stratified Non-Participant Wells on TCP Enrolled Property	Total Wells Developed on Enrolled Property
2012	40	20	60
2013	47	11	58
2014	26	9	35
2015	56	11	67
2016	52	3	55
2017	15	1	16
TOTAL	236	55	291

Fifty-five non-participant wells were developed on enrolled properties (i.e., were stratified). The table above shows approximately 19 percent of TCP-enrolled properties were stratified from 2012 through 2017. While non-participant development may diminish the benefit of Conservation Measures enacted on stratified property, non-participant wells never exceeded 50 percent of annual development during the study period.

Under the 2020 DSL CCAA, oil and gas participants that have mineral rights on stratified properties must comply with their Conservation Measures to contribute to the protection of the DSL and its habitat. Where several strata are leased to non-participants, the relative conservation value of the oil and gas participant's Conservation Measures on the surface

[1] A consultant performed a preliminary analysis of stratification in DSL Habitat. Based on information available at that time, the consultant assumed that an oil and gas participant had not enrolled the property on which wells were developed (new drills, recompletions, and workovers) by one of the participant's subsidiary. The assumption was not correct. As a result, the preliminary report overstated the number of participant wells and understated the number of participant wells on enrolled property by 164 wells. This table corrects that error.

estate may be diminished. For this reason, the 2020 DSL CCAA has an objective to incentivize the enrollment of stratified mineral interests (see Section 8.1). Furthermore, and unique from the TCP, the 2020 DSL CCAA requires landowner participants to work with the Administrator and lease-holders to develop a surface use or mineral management plan to reduce the occurrence and intensity of stratification (see Section 8.3.1). The Administrator will continue to monitor stratification and address impacts through the Changed Circumstances process (see Section 16.1.1).

7.1.2 Roads

Roads are likely to vary in their effects on DSL according to surface type, density and width. Paved surface roads including asphalt, blacktop, or concrete may be avoided or rarely used by DSL and there is only one documented observation of DSL basking on the edge of a parking lot adjacent to shinnery oak in the Monahans Sandhills State Park (https://www.inaturalist.org/observations/1644726). Conversely there have been multiple documentations and anecdotal accounts of DSL crossing caliche roads (Hibbitts *et al.* 2017; Johnson *et al.* 2016; Leavitt *et al*. 2011; Young *et al.* 2018). Behavioral studies and radio-telemetry studies indicate that DSL do not readily use caliche roads in their daily activities (Hibbitts *et al.* 2017; Young *et al.* 2018). Young et al. (2018) observed significantly fewer DSL movements across a caliche road relative to movements in adjacent shinnery oak dunes, concluding DSL have a behavioral avoidance of roads. Hibbitts *et al*. (2017) argued that DSL avoid roads based on findings that approximately 20 percent (three of 22) of DSLs crossed the caliche road included within their road crossing experiments. Modified landscapes that contain high densities of roads have harbored DSL populations of DSL for decades but at lower relative abundances compared to unaltered landscapes (Sias and Snell 1998; Walkup *et al.* 2017; Walkup *et al.* 2019). According to Hibbitts et al. (2017:2), "Direct mortality from vehicular traffic has been documented only once for the dunes sagebrush lizard (A. L. Fitzgerald, pers. comm.)." Taken together, roads are not absolute barriers to dispersal of DSL but may reduce some movement of individuals between populations when compared to unaltered landscapes.

Given the variation in road types and densities and DSL responses, there is uncertainty in the extent of fragmentation caused by roads. The Adaptive Management Program will include an evaluation of the threats of roads on the DSL and its habitat.

Road networks are not uniformly dispersed across DSL Habitat (*See* Appendix F). The concentration of roads is very similar to that of wells (*See* Appendix G). The Adaptive Management program will evaluate the impact of roads associated with oil and gas activities and the effectiveness of removing these roads.

7.1.3 Pipelines

Pipelines constructed throughout DSL Habitat may also adversely affect DSL Habitat. Pipelines are required to avoid areas of High and Intermediate Suitability DSL Habitat subject to limited exceptions. The most significant threat to the DSL is the construction process. Pipeline rights-of-way are typically 50 feet wide. Construction of pipelines necessitates: (1) the staging and storage of equipment, materials, and vehicles; (2) clearing of rights-of-way; (3) trenching for the pipeline; and (4) constructing appurtenant facilities such as "pigging" stations, and compression and pumping stations. Such construction also requires access roads, parking lots, and fencing. Such activities will remove vegetation and may destabilize the overall dunes structure (Van Pelt *et al.*, 2013). Heavy equipment used to remove shinnery oak and bury the lines in the sand may cause direct mortality. The large open trenches can form linear pitfall traps from which the DSL is unable to escape (Romano *et al.*, 2015).

The threats posed by pipelines are reduced by Conservation Measures for pipeline activities that include requirements for: (1) restoration of rights-of-way; (2) minimizing the footprint for development; (3) maximizing use of developed areas and rights-of-way; (4) minimizing road traffic; (5) use of SCADA (Supervisory Control and Data Acquisition System); and (6) open trench monitoring.

Once pipelines are constructed and properly functioning, they are less of a threat to the DSL. Ongoing pipeline maintenance crews may travel by OHV, which may directly and indirectly cause intermittent disturbance to DSL Habitat. DSL mortality may occur due to vehicular strikes. Extensive OHV use may result in soil compaction, reduced plant cover, and tire ruts that exacerbate erosional processes in the dune complexes (Van Pelt *et al.*, 2013).

7.1.4 Sand Mining

Recent years have seen the introduction of sand mining operations in and near DSL Habitat in Texas. Sand mining operations have the potential to alter DSL habitat and cause fragmentation. As a relatively new activity in the region, the potential consequences of sand mining activity to habitat, DSL dispersal, and the structure and stability of dune systems are not yet fully understood. One of the purposes of the 2020 DSL CCAA is to develop information about these potential consequences, which can be used to inform Adaptive Management.

Land Surface Impacts

In general, sand mining consists of the following major components: plant infrastructure, supporting infrastructure (roads, water and power pipelines, well fields), excavation, processing/operations, transportation, and regrading. If the operation of a sand-mining facility is in DSL Habitat, it may result in significant habitat alteration by removing

vegetation, altering topography, displacing wildlife during the life of the operation, and introducing noise, light, and vehicular traffic.

Mining operations can remove sand to a depth of 80 feet or more depending on the depth of the deposit, which can serve to minimize impacts across the surface. Non-commercial grade sediments (e.g., gravels, fines, large organic material) removed during excavation are returned to the mined area up to two years after the excavation in that area has been completed. The long-term impacts of sand removal on geomorphic dynamics of shin-oak dune blowout features are unclear.

Vehicular traffic to and from sand mines may have effects on lizard populations, although it is unclear the extent to which any increased truck activity is related to sand mining operations in the area, given that sand would need to be trucked in for certain oil and gas operations regardless where mined. Increased truck activity also may contribute to behavioral modifications of DSL and further exacerbate the effects of fragmentation, if the activity is within DSL Habitat.

Each of these components may have direct and indirect consequences on DSL and DSL habitat. The permanency and extent of habitat loss, habitat fragmentation, and mortality or altered behaviors and dispersal of DSL will depend on the component.

Groundwater Impacts

The rapid development of sand mining operations has led to questions about potential influence on groundwater. Among these questions are potential local and regional effects to groundwater accessibility for human use, surface disturbances due to well drilling, and hydraulic connectivity between shinnery oak habitat and groundwater.

Water use to wash or process sand varies by sand mining operations. Groundwater may be drawn by well from the same or different aquifers and used in ponds or tanks to wash and process the sand. Water is recycled or otherwise re-used by a number of sand mine operators. Operations encountering water during mining typically remove water from the area, and then hold that water in ponds or tanks for re-use. Sand may be dried either naturally or mechanically. Sand mine operators also utilize air drying systems as part of the sand drying process.

One aquifer classified by the Texas Water Development Board (TWDB) as a major aquifer, the Pecos Valley Aquifer, and one aquifer classified by the TWDB as a minor aquifer, the Dockum Aquifer, underlie the majority of DSL Habitat and provide the water resources required by sand mining operations.

The Pecos Valley Aquifer is an unconfined aquifer (TWDB, 2016), which means the water level in the aquifer can move up and down and is not confined by an overlying impermeable

stratum. No impermeable strata exist between the land surface and the water table. Though few well records are available to estimate hydrologic attributes of this aquifer, the TWDB provides estimates of static water levels and saturated thickness. The static water level surface (e.g., the feet below ground level (b.g.l)) in the Covered Area ranges from approximately 0 feet b.g.l. to approximately 260 feet b.g.l.. (Meyer, et al., 2012). The aquifer consists of alluvial (river), lacustrine (lake), and eolian (windblown) sediments that lie within the Pecos River Valley. The sediments fill several structural basins and therefore, the thicknesses of the sediments vary significantly from 0 to 1,745 feet in thickness where the basins were deepest (Meyer et al. 2012). The freshwater saturated thickness averages about 250 feet (TWDB 2020). Total storage in the Pecos Valley Aquifer may exceed 323 million acre-feet (TWDB 2016). Recharge is approximately 89,800 acre-feet per year, much of which occurs as irrigation return flow (Anaya and Jones 2009).

The Dockum Aquifer, within the Covered Area, is a confined aquifer that underlies the Pecos Valley Aquifer. Annual recharge is approximately 31,000 acre-feet (Bradley and Kalaswad, 2003). Estimated recoverable storage within the Dockum Aquifer across the six-county Covered Area is 82 million acre-feet (TWDB 2016). Groundwater is most available for withdrawal from the coarsest grained deposits located at the base of the Dockum Group. The outcrop area of the aquifer is located down gradient from the confined portion of the aquifer. Therefore, recharge that occurs in the outcrop areas does not flow into the confined portions of the aquifer, but rather flows toward the Canadian and Colorado Rivers and their tributaries. Recharge areas of the Dockum Aquifer that previously existed at higher elevations in New Mexico during the Pleistocene have been eroded, cutting off recharge from those higher areas (Ewing and others, 2008). Springs occur in areas where Dockum Aquifer sediments intersect the water table. Springs were noted along the Pecos River Valley issuing from the Dockum Aquifer by Brune (1981). Groundwater in the Dockum aquifer is generally of poor quality. Water quality ranges from fresh in the outcrop areas to brine in the confined parts of the aquifer. It also tends to deteriorate with depth, and total dissolved solids (TDS) concentrations can exceed 60,000 mg/l in the deepest parts of the aquifer. (Bradley and Kalaswad 2003).

A very small portion of DSL habitat is in the Capitan Reef Complex Aquifer north and south of Kermit, TX.

Perched aquifers are also distributed throughout the Covered Area between the land surface and the water table of the Pecos Valley Aquifer. These perched groundwater sources occur where precipitation infiltrates through sand and collects above less permeable soil layers such as caliche and clay (Machenberg 1984).

Historically, near-surface groundwater discharge, characterized the Monahans dune system as “wet eolian,” where near-surface groundwater stabilized sand beneath the dune deposits

(Garza and Wesselman, 1959). Near-surface groundwater provides cohesiveness between sand grains and the moisture required by native vegetation, such as shinnery oak, that serves as an important stabilizing agent for maintaining dune structures (Machenberg, 1984).

Limited information suggests the occurrence of perched aquifers in the dune areas where near-surface groundwater intersects the land surface between the dunes. Because an impermeable layer separates a perched aquifer from the underlying aquifers, pumping from the perched aquifer or pumping beneath the perched aquifer from the underlying Pecos Valley and Dockum aquifers would have limited effects on one another. Suspected perched aquifers and associated interdunal ponds have been observed within the Covered Area.

7.1.5 Renewable Energy

Wind and solar development is occurring in the Permian Basin, including in or near DSL Habitat. West Texas development coincides with statewide trends. Texas is leading the nation (and ranked sixth in the world) in wind energy development (Brody, 2018). The Electric Reliability Council of Texas (ERCOT) projects that solar capacity will triple to 3,000 megawatts by 2020 (Osborne and Handy, 2018).

Wind farm construction includes clearing vegetation, contouring, compacting, and stabilizing soils. Erosion control measures may become barriers to DSL movement. On the other hand, silt fences can keep DSLs out of a construction area, thus minimizing mortality. Vehicular traffic would occur during construction and continue throughout the life span of the project – typically twenty-to-thirty years for wind farms (Van Pelt *et al*., 2013). Changes to the environment caused by construction of a wind energy facility include: "1) habitat fragmentation and reduction in habitat patch sizes; 2) creation of habitat edges; 3) introduction of noise and human activity; and 4) introduction of shadow flicker" (SWCA, 2017). At this time, wind development near DSL Habitat is substantially confined to the topographic ridge to the east of DSL Habitat and is sufficiently removed that it should not affect DSL Habitat. The relatively low altitude of DSL Habitat will likely discourage wind power development in Habitat.

The construction and operation of a solar power facility in DSL Habitat may result in significant habitat loss. Commercial solar energy facilities require a large amount of land, typically 10 acres per 1 megawatt (100-200 MW solar plants are typical in Texas) of power generation. Depending on the complexities of a project, development timelines typically range between 24-60 months, beginning with site control. The average Texas solar plant, 100-200 MW capacity, can be built in less than a year.

Development of solar operations includes installation of solar panels typically on single-axis tracks which are mounted on piles driven into the ground at various depths depending on soil type. Panel height above ground may vary from two to eight feet depending on the type of technology used (Texas Star Alliance, pers. comm.). Project siting is primarily driven by

access to transmission lines within each region, as available solar resources do not vary significantly within a given region.

For solar and wind energy projects, site development disturbs soil, removes vegetation, grades the land surface, displaces wildlife, and introduces noise, light, and human disturbance within DSL Habitat. Construction activities such as the movement of vehicles or heavy equipment and the installation of transmission towers or solar energy facility components may result in the direct mortality, injury, or harassment of DSLs.

Solar energy facilities disrupt the physical and biological properties of DSL Habitat. Photovoltaic power plant installations significantly alter the energy dynamics of the area by trapping latent heat underneath solar panels. The trapped heat may cause evening temperatures within the field to be as much as 7°F higher than the surrounding environment (Barron-Gafford *et al*., 2016). Additionally, avian predators such as loggerhead shrikes and American kestrels may be drawn to solar energy facilities due to the increase in nesting/perching areas. Solar infrastructure provides perches that predators may use to access and forage within the surrounding DSL Habitat.

Ongoing solar operation requires access to local water resources. Water is required for domestic use, equipment cooling, dust suppression, and panel washing. Water consumption varies with the technology utilized and the scale of the operation.

7.1.6 Agriculture and Ranching

Agriculture and ranching activities can result in habitat loss and fragmentation, depending on range management practices, stocking densities, and infrastructure.

Shinnery oak, an essential element of DSL Habitat, was historically cleared for agriculture and to increase forage for grazing. In 1974, the herbicide tebuthiuron was introduced to control shinnery oak. Historically, shinnery oak is estimated to have covered 405,000 ha in Oklahoma, 607,000 ha in New Mexico, and 1.4 million ha in Texas (Peterson and Boyd, 1998). By 1994, an estimated 130,000 and 40,000 ha of shinnery oak in Texas and New Mexico, respectively, had been treated with the herbicide (Johnson and Ethridge, 1996). The effectiveness of tebuthiuron applications varies, but a 95 percent reduction in oak cover has been documented with as low as a 0.4kg/ha application rate (Jones and Pettit 1984). The reduction in shinnery oak cover is reflected in DSL populations – areas experience drastic reductions and extirpations following herbicide treatment (Snell *et al*., 1997)

Herbicide application by agricultural and ranching interests, particularly tebuthiuron, can kill shinnery oak. The loss of shinnery oak has been correlated with reductions in DSL abundance (Snell *et al*., 1997). Top-kill of shinnery oak due to mechanical removal or fire often triggers rigorous resprouting within a year of disturbance, pending favorable conditions. Persistent drought may delay regrowth, leaving the surface habitat exposed to

significant wind erosion before conditions enable resprouting to occur (Zobeck *et al*., 1989; but see Gucker 2006 and Cox *et al*. 2012).

While tebuthiuron demonstrates low toxicity to fish and wildlife, it persists in the environment in soils and vegetation. Chemical decomposition varies with climate and soil conditions. Half-life ranges between 11 and 61 months (Emmerich 1985). In the arid southwestern United States, decomposition in the natural environment was estimated to occur between three and seven years. In Texas, tebuthiuron persisted in the Claypan Resource Area for more than two years (Bovey *et al.*, 1982). Furthermore, chemical recycling via absorbing and decaying vegetation may prolong the presence of tebuthiuron in the environment. One study detected the herbicide in the environment via contaminated plant tissues over 11 years after initial application (Johnsen and Morton, 1991). The herbicide is most commonly applied in pellet form by air. The 2020 DSL CCAA prohibits herbicide application by agriculture and ranching Participants for control of shinnery oak in dune complexes and dispersal corridors between dune complexes.

While no systematic studies have been performed, grazing has demonstrated some effect on DSL and its habitat. Heavy grazing, in combination with tebuthiuron application, has been associated with lower DSL abundance (Snell *et al.* 1994; Snell *et al.*, 1997). However, DSL have been found in areas that are moderately grazed (Painter *et al*., 1999). Grazing may indirectly influence DSL abundance by changing the composition of the plant community, increasing bare ground, and exposing habitat to wind erosion (Peterson and Boyd, 1998). Grazing on shinnery oak may lower shrub height, but stand density may not be affected (Peterson and Boyd, 1998). To meet management objectives, the 2020 DSL CCAA adopts NRCS Conservation Practice General Specifications Prescribing Grazing Code 528 (September 2015 Texas) (hereinafter NRCS Code 528) that establishes guidelines to maintain adequate vegetative cover within sensitive areas. Recommended practices include moderating the intensity, frequency, timing, and duration of grazing, even implementing periodic deferment (i.e., rotational grazing). Prescribed grazing plans must include maintenance of the plant structure, density, and diversity needed for the wildlife target species (NRCS Code 528).

Agriculture and ranching introduce infrastructure, including roads, windmills, water pipelines, and fences, into DSL Habitat. NRCS Code 528 includes considerations to protect soil, water, air, plant, and animal resources when locating livestock feeding, fencing, handling, and watering facilities. Prescribed grazing plans must include the location and condition of structural improvements and seek measures to avoid adverse effects to endangered, threatened, and candidate species, including species of concern, and their habitats.

7.2 Impacts from Predation

DSL Predators include snakes, such as coachwhips (*Masticophis flagellum*; Hill and Fitzgerald 2007), birds, including loggerhead shrikes (*Lanius ludovicianus*), American kestrels (*Falco sparverius*), and greater roadrunners (*Geococcyx californianus*; Hughes, 1996; Yosef, 1996; Smallwood and Bird 2002).

During radio telemetry experiments, pit fall studies, and surveys, a number of predators were observed eating DSLs (*See* 77 Fed. Reg. at 36,895). A coachwhip snake was observed leaving a pit fall with a DSL in its mouth. A radio-tracking survey noted that snakes preyed upon five out of 20 DSLs (25 percent) (Hill and Fitzgerald, 2007). DSLs have been found impaled on barbed-wire fences within shinnery oak dunes, a clear indication of loggerhead shrike predation (Alderfer, 2006).

Infrastructure development, such as power lines and fences that may provide perch landings for predatory birds, may indirectly increase predators of the DSL. Power lines and appurtenant structures for Renewable Energy projects provide perches that predators may use to access and forage within the surrounding areas of Low Suitability DSL Habitat.

Indirect threats from infrastructure development throughout DSL Habitat may include the creation of avian predator perches. These perches can provide observation points, and sharp points in the case of loggerhead shrikes, for predator avian species to hunt DSL. Increases in the number of available perches may increase presence of avian predators within core DSL Habitat, which could result in higher mortality within local DSL populations.

7.3 Existing Regulatory Mechanisms

The TPWD includes the DSL among the Species of Greatest Conservation Need (SGCN). The DSL is not identified as threatened or endangered under Texas law. Although the DSL is not a listed species under the Endangered Species Act, existing Candidate Conservation Plans in Texas (the TCP) and New Mexico conserve the DSL and its habitat.

7.3.1 Oil and Gas

The Texas Railroad Commission (TRRC) has jurisdiction over oil and gas activities. That jurisdiction does not specifically relate to candidate species. The TRRC regulations establish a statewide standard designed to establish development on a pattern of one well to each 40 acres where proration units have not been established (16 wells/mi^2) (16 Texas Administrative Code, Part 1 § 3.37). Exceptions allow closer spacing. TRRC has regulations establishing standards for the cleanup of oil spills that are designed to protect human health. TRRC also has authority over intrastate pipelines. No prior approval is required for pipeline construction. Test waters for pipeline integrity are often associated with compressor stations and require a water discharge permit for disposal from TCEQ.

7.3.2 Roads

The TRRC does not have jurisdiction over, and exercises no regulatory authority with respect to, private or public roads or road use. Permits issued by the Commission for oil and gas exploration, production and waste disposal do not limit any independent authority of a municipality, county or other state agencies with respect to road use. The Texas Department of Transportation has jurisdiction over private roads only to the extent where they cross public roadways.

7.3.3 Sand Mining

Beginning early in 2017, sand mining companies began purchasing or leasing large tracts of land in the Permian Basin in Texas for sand operations. Some of these properties include areas of DSL Habitat. Texas requires certain permits, depending on the extent of operations. These permits include (but are not limited to): an aggregate production operation registration, an air pollution control permit, storm water construction and operation general permits, public drinking water well permit, on-site sewage facility registration and permit, hazardous chemical inventory reporting (Tier II), solid and/or hazardous waste registration and reporting, petroleum storage tank registration. Texas has no requirements pertaining to the reclamation of sand mining sites. Thus the 2020 DSL CCAA offers the ability, which otherwise does not exist, to bring substantial acres of DSL Habitat on private lands into conservation, generate sustainable revenue to fund conservation and scientific study under the plan, and to limit the overall disturbance from sand mining activity on private lands in Texas.

Certain sand mining operations enrolled under the TCP and agreed to avoid excavations in DSL Habitat, as delineated by the Hibbitts map, and two sand mine operators agreed to provide conservation protection for a total of 944 acres of off-site High Suitability habitat.

7.3.4 Renewable Energy

As discussed above, wind and solar energy companies recently began to develop operations in the Permian Basin. In Texas, there is no federal or state regulation of wind or solar energy operations. Texas exercises authority over its own electric grid, the Electric Reliability Council of Texas (ERCOT). Without a permitting process, state agencies like TPWD do not have a formal role in wind development (Brody 2018). Texas has declined to provide voluntary wildlife guidelines for developers, although TPWD can provide an advisory opinion if requested by the company (Stemmer 2011). The CPA has been successful in working with solar developers through incentive programs to avoid or limit encroachment by solar projects in DSL Habitat.

7.4 Impacts of Other Natural or Manmade Factors

7.4.1 Contaminants

FWS identified several natural or manmade factors affecting the DSL. These factors include exposure to pollutants from oil and gas operations (*See* 77 Fed. Reg. at 36,896). Incidents associated with oil and gas operations, such as oil spills, hydrogen sulfide (H_2S) gas emissions, and chemical exposure may also adversely affect DSLs. Because DSL Habitat overlays oil and gas deposits in the Permian Basin, there is potential for DSL and DSL Habitat exposure to toxic pollutants including petroleum hydrocarbons, polycyclic aromatic hydrocarbons (PAH) (e.g., phenanthrene, fluoranthene, and benzo[a]anthracene), oil spills, and air pollutants (EPA, 1999). TRRC rules address releases and venting. Existing RRC statewide rule 36 requires oil and gas operators to take precautions to avoid H_2S releases from their operations. TRRC statewide rule 32 proscribes venting from oil and gas operations where a safety condition precludes flaring.

A study by Texas Tech University for the TCP evaluated the potential risks to the DSL of H_2S associated with petroleum activities. The study concluded that the risks were low (Salice and Anderson, 2011). Texas A&M University also evaluated the potential risks to the DSL of altered pH of the sand, elevated sulfates, tebuthiuron, and total petroleum hydrocarbons and concluded that those risks also were low (Ryberg *et al.*, 2014). Lusk and Kraft (2010) determined that adverse effects of H_2S exposure vary with gas concentration and lizard activity. Active lizards demonstrated adverse effects at lower concentrations than resting lizards. The authors did not detect H_2S at concentrations above 50 ppm, the threshold to harm resting lizards (Lusk and Kraft, 2010 at 15).

7.4.2 Climate Change

Climate change impacts on DSL populations have not been studied, and therefore, are not well understood. Because lizards are ectothermic, ambient temperatures affect their physiological performance and influence their daily activities (Sartorius *et al.*, 2002). Daily DSL activity, for instance, declines as air and substrate temperatures increase due to thermoregulatory constraints (Sartorius *et al.*, 2002; Fitzgerald *et al.*, 2011). It is possible that by altering the temperature and precipitation conditions that characterize shinnery oak dune habitat, there may be corresponding impacts on the DSL and its habitat. On average, surface air temperatures across Texas are predicted to increase by 3°C (5.4°F) by 2099 (Jiang and Yang, 2012). In the southwest United States, temperature increases will be concentrated in the summer months. In Texas, the number of days exceeding 95°F may double by 2050 (IPCC, 2013; Ray *et al.*, 2008; Kinniburgh *et al.*, 2015). According to climate change predictions, West Texas will experience greater variability in seasonal precipitation patterns with the greatest net loss experienced in winter (Jiang and Yang, 2012).

An increase in drought frequency and intensity has been shown to be occurring throughout the range of the DSL Habitat (Kinniburgh *et al*., 2015). While shinnery oak is highly adapted for arid conditions, prolonged periods of drought may inhibit growth and reproduction. Shinnery oak clones may reach 50 feet in diameter, making large areas of dune habitat vulnerable in the event of climate-induced oak mortality (Gucker, 2006). Historically, natural groundwater discharge from the Cenozoic Alluvium aquifer characterized the Monahans dune system as "wet eolian," where a shallow water table stabilized sand beneath the dune deposits (Garza and Wesselman, 1959). Climate change may affect regional groundwater availability. Limited recharge due to altered hydrologic conditions may increase competition for groundwater resources, and the drilling of new wells to access water resources may increase surface disturbance in DSL Habitat.

8.0. CONSERVATION STRATEGY

A Conservation Strategy will guide the implementation of the Conservation Measures and Actions. The Strategy was developed by potential Participants in collaboration with the FWS Ecological Service's New Mexico and Texas Coastal Field offices. The Strategy sets goals (desired biological outcome for the species), objectives (conditions necessary for achieving the goal in terms of reduction or elimination of threats), and criteria (values for determining that the objectives have been met).

8.1 Biological Goals and Objectives

The FWS defines a biological goal as a "statement of the desired biological outcome for the species" (NMFS and USFWS 2010). The term "Objectives" describes "the conditions necessary for achieving the goals. They can be identified in terms of reduction or elimination of threats." *Id*. The term "criteria" refers to the "values by which it is determined that an objective has been reached." *Id*. These criteria should be "objective and measurable" but they do not have to be "quantitative" (NMFS and USFWS 2010).

The biological goal of this 2020 DSL CCAA is to contribute, directly or indirectly, to the conservation of the DSL by reducing or eliminating threats on Enrolled Property for the net conservation benefit of the DSL. In general, the biological goals will be accomplished by: (1) conserving DSL and its habitat in the Covered Area; (2) mitigating the impacts of historic and New Surface Disturbances by reclaiming and restoring such areas in DSL Habitat throughout the Covered Area in the Permian Basin in Texas; (3) preserving High Priority (i.e., areas likely to be most beneficial to the conservation of the species) areas of DSL Habitat; and (4) reducing habitat fragmentation. The Conservation Strategy and Conservation Measures under the 2020 DSL CCAA provide a substantial net conservation benefit to the DSL relative to the current baseline, which is marked by the absence of federal

regulatory and land management authority to protect an unlisted species and its habitat on private property in West Texas.

Specifically, the biological objectives of the 2020 DSL CCAA beginning in Year One will be as follows:

Objective: Developing a landscape scale Conservation Strategy that emphasizes reducing or eliminating the threats to the DSL. The Administrator, with input from FWS and the Adaptive Management Committee, will develop the strategy supported by research and other studies. Acquiring Conservation Easements and other protections and implementing on-the-ground actions to eliminate or reduce threats of habitat loss and fragmentation in areas of DSL Habitat. Requiring all Participants (except the agriculture and ranching sector) to pay Enrollment Fees and Habitat Conservation Fees for New Surface Disturbances in DSL Habitat to ensure a robust Conservation Action program.

Objective: Achieving avoidance of impacts from Covered Activities in areas of DSL Habitat subject only to limited exceptions set out below in Section 8.3. Requiring, subject to the exemptions in Section 8.3, avoidance of well development in High and Intermediate Suitability areas of DSL Habitat where the well density is equal to or greater than four well pads/mi^2 but less than 13 well pads/mi^2. Requiring implementation of Conservation Measures for impacts from Covered Activities in DSL Habitat.

Objective: Minimizing and offsetting the impact of Covered Activities on DSL Habitat and in areas containing well pads and associated road densities with a demonstrated potential to affect DSL abundance and habitat suitability. Requiring implementation of Conservation Measures for impacts from Covered Activities in DSL Habitat.

Objective: Minimizing and offsetting the impact of Covered Activities on DSL Habitat and in areas with well pads and associated roads with a demonstrated potential to affect DSL abundance and habitat connectivity. Based on recommendations from the Adaptive Management Committee, and with input from FWS, the Administrator will: (1) identify well pads and associated roads in High Priority areas of DSL Habitat, including areas of high well densities; (2) obtain access and permission; and, (3) initiate the removal and restoration of well pads and/or roads within the High Priority areas. The Administrator will monitor the effectiveness of the Conservation Actions implemented at these sites.

Objective: Preservation of High Priority Areas of DSL Habitat through Conservation Easements and other protections. In Year One, the

Administrator, in consultation with the Adaptive Management Committee, will develop a conservation strategy and establish priorities for the use of Conservation Easements and other protections. The Administrator intends to initiate a process that will result in the acquisition of easements and agreements to preserve contiguous blocks of High Priority Areas of DSL Habitat within five years of the execution of the CCAA. Participants are committed to working across industry sectors to work together to identify and preserve High Priority Areas. Opportunities to be evaluated include patterns of use of existing roads and infrastructure to reduce fragmentation, voluntary initiatives to reduce vehicle traffic on Enrolled Property, and restoration of well pads, roads, and other infrastructure to establish usable DSL Habitat.

Objective: Increasing the Participant enrollment of property within DSL Habitat through the CCAA to provide sufficient protection for DSL Habitat, in addition to areas subject to conservation under the TCP. Improvements to the CCAA, such as the All Activities option, will support an improved and effective outreach to potential Participants. The All Activities option makes it easier to transfer leases, increases awareness of the importance of participation within the oil and gas industry, and ensures that Participants' properties enrolled through the All Activities process will be covered if the species is listed.

Objective: Addressing stratification issues. The Administrator has analyzed the extent of leasing where both Participants and non-enrolled mineral rights holders have access to the same surface estate (i.e., stratification). (*See supra* at Section 7.1.1.3.) The stratification analysis has identified the surface rights holders and the non-enrolled stratified mineral rights holders in the Covered Area. Using information from the study, the Administrator will encourage the participation in the 2020 DSL CCAA of non-enrolled entities sharing access to the same surface estate. In addition, the 2020 DSL CCAA provides financial incentives for mineral rights holders that share the same surface estate to enroll in the 2020 DSL CCAA by allowing for Enrollment and Implementation fees to be divided between the different companies.

For properties with severed surface and mineral estates that Participants are actively engaged in development, Participants agree to work with the non-surface estate and the Administrator to identify approaches to development that avoid, minimize or offset impacts from development, taking into consideration statutory and legal rights of the mineral estate. For example, developed approaches may include encouraging cooperation between owners of the mineral estates to minimize new disturbances through the use of an existing or a single right-of-way, or where feasible and appropriate, developing surface use or mineral management plans.

Objective: Protecting shinnery oak associated with dunal structures and serving as dispersal corridors by minimizing the use of herbicide to control shinnery oak in High and Intermediate Suitability areas of DSL Habitat.

Objective: Enhancing knowledge of effective conservation strategies by conducting research on the DSL, its habitat, and the efficacy of Conservation Measures and Conservation Actions. In Year One, the Adaptive Management Committee will be directed to consider, develop, and prioritize recommendations for this research.

Examples of potential research on the DSL that may be considered by the Adaptive Management Committee include studies of: (1) the threats posed by high densities of well pads to DSL occupancy and dune structure; (2) the threats posed by roads, or certain types of roads, including but not limited to, whether and to what degree, roads serve as a barrier or limitation to DSL crossing; (3) the efficacy and feasibility of establishing and re-establishing shinnery oak in areas of DSL Habitat; (4) the priority areas where the establishment or reestablishment of shinnery oak is likely to be the most effective; (5) the efficacy and feasibility of preserving and restoring habitat connectivity; (6) potential consequences to dune stability and integrity in a highly dynamic dune system; and (7) water use across industry sectors and the potential consequences to DSL Habitat.

Research priorities will be determined by the Adaptive Management Committee and availability of funding.

8.2 Effectiveness of the CCAA in Eliminating or Reducing Impacts

The Conservation Actions and Conservation Measures are the cornerstone of the 2020 DSL CCAA's efforts to eliminate or reduce the impacts of the Covered Activities. The Conservation Measures include avoidance in High Suitability and Intermediate Suitability areas of DSL Habitat subject only to certain exceptions. Where avoidance of DSL Habitat is not required in these areas, the Participants are required to implement Conservation Measures to minimize the impacts of the Covered Activities. The 2020 DSL CCAA also requires all Participants (except the agriculture and ranching sector) to pay fees to fund the implementation of Conservation Actions.

The Conservation Strategy will be implemented on a landscape scale to reclaim and restore DSL Habitat impacted by surface disturbances and to preserve contiguous blocks of High Priority Areas of habitat (i.e., areas likely to be most beneficial to the conservation of the species) including the use of Conservation Easements and other protections as appropriate, to reduce habitat fragmentation and ensure maintenance of dispersal habitats across the landscape. Priorities for Conservation Actions will be based, to the extent feasible, on areas

most beneficial to the conservation of the species. The effectiveness of the Conservation Actions and Measures will be reviewed by the Adaptive Management Committee. Collectively, these efforts are designed to provide a measurable conservation benefit to the species.

The criteria for measuring the success towards achieving conservation of the DSL by reducing or eliminating threats include:

- **Effectiveness of Conservation Program:** Implementing the 2020 DSL CCAA on a landscape scale. Based on recommendations from the Adaptive Management Committee, prioritizing, reclaiming, and restoring DSL Habitat impacted by surface disturbances. Implementing Conservation Easements and other protections. Collecting fees from all Participants (except the agriculture and ranching sector). The criterion is reporting implementation of the 2020 DSL CCAA to the Adaptive Management Committee and FWS.

- **Effectiveness of Avoidance and Minimization:** Evaluating the overall acreage of surface disturbances on enrolled and unenrolled properties in DSL Habitat.

- **Effectiveness of Minimizing Impacts Resulting from Well Density:** Conducting evaluation and spatial analysis of the well density trends within DSL Habitat and on enrolled property. The evaluation will include a comparison of impacts from changes in well densities within DSL Habitat during the 2020 DSL CCAA with densities in the same area prior to the 2020 DSL CCAA. The criterion is, to the extent feasible, no increase in densities within areas that contain well pad densities between four well pads/mi^2 and 13 well pads/mi^2 on enrolled properties during the life of the agreement.

- **Effectiveness of Minimizing Impacts Resulting from Well Pads and Roads:** Conducting evaluation of distribution of well pads and associated roads in DSL Habitat. Studying efficacy and feasibility of removing well pads and roads to restore habitat connectivity. If determined efficacious and feasible, following recommendations from the Adaptive Management Committee, the Administrator will implement well pad and road removal. The criterion is decrease (via avoidance and removal) in well pads and roads on High Priority areas of DSL Habitat.

- **Effectiveness of Conservation Easements, Protections, and Restoration:**
    - Comparing the acres of High and Intermediate Suitability DSL Habitat restored with Enrollment and Habitat Conservation Fees and protected through Conservation Easements and other measures with the acres of disturbances. The criterion is the number of acres and quality of High Priority Areas, as defined in Appendix I of the CCAA, protected through the easement and habitat restored compared to the number of acres of disturbances in High and Intermediate areas

of habitat.

- Conducting evaluations comparing the size and location of surface disturbances caused by Covered Activities on enrolled property areas of DSL Habitat where avoidance is not feasible with the amount of DSL Habitat restored with Enrollment and Habitat Conservation Fees and preserved through Conservation Easements and other protections. The criterion is higher acreage of restored and preserved acreage compared to disturbed acreage.

- **Enrollment/Protection of Habitat:**
  - Monitoring the percent of DSL Habitat in Texas (described in Appendix A) that is enrolled in the 2020 DSL CCAA and the acreage of surface disturbances on enrolled and unenrolled property in DSL Habitat to evaluate the effectiveness of enrollment. The criterion is increasing trends in enrollment (i.e., percent of DSL Habitat in TX enrolled in the 2020 DSL CCAA) in this CCAA and decreasing trends in the acreages of surface disturbances on unenrolled properties.
  - Presenting education programs and implementing outreach efforts to potential Participants to increase enrollment in areas of DSL Habitat. The effectiveness of outreach efforts will be evaluated by considering whether or not enrollment increases.

- **Effectiveness of Addressing Stratification:** Using Change Detection Analysis (CDA) to monitor the acres disturbed by non-Participants and reporting the overall acres disturbed by Participants and non-Participants. The criterion is to achieve and maintain an appreciable reduction in surface disturbance acreage by non-Participants on enrolled property.

- **Effectiveness of Minimizing Impacts Resulting from Herbicide Use:** Conducting evaluation of the amount of disturbances associated with herbicide application using the results of vegetation surveys. Criterion is a decrease in habitat loss associated with herbicide application in shinnery oak and associated dunal structures.

- **Improvement of Effectiveness of Conservation Strategies:** Evaluating impacts of threats posed by Covered Activities on the DSL. Conducting annual surveys of vegetation and DSL. Using the habitat suitability alternatives described in Appendix A and data from annual surveys to evaluate changes over time in areas where Conservation Strategy has been implemented. Coordinating with CEHMM and FWS New Mexico Field Office to develop a protocol for and conducting range-wide DSL surveys every five years. The 2020 DSL CCAA will only be responsible for the cost of surveys in Texas. The criterion is active research and monitoring of DSL to evaluate the efficacy of the Conservation Actions and Measures implemented pursuant to the 2020 DSL CCAA.

- **Establishment or Reestablishment of Shinnery Oak:** Evaluating the efficacy and feasibility of establishing and re-establishing shinnery oak in areas of DSL Habitat and

identifying priority areas it is likely to be the most effective. Once promising techniques in the laboratory have been developed, field studies of shinnery oak's potential for establishment and reestablishment will begin. If this methodology is proven to be efficacious, feasible, and cost effective implement as part of the Conservation Program the establishment or reestablishment of shinnery oak in High Priority Areas through the Adaptive Management process

The specific Conservation Measures and approach to Conservation Actions are detailed below. Appendix C summarizes the effectiveness of the 2020 DSL CCAA in addressing specific threats.

8.3 Conservation Measures

This section describes the approaches and strategies for conserving the DSL and reducing or eliminating the threats thereto. These approaches and strategies are designed to benefit the DSL through the application of Conservation Measures, including avoidance and minimization measures. As new information or empirical data becomes available, Conservation Measures may be modified or added to future CIs through Adaptive Management, and to existing CIs with written approval from the Participant.

Conservation Measures for each Participant Sector are included in this section of the 2020 DSL CCAA and in the Template CIs in Appendix B.

The following is a suite of Conservation Measures required in the CIs for Enrolled Properties, broken down by Participant sector and habitat suitability area.

8.3.1 Oil and Gas Sector

Oil and gas Participants will pay Enrollment, Habitat Conservation, and Implementation Fees as set out in Appendix D. In addition to payment of these fees, Participants agree to implement the following Conservation Measures for New Surface Disturbances to avoid and minimize impacts to Covered Species.

General Measures:

To assist in developing and prioritizing Conservation Measures and Actions, upon initial enrollment and thereafter, annually by December 1, Participant will provide the Administrator with an estimate of surface disturbances anticipated in the course of its development for the upcoming calendar year. The estimate of surface disturbance need only be based on the Participant's planned development. The Participant's actual surface disturbances may differ from the estimate provided.

For properties with severed surface and mineral estates that Participants are actively engaged in development, Participants agree to work with the non-surface estates and the Administrator to identify approaches to development that avoid, minimize or offset impacts from development, taking into consideration statutory and legal rights of the mineral estate. For example, developed approaches may include encouraging cooperation between owners of the mineral estates to minimize new disturbances through the use of an existing or a single right-of-way, or where feasible and appropriate, developing surface use or mineral management plans.

Seismic activities shall be limited to areas outside High and Intermediate Suitability DSL Habitat unless walk-in geophonic, other smaller seismic survey equipment is utilized or the activities are limited to periods of lizard inactivity (October through March). Where feasible, existing roads, pads, or utility easements in High or Intermediate Suitability DSL Habitat will be identified that would permit OHV and/or equipment used to induce seismic pulses to be used without corresponding impacts to the DSL. Seismic activities in Low Suitability DSL Habitat are allowed but, where possible, existing roads, pads, or easements should be utilized to minimize potential impact to the habitat. Where the Administrator identifies permanent impacts from a Participant's seismic activities, the Participant will work with the Administrator to identify and provide mitigation equal to the permanent impacts.

To the extent legally, technically, and economically feasible, Participant also will avoid development in areas of High and Intermediate Suitability DSL Habitat where the well density is equal to or more than four well pads/mi^2 but less than 13 well pads/mi^2 unless the Participant demonstrates that avoidance is not feasible.

<u>High and Intermediate Suitability Areas of DSL Habitat</u>:

Except as provided in this section, no New Surface Disturbance is allowed in High and Intermediate Suitability areas of DSL Habitat, which are described in Appendix A. The distribution of well densities is found in Appendix G.

Avoidance of High and Intermediate Suitability areas of DSL Habitat is required unless the Participant demonstrates one of the criteria below:

- The habitat designation assigned to the area in the Texas State Map of DSL Habitat in which the development is proposed to occur is incorrectly designated. That demonstration must be made following the approved Protocols set out in Appendix A; or

- The mineral estate for which the development was planned cannot be accessed except through the High or Intermediate Suitability area. The demonstration shall include evidence that:

- The Participant cannot access the mineral estate from an existing well pad or other disturbance or from reasonably nearby Low Suitability or unsuitable areas to which it has access. "A reasonably nearby" site includes, but is not limited to, sites from which the mineral estate can be accessed by horizontal or directional drilling.

Before areas of High and Intermediate Suitability DSL Habitat can be disturbed, the Participant must submit a written demonstration of compliance with the criterion above with supporting documentation. The Administrator, with the assistance of qualified biological and technical professionals, where feasible, will review the documentation and either concur with the determination or request additional information within 20 days of receiving the Participant's documentation. The Administrator will avoid unnecessary requests for information and will not exceed the 20-day review period after receipt of complete documentation. The Administrator will use reasonable efforts to provide expedited reviews if requested. Appendix J is a chart that may be used to support its contention that the mineral estate cannot be accessed except through areas of High or Intermediate suitability. The chart describes the type of information that may support such a demonstration; however, it is not necessarily dispositive of the issue.

If the Administrator has not requested additional documentation after 20 days of receipt of Participant's submission, Participant may proceed with the surface disturbance; however, Participant acknowledges that the Service may request to review the documentation submitted by the Participant, and Participant waives any confidentiality with respect to such documentation except as it pertains to confidential business information. All such information submitted by the Participant must be marked "Confidential or Business Sensitive" even in situations where the confidentiality has been waived. The Service may seek to have the Administrator require the Participant to address any deficiency.

If the Participant demonstrates that the mineral estate cannot be otherwise accessed except through High or Intermediate Suitability DSL Habitat, the Participant must then seek to avoid development in areas of High and Intermediate Suitability DSL Habitat where the well density is equal to or more than four well pads/mi^2 but less than 13 well pads/mi^2, utilizing the criteria above. If the Participant then demonstrates that it is not feasible for the mineral estate to be otherwise accessed except through areas where the well density is equal to or more than four well pads/mi^2 but less than 13 well pads/mi^2 then the Participant will pay fees described in Appendix D and implement Conservation Measures set out below for Covered Activities in DSL Habitat as appropriate. The Administrator will work with the Participant to locate wells in existing high-density areas, preferably in a clustered arrangement (i.e., not evenly distributed) where feasible.

<u>Conservation Measures</u>:

In DSL Habitat, Participants must implement the following Conservation Measures to minimize the impacts of development. The minimization measures must be implemented concurrently with the initiation of the surface-disturbing activities.

- Maximize use of existing developed areas and rights-of-way for infrastructure supporting the development of the wells (roads, power lines, pipelines, flowlines, etc.);
- Minimize footprint for development, if operationally feasible (i.e., size of well site; centralized facilities, co-locating multiple wells on a single well pad; interim reclamation—reclaim portion of location after drilling and completion to the extent allowed by the surface estate owner and/or stratified mineral estate owners/operators and operators on the same pad);
- Avoid aerial sprayed application of approved herbicide for weed control (e.g., utilize pellets, hand applicators or manual removal);
- Avoid introduction of non-native vegetation by using habitat appropriate native vegetation and best management practices, such as cleaning vehicle coming into the area to remove mud and seeds. If an activity is identified that introduces new non-native vegetation, the activity or source will be controlled to manage or remove the invasive vegetation;
- Control dust from road traffic and other activities including restricting unnecessary off-road vehicle access;
- Remove mesquite from flowback pits, where feasible;
- Minimize OHV activity in DSL Habitat, as practicable;
- Minimize spills through inspection, monitoring, maintenance and employee training in spill response procedures; and
- Disturbances from Emergency Operations must be restored after Emergency Operations have been completed and cannot be used for new development.

Notice: Oil and gas Participants will provide notice of New Surface Disturbance and seismic activities as described in Section 14 below. Participants will notify the Administrator:

- not less than 15 days in advance of New Surface Disturbance and Seismic Activities to determine appropriate Habitat Conservation Fees in accordance with Appendix D. the Administrator will invoice Participant for the required Habitat Conservation fees. Payment is due 60 days after invoice;
- as soon as is practicable under the circumstances but not less than 15 days after material changes to the prior notice of the New Surface Disturbance; and,
- within 72-hours after Emergency Operations that result in New Surface Disturbance.

8.3.2 Sand Mining Sector

Sand mining Participants will pay Enrollment, Habitat Conservation, and Implementation Fees as set out in Appendix D. In addition, Participants agree to implement the following Measures for New Surface Disturbances to minimize impacts to Covered Species.

General Measures:

To assist in developing and prioritizing Conservation Actions, upon initial enrollment and, thereafter, annually by December 1, Participant will provide the Administrator with a Plan of Operation that includes an estimate of surface disturbances anticipated in the course of its development for the upcoming calendar year. The Plan of Operation shall minimize habitat fragmentation to the extent practicable. Participant will notify the Administrator at least 45 days in advance of any change in the plan. For the first three years of participation, the Participant will provide documentation to the Administrator in its annual plan that demonstrates that the New Surface Disturbances have not exceeded 60 acres per Enrolled Property in the preceding year. After the first three years of participation, the Participant's annual plan must demonstrate that the average New Surface Disturbance over the three preceding three years have not exceeded 60 acres per year per Enrolled Property. The Administrator will invoice Participant for the required Habitat Conservation fees upon receipt of the annual plan, and any adjustment thereafter. Payment is due 60 days after invoice.

Participant will minimize the use of groundwater in its operations to the extent practicable. Upon enrollment, a sand mining Participant must provide to the Administrator the following:

1. The most recent year's Water Use Survey submitted to the Texas Water Development Board (TWDB). If not requested to complete this survey by the TWDB, the Participant will complete the survey and submit it to the Administrator. The survey reports separately all groundwater drawn by aquifer;
2. A description of how water is drawn and used in processing, including all measures implemented to captures water used for re-use.

In cooperation with the Administrator, each sand mining Participant must create a water use minimization plan that will include targets on water use reduction. Sand mining Participants must monitor water use and annually report performance relative to those targets.

For each area of mining disturbance (pit) in an area within DSL Habitat, Participant shall monitor dune movement and stability. Participants may re-grade areas of mining disturbance consistent with any applicable contractual requirements. During re-grading, Participants shall avoid or minimize additional surface disturbance in DSL Habitat.

Upon application for enrollment under the 2020 DSL CCAA, a sand mine operator must submit a site specific Habitat Assessment for the portion of the Enrolled Property that will be mined in the upcoming year, as described in Appendix A. A sand mine operator also will conduct a Habitat Assessment for any areas on an Enrolled Property that may be mined in

future years, as needed. The Habitat Assessment will delineate the entire proposed Enrolled Property based on the following land cover categories: (1) Shinnery Oak Dune I, (2) Shinnery Oak Dune II, (3) Shinnery Oak Flats or Co-Dominate Shinnery Oak Mesquite Flats, (4) Grass Dunes; (5) Open Sand Dunes; and (6) Mesquite Shrub. Covered Activities related to sand mining may proceed, subject to applicable Conservation Measures, in areas other than Dune I, Dune II, and Shinnery Oak Flats / Co-Dominant Shinnery Oak Flats.

Avoidance (*i.e.,* no New Surface Disturbance from Covered Activities) is required in areas identified as including the following ground cover types: Dunes I, Dunes II, and Shinnery Oak Flats or Co-Dominate Shinnery Oak Mesquite Flats, except as follows:

- The Participant has conducted a Presence/Absence survey for DSL within the survey season immediately prior to any proposed surface disturbance activity, consistent with the Presence / Absence Survey Protocol provided in Appendix A. Any documented DSL detection establishes a Zone of Likely DSL Occupancy extending in a 350 meters radius from the detection location in areas of potential DSL Habitat

- Any New Surface Disturbance within a Zone of Likely DSL Occupancy, Dunes I, Dunes II, and Shinnery Oak Flats or Co-Dominate Shinnery Oak Mesquite Flats shall be offset consistent with the requirements of Appendix D.

Areas of potential DSL Habitat other than Dunes I, Dunes II, and Shinnery Oak Flats or Co-Dominate Shinnery Oak Mesquite Flats. Impacts in these areas shall be offset consistent with the requirements of Appendix D. Participant shall minimize habitat fragmentation during mining operations to the extent practicable.

Before areas in DSL Habitat can be disturbed, the Participant must submit to the Administrator a written demonstration of compliance with the criterion above with supporting documentation. Participant acknowledges that FWS may request to review the documentation submitted by the Participant. All proprietary information submitted by the Participant must be marked "Confidential or Business Sensitive". FWS may seek to have the Administrator require the Participant to address any deficiency.

<u>Conservation Measures:</u>

In all areas of DSL Habitat, including Low Suitability Areas, Participant must implement the following Conservation Measures to minimize the impacts of development:

- Maximize use of existing developed areas and Low Suitability Areas of DSL Habitat in siting excavation activities and rights-of-way for infrastructure supporting the excavation activities;
- Limit New Surface Disturbances to 60 acres annually for each mine on an Enrolled Property, not to exceed 1,380 acres over the duration of the CCAA;
- Re-grade areas of mining disturbance consistent with any applicable contractual requirements, and avoid or minimize additional surface disturbance consistent with the requirements of Appendix D;
- Restrict traffic to existing roads to the maximum extent practicable and minimize new road development consistent with the New Surface Disturbance Offsets in Appendix D. Measures (e.g., signage and fencing) will be implemented to ensure that traffic does not impinge on High or Intermediate Suitability areas of DSL Habitat;
- Avoid aerial sprayed application of approved herbicide for weed control (e.g., utilize pellets, hand applicators or manual removal);
- Avoid introduction of non-native vegetation by using habitat appropriate native vegetation and best management practices, such as cleaning vehicle coming into the area. If an activity is identified that introduces new non-native vegetation, the activity or source will be controlled to manage or remove the invasive vegetation;
- Control dust from excavation, road traffic and other activities including restricting unnecessary off-road vehicle access;
- Minimize OHV activity to the extent practicable; and
- Implement best management practices, such as barrier fencing, to protect DSL Habitat and individual DSL.

These minimization measures must be implemented concurrently with the initiation of the surface-disturbing activities.

8.3.3 Renewable Energy Sector

Renewable energy operations (solar and wind energy) that construct and maintain power lines and appurtenant structures in Low Suitability areas of DSL Habitat can enroll in the 2020 DSL CCAA as long as they comply with the Conservation Measures set out below and pay the Fees described in Appendix D of this Agreement. The construction, maintenance, or operation of solar or wind energy facilities including power lines and appurtenant structures in High and Intermediate areas of DSL Habitat are not Covered Activities under this agreement.

Avoidance of DSL Habitat: Participant cannot cause a New Surface Disturbance in High or Intermediate Suitability areas of DSL Habitat. A description of these Habitat Suitability DSL Habitat is in Appendix A.

Avoidance of DSL habitat in High and Intermediate Suitability areas of DSL Habitat as identified in Appendix A is required unless the Participant demonstrates to the Administrator's satisfaction that the designation of an area as a specific category of suitable DSL Habitat in Appendix A is incorrect. That demonstration must include surveys conducted following the approved Protocols set out in Appendix A.

Before any area of DSL Habitat can be disturbed, the Participant must submit a written demonstration of compliance with the criterion above with supporting documentation. The Administrator, with the assistance of qualified biological and technical professionals where feasible, will review the documentation and either concur with the determination or request additional information within 20 days of receiving the Participant's documentation. The Administrator will avoid unnecessary requests for information and will not exceed the 20-day review period after receipt of complete documentation. The Administrator will use reasonable efforts to provide expedited reviews if requested.

If the Administrator has not requested additional documentation after 20 days of receipt of Participant's submission, Participant may proceed with the surface disturbance; however, Participant acknowledges that the Service may request to review the documentation submitted by the Participant and waives any confidentiality with respect to such documentation except as it pertains to confidential business information. All confidential information submitted by the Participant must be marked "Confidential or Business Sensitive" even in situations where the confidentiality has been waived. The Service may seek to have the Administrator require the Participant to address any deficiency.

Upon enrollment, the Participants will provide the Administrator a plan for the development and operation of the Enrolled Property. Participant will notify Administrator at least 45 days in advance of any change in the plan with respect to the location of development or the location of roads or infrastructure.

Conservation Measures

- Maximize use of existing developed areas and rights-of-ways for infrastructure supporting the development of the power lines and appurtenances (roads, and associated infrastructure);
- Trenches left open for eight (8) hours or more must have earthen ramps (built at no more than a 30-degree slope and placed no more than 500 feet apart). At the end of each day, a monitor approved by the Administrator (in consultation with the FWS, as appropriate), shall walk the entire length of open trench and remove all trapped DSL and release them at least 100 yards from the trench;
- Minimize footprint for development, (i.e., centralized facilities, width of the easement, and interim reclamation, and restoration as appropriate);

- Restrict traffic to existing roads;
- Use SCADA or remote sensing where appropriate, to reduce traffic;
- Minimize OHV activity, to the extent practicable;
- Restore rights-of-way promptly with native vegetation; and,
- Avoid introduction of non-native vegetation by using habitat appropriate native vegetation and best management practices, such as cleaning vehicle coming into the area to remove mud and seeds. If an activity is identified that introduces new non-native vegetation, the activity or source will be controlled to manage or remove the invasive vegetation.

8.3.4 Pipeline Sector

Pursuant to Section 13.0 of this CCAA and as further set forth in this CI, the Participant agrees to pay Enrollment and Habitat Conservation Fees to the Administrator as called for by Appendix D.

High and Intermediate Suitability Areas of DSL Habitat: Avoidance of High and Intermediate Suitability DSL Habitat is required unless the Participant demonstrates that the criteria below are met:

- Contractual fulfillment of surface use agreements or leases existing at least six months prior to the planned activity and that cannot be achieved by an alternative development plan;
- No feasible technologically routing diversions are available;
- Horizontal or directional boring is not feasible; and,
- Areas in Low Suitability Habitat or areas with existing disturbance in habitat are not available.

Before habitat can be disturbed, the Participant must submit a written demonstration of compliance with the criteria above.

Participant may also demonstrate that the Habitat Suitability designation in the Texas State Map of DSL Habitat assigned to the development site is incorrect. That demonstration must include surveys conducted following the approved Protocols set out in Appendix A.

The Administrator, with the assistance of qualified biological and technical professionals, where feasible, will review the documentation and either concur with the determination or request additional information within 20 days of receiving the Participant's documentation. The Administrator will use reasonable efforts to provide expedited reviews if necessary. The Administrator will avoid unnecessary requests for information and will not exceed the 20-day review period after receipt of complete documentation. The Administrator will use reasonable efforts to provide expedited reviews if requested. If the Administrator has not

requested additional documentation after 20 days of receipt of Participant's submission, Participant may proceed with the surface disturbance; however, Participant acknowledges that the Service may request to review the documentation submitted by the Participant and waives any confidentiality with respect to such documentation except as it pertains to confidential business information. All confidential information submitted by the Participant must be marked "Confidential or Business Sensitive" even in situations where the confidentiality has been waived. The FWS also may seek to have Administrator require the Participant to address any deficiency.

Low Suitability Areas of DSL Habitat

In DSL Habitat, Participants must implement the following Conservation Measures to minimize the impacts of development. The minimization measures must be implemented concurrently with the minimizing of surface-disturbing-disturbance activities.

- Maximize use of existing developed areas and rights-of-way for infrastructure supporting the development of the pipeline and appurtenances (roads, power lines, associated infrastructure);
- Conduct routine monitoring and inspection for oil, gas, and produced water pipelines and facilities to prevent accidental pollution events;
- Trenches left open for eight (8) hours or more must have earthen ramps (built at no more than a 30-degree slope and placed no more than 500 feet apart). At the end of each day, a monitor approved by the Administrator (in consultation with the FWS, as appropriate), shall walk the entire length of open trench and remove all trapped DSL and release them at least 100 yards from the trench;
- Minimize footprint for development (i.e., width of pipeline right-of-way, centralized facilities and interim reclamation); Restrict traffic to existing roads;
- Use SCADA or remote sensing where appropriate, to reduce traffic and need to clear right-of-way for line-of-sight inspection and monitoring;
- Minimize OHV activity, to the extent practicable;
- Restore rights-of-way promptly with native vegetation; and,
- Avoid introduction of non-native vegetation by using habitat appropriate native vegetation and best management practices, such as washing vehicle coming into the area to remove mud and seeds. If an activity is identified that introduces new non-native vegetation, the activity or source will be controlled to manage or remove the invasive vegetation.

Notice: Pipeline Participants will provide notice of New Surface Disturbance. Participants will notify the Administrator:

- not less than 15 days in advance of the initiation of a New Surface Disturbance to determine appropriate Habitat Conservation Fees in accordance with

Appendix D. The Administrator will invoice Participant for the required Habitat Conservation Fees. Payment is due on invoicing;

- as soon as is practicable under the circumstances but not less than 15 days after material changes to the prior notice of the New Surface Disturbance; and,
- within 72 hours after Emergency Operations that result in New Surface Disturbance. Disturbances from Emergency Operations must be restored after Emergency Operations have been completed and cannot be used for surface development

8.3.5 Agriculture and Ranching Sector

The Participant will allow the Administrator access to the enrolled property to conduct surveys. The Participant shall have an opportunity to review the survey plan to ensure that it is conducted in a manner that is not unduly disruptive to Participant's activities on the property.

In exchange for granting the access described above, the Agriculture and Ranching Participants will not pay Enrollment, Habitat Conservation, or Implementation Fees.

For properties with severed surface and mineral leases (stratification), the Participant will work with the Administrator and holders of leases to develop approaches for planned development that conforms with the requirements of the CCAA, including where feasible and appropriate, a surface use agreement or mineral management plan.

Participants, in addition to providing access, shall implement the following Conservation Measures, to minimize adverse effects on the DSL:

High Suitability Areas of DSL Habitat:

- Refrain from causing any New Surface Disturbance in High Suitability areas of DSL Habitat;
- Comply with the NRCS Code 528 including livestock stocking rates, or equivalent grazing management system;
- No release, planting or related actions to establish or introduce exotic or invasive species, including but not limited to feral pigs or other species that may degrade habitat;
- Construction of new fences and livestock structures, when possible, shall avoid High Suitability DSL Habitat;
- Avoid introduction of non-native vegetation by using habitat appropriate native vegetation and best management practices, such as cleaning vehicle coming into the area to remove mud and seeds. If an activity is identified that introduces new non-native vegetation, the activity or source will be controlled to manage or remove the invasive vegetation; and

- Use of herbicides for shinnery oak management only when habitat goals cannot be achieved by other means, including grazing system management. When herbicide use cannot be avoided, the following measures will be implemented:
    - No herbicide application for the control of shinnery oak in dune complexes and dispersal corridors between dune complexes and shinnery oak associated with dune complexes. Maintenance of buffers around dune complexes of 100 meters to ensure dune stability where tebuthiuron will be applied. Herbicide application for the management/control of mesquite and other problematic woody and herbaceous plants will be conducted only with the Administrator's approval and concurrence by FWS.
    - Herbicides should be used at appropriate shinnery oak suppression rates. Application should follow the natural patterns on the landscape such that only patches needing treatment are treated.
    - Grazing will be deferred one growing season following treatment. If vegetation response to treatment has been hindered due to drought or other factors, additional deferments to ensure success of the treatment may be required.
    - Experimental treatments outside these guidelines may occur with the Administrator's approval and concurrence by FWS. Experimental treatments must be part of a quantitative research design to study vegetation response, viability of shinnery oak, drift, sub-surface spread, the interaction of herbicide treatment and/or grazing management and the response of the DSL to various treatments.

<u>Intermediate Suitability Areas of DSL Habitat:</u>

- Refrain from increases in current agricultural practices that could impact Intermediate Suitability Areas of DSL Habitat (i.e., increasing grazing pressure and developing new agricultural fields);
- Comply with the NRCS Code 528 including livestock stocking rates, or equivalent grazing management system;
- No release, planting or related actions to establish or introduce exotic or invasive species, including but not limited to feral pigs or other species that may degrade habitat;
- Construction of new fences and livestock structures, when possible, shall avoid DSL Habitat;
- Avoid introduction of non-native vegetation by using habitat appropriate native vegetation and best management practices, such as washing vehicle coming into the area to remove mud and seeds. If an activity is identified that introduces new non-native vegetation, the activity or source will be controlled to manage or remove the invasive vegetation; and

- Use of herbicides for shinnery oak management only when habitat goals cannot be achieved by other means, including grazing system management. When herbicide use cannot be avoided, the following measures will be implemented:
    - No herbicide application for the control of shinnery oak in dune complexes and dispersal corridors between dune complexes and shinnery oak associated with dune complexes. Maintenance of buffers around dune complexes of 100 meters to ensure dune stability where tebuthiuron will be applied. Herbicide application for the management/control of mesquite and other problematic woody and herbaceous plants will be conducted only with the Administrator's approval and concurrence by FWS.
    - Herbicides should be used at appropriate shinnery oak suppression rates. Application should follow the natural patterns on the landscape such that only patches needing treatment are treated.
    - Grazing will be deferred one growing season following treatment. If vegetation response to treatment has been hindered due to drought or other factors, additional deferments to ensure success of the treatment may be required.
    - Experimental treatments outside these guidelines may occur with the Administrator's approval and concurrence by FWS. Experimental treatments must be part of a quantitative research design to study vegetation response, viability of shinnery oak, drift, sub-surface spread, the interaction of herbicide treatment and/or grazing management, and the response of the DSL to various treatments.

<u>Low Suitability Areas of DSL Habitat:</u>

- Comply with the NRCS Code 528 including stocking rates, or equivalent grazing management system;
- No release, planting or related actions to establish or introduce exotic or invasive species, including but not limited to feral pigs or other species that may degrade habitat;
- Construction of new fences and livestock structures, when possible, shall avoid DSL Habitat; and,
- Avoid introduction of non-native vegetation by using habitat appropriate native vegetation and best management practices, such as cleaning vehicle coming into the area to remove mud and seeds. If an activity is identified that introduces new non-native vegetation, the activity or source will be controlled to manage or remove the invasive vegetation;
- Use of herbicides for shinnery oak management only when habitat goals cannot be achieved by other means, including grazing system management.

When herbicide use cannot be avoided, the following measures will be implemented:

- No herbicide application for the control of shinnery oak in dune complexes and dispersal corridors between dune complexes and shinnery oak associated with dune complexes. Maintenance of buffers around dune complexes of 100 meters to ensure dune stability where tebuthiuron will be applied. Herbicide application for the management/control of mesquite and other problematic woody and herbaceous plants will be conducted only with the Administrator's approval and concurrence by FWS.
- No herbicide application for the control of shinnery oak in dune complexes and maintenance of buffer around dune complexes of 100 meters to ensure dune stability where tebuthiuron will be applied. Herbicide application for the management/control of mesquite and other problematic woody and herbaceous plants will be conducted only with the Administrator's approval and concurrence by FWS.
- Herbicides should be used at appropriate shinnery oak suppression rates. Application should follow the natural patterns on the landscape such that only patches needing treatment are treated.
- Grazing will be deferred one growing season following treatment. If vegetation response to treatment has been hindered due to drought or other factors, additional deferments to ensure success of the treatment may be required.
- Experimental treatments outside these guidelines may occur with the Administrator's approval and concurrence by FWS. Experimental treatments must be part of a quantitative research design to study vegetation response, viability of shinnery oak, drift, sub-surface spread, the interaction of herbicide treatment and/or grazing management and the response of the DSL to various treatments.

8.4 Conservation Actions

Enrollment and Habitat Conservation Fees will be used for Conservation Actions. The approved uses of Enrollment and Habitat Conservation Fees include the following Conservation Actions:

- Remove abandoned wells, well pads, and associated roads, and reclaim or restore the locations;
- Acquiring Conservation Easements and other protections to conserve contiguous blocks of priority areas of High and Intermediate Suitability DSL Habitat;
- Restoration or Reclamation, as appropriate, of habitat connectivity and dispersal corridors in High Priority Areas;
- Enhancing knowledge of effective conservation strategies by conducting research on the DSL, its habitat, and the efficacy of Conservation Measures and Actions;

- Studying the efficacy of implementing the introduction or reintroduction of shinnery oak in priority areas and implementing the technique if it is effective and feasible; and,
- Studying: (a) the threats posed by high densities of well pads to DSL occupancy and dune structure; (b) the threats posed by roads, or certain types of roads; (c) re-establishment of DSL populations in currently unoccupied, suitable habitat; and (d) the effectiveness of well pad and road removal in ameliorating the effects of well pad and road density and implementing any changes dictated by the studies through the Adaptive Management process.

Enrollment and Habitat Conservation Fees may be applied to Conservation Action not listed above, if a new Conservation Action is recommended to the Administrator by the Adaptive Management Committee and approved by the Service.

In lieu of Habitat Conservation Fees, Participants may elect to contribute in-kind services by implementing Conservation Actions on their enrolled property. Participants also may conduct such Conservation Actions in advance of surface disturbances. In both cases, prior approval by the Administrator is required of those actions as being consistent with the Conservation Strategy and the requirements of this 2020 DSL CCAA. The Administrator will track and assess the Participant's in-kind services on its own property and their costs and apply the services to the Habitat Conservation Fee or, if the costs incurred are more than the Habitat Conservation Fee owed, use the surplus as a pre-payment on future Habitat Conservation Fees.

The Conservation Strategy and Adaptive Management Committee will guide the development, implementation and priority areas for Conservation Action by the Administrator or Participants. The goal of this approach is to direct Conservation Actions to protect and restore the most important areas of habitat for the DSL.

For most Covered Activities causing a New Surface Disturbance, the acquisition of perpetual Conservation Easements and similar protections will be preferred. Where an easement of 25 or more years is appropriate, the easement must be rolled over or replaced for any re-issuance of the 2020 DSL CCAA in order to maintain a net conservation benefit.

To incentivize non-Federal property owners to grant access for surveys, research and implementation of Conservation Actions, an appropriate one-time payment may be made by the Administrator from Enrollment and Habitat Conservation Fees. The amount of any payment, the basis for the payment, and the recipient of the payment must be reported in the Annual Report.

9.0. CERTIFICATES OF INCLUSION (CI)

A Certificate of Inclusion (CI) is the mechanism for Participants to voluntarily participate in this CCAA for the purposes of providing conservation for the DSL. Participants sign a CI for

Enrolled Property and agree to implement Conservation Measures on the Enrolled Property and, except for Agriculture and Ranching Participants, to contribute funding via Habitat Conservation, Enrollment and, where applicable, Implementation Fees (Section 13.0). It is important to note that funds associated with a CI may or may not be used on Enrolled Property as described under the corresponding CI since that area may not encompass the highest priority area identified for Conservation Actions. All CIs contribute to and are consistent with the Conservation Program in this 2020 DSL CCAA. No changes or modification of the CI language, as approved with this Agreement, will be made without written approval of the Service.

If the DSL is listed during the life of the 2020 DSL CCAA, the permit becomes effective on the day the listing becomes effective. The Permit conveys the incidental take authorization and assurances to the Permit Holder on the effective date. The CI is the document that conveys the incidental take authorization from the permit to the Participants; and conveys the assurances of the Permit to the Participants upon the effective date of the permit/listing, if the CI conservation commitment is fully implemented and is consistent with the CCAA.

10.0. RESPONSIBILITIES OF THE PARTIES

The Administrator shall be responsible for:

- Implementing and administering the 2020 DSL CCAA;
- Retaining staff and/or third-party contractors to administer the on-the-ground implementation of the 2020 DSL CCAA;
- Enrolling Participants in accordance with this 2020 DSL CCAA via CIs;
- Calculating and invoicing participants for conservation fees as stated in Section 13.0;
- Securing permission to conduct surveys, research, and Conservation Actions on private and state lands;
- Using Enrollment and Habitat Conservation fees to implement Conservation Actions to promote the conservation of the DSL or its habitat;
- Using Enrollment and Habitat Conservation fees to acquire Conservation Easements and other protections in high priority areas (i.e., areas likely to be most beneficial to the conservation of the species) of DSL Habitat, including to reduce habitat fragmentation;
- Reviewing Conservation Measures and Actions within DSL Habitat for compliance with the terms of the 2020 DSL CCAA and CIs;
- Monitoring Conservation Measures and Actions to determine success and adaptations needed; coordinating with the Adaptive Management Committee as needed;
- Monitoring compliance with Conservation Measures in the various CIs;
- Conducting annual monitoring to evaluate the population status and level of habitat loss or modification;

- Conducting outreach and public education efforts to promote the conservation of the DSL and its habitat;
- Establishing and maintaining the Adaptive Management Committee;
- Leading an annual meeting with the Adaptive Management Committee to facilitate the Administrator's implementation of the 2020 DSL CCAA by reviewing progress from the previous year, seeking potential solutions for factors that would benefit conservation of the DSL and its habitat, and discussing actions that would benefit the DSL and its habitat to be initiated in the upcoming year;
- Tracking expenditure of funds and preparing an annual report on the implementation of this CCAA that shows how much of Implementation, Habitat Conservation, and Enrollment Fees were spent, what they were spent on, and how much remains;
- Making, with suggestions from the Participant Committee, necessary adjustments to Enrollment, Habitat Conservation, and Implementation Fees as set out in Appendix D:
- Monitoring and tracking surface-disturbing activities in DSL Habitat and reporting disturbances on a quarterly basis;
- Reporting on a bi-annual basis the results of Change Detection Analyses (CDA) regarding surface-disturbing activities in the Covered Area;
- Ensuring confidentiality for all areas under control of the Administrator in accordance with Section 21.0; and,
- Providing reasonable advance notice to a Participant prior to accessing Participant's Enrolled Property for purposes of monitoring compliance with terms of the CI. The Administrator shall allow a Participant to accompany the Administrator during any visit to the Participant's Enrolled Property. The Administrator and other individuals will comply with Participant's site visitation policies when visiting the Participant's Enrolled Property.

The FWS shall be responsible for:

- Issuing, upon execution of this 2020 DSL CCAA, an umbrella Enhancement of Survival Permit to the Administrator, Permit holder, on behalf of the Participants in accordance with 50 CFR § 17.22(d) or 17.32(d) and the terms of the CCAA. If the DSL is listed under the ESA, this permit shall become effective and provide Participants who are in compliance with the terms of their CI, that is consistent with the CCAA, with authorization for anticipated incidental take of the species as a result of Covered Activities on their Enrolled Property and with the assurances described in this CCAA;
- Serving as an advisor to the Administrator;
- Participating in the Adaptive Management Committee;
- Reviewing the CCAA annual report and quarterly surface disturbance report; and,
- Reviewing the results of Change Detection Analysis.

Participants shall be responsible for:

- Implementing Conservation Measures and funding Conservation Actions in accordance with the terms of their CIs;
- Maintaining documentation of the Participant's compliance with the Conservation Measures in its CIs and providing that documentation to the Administrator upon request;
- Providing required notifications as outlined in Section 14.0;
- Submitting updated GIS shapefiles to the Administrator of its Enrolled Properties on an annual basis, no later than October 1;
- Providing the Administrator with an estimate of surface disturbances anticipated in the course of its development for the upcoming calendar year by December 1; and,
- Subject to appropriate rights and confidentiality, allowing the Administrator or its designated representatives reasonable access, with prior notification and consent, to survey, monitor or study the DSL and/or conduct compliance monitoring on Enrolled Properties.

11.0. PARTICIPANT NON-COMPLIANCE

In the event that the Administrator determines that a Participant is improperly implementing or failing to implement the agreed upon Conservation Measures and Actions described in its CI, the Administrator will notify the Participant by mail and electronic transmission regarding the need to correct the deficiency immediately. If the deficiency is a failure to pay Fees, Participant shall have thirty (30) days to make the payment or to arrange for a mutually acceptable date by which the Administrator will receive the payment. With respect to any other deficiency, the Administrator will notify Participant by mail and electronic transmission of the deficiency promptly on its discovery. Participant shall initiate corrective actions within thirty (30) days of receipt of the notice or arrange for a mutually acceptable date by which corrective action will be initiated. If the Participant has not initiated corrective actions within thirty (30) days of receipt of the notification or arranged for a mutually acceptable date for initiating the corrective actions, the Administrator may take actions, up to and including termination of some or all of the CI. In lieu of initiating corrective actions, Participant may file an appeal with the Administrator, by electronic transmission or formal written notice, within thirty (30) days of receipt of the notice of deficiency setting out clearly the basis for the appeal. Administrator will notify the Participant by mail and electronic transmission within 10 days of determination of the appeal. The Permit Holder will notify the Service of the resolution of any unresolved non-compliance issue within 30 days of the determination of the appeal.

12.0. SUSPENSION AND TERMINATION

12.1 Suspension

Each Participant will agree that the Administrator, in coordination with the FWS, may suspend any CI as it relates to some or all of the Enrolled Property identified in Exhibit A of the CI until the Habitat Conservation Fee, Enrollment Fee (if any), or Implementation Fee, if applicable, associated with the CI is paid. Regardless of enrollment method, the CI may be suspended with respect to a single parcel of Enrolled Property. If the DSL is listed, the FWS will not authorize incidental take of DSL resulting from any activities occurring on Enrolled Property for which the CI is suspended.

12.2 Voluntary Termination

The Participant may terminate the CI in part or whole at any time but remains obligated to pay all Enrollment Fees described in Section 12.3. The Participant may terminate its CI as to any or all enrolled property by giving written notice to the Administrator thirty (30) days prior to termination. Any funds remaining in Participant's Habitat Protection Fund account at the time of termination will not be refunded.

12.3 Involuntary Termination

A CI may be terminated following the process described in Sections 11.0 and 12.0, and over a Participant's objections because of a Participant's failure to pay the Habitat Conservation Fee or for the Participant's failure to implement the Conservation Measures documented in the CI. As funds can be spent on implementation of this agreement and Conservation Actions at any time, Enrollment Fees and Habitat Conservation Fees will not be refunded.

Voluntary or involuntary termination of the CI will relieve a Participant of any additional Habitat Conservation Fees for future New Surface Disturbance on the terminated parcels. Participants will be given notifications as described in Section 14.0.

12.4 Termination of this Agreement and Corresponding Permit(s)

In the event that circumstances beyond the Administrator's control threaten to terminate the 2020 DSL CCAA, the Administrator agrees to provide prompt written notice to Participants. Such notice shall include a description of the issue and a recommended course of action to resolve the threatening circumstances. The Administrator shall then convene a meeting of the Administrator, FWS and Participants, and the Parties and Participants collectively agree to exercise their best good faith efforts to seek resolution of the circumstances and maintain this 2020 DSL CCAA and any corresponding permit(s) in full force.

The FWS may suspend or terminate the Agreement, or suspend or revoke the permit for cause in accordance with 50 CFR § 17.22(d), 17.32(d), 13.27, and 13.28. Such suspension or

termination would be of the Agreement and Permit as a whole, if the Permit Holder fails to implement the CCAA or fails to hold Participants accountable for their commitment in their CIs or that their CIs are not fully consistent with the CCAA.

In addition the Service may revoke the permit if continuation of the permitted activity would either appreciably reduce the likelihood of survival and recovery in the wild of any listed species (jeopardize) or directly or indirectly alter designated critical habitat such that it appreciably diminishes the value of that critical habitat for both the survival and recovery of a listed species (Adverse Modification). Before revoking a permit for either of the latter two reasons, the Service, with the consent of the permittee, will pursue all appropriate options to avoid permit revocation. These options may include, but are not limited to: extending or modifying the existing permit, capturing and relocating the species, compensating the landowner to forgo the activity, purchasing an easement or fee simple interest in the property, or arranging for a third-party acquisition of an interest in the property (50 CFR § 13.22(d)(7) and 17.32(d)(7)).

13.0. FUNDING AND ENROLLMENT PROCESS

Habitat Conservation, Enrollment, and Implementation Fees contributed by Participants will be held in an account and utilized by the Administrator to implement the 2020 DSL CCAA including accomplishing the Conservation Actions. The Administrator will calculate, invoice and use the Habitat Conservation, Enrollment and Implementation Fees, and Participants will make payments of these fees, based on Appendix D of this CCAA.

13.1 Enrollment Process

Enrollment is a process that starts with a potential Participant contacting the Permit Holder and submitting a CI with associated material supporting the CI (Collectively referred to as an Application to Enroll). All applications for enrollment must complete prior to the effective date of any potential listing of DSL.

Participants may enroll on an All Activities or Parcel-by-Parcel basis as specified below:

- An Oil and Gas Participant may enroll through the All Activities process.
- An Oil and Gas Participant that has an aggregate property interest equal to or less than 500 acres may enroll through the Parcel-by-Parcel process.
- A Pipeline Participant must enroll through the All Activities process.
- A Sand Mining Participant must enroll through the All Activities process.
- A Renewable Energy Operation Participant must enroll through the All Activities process.
- An Agriculture and Ranching Participant must enroll through the Parcel-by-Parcel process

Participants will agree to each of the Conservation Actions and Measures included in this agreement and the CI. Once the application is considered complete by the Permit Holder, the Participant will sign two originals of the CI, which will then be signed by the Administrator. CIs must be signed by the Participant within 60 days after the effective date of a decision to list the DSL. The date of the last signature will be the effective date of the CI. The Administrator will mail one original CI to the Participant. Electronic signatures will suffice for enrollment requirements. If electronic signatures are used, one copy of the CI will suffice, and each signatory will receive a copy of the electronic version.

FWS will receive copies of the CIs that have been designated to protect confidential business information in accordance with the requirements of Section 21 regarding Confidentiality.

13.2 Implementation Fees

Beginning upon enrollment, Oil and Gas, Sand Mining, and Renewable Energy Participants will be responsible for paying an annual Implementation Fee for the duration of their CI as set out in Appendix D.

13.3 Enrollment Fees

All Participants, except those in the Agriculture and Ranching Sector, will be responsible for paying an Enrollment Fee for the first three years this CCAA and CI are in effect as set out in Appendix D.

13.4 Habitat Conservation Fees

All Participants, except those in the Agriculture and Ranching Sector, will be responsible for paying Habitat Conservation Fees associated with New Surface Disturbances and seismic activities as set out in Appendix D.

13.5 Enrollment of Property with Stratified Mineral Interests

Participants may enroll properties where mineral interests are severed from the surface estate. Under Texas law, the owner of the mineral estate is legally privileged to make such use of the surface as is reasonable and necessary to develop underlying minerals. A Participant with a right of access to develop a mineral lease agrees to be responsible only for New Surface Disturbance in conjunction with that access and for implementing the Conservation Measures and Actions in its CI.

If the mineral rights on a Property are stratified, Participants that share access to the same surface may agree to divide the enrollment fees. Where the access to a surface estate is shared by a Participant and a non-participant with mineral rights in a different strata

underlying the same tract, (i.e., stratification), and the Administrator determines, after consulting with the Adaptive Management Committee, that the impacts on the surface from stratified leasing override the benefits of enrollment of the Property, the Administrator will work with the Participant, and the stratified lessee to develop approaches to avoid, minimize or mitigate impacts to the DSL or its habitat from development by the stratified lessee.

14.0. NOTIFICATION PROCEDURES

Upon initial enrollment and, thereafter, annually by December 1, each Participant will provide the Administrator with an estimate of New Surface Disturbances anticipated in the upcoming calendar year. The estimate of surface disturbance need only be based on the Participant's planned development for the year. The Participant's actual surface disturbances may differ from the estimate provided.

Then, throughout the year, not less than 15 days prior to commencing a New Surface Disturbance or seismic activities, the Participant shall provide the Administrator with a description of the proposed New Surface Disturbance that includes:

- Survey plats, GIS shape files, Google Earth KML, or other appropriate documentation of proposed surface-disturbing activities within the Covered Area; and
- Anticipated expected timeframe that surface-disturbing activities will occur.

The Administrator, in cooperation with the Participant, will:

- Review the description of the New Surface Disturbance submittal by Participants to determine it is complete;
- Submit invoices to Participants upon receipt of notification of planned New Surface Disturbance; and,
- Conduct on-site inspections of the project if necessary.

15.0. ADAPTIVE MANAGEMENT

This CCAA is based on the principles of Adaptive Management set out in 65 Fed. Reg. at 35,242. The adaptive management process is a structured approach for dealing with uncertainty. The adaptive management process develops hypotheses regarding uncertainty and research to test those hypotheses in an iterative process to develop effective strategies for minimizing the uncertainty.

The signatories to this CCAA agree and recognize that implementation of the Conservation Strategy objectives and criteria, Conservation Measures and Actions, and the Covered Area may change as new science emerges. The effectiveness of the Conservation Strategy

objectives and criteria, Conservation Measures, Conservation Actions, monitoring methods, and new technologies will be reviewed by the Administrator on an annual basis, with input from the Adaptive Management Committee. The Adaptive Management Committee will be responsible for reviewing and evaluating the effectiveness of Conservation Program under the 2020 DSL CCAA as described in Sections 2.0 and 16.1, including the effectiveness and implementation of the Conservation Strategy, Conservation Measures and Conservation Actions; setting priorities for DSL Habitat conservation and monitoring habitat loss; and recommending changes to any aspect of the Conservation Program based on new science.

As a result, appropriate modifications to the Conservation Measures and Actions may be incorporated to further refine the goals and objectives of this 2020 DSL CCAA. Such modifications are incorporated into existing CIs, if they were identified in changed circumstances in the 2020 DSL CCAA. Modifications not related to changed circumstances identified in the 2020 DSL CCAA and instead related to unforeseen circumstances may be incorporated into new CIs that take effect after the modifications have been made and to existing CIs only with written consent from the Participants and Service. Additionally, research projects that are designed to determine the effectiveness of management practices will be encouraged and utilized to determine what Adaptive Management is necessary. Changes resulting from Adaptive Management will flow through the Governance structure as described in Section 2.0 of this CCAA.

16.0. ASSURANCES PROVIDED

The FWS provides regulatory assurances to the Permit Holder in the associated Section 10(a)(1)(A) Enhancement of Survival Permit supported by this CCAA. Consistent with 50 CFR §17.22(d)(5) and 17.32(d)(5) and the FWS' Candidate Conservation Agreement with Assurances Final Policy (81 Fed. Reg. at 95,164), if the DSL is listed, the FWS will not require additional Conservation Measures (including conservation measures and actions as described in this CCAA) nor impose additional land, water, or resource-use restrictions, beyond those voluntarily agreed to and described in this Section, as long as the CCAA and CIs are properly implemented. These assurances will be authorized through the Enhancement of Survival Permit, which will become effective if the DSL is listed in the future if the terms of the CCAA has been fully implemented. As described in more detail below, these assurances also apply in the event of Unforeseen Circumstances. FWS may request additional Conservation Measures of the Participants with CIs. However, any such additional Conservation Measures would be voluntary and must be agreed to by the Administrator and the relevant Participant in writing as an amendment to the CI. The Permit, when it becomes effective, will also authorize the incidental take of the species by Participants as long as the take is consistent with the terms of this CCAA and relevant CI, and the CCAA has been fully implemented.

16.1 Changed or Unforeseen Circumstances

In the case of changed or unforeseen circumstances, the assurance listed above apply to Participants where the CCAA is being properly implemented.

"Changed circumstances" are those alterations in circumstances that can reasonably be anticipated and planned for in the 2020 DSL CCAA. "Unforeseen circumstances" are changes in circumstances that could not reasonably have been anticipated by the Administrator and FWS at the time of the CCAA's negotiation and development, and result in a substantial and adverse change in the status of the species.

16.1.1 Changed circumstances provided for in the 2020 DSL CCAA.

If additional Conservation Measures (including conservation measures and actions as described in this CCAA) are necessary to respond to changed circumstances and the measures were set forth in this CCAA, Participants will implement the measures specified herein.

It is anticipated and planned for in Appendix A of this CCAA that new data and analysis will allow refinement of the Texas State Map through the Adaptive Management process, as well as site-specific assessment of habitat and DSL presence/absence to inform Conservation Measures and Conservation Actions by sand mining Participants.

Changed Circumstances provided for in this 2020 DSL CCAA and the measures specified to address them include:

Table 2. Changed Circumstances included in the 2020 DSL CCAA

Changed Circumstance	Trigger	Measures or Actions to Be Implemented
Stratification	If an observable trend in the amount of stratification is demonstrated through stratification monitoring.	The Administrator will promptly develop and implement a program of education and outreach to encourage adoption of the Adaptive Management Committee's findings. The program will include, where appropriate, meetings with surface owners, enrolled participants with stratified mineral estate leases, and unenrolled mineral rights owners of stratified mineral leases in High and Intermediate Suitability DSL Habitat to attempt to develop a mutually acceptable surface use plan and to discuss measures to minimize adverse impacts to the surface estate.
Assumptions regarding the efficacy of Conservation Measures and Actions Were Incorrect	The Administrator, in consultation with the Adaptive Management Committee, determines that the implementation of the Conservation Measures and Actions is no longer supported by the best available science information.	Adaptive Management Committee will examine the efficacy of Conservation Measures and Actions and, if necessary, recommend appropriate modifications to the Conservation Measures and Actions that should be incorporated to further refine the goals and objectives.
The Map in Appendix A Does Not Accurately Identify Areas of Likely Occurrence	The Administrator determines the map of likelihood of occurrence in Appendix A is no longer supported by the best available science information.	Based on recommendations of the Adaptive Management Committee and in coordination with the TCP permit holder and participants, the map can be amended through the Adaptive Management process as outlined in Sections 2.0, 22.0, and 15.0.

Changed Circumstance	Trigger	Measures or Actions to Be Implemented
Impacts of groundwater pumping	Evidence identified through the Adaptive Management Process that pumping is adversely affecting dune structure or shinnery oak	The Adaptive Management Committee will review and evaluate all groundwater data and information received by the Administrator and recommend any necessary changes to protect dune structure and shinnery oak.

16.1.2 Changed circumstances not provided for in the 2020 DSL CCAA.

Changed circumstances not provided for in this CCAA will be treated as unforeseen circumstances as described below (Section 16.1.3) (See 50 CFR §§17.22(d)(5) and 17.32(d)(5)).

16.1.3 Unforeseen circumstances.

If additional Conservation Measures (including conservation measures and actions as described in this CCAA) are necessary to respond to unforeseen circumstances, FWS may require additional measures of the Participants, but only if such measures are limited to modifications within the CCAA's conservation strategy for the affected species, as described in Section 8 of this CCAA, and only if those measures maintain the original terms of the CCAA and CIs to the maximum extent possible. These additional Conservation Measures (including conservation measures and actions as described in this CCAA) will not involve the commitment of additional land, water, financial compensation, or additional restrictions on the use of land, water, or other natural resources available for development or use under the original terms of the CCAA and associated CI without the consent of the individual Participant(s).

The FWS will demonstrate if unforeseen circumstances exist, using the best scientific and commercial data available. These findings must be clearly documented and based upon reliable technical information regarding the status and habitat requirements of the DSL. The FWS will consider, but is not limited to, the following factors:

- Size of the current range of the species;
- Percentage of range adversely affected by the CCAA;
- Percentage of range conserved by the CCAA;
- Ecological significance of that portion of the range affected by the CCAA;
- Level of knowledge about the affected species and the degree of specificity of the species' conservation program under the CCAA; and,
- Whether failure to adopt additional Conservation Measures would appreciably reduce the likelihood of survival and recovery of the DSL in the wild.

In the unlikely situation in which an unforeseen circumstance results in likely jeopardy to a species covered by this CCAA and enhancement of survival permit, the Service could revoke this CCAA and permit as a last resort. However, the Service and its cooperators would first exercise all possible means to remedy the situation through other means (50 CFR § 17.22(d)(7).

17.0. DURATION OF THE 2020 DSL CCAA AND ENHANCEMENT OF SURVIVAL PERMIT

To promote a holistic, integrated Conservation Program for the DSL, this 2020 DSL CCAA will have the same duration as the TCP, beginning from the date of the last signature by Administrator and FWS and ending 30 years from the effective date of the TCP. Therefore, it will be effective for approximately 23 years. It may be also renewed upon application by Administrator, provided the FWS determines that the CCAA continues to comply with the requirements of the applicable CCAA policy at the time the CCAA is approved. If the Administrator applies for a renewal at least 30 days prior to the expiration of the Permit, the Administrator and Participants may continue the activities authorized by the Permit until the FWS acts on the application for renewal. The CCAA will cover a Participant's Enrolled Property from the effective date of the CI until the CCAA or CI terminates, whichever occurs first.

Should the DSL be listed as "threatened" or "endangered," the Enhancement of Survival Permit will become effective. The Permit shall remain in effect until the CCAA's expiration date or until surrender by the Permittee, unless it is suspended or revoked by FWS, as provided in its permitting regulations.

So long as Participants remain in compliance with the terms of their CI and this CCAA, all Participants and their Covered Activities on or associated with Enrolled Property will be covered by this Permit from its effective date until the CCAA's expiration date or the date on which a Participant terminates the CI for an Enrolled Property, whichever comes first. Participation is also renewable with the original conservation commitment, as identified by Administrator in the CI.

Coverage under the Enhancement of Survival Permit will only apply to Covered Activities on the Enrolled Properties in the CCAA through a CI. The Permit provides the assurances described in this CCAA and coverage for anticipated incidental take associated with the Participant's Covered Activities on Enrolled Property as long as the Participant is in compliance with the relevant CI. Incidental take authorization is also provided for independent third-party contractors implementing Covered Activities on behalf of the Participant, on the Participant's Enrolled Property, regardless of who constructs or operates the associated facilities. Any subsidiary of a parent participant company should enroll their

interests separately or be expressly identified in the parent companies CI, and will be bound to the requirements of the CI.

18.0. ANTICIPATED LEVEL OF TAKE

The anticipated level of individual DSLs taken through the Covered Activities is indeterminable due to the small numbers of the species, the cryptic nature of their behavior and the difficulty in detecting them in surveys. Disturbance or loss of DSL Habitat will be used as a surrogate for Take of individual DSL. Because of the DSL being a habitat specialist, habitat loss provides an adequate means of estimating the relative Take of individuals. As part of the 2020 DSL CCAA, the Administrator will monitor the impacts to the DSL Habitat based upon the geographic extent of the Texas State model as described in this CCAA (Hardy et al., 2018), to determine the amount of surface disturbance caused by the Participants and non-participants on an annual basis to determine Take under this CCAA, in agreement with the terms established for Take allocation in relationship with the TCP, and the overall effectiveness of this 2020 DSL CCAA.

As discussed in Section 7.0 above, Take could occur as a result of oil and gas development, agricultural and ranching use of the land, pipeline construction and operation, sand mining, and renewable energy operations in DSL Habitat. As described below, Conservation Measures and Actions undertaken by the Administrator and Participants are designed to provide a net conservation benefit to the DSL, and, thus, to avoid or minimize the amount of Take.

The TCP and Enhancement of Survival Permit issued in 2012 authorized up to 21,257 acres of surface disturbances/incidental Take over the 30-year term of the TCP (Enhancement of Survival Permit § K). The authorization was based on a calculation of the maximum amount of Take that could be realized over 30 years and included 17,997 acres related to oil and gas development, 1,087 acres of loss from agricultural and ranching activities, and 2,174 acres from other activities (TCP at 61). The allowable Take from oil and gas activities was based on a "worst case" analysis of the maximum number of acres of DSL Habitat that could be lost over 30 years by both Participants and non-participants (*id*).

18.1 Existing Condition

Due to limited survey site access in Texas, significant portions of the DSL range have not been surveyed. As such, Administrator used habitat quality and quantity and its protection as measures to evaluate the existing condition of DSL Habitat.

In the 25 years leading up to the creation of the conservation plans in New Mexico and Texas, 1986 to 2011, the geographic extent of the sand shinnery oak soil-vegetation association decreased 10.3 percent for Texas and New Mexico (Dzialak *et al*., 2013). This decrease was mostly in New Mexico for which patch size and total extent decreased. Conversely, patch

size and total extent increased in portions of Texas. During the same period, 1986 through 2011, there was a net increase of 27.3 percent in patch isolation range-wide; mostly attributed to trends in Texas. (*id.*).

A study of genetic population structure of the DSL (Chan *et al*. 2009) found three genetic clusters corresponding to north, central, and southern regions of the species' range in New Mexico. DSL samples from Texas fell within the southern genetic cluster but they were not more genetically similar to each other relative to samples obtained from southern portions of New Mexico. The study showed limited but recent gene flow between the genetic clusters but no fine scale spatial structuring of genetic diversity within each genetic cluster.

18.1.1 New Mexico

New Mexico currently contains 397,423 acres of modeled DSL Habitat, which is approximately 58 percent of the 684,750 acres of modeled DSL Habitat across the entire range in New Mexico and Texas (according to the Texas State map). Approximately 76% of the 1,447,137 acre DSL range studied by Johnson, et al., is within lands managed by the federal or state governments. The New Mexico CCA/CCAA plans, which require strict avoidance of disturbance in all DSL Habitat, cover approximately 1,408,000 acres. DSL Habitat in New Mexico is defined as sand dune complexes with shinnery oak and scattered sand sage (*Artemesia filifolia*) (USFWS, BLM, CEHMM 2008). Areas where honey mesquite or grasses are dominant or co-dominant, and areas of open unvegetated dunes are described as unsuitable for the DSL (Fitzgerald et al. 1997; Johnson et al. 2016). Since 2012 when the New Mexico CCA/CCAA began implementation, 577 proposed wells by participants were relocated out of DSL Habitat (CEHMM Annual Report, 2017).

18.1.2 Texas

Texas contains 287,327 acres of DSL Habitat according to the Texas State Map, which is approximately 42% of modeled DSL Habitat across New Mexico and Texas. In contrast to New Mexico, virtually all modeled DSL Habitat in Texas is on private lands. In Texas, since 2012, participants in the TCP have placed 258 wells in DSL Habitat as defined by the Texas State Map. Non-participants developed 272 wells in DSL Habitat.

Of the 287,327 acres of DSL Habitat, 76 percent fall within areas characterized as High and Intermediate Suitability under the Texas State map, totaling approximately 218,369 acres. Thus, because the 2020 DSL CCAA generally requires avoidance in High and Intermediate Suitability Habitat, subject to certain exceptions including escalating Habitat Conservation Fees based on groundcover types, Take by Participants would be incentivized toward disturbances in lower suitability Habitat.

18.2 Impacts by Sector

18.2.1 Oil and Gas

Potential future disturbance from oil and gas activities within DSL Habitat, as defined by the Texas State Hardy Map, is based on the number of additional wells that could be permitted within DSL Habitat in accordance with the Texas Railroad Commission Rules. The calculation also accounts for existing wells, the relative percentage of vertical and horizontal wells, the average surface disturbance area for each well type, and other infrastructure including roads, flowlines, and other associated infrastructure.

Total potential wells are calculated based on the total DSL Habitat acreage and 40-acre spacing units typical in the Permian Basin. The total number of wells that may be drilled, based on 40-acre spacing is 7,183. Existing wells estimated at 2,874 based on Texas Railroad Commission data are subtracted from total wells to estimate 4,309 potential future wells. The number of potential future wells is then adjusted to account for the relative percentage of vertical and horizontal wells, and their respective average disturbance area. Accordingly, there are an estimated 5,744 acres of potential disturbance from vertical wells and an estimated 7,180 acres of potential disturbance from horizontal wells. In addition, there is an estimated 2,500 acres of potential disturbance from other oil and gas infrastructure such as roads, flowlines, and other associated infrastructure. As described in Section 18 below, the 2020 DSL CCAA incorporates this total potential future disturbance as the take estimate for Participants, as well as non-participants, across the geographic range of modeled habitat. This 2020 DSL CCAA and the TCP provide the same range-wide disturbance estimate for upstream oil and gas development in Texas. As reflected in Section 18 below, the upstream oil and gas take number to be allocated between both the 2020 DSL CCAA and the TCP is 15,424 acres.

18.2.2 Pipelines

After six years of TCP implementation, surface disturbances due to Participant pipeline construction activities have been limited to approximately 159 acres. Ninety-six of those acres occurred in High and Intermediate areas of DSL Habitat (16 acres per year) and 63 acres (approximately 10 acres per year) occurred in Low Suitability Habitat as defined by the Texas State Map. Pipeline right of ways are typically 50 feet wide.

Because of the existing demand for pipeline capacity in the Permian Basin, it is estimated that a three-fold increase will occur in pipeline construction over the next five years and a 25 percent increase will occur over the remaining 25 years of the 2020 DSL CCAA.[2] Thus, the total habitat disturbance from pipeline construction and operation is anticipated to be 1,105

[2] Recently, oil production has exceeded pipeline capacity in the Permian Basin (See, e.g., Shortage of pipeline capacity to take crude out of the Permian basin is expected to remain until at least 2023. Seeking Alpha, "Permian Basin, These Oil and Gas Pipeline Projects Will Narrow the Oil and Gas Discount in 2020. (July 11, 2018).")

acres ((26 acres/year x 4 x 5 years)+(26 acres/year x 1.25 x 18 years)=1,105)). The estimated range-wide take allocation for this covered activity is presented based upon forecasted future covered activities under both the 2020 DSL CCAA and the TCP.

The Conservation Measures for pipeline participants have been enhanced in the 2020 DSL CCAA to include: (1) restoration of rights-of-way; (2) minimizing the footprint for development; (3) maximizing use of developed areas and rights-of-way; (4) minimizing road traffic; (5) use of SCADA to reduce traffic; and (6) open trench monitoring. Thus, the impacts may be temporary, avoided, or minimized.

18.2.3 Sand Mining

Under 2020 DSL CCAA, sand mining companies may enroll and mine areas of DSL Habitat so long as the participant complies with the Conservation Measures and Actions in its CI (*See* Appendix D; Section 8.3.2.). Seven sand mining companies were enrolled in the TCP through October 2018 based on their agreement not to excavate in DSL Habitat as described in the Hibbitts Map. Two of these companies are located proximate to Low Suitability DSL Habitat.

The Conservation Measures for sand mining operations include limiting New Surface Disturbances to 60 acres of DSL Habitat annually. Accordingly, no sand mining Participant may Take more than 1,380 acres of DSL Habitat, over the 23-year duration of the 2020 DSL CCAA.[3] While there is expected to be contraction in the number of sand mining operations over time, it is assumed for purposes of developing this disturbance estimate that 12 sand mines will continue to operate and that each mine will disturb DSL Habitat up to the 60 acre annual cap, consistent with the Conservation Strategy described in Section 8.3 above.

The total maximum surface disturbance for those 12 sand mining operations is approximately 16,560 acres (60 acres x 23 years x 12 sand mines). While it is not likely that all of those 16,560 acres is DSL Habitat for purposes of the Take estimate under the 2020 DSL CCAA, it is assumed that all 16,560 acres is both DSL Habitat and would be disturbed over the 23 year duration of the CCAA. Thus, the total maximum surface disturbances (e.g., Take) from all sand mining activities in DSL Habitat in Texas (whether under the TCP or this CCAA) is estimated to be 16,560 acres, which is an inclusive and conservative estimate accounting for all potential disturbance of DSL Habitat through the duration of the 2020 CCAA whether or not a particular sand mine operation is a Participant. [4]

[3] As discussed in Section 8 above, for the first three years of participation, a sand mining Participant will provide documentation to the Administrator in its annual plan that demonstrates that the New Surface Disturbances have not exceeded 60 acres per Enrolled Property in the preceding year. After the first three years of participation, the sand mining Participant's annual plan must demonstrate that the average New Surface Disturbance over the three preceding three years have not exceeded 60 acres per year per Enrolled Property

[4] Sand mining companies already enrolled in the TCP may continue to participate in that plan under those pre-existing agreements. To ensure that the take estimates under the 2020 DSL CCAA are conservative in capturing potential disturbance of DSL Habitat, the impacts associated with those "non-participants" have been included in the impact calculations discussed in Section 18.

18.2.4 Renewable Energy

At this time, wind development near DSL Habitat is largely confined to a topographic ridge to the east of DSL Habitat and is sufficiently removed that it should not affect DSL Habitat. The relatively low altitude of DSL Habitat should discourage wind power development in habitat. In 2017, three solar companies planned projects that included placement of solar panels in DSL Habitat. When they learned about the DSL, they redesigned the distribution of solar panels to avoid DSL Habitat.

Under the 2020 DSL CCAA, renewable energy Covered Activities are limited to power lines and appurtenant structures located in areas of Low Suitability DSL Habitat. Above-ground lines typically have a right-of-way approximately 20 feet wide. Electric substations cause approximately two to five acres of disturbance (*See*, e.g., Oil and Gas Industry Conservation Plan for the American Burying Beetle, 2014).

Absent the context of a specific project, it is not possible to reasonably estimate the amount of surface disturbance. The amount of disturbances from these sectors may be fewer than 1000 acres because of the limited interest that has been expressed about activity in the area and its limited use for infrastructure. Conservation Measures include maximizing use of existing developed areas, restoring right-of-ways, and minimizing the footprint of development. The estimated range-wide take allocation for this covered activity is presented based upon forecasted future covered activities under this plan and under the TCP.

18.2.5 Agriculture and Ranching

The original calculation of habitat loss for agricultural activities in the 2012 TCP limited the losses over 30 years to 1,087 acres or approximately 0.5 percent of total habitat loss, which the TCP characterized as "minimal." (*See* TCP at 60; *See also* 77 Fed. Reg. at 36,892.) As reflected in the 2012 TCP Take analysis, grazing and other agricultural activities historically have not resulted in significant habitat loss. (*See* 77 Fed. Reg. at 36,892.) CPA had no record of any ranching and agricultural disturbances. The 2020 DSL CCAA restricts the creation of New Surface Disturbances by Agriculture and Ranching Participants in High and Intermediate Suitability areas of DSL Habitat. In addition, grazing activities must be conducted as prescribed by NRCS Code 528. Further, the more stringent restrictions in this 2020 DSL CCAA on tebuthiuron use should markedly limit the loss of shinnery oak associated with dune complexes caused by use of the herbicide. Similarly, restrictions on new fencing in High and Intermediate areas of DSL Habitat should also minimize the threat of predation. Accordingly, we anticipate Take associated with agricultural and ranching activities to be minimal and not greater than the 1,087 acres projected in the TCP.

The estimated range-wide take allocation for this covered activity is presented based upon forecasted future covered activities under this plan and under the TCP.

18.3 Total Anticipated Take

Based on these analyses and assumptions, the total estimated surface disturbances over 23 years is reasonably anticipated to be 34,690 acres of DSL Habitat, approximately 48% of which is from sand mining operations. Because the 2020 DSL CCAA provides the opportunity for participation across all relevant sectors, including the sand mining industry, the total estimated surface disturbance is inclusive of all estimated impacts by each sector, regardless of whether or not a particular operation is a Participant. This is not an assumption of 100% participation by operations across all sectors, but rather reflects the establishment of metrics related to New Surface Disturbance of DSL Habitat over the course of this plan's 23 years by which the effectiveness of Conservation Measures, such as the annual and total caps on New Surface Disturbance by sand mining operations, under the 2020 DSL CCAA can be monitored, including for purposes of Adaptive Management. These estimates also establish the ceiling for any Take that is authorized consistent with the 2020 DSL CCAA. This represents approximately 12% of modeled potential DSL habitat in Texas.[5]

Table 3. Summary of Anticipated Impact (Take) by Sector.

EFFECTS OF THE ACTION	ANTICIPATED TAKE (ACRES)
Oil and Gas	15,424
Pipelines	1,105
Agriculture and Ranching	834
Sand Mining	16,560
Renewable Energy	767
Total Take from Covered Activities	34,690

18.3.1 Conservation Strategy

The 2020 DSL CCAA's Conservation Strategy will contribute to the conservation of the DSL by reducing or eliminating threats on Enrolled Property and result in a net conservation benefit to the DSL and its habitat.

First, the 2020 DSL CCAA generally requires and incentivizes avoidance of High and Intermediate Suitability Habitat for all Covered Activities with certain exceptions. All New Surface Disturbances will be fully mitigated through the Conservation Action program. Second, habitat degradation and fragmentation, which can be among the principal threats to the DSL in Texas, are reduced by the 2020 DSL CCAA. For example, the 2020 DSL CCAA places

[5] Sand mining under the 2020 DSL CCAA would affect less than 6% of the modeled DSL Habitat in Texas (287,327 acres under Hardy) and would affect less than 2.5% of total modeled DSL Habitat in Texas and New Mexico (684,750 acres).

an emphasis on avoidance of development in high quality habitat and focuses development in areas of degraded habitat (e.g., greater than 13 wells pads/mi^2). This emphasis will reduce the creation of new areas of high-density wells and, thus, minimize habitat degradation and fragmentation. Third, encouraging avoidance of areas of well densities greater than four and less than 13 well pads/mi^2 also should minimize development in areas with the potential to become degraded habitat. Fourth, the CCAA includes a Conservation Strategy calling for well pad removal and restoration that will reduce well densities in marginal areas of degradation.

Moreover, the 2020 DSL CCAA emphasizes the use of Conservation Easements and other protections to create contiguous areas of protected High and Intermediate Suitability DSL Habitat, again reducing the areas of high density and fragmentation of DSL Habitat. Additionally, the 2020 DSL CCAA will fund research to better understand the impacts of well density and roads and to determine whether shinnery oak can be established or reestablished in DSL Habitat. Finally, the Administrator may consider implementing a credit system for the acres of DSL Habitat that may be disturbed by sand mining operations under the 16,560 acre disturbance cap. Under such a system a sand mining Participant would be permitted to sell credits for acres of like DSL Habitat in an Enrolled Property to another enrolled sand mining Participant. Among other things, such a credit system would incentivize enrollment by sand mining operators and provide opportunities for DSL Habitat offsets, including in High Priority Areas.

Overall, there are substantial net conservation benefits to the DSL to be achieved through the sand mining industry's participation in voluntary conservation pursuant to the 2020 DSL CCAA. The net conservation benefit to the DSL of the 2020 DSL CCAA is substantial relative to the current baseline, which is marked by the absence of federal regulatory and land management authority to conserve and protect an unlisted species and its habitat on private property in West Texas. The 2020 DSL CCAA also achieves a net conservation benefit to the DSL relative to the Comptroller's recent 2019 voluntary conservation proposal, which would have excluded sand mining operations located in High and Intermediate Habitat as characterized by the Hardy map from participation in that plan, but at the same time acknowledged that impacts in these same areas would proceed without any required conservation measures. In its proposed 2019 CCAA submitted to FWS, the Comptroller estimated that there would be only 5 sand mining participants, which it estimated would take approximately 12,731 acres of Low Suitability Habitat under the Hardy map. The Comptroller estimated that sand mining operations not participating in its proposed 2019 CCAA would take an additional approximately 20,160 acres of High and Intermediate Habitat under the Hardy map, while not being subject to any conservation measures under the plan. The Comptroller estimated that, under its 2019 proposal, sand mining operations, both participants and non-participants, would take a total of 32,891 acres of DSL Habitat.

As reflected above, the 2020 DSL CCAA establishes firm caps limiting disturbance by sand mining operations of all potential DSL Habitat, including High and Intermediate Suitability Habitat under the Hardy map, to 16,560 total acres. Even if all sand mining disturbance under the caps were in High and Intermediate Suitability Habitat under the Hardy map (which is unlikely), the 2020 DSL CCAA would reduce disturbance of all DSL Habitat by 16,331 acres and disturbance of High and Intermediate Suitability Habitat by 3,829 acres, relative to the Comptroller's 2019 proposal. Accordingly, the disturbance caps under the 2020 DSL CCAA reduce potential disturbance by sand mining operations of all DSL Habitat by 49.7% and of High and Intermediate Habitat by at least 19.0%, relative to the Comptroller's 2019 proposal.

In addition to providing firm annual and total caps that limit disturbance of DSL Habitat, by allowing all sand mining operations to participate in the 2020 DSL CCAA, all reasonably foreseeable activities are taken into account and would be subject to Conservation Measures including (1) Habitat Conservation Fees and other fees to incentivize avoidance of and conservation of High Priority Areas, to reduce fragmentation of DSL Habitat, and to fund DSL and DSL Habitat conservation and scientific research; (2) opportunities to offset habitat disturbance and fragmentation through conservation of DSL Habitat through Conservation Easements and other protections; (3) sector-specific suites of best management practices and other protective measures; and (4) a robust Adaptive Management process.

Additionally, the maximum estimated take of DSL Habitat across all Covered Activities, as backstopped by annual and overall disturbance caps established in the CCAA and CIs, under the 2020 DSL CCAA is significantly *lower* than the Comptroller's estimated take from Participants as well as the "cumulative effects" of take from non-participant activity, including sand mining operations – 34,690 acres under the 2020 DSL CCAA as compared to 66,113 acres under the Comptroller's proposed 2019 CCAA. [6] Accordingly, the estimated disturbance of DSL Habitat across all sectors under the 2020 DSL CCAA is approximately 47.5% fewer acres than under the Comptroller's 2019 proposal, and all activities by Participants that may result in disturbance would be subject to sector-specific Conservation Measures. This reflects a substantial net conservation benefit to the DSL and its habitat relative to the current baseline as well as relative to the Comptroller's 2019 proposal.

[6] All sand mines, including those with property that includes High and Intermediate Habitat, can participate in the 2020 DSL CCAA. Accordingly, the disturbance estimate of 16,560 acres for sand mining is conservative and intended to include all potential surface disturbance of DSL Habitat regardless of whether the disturbance is caused by a Participant or non-participant. This eliminates the need for a "cumulative effects" estimate, such as was included in the CCAA proposed by the Comptroller for impacts to High and Intermediate Habitat by non-participating sand mining operations.

19.0. NOTIFICATION OF TAKE

FWS does not believe that notifications of direct incidental Take are practical and should not be required. The Administrator will notify FWS of the amount of New Surface Disturbances in its annual report and will also report any observed Take at that time.

20.0. MONITORING AND REPORTING

The Administrator will be responsible for annual monitoring and reporting related to the 2020 DSL CCAA. Information in annual reports will include, but not be limited to, statements concerning:

- The number and acreage of new Participants enrolled under the CCAA over the previous year;
- The percent of DSL Habitat in TX enrolled in the 2020 DSL CCAA;
- The amount and rate of Take (New Surface Disturbance);
- Results of Change Detection Analysis (CDA) to monitor the acres of DSL Habitat (High, Intermediate, and Low Suitability) disturbed by Participants and non-Participants;
- Conservation Measures conducted by the Participants and how impacts to the DSL were minimized;
- Conservation Actions in the Covered Area and on all Enrolled Properties over the past year with any identifying confidential information related to the Participant removed (*see* Section 21.0);
- Effectiveness of Conservation Actions implemented in previous years at meeting the intended conservation benefits;
- Results of monitoring, including surveys and studies over the past year;
- Any DSL mortality or injury observed over the year;
- Funds used for Conservation Actions on private lands, including how they were used and how much are remaining; and,
- Captive-reared or translocated DSL that were released on Enrolled Properties and the results of that action.

Reports will be due March 1 of each year to the FWS and will be made available to Participants via email and to the public via the Administrator's website. Except as provided herein, Participants will not be required to report any additional information to Administrator for inclusion into the report.

Semi-annually, Administrator will report the results of a CDA regarding surface-disturbing activities in the Covered Area on enrolled property in DSL Habitat. The Administrator will

also make a reasonable effort to identify non-Participants responsible for any disturbances on enrolled property.

21.0. CONFIDENTIALITY

The Administrator must provide sufficient information to enable the FWS to monitor compliance and enforce the Permit, including CIs. However, a Participant may designate proprietary, trade secret, and confidential business information provided to the Administrator as Confidential or Business Sensitive. Confidential or Business Sensitive Information is any information that is confidential and not subject to disclosure under federal or Texas law. Disclosure of such information, which is voluntarily provided to the Administrator, would materially and negatively affect a Participant's competitive position, and may only be provided by the Administrator to FWS with the Participant's approval. Prior to the Administrator providing such information to FWS, the Participant will have the opportunity to designate as confidential information not subject to disclosure under the Freedom of Information Act ("FOIA"), pursuant to 5 U.S.C. § 552(b)(4) and the Department of the Interior's implementing FOIA regulations at 43 C.F.R. § 2.26(a), and protected information, not subject to disclosure, under 18 U.S.C. § 1805.

If any Party to this CCAA receives a request under FOIA, the Texas Public Information Act (TPIA), or pursuant to a court order, and has responsive documents in its possession containing confidential and sensitive business information, it will consult with the Administrator, who will consult with the Participant that submitted the information and provide it with an opportunity to object to the information's disclosure before determining whether the information must be disclosed or is exempt from disclosure pursuant to FOIA, TPRA, or pursuant to a court order.

Additionally, under Texas law, information collected by a Texas state agency, or an entity acting on the state agency's behalf, from a private landowner, or other Participant or potential Participant in the CCAA and relating to the specific location, species identification, or quantity of any animal or plant life cannot be disclosed to the FWS or any other person, including a state or federal agency; and, further, it is not subject to the Texas Public Information Act (Texas Government Code § 403.454). A Texas agency may only disclose information that relates to the specific location or quantity of the species for which the CCAA has been prepared to the person who provided it, unless the person consents in writing to full or specified partial disclosure of such information to another person or agency. *Id*.

22.0. MODIFICATION OF THE 2020 DSL CCAA AND AMENDMENT OF THE PERMIT

Any Party to this CCAA may propose modifications or amendments to this CCAA by providing written notice to the other Party. If the Administrator is the recipient of this notice, it will forward copies to the Participants within 10 days of receipt of the notice. If the Administrator provided written notice to the other Party, it will provide such written notice to the Participants at the same time notice is provided to the other Party. Such notice shall include a description of the proposed amendment, the justification for it, and its expected results. Upon issuance of the notice, the Party proposing the amendment will coordinate a meeting or conference call between the other Party to discuss and explain the proposal. Participants will be invited to participate in this meeting or call. The Parties will respond in writing or electronic mail to proposed amendments within 60 days of receipt of such notice. After any National Environmental Policy Act (NEPA) requirements have been met, proposed amendments will become effective upon the parties' written concurrence. Approved amendments shall be dated and attached to the original CCAA.

A major amendment of the CCAA will be subject to the procedural requirements of Federal laws and regulations, such as NEPA, additional analysis by the FWS, public notification in the Federal Register, and a formal CCAA amendment process. A major amendment of the CCAA is one that would result in: (1) a different level or type of Take than was analyzed in association with the original CCAA; or (2) a change to the cumulative conservation benefits to the DSL such that the CCAA standard might not be met.

In addition to amending the CCAA itself, and subject to the notice requirements of this section, the FWS may amend the Enhancement of Survival Permit associated with this CCAA in accordance with all applicable legal requirements including, but not limited to, the ESA, NEPA, and the FWS' general permitting regulations at 50 CFR Parts 13 and 17, and formal FWS policy.

Amendments to the CCAA in effect at the time the Participant executes a CI may only be applied to the Participant upon its written consent; however, a CI may be amended to accommodate changes to applicable legal requirements, including but not limited to the ESA, the NEPA, and the FWS' permit regulations at 50 CFR Parts 13 and 17.

23.0. REMEDIES

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

24.0. DISPUTE RESOLUTION

The FWS and the Administrator agree to work together and with Participants in good faith to resolve any disputes using dispute-resolution procedures agreed upon by the Parties, and when appropriate, the Participants. If there is a global issue among multiple Participants, The Administrator will meet with them to discuss and resolve the issue. The Administrator will be responsible for determining the outcome of disputes. The Administrator will resolve disputes within 60 days of notification of the dispute.

25.0. NO THIRD-PARTY BENEFICIARIES

This 2020 DSL CCAA does not create any new right or interest in any member of the public as a third-party beneficiary, nor shall it authorize anyone not a Party to this 2020 DSL CCAA to maintain a suit for personal injuries or damages pursuant to the provisions of this 2020 DSL CCAA. The duties, obligations, and responsibilities of the Parties to this 2020 DSL CCAA, with respect to third parties, shall remain as imposed under existing law.

26.0. AVAILABILITY OF FUNDS

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

27.0. RELATIONSHIP TO AUTHORITIES

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

28.0. SIGNATURES

IN WITNESS, WHEREOF, THE PARTIES HERETO have, as of the last signature below, executed the Candidate Conservation Agreement with Assurances for the Dunes Sagebrush Lizard (*Sceloporus arenicolus*) to be in effect as of the date of the last signature. The CCAA may be executed in one or more counterparts, all of which shall be considered an original.

_____ _____

Assistant Regional Director Date
U.S. Fish and Wildlife Service, Southwest Region

_____ _____

Administrator Date

29.0. LITERATURE CITED

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APPENDIX A: SURVEY PROTOCOLS AND MAP OF COVERED AREA

Appendix A

In 2016, the CPA contracted with Texas State University to produce a new habitat suitability model and map for the Dunes Sagebrush Lizard. This model was to be unique from the two previously completed Texas A&M maps, due to a landscape feature approach that integrated both new DSL occurrence data and detailed habitat imagery. As discussed above, the Texas State University model is still under development and being refined. The following briefly describes the classification of the areas of DSL Habitat identified through the model. Participants and potential Participants may elect to challenge the classifications as they apply to their property. Those challenges can be made using the Protocols as described in Option 1 below. Participants also may elect to use the Protocols described in Option 2 below to delineate groundcover types and the presence/absence of DSL on Enrolled Property, which is information that can be used to calculate Habitat Conservation Fees under Appendix D as well as to contribute to the ongoing effort to model DSL Habitat.

A detailed description of the map and the model used, the creation of the map and model, the results of Texas State University's model, and a comparision of the other efforts to identify DSL Habitat can be found at Hardy *et al.* (2018). The model attempts to map DSL Habitat (e.g., shinnery oak dune structures and shinnery oak flats) and broadly classifies the potential range of the DSL into High, Intermediate I and II (collectively Intermediate), or Low Suitability categories. It is recognized that this model has technical issues in the coherence between habitat polygons and landscape features present on a site that result in the categorization of land covers that are inconsistent with literature on what qualifies as suitable habitat. The aggregations of land covers into the eight map units, and then into four categories of suitable habitat creates too coarse of a model relative to the heterogeneity of the landscape. Land covers containing grass dunes, mesquite shrublands, unvegetated dunes, and high densities of oil and gas development are grouped with shinnery oak dunes and categorized as highly suitable / shinnery oak duneland. The scientific literature does not have data to support the designation of all these lands covers as comparable and highly suitable for the DSL. Open unvegetated sand dunes are not comparable to shinnery oak dunes in geomorphology, floristic composition, or biotic communities (Johnson et al. 2016; Muhs and Holliday 2001; Peterson and Boyd 1998; Sena 1985). Consequently, the results of model should be cautiously used to approximate the location, acreages and loss of suitable habitat for the DSL, and additional efforts, including site-specific Protocols will be used to further refine the mapping effort.

Texas State University DSL Model Application: The Texas State Map

Suitability Classification in DSL Habitat

The Texas State University model maps the potential geographic extent of DSL Habitat in Texas characterizing areas as High, Intermediate I and II (collectively Intermediate), or Low suitability DSL Habitat (e.g., the Covered Area). (Table 1).

Table 1. Suitability Classification in DSL Habitat

Habitat Suitability Classification	Landscape Feature*	Total Acres	Percentage
High	Shin-Oak Duneland (including blowouts)	90,308	31.4
Intermediate I	Shin-Oak Honey Mesquite Duneland (including blowouts)	64,790	22.5
Intermediate II	Shin-Oak Shrubland (dispersal corridors)	63,081	22.0
Low	Mesquite Shin-Oak Shrubland	69,148	24.1
		287,327	100.0

*Photographs of the landscape features are included in Appendix I.

DSL Habitat Suitability Categories

The first two classifications of suitable habitat include landscape features associated with breeding, rearing, and foraging while the remaining two include landscape features that may be used during dispersal (Johnson *et al*., 2016; Painter 2004, Fitzgerald *et al*., 2005, Leavitt *et al*., 2011):

HIGH SUITABILITY HABITAT

Shinnery Oak Duneland – This landscape feature includes embedded dunes, blowouts, disturbed blowouts and barren sandy areas in association with shinnery oak. Dunes represent large active dune complexes where shinnery oak is in contact at the margins or as embedded vegetation within the larger open dune area. Large areas of active dunes devoid of vegetation are included in this category under the Hardy model, although these areas have not been correlated to breeding, rearing and foraging activities, and these areas are not considered suitable habitat under the New Mexico model.

INTERMEDIATE HABITAT

Shinnery Oak Honey Mesquite Duneland – This landscape feature includes dunes, blowouts, disturbed blowouts and barren sandy area in association with shinnery oak co-dominant with honey mesquite. As noted in Johnson *et al.*, (2016) it remains unclear at what percent honey mesquite inclusions represents degraded DSL Habitat. Hardy *et al.* assumed honey mesquite inclusions of < 25 percent to represent DSL Habitat.

Shinnery Oak Shrubland (flats) – This landscape feature represents flat-to-low rolling eolian plains. Blowouts or disturbed blowouts are somewhat deflated. Areas are limited to smaller scattered patches. These areas are considered dispersal corridors (Johnson *et al.*, 2016; Painter 2004).

LOW SUITABILITY HABITAT

Shinnery Oak-Honey Mesquite Shrubland – This landscape feature is dominated by mesquite and contains dunes, blowouts, and disturbed blowouts with some shinnery oak inclusions. When adjacent to shinnery oak dunelands these can function as dispersal corridors (Johnson *et al*. 2016). Grasslands when interspersed with blowouts and adjacent to Shinnery oak dunelands can also function as dispersal corridors in these spatial contexts.

Importance of Dispersal Corridors

The importance of landforms such as shinnery oak shrublands located between shinnery oak duneland areas have been identified as important landcover components related to dispersal (Fitzgerald *et al.* 2005; Hill and Fitzgerald 2007). These studies show that the shinnery oak shrubland are used by different demographic groups of DSL potentially for dispersal and specifically by females seeking egg deposition sites in dunes outside of their territories. Suggested widths of shinnery oak shrubland areas that may serve as potential dispersal corridors are derived from Painter *et al.* (1999) and Johnson *et al.* 2016. Painter *et al.* (1999) suggested that herbicide application be restricted in shinnery oak flats within 500 meters of occupied DSL habitat. Johnson *et al.* (2016) consulted with Painter who suggested retaining dispersal corridors of shinnery oak shrublands at least 500 meters wide connecting patches of shinnery oak dunelands that are within 2,000 meters.

Survey Protocols

In light of the uncertainty regarding mapping DSL Habitat and ongoing work to refine the models, including through adaptive management, two options for site-specific surveys are available to Participants to conduct addition work to verify or reclassify habitat.

A. *Survey Protocols Option 1*

The following Protocols are an option available to Participants and potential participants who seek to confirm/reclassify DSL Habitat Suitability classification as defined by the Texas State University habitat suitability model or who seek to establish the presence/absence of DSL (and by extension DSL Habitat) on a particular site (*see* Hardy *et al*. 2018). The Landscape Feature Survey Protocols are designed for reclassifying a parcel's DSL Habitat Suitability classification. The Presence/Absence survey Protocol is designed to be used within the 2020 DSL CCAA, for the limited purpose of informing a Participant (or potential Participant) on whether DSL is present or absent on a specific discrete parcel. The results can be used to confirm or alter the parcel's DSL Habitat Suitability classification, as well as to inform the implementation of Conservation Measures such as barrier fencing to protect DSL Habitat and individuals.

Surveys should cover a biologically significant patch size centered on the site at issue (Chen *et al*. 2006). While observance of the Protocol is intended to yield scientifically valid data, the development of a range of options and actions that might be taken in response to DSL Habitat suitability classification or Presence/Absence survey results will depend on several factors including, for example, the degree to which surveys comport with other research that has been conducted over a particular survey area. Upon request, the Administrator will meet with any Participant (or potential Participant) that has submitted a DSL Habitat suitability classification or Presence/Absence survey to discuss the results and determine next steps. Any particular course of action in response to a Presence/Absence survey may trigger the Adaptive Management process and will require the Administrator's approval. Based on survey protocols, the proposed location and number of plots and/or survey transects should be provided to the Administrator as an ArcMap 10.6 compatible shapefile or layer compatible to current GIS software. The Administrator will review the proposed sampling strategy to ensure that an adequate sample size and spatial distribution is represented.

DSL Habitat Suitability Classification Survey Protocol

The protocol for verifying the classification of DSL Habitat suitability on a particular site shall include one of two approaches below to validate the landscape feature delineations in the Texas State University habitat suitability model:

1) Utilization of low-cost drones to acquire imagery (e.g., Phantom 4 Pro), can be programmed to fly a specific flight line/path and provide high-resolution color digital imagery. This imagery should be of sufficient quality to permit species-specific vegetation identification (e.g., shinnery oak versus grasses versus mesquite). Programmed flight lines should employ 200-square-meter rectangles and a sufficient number of sample plots to cover any variability of the landform being evaluated.

2) Conduct ground based vegetation transects with photo documentation using cardinal compass viewpoints with survey-grade GPS. Transects should be at least 400 linear

meters and a sufficient number of transects to represent the variability of the landform being evaluated. At each cardinal point, reference data on the vegetation species should be documented with photographs. Camera systems that integrate GPS location data with each photograph should be used for all surveys. Location of the survey transects should be pre-selected on Google Earth or ArcMap Base Map imagery for planimetric reference of the underlying landscape feature(s).

The Participant must provide the Administrator with a technical memo that includes: (1) the resulting survey data (digital format), (2) the determination of the respective landscape feature as defined under the Texas State University habitat suitability model, and (3) the justification for changes in suitability classification.

DSL Presence/Absence Survey Protocol

The core issue in surveys for the cryptic DSL is the probability of detection when surveys are implicit to a determination of presence or absence. The probability of detection for any organism is the result of interactions among its abundance, behavior, and how easily an individual of the species can be observed or otherwise detected. Most of the work published and completed thus far with this species utilized two methods: 1) visual encounter surveys (VES) and 2) pitfall trapping without associated drift fences.

Visual encounter surveys are an active method relying on walking through a site and recording observations of lizards. Transects have either a set time or length respectively. All lizards are recorded and the species identification, if possible, is noted.

Pitfall trapping is a passive collection method wherein a bucket set flush with the surface substrate has a shade coverboard and lizards traveling or seeking shade fall into and are trapped by that bucket. Monitors then check each bucket and record all individuals captured.

Visual Encounter Surveys (VES) Protocol:

Evaluate the particular site/location compared to the Texas State University habitat suitability model. For areas that indicate suitable potential habitat for *S. arenicolus*, design a survey approach that incorporates VES for those habitat types where visual detection is high (e.g., blowouts, open sand feature). Texas State University has estimated detection probabilities using several methods to be between 0.11 and 0.14, meaning that between 18 and 26 separate surveys would be required to be 95 percent confident of absence at an individual site (M. J. Forstner, Texas State University, personal communication).

No fewer than 25 one-hour visual encounter surveys should be conducted annually, for a period of two years, by a minimum of two observers for plots that are 400 x 400 meters. Each observer must utilize real-time GPS track logging and collect real-time coordinates for each lizard encountered (i.e., all lizard species). Additional measurements must include air and

surface temperatures, average wind speed, cloud cover, relative humidity, and barometric pressure. If the surface disturbance is approved, and does not commence within two years after completion of the survey, a repeat survey must be completed.

Pitfall Trapping Protocol:

VES will not be reliable in those habitats adjacent to open sand features, as the probability of type II error (i.e., failing to detect the species when it is actually present) will rise as the vegetation occludes observation. In such habitats, the only proven method for species-level identification is pitfall trapping. Trapping designs should have a density grid of pitfalls wherein these surveys should seek to optimize a breadth of each array. Historical arrays have utilized a 6 x 6 pitfall array with 15-meter spacing. This design has shown success and can be utilized if the site to be surveyed is relatively small (potentially addressing an area of minimally 300 square meters, this indicates a 100-meter buffer on the outside of the array in all directions, coincident to known movement of the species from telemetry). This array design has the advantage of direct comparison of capture rates to the existing available data for the species. For larger areas that optimize distribution rather than density of pitfalls, a 6 x 6 array with 50-meter spacing is appropriate.

These arrays should utilize, at minimum, 11.4-liter (3-gallon) pitfall buckets, with strong secure cover boards, explicitly raised from the lip of the pitfall to enable lizard entrance. A period of 240 consecutive hours per pitfall trap should be used, beginning in April, and operating monthly until October. The days spent opening and closing the arrays should not be included in the 10 trap-day count.

The Participant must provide the Administrator with a technical memo that includes the resulting survey data (digital format).

B. *Survey Protocols Option 2*

The following Protocols offer Participants, particularly from the sand mining sector, a second option for conducting site-specific Habitat Assessment for Enrolled Property as well as annual presence / absence surveys to establish Zones of Likely DSL Occupancy within an Enrolled Property, consistent with the Conservation Strategy under Section 8 and the Conservation Measures for sand mining under Section 8.3.2. Unlike Option 1, these suggested Protocols provide information on potential presence of DSL and locations and spatial extents of potentially suitable habitat for the DSL across an entire area of potential disturbance.

1. Site-Specific Habitat Assessment Protocol

Site-specific habitat assessments are to be conducted for the DSL within areas of potential disturbance (Survey Areas). The size and configuration of Survey Areas for a habitat

assessment are at the discretion of the landowner/project proponent. Habitat assessments should be performed by a Qualified Habitat Assessor. The habitat assessment results expire 10 years after the assessment date or if conditions within the Survey Area change substantially from those evaluated in the report.

Initial Desktop Delineation – Delineate "Homogenous Habitat Units" (HHUs) >10 acres within and outside of the area of potential disturbance (Survey Area) to a distance of 350 meters (m), using an aerial scale of approximately (app) 1 inch = 200m. Categorize HHUs according to the predominant land cover (e.g., shinnery oak dunes; grassy dunes; unvegetated dunes; vegetated flats (shinnery oak dominant, other scrub-shrub dominant, or herbaceous dominant). Document the macrohabitat as described below. Available sources may include current & historic aerial imagery, topographic maps, land cover data, ecological or physiognomic spatial data, and Texas State University's DSL Suitable Habitat Model.

Habitat Assessment Points – Create a set of "Habitat Assessment Points" (HAPs) spaced on a 350m grid within the Survey Area. Include at least three HAPs within each HHU. Additional HAPs should be evenly distributed within the HHU. For each HAP, document the macrohabitat and microhabitat as described below.

Desktop Macrohabitat Data Collection – Use available data sources to determine macrohabitat information in each HHU and within a 100m radius of each HAP.

- Dominant Land Form: flat sand sheet, rolling sand sheet, linear dunes, parabolic dunes, etc.
- Dominant Non-blowout Vegetation Community: Such as unvegetated, herbaceous, mesquite scrub, shinnery oak scrub, etc.
- Percent (%) Blowout: % of blowout within 100m of HAP represented by open or sparsely vegetated blowout features in dune land forms.
- Percent Disturbed Land: % of visually disturbed land (i.e., paved or caliche surfaces, transportation or utility rights-of-way, structures, mine sites, etc.) within 100m of HAP.
- DSL Habitat Model Results: classification of land within 100m of HAP.

On-site Microhabitat Field Data Collection – At each HAP, visually estimate the typical or dominant features in a 30m radius.

- Photographs: One photo in each cardinal direction, labeled with the HAP identification, location, date, assessors name, and cardinal direction.
- Plant Community Composition: name and approximate % cover for each dominant or co-dominant plant species; % cover visually estimated in increments of 20% (i.e.,

0-20%, 20-40%, … 80-100%). *Cover for all species may be greater than 100% due to overlapping cover*.

- Percent Bare Ground: visually estimated in increments of 20%.
- Dominant Dune Height/Blowout Depth: visually estimated as 0-2 feet (ft), 2-10ft, or >10ft
- Dominant Dune/Blowout Slope: visually estimated as 0-20° (gradual), 20-40° (moderate), 40-65° (steep), or >65° (extremely steep hard edge).
- Blowout Shape: linear, parabolic, or circular or bowl-shaped.
- Soil Compaction: visually estimated in relative categories as either:
    - Low compaction – Loose soil, little vegetation for soil deposition and stabilization, sink when walking across soil, no shovel restriction when digging.
    - Moderate compaction – Soil remains in place, vegetation provides stability, but may shift when disturbed or stepped on, footsteps supported when walking across soil, slight resistance when digging.
    - High compaction – Soil remains in place, vegetation provides stability, little to no movement of soil when walking across soil, shovel restriction within 6 inches of surface when digging.

On-site Refinement of Delineation Boundaries – In the field, ground-truth the boundaries of the HHUs. Refine the initial desktop delineation, as appropriate.

DSL Habitat Delineation – Group HHUs into the appropriate land cover category (Table A-1) using field observations to guide categorization. An HHU need not meet all criteria specified for a category in Table A-1 to qualify for that category. The Qualified Habitat Assessor should provide a description of the rationale used for HHU classification into DSL habitat categories.

Data Collection and Reporting – Complete detailed data sheets for each HAP. Following the on-site assessment prepare a report documenting the application of this protocol to the Survey Area and findings with descriptions, figures and tables as necessary. Include within the report the location and size of the Survey Area, desktop and refined delineation of HHUs and locations of HAPs. Describe the extent of previous disturbances and general findings from the habitat assessment within and among HHUs. Discuss the classification of HHUs into land cover categories and DSL habitat suitability categories as defined by DSL Habitat Model. Discuss the locations of previously recorded DSL observations within 2 kilometers of the Survey Area and likelihood of occurrence. Include the identity of any survey personnel, including qualifications and experience.

Table A-1. Predominant features of each land cover category.

Land Cover Category	Macrohabitat Characteristics – Desktop Review			Microhabitat Characteristics – Field Observations			
	Dominant Land Form	Dominant Vegetation Community	Dune/Blowout Complex	Dominant Dune/Blowout Size	Dominant Dune/Blowout Slopes	Blowout % Vegetation	Soil Compaction
Shinnery Oak Dune I	Parabolic or Circular Sand Dunes	Shinnery Oak	Extensive area and connectivity (80-100% blowout area)	>10 feet	Steep (40-65° slopes)	No to sparse herbaceous cover (0-40% cover)	Moderate
Shinnery Oak Dune II	Parabolic, Circular, or Linear Sand Dunes	Shinnery Oak	Moderate area or connectivity (40-80% blowout area)	>10 feet	Steep (40-65° slopes)	Sparse to moderate herbaceous cover (20-60%)	Moderate
Shinnery Oak Flats or Co-Dominant Shinnery Oak Mesquite Flats	Parabolic, Circular, or Linear Sand Dunes or Rolling or Flat	Shinnery Oak or Mesquite Shrub	Limited area and connectivity (0-40% blowout area) or blowouts are individual and isolated	2-10 feet	Moderate to Gradual (0-40° slopes)	Moderate to dense herbaceous cover (60-100%)	Low to High
Grass Dunes	Linear Sand Dunes or Rolling or Flat	Herbaceous	Blowouts lacking	Blowouts lacking	Blowouts lacking	Not applicable—blowouts lacking in	Low to Moderate
Open Sand Dunes	Linear Sand Dunes or Rolling or Flat	Sparse or Absent Vegetation	Blowouts lacking	Blowouts lacking	Blowouts lacking	Not applicable—blowouts lacking in	Low to Moderate
Mesquite Shrub	Rolling or Flat	Mesquite Shrub	Blowouts lacking	Blowouts lacking	Blowouts lacking	Not applicable—blowouts lacking in	Low to High

2. Presence/Absence Survey Protocol.

Presence/Absence (P/A) surveys are to be conducted for the DSL within areas of potential disturbance (Survey Areas). The size and configuration of Survey Areas for a P/A survey are at the discretion of the landowner/project proponent. P/A surveys should be performed by a permitted Qualified DSL Biologist during the DSL's active season (April 1 through October 31); during which DSL are above ground and detectable. Suitable survey conditions include 0% chance of rain and at least 6 hours between dawn and dusk with air temperatures between 86˚Farenheit (F) and 104˚F. P/A surveys include Visual Encounter Surveys (VES) and Pitfall Trap Surveys (PTS) within the Survey Area(s). The P/A survey results expire April 1 of the following year, unless no DSL are detected in the Survey Area during three years of P/A surveys performed within a 5-year period.

Visual Encounter Surveys (VES) – Perform each VES by walking slowly (<2kilometers/hour) along a set of parallel transect lines that are spaced 100 meters (m) apart. Up to 4 sets of transect lines (i.e., Transect Sets) may be needed to complete a VES (i.e., Transect Set A, Transect Set B, …, Transect Set D) (*Figure A-1*). Search along dune slopes, basking sites, and under refugia (e.g., vegetation, roots, etc.), continuously scanning (using binoculars) an area that extends approximately (app) 20m from the transect line on each side. VESs for different Transect Sets must be performed on separate days. Document DSL detections as described below.

Pitfall Trap Surveys (PTS) – Perform a PTS in a grid trap pattern consisting of alternating pitfall traps and coverboard traps spaced 50m apart within the Survey Area (see *Figure A-1*). Bury pitfall traps (i.e., a 5-gallon bucket) so that the opening is flush with the ground surface. Each bucket should have 8 holes (50 millimeters [mm] in diameter), drilled in the bottom. Install coverboards (0.165m^2) app 25mm above each pitfall trap. Add app 25mm of sand to bottom of each pitfall trap. Place a small piece of foam (app 150cm^3) inside each trap in case of rainfall event. Relocate trap if red imported fire ants (*Solenopsis invicta*) are present in the immediate vicinity. Each pitfall trap and coverboard trap should be open for 5 days (excluding days of installation and removal) and checked daily. DSL detections should be documented as described below; additionally, each PTS-captured DSL should be marked via unique toe-clip marking scheme. When the PTS is complete, remove the trap and coverboard and backfill the hole.

Documenting DSL Detections – DSL detections must be verified via non-lethal capture (i.e., via hand, noose, pitfall trap, coverboard) and documented with:

- Global Positioning System (GPS) Coordinates: of detection location with 5m accuracy, document datum.
- Photographs: >3 photos of each DSL including the lateral view of the whole specimen and the dorsolateral bands, view of venter with appropriate resolution to count the scales between the femoral pores, dorsolateral view of the head showing scales around the ear opening, and posterior view showing scale types on the hind legs.
- Size and sex: Measure snout-to-vent length and total length, record sex.
- Time: Record detection time.
- Animal condition: live, dead, healthy, injured.
- Habitat features at location of capture: Include vegetation type, land form (e.g. shinnery oak sand dune, shin oak flat), and microhabitat location (e.g., open dune slope, vegetated dune ridge, base of blowout).

For unverified detections of DSL, designate as "unverified" and collect GPS coordinates. Unverified detection is not considered a confirmed presence of DSL. Each *verified* DSL detection creates a zone of Likely DSL Occupancy that extends 350m from that given

location. Areas determined to have Likely DSL Occupancy do not need to be surveyed again until the P/A survey expires. *DSL should be released at the site of capture ASAP following documentation.*

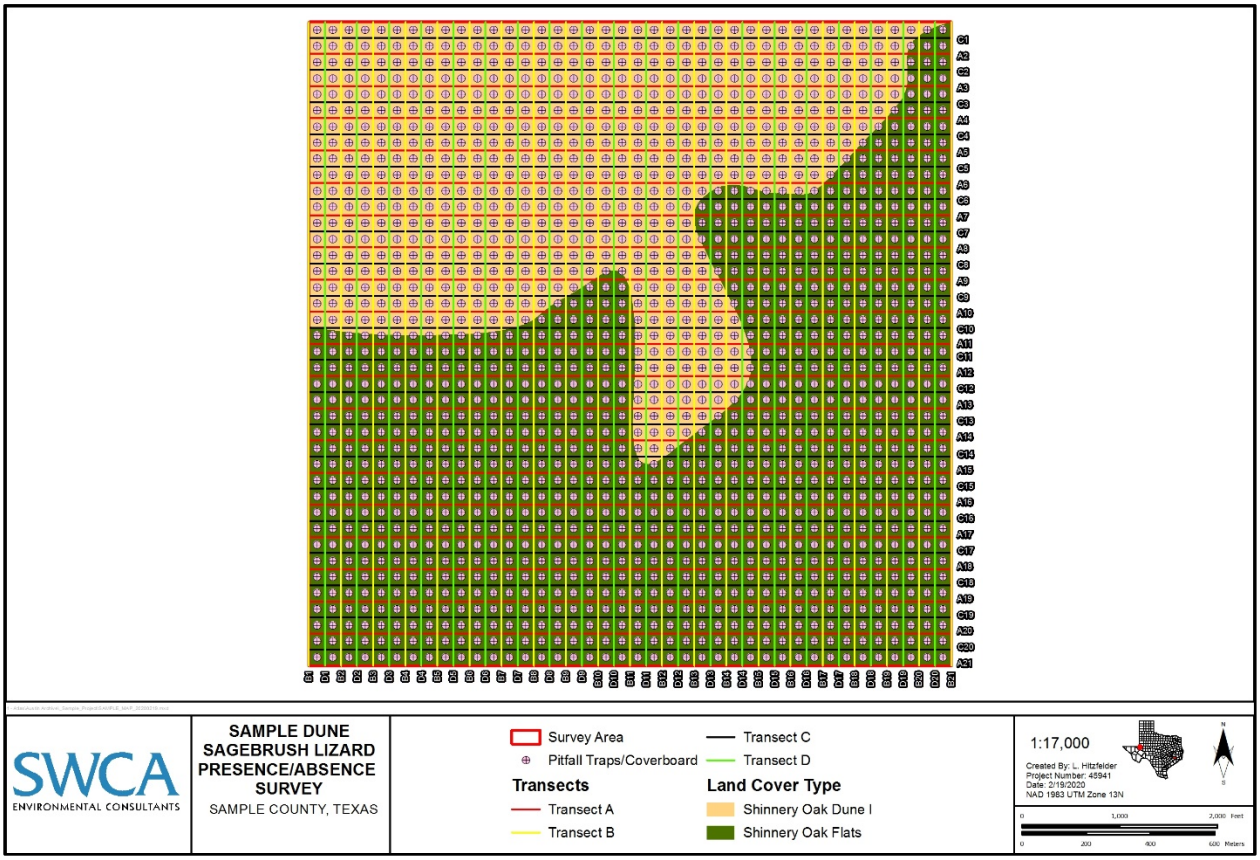
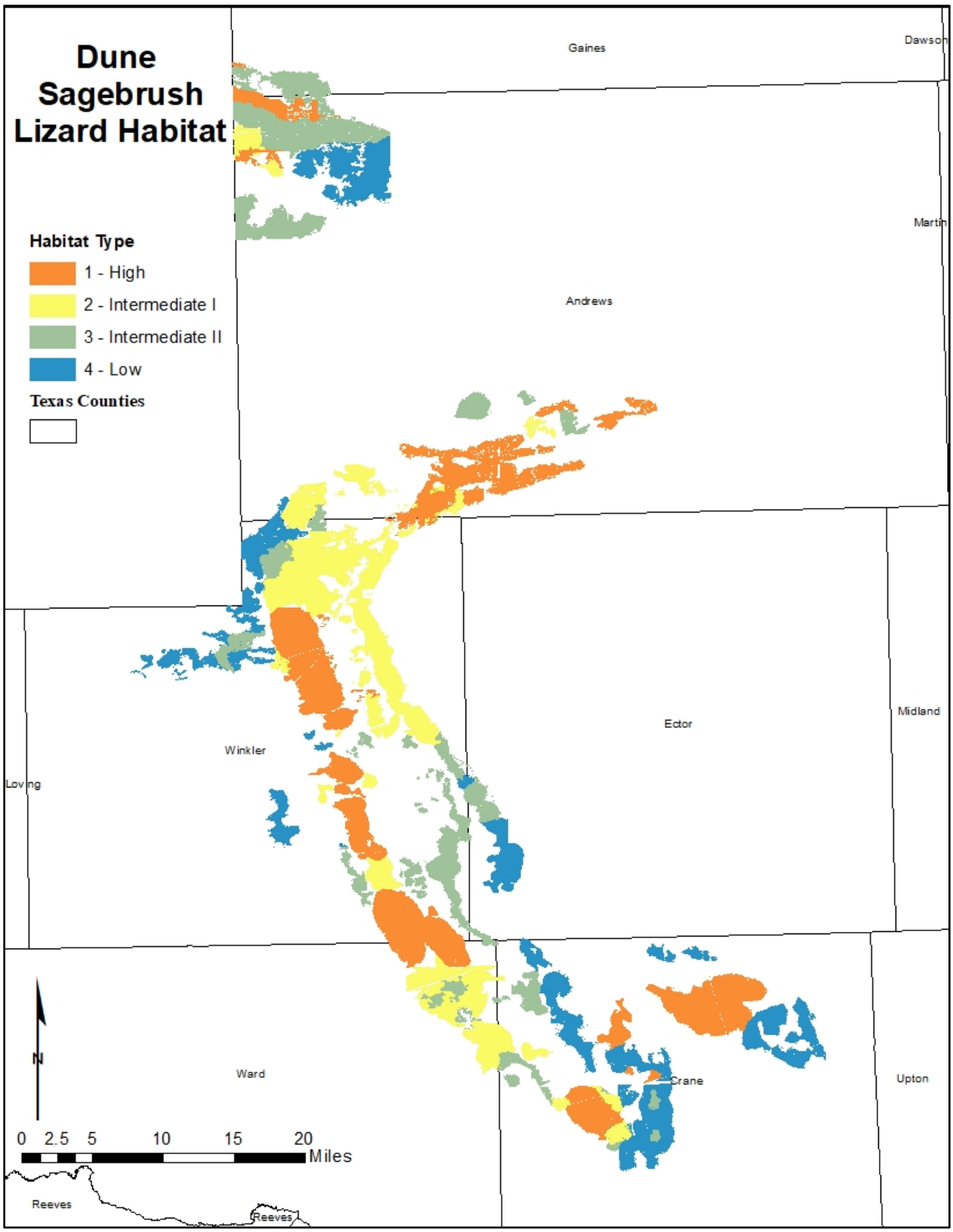


Figure A-1. Example survey design for a site containing potentially suitable and marginal DSL habitat.

Data Collection and Reporting – Complete detailed data sheets for each run of a transect line or each check of a pitfall trap/coverboard. Following field effort, prepare a report documenting the application of the P/A survey protocol to the Survey Area and the results of the survey. Include within report: a description and figure of location and size of Survey Area, survey design, land covers present (use data from site-specific habitat assessment or TAMU model), survey dates and weather conditions, dates and locations of verified and unverified DSL detections, zones of Likely DSL Occurrence, list of survey personnel with qualifications and experience, and data sheets.


Dune Sagebrush Lizard Habitat
Habitat Type
1 - High
2 - Intermediate I
3 - Intermediate II
4 - Low
Texas Counties
Gaines
Dawson
Martin
Andrews
Midland
Ector
Winkler
Loving
Ward
Crane
Upton
Reeves
Reeves
N
0 2.5 5 10 15 20
Miles

APPENDIX B: CERTIFICATES OF INCLUSION

Appendix B
Certificates of Inclusion

CERTIFICATE OF INCLUSION FOR OIL AND GAS SECTOR
in the Candidate Conservation Agreement with Assurances for the Dunes Sagebrush Lizard (*Sceloporus arenicolus*)

CI Number: _____

Participant's Name: _____

Address: _____

This certifies that the Participant described herein is included within the scope of the attached Candidate Conservation Agreement with Assurances (CCAA) for the Dunes Sagebrush Lizard (*Sceloporus arenicolus*) (DSL) under the authority of Section 10(a)(1)(A) of the Endangered Species Act of 1973, as amended (ESA), 16 USC § 1531-1544. The Participant must be a Property Owner. A Property Owner, as defined by 50 CFR § 17.3, is a person with a fee simple, leasehold, or other property interest (including owners of water or other natural resources), or any other entity that may have a property interest, sufficient to carry out the proposed management activities, subject to applicable state law, on non-Federal land.

The goal of the U.S. Fish and Wildlife Service (FWS), the Administrator, and the Participant is to reduce or eliminate threats to the DSL. By agreeing to conduct the Conservation Measures described herein, the Permit Holder will provide the Participant with regulatory certainty (assurances) concerning land-use restrictions that might otherwise apply should the DSL become listed as a "threatened" or "endangered" species under the ESA, that are provided by FWS through the Permit to the Administrator.

This Certificate of Inclusion (CI) is a voluntary agreement between the Administrator and the Participant expressly named herein. Through this CI, the Participant commits to implement Conservation Measures and to fund Conservation Actions that collectively will reduce or eliminate threats to the DSL. Funds contributed as part of this CI will be used by the Administrator to manage the program and implement Conservation Actions and associated activities. The Administrator will direct the funds to high priority Conservation Actions to restore, reclaim or preserve DSL Habitat as suggested by the Adaptive Management Committee in accordance with the governance structure and process. By signing below, the Participant acknowledges that it has read and understand the CCAA and this CI. They further acknowledge that the CCAA may not be sufficient to prevent the listing of the species.

1.0. <u>ENROLLED PROPERTY.</u>

By executing this CI, the Participant affirms that to the best of its knowledge it is a Property Owner of each Enrolled Property as defined by 50 CFR § 17.3, which provides that a Property Owner for these purposes is a person or entity with a fee simple, leasehold, or other property interest (including owners of water or other natural resources), sufficient to carry out the Conservation Measures and any other management activities contemplated by this CI, the CCAA and the Permit, subject to applicable state law, on enrolled, non-Federal land. This CI cannot be amended without the written agreement of all signatories.

1.1. Enrollment.

Enrollment for the oil and gas sector will be either through the All Activities or Parcel-by-Parcel approach as described in Section 13.0 of the 2020 DSL CCAA. Enrollment of property in this CI does not guarantee approval of an application to cause New Surface Disturbance by regulatory agencies (state or Federal), and subsequent approval of any permit does not guarantee adherence to the CI.

1.1.1 All Activities Enrollment.

Participant shall enroll through the All Activities enrollment process if its property interests in the Covered Area exceed 499 acres. GIS shapefiles of all Enrolled Properties on which the Participant operates must be supplied to the Administrator prior to the CI being effective. The Participant will provide a list of Enrolled Properties (leases or portions of leases) to the Administrator that includes lease number, detailed legal description, and acreage for each enrolled parcel in this CI (*see* Exhibit A). For tracking purposes, the Participant will provide an update to the Administrator of its Enrolled Properties on an annual basis, no later than October 1. Outside of this annual update, GIS shapefiles of all Enrolled Properties on which the Participant operates may be requested by the Administrator.

1.1.2 Parcel-by-Parcel Enrollment.

If the Participant has less than 500 acres in the Covered Area, it may enroll either through the All Activities or Parcel-by-Parcel enrollments. The Participant will provide a list of Enrolled Properties (leases or portions of leases) to the Administrator that includes lease number, detailed legal description, and acreage for each enrolled parcel in this CI (*see* Exhibit A). A GIS shapefile depicting the information is also required at enrollment.

1.2. Transfers of Enrolled Property by Participants to Third Parties.

Participants may transfer ownership of Enrolled Property to a third party before or after a listing decision. If a Participant chooses to transfer ownership of Enrolled Property to a third party, participation in the CCAA will only continue if the transferee is a Participant or elects to become a Participant through execution of a new CI.

If the transferee is not a Participant and the DSL is not listed, the transferee may enroll in the CCAA as described in the Section 1.1 (Enrollment); however, the Administrator will credit to

the transferee any Enrollment Fees related to the transferred property paid by the transferor. If the transferee is not a Participant and the DSL is listed, the transferee may sign a new CI within 30 days of acquiring the Enrolled Property. All terms and conditions of the CCAA and CI, including any applicable Habitat Conservation Fee schedule associated with the Enrolled Property, will be assumed by the new Participant.

New Participants may enroll either through All Activities or Parcel-by-Parcel enrollment processes as set out above. If the new Participant enrolls via the Parcel-by-Parcel method after a listing occurs, the new Participant may not enroll additional properties that were not Enrolled Properties at the time of the listing. If the new Participant enrolls via the All Activities process, the new Participant may enroll all of its activities within the Covered Area. In each case, the new Participant must provide the Administrator with the information described in Section 1.1 (Enrollment).

Transferors and transferees that are Participants are responsible for revising GIS shapefiles and lists of Enrolled Property to reflect transfers of Enrolled Property in annual updates provided to the Administrator in accordance with Section 1.1 (Enrollment).

If a Participant that enrolled via the Parcel-by-Parcel process transfers ownership of Enrolled Property before three years of Enrollment Fees are paid and the transferee does not continue participation in the CCAA, the original Participant (transferor) remains responsible for the payment of three years of Enrollment Fees associated with the transferred parcels.

1.3. Addition and Removal of Enrolled Properties.

This section addresses Participant's ability to add Enrolled Properties to this CI when the Participants did not acquire parcels from an existing Participant. When one Participant seeks to add Enrolled Properties received via transfer from another Participant, the Participant must follow the procedures outlined in Section 1.2 (Transfers). This section also addresses Participant's ability to remove Enrolled Properties from this CI.

1.3.1. Addition and Removal of Enrolled Properties by All Activities Participants.

Participants that enrolled via the All Activities process may add any properties to (and remove properties from) this CI at any time prior to a decision to list DSL, except as transferred from a Participant. Participants will provide an updated GIS shapefile reflecting additions or removals as part of the next annual update to the Administrator as described in Section 1.1 (Enrollment).

1.3.2. Additions to Enrolled Properties by Parcel-by-Parcel Participants.

Participants that enrolled via the Parcel-by-Parcel process may add parcels to their lists of Enrolled Property up to an aggregate of 500 acres prior to any decision to list the DSL. After any decision to list the DSL, Participants that enrolled via the Parcel-by-Parcel method cannot add parcels to their lists of Enrolled Property, except those transferred from a Participant. Additionally, Participants that enrolled via the Parcel-by-Parcel method cannot remove parcels from their list of Enrolled Property until three years of Enrollment Fees are paid for the parcel.

1.3.3. Replacement of Enrolled Properties by Parcel-by-Parcel Participants.

Prior to a listing of the DSL, the Participant my replace acreage under this CI that has been transferred or otherwise removed from the CI, by identifying a new parcel of equal or lesser acreage. After a listing of the DSL, the participant may only replace acreage under this CI that has been transferred or otherwise removed from the CI, through the transfer of enrolled properties as described above in Section 1.2 of this CI.

Once a Covered Activity results in New Surface Disturbance on an Enrolled Property, the entire Enrolled Property (i.e., the entire parcel) cannot be replaced with an unenrolled parcel.

Notification of transfers or changes to Enrolled Properties will be transmitted to the Administrator within 60 days of finalization and will include a GIS shapefile and a spreadsheet with the lease number(s), detailed legal description(s), and acreage of the parcel(s) involved.

2.0. PARTICIPANT AGREEMENT TO IMPLEMENT CONSERVATION MEASURES.

Pursuant to Section 13.0 of the CCAA, and as further set forth in this CI, the Participant agrees to pay Enrollment, Habitat Conservation, and Implementation Fees as set out in Appendix D. Participant further agrees to implement the following Conservation Measures for New Surface Disturbances to avoid and minimize impacts to Covered Species.

General Measures:

To assist in developing and prioritizing Conservation Measures and Actions, upon initial enrollment and thereafter, annually by December 1, Participant will provide the Administrator with an estimate of surface disturbances anticipated in the course of its development for the upcoming calendar year. The estimate of surface disturbance need only be based on the Participant's planned development. The Participant's actual surface disturbances may differ from the estimate provided.

For properties with severed surface and mineral estates that a Participant is actively engaged in development, the Participant agrees to work with the non-surface estate owners and the Administrator to identify approaches to development that avoid, minimize or offset impacts from development, taking into consideration statutory and legal rights of the mineral estate. For example, developed approaches may include encouraging cooperation between owners of the mineral estates to minimize new disturbances through the use of an existing or a single right-of-way, or where feasible and appropriate, developing surface use or mineral management plans.

Seismic activities shall be limited to areas outside High and Intermediate Suitability DSL Habitat unless walk-in geophonic, other smaller seismic survey equipment is utilized or the activities are limited to periods of lizard inactivity (October through March). Where feasible, existing roads, pads, or utility easements in High or Intermediate Suitability DSL Habitat will be identified that would permit OHV and/or equipment used to induce seismic pulses to be used without corresponding impacts to the DSL. Seismic activities in Low Suitability DSL Habitat are allowed but, where possible, existing roads, pads, or easements should be utilized to minimize potential impact to the habitat. Where the Administrator identifies permanent impacts from a Participant's seismic activities, the Participant will work with the Administrator to identify and provide mitigation equal to the permanent impacts.

To the extent legally, technically, and economically feasible, Participant also will avoid development in areas of High and Intermediate Suitability DSL Habitat where the well density is equal to or more than four well pads/mi^2 but less than 13 well pads/mi^2 unless the Participant demonstrates that avoidance is not feasible.

<u>High and Intermediate Suitability Areas of DSL Habitat</u>:

Except as provided in this section, no New Surface Disturbance is allowed in High and Intermediate Suitability areas of DSL Habitat, which are described in Appendix A of the 2020 DSL CCAA. The distribution of well densities is found in Appendix G of the 2020 DSL CCAA.

Avoidance of High and Intermediate Suitability areas of DSL Habitat is required unless the Participant demonstrates one of the criteria below:

- The habitat designation assigned to the area in the Texas State Map of DSL Habitat in which the development is proposed to occur is incorrectly designated. That demonstration must be made following the approved Protocols set out in Appendix A; or,
- The mineral estate for which the development was planned cannot be accessed except through the High or Intermediate Suitability area. The demonstration shall include evidence that:

- The Participant cannot access the mineral estate from an existing well pad or other disturbance or from reasonably nearby Low Suitability or unsuitable areas to which it has access. "A reasonably nearby" site includes, but is not limited to, sites from which the mineral estate can be accessed by horizontal or directional drilling.

Before areas of High and Intermediate Suitability DSL Habitat can be disturbed, the Participant must submit a written demonstration of compliance with the criterion above with supporting documentation. The Administrator, with the assistance of qualified biological and technical professionals, where feasible, will review the documentation and either concur with the determination or request additional information within 20 days of receiving the Participant's documentation. The Administrator will avoid unnecessary requests for information and will not exceed the 20-day review period after receipt of complete documentation. The Administrator will use reasonable efforts to provide expedited reviews if requested. Appendix J is a chart that may be used to support its contention that the mineral estate cannot be accessed except through areas of High or Intermediate suitability. The chart describes the type of information that may support such a demonstration; however, it is not necessarily dispositive of the issue.

If the Administrator has not requested additional documentation after 20 days of receipt of Participant's submission, Participant may proceed with the surface disturbance; however, Participant acknowledges that the Service may request to review the documentation submitted by the Participant, and Participant waives any confidentiality with respect to such documentation except as it pertains to confidential business information. All such information submitted by the Participant must be marked "Confidential or Business Sensitive" even in situations where the confidentiality has been waived. The Service may seek to have the Administrator require the Participant to address any deficiency.

If the Participant demonstrates that the mineral estate cannot be otherwise accessed except through High or Intermediate Suitability DSL Habitat, the Participant must then seek to avoid development in areas of High and Intermediate Suitability DSL Habitat where the well density is equal to or more than four well pads/mi^2 but less than 13 well pads/mi^2, utilizing the criteria above. If the Participant then demonstrates that it is not feasible for the mineral estate to be otherwise accessed except through areas where the well density is equal to or more than four well pads/mi^2 but less than 13 well pads/mi^2 then the Participant will pay fees described in Appendix D and implement Conservation Measures set out below for Covered Activities in DSL Habitat as appropriate. the Administrator will work with the Participant to locate wells in existing high-density areas, preferably in a clustered arrangement (i.e., not evenly distributed) where feasible.

Conservation Measures:

In DSL Habitat, Participants must implement the following Conservation Measures to minimize the impacts of development. The minimization measures must be implemented concurrently with the initiation of the surface-disturbing activities.

- Maximize use of existing developed areas and rights-of-way for infrastructure supporting the development of the wells (roads, power lines, pipelines, flowlines, etc.);
- Minimize footprint for development, if operationally feasible (i.e., size of well site; centralized facilities, co-locating multiple wells on a single well pad; interim reclamation—reclaim portion of location after drilling and completion to the extent allowed by the surface estate owner and/or stratified mineral estate owners/operators and operators on the same pad);
- Avoid aerial sprayed application of approved herbicide for weed control (e.g., utilize pellets, hand applicators or manual removal);
- Avoid introduction of non-native vegetation by using habitat appropriate native vegetation and best management practices, such as cleaning vehicle coming into the area to remove mud and seeds. If an activity is identified that introduces new non-native vegetation, the activity or source will be controlled to manage or remove the invasive vegetation;
- Control dust from road traffic and other activities including restricting unnecessary off-road vehicle access;
- Remove mesquite from flowback pits, where feasible;
- Minimize OHV activity in DSL Habitat, as practicable;
- Minimize spills through inspection, monitoring, maintenance and employee training in spill response procedures; and
- Disturbances from Emergency Operations must be restored after Emergency Operations have been completed and cannot be used for new development.

Notice: Oil and gas Participants will provide notice of New Surface Disturbance and seismic activities as described in Section 14 below. Participants will notify the Administrator:

- not less than 15 days in advance of New Surface Disturbance and Seismic Activities to determine appropriate Habitat Conservation Fees in accordance with Appendix D. The Administrator will invoice Participant for the required Habitat Conservation fees. Payment is due 60 days after invoice;
- as soon as is practicable under the circumstances but not less than 15 days after material changes to the prior notice of the New Surface Disturbance; and,
- within 72-hours after completion of Emergency Operations that result in New Surface Disturbance.

In the event of any inconsistencies between the Conservation Measures described above and those described in the 2020 DSL CCAA, the terms of the 2020 DSL CCAA control.

3.0. ENROLLMENT FEES AND HABITAT CONSERVATION FEES.

Participant must pay Enrollment, Habitat Conservation, and Implementation fees as called for in Appendix D.

The Participant is responsible for paying an Enrollment Fee for the first three years this CI is in effect. If the Participant opts out of the CI before the end of three years, the Participant is still responsible for three years of Enrollment Fees. The Participant may choose from two enrollment options: All Activities or Parcel-by-Parcel.

4.0. PARTICIPANT NON-COMPLIANCE.

In the event that the Administrator determines that a Participant is failing to implement the required Conservation Measures described in the CI, the Administrator will notify the Participant of the need to immediately correct the deficiency. If the deficiency is a failure to pay Fees, Participant will have thirty (30) days to make the payment or to arrange for a mutually acceptable date by which the Administrator will receive the payment. With respect to any other deficiency, the Administrator will notify Participant by mail and electronic transmission of the deficiency promptly on its discovery. Participant shall initiate corrective actions within thirty (30) days of receipt of the notice or arrange for a mutually acceptable date by which corrective action will be initiated. If the Participant has not initiated corrective actions within thirty (30) days of receipt of the notification, or arranged for a mutually acceptable date for initiating the corrective actions, the Administrator may take actions, up to and including termination of some or all of the CI. In lieu of initiating corrective actions, Participant may file an appeal with the Administrator, by electronic transmission or formal written notice, within thirty (30) days of receipt of the notice of deficiency, setting out clearly the basis for the appeal. The Administrator will notify the Participant by mail and electronic transmission within 10 days of determination of the appeal. The Permit Holder will notify the Service of the resolution of any unresolved non-compliance issue within 30 days.

5.0. SUSPENSION AND TERMINATION.

5.1 Suspension

Each Participant hereby agrees that the Administrator, in coordination with the FWS, can suspend this CI as it relates to some or all of the Enrolled Property identified in Exhibit A of the CI until the Habitat Conservation Fee or Enrollment Fee (if any) associated with the CI is paid. Regardless of enrollment method, the CI may be suspended with respect to a single parcel of Enrolled Property. The FWS incidental take authorization of the Covered Species and regulatory assurances, cannot be extended from the permit to activities occurring on Enrolled Property while the CI is suspended.

5.2 Voluntary Termination

The Participant may terminate the CI in part or whole at any time but remains obligated to pay all Enrollment Fees described in Section 13.0 of the CCAA. The Participant may terminate this CI by giving thirty (30) days' written notice to the Administrator and FWS as to any or all of the Enrolled Property. Any funds remaining in Participant's Habitat Protection Fund account at the time of termination, voluntarily or for cause, will be assigned to the Administrator for conservation efforts to support the DSL under this CCAA and CI, and will not be refunded. As funds can be spent on implementation of this agreement and Conservation Actions at any time, Enrollment Fees and Habitat Conservation Fees will not be refunded. The FWS incidental take authorization of the Covered Species and regulatory assurance, cannot be extended from the permit to activities occurring on Properties after the CI has been voluntarily terminated.

5.3 Involuntary Termination

A CI may only be terminated following the process described in Sections 11.0 and 12.0 of the 2020 DSL CCAA, and over a Participant's objections because of a Participant's failure to pay the Habitat Conservation Fee or for the Participant's failure to implement the Conservation Measures documented in the CI. Any funds remaining in Participant's Habitat Protection Fund account at the time of termination, voluntarily or for cause, will be assigned to the Administrator for conservation efforts to support the DSL under this CCAA and CI and will not be refunded. As funds can be spent on implementation of this agreement and Conservation Actions at any time, Enrollment Fees and Habitat Conservation Fees cannot be refunded.

Voluntary or involuntary termination of the CI will relieve a Participant of any additional Habitat Conservation Fees for future New Surface Disturbance on the terminated parcels. Participants will be given notifications as described in Section 14.0 of the CCAA.

The FWS incidental take authorization of the Covered Species and regulatory assurances, cannot be extended from the permit to activities occurring on Property after the CI has been terminated.

6.0. PROPERTY ACCESS.

The Participant agrees to provide access to Enrolled Property to the Administrator, and the Administrator agrees to provide prior notice and abide by the Participant's site visitation policies as provided under Section 10.0 of the CCAA. For Enrolled Property that is severed from the surface estate, the Participant agrees to work with the Administrator and the surface estate owner to provide surface access to the Administrator.

7.0. NO WAIVER.

The Participant, by entering into this CI, does not concede its agreement with, or endorsement of, any underlying studies and conclusions in the CCAA. Further, the Participant does not waive any legal rights or remedies that may exist outside of this CI. The Participant is also not responsible for work being accomplished by the FWS, the Administrator, or any third parties using the Participant's contributed funds.

8.0. RELEASE.

If at any time any administrative or legal challenge prevents the implementation of this CI, the Participant agrees to release the U.S. Department of the Interior, FWS, and the Administrator from any legal claims related to and against all other Parties to this CI and CCAA. If at any time any administrative or legal challenge to the CCAA prevents the implementation of this CI, the Participant shall be excused from its performance and shall release the signatories of the CCAA and CI from any legal claims related to this CI and CCAA. If at any time any administrative or legal challenge to the CCAA prevents the implementation of this CI, the Administrator agrees to release the Participant from any legal claims related to this CI and CCAA. Participant's obligation to make payments of Enrollment and Habitat Conservation Fees as described in Section 13.0 of the CCAA shall be suspended pending a final ruling if any administrative or judicial challenge prevents the implementation of the CCAA or its CIs. All funds remaining in the Habitat Protection Fund account will be retained by the Administrator and be used for conservation of the Covered Species.

9.0. AMENDMENT.

This CI may be amended with the written consent of each of the Parties hereto. The Parties agree to process requests for amendments in a timely manner. This CI may also be amended, with the written consent of each of the Parties hereto, to accommodate changes to applicable legal requirements, including but not limited to the ESA, the NEPA, and the FWS' permit regulations at 50 CFR 13 and 50 CFR 17.

10.0. MULTIPLE ORIGINALS.

The Participant will sign two originals of the CI, which will then be signed by the Administrator. The date of the last signature will be the effective date of the CI. The Administrator will mail one original CI to the Participant and will keep the last original for its records. Electronic signatures will suffice for enrollment requirements. If electronic signatures are used, one copy of the CI will suffice, and each signatory will receive a copy of the electronic version.

11.0. CONFIDENTIALITY.

Confidentiality requirements are set out in Section 21.0 of the 2020 DSL CCAA. The Administrator will fully comply with the requirements of Section 21.0.

If any Party to this CI receives a request under the Freedom of Information Act (FOIA), under the Texas Public Records Act (TPRA), or pursuant to a court order, and has responsive documents in its possession containing confidential and sensitive business information, the party will consult with the Participant that submitted the information and provide them with an opportunity to object to the information's disclosure before determining whether the information must be disclosed or is exempt from disclosure pursuant to FOIA, TPRA, or a court order, including, but not limited to, Exemption 4 or corresponding state provisions. The FWS will redact any proprietary information within the enrollment according to FWS' FOIA guidelines. Additional information regarding the FWS's process for responding to FOIA requests for possibly confidential information is set out at 43 CFR § 2.26-2.36 (2013).

12.0. DISPUTE RESOLUTION.

The Administrator agrees to work with Participant in good faith to resolve any disputes using dispute-resolution procedures agreed upon by the Parties. The Administrator will be responsible for determining the outcome of disputes. The Administrator will resolve disputes within 60 days of notification of the dispute.

13.0. NOTICE.

Any notice permitted or required by this CI including, but not limited to, the notices described in Section 14.0 of the CCAA shall be transmitted within any time limits described in this CI to the persons set forth below or shall be deemed transmitted given five (5) days after deposit in the U.S. mail, certified and postage prepaid, return receipt requested, and addressed as follows or at such other address as any Party may from time to time specify to the other Parties in writing.

Participant: _____

Contact: _____

Address: _____

_____

Telephone: _____

Fax: _____

E-Mail: _____

The Administrator 2020 DSL CCAA
[insert address]

14.0. <u>SIGNATURES.</u>

IN WITNESS, WHEREOF THE PARTIES HERETO have executed this Certificate of Inclusion to be in effect on the date of the last signature below. The CI may be executed in one of more counterparts, all of which shall be considered an original.

_____

Participant and Affiliation

Date_____

_____

Administrator

Date_____

EXHIBIT A
Property Description for Enrolled Property

EXHIBIT B
Map of Enrolled Properties

Appendix B
Certificates of Inclusion

CERTIFICATE OF INCLUSION FOR SAND MINING SECTOR
in the Candidate Conservation Agreement with Assurances for the Dunes Sagebrush Lizard (*Sceloporus arenicolus*)

CI Number: _____

Participant's Name: _____

Address: _____

This certifies that the Participant described herein is included within the scope of the attached Candidate Conservation Agreement with Assurances (CCAA) for the Dunes Sagebrush Lizard (*Sceloporus arenicolus*) (DSL) under the authority of Section 10(a)(1)(A) of the Endangered Species Act of 1973, as amended (ESA), 16 USC § 1531-1544. The Participant must be a Property Owner. A Property Owner, as defined by 50 CFR § 17.3, is a person with a fee simple, leasehold, or other property interest (including owners of water or other natural resources), or any other entity that may have a property interest, sufficient to carry out the proposed management activities, subject to applicable state law, on non-Federal land.

The goal of the U.S. Fish and Wildlife Service (FWS), the Administrator, and the Participant is to reduce or eliminate threats to the DSL. By agreeing to conduct the Conservation Measures and to fund Conservation Actions described herein, the Permit Holder will provide the Participant with regulatory certainty (assurances) concerning land-use restrictions that might otherwise apply should the DSL become listed as a "threatened" or "endangered" species under the ESA, that are provided by FWS through the Permit to the Administrator.

This Certificate of Inclusion (CI) is a voluntary agreement between the Administrator and the Participant expressly named herein. Through this CI, the Participant commits to implement Conservation Measures and to fund Conservation Actions that collectively will reduce or eliminate threats to the DSL. Funds contributed as part of this CI will be used by the Administrator to manage the program and implement Conservation Actions and associated activities. The Administrator will direct the funds to high priority Conservation Actions to restore, reclaim or preserve DSL Habitat as suggested by the Adaptive Management Committee in accordance with the governance structure and process. By signing below, the Participant acknowledges that it has read and understand the CCAA and this CI. They further acknowledge that the CCAA may not be sufficient to prevent the listing of the species.

1.0. ENROLLED PROPERTY.

By executing this CI, the Participant affirms that to the best of its knowledge it is a Property Owner of the Enrolled Property as defined by 50 CFR § 17.3, which provides that a Property Owner for these purposes is a person or entity with a fee simple, leasehold, or other property interest (including owners of water or other natural resources), sufficient to carry out the Conservation Measures and any other management activities contemplated by this CI, the CCAA and the Permit, subject to applicable state law, on enrolled, non-Federal land. This CI cannot be amended without the written agreement of all signatories.

1.1. Enrollment.

The Participant must enroll under the All Activities option and include all properties within the Covered Area. GIS shapefiles of all Enrolled Properties on which the Participant operates must be supplied to the Administrator prior to the CI being effective. The Participant will provide an update to the Administrator of its Enrolled Properties on an annual basis, no later than October 1. Outside of this annual update, GIS shapefiles of all Enrolled Properties on which the Participant operates may be requested by the Administrator.

1.2. Transfers of Enrolled Property by Participants to Third Parties.

Participant may transfer ownership of Enrolled Property to a third party before or after a listing decision. If Participant chooses to transfer ownership of Enrolled Property to a third party, participation in the CCAA will only continue if the transferee is a Participant or elects to become a Participant through execution of a new CI.

If the transferee is not a Participant and the DSL is not listed, the transferee may enroll in the CCAA as described in Section 1.1 (Enrollment); however, the Administrator will credit to the transferee any Enrollment Fees related to the transferred property paid by the transferor. If the transferee is not a Participant and the DSL is listed, the transferee may sign a new CI within 30 days of acquiring the Enrolled Property. All terms and conditions of the CCAA and CI, including any applicable Habitat Conservation Fee schedule associated with the Enrolled Property, will be assumed by the new Participant.

If the DSL is not listed, the new Participant must enroll all of its activities within the Covered Area, and provide the Administrator with the information described in Section 1.1 (Enrollment). If the DSL is listed at the time of the transfer, the new Participant must enroll all of its activities on the transferred property, and provide the Administrator with the information described in Section 1.1 (Enrollment).

Transferors, and transferees that are Participants, are responsible for revising GIS shapefiles and lists of Enrolled Property to reflect transfers of Enrolled Property in annual updates provided to the Administrator in accordance with Section 1.1 (Enrollment).

1.3. Addition and Removal of Enrolled Properties.

This section addresses Participant's ability to add Enrolled Properties to this CI when the Participant did not acquire parcels from an existing Participant. When one Participant seeks to add Enrolled Properties received via transfer from another Participant, the Participant must follow the procedures outlined in Section 1.2 (Transfers). This section also addresses Participants' ability to remove Enrolled Properties from this CI.

1.3.1. Addition and Removal of Enrolled Properties by All Activities Participants.

Participants may add any properties to (and remove Enrolled Properties from) this CI at any time, including after any decision to list a Covered Species. Participants will provide an updated GIS shapefile of Enrolled Properties reflecting additions or removals as part of the next annual update to the Administrator as described in Section 1.1 (Enrollment).

2.0. PARTICIPANT AGREEMENT TO IMPLEMENT CONSERVATION MEASURES.

Pursuant to Section 13.0 of the CCAA, and as further set forth in this CI, the Participant agrees to pay Enrollment, Habitat Conservation, and Implementation Fees as set out in Appendix D. In addition to payment of these fees, Participants agree to avoid High and Intermediate Suitability DSL Habitat. In addition, Participants agree to implement the following Measures for New Surface Disturbances to minimize impacts to Covered Species.

General Measures:

To assist in developing and prioritizing Conservation Actions, upon initial enrollment and, thereafter, annually by December 1, Participant will provide the Administrator with a Plan of Operation that includes an estimate of surface disturbances anticipated in the course of its development for the upcoming calendar year. Participant will notify the Administrator at least 45 days in advance of any change in the plan. Participant will provide documentation to the Administrator in its annual plan that demonstrates that the New Surface Disturbances have not exceeded 60 acres per Enrolled Property in the preceding year for the first three years of participation. After the first three years of participation the Participant's annual plan must demonstrate that the average New Surface Disturbance over the three preceding three years have not exceeded 60 acres per year per Enrolled Property..
The Administrator will invoice Participant for the required Habitat Conservation fees upon receipt of the annual plan. Payment is due 60 days after invoice.

Participant will minimize the use of groundwater in its operations to the extent practicable. Upon enrollment, a sand mining Participant must provide to the Administrator the following:

1. The most recent year's Water Use Survey submitted to the Texas Water Development Board. If not requested to complete this survey by the Texas Water Development Board, the participant will complete the survey and submit it to the Administrator. The Survey reports separately all groundwater drawn by aquifer;
2. A description of how water is drawn and used in processing, including all measures implemented to captures water used for re-use.

In cooperation with the Administrator, each sand mining Participant must create a water use minimization plan that will include targets on water use reduction and Participants must annually report performance relative to those targets.

For each area of mining disturbance (pit) in an area within DSL Habitat, Participant shall monitor dune movement and stability. Participants may re-grade areas of mining disturbance consistent with any applicable contractual requirements. During re-grading, Participants shall avoid or minimize additional surface disturbance in DSL Habitat, consistent with the requirements in Appendix D.

Upon application for enrollment under the 2020 DSL CCAA, a sand mine operator must submit a site specific Habitat Assessment for the portion of the Enrolled Property that will be mined in the upcoming year, as described in Appendix A. A sand mine operator also will conduct a Habitat Assessment for any areas on an Enrolled Property that may be mined in future years, as needed. The Habitat Assessment will delineate the entire proposed Enrolled Property based on the following land cover categories: (1) Shinnery Oak Dune I, (2) Shinnery Oak Dune II, (3) Shinnery Oak Flats or Co-Dominate Shinnery Oak Mesquite Flats, (4) Grass Dunes; (5) Open Sand Dunes; and (6) Mesquite Shrub. Covered Activities related to sand mining may proceed, subject to applicable Conservation Measures, in areas other than Dune I, Dune II, and Shinnery Oak Flats / Co-Dominant Shinnery Oak Flats.

Avoidance (*i.e.,* no new surface disturbance from Covered Activities) is required in areas identified as including the following ground cover types: Dunes I, Dunes II, and Shinnery Oak Flats or Co-Dominate Shinnery Oak Mesquite Flats, except as follows:

- The Participant has conducted a Presence/Absence survey for DSL within the survey season immediately prior to any proposed surface disturbance activity, consistent with the Presence / Absence Survey Protocol provided in Appendix A. Any documented DSL detection establishes a Zone of Likely DSL Occupancy extending in a 350 meters radius from the detection location in areas of potential DSL Habitat

- Any new Surface Disturbance within a Zone of Likely DSL Occupancy, Dunes I, Dunes II, and Shinnery Oak Flats or Co-Dominate Shinnery Oak Mesquite Flats shall be offset consistent with the requirements of Appendix D.

Areas of potential DSL Habitat other than Dunes I, Dunes II, and Shinnery Oak Flats or Co-Dominate Shinnery Oak Mesquite Flats. Impacts in these areas shall be offset consistent with the requirements of Appendix D.

Before areas in DSL Habitat can be disturbed, the Participant must submit to the Administrator a written demonstration of compliance with the criterion above with supporting documentation. Participant acknowledges that FWS may request to review the documentation submitted by the Participant. All proprietary information submitted by the Participant must be marked "Confidential or Business Sensitive". FWS may seek to have the Administrator require the Participant to address any deficiency.

Conservation Measures:

In all areas of DSL Habitat, including Low Suitability Areas, Participant must implement the following Conservation Measures to minimize the impacts of development:

- Maximize use of existing developed areas and Low Suitability Areas of DSL Habitat in siting excavation activities and rights-of-ways for infrastructure supporting the excavation activities;
- Limit New Surface Disturbances to 60 acres annually for all Enrolled Property, not to exceed 1,380 acres over the duration of the CCAA;
- Re-grade areas of mining disturbance consistent with any applicable contractual requirements, and avoid or minimize additional surface disturbance consistent with the requirements of Appendix D;
- Restrict traffic to existing roads to the maximum extent practicable and minimize new road development consistent with the New Surface Disturbance Offsets in Appendix D. Measures (e.g., signage and fencing) will be implemented to ensure that traffic does not impinge on High or Intermediate Suitability areas of DSL Habitat;
- Avoid aerial sprayed application of approved herbicide for weed control (e.g., utilize pellets, hand applicators or manual removal);
- Avoid introduction of non-native vegetation by using habitat appropriate native vegetation and best management practices, such as cleaning vehicle coming into the area. If an activity is identified that introduces new non-native vegetation, the activity or source will be controlled to manage or remove the invasive vegetation;

- Control dust from excavation, road traffic and other activities including restricting unnecessary off-road vehicle access;
- Minimize OHV activity to the extent practicable; and
- Implement best management practices, such as barrier fencing, to protect DSL Habitat and individual DSL.

These minimization measures must be implemented concurrently with the initiation of the surface-disturbing activities.

In the event of any inconsistencies between the Conservation Measures described above and those described in the 2020 DSL CCAA, the terms of the 2020 DSL CCAA control.

3.0. ENROLLMENT FEES AND HABITAT CONSERVATION FEES.

Participant must pay Enrollment, Habitat Conservation, and Implementation fees as called for in Appendix D.

The Participant is responsible for paying an Enrollment Fee for the first three years this CI is in effect. If the Participant opts out of the CI before the end of three years, the Participant is still responsible for three years of Enrollment Fees. The Participant must enrollment through the All Activities process.

4.0. PARTICIPANT NON-COMPLIANCE.

In the event that the Administrator determines that a Participant is failing to implement the required Conservation Measures described in the CI, the Administrator will notify the Participant of the need to immediately correct the deficiency. If the deficiency is a failure to pay Fees, Participant shall have thirty (30) days to make the payment or to arrange for a mutually acceptable date by which the Administrator will receive the payment. With respect to any other deficiency, the Administrator will notify Participant by mail and electronic transmission of the deficiency promptly on its discovery. Participant shall initiate corrective actions within thirty (30) days of receipt of the notice or arrange for a mutually acceptable date by which corrective action will be initiated. If the Participant has not initiated corrective actions within thirty (30) days of receipt of the notification or arranged for a mutually acceptable date for initiating the corrective actions, the Administrator may take actions, up to and including termination of some or all of the CI. In lieu of initiating corrective actions, Participant may file an appeal with the Administrator, by electronic transmission or formal written notice, within thirty (30) days of receipt of the notice of deficiency setting out clearly the basis for the appeal. The Administrator will notify the Participant by mail and electronic transmission within 10 days of determination of the appeal. The Permit Holder will notify the Service of the resolution of any unresolved non-compliance issue within 30 days.

5.0. SUSPENSION AND TERMINATION.

5.1 Suspension

Each Participant hereby agrees that the Administrator, in coordination with the FWS, can suspend this CI as it relates to some or all of the Enrolled Property identified in Exhibit A of the CI until the Habitat Conservation Fee or Enrollment Fee (if any) associated with the CI is paid. Regardless of enrollment method, the CI may be suspended with respect to a single parcel of Enrolled Property. The FWS will not authorize incidental take of Covered Species resulting from any activities occurring on Enrolled Property for which the CI is suspended.

5.2 Voluntary Termination

The Participant may terminate the CI in part or whole at any time but remains obligated to pay all Enrollment Fees described in Section 13.0 of the CCAA. The Participant may terminate this CI by giving thirty (30) days' written notice to the Administrator and FWS as to any or all of the Enrolled Property. Any funds remaining in Participant's Habitat Protection Fund account at the time of termination, voluntarily or for cause, will be assigned to the Administrator for conservation efforts to support the DSL under this CCAA and CI and will not be refunded. As funds can be spent on implementation of this agreement and Conservation Actions at any time, Enrollment Fees and Habitat Conservation Fees will not be refunded.

5.3 Involuntary Termination

A CI may only be terminated following the process described in Sections 11.0 and 12.0 of the CCAA, and over a Participant's objections because of a Participant's failure to pay the Habitat Conservation Fee or for the Participant's failure to implement the Conservation Measures documented in the CI. Any funds remaining in Participant's Habitat Protection Fund account at the time of termination, voluntarily or for cause, will be assigned to the Administrator for conservation efforts to support the DSL under this CCAA and CI and will not be refunded. As funds can be spent on implementation of this agreement and Conservation Actions at any time, Enrollment Fees and Habitat Conservation Fees cannot be refunded.

Voluntary or involuntary termination of the CI will relieve a Participant of any additional Habitat Conservation Fees for future New Surface Disturbance on the terminated parcels. Participants will be given notifications as described in Section 14.0 of the CCAA.

6.0. PROPERTY ACCESS.

The Participant agrees to provide access to Enrolled Property to the Administrator, and the Administrator agrees to provide prior notice and abide by the Participant's site visitation policies as provided under Section 10.0 of the CCAA. For Enrolled Property that is severed

from the surface estate, the Participant agrees to work with the Administrator and the surface estate owner to provide surface access to the Administrator.

7.0. NO WAIVER.

The Participant, by entering into this CI, does not concede its agreement with, or endorsement of, any underlying studies and conclusions in the CCAA. Further, the Participant does not waive any legal rights or remedies that may exist outside of this CI. The Participant is also not responsible for work being accomplished by the FWS, the Administrator, or any third parties using the Participant's contributed funds.

8.0. RELEASE.

If at any time any administrative or legal challenge prevents the implementation of this CI, the Participant agrees to release the U.S. Department of the Interior, FWS, and the Administrator from any legal claims related to and against all other Parties to this CI and CCAA. If at any time any administrative or legal challenge to the CCAA prevents the implementation of this CI, the Participant shall be excused from its performance and shall release the signatories of the CCAA and CI from any legal claims related to this CI and CCAA. If at any time any administrative or legal challenge to the CCAA prevents the implementation of this CI, the Administrator agrees to release the Participant from any legal claims related to this CI and CCAA. Participant's obligation to make payments of Enrollment and Habitat Conservation Fees as described in Section 13.0 of the CCAA shall be suspended pending a final ruling if any administrative or judicial challenge prevents the implementation of the CCAA or its CIs. All funds remaining in the Habitat Protection Fund account will be retained by the Administrator and be used for conservation of the Covered Species.

9.0. AMENDMENT.

This CI may be amended with the written consent of each of the Parties hereto. The Parties agree to process requests for amendments in a timely manner. This CI may also be amended, with the written consent of each of the Parties hereto, to accommodate changes to applicable legal requirements, including but not limited to the ESA, the NEPA, and the FWS' permit regulations at 50 CFR 13 and 50 CFR 17.

10.0. MULTIPLE ORIGINALS.

The Participant will sign two originals of the CI, which will then be signed by the Administrator. The date of the last signature will be the effective date of the CI. The Administrator will mail one original CI to the Participant and will keep the last original for its records. Electronic signatures will suffice for enrollment requirements. If electronic signatures are used, one copy of the CI will suffice, and each signatory will receive a copy of the electronic version.

11.0. CONFIDENTIALITY.

Confidentiality requirements are set out in Section 21.0 of the 2020 DSL CCAA. The Administrator will fully comply with the requirements of Section 21.0.

If any Party to this CI receives a request under the Freedom of Information Act (FOIA), under the Texas Public Records Act (TPRA), or pursuant to a court order, and has responsive documents in its possession containing confidential and sensitive business information, it will consult with the Participant that submitted the information and provide it with an opportunity to object to the information's disclosure before determining whether the information must be disclosed or is exempt from disclosure pursuant to FOIA, TPRA, or a court order, including, but not limited to, Exemption 4 or corresponding state provisions. The FWS will redact any proprietary information within the enrollment according to FWS' FOIA guidelines. Additional information regarding the FWS' process for responding to FOIA requests for possibly confidential information is set out at 43 CFR § 2.26-2.36 (2013).

12.0. DISPUTE RESOLUTION.

The Administrator agrees to work with Participant in good faith to resolve any disputes using dispute-resolution procedures agreed upon by the Parties, and the Administrator will be responsible for determining the outcome of disputes. The Administrator will resolve disputes within 60 days of notification of the dispute.

13.0. NOTICE.

Any notice permitted or required by this CI including, but not limited to, the notices described in Section 14.0 of the CCAA, shall be transmitted within any time limits described in this CI to the persons set forth below or shall be deemed transmitted given five (5) days after deposit in the U.S. mail, certified and postage prepaid, return receipt requested, and addressed as follows or at such other address as any Party may from time to time specify to the other Parties in writing.

Participant: _____

Contact: _____

Address: _____

_____

_____

Telephone: _____

Fax: _____

E-Mail: _____

The Administrator 2020 DSL CCAA
[insert address]

14.0. <u>SIGNATURES.</u>

IN WITNESS WHEREOF THE PARTIES HERETO have executed this Certificate of Inclusion to be in effect on the date of the last signature below. The CI may be executed in one or more counterparts, all of which shall be considered an original.

_____

Participant and Affiliation

Date_____

_____

Administrator

Date_____

EXHIBIT A
PROPERTY DESCRIPTION for ENROLLED PROPERTY

EXHIBIT B
Map of enrolled property

Appendix B
Certificates of Inclusion

CERTIFICATE OF INCLUSION FOR the RENEWABLE ENERGY SECTOR
in the
Candidate Conservation Agreement with Assurances for the Dunes Sagebrush Lizard (*Sceloporus arenicolus*)

CI Number: _____

Participant's Name: _____

Address: _____

This certifies that the Participant described herein is included within the scope of the attached Candidate Conservation Agreement with Assurances (CCAA) for the Dunes Sagebrush Lizard (*Sceloporus arenicolus*) (DSL) under the authority of Section 10(a)(1)(A) of the Endangered Species Act of 1973, as amended (ESA), 16 USC § 1531-1544. The Participant must be a Property Owner. A Property Owner, as defined by 50 CFR § 17.3, is a person with a fee simple, leasehold, or other property interest (including owners of water or other natural resources), or any other entity that may have a property interest, sufficient to carry out the proposed management activities, subject to applicable state law, on non-Federal land.

The goal of the U.S. Fish and Wildlife Service (FWS), the Administrator, and the Participant is to reduce or eliminate threats to the DSL. By agreeing to conduct the Conservation Measures and to fund Conservation Actions described herein, the Permit Holder will provide the Participant with regulatory certainty (assurances) concerning land-use restrictions that might otherwise apply should the DSL become listed as a "threatened" or "endangered" species under the ESA, that are provided by FWS through the Permit to the Administrator.

This Certificate of Inclusion (CI) is a voluntary agreement between the Administrator and the Participant expressly named herein. Through this CI, the Participant commits to implement Conservation Measures and to fund Conservation Actions that collectively will reduce or eliminate threats to the DSL. Funds contributed as part of this CI will be used by the Administrator to manage the program and implement Conservation Actions and associated activities. The Administrator will direct the funds to high priority Conservation Actions to restore, reclaim or preserve DSL Habitat as suggested by the Adaptive Management Committee in accordance with the governance structure and process. By signing below, the Participant acknowledges that it has read and understand the CCAA and this CI. They further acknowledge that the CCAA may not be sufficient to prevent the listing of the species.

1.0. ENROLLED PROPERTY.

By executing this CI, the Participant affirms that to the best of its knowledge it is a Property Owner of the Enrolled Property as defined by 50 CFR § 17.3, which provides that a Property Owner for these purposes is a person or entity with a fee simple, leasehold, or property interest (including owners of water or other natural resources), sufficient to carry out the Conservation Measures and any other management activities contemplated by this CI, the CCAA and the Permit, subject to applicable state law, on enrolled, non-Federal land. This CI cannot be amended without the written agreement of all signatories.

1.1. Enrollment.

The Participant must enroll under the All Activities option and include all properties within the Covered Area. GIS shapefiles of all Enrolled Properties on which the Participant operates must be supplied to the Administrator prior to the CI being effective. The Participant will provide an update to the Administrator of its Enrolled Properties on an annual basis, no later than October 1. Outside of this annual update, GIS shapefiles of all Enrolled Properties on which the Participant operates may be requested by the Administrator.

1.2. Transfers of Enrolled Property by Participants to Third Parties.

Participant may transfer ownership of Enrolled Property to a third party before or after a listing decision. If Participant chooses to transfer ownership of Enrolled Property to a third party, participation in the CCAA will only continue if the transferee is a Participant or elects to become a Participant through execution of a new CI.

If the transferee is not a Participant and the DSL is not listed, the transferee may enroll in the CCAA as described in Section 1.1 (Enrollment); however, the Administrator will credit to the transferee any Enrollment Fees related to the transferred property paid by the transferor. If the transferee is not a Participant and the DSL is listed, the transferee may sign a new CI within 30 days of acquiring the Enrolled Property. All terms and conditions of the CCAA and CI, including any applicable Habitat Conservation Fee schedule associated with the Enrolled Property, will be assumed by the new Participant.

If the DSL is not listed, the new Participant must enroll all of its activities within the Covered Area, and provide the Administrator with the information described in Section 1.1 (Enrollment). If the DSL is listed at the time of the transfer, the new Participant must enroll all of its activities on the transferred property, and provide the Administrator with the information described in Section 1.1 (Enrollment).

Transferors, and transferees that are Participants, are responsible for revising GIS shapefiles and lists of Enrolled Property to reflect transfers of Enrolled Property in annual updates provided to the Administrator in accordance with Section 1.1 (Enrollment).

1.3. Addition and Removal of Enrolled Properties.

This section addresses Participant's ability to add Enrolled Properties to this CI when the Participant did not acquire parcels from an existing Participant. When one Participant seeks to add Enrolled Properties received via transfer from another Participant, the Participant must follow the procedures outlined in Section 1.2 (Transfers). This section also addresses Participant's ability to remove Enrolled Properties from this CI.

1.3.1. Addition and Removal of Enrolled Properties by All Activities Participants.

Participants may add any properties to (and remove Enrolled Properties from) this CI at any time, including after any decision to list a Covered Species. Participants will provide an updated GIS shapefile of Enrolled Properties reflecting additions or removals as part of the next annual update to the Administrator as described in Section 1.1 (Enrollment).

2.0. PARTICIPANT AGREEMENT TO IMPLEMENT CONSERVATION MEASURES.

Pursuant to Section 13.0 of the CCAA, and as further set forth in this CI, the Participant agrees to pay Enrollment, Habitat Conservation, and Implementation Fees as set out in Appendix D. Participant further agrees to implement the following Conservation Measures for New Surface Disturbances to avoid and minimize impacts to Covered Species.

Renewable energy operations (solar and wind energy) that construct and maintain power lines and appurtenant structures in Low Suitability areas of DSL Habitat can enroll in the 2020 DSL CCAA as long as they comply with the Conservation Measures set out below and pay the Fees described in Appendix D of this Agreement. The construction, maintenance, or operation of solar or wind energy facilities including power lines and appurtenant structures in High and Intermediate areas of DSL Habitat are not Covered Activities under this agreement.

Avoidance of DSL Habitat: Participant cannot cause a New Surface Disturbance in High or Intermediate Suitability areas of DSL Habitat. A description of these Habitat Suitability DSL Habitat is in Appendix A.

Avoidance of DSL habitat in High and Intermediate Suitability areas of DSL Habitat as identified in Appendix A is required unless the Participant demonstrates to the Administrator's satisfaction that the designation of an area as a specific category of suitable DSL Habitat in Appendix A is incorrect. That demonstration must include surveys conducted following the approved Protocols set out in Appendix A.

Before any area of DSL Habitat can be disturbed, the Participant must submit a written demonstration of compliance with the criterion above with supporting documentation. The Administrator, with the assistance of qualified biological and technical professionals were feasible, will review the documentation and either concur with the determination or request additional information within 20 days of receiving the Participant's documentation. The Administrator will avoid unnecessary requests for information and will not exceed the 20-day review period after receipt of complete documentation. The Administrator will use reasonable efforts to provide expedited reviews if requested.

If the Administrator has not requested additional documentation after 20 days of receipt of Participant's submission, Participant may proceed with the surface disturbance; however, Participant acknowledges that the Service may request to review the documentation submitted by the Participant, and Participant waives any confidentiality with respect to such documentation except as it pertains to confidential business information. All such information submitted by the Participant must be marked "Confidential or Business Sensitive" even in situations where the confidentiality has been waived. The Service may seek to have the Administrator require the Participant to address any deficiency.

Upon enrollment, the Participants will provide the Administrator a plan for the development and operation of the Enrolled Property. Participant will notify the Administrator at least 45 days in advance of any change in the plan with respect to the location of development or the location of roads or infrastructure.

Conservation Measures

- Maximize use of existing developed areas and rights-of-way for infrastructure supporting the development of the power lines and appurtenances (roads, and associated infrastructure);
- Trenches left open for eight (8) hours or more must have earthen ramps (built at no more than a 30-degree slope and placed no more than 500 feet apart). At the end of each day, a monitor approved by the FWS or the Administrator, shall walk the entire length of open trench and remove all trapped DSL and release them at least 100 yards from the trench;
- Minimize footprint for development, (i.e., centralized facilities, width of the easement, and interim reclamation, and restoration as appropriate);
- Restrict traffic to existing roads;
- Use SCADA or remote sensing where appropriate, to reduce traffic;
- Minimize OHV activity, to the extent practicable;
- Restore rights-of-way promptly with native vegetation; and,
- Avoid introduction of non-native vegetation by using habitat appropriate native vegetation and best management practices, such as cleaning vehicle

coming into the area to remove mud and seeds. If an activity is identified that introduces new non-native vegetation, the activity or source will be controlled to manage or remove the invasive vegetation

In the event of any inconsistencies between the Conservation Measures described above and those described in the 2020 DSL CCAA, the terms of the 2020 DSL CCAA control.

3.0. ENROLLMENT FEES

Participant must pay Enrollment, Habitat Conservation, and Implementation fees as called for in Appendix D.

The Participant is responsible for paying an Enrollment Fee for the first three years this CI is in effect. If the Participant opts out of the CI before the end of three years, the Participant is still responsible for three years of Enrollment Fees. The Participant must enrollment through the All Activities process.

4.0 PARTICIPANT NON-COMPLIANCE.

In the event that the Administrator determines that a Participant is failing to implement the required Conservation Measures described in the CI, the Administrator will notify the Participant of the need to immediately correct the deficiency. If the deficiency is a failure to pay Fees, Participant shall have thirty (30) days to make the payment or to arrange for a mutually acceptable date by which the Administrator will receive the payment. With respect to any other deficiency, the Administrator will notify Participant of the deficiency promptly on its discovery by mail and electronic transmission. Participant shall initiate corrective actions within thirty (30) days of receipt of the notice or arrange for a mutually acceptable date by which corrective action will be initiated. If the Participant has not initiated corrective actions within thirty (30) days of receipt of the notification or arranged for a mutually acceptable date for initiating the corrective actions, the Administrator may take actions, up to and including termination of some or all of the CI. In lieu of initiating corrective actions, Participant may file an appeal with the Administrator, by electronic transmission or formal written notice, within thirty (30) days of receipt of the notice of deficiency setting out clearly the basis for the appeal. The Administrator will notify the Participant by mail and electronic transmission within 10 days of determination of the appeal. The Permit Holder will notify the Service of the resolution of any unresolved non-compliance issue within 30 days.

5.0. SUSPENSION AND TERMINATION.

5.1 Suspension

Each Participant hereby agrees that the Administrator, in coordination with the FWS, can suspend this CI as it relates to some or all of the Enrolled Property identified in Exhibit A of the CI until the Habitat Conservation Fee or Enrollment Fee (if any) associated with the CI is

paid. Regardless of enrollment method, the CI may be suspended with respect to a single parcel of Enrolled Property. The FWS will not authorize incidental take of Covered Species resulting from any activities occurring on Enrolled Property for which the CI is suspended.

5.2 Voluntary Termination

The Participant may terminate the CI in part or whole at any time but remains obligated to pay all Enrollment Fees described in Section 13.0 of the CCAA. The Participant may terminate this CI by giving thirty (30) days' written notice to the Administrator and FWS as to any or all of the Enrolled Property. Any funds remaining in Participant's Habitat Protection Fund account at the time of termination, voluntarily or for cause, will be assigned to the Administrator for conservation efforts to support the DSL under this CCAA and CI, and will not be refunded. As funds can be spent on implementation of this agreement and Conservation Actions at any time, Enrollment Fees and Habitat Conservation Fees will not be refunded.

5.3 Involuntary Termination

A CI may only be terminated following the process described in Sections 11.0 and 12.0 of the CCAA, and over a Participant's objections because of a Participant's failure to pay the Habitat Conservation Fee or for the Participant's failure to implement the Conservation Measures documented in the CI. Any funds remaining in Participant's Habitat Protection Fund account at the time of termination, voluntarily or for cause, will be assigned to the Administrator for conservation efforts to support the DSL under this CCAA and CI and will not be refunded. As funds can be spent on implementation of this agreement and Conservation Actions at any time, Enrollment Fees and Habitat Conservation Fees cannot be refunded.

Voluntary or involuntary termination of the CI will relieve a Participant of any additional Habitat Conservation Fees for future New Surface Disturbance on the terminated parcels. Participants will be given notifications as described in Section 14.0 of the CCAA.

6.0. PROPERTY ACCESS.

The Participant agrees to provide access to Enrolled Property to the Administrator, and the Administrator agrees to provide prior notice and abide by the Participant's site visitation policies as provided under Section 10.0 of the CCAA. For Enrolled Property that is severed from the surface estate, the Participant agrees to work with the Administrator and the surface estate owner to provide surface access to the Administrator.

7.0. NO WAIVER.

The Participant, by entering into this CI, does not concede its agreement with, or endorsement of, any underlying studies and conclusions in the CCAA. Further, the Participant does not waive any legal rights or remedies that may exist outside of this CI. The

Participant is also not responsible for work being accomplished by the FWS, the Administrator, or any third parties using the Participant's contributed funds.

8.0. RELEASE.
If at any time any administrative or legal challenge prevents the implementation of this CI, the Participant agrees to release the U.S. Department of the Interior, FWS, and the Administrator from any legal claims related to and against all other Parties to this CI and CCAA. If at any time any administrative or legal challenge to the CCAA prevents the implementation of this CI, the Participant shall be excused from its performance and shall release the signatories of the CCAA and CI from any legal claims related to this CI and CCAA. If at any time any administrative or legal challenge to the CCAA prevents the implementation of this CI, the Administrator agrees to release the Participant from any legal claims related to this CI and CCAA. Participant's obligation to make payments of Enrollment and Habitat Conservation Fees as described in Section 13.0 of the CCAA shall be suspended pending a final ruling if any administrative or judicial challenge prevents the implementation of the CCAA or its CIs. All funds remaining in the Habitat Protection Fund account will be retained by the Administrator and be used for conservation of the Covered Species.

9.0. AMENDMENT.
This CI may be amended with the written consent of each of the Parties hereto. The Parties agree to process requests for amendments in a timely manner. This CI may also be amended, with the written consent of each of the Parties hereto, to accommodate changes to applicable legal requirements, including but not limited to the ESA, the NEPA, and the FWS' permit regulations at 50 CFR 13 and 50 CFR 17.

10.0. MULTIPLE ORIGINALS.
The Participant will sign two originals of the CI, which will then be signed by the Administrator. The date of the last signature will be the effective date of the CI. The Administrator will mail one original CI to the Participant and will keep the last original for its records. Electronic signatures will suffice for enrollment requirements. If electronic signatures are used, one copy of the CI will suffice, and each signatory will receive a copy of the electronic version.

11.0. CONFIDENTIALITY.
Confidentiality requirements are set out in Section 21.0 of the 2020 DSL CCAA. The Administrator will fully comply with the requirements of Section 21.0.

If any Party to this CI receives a request under the Freedom of Information Act (FOIA), under the Texas Public Records Act (TPRA), or pursuant to a court order, and has responsive documents in its possession containing confidential and sensitive business information, it will consult with the Participant that submitted the information and provide it with an

opportunity to object to the information's disclosure before determining whether the information must be disclosed or is exempt from disclosure pursuant to FOIA, TPRA, or a court order, including, but not limited to, Exemption 4 or corresponding state provisions. The FWS will redact any proprietary information within the enrollment according to FWS' FOIA guidelines. Additional information regarding the FWS' process for responding to FOIA requests for possibly confidential information is set out at 43 CFR § 2.26-2.36 (2013).

12.0. <u>DISPUTE RESOLUTION.</u>

The Administrator agrees to work with Participant in good faith to resolve any disputes using dispute-resolution procedures agreed upon by the Parties, and when appropriate, the Participants. The Administrator will be responsible for determining the outcome of disputes. The Administrator will resolve disputes within 60 days of notification of the dispute.

13.0. <u>NOTICE.</u>

Any notice permitted or required by this CI including, but not limited to, the notices described in Section 14.0 of the CCAA, shall be transmitted within any time limits described in this CI to the persons set forth below or shall be deemed transmitted given five (5) days after deposit in the U.S. mail, certified and postage prepaid, return receipt requested, and addressed as follows or at such other address as any Party may from time to time specify to the other Parties in writing.

Participant: _____

Contact: _____

Address: _____

_____

_____

Telephone: _____

Fax: _____

E-Mail: _____

The Administrator 2020 DSL CCAA
[insert address]

14.0. <u>SIGNATURES.</u>

IN WITNESS WHEREOF THE PARTIES HERETO have executed this Certificate of Inclusion to be in effect on the date of the last signature below. The CI may be executed in one or more counterparts, all of which shall be considered an original.

_____

Participant and Affiliation

Date_____

_____

Administrator

Date_____

EXHIBIT A
PROPERTY DESCRIPTION for ENROLLED PROPERTY

EXHIBIT B
Map of Enrolled Property

EXHIBIT C
Plan of Development

Appendix B
Certificates of Inclusion

CERTIFICATE OF INCLUSION FOR PIPELINE SECTOR
in the
Candidate Conservation Agreement with Assurances for the Dunes Sagebrush Lizard (*Sceloporus arenicolus*)

CI Number: _____

Participant's Name: _____

Address: _____

This certifies that the Participant described herein is included within the scope of the attached Candidate Conservation Agreement with Assurances (CCAA) for the Dunes Sagebrush Lizard (*Sceloporus arenicolus*) (DSL) under the authority of Section 10(a)(1)(A) of the Endangered Species Act of 1973, as amended (ESA), 16 USC § 1531-1544. The Participant must be a Property Owner. A Property Owner, as defined by 50 CFR § 17.3, is a person with a fee simple, leasehold, or other property interest (including owners of water or other natural resources), or any other entity that may have a property interest, sufficient to carry out the proposed management activities, subject to applicable state law, on non-Federal land.

The goal of the U.S. Fish and Wildlife Service (FWS), the Administrator, and the Participant is to reduce or eliminate threats to the DSL. By agreeing to conduct the Conservation Measures and to fund Conservation Actions described herein, the Permit Holder will provide the Participant with regulatory certainty (assurances) concerning land-use restrictions that might otherwise apply should the DSL become listed as a "threatened" or "endangered" species under the ESA, that are provided by FWS through the Permit to the Administrator.

This Certificate of Inclusion (CI) is a voluntary agreement between the Administrator and the Participant expressly named herein. Through this CI, the Participant commits to implement Conservation Measures and to fund Conservation Actions that collectively will reduce or eliminate threats to the DSL. Funds contributed as part of this CI will be used by the Administrator to manage the program and implement Conservation Actions and associated activities. The Administrator will direct the funds to high priority Conservation Actions to restore, reclaim or preserve DSL Habitat as suggested by the Adaptive Management Committee in accordance with the governance structure and process. By signing below, the Participant acknowledges that it has read and understand the CCAA and this CI. They further acknowledge that the CCAA may not be sufficient to prevent the listing of the species.

1.0. ENROLLED PROPERTY.

By executing this CI, the Participant affirms that to the best of its knowledge it is a Property Owner of the Enrolled Property as defined by 50 CFR § 17.3, which provides that a Property Owner for these purposes is a person or entity with a fee simple, leasehold, or property interest (including owners of water or other natural resources), sufficient to carry out the Conservation Measures and any other management activities contemplated by this CI, the CCAA and the Permit, subject to applicable state law, on enrolled, non-Federal land. This CI cannot be amended without the written agreement of all signatories.

1.1. Enrollment.

The Participant must enroll through the All Activities process for its property interests within the Covered Area as provided in Appendix D. GIS shapefiles of all Enrolled Properties on which the Participant operates must be supplied to the Administrator prior to the CI being effective. The Participant will provide an update to the Administrator of its Enrolled Properties on an annual basis, no later than October 1. Outside of this annual update, GIS shapefiles of all Enrolled Properties on which the Participant operates may be requested by the Administrator.

1.2. Transfers of Enrolled Property by Participants to Third Parties.

Participant may transfer ownership of Enrolled Property to a third party before or after a listing decision. If Participant chooses to transfer ownership of Enrolled Property to a third party, participation in the CCAA will only continue if the transferee is a Participant or elects to become a Participant through execution of a new CI.

If the transferee is not a Participant and the DSL is not listed, the transferee may enroll in the CCAA as described in Section 1.1 (Enrollment); however, the Administrator will credit to the transferee any Enrollment Fees related to the transferred property paid by the transferor. If the transferee is not a Participant and the DSL is listed, the transferee may sign a new CI within 30 days of acquiring the Enrolled Property. All terms and conditions of the CCAA and CI, including any applicable Habitat Conservation Fee schedule associated with the Enrolled Property, will be assumed by the new Participant.

If the DSL is not listed, the new Participant must enroll all of its activities within the Covered Area, and provide the Administrator with the information described in Section 1.1 (Enrollment). If the DSL is listed at the time of the transfer, the new Participant must enroll all of its activities on the transferred property, and provide the Administrator with the information described in Section 1.1 (Enrollment).

Transferors, and transferees that are Participants, are responsible for revising GIS shapefiles and lists of Enrolled Property to reflect transfers of Enrolled Property in annual updates provided to the Administrator in accordance with Section 1.1 (Enrollment).

1.3. Addition and Removal of Enrolled Properties.

This section addresses Participant's ability to add Enrolled Properties to this CI when the Participants did not acquire parcels from an existing Participant. When one Participant seeks to add Enrolled Properties received via transfer from another Participant, the Participant must follow the procedures outlined in Section 1.2 (Transfers). This section also addresses Participant's ability to remove Enrolled Properties from this CI.

1.3.1. Addition and Removal of Enrolled Properties by All Activities Participants.

Participants may add any properties to (and remove Enrolled Properties from) this CI at any time, including after any decision to list a Covered Species. Participants will provide an updated GIS shapefile of Enrolled Properties reflecting additions or removals as part of the next annual update to the Administrator as described in Section 1.1 (Enrollment).

2.0. PARTICIPANT AGREEMENT TO IMPLEMENT CONSERVATION MEASURES.

Pursuant to Section 13.0 of the CCAA, and as further set forth in this CI, the Participant agrees to pay Enrollment, Habitat Conservation, and Implementation Fees as set out in Appendix D. Participant further agrees to implement the following Conservation Measures for New Surface Disturbances to avoid and minimize impacts to Covered Species.

High and Intermediate Suitability Areas of DSL Habitat:

Avoidance of High and Intermediate Suitability DSL Habitat is required unless the Participant demonstrates that the criteria below are met:

- Contractual fulfillment of surface use agreements or leases existing at least six months prior to the planned activity and that cannot be achieved by an alternative development plan;
- No feasible technologically routing diversions are available;
- Horizontal or directional boring is not feasible; and,
- Areas in Low Suitability Habitat or areas with existing disturbance in habitat are not available.

Before habitat can be disturbed, the Participant must submit a written demonstration of compliance with the criteria above. Participant may also demonstrate that the Habitat Suitability designation in the Texas State Map of DSL Habitat assigned to the development site is incorrect. That demonstration must include surveys conducted following the approved Protocols set out in Appendix A. The Administrator, with the assistance of

qualified biological and technical professionals, where feasible, will review the documentation and either concur with the determination or request additional information within 20 days of receiving the Participant's documentation. The Administrator will use reasonable efforts to provide expedited reviews if necessary. The Administrator will avoid unnecessary requests for information and will not exceed the 20-day review period after receipt of complete documentation. The Administrator will use reasonable efforts to provide expedited reviews if requested.

If the Administrator has not requested additional documentation after 20 days of receipt of Participant's submission, Participant may proceed with the surface disturbance; however, Participant acknowledges that the Service may request to review the documentation submitted by the Participant and waives any confidentiality with respect to such documentation except as it pertains to confidential business information. All confidential information submitted by the Participant must be marked "Confidential or Business Sensitive" even in situations where the confidentiality has been waived. The Service also may seek to have the Administrator require the Participant to address any deficiency.

Low Suitability Areas of DSL Habitat

In DSL Habitat, Participants must implement the following Conservation Measures to minimize the impacts of development. The minimization measures must be implemented concurrently with the minimizing of surface-disturbing-disturbance activities.

- Maximize use of existing developed areas and rights-of-way for infrastructure supporting the development of the pipeline and appurtenances (roads, power lines, associated infrastructure);
- Conduct routine monitoring and inspection for oil, gas, and produced water pipelines and facilities to prevent accidental pollution events;
- Trenches left open for eight (8) hours or more must have earthen ramps (built at no more than a 30-degree slope and placed no more than 500 feet apart). At the end of each day, a monitor approved by the FWS or the Administrator, shall walk the entire length of open trench and remove all trapped DSL and release them at least 100 yards from the trench;
- Minimize footprint for development (i.e., width of pipeline right-of-way, centralized facilities and interim reclamation); Restrict traffic to existing roads;
- Use SCADA or remote sensing where appropriate, to reduce traffic and need to clear right-of-way for line-of-sight inspection and monitoring;
- Minimize OHV activity, to the extent practicable;
- Restore rights-of-way promptly with native vegetation;
- Avoid introduction of non-native vegetation by using habitat appropriate native vegetation and best management practices, such as cleaning vehicle

coming into the area to remove mud and seeds. If an activity is identified that introduces new non-native vegetation, the activity or source will be controlled to manage or remove the invasive vegetation; and

- Disturbances from Emergency Operations must be restored after Emergency Operations have been completed and cannot be used for surface development

Notice: Pipeline Participants will provide notice of New Surface Disturbance. Participants will notify the Administrator:

- not less than 15 days in advance of the initiation of a New Surface Disturbance to determine appropriate Habitat Conservation Fees in accordance with Appendix D. The Administrator will invoice Participant for the required Habitat Conservation Fees. Payment is due on invoicing;
- as soon as is practicable under the circumstances but not less than 15 days after material changes to the prior notice of the New Surface Disturbance; and,
- within 72 hours after Emergency Operations that result in New Surface Disturbance.

In the event of any inconsistencies between the Conservation Measures described above and those described in the 2020 DSL CCAA, the terms of the 2020 DSL CCAA control.

3.0. ENROLLMENT FEES

Participant must pay Enrollment, Habitat Conservation, and Implementation fees as called for in Appendix D.

The Participant is responsible for paying an Enrollment Fee for the first three years this CI is in effect. If the Participant opts out of the CI before the end of three years, the Participant is still responsible for three years of Enrollment Fees. The Participant must enrollment through the All Activities process.

4.0. <u>PARTICIPANT NON-COMPLIANCE.</u>

In the event that the Administrator determines that a Participant is failing to implement the required Conservation Measures described in the CI, the Administrator will notify the Participant of the need to immediately correct the deficiency. If the deficiency is a failure to pay Fees, Participant shall have thirty (30) days to make the payment or to arrange for a mutually acceptable date by which the Administrator will receive the payment. With respect to any other deficiency, the Administrator will notify Participant by mail and electronic transmission of the deficiency promptly on its discovery. Participant shall initiate corrective actions within thirty (30) days of receipt of the notice or arrange for a mutually acceptable date by which corrective action will be initiated. If the Participant has not initiated corrective actions within thirty (30) days of receipt of the notification or arranged for a mutually acceptable date for initiating the corrective actions, the Administrator may take actions, up

to and including termination of some or all of the CI. In lieu of initiating corrective actions, Participant may file an appeal with the Administrator, by electronic transmission or formal written notice, within thirty (30) days of receipt of the notice of deficiency setting out clearly the basis for the appeal. The Administrator will notify the Participant by mail and electronic transmission within 10 days of determination of the appeal. The Permit Holder will notify the Service of the resolution of any unresolved non-compliance issue within 30 days.

5.0. SUSPENSION AND TERMINATION.

5.1 Suspension

Each Participant hereby agrees that the Administrator, in coordination with the FWS, can suspend this CI as it relates to some or all of the Enrolled Property identified in Exhibit A of the CI until the Habitat Conservation Fee or Enrollment Fee (if any) associated with the CI is paid. Regardless of enrollment method, the CI may be suspended with respect to a single parcel of Enrolled Property. The FWS will not authorize incidental take of Covered Species resulting from any activities occurring on Enrolled Property for which the CI is suspended.

5.2 Voluntary Termination

The Participant may terminate the CI in part or whole at any time but remains obligated to pay all Enrollment Fees described in Section 13.0 of the CCAA. The Participant may terminate this CI by giving thirty (30) days' written notice to the Administrator and FWS as to any or all of the Enrolled Property. Any funds remaining in Participant's Habitat Protection Fund account at the time of termination, voluntarily or for cause, will be assigned to the Administrator for conservation efforts to support the DSL under this CCAA and CI and will not be refunded. As funds can be spent on implementation of this agreement and Conservation Actions at any time, Enrollment Fees and Habitat Conservation Fees will not be refunded.

5.3 Involuntary Termination

A CI may only be terminated following the process described in Section 12.0 of the CCAA, and over a Participant's objections because of a Participant's failure to pay the Habitat Conservation Fee or for the Participant's failure to implement the Conservation Measures documented in the CI. Any funds remaining in Participant's Habitat Protection Fund account at the time of termination, voluntarily or for cause, will be assigned to the Administrator for conservation efforts to support the DSL under this CCAA and CI and will not be refunded. As funds can be spent on implementation of this agreement and Conservation Actions at any time, Enrollment Fees and Habitat Conservation Fees cannot be refunded.

Voluntary or involuntary termination of the CI will relieve a Participant of any additional Habitat Conservation Fees for future New Surface Disturbance on the terminated parcels. Participants will be given notifications as described in Section 14.0 of the CCAA.

6.0. PROPERTY ACCESS.

The Participant agrees to provide access to Enrolled Property to the Administrator, and the Administrator agrees to provide prior notice and abide by the Participant's site visitation policies as provided under Section 10.0 of the CCAA. For Enrolled Property that is severed from the surface estate, the Participant agrees to work with the Administrator and the surface estate owner to provide surface access to the Administrator.

7.0. NO WAIVER.

The Participant, by entering into this CI, does not concede its agreement with, or endorsement of, any underlying studies and conclusions in the CCAA. Further, the Participant does not waive any legal rights or remedies that may exist outside of this CI. The Participant is also not responsible for work being accomplished by the FWS, the Administrator, or any third parties using the Participants' contributed funds.

8.0. RELEASE.

If at any time any administrative or legal challenge prevents the implementation of this CI, the Participant agrees to release the U.S. Department of the Interior, FWS, and the Administrator from any legal claims related to and against all other Parties to this CI and CCAA. If at any time any administrative or legal challenge to the CCAA prevents the implementation of this CI, the Participant shall be excused from its performance and shall release the signatories of the CCAA and CI from any legal claims related to this CI and CCAA. If at any time any administrative or legal challenge to the CCAA prevents the implementation of this CI, the Administrator agrees to release the Participant from any legal claims related to this CI and CCAA. Participant's obligation to make payments of Enrollment and Habitat Conservation Fees as described in Section 13.0 of the CCAA shall be suspended pending a final ruling if any administrative or judicial challenge prevents the implementation of the CCAA or its CIs. All funds remaining in the Habitat Protection Fund account will be retained by the Administrator and be used for conservation of the Covered Species.

9.0. AMENDMENT.

This CI may be amended with the written consent of each of the Parties hereto. The Parties agree to process requests for amendments in a timely manner. This CI may also be amended, with the written consent of each of the Parties hereto, to accommodate changes to applicable legal requirements, including but not limited to the ESA, the NEPA, and the FWS' permit regulations at 50 CFR 13 and 50 CFR 17.

10.0. MULTIPLE ORIGINALS.

The Participant will sign two original copies of the CI, which will then be signed by the Administrator. The date of the last signature will be the effective date of the CI. The Administrator will mail one original CI to the Participant, will mail one original redacted to comply with the requirements of Tex. Gov't Code § 403.454 to FWS, and will keep the last original for its records. Electronic signatures will suffice for enrollment requirements. If electronic signatures are used, one copy of the CI will suffice, and each signatory will receive a copy of the electronic version.

11.0. CONFIDENTIALITY.

Confidentiality requirements are set out in Section 21.0 of the 2020 DSL CCAA. The Administrator will fully comply with the requirements of Section 21.0.

If any Party to this CI receives a request under the Freedom of Information Act (FOIA), under the Texas Public Records Act (TPRA), or pursuant to a court order, and has responsive documents in its possession containing confidential and sensitive business information, it will consult with the Participant that submitted the information and provide it with an opportunity to object to the information's disclosure before determining whether the information must be disclosed or is exempt from disclosure pursuant to FOIA, TPRA, or a court order, including, but not limited to, Exemption 4 or corresponding state provisions. The FWS will redact any proprietary information within the enrollment according to FWS' FOIA guidelines. Additional information regarding the FWS' process for responding to FOIA requests for possibly confidential information is set out at 43 CFR § 2.26-2.36 (2013).

12.0. DISPUTE RESOLUTION.

The Administrator agrees to work with Participant in good faith to resolve any disputes using dispute-resolution procedures agreed upon by the parties. The Administrator will be responsible for determining the outcome of disputes. The Administrator will resolve disputes within 60 days of notification of the dispute.

13.0. NOTICE.

Any notice permitted or required by this CI including, but not limited to, the notices described in Section 14.0 of the CCAA, shall be transmitted within any time limits described in this CI to the persons set forth below or shall be deemed transmitted given five (5) days

after deposit in the U.S. mail, certified and postage prepaid, return receipt requested, and addressed as follows or at such other address as any Party may from time to time specify to the other Parties in writing.

Participant: _____

Contact: _____

Address: _____

_____

_____

Telephone: _____

Fax: _____

E-Mail: _____

The Administrator 2020 DSL CCAA
[insert address]

14.0. <u>SIGNATURES.</u>

IN WITNESS WHEREOF THE PARTIES HERETO have executed this Certificate of Inclusion to be in effect on the date of the last signature below. The CI may be executed in one or more counterparts, all of which shall be considered an original.

_____

Participant and Affiliation

Date_____

_____

Administrator

Date_____

EXHIBIT A
PROPERTY DESCRIPTION for ENROLLED PROPERTY

EXHIBIT B
Map of Enrolled Property

Appendix B
Certificates of Inclusion

CERTIFICATE OF INCLUSION FOR AGRICULTURE AND RANCHING SECTOR
in the
Candidate Conservation Agreement with Assurances for the Dunes Sagebrush Lizard (*Sceloporus arenicolus*)

CI Number: _____

Participant's Name: _____

Address: _____

This certifies that the Participant described herein is included within the scope of the attached Candidate Conservation Agreement with Assurances (CCAA) for the Dunes Sagebrush Lizard (*Sceloporus arenicolus*) (DSL) under the authority of Section 10(a)(1)(A) of the Endangered Species Act of 1973, as amended (ESA), 16 USC § 1531-1544. The Participant must be a Property Owner. A Property Owner, as defined by 50 CFR § 17.3, is a person with a fee simple, leasehold, or other property interest (including owners of water or other natural resources), or any other entity that may have a property interest, sufficient to carry out the proposed management activities, subject to applicable state law, on non-Federal land.

The goal of the U.S. Fish and Wildlife Service (FWS), the Administrator, and the Participant is to reduce or eliminate threats to the DSL. By agreeing to conduct the Conservation Measures described herein, the Permit Holder will provide the Participant with regulatory certainty (assurances) concerning land-use restrictions that might otherwise apply should the DSL become listed as a "threatened" or "endangered" species under the ESA, that are provided by FWS through the Permit to the Administrator.

This Certificate of Inclusion (CI) is a voluntary agreement between the Administrator and the Participant expressly named herein. Through this CI, the Participant commits to implement Conservation Measures that collectively will reduce or eliminate threats to the DSL. By signing below, the Participant acknowledges that it has read and understand the CCAA and this CI. They further acknowledge that the CCAA may not be sufficient to prevent the listing of the species.

1.0. <u>ENROLLED PROPERTY.</u>
By executing this CI, the Participant affirms that to the best of its knowledge it is a Property Owner of the Enrolled Property as defined by 50 CFR § 17.3, which provides that a Property

Owner for these purposes is a person or entity with a fee simple, leasehold, or property interest (including owners of water or other natural resources), sufficient to carry out the Conservation Measures and any other management activities contemplated by this CI, the CCAA and the Permit, subject to applicable state law, on enrolled, non-Federal land. This CI cannot be amended without the written agreement of all signatories.

1.1. Enrollment.

The Participant shall use the Parcel-by-Parcel enrollment. GIS shapefiles of all Enrolled Properties on which the Participant operates must be supplied to the Administrator prior to the CI being effective. The Participant will provide an update to the Administrator of its Enrolled Properties on an annual basis, no later than October 1. Outside of this annual update, GIS shapefiles of all Enrolled Properties on which the Participant operates may be requested by the Administrator on limited occasions by special request.

1.2. Transfers of Enrolled Property by Participants to Third Parties.

Participants may transfer ownership of Enrolled Property to a third party. The transferee may elect to continue as a Participant by signing the CI in effect for the property within 30 days of the transfer. The Transferee may also elect not to continue enrollment of the property.

This CI only covers the property for Agriculture and Ranching sector. A transfer to a third-party in another sector may continue participation in the 2020 DSL CCAA, but will need to sign a new CI for the appropriate sector that is identical to the 2020 DSL CCAA, as amended at the time the new CI is signed. This may occur prior to or after a listing of the DSL.

In each case, the new Participant must provide the Administrator with the information described in Section 1.1 (Enrollment). Transferors, and transferees that are Participants, are responsible for revising GIS shapefiles and lists of Enrolled Property to reflect transfers of Enrolled Property in annual updates provided to the Administrator in accordance with Section 1.1 (Enrollment).

1.3. Addition and Removal of Enrolled Properties.

This section addresses Participant's ability to add Enrolled Properties to this CI when the Participants did not acquire parcels from an existing Participant. When one Participant seeks to add Enrolled Properties received via transfer from another Participant, the Participant must follow the procedures outlined in Section 1.2 (Transfers). This section also addresses Participant's ability to remove Enrolled Properties from this CI.

1.3.1. Addition and Removal of Enrolled Properties by Participants.

Participants may add any properties to (and remove Enrolled Properties from) this CI at any time, including after any decision to list a Covered Species. Participants will provide an

updated GIS shapefile of Enrolled Properties reflecting additions or removals as part of the next annual update to the Administrator as described in Section 1.1 (Enrollment).

2.0. PARTICIPANT AGREEMENT TO IMPLEMENT CONSERVATION MEASURES.

In exchange for granting the access described above, the Agriculture and Ranching Participants will not pay Enrollment, Habitat Conservation, or Implementation Fees.

The Participant will allow the Administrator access to the enrolled property to conduct surveys. The Participant shall have an opportunity to review the survey plan to ensure that it is conducted in a manner that is not unduly disruptive to Participant's activities on the property.

For properties with severed surface and mineral leases (stratification), the Participant will work with the Administrator and holders of leases to develop approaches for planned development that conforms with the requirements of the CCAA, including where feasible and appropriate, a surface use agreement or mineral management plan.

Participants, in addition to providing access, shall implement the following Conservation Measures, to minimize adverse effects on the DSL:

High Suitability Areas of DSL Habitat:

- Refrain from causing any New Surface Disturbance in High Suitability areas of DSL Habitat;
- Comply with the NRCS Code 528 including livestock stocking rates, or equivalent grazing management system;
- No release, planting or related actions to establish or introduce exotic or invasive species, including but not limited to feral pigs or other species that may degrade habitat;
- Construction of new fences and livestock structures, when possible, shall avoid High Suitability DSL Habitat;
- Avoid introduction of non-native vegetation by using habitat appropriate native vegetation and best management practices, such as cleaning vehicle coming into the area to remove mud and seeds. If an activity is identified that introduces new non-native vegetation, the activity or source will be controlled to manage or remove the invasive vegetation; and
- Use of herbicides for shinnery oak management only when habitat goals cannot be achieved by other means, including grazing system management. When herbicide use cannot be avoided, the following measures will be implemented:
    - No herbicide application for the control of shinnery oak in dune complexes and dispersal corridors between dune complexes and shinnery oak associated with dune complexes. Maintenance of buffers

around dune complexes of 100 meters to ensure dune stability where tebuthiuron will be applied. Herbicide application for the management/control of mesquite and other problematic woody and herbaceous plants will be conducted only with the Administrator approval and concurrence by FWS.

- Herbicides should be used at appropriate shinnery oak suppression rates. Application should follow the natural patterns on the landscape such that only patches needing treatment are treated.
- Grazing will be deferred one growing season following treatment. If vegetation response to treatment has been hindered due to drought or other factors, additional deferments to ensure success of the treatment may be required.
- Experimental treatments outside these guidelines may occur with the Administrator approval and concurrence by FWS. Experimental treatments must be part of a quantitative research design to study vegetation response, viability of shinnery oak, drift, sub-surface spread, the interaction of herbicide treatment and/or grazing management and the response of the DSL to various treatments.

<u>Intermediate Suitability Areas of DSL Habitat:</u>

- Refrain from increases in current agricultural practices that could impact Intermediate Suitability Areas of DSL Habitat (i.e., increasing grazing pressure and developing new agricultural fields);
- Comply with the NRCS Code 528 including livestock stocking rates, or equivalent grazing management system;
- No release, planting or related actions to establish or introduce exotic or invasive species, including but not limited to feral pigs or other species that may degrade habitat;
- Construction of new fences and livestock structures, when possible, shall avoid DSL Habitat;
- Avoid introduction of non-native vegetation by using habitat appropriate native vegetation and best management practices, such as cleaning vehicle coming into the area to remove mud and seeds. If an activity is identified that introduces new non-native vegetation, the activity or source will be controlled to manage or remove the invasive vegetation; and
- Use of herbicides for shinnery oak management only when habitat goals cannot be achieved by other means, including grazing system management. When herbicide use cannot be avoided, the following measures will be implemented:

    - No herbicide application for the control of shinnery oak in dune complexes and dispersal corridors between dune complexes and

shinnery oak associated with dune complexes. Maintenance of buffers around dune complexes of 100 meters to ensure dune stability where tebuthiuron will be applied. Herbicide application for the management/control of mesquite and other problematic woody and herbaceous plants will be conducted only with the Administrator approval and concurrence by FWS.

- Herbicides should be used at appropriate shinnery oak suppression rates. Application should follow the natural patterns on the landscape such that only patches needing treatment are treated.
- Grazing will be deferred one growing season following treatment. If vegetation response to treatment has been hindered due to drought or other factors, additional deferments to ensure success of the treatment may be required.
- Experimental treatments outside these guidelines may occur with the Administrator approval and concurrence by FWS. Experimental treatments must be part of a quantitative research design to study vegetation response, viability of shinnery oak, drift, sub-surface spread, the interaction of herbicide treatment and/or grazing management, and the response of the DSL to various treatments.

<u>Low Suitability Areas of DSL Habitat:</u>

- Comply with the NRCS Code 528 including stocking rates, or equivalent grazing management system;
- No release, planting or related actions to establish or introduce exotic or invasive species, including but not limited to feral pigs or other species that may degrade habitat;
- Construction of new fences and livestock structures, when possible, shall avoid DSL Habitat; and,
- Avoid introduction of non-native vegetation by using habitat appropriate native vegetation and best management practices, such as cleaning vehicle coming into the area to remove mud and seeds. If an activity is identified that introduces new non-native vegetation, the activity or source will be controlled to manage or remove the invasive vegetation;
- Use of herbicides for shinnery oak management only when habitat goals cannot be achieved by other means, including grazing system management. When herbicide use cannot be avoided, the following measures will be implemented:
    - No herbicide application for the control of shinnery oak in dune complexes and dispersal corridors between dune complexes and shinnery oak associated with dune complexes. Maintenance of buffers around dune complexes of 100 meters to ensure dune stability where tebuthiuron will be applied. Herbicide application for the

management/control of mesquite and other problematic woody and herbaceous plants will be conducted only with the Administrator approval and concurrence by FWS.

- No herbicide application for the control of shinnery oak in dune complexes and maintenance of buffer around dune complexes of 100 meters to ensure dune stability where tebuthiuron will be applied. Herbicide application for the management/control of mesquite and other problematic woody and herbaceous plants will be conducted only with the Administrator approval and concurrence by FWS.
- Herbicides should be used at appropriate shinnery oak suppression rates. Application should follow the natural patterns on the landscape such that only patches needing treatment are treated.
- Grazing will be deferred one growing season following treatment. If vegetation response to treatment has been hindered due to drought or other factors, additional deferments to ensure success of the treatment may be required.
- Experimental treatments outside these guidelines may occur with the Administrator approval and concurrence by FWS. Experimental treatments must be part of a quantitative research design to study vegetation response, viability of shinnery oak, drift, sub-surface spread, the interaction of herbicide treatment and/or grazing management and the response of the DSL to various treatments.

In the event of any inconsistencies between the Conservation Measures described above and those described in the 2020 DSL CCAA, the terms of the 2020 DSL CCAA control.

3.0. PARTICIPANT NON-COMPLIANCE.

The CCAA is a voluntary agreement intended to promote conservation and the implementation of Conservation Measures and should be administered to encourage continued participation. In the event a Participant fails to comply with a Conservation Measure, notifications, opportunities to take corrective actions, and opportunities to appeal in this document are intended to encourage continued participation in the CCAA and compliance with its terms. In the event that the Administrator determines that Participant is failing to implement the required Conservation Measures described in the CI, the Administrator will notify the Participant by mail and electronic transmission of the need to immediately correct the deficiency. Participant shall initiate corrective actions within thirty (30) days of receipt of the notice or arrange for a mutually acceptable date by which corrective action will be initiated. If the Participant has not initiated corrective actions within thirty (30) days of receipt of the notification or arranged for a mutually acceptable date for initiating the corrective actions, the Administrator may take actions, up to and including termination of some or all of the CI. In lieu of initiating corrective actions, Participant may file an appeal with the Administrator, by electronic transmission or formal written notice,

within thirty (30) days of receipt of the notice of deficiency setting out clearly the basis for the appeal. The Administrator will notify the Participant by mail and electronic transmission within 10 days of determination of the appeal. The Permit Holder will notify the Service of the resolution of any unresolved non-compliance issue within 30 days.

4.0. SUSPENSION AND TERMINATION.

4.1 Suspension

Each Participant hereby agrees that the Administrator, in coordination with the FWS, can suspend this CI as it relates to some or all of the Enrolled Property identified in Exhibit A of the CI until the Habitat Conservation Fee or Enrollment Fee (if any) associated with the CI is paid. Regardless of enrollment method, the CI may be suspended with respect to a single parcel of Enrolled Property. The FWS will not authorize incidental take of Covered Species resulting from any activities occurring on Enrolled Property for which the CI is suspended.

4.2 Voluntary Termination

The Participant may terminate the CI in part or whole at any time but remains obligated to pay all Enrollment Fees described in Section 13.0 of the CCAA. The Participant may terminate this CI by giving thirty (30) days' written notice to the Administrator and FWS as to any or all of the Enrolled Property. Any funds remaining in Participant's Habitat Protection Fund account at the time of termination, voluntarily or for cause, will be assigned to the Administrator for conservation efforts to support the DSL under this CCAA and CI and will not be refunded. As funds can be spent on implementation of this agreement and Conservation Actions at any time, Enrollment Fees and Habitat Conservation Fees will not be refunded.

4.3 Involuntary Termination

A CI may only be terminated following the process described in Section 12.0 of the CCAA, and over a Participant's objections because of a Participant's failure to pay the Habitat Conservation Fee or for the Participant's failure to implement the Conservation Measures documented in the CI. Any funds remaining in Participant's Habitat Protection Fund account at the time of termination, voluntarily or for cause, will be assigned to the Administrator for conservation efforts to support the DSL under this CCAA and CI and will not be refunded. As funds can be spent on implementation of this agreement and Conservation Actions at any time, Enrollment Fees and Habitat Conservation Fees cannot be refunded.

Voluntary or involuntary termination of the CI will relieve a Participant of any additional Habitat Conservation Fees for future New Surface Disturbance on the terminated parcels. Participants will be given notifications as described in Section 11.0 of the CCAA.

5.0. PROPERTY ACCESS.

The Participant agrees to provide access to Enrolled Property to the Administrator, and the Administrator agrees to provide prior notice and abide by the Participant's site visitation policies as provided under Section 10.0 of the CCAA. For Enrolled Property that is severed from the surface estate, the Participant agrees to work with the Administrator and the surface estate owner to provide surface access to the Administrator.

6.0. NO WAIVER.

The Participant, by entering into this CI, does not concede its agreement with, or endorsement of, any underlying studies and conclusions in the CCAA. Further, the Participant does not waive any legal rights or remedies that may exist outside of this CI. The Participant is also not responsible for work being accomplished by the FWS, the Administrator, or any third parties using the Participant's contributed funds.

7.0. RELEASE.

If at any time any administrative or legal challenge prevents the implementation of this CI, the Participant agrees to release the U.S. Department of the Interior, FWS, and the Administrator from any legal claims related to and against all other Parties to this CI and CCAA. If at any time any administrative or legal challenge to the CCAA prevents the implementation of this CI, the Participant shall be excused from its performance and shall release the signatories of the CCAA and CI from any legal claims related to this CI and CCAA. If at any time any administrative or legal challenge to the CCAA prevents the implementation of this CI, the Administrator agrees to release the Participant from any legal claims related to this CI and CCAA. Participant's obligation to make payments of Enrollment and Habitat Conservation Fees as described in Section 13.0 of the CCAA shall be suspended pending a final ruling if any administrative or judicial challenge prevents the implementation of the CCAA or its CIs. All funds remaining in the Habitat Protection Fund account will be retained by the Administrator and be used for conservation of the Covered Species.

8.0. AMENDMENT.

Any changes to the CCAA in effect at the time the Participant executes this CI may only be applied to the Participant upon its written consent. This CI may be amended with the written consent of each of the Parties hereto. The Parties agree to process requests for amendments in a timely manner. This CI may also be amended to accommodate changes to applicable legal requirements, including but not limited to the ESA, the NEPA, and the FWS' permit regulations at 50 CFR § 13 and 50 CFR 17.

9.0. MULTIPLE ORIGINALS.

The Participant will sign two originals of the CI, which will then be signed by the Administrator. The date of the last signature will be the effective date of the CI. The Administrator will mail one original CI to the Participant and keep the last original for its

records. Electronic signatures will suffice for enrollment requirements. If electronic signatures are used, one copy of the CI will suffice, and each signatory will receive a copy of the electronic version.

10.0. CONFIDENTIALITY.

Confidentiality requirements are set out in Section 21.0 of the 2020 DSL CCAA. The Administrator will fully comply with the requirements of Section 21.0.

If any Party to this CI receives a request under the Freedom of Information Act (FOIA), under the Texas Public Records Act (TPRA), or pursuant to a court order, and has responsive documents in its possession containing confidential and sensitive business information, it will consult with the Participant that submitted the information and provide it with an opportunity to object to the information's disclosure before determining whether the information must be disclosed or is exempt from disclosure pursuant to FOIA, TPRA, or a court order, including, but not limited to, Exemption 4 or corresponding state provisions. The FWS will redact any proprietary information within the enrollment according to FWS' FOIA guidelines. Additional information regarding the FWS' process for responding to FOIA requests for possibly confidential information is set out at 43 CFR § 2.26-2.36 (2013).

11.0. DISPUTE RESOLUTION.

The Administrator agrees to work with Participant in good faith to resolve any disputes using dispute-resolution procedures agreed upon by the Parties. The Administrator will be responsible for determining the outcome of disputes. The Administrator will resolve disputes within 60 days of notification of the dispute.

12.0. NOTICE.

Any notice permitted or required by this CI including, but not limited to, the notices described in Section 14.0 of the CCAA, shall be transmitted within any time limits described in this CI to the persons set forth below or shall be deemed transmitted given five (5) days after deposit in the U.S. mail, certified and postage prepaid, return receipt requested, and addressed as follows or at such other address as any Party may from time to time specify to the other Parties in writing.

Participant: _____

Contact: _____

Address: _____

_____

_____

Telephone: _____

Fax: _____

E-Mail: _____

The Administrator 2020 DSL CCAA
[insert address]

13.0. <u>SIGNATURES.</u>

IN WITNESS WHEREOF THE PARTIES HERETO have executed this Certificate of Inclusion to be in effect on the date of the last signature below. The CI may be executed in one or more counterparts, all of which shall be considered an original.

_____

Participant and Affiliation

Date_____

_____

Administrator

Date_____

EXHIBIT A
PROPERTY DESCRIPTION for Enrolled PROPERTY

EXHIBIT B
Map of Property

APPENDIX C: TABLE SHOWING THREATS AND ASSOCIATED CONSERVATION BENEFITS TO THE COVERED SPECIES

APPENDIX C
Benefits of Conservation Actions and Measures in Reducing and/or Eliminating Threats to the Dunes Sagebrush Lizard

CONSERVATION ACTIONS (Implemented by the Administrator)			
Sector	**Threat**	**Action**	**Benefit**
Agriculture	Habitat Loss, Modification, Fragmentation: General	Allow the Administrator access to private lands to conduct surveys.	Enhance knowledge of DSL status
All Sectors	Habitat Loss, Modification, Fragmentation: General	Place Conservation Easements and other protections on High Priority Areas of DSL Habitat and dispersal corridors.	Reduce habitat loss and habitat fragmentation. Establish contiguous blocks of High Priority Areas.
All Sectors	Stratification	Increase enrollment of entities that have access to the same surface estate by providing financial incentives to stratified lessees.	Reduce habitat loss, modification, and fragmentation.
All Sectors	Habitat Loss, Modification, Fragmentation	Evaluate the efficacy and feasibility of establishing and re-establishing shinnery oak in areas of DSL Habitat, and identify priority areas where the establishment or reestablishment of it is likely to be the most effective.	Develop effective techniques for maintaining and restoring essential features of DSL Habitat.
Oil and Gas	Habitat Loss, Modification, Fragmentation: Well Density	Road and abandoned well pad removal and restoration; minimization measures; avoidance of well development in High and Intermediate Suitability habitat where the well density is equal to or less than 13 well pads/mi^2; surveys and research on impact of well density and effectiveness of removal and restoration.	Reduce habitat loss, modification, and fragmentation. Limit well density in High and Intermediate Suitability habitat to levels that are compatible with DSL and DSL Habitat

Oil and Gas	Habitat Loss, Modification, Fragmentation	Study: (1) the threats posed by high densities of well pads to DSL occupancy and dune structure, (2) the threats posed by roads, and (3) the effectiveness of well pad and road removal in ameliorating the effects of well pad and road density. Implementing any changes dictated by the studies through the Adaptive Management process.	Inform the Adaptive Management process. Develop effective techniques for maintaining and restoring DSL Habitat
Oil and Gas	Habitat Loss, Modification, Fragmentation	Study the efficacy of mesquite removal and use of flowback pits	Inform the Adaptive Management process
Oil and Gas	Habitat Loss, Modification, Fragmentation: Wells, well pads, and associated roads	Removal of anthropogenic features and restoration of DSL Habitat	Reduce habitat loss, modification and fragmentation
CONSERVATION MEASURES (Implemented by CCAA Participants)			
Sector	**Threats**	**Action**	**Benefit**
All Sectors	Dust resulting from road traffic and other activities	Dust control actions	Reduce behavioral impacts
All Sectors	Habitat Loss, Modification, Fragmentation: General	Avoid New Surface Disturbance in High and Intermediate Suitability habitat subject to certain exceptions	Reduce habitat loss, modification, fragmentation; mortality; behavioral impacts
All Sectors	Habitat Modification: Invasive vegetation	Avoid introduction of non-native vegetation. Manage or remove existing invasive vegetation.	Reduce habitat modification
All Sectors	Stratification	For properties with severed surface and mineral estates that Participants are actively engaged in developing, Participants agree to work with the non-surface estates and the Administrator to identify approaches to development that avoid, minimize or offset impacts from	Reduce habitat loss, modification and fragmentation

		development, taking into consideration statutory and legal rights of the mineral estate.	
All Sectors	Dust resulting from road traffic and other activities	Dust control actions	Reduce behavioral impacts
All Sectors	Habitat Loss, Modification, Fragmentation: General	Avoid New Surface Disturbance in High and Intermediate Suitability Habitat subject to certain exceptions	Reduce habitat loss, modification, fragmentation; mortality; behavioral impacts
All Sectors	Habitat Modification: Invasive vegetation	Avoid introduction of non-native vegetation. Manage or remove existing invasive vegetation.	Reduce habitat modification
All Sectors	Dust resulting from road traffic and other activities	Dust control actions	Reduce behavioral impacts
All Sectors	Vehicular strikes	Restrict traffic to existing roads; minimize OHV activity in DSL Habitat to the extent practicable	Reduce mortality, behavioral impacts, and habitat loss, modification and fragmentation

Agriculture	Habitat Loss, Modification, Fragmentation: Grazing	Compliance with NRCS Prescribed Grazing Standards.	Reduce habitat loss, modification, fragmentation
Agriculture	Habitat Loss: Herbicide use	Use herbicides for shinnery oak management only when habitat goals cannot be achieved by other means. No herbicide application in dune complexes or dispersal corridors. Maintain 100-meter buffer	Reduce habitat loss (shinnery oak)
Agriculture	Predation: Fences that provide perches for avian predators	Avoid new fences and livestock structures in DSL Habitat when possible	Reduce mortality
Agriculture	Habitat Loss, Modification, and Fragmentation	Prohibit release of or actions related to establishing or introducing exotic or invasive species including feral hogs	Minimize habitat degradation
Oil and Gas and Sand Mining	Habitat Loss	Avoid aerially sprayed application of approved herbicide for weed control (e.g., utilize pellets, hand applicators or manual removal).	Reduce habitat loss (shinnery oak)
Oil and Gas	Habitat Loss, Modification, Fragmentation: General	Remove mesquite from flowback pits	Protect dune structure

Oil and Gas	Habitat Loss, Modification, Fragmentation: General	Maximize use of existing developed areas and rights-of-way for infrastructure supporting wells and well pads and seismic activities.	Reduce habitat loss, modification, fragmentation
Oil and Gas	Habitat Modification: Seismic Activities	Limit to areas outside of High and Intermediate Suitability DSL Habitat unless walk-in geophonic, or other smaller seismic survey equipment is utilized OR the activities are limited to periods of lizard inactivity (October through March). Where feasible, use existing disturbances.	Reduce habitat modification
Sand mining, agriculture, Renewable Energy; Pipelines	Habitat Loss, Modification, Fragmentation: General	Maximize use of existing developed areas and rights-of-way for appurtenant infrastructure	Reduce habitat loss, modification, fragmentation
Oil and Gas	Habitat Loss, Modification, Fragmentation: General	Minimize footprint for pre-development and development activities (i.e., size of well pad, centralized appurtenant facilities, interim reclamation, and restoration)	Reduce habitat loss, modification, fragmentation
Oil and Gas	Habitat Loss, Modification, Fragmentation: General	In High and Intermediate Habitat, Participant will work with the Administrator to locate wells in existing high density areas, preferably in a clustered arrangement, if feasible.	Reduce habitat loss, modification, fragmentation
Pipelines	Habitat loss	Restore rights-of-way with native vegetation	Reduce habitat loss, modification and fragmentation
Pipelines	Habitat Loss, Modification, Fragmentation: Pipeline construction (e.g.,	Maximize use of existing disturbances and rights-of-way for pipelines and supporting infrastructure (e.g., roads, power lines).	Reduce habitat loss, modification, fragmentation; mortality

	Shinnery oak and vegetation removal, burying lines in sand)		
Pipelines	Vehicular strikes; general habitat modification	Use remote sensing or Supervisory Control And Data Acquisition (SCADA)	Reduce mortality, behavioral impacts, and habitat loss, modification and fragmentation
Pipelines	Habitat Loss, Modification, Fragmentation: Pollution	Monitor and inspect for oil, gas and produced water pipeline and facilities	Prevent accidental pollution events
Pipelines	Habitat Loss, Modification, Fragmentation: Pipeline construction (e.g., Shinnery oak and vegetation removal, burying lines in sand)	Maximize use of existing disturbances and rights-of-way for pipelines and supporting infrastructure (e.g., roads, power lines).	Reduce habitat loss, modification, fragmentation; mortality
Pipelines and Renewable Energy	Habitat Loss, Modification, Fragmentation: Open trenches	Installation of ramps in trenches left open for eight (8) hours or more. Daily monitoring of open trenches to release all trapped DSL.	Reduce mortality
Pipelines and Renewable Energy	Habitat Loss, Modification, Fragmentation: General	Minimize footprint for development (i.e., centralized facilities, interim reclamation, and restoration)	Reduce habitat loss, modification, fragmentation
Oil and Gas, Pipelines	Other Natural or Manmade Factors: Exposure to chemicals and toxic pollutants associated with oil and gas operations and oil spills	Inspection, monitoring, and maintenance programs to minimize spills. Employee training in spill response procedures.	Reduce habitat loss, modification, fragmentation; behavior changes; mortality

Oil and Gas, Pipelines, Sand Mining	Habitat Modification: Off Highway Vehicles (OHV)	Avoid OHV activity in High Suitability habitat.	Reduce Habitat modification (e.g., soil compaction, reduction in plant cover, erosion of dune complexes)
Renewable Energy	Habitat Loss, Modification, Fragmentation:	Avoid DSL Habitat	Reduce Habitat loss, modification, and fragmentation
Sand Mining	Habitat Loss, Modification, Fragmentation: Excavation and related infrastructure and development	Submit to the Administrator a Mine Operation Plan (MOP) for New Surface Disturbances in DSL habitat	Reduce habitat loss, modification, fragmentation; mortality
Sand Mining	Habitat Loss, Modification, Fragmentation: Excavation and related infrastructure and development	Avoidance of High and Intermediate DSL Habitat, subject to certain exceptions.	Reduce habitat loss, modification, fragmentation; behavior changed
Sand Mining	Habitat Loss, Modification, Fragmentation: Excavation and related infrastructure and development	Limit surface disturbances of DSL Habitat to 60 acres annually per Enrolled Property, up to 1,380 acres per Enrolled Property annually or the total acres of the property, whichever is less. Define High Priority Areas of DSL Habitat. Incentivize and maximize use of less suitable portions of habitat in siting excavation activities, and rights-of-way for supporting infrastructure.	Reduce habitat loss, modification and fragmentation

Sand Mining	Habitat loss	Annual report of water use; collaboration with the Administrator to develop a program to evaluate the effects of water use by sand mining operations on habitat	Reduce habitat loss
RESEARCH			
Sector	Threat	Actions	Benefit
All Sectors	General	Conduct annual surveys of vegetation and DSL to update the habitat suitability model and evaluate changes over time in Conservation Action sites.	Enhance knowledge of DSL status and biology, the effectiveness conservation strategies, Measures and Actions; and inform Adaptive Management process.
All Sectors	General	Develop range-wide protocol for DSL surveys in coordination with CEHMM and FWS New Mexico. Conduct range-wide surveys every three years in coordination with CEHMM and FWS New Mexico. (Texas CCAA only responsible for cost of surveys in Texas.)	Enhance knowledge of the range-wide status of DSL populations, and inform Adaptive Management process.

All Sectors	Habitat Loss	Research effects of water usage across all sectors on DSL Habitat	Enhance knowledge of hydrology and potential impacts of water use on DSL Habitat range-wide, and inform Adaptive Management.

APPENDIX D: FEE STRUCTURE

Participants may be responsible for paying three types of fees: Enrollment, Habitat Conservation, and Implementation. Enrollment Fees and Habitat Conservation Fees will be used to fund Conservation Actions including enhancement and restoration of habitat, protection of habitat through the acquisition of Conservation Easements, and research and monitoring activities. Implementation Fees will be used to administer the 2020 DSL CCAA including but not limited to project management, outreach and coordination with landowners and potential enrollees, reporting, compliance monitoring, scientific research, working with Participants on planned surface-disturbing activities, adaptive management, participating in Governance committee meetings, reviewing technical memos as specified in Appendix A, conducting annual DSL and vegetative surveys, and obtaining access to private property for surveys.

The Administrator will invoice a Participant for the Habitat Conservation, Enrollment and Implementation Fees. For all methods of enrollment, payment is due within 60 days of invoicing.

If a Participant opts out of the CCAA, Habitat Conservation, Enrollment and Implementation Fees paid by the Participant will not be reimbursed.

I. Enrollment Fees

All Participants, except those in the Agriculture and Ranching Sector, will be responsible for paying an Enrollment Fee for each of the first three years a Participant's CI is in effect.

For all methods of enrollment, the Participant shall make the first payment of Enrollment Fees at the time of enrollment. The Participant shall make the second and third payments on the first and second anniversaries of the CCAA effective date. If the Participant so chooses, it may pay all three Enrollment Fees at the time of enrollment. Enrollment Fees will not be required after the initial three-year period for each Enrollee. If a Participant opts out of the CCAA during the first three years, the Participant is still responsible for these fees.

If the mineral rights on a property are severed (i.e., stratification), the Enrollment Fees may be divided among Participants if they share access to the same enrolled surface estate.

1. Oil and Gas Participants: An Oil and Gas Participant that has an aggregate property interest in more than 500 acres must enroll through the All Activities process and pay a $30,000 Enrollment Fee for each of the first three years to enroll all properties and facilities within the Covered Area. An Oil and Gas Participant that has an aggregate property interest in less than 500 acres may enroll through the Parcel-by-Parcel process and pay an Enrollment Fee for each of the first three years of $15,000.

2. Pipeline Participants: A pipeline Participant may enroll through the All Activities process and pay an Enrollment Fee of $5,000 for each of the first three years to enroll all properties and facilities within the Covered Area.

3. Sand Mining Participants: A sand mining Participant must enroll through the All Activities process. A sand mining participant must pay a $30,000 Enrollment Fee for each of the first three years. Sand

mining participants may provide protected areas of off-site DSL Habitat as Conservation Property in lieu of an equivalent value of enrollment fee.

4. Renewable Energy Participants: A Renewable Energy Participant must enroll through the All Activities process and pay a $20,000 Enrollment Fee for each of the first three years.

II. Habitat Conservation Fees

The Habitat Conservation Fee for New Surface Disturbance associated with oil and gas, pipeline and sand mining sectors will be calculated using scales set forth below. In exchange for granting the access described in Section 8.3.5 of the CCAA, Agriculture and Ranching Participants are not required to pay Habitat Conservation Fees.

The Participant must remit the full payment of the Habitat Conservation Fee owed for the New Surface Disturbance. The requirement to pay Habitat Conservation Fees is effective upon the Participant's enrollment in the CCAA and throughout the term of the CI. The Participant may prepay Habitat Conservation Fees at any time at its discretion.

The Participant may elect not to conduct the surface-disturbing activities after the Habitat Conservation Fees have been assessed or paid. The Participant shall provide notice to the Administrator if the proposed disturbance has been cancelled as described above. Any New Surface Disturbance or seismic activities would reinstate the need for a 15-Day Notice to the Administrator. Within 10 days of receiving notification of cancelled New Surface Disturbance or seismic activities from the Participant, the Administrator will treat the amount as a prepayment of Habitat Conservation Fees credited to the Participant.

1. New Well Location Scale[1]

Habitat Suitability Area[2]	Conservation Fee
High Suitability	$56,000/location
Intermediate Suitability	$42,000/location
High Suitability – Degraded	$28,000/location
Intermediate Suitability – Degraded	$21,000/location
Low Suitability	$14,000/location

1. Includes a well pad and associated access road and infrastructure not to exceed five acres. If the acreage is less five acres, the fees will be prorated by the ratio of the acreage actually disturbed over five acres. If the disturbed acreage is greater than five acres, the fee paid for the acres over five acres will be calculated according to the New Surface Development Scale below. If any portion of the project falls into multiple suitability areas, the charge incurred will be apportioned accordingly. If any of the project area falls outside of the DSL habitat, no fees will be assessed for the portion of the project.
2. Development in High and Intermediate Suitability areas of DSL Habitat is subject to the exemption requirements described in the Conservation Measures for oil and gas Participants. Suitable habitat areas are considered to be degraded based on the presence of high densities of well pads and associated roads (i.e., >13 well pads/mi^2).

2. New Surface Development Scale

The New Surface Development scale includes Renewable Energy, pipeline projects, oil and gas development that is not directly attributable to a new well pad and associated roads and infrastructure, and sand mining development not directly attributable to new mining and associated roads and infrastructure. For New Surface Development on Enrolled Property[3], including but not limited to pipelines and appurtenant structures, frac ponds, flowback pits, power lines and appurtenant structures, tanks and pits, the Habitat Conservation Fee will be based on the following scale:

Habitat Suitability Area	Conservation Fee[4]
High Suitability	$5,000/acre
High Suitability – Degraded	$4,000/acre
Intermediate Suitability	$3,000/acre
Intermediate Suitability – Degraded	$3,000/acre
Low Suitability	$2,000/acre

3. Co-located wells that require an increase in the size of the existing pad will be assessed by new acres disturbed.
4. Development in High and Intermediate Suitability areas of DSL Habitat is subject to the exemption requirements described in the Conservation Measures for oil and gas Participants. Suitable habitat areas are considered to be degraded based on the presence of high densities of well pads and associated roads (i.e., >13 well pads/mi^2).

New operations on previously disturbed land (e.g., co-located new well on an existing pad or new pipeline in an existing corridor, etc.) will incur no additional Habitat Conservation Fee, unless the previously disturbed land has been reclaimed and restored.

If a New Surface Disturbance falls within two or more Habitat Suitability areas, the amount of the Habitat Conservation Fee will reflect the amount of the New Surface Disturbance within each Habitat Suitability area.

3. Sand Mining Scale

The Sand Mining scale does not include associated development of mining facilities, mines, roads, power lines and other appurtenant facilities. The Habitat Conservation Fee will be based on the following scale:

Site Specific Habitat Assessment Area[7]	Conservation Fee
Zone of Likely DSL Occupancy	$6,000/acre
Dunes I	$5,000/acre
Dunes II	$4,000/acre
Shinnery Oak Flats / Co-Dominant Shinnery Oak Mesquite Flats	$3,000/acre

For all other areas in DSL Habitat, on enrollment and each year thereafter, the sand mining Participant shall pay a Habitat Conservation Fee of $500 per acre of New Surface Disturbance set out in its annual Plan of

[7] Fees apply in areas identified as Zone of Likely DSL Occupancy, Dunes I, Dunes II, and Shinnery Oak Flats / Co-Dominant Shinnery Oak Mesquite Flats consistent with protocols described in Appendix A.

Operation. Alternatively, a sand mining Participant may purchase or otherwise contribute acres of like habitat to be acquired and/or placed into long term conservation through a conservation easement (on or off Enrolled Property), at a 1:1 ratio.

If a New Surface Disturbance falls within two or more types of habitat, the amount of the Habitat Conservation Fee will reflect the amount of the new Surface Disturbance within each type of Habitat.

III. Implementation Fees

The Oil and Gas, Sand Mining, and Renewable Energy Sectors will pay the Implementation Fees.
The annual Implementation costs under the 2020 DSL CCAA will be equally distributed among these Participants. The Participants will pay an annual fee per acre of their enrolled property.

IV. Fee Adjustment

Adjustment for Inflation or Deflation.

The term "Base Habitat Conservation Fee" shall refer to the values of the Habitat Conservation Fees set forth in this Exhibit. For purposes of this section, the term "CPI-U" shall refer to the Consumer Price Index for All Urban Consumers, U.S. City Average, all items less food and energy (base 1982-84=100), not seasonally adjusted, as published by the U.S. Department of Labor, Bureau of Labor Statistics. The Maximum Annual Inflation Increase shall be based on the percent increase between the annual average CPI-U for the calendar year that precedes the date of the adjustment ("Current CPI-U") and the annual average CPI-U for calendar year 2016 ("Base CPI-U"). The Maximum Annual Inflation Increase shall be calculated as follows:

Maximum Annual Inflation Increase =
Base Habitat Conservation Fee x ((Current CPI-U – Base CPI-U) / Base CPI-U))

Increases to adjust for inflation or deflation, if any, shall occur on the January release date of the CPI-U. The Maximum Annual Inflation Increase will reflect the most recent revision to the annual average Current CPI-U, if any. The Administrator will send Participants a notification, both electronically and by mail, each year at the time the fees are adjusted.

If the annual average CPI-U is unavailable for a calendar year, no increases will be made. If the CPI-U is discontinued entirely or unavailable for a period longer than two calendar years, the Administrator will consult with the Participant to select an appropriate alternative index.

Adjustment to Address Increased Market Valuation

The Administrator will review all Habitat Conservation and Enrollment Fees annually to determine whether any of the fees need to be adjusted to adequately implement the Conservation Program. Increases or decreases in these fees, if any, will be decided by the Administrator on an annual basis. The

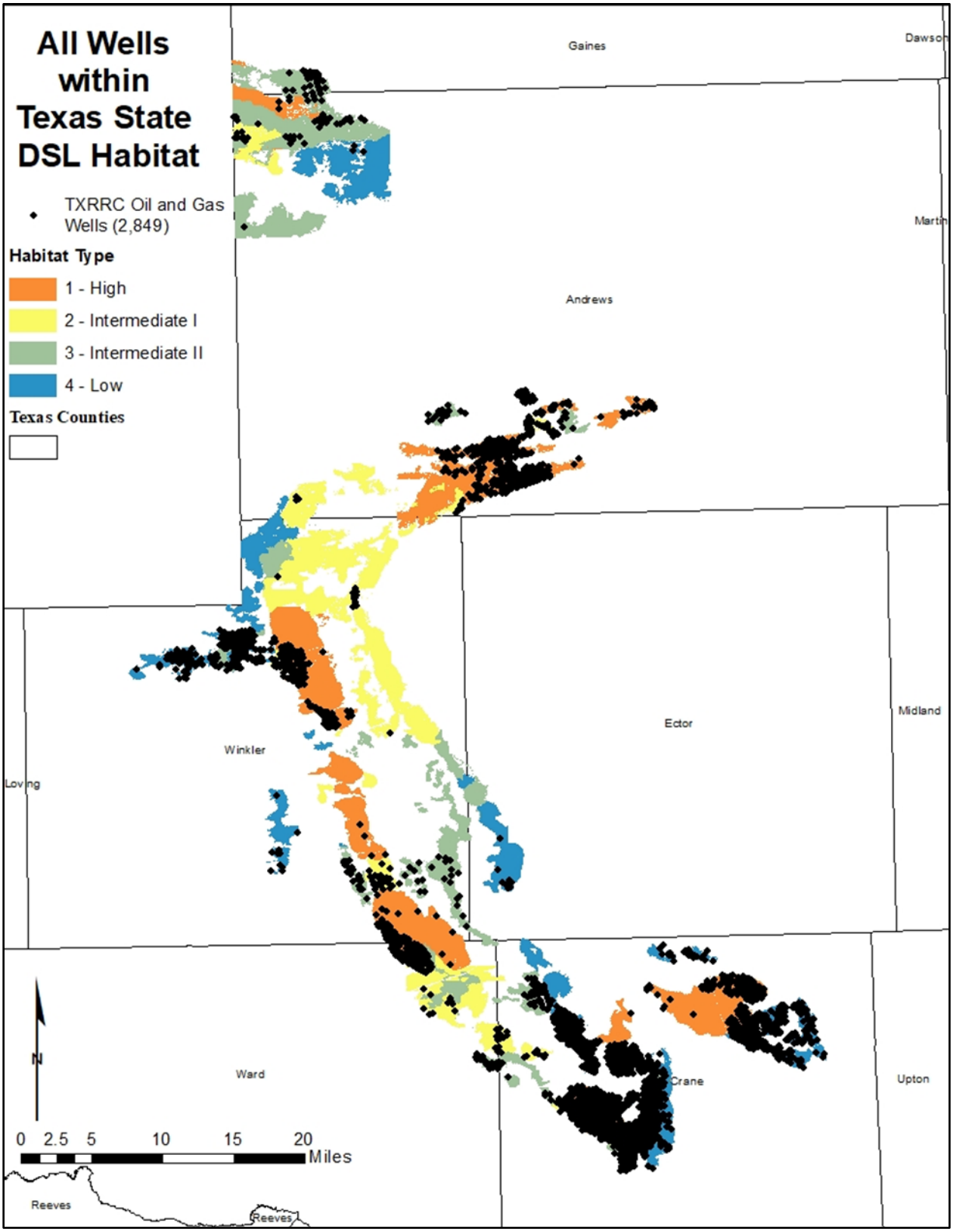
Administrator will make these decisions with input from the Participant Committee. The Administrator will provide to the committee a report on the obligations and expenditures of the conservation program, including Conservation Easements and other protections, and projections for future costs. Taking into consideration the recommendation of the Participant Committee and the obligations under the 2020 DSL CCAA, the Administrator will implement any necessary changes in the Habitat Conservation and Enrollment Fees.

Adjustment to Address Increased Implementation Costs

The Administrator will review Implementation Fees annually to determine whether any of the fees need to be adjusted to adequately implement the 2020 DSL CCAA. Increases or decreases in Implementation Fees, if any, will be decided by the Administrator on an annual basis. The Administrator will make these decisions with input from the Participant Committee. The Administrator will provide to the committee a report on the obligations and expenditures of the implementation of the 2020 DSL CCAA and projections for future costs. Taking into consideration the recommendation of the Participant Committee and the obligations under the 2020 DSL CCAA, the Administrator will implement any necessary changes in the Implementation Fees.

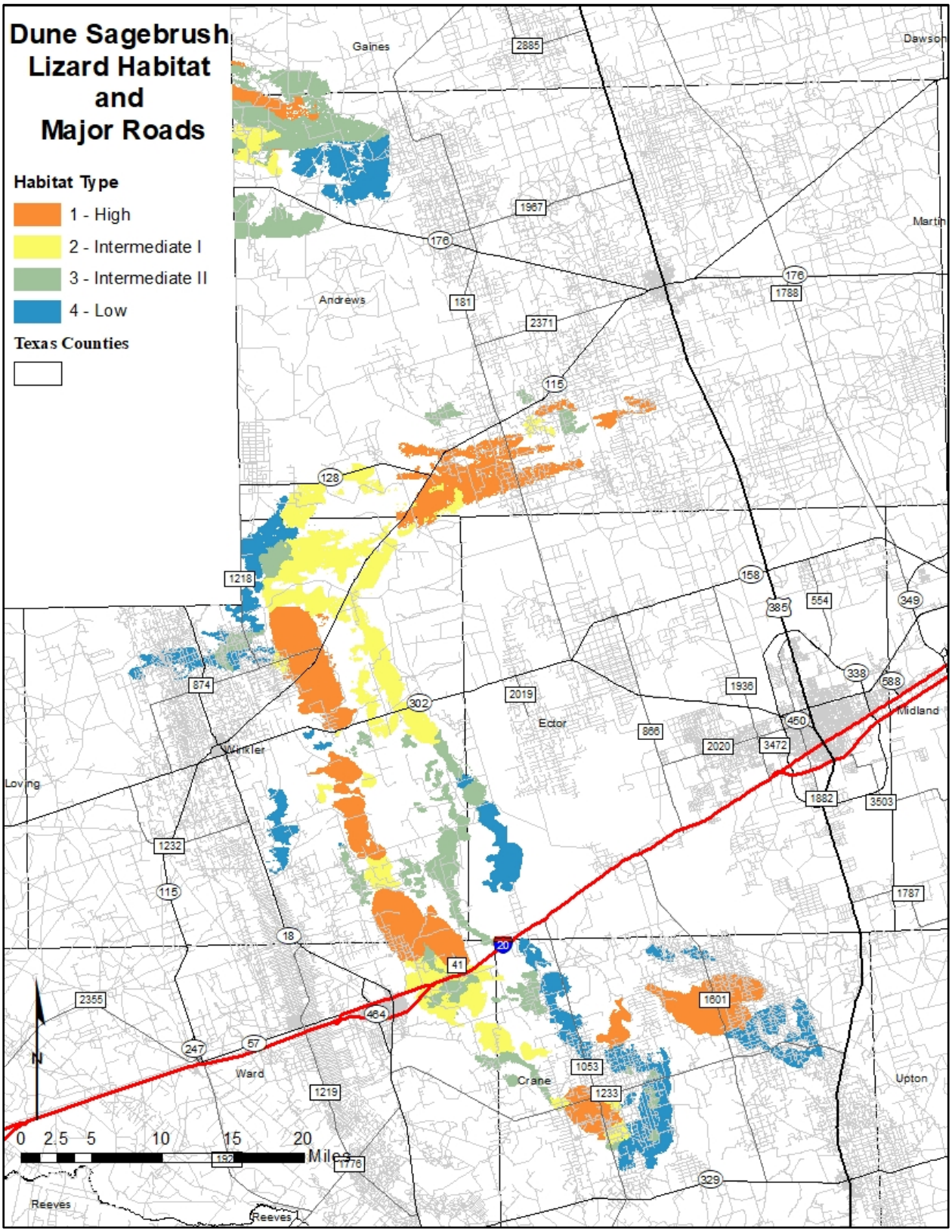
APPENDIX E: MAP OF OIL AND GAS WELLS IN DSL HABITAT IN 2017

I.

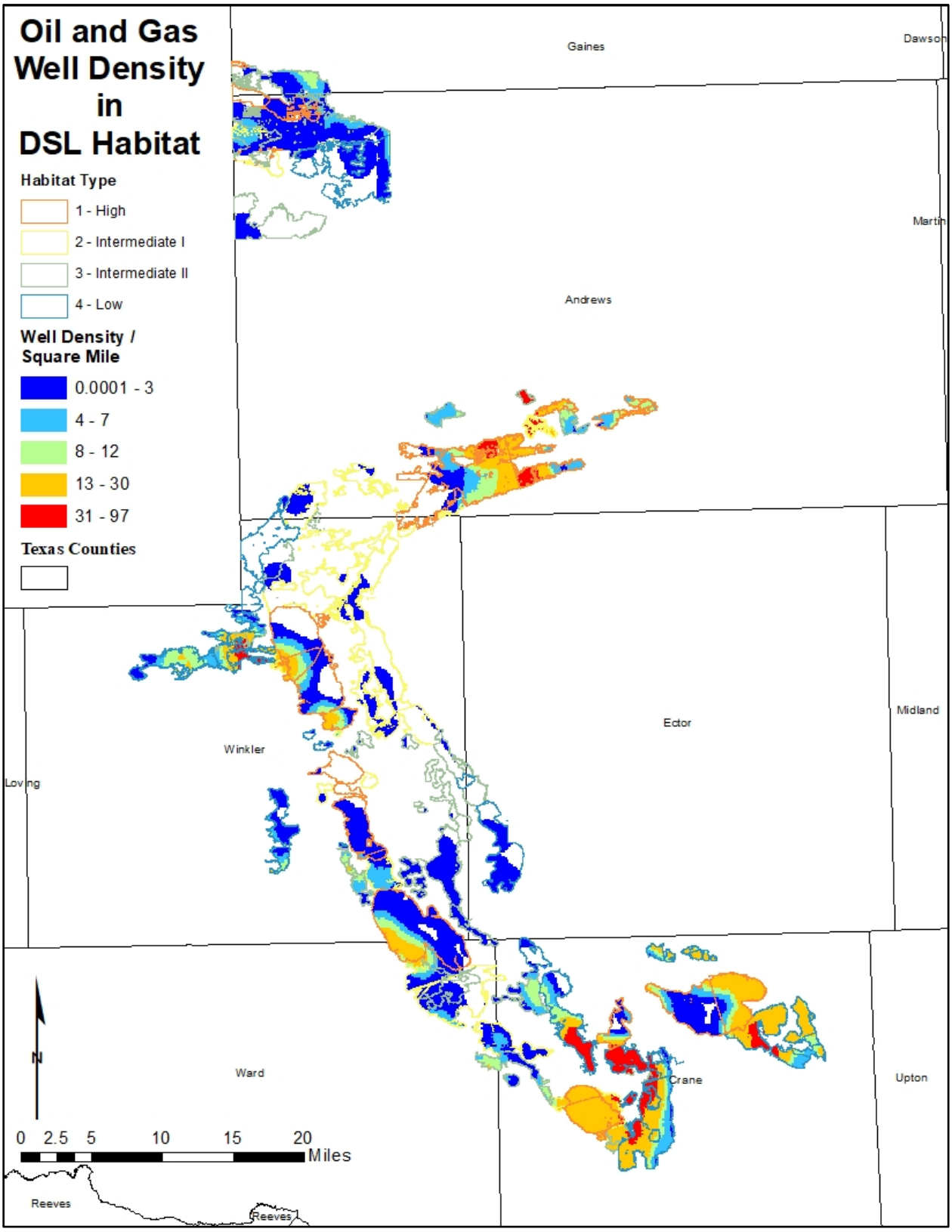


APPENDIX F: TAMU HABITAT SUITABILITY MAP WITH MAJOR ROADS

II.


Dune Sagebrush Lizard Habitat and Major Roads
Habitat Type
1 - High
2 - Intermediate I
3 - Intermediate II
4 - Low
Texas Counties
Gaines
Dawson
Andrews
Martin
Ector
Midland
Winkler
Loving
Ward
Crane
Upton
Reeves
Reeves
0 2.5 5 10 15 20
Miles
N

APPENDIX G: WELL DENSITY


Oil and Gas Well Density in DSL Habitat
Habitat Type
1 - High
2 - Intermediate I
3 - Intermediate II
4 - Low
Well Density / Square Mile
0.0001 - 3
4 - 7
8 - 12
13 - 30
31 - 97
Texas Counties
Gaines
Dawson
Martin
Andrews
Midland
Ector
Winkler
Loving
Ward
Crane
Upton
Reeves
Reeves
N
0 2.5 5 10 15 20
Miles

APPENDIX H: PHOTOGRAPHS OF DSL HABITAT

Shinnery Oak Dunes

Shinnery Oak/Mesquite Dunes

Shinnery Oak Flat

Mesquite Shin-Oak Shrubland

APPENDIX I: GLOSSARY

Glossary

15-Day Notice – Notice provided to the Administrator by Participants no less than 15 days prior to commencement of New Surface Disturbance so that the Administrator can calculate the appropriate Habitat Conservation Fees in accordance with Appendix D.

Acre – A unit of land equal to 4,840 square yards or 0.405 hectare.

Adaptive Management – A process for examining alternative strategies for meeting measurable biological goals and objectives and then, if necessary, adjusting future conservation and land management actions according to what is learned.

Adaptive Management Committee – Scientific committee consisting of representatives from FWS, various state wildlife agencies, Participants, and other supporting state agencies that will, among other responsibilities, develop and , review other proposals for Conservation Actions, and recommend priorities for funding said projects.

All Activities Enrollment – Enrollment of all of a Participant's activities and facilities on non-Federal lands within an Enrolled Property within the Covered Area.

Candidate Conservation Agreement with Assurances (CCAA) – Voluntary agreement on non-Federal lands administered by the Administrator in which Participants implement Conservation Measures aimed at reducing or eliminating threats to the Covered Species under the CCAA and CI to allow their land operations to continue unaffected if the DSL is listed in the future. The non-Federal property owners receive assurances from the FWS that additional Conservation Measures above and beyond those contained in the agreement will not be required and that additional land, water, or resource use limitations will not be imposed upon them should the DSL become listed in the future.

Candidate Species – Plants and animals for which the U.S. Fish and Wildlife Service (FWS) has sufficient information on their biological status and threats to propose them as "endangered" or "threatened" under the Endangered Species Act (ESA), but for which development of a proposed listing regulation is precluded by other higher priority listing activities.

Certificate of Inclusion (CI) – An agreement between Permit Holder and Participant in which the Participant voluntarily commits to implement Conservation Measures and fund Conservation Actions on non-Federal lands and to otherwise comply with the terms and conditions of the CI, CCAA, and Permit.

Conservation Actions – Actions that preclude or reduce threats to the Covered Species, including daily implementation of the agreements performed by the Administrator, and mitigation measures that are funded by Participants via this CCAA.

Conservation Easements – A recorded legal document established to conserve biological resources for a specified duration, usually in perpetuity, on an identified conservation property and which restricts certain activities and requires certain habitat management obligations for the property.

Conservation Measures – Avoidance and minimization measures to preclude or reduce threats to the Covered Species that Participants agree to implement via this CCAA.

Conservation Measure Violation (CMV) – Notice of noncompliance with the terms of a CI, the CCAA, or the Permit.

Conservation Strategy – The necessary information to guide conservation management of a species, or multiple species in a specific habitat or landscape so that protections of the ESA are not needed.

Covered Activities – Activities occurring on non-Federal lands or minerals that are identified in Section 5.0 of this 2020 DSL CCAA and the associated Enhancement of Survival Permit.

Covered Area – The Covered Area is defined as Andrews, Gaines, Winkler, Ward, Ector, and Crane Counties in Texas. The landscape features comprising DSL Habitat and the characterization of the areas by Habitat Suitability are shown in Appendix A. These areas are classified as High, Intermediate, and Low Suitability based on initial modeling performed by Texas State University, which remains under development and refinement.

Covered Species – Those species that are candidates or proposed for listing and species that may become candidates or proposed for listing in the near future. For this CCAA, Covered Species includes the DSL that will receive incidental take coverage under the permit if the species is listed.

DSL Habitat – Unless otherwise identified, the four areas (High, Intermediate I and II, and Low Suitability) identified by Texas State University and described in Appendix A and Hardy *et al*. (2018).

Dispersal Corridor – Areas in Andrew, Gaines, Winkler, Ward, Ector, and Crane Counties identified in Appendix A and classified by Texas State University as connecting and enabling DSL movement between areas of suitable habitat.

Emergency Operations – Those activities unexpectedly and urgently required to prevent or address immediate threats to human health, safety, property, the environment, or national defense or security.

Endangered Species Act (ESA) – 16 USC § 1531 *et seq*. The act provides a framework to conserve and protect “endangered” and “threatened” species and their habitats.

Enhancement of Survival Permit – Permits that are issued by the U.S. Fish and Wildlife Service pursuant to Section 10(a)(1)(A) of the ESA. The Permit, which goes into effect if the DSL becomes listed, authorizes

"take" of the DSL on enrolled non-Federal property. If the DSL is listed, the Permit will provide incidental take authority for Covered Activities of Participants on Enrolled Property under the CCAA and CI.

Enrolled Property – Non-Federal lands enrolled in the CCAA through a CI through either Parcel-by-Parcel Enrollment or All Activities Enrollment.

Enrollment Fee – Annual fee a Participant commits to pay for first three years of enrollment of activities or parcels in the CCAA.

Habitat Conservation Fee – Fee a Participant commits to pay when its activities result in New Surface Disturbances.

Harass – Actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns, which include, but are not limited to, breeding, feeding or sheltering.

Harm – To include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, or sheltering.

High Priority Areas of DSL Habitat – Areas of DSL Habitat identified by the Administrator and Participants' Committee as priority areas for conservation, including through conservation easements and offset. High Priority Areas of DSL Habitat will be primarily areas of High Suitability, but also may include areas of Intermediate Suitability and dispersal corridors.

High Suitability Area of DSL Habitat – Areas in Andrews, Gaines, Winkler, Ward, Ector, and Crane Counties identified in Appendix A and classified by Texas State University as having a high suitability for occupancy or use by the DSL as a dispersal corridor.

Implementation Fee – An annual fee paid by Participants in the Oil and Gas and Sand Mining sectors to cover the costs of a third party on-site contractor to administer and implement the CCAA and annual DSL and DSL Habitat surveys.

Intermediate Suitability Area of DSL Habitat – Areas in Andrews, Gaines, Winkler, Ward, Ector and Crane Counties identified in Appendix A and classified by Texas State University as having an intermediate suitability for occupancy by the DSL or use by the DSL as a dispersal corridor.

Low Suitability Area of DSL Habitat – Areas in Andrews, Gaines, Winkler, Ward, Ector and Crane Counties identified in Appendix A and classified by Texas State University as having a low suitability for occupancy by the DSL.

New Surface Disturbance – Alterations by a Participant to unimproved lands covered by this CCAA and associated CI, excluding lands previously altered by a Participant in compliance with this CCAA and associated CI or prior to enrollment in this CCAA unless the land had been restored. With respect to Sand

Mining activities, New Surface Disturbances include all excavation, road, and other infrastructure construction and maintenance.

Off-Highway Vehicles (OHV) – A type of vehicle that was designed specifically for use off road. It may be used as part of geophysical exploration.

Offset – To mitigate the effects of impacts of loss or disturbance of DSL or DSL Habitat.

Parcel – A unit of described acreage (e.g., leases or portions of leases) in which a Participant has a sufficient property interest to carry out proposed management actions, that may be enrolled within the Covered Area.

Parcel-by-Parcel Enrollment – Enrollment of parcels of lands, including leases or portions of leases, within the Covered Area.

Participant – A Property Owner with a fee simple, leasehold, or property interest (including owners of water or other natural resources), or any other entity that may have a property interest, who voluntarily agrees to the terms or conditions of approval described in the CI under the CCAA sufficient to carry out the proposed management activities, subject to applicable State law, on non-Federal land.

Parties – All signatory members of the CCAA.

Permit Holder – The Administrator, the entity to which FWS issues the Enhancement of Survival Permit.

Property Owner – A person with a fee simple, leasehold, or property interest (including owners of water or other natural resources), or any other entity that may have a property interest, sufficient to carry out the proposed management activities, subject to applicable State law, on non-Federal land. Defined as a Participant throughout the CCAA.

Replacement of Enrolled Properties – Amendment of a CI to remove a parcel enrolled through Parcel-by-Parcel Enrollment and replace it with an unenrolled parcel of equal or less acreage.

Reclamation Activities – Activities that remove anthropogenic features and return land to a useful purpose, but not necessary returned to DSL habitat.

Restoration Activities – Activities that enhance DSL habitat or remove anthropogenic features and return lands to suitable DSL Habitat.

Suitable Areas of DSL Habitat – Areas of DSL Habitat determined to have landscape features suitable for DSL.

Take – To harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect or attempt to engage in any such conduct.

Texas Conservation Plan – The CCAA approved by the FWS on February 19, 2012.

Transfer – Assignment of a CI, including the associated incidental take authorizations and assurances, from a Participant to a third party.

U.S. Fish and Wildlife Service (FWS) – An agency of Federal government within the U.S. Department of the Interior, which is dedicated to the management of fish, wildlife, and natural habitats.

APPENDIX J

Dunes Sagebrush Lizard CCAA

Development Justification in DSL

High and Intermediate Suitable Habitat as Provided in Section 8.3.1

Instructions

Appendix J is a chart that may be used by an oil and gas Participant to demonstrate that the mineral estate cannot be accessed except through an area of High or Intermediate suitability. The chart describes the type of information that may support such a demonstration. It is not necessarily dispositive. Supporting attachments should be provided by the Participant to demonstrate the applicable justification criteria. The Administrator, with the assistance of qualified biological and technical professionals where feasible, will review the documentation and either concur with the determination or request additional information within 20 days of receiving the Participant's documentation. If the Administrator does not request additional information in writing within 20 days of receiving the Participant's documentation, Participant may proceed with the planned development. Participant acknowledges that the Service may request to review the documentation and waives any confidentiality with respect to such documentation except as it pertains to confidential business information. All such information submitted by the Participant must be marked "Confidential or Business Sensitive" even in situations where the confidentiality has been waived. The FWS may seek to have the Administrator require the Participant to address or mitigate any deficiency.

Development Justification in DSL

High or Intermediate Suitable Habitat

I. Participant Information		
A. Company or Other Legal Customer Name:		
B. Company Official Contact Information (☐ Mr. ☐ Mrs. ☐ Ms. ☐ Other): _____		
Name:		
Title:		
Mailing Address:		
City:	State:	ZIP Code:
Phone:	Fax:	
E-mail Address:		
II. Site Information		
A. Name and Type of Facility		
Site Name:		
Type of construction: ☐ Well Pad ☐ Facility Pad ☐ Road (not included on New pad)		
☐ Buried Pipeline ☐ Permanent Flowline ☐ Other: _____		
B. Site Location Information		
Latitude:	Longitude:	

If there is no street address, provide written driving directions to the site and provide the closest city or town, county, and ZIP code for the site (attach description if additional space is needed).		
Nearest City:	County:	ZIP Code:
C. Brief description of project to be developed		
D. Survey Information		
Date Surveyed	Expected Construction Date	
Was qualified third party present during survey?		☐ YES ☐ NO
Total acreage to be disturbed (attach imagery documenting total acreage to be disturbed):		
Please describe:		

II. Site Information (Continued)			
E. Pad Density			
Which category applies to your project?			
☐ 0-3 well pads/mi^2	☐ 4-13 well pads/mi^2	☐ >13 well pads/mi^2	
Is there any other construction in the area that should be counted in the pad density other than well pads?			☐ YES ☐ NO
Please describe:			
F. Which level of habitat suitability could this project affect?			
☐ High	☐ Intermediate I	☐ Intermediate II	☐ Low
Additional comments:			

III. Avoidance Infeasibility Explanation			
☐ **(A)** Geological	☐ **(B)** Contractual/Legal	☐ **(C)** Surface Use Limitations	☐ **(D)** Regulatory
☐ **(E)** Safety	☐ **(F)** Other:		
Please describe and attach relevant information:			

Can you relocate project outside restricted habitat?	☐ YES ☐ NO
Please explain:	
Can you relocate project to pre-existing construction (e.g., old well pad)?	☐ YES ☐ NO
Please explain:	