# 2020 CANDIDATE CONSERVATION AGREEMENT WITH ASSURANCES FOR THE DUNES SAGEBRUSH LIZARD (*SCELOPORUS ARENICOLUS*) IN WEST TEXAS

## FINAL ENVIRONMENTAL ASSESSMENT

Prepared for

**U.S. FISH AND WILDLIFE SERVICE**
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## ABBREVIATIONS

| Abbreviations | Description |
|---|---|
| 2020 DSL CCAA | *Candidate Conservation Agreement with Assurance for the Dunes Sagebrush Lizard (Sceloporus arenicolus)* |
| af/y | acre-feet per year |
| Alternative A | Proposed Action: Issuance of Section 10(A)(1)(A) Permit |
| Alternative B | No Action Alternative |
| Applicant | Canyon Environmental, LLC |
| CCAA | Candidate Conservation Agreement with Assurances |
| CEQ | Council on Environmental Quality |
| CFR | Code of Federal Regulations |
| Covered Activities | The type of activities authorized under the Proposed Action |
| Covered Area | The geographic extent of the Proposed Action |
| Covered Species | Species covered under the Proposed Action, i.e., the Dunes Sagebrush Lizard |
| CPA | Texas Comptroller of Public Accounts |
| DSL | Dunes Sagebrush Lizard |
| DSL Habitat | A geospatial model of potential habitat for the Covered Species that serves as the basis for the Covered Area |
| EA | Environmental Assessment |
| EPA | U.S. Environmental Protection Agency |
| ESA | Endangered Species Act |
| FR | Federal Register |
| NEPA | National Environmental Policy Act |
| NRCS | Natural Resources Conservation Service |
| NRHP | National Register of Historic Places |
| Proposed Action | Issuance of Section 10(a)(1)(A) Permit |
| PUF | Permanent University Fund |
| OHV | off-highway vehicles |
| ROW | Rights-of-way |
| Service | U.S. Fish and Wildlife Service |
| SHPO | State Historic Preservation Office |
| SWCA | SWCA Environmental Consultants |
| TASA | Texas Archeological Sites Atlas |
| TCEQ | Texas Commission on Environmental Quality |
| TCP | Texas Conservation Plan |
| TPWD | Texas Parks and Wildlife Department |
| USC | United States Code |

# 1 PURPOSE AND NEED

## 1.1 Introduction

This Final Environmental Assessment (EA) has been prepared in accordance with the requirements of the National Environmental Policy Act (NEPA) (42 USC 4321-4327) to evaluate potential impacts to the environment that may result from the *Candidate Conservation Agreement with Assurances for the Dunes Sagebrush Lizard* (*Sceloporus arenicolus*) (2020 DSL CCAA) submitted to the U.S. Fish and Wildlife Service (Service) by Canyon Environmental, LLC (Applicant). The species covered by the 2020 DSL CCAA (referred to as "Covered Species") is the Dunes Sagebrush Lizard, *Sceloporus arenicolus* (DSL) in West Texas.

The proposed Federal action is the approval of the proposed 2020 DSL CCAA and issuance of the Enhancement of Survival Permit (Permit), pursuant to the Endangered Species Act of 1973, as amended (16 USC § 1531, *et seq.*) (ESA). The purpose of Candidate Conservation Agreements with Assurances (CCAA) is to encourage the public to voluntarily develop and implement conservation plans for species prior to them declining to the point of being listed under the ESA. The Service may issue the Permit if it finds that implementation of the CCAA is reasonably expected to provide a net conservation benefit to the species (50 CFR 17.22(d)(2)(ii); 50 CFR 17.32(d)(2)(ii)). Non-Federal property owners that voluntarily enter into the CCAA and implement the CCAA's specific conservation measures to reduce or eliminate threats to a covered species on their land would receive regulatory assurances from the Service that additional restrictions will not be required should the species be listed as "threatened" or "endangered" in the future (81 Fed. Reg. 95,171). Under section 10(a)(1)(A) of the ESA, a Permit is issued for species that are candidates for federal listing under the ESA or other non-listed species; the Permit would only become effective if and when the covered species is actually listed as "threatened" or "endangered" under the ESA. The Permit would authorize take of the covered species incidental to activities covered by the CCAA and conservation measures implemented pursuant to the conservation plan in the CCAA.

The Applicant has submitted the 2020 DSL CCAA for approval and applied for a Permit pursuant to section 10(a)(1)(A) of the ESA for the conservation of the DSL in Texas. An expected benefit of the 2020 DSL CCAA is that it will incentivize avoidance and minimize impacts to the DSL, an unlisted species, and its habitat on private lands. The Conservation Strategy and Conservation Measures under the 2020 DSL CCAA are intended to provide a net conservation benefit to the DSL relative to the environmental 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. Further, the baseline should be evaluated in the context of the maximum level of disturbance that is legally allowable to non-Federal property owners. The Proposed Action includes approval and implementation of a voluntary conservation program that would be reasonably expected to provide a net conservation benefit to the DSL, the effects of which include mitigating impacts to relevant environmental resources associated with those legally allowable activities by non-Federal property owners. While conservation implemented as a result of the Proposed Action would be reasonably expected to provide a net conservation benefit, it is not anticipated that the Proposed Action will eliminate impacts from underlying lawful activities by participants in the 2020 DSL CCAA and non-participants relative to the environmental baseline.

If the Covered Species becomes listed as "threatened" or "endangered" under the ESA, the Permit would become effective and authorize take of the Covered Species incidental to activities covered by the 2020 DSL CCAA (referred to as "Covered Activities") (i.e., oil and gas development, sand mining, renewable energy, linear infrastructure, local government activities, and agriculture and ranching activities) and activities implemented pursuant to the Conservation Strategy and Conservation Measures. Participants

enrolled in the 2020 DSL CCAA would also receive assurances through the Permit that, if the Covered Species is listed and they are fully implementing their commitments under the Permit and Certificates of Inclusion, they would not be required to undertake any additional conservation measures than those agreed to in the 2020 DSL CCAA or Permit, inclusive of changed circumstances. Even if new information indicates that additional or revised conservation measures are needed for the Covered Species, Participants would not be required to provide additional resource or land use restrictions (50 CFR 17.22(b)(5) and 17.32(b)(5)).

Approval of the 2020 DSL CCAA and issuance of a Permit under section 10(a)(1)(A) of the ESA is a discretionary Federal action by the Service and is thus subject to NEPA. This EA was prepared pursuant to NEPA (42 USC 4321-4327), the Council on Environmental Quality (CEQ) NEPA implementing regulations (40 CFR Parts 1500-1508 (1978)) and the U.S. Department of the Interior's supplemental NEPA implementing regulations (43 CFR Part 46). The purpose of the EA is to examine the types and intensity of impacts from implementation of the CCAA and issuance of the Permit to the Applicant for activities covered by the 2020 DSL CCAA (Alternative A – Proposed Action). This EA also evaluates a reasonable range of alternatives, including the No Action Alternative (Alternative B). If approved, the Applicant would implement the 2020 DSL CCAA.

## 1.2 2020 DSL CCAA Overview

The purpose of the Service's CCAA program is to facilitate the conservation of species proposed for listing under the ESA and candidate species, and species that may become candidates or proposed for listing in the near future, by giving non-Federal property owners, such as individuals, States, local governments, Tribes, businesses, and organizations, incentives to implement conservation measures for declining species by providing regulatory assurances with regard to land, water, or resource use restrictions that might otherwise apply should the species later become listed as "endangered" or "threatened" under the ESA. (81 Fed. Reg. 95,171). The aim of the 2020 DSL CCAA is to allow Participants to voluntarily enroll to commit to conservation measures for the Covered Species (i.e., DSL) to reduce threats to the Covered Species from Covered Activities occurring on an Enrolled Property in modeled habitat for the Covered Species in West Texas (referred to as "DSL Habitat"), which represents the "Covered Area" of the 2020 DSL CCAA. The Covered Area spans portions of Andrews, Crane, Ector, Gaines, Ward, and Winkler Counties (Figure 1). Participants eligible to enroll in the 2020 DSL CCAA would include entities in the following sectors: oil and gas development, sand mining operations, renewable energy operations, linear infrastructure (including pipelines, transmission lines, and similar utilities) construction and operation, local government activities (including road construction and maintenance), and agriculture and ranching (collectively referred to as "Covered Activities"). Should the Covered Species become federally listed, Participants would receive regulatory assurances that the Service would not require the commitment of additional conservation measures or impose restrictions beyond agreements detailed in the 2020 DSL CCAA without consent of the permittee (or Applicant) and Participants (50 CFR 17.22(d)(5) and 17.32(d)(5)), should they have fully implement their commitments under the 2020 DSL CCAA.

The 2020 DSL CCAA describes conservation measures for the Covered Species in the Covered Area that are aimed to reduce current and reasonably foreseeable threats that are under the Participants' control and are reasonably expected to provide a net conservation benefit to the Covered Species (81 Fed. Reg. 95,164). If the Service determines the conservation measures included in the 2020 DSL CCAA meet the Service's CCAA regulatory issuance criteria, a Permit may be, but is not required, to be issued. 50 CFR 17.22(d)(2)(ii) and 17.32(d)(2)(ii).

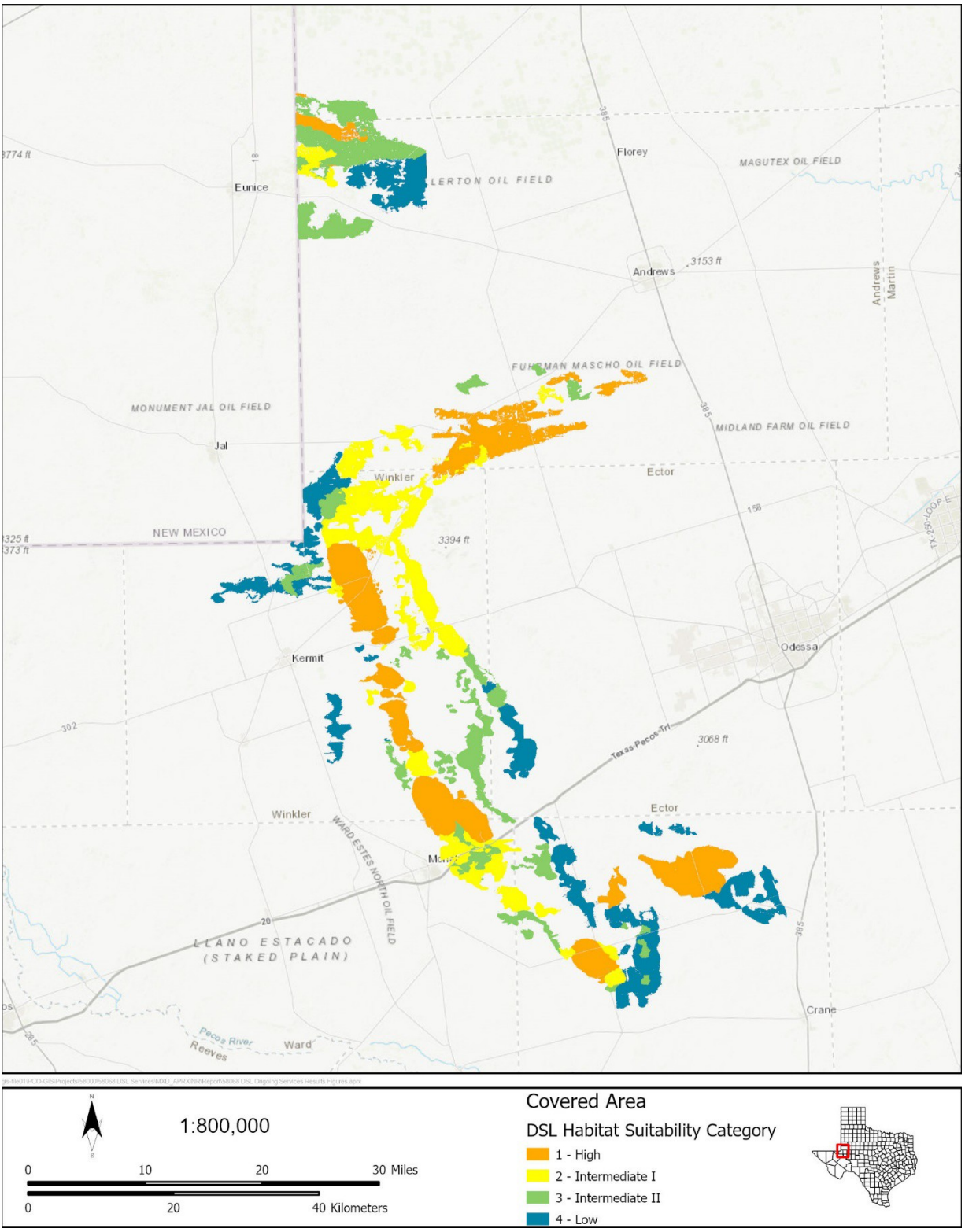


**Figure 1. Covered Area showing the categories and current locations of DSL Habitat suitability derived from Hardy *et al.* (2018) that establish the areas to which Conservation Measures of the 2020 DSL CCAA would be implemented.**

## 1.3 Purpose and Need for the Proposed Federal Action

The purpose of the Proposed Federal Action is to:

- approve the Applicant's 2020 DSL CCAA and issue a Permit for the Covered Species for Covered Activities, pursuant to section 10(a)(1)(A) of the ESA and its implementing regulations and policies;
- protect, conserve, and enhance the Covered Species, its habitat, and the ecosystem upon which it depends, and contribute to the long-term survival of the Covered Species through protection and management of the species and its habitat; and
- coordinate and provide technical assistance to the Applicant and Participants with the goal of providing a net conservation benefit to the Covered Species.

A CCAA is one conservation tool that may improve the status of a species such that listing becomes unnecessary; listing is as a "threatened" species instead of "endangered"; or the species' recovery is accelerated if it is listed. The Service would approve a CCAA if it determines that the conservation measures to be implemented would reduce and eliminate current and anticipated future threats that are under the property owner's control to the point that the conservation measures are reasonably expected to provide a net conservation benefit to the Covered Species such that its populations are stabilized, the number of individuals is increased, or habitat is improved.

The 2020 DSL CCAA is a voluntary program for the conservation of the DSL, the performance of which is not dependent on other DSL Habitat conservation activities that may be undertaken through other CCAAs, such as the Texas Conservation Plan for the Dunes Sagebrush Lizard (TCP) (Service *et al.*) and the New Mexico DSL conservation programs, or programs sponsored by the Department of Agriculture's Natural Resource Conservation Service (NRCS). The 2020 DSL CCAA, however, is designed through its implementation to complement and enhance such other conservation programs. Specifically, the DSL would benefit from additional voluntary conservation measures on non-Federal lands in West Texas to reduce and eliminate threats that have emerged in the region since the original approval of the TCP. Accordingly, the 2020 DSL CCAA was developed to reduce these threats, including from sand mining, for the benefit of the DSL.

## 1.4 Decision to be Made

This EA has been prepared to analyze the impacts on the quality of the environment and other potentially affected resources from implementation of the 2020 DSL CCAA and issuance of a section 10(a)(1)(A) Permit to the Applicant for activities covered by the 2020 DSL CCAA. The Service must evaluate the 2020 DSL CCAA and Permit application to determine if they meet the Service's issuance criteria (50 CFR 13.21, 50 CFR 17.22(d)(2), 50 CFR 17.32(d)(2)). The Service must find that

1) the take would be incidental to an otherwise lawful activity and would be in accordance with the terms of the 2020 DSL CCAA;

2) the implementation of the terms of the 2020 DSL CCAA is reasonably expected to provide a net conservation benefit to the affected Covered Species by contributing to the conservation of the species included in the permit, and the 2020 DSL CCAA otherwise complies with the CCAA policy available from the Service;

3) the probable direct and indirect effect of any authorized take would not appreciably reduce the likelihood of survival and recovery in the wild of any species;

4) implementation of the terms of the 2020 DSL CCAA is consistent with applicable Federal, State, and Tribal laws and regulations;

5) implementation of the terms of the 2020 DSL CCAA would not be in conflict with any ongoing conservation programs for species covered by the permit; and

6) the applicant has shown capability for and commitment to implementing all the terms of the 2020 DSL CCAA.

If the Service determines the application is in conformance with the CCAA issuance criteria, the Service may approve the 2020 DSL CCAA and issue a Permit, which would become effective if the Covered Species is listed under the ESA.

## 1.5 Public Involvement

On July 16, 2020, the Service published a Notice of Intent (NOI) in the Federal Register informing the public that the Applicant submitted the 2020 DSL CCAA and a Permit application and requested public input on the scope of this EA (85 FR 43254). Comments received in response to the NOI were considered in the preparation of the Draft EA, which was made available for a 30 day public review and comment period. On November 20, 2020, the Service published a second Federal Register notice announcing the availability of the Draft EA that had been prepared to evaluate the permit application in accordance with the requirements of NEPA, and made the permit application package, including the draft CCAA and Draft EA, as well as the issuance criteria for the requested permit, available for 30-day public review and comment (85 FR 74370). Comments received during that period were reviewed and considered in writing the Final EA. The comments, Service's responses, and locations of any changes in response to those comments are in Appendix A.

### *1.5.1 Tribal Outreach*

Section 3.9 below provides a discussion of cultural and historical resources in the Covered Area. On July 2, 2020, consistent with the requirements of Section 106 of the National Historic Preservation Act (NHPA), the Service notified 28 federally recognized Tribes with potential interest in projects in the Covered Area of the 2020 DSL CCAA. The Service sent notification letters to the following federally recognized Tribes: Absentee-Shawnee Tribe of Indians of Oklahoma, Alabama-Quassarte Tribal Town, Alabama-Coushatta Tribe of Texas, Apache Tribe of Oklahoma, Caddo Nation of Oklahoma, Choctaw Nation of Oklahoma, Cherokee Nation of Oklahoma, Comanche Nation of Oklahoma, Coushatta Tribe of Louisiana, Delaware Nation, Fort Sill Apache Tribe of Oklahoma, Jicarilla Apache Nation, Kialagee Tribal Town, Kickapoo Traditional Tribe of Texas, Kickapoo Tribe of Oklahoma, Kiowa Indian Tribe of Oklahoma, Mescalero Apache Tribe, Muscogee (Creek) Nation of Oklahoma, Osage Nation, Poarch Band of Creek Indians, Quapaw Tribe of Oklahoma, Seminole Nation of Oklahoma, Thlopthlocco Tribal Town, Tonkawa Tribe of Oklahoma, Tunica-Biloxi Tribe of Louisiana, United Keetoowah Band of Cherokee Indians, Wichita and Affiliated Tribes, and Ysleta del Sur Pueblo. On September 25, 2020, additional letters were sent to Sandia Pueblo and Ysleta Pueblo.

As of January 11, 2021, three Tribes responded to the notification letters: Ysleta del Sur Pueblo, Sandia Pueblo, and United Keetowah Band of Cherokee. The Ysleta del Sur Pueblo in New Mexico indicated the Tribe has an interest in the Covered Area and the DSL and wished to continue consultation. The United Keetowah Band of Cherokee in Oklahoma indicated that the Covered Area is outside of their historic area of interest and that the Tribe requires no further consultation on the application and 2020 DSL CCAA. No Tribes commented on the draft EA.

# 2 DESCRIPTION OF ALTERNATIVES

This chapter describes the alternatives considered in this EA (Alternative A —Proposed Action and Alternative B — No Action), as well as alternatives that were considered but eliminated from detailed analysis.

## 2.1 Alternative A – Issuance of a Section 10(a)(1)(A) Permit for Activities Covered and Implementation of the 2020 DSL CCAA (Proposed Action)

Under Alternative A, the Service would approve implementation of the 2020 DSL CCAA and issue a section 10(a)(1)(A) Permit to the Applicant for activities covered in the 2020 DSL CCAA for 23 years, consistent with the Application and Proposed Action. The Permit would require the implementation of the conservation measures and actions described in the 2020 DSL CCAA. The Administrator of the 2020 DSL CCAA and Participants must implement the conservation measures set forth in the 2020 DSL CCAA for Covered Activities to reduce or eliminate threats to the Covered Species and improve its status (81 Fed. Reg. 91,564; 50 CFR 17.22(d) and 50 CFR 17.32(d)). Implementation of the 2020 DSL CCAA would include conservation measures aimed at avoiding or minimizing disturbance in DSL Habitat and actions to protect and restore priority habitat for the Covered Species. These conservation measures and actions, which are summarized in Section 2.1.4 below, are designed to result in a net conservation benefit to the Covered Species, including to reduce and eliminate threats to the DSL by avoiding, minimizing, and mitigating potential impacts associated with Covered Activities.

The Permit would require the implementation of the measures described in the 2020 DSL CCAA. In the event that the Covered Species becomes listed as "threatened" or "endangered" under the ESA, the Permit would become effective and would authorize the incidental take of the Covered Species for Covered Activities by Participants consistent with the terms of the 2020 DSL CCAA and Permit. The 2020 DSL CCAA uses acres of disturbance or loss of potential DSL Habitat as a proxy for take in the Covered Area, estimating the maximum amount of anticipated incidental take to be 34,940 acres. This total maximum take figure is a ceiling that is inclusive of all disturbance of DSL Habitat within the Covered Area by both Participants and non-Participants. Actual levels of incidental take authorized under the Permit for an individual Participant and its enrolled property will be described in the Participant's CI, such that overall authorized take by Participants can be managed over time based on the performance of the CCAA, including for purposes of evaluating adaptive management triggers, changed circumstances, and unforeseen circumstances. The maximum amount of incidental take of DSL Habitat would not exceed 34,940 acres during the 23-year term of the Permit subject to the requirements of the 2020 DSL CCAA, including annual and total disturbance caps applicable to sand mining Participants. The Permit may be renewed through application and in accordance with applicable permit renewal regulations (50 CFR 13.22), unless it is suspended or revoked by the Service, as provided in its permitting regulations (50 CFR 17.22(d) and 50 CFR 17.32(d)).

Under Alternative A, the Permit would be issued to the Applicant. The CCAA includes a Certificate of Inclusion provision that would allow the Administrator of the 2020 DSL CCAA to enroll Participants by creating a contract between the Administrator and the Participant. Non-Federal property owners who are not Participants in the 2020 DSL CCAA or another conservation agreement (e.g., TCP) that would be interested in engaging in voluntary conservation measures for the Covered Species in the Covered Area in return for regulatory assurances would need to pursue separate CCAAs with the Service. If the species is listed under the ESA, no further enrollment by new Participants in the 2020 DSL CCAA could occur.

### 2.1.1 Covered Species

The Covered Species in the 2020 DSL CCAA is the DSL, a small, brown lizard with a maximum body length of 2.9 inches for males and 2.5 inches for females (Fitzgerald *et al.* 2011). The Covered Species is endemic to the ecosystems of the Mescalero Sands of New Mexico and Monahans Sandhills of Texas, the latter of which occurs in the Covered Area (Axtell 1988; Degenhardt and Jones 1972; Fitzgerald *et al.* 1997). The Covered Species is a habitat specialist of shinnery oak (*Quercus havardii*) sand dunes with blowouts (i.e., depressions that have been hollowed out by wind), or shinnery oak hummocks (i.e., aboveground knolls or mounds) that may or may not be interspersed with honey mesquite (*Prosopis glandulosa*) hummocks (Degenhardt and Jones 1972; Fitzgerald *et al.* 1997; Fitzgerald *et al.* 2011; Johnson *et al.* 2016; Sena 1985; Walkup *et al.* 2018). Within Texas, the Covered Species historically occurred in Andrews, Crane, Gaines, Ward, and Winkler Counties, but recent detections of the Covered Species in Texas have been limited to Andrews, Gaines, Ward, and Winkler Counties (Axtell 1988; Degenhardt and Jones 1972; Laurencio *et al.* 2007; Painter and Sias 1998; Fitzgerald *et al.* 2011; Walkup *et al.* 2018).

### 2.1.2 Covered Area

The Covered Area in the 2020 DSL CCAA is modeled potential habitat for the Covered Species in the Texas portion of its range, which spans portions of Andrews, Crane, Ector, Gaines, Ward, and Winkler counties (Figure 1). Non-Federal properties within the Covered Area are eligible to enroll as Participants in the 2020 DSL CCAA. Modeled potential habitat for the Covered Species is based on a geospatial model developed at Texas State University (Hardy *et al.* 2018) that attempts to map the Covered Species' habitat (e.g., shinnery oak dune structures and shinnery oak flats) and broadly classifies the landscape into habitat suitability categories for the Covered Species: High, Intermediate I, Intermediate II, and Low Suitability categories (Hardy *et al.* 2018). As an approximation of the Covered Species' habitat over a large scale, the Texas State University model is a working model that evolves with on-site habitat assessments and surveys. Mapped polygon locations, extents and associated acreages are refined with additional data resulting in new versions of the model. The current Texas State University model, encompassing approximately 287,327 acres, serves as the geographic location of potentially suitable DSL Habitat in Texas and, therefore, represents the Covered Area for the 2020 DSL CCAA.

### 2.1.3 Covered Activities

The Administrator would enroll Participants in the 2020 DSL CCAA. Participant activities on enrolled properties related to the Covered Activities also include activities associated with conservation, research, and monitoring performed or approved under the 2020 DSL CCAA. Key aspects of the Covered Activities and conservation, research, and monitoring under the 2020 DSL CCAA are summarized in Table 1. Additional information on these Covered Activities is provided in Chapter 6 of the 2020 DSL CCAA.

**Table 1. 2020 DSL CCAA Covered Activities**

| Activity | Description |
|---|---|
| Oil and gas development | Equipment and activities related to seismic and land surveys; construction, operation, and/or maintenance of oil and gas facilities and associated activities including access roads; well sites; wells; flowlines, pipelines, and utilities; compressor facilities and/or gathering/processing facilities; in-field electrical distribution systems; plugging and abandonment; emergency operations; drilling, completion, recompletion, and workover; well site fencing; routine production, operation, and maintenance; and remediation and reclamation. |

| Activity | Description |
|---|---|
| Sand mining | Excavation and processing of sand; access roads, processing plants, and other infrastructure; and drilling of water wells. |
| Renewable energy operations | Construction and maintenance of power lines, access roads and appurtenant structures (in Low Suitability areas of Covered Species habitat only). |
| Linear infrastructure construction and operation | Construction, operation, repairs, and maintenance of industrial pipelines, transmission and distribution lines, similar utilities, access roads, and appurtenant structures (e.g., pipe yards, interconnects, compressor stations, substations) |
| Agriculture, ranching and local government | Agriculture and ranching activities involving brush management; livestock grazing; construction and maintenance of fences, access roads, water storage, and water transmission facilities; farming; and irrigation. Local government activities involving construction, maintenance and repair public works and infrastructure including roads, water and sewer facilities, public buildings, facilities, parks, etc. |
| General construction activities | General construction activities associated with the enrollment sectors including but not limited to the construction of facility sites, associated infrastructure, and access roads; and implementation of best management practices. |
| Conservation, research, and monitoring | Activities associated with conservation, research, and monitoring projects including Covered Species surveys; 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. |

### 2.1.4 Conservation Measures

The biological goal of the 2020 DSL CCAA is to achieve a net conservation benefit for the Covered Species through reduction or elimination of threats to the Covered Species on enrolled properties. The 2020 DSL CCAA aims to achieve this goal through the following objectives:

- Develop a conservation strategy financially supported through a fee structure to acquire conservation easements and other protections, and to implement other conservation actions.
- Enrollment and payment of fees by Participants including stratified mineral rights holders[1].
- Avoid, minimize, or offset impacts from Covered Activities in the portions of the Covered Area categorized as High or Intermediate Suitability, or in areas with demonstrated potential to affect the abundance, habitat suitability, or habitat connectivity of the Covered Species.
- Preserve and restore high priority areas of DSL Habitat.
- Implement research and evaluation of conservation measures and conservation actions of the 2020 DSL CCAA.

To meet the goal and objectives, the 2020 DSL CCAA proposes conservation measures for the Covered Species. These conservation measures are described in detail in the 2020 DSL CCAA and include the following types of measures:

- Avoid or limit surface development and surface use in High or Intermediate Suitability Areas of DSL habitat; utilize existing developed areas and infrastructure to the extent possible and practicable; and minimize infrastructure footprints.
- Support collaboration between severed surface and mineral lease holders to develop approaches to minimize surface disturbance and implement planned development that conforms with the requirements of the CCAA.

[1] Mineral rights may be held by a different Participant or Participants than surface rights, in which case, they are referred to as stratified mineral interests.

- Develop and implement plans and measures to minimize and/or control habitat fragmentation, groundwater use, dust, traffic, and spills.
- Monitor disturbed areas (e.g., dunes) to identify areas where re-grading is necessary.
- Monitor infrastructure (e.g., pipelines) to identify sources of potential contamination.
- Restore disturbed areas through re-grading and revegetation.
- Implement best management practices, such as barrier fencing, to protect DSL Habitat and individual DSL.
- Physically inspect trenched areas to remove and relocate trapped DSL and provide escape ramps.
- Implement site-specific habitat assessments and presence/absence surveys for the DSL on Enrolled Property that would be mined.
- Implement mitigation or offsets for impacts on specific areas of potential DSL Habitat.
- Comply with applicable livestock stocking rates or equivalent grazing management system in High or Intermediate Suitability Areas of DSL Habitat.
- Avoid the establishment or introduction of exotic, invasive species; avoid sprayed applications of herbicides for weed control; and restrict the use of herbicides in specific DSL Habitat.

### *2.1.5 Anticipated Incidental Take*

The 2020 DSL CCAA estimates the maximum amount and extent of anticipated take of the DSL that could occur using the area of disturbance or loss of potential DSL Habitat from Covered Activities by both Participants and non-Participants as a proxy for incidental take of the Covered Species. Table 2 summarizes the estimated maximum amount of disturbance of potential DSL Habitat regardless of suitability classification under the Texas State University model, as a proxy for take, that may occur from Covered Activities in the Covered Area associated with each Enrollment Sector inclusive of Participants in the 2020 DSL CCAA and non-Participants engaging in similar activities in the Covered Area for the 23-year duration of the 2020 DSL CCAA. If maximum estimated take occurred, disturbance of DSL Habitat from all Covered Activities would account for approximately 12 percent (34,940 acres) of the potential DSL Habitat in the Covered Area (287,327 acres).

**Table 2. Maximum Anticipated Take Associated with Covered Activities for Each Enrolled Sector**

| Enrolled Sector | Acreage* | Percent of Covered Area |
|---|---|---|
| Oil and Gas Development | 15,424 | 5.4 |
| Sand Mining | 16,560 | 5.8 |
| Renewable Energy Operations | 767 | 0.3 |
| Linear Infrastructure Construction and Operation | 1,355 | 0.4 |
| Local Government, Agriculture and Ranching | 834 | 0.3 |
| Total | 34,940 | 12.1 |

*Estimated acreage is an estimated total potential future disturbance for Participants of the 2020 DSL CCAA and non-Participants conducting similar activities across the Covered Area over the 23-year duration of the 2020 DSL CCAA (see Chapter 18.2 and 18.3 of the 2020 DSL CCAA for more details).

Overall, the participation of entities engaged in Covered Activities, in particular sand mining, in voluntary conservation pursuant to the 2020 DSL CCAA is expected to substantially reduce disturbance of DSL Habitat relative to the activities that are legally allowed to occur. The current baseline, as reflected by the No Action Alternative, 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. 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, including those located in High and Intermediate Suitability Habitat as described under the Texas State University model, all reasonably foreseeable activities are taken into account and would be subject to conservation measures including: (1) charging fees to incentivize avoidance and reducing fragmentation of DSL Habitat; (2) funding DSL conservation

and scientific research; (2) offsetting impacts to habitat through conservation of DSL Habitat with conservation easements and other protections; (3) sector-specific suites of best management practices and other protective measures; and (4) an adaptive management process.

## 2.2 Alternative B – No Action

Under the No Action Alternative, the 2020 DSL CCAA would not be implemented, and the Service would not issue a section 10(a)(1)(A) Permit to the Applicant for activities covered in the 2020 DSL CCAA. Lawful activities resulting in the disturbance of DSL Habitat are ongoing, and would continue, on private property across the Covered Area without being subject to the Conservation Measures required under the 2020 DSL CCAA. This includes ongoing commercial, industrial and other lawful activities such as oil and gas development and sand mining in DSL habitat, which generally do not require approvals from the Service or other Federal agencies to be conducted on private property in West Texas. Because there is no "close causal relationship" between the proposed action and these activities, which do not require the Service's approval, impacts associated with the underlying effects of these activities are not direct or indirect effects of the proposed action or consequences of the proposed action. *See, e.g., Dep't of Transportation v. Public Citizen*, 541 US 752, 767 (2004).

The Covered Species is not federally listed and thus the regulatory protections under the ESA would not apply to current activities. The private property comprising virtually all of the Covered Area would also not be subject to management for conservation of the Covered Species as proposed under the CCAA. Under the No Action Alternative, private property owners could engage in conservation management activities aimed to benefit the Covered Species at their discretion individually, but any actions taken would not be provided regulatory assurances. As a result, there would be no incentives to encourage conservation activities, and the activities would not be part of an integrated conservation strategy for the benefit of the Covered Species.

Should the Covered Species become listed under the ESA, activities that result in take of the Covered Species could be in violation of ESA regulatory protections. To comply with the ESA, persons engaged in these activities could modify their activities to avoid take or seek authorization from the Service for take incidental to otherwise lawful activities. Such authorization could occur on a project-by-project basis or through a programmatic action. The project-by-project compliance approach could result in uncoordinated conservation measures that would not be as productive or beneficial for the Covered Species.

Under the No Action Alternative, the existing TCP (Service *et al.* 2011), which was transferred to the American Conservation Foundation in October 2020, would continue to operate, and potentially could be amended. The Covered Area of the 2020 DSL CCAA overlaps with the existing TCP and some of its covered activities associated with oil and gas and agriculture and ranching but does not establish specific conservation measures for sand mining and renewable energy operations. However, there has been some limited enrollment by sand mining and renewable energy operations in the TCP, and those participants have agreed to conservation measures that are consistent with the TCP.

## 2.3 Alternatives Eliminated from Further Analysis

NEPA regulations (40 CFR 1502.14(c)) require consideration of reasonable alternatives, which must be practical and technically and economically feasible. As a result, the Service considered three additional alternatives, as described below.

First, the Texas Comptroller of Public Accounts (CPA) developed a draft CCAA (hereafter referred to as the CPA CCAA) in consultation with the Service (CPA 2020a). The CPA's draft CCAA expanded

covered activities to a broader list of industries beyond those included in the TCP. The CPA's draft CCAA specifically would cover activities implemented by sand mining operations, renewable energy operations, and pipeline construction and operation. The Service's internal review and negotiations of that draft CCAA was not completed. For example, the calculations of take associated with oil and gas activities were overestimated due to miscalculation. Prior to the finalization of that draft CCAA, the CPA withdrew its application. This alternative is no longer a reasonable alternative to the Proposed Action as the CPA withdrew their application and was not carried forward for further analysis.

Second, the Service considered and took comment on a potentially shorter Permit term than the 23-year duration proposed by the Applicant. The Service has rejected a shorter Permit term as not meeting the purpose and need because the 23-year Permit term, as proposed by the Applicant, is necessary to (1) allow for consistency in monitoring and allocating take under the 2020 DSL CCAA and the transferred TCP subject to the overall maximum take allocation provided for under the 2020 DSL CCAA; (2) promote strategic, long-term conservation planning and implementation of conservation measures, including with respect to high priority areas of DSL habitat, and (3) incentivize enrollment and participation in the Plan, including the payment of enrollment, implementation, and conservation fees that support the Administrator's capability to implement all terms of the CCAA and the deployment of conservation resources for the benefit of the DSL.

Finally, the Service considered an amendment to the original TCP to incorporate the new science on the species and the new potential participants within the covered area. The permit holder for the TCP as transferred has not proposed such an amendment to the TCP. Moreover, such an alternative is not within the scope of analysis of the Proposed Action because it would require action by the Service vis-à-vis the TCP that is separate from the Proposed Action. Accordingly, this scenario is properly considered under the No Action Alternative.

# 3 AFFECTED ENVIRONMENT

## 3.1 Introduction

The affected environment describes the current environmental conditions for resources within the Covered Area. Detailed discussions of resources are restricted to those that would be affected by the Proposed Action, described in Section 2.1 above. Resources that were dismissed from detailed analysis are addressed in Section 3.1.2.

### *3.1.1 Resources Analyzed in this Environmental Assessment*

The Service reviewed all human environment[2] resources to determine which resources could be affected by the Proposed Action and should be carried forward in this EA for further detailed analysis. In accordance with CEQ NEPA guidance, this EA is "analytic rather than encyclopedic," discusses impacts proportionally to their significance, and only briefly discusses impacts that are not significant (40 CFR 1502.2(a)-(b)). The resources identified with the potential to have greater impacts from the Proposed Action, either adversely or beneficially, are described in greater detail later in this section and analyzed in detail in Section 4 below.

[2] The human environment is defined by CEQ as the natural and physical environment, and the relationship of people with that environment (40 CFR 1508.14).

### 3.1.2 Resources Not Considered for Detailed Analysis

Table 3 lists the resources that have not been carried forward for further analysis in this EA and includes a brief explanation why each resource listed has not been carried forward for further review. Because the Service has no regulatory authority over the activities covered by the 2020 DSL CCAA and because these activities can proceed in the Covered Area without a Permit, this analysis focuses only on the potential impacts that would occur relevant to (1) the Proposed Action (i.e., implementation of conservation measures for activities covered in the 2020 DSL CCAA and issuance of a Permit to the Applicant), and (2) the No Action Alternative (no Permit issued and no conservation measures implemented for activities covered in the 2020 DSL CCAA).

**Table 3. Resources Dismissed from Analysis**

| Resource | Rationale |
|---|---|
| Air Quality and Climate Change | Issuance of a Permit for activities covered in the 2020 DSL CCAA or implementation of conservation measures of the 2020 DSL CCAA would not alter ongoing or future air quality or climate change within the Covered Area. |
| Noise | Issuance of a Permit for activities covered in the 2020 DSL CCAA or implementation of conservation measures of the 2020 DSL CCAA would not result in changes to ambient noise conditions. |
| Aesthetics and Visual Resources | Issuance of a Permit for activities covered in the 2020 DSL CCAA or implementation of conservation measures of the 2020 DSL CCAA would not result in degradation of public views or scenery. |
| Recreation | Issuance of a Permit for activities covered in the 2020 DSL CCAA or implementation of conservation measures of the 2020 DSL CCAA would restrict access to or the use of recreation resources. |
| Transportation | Issuance of a Permit for activities covered in the 2020 DSL CCAA or implementation of conservation measures of the 2020 DSL CCAA would not result in changes to existing transportation resources or reduce the level of service of roadways or intersections. |
| Socioeconomics and Environmental Justice | Issuance of a Permit for activities covered in the 2020 DSL CCAA or implementation of conservation measures of the 2020 DSL CCAA would neither generate or adversely affect employment, income, or spending that would contribute to the local economy.<br><br>The decision to become a Participant in the 2020 DSL CCAA is at the discretion of the landowner, and the implementation of conservation measures in the 2020 DSL CCAA would be limited to Enrolled Property. As a result, changes to resources would generally be limited to the Enrolled Property. The Covered Area, and therefore Enrolled Property, is predominantly rural, with populations generally concentrated around towns. Covered Activities or associated impacts would generally not occur near population centers. In cases where changes to resources would occur to a widespread area (e.g., Covered Area, landscape unit, etc.), changes would not be disproportionately experienced by any one population. |

## 3.2 Covered Species

The Covered Species occurs in the Mescalero-Monahans Shinnery Dune System of New Mexico and Texas (Axtell 1988; Degenhardt and Jones 1972; Fitzgerald *et al.* 1997). The Covered Species' range is predominantly in New Mexico, where the extent of the Covered Species range is 1,447,137 acres, with an estimated 397,424 acres of modeled habitat (Johnson *et al.* 2016). In Texas, the extent of the Covered Species' range is 459,102 acres (Ryberg *et al*. 2016), with an estimated 287,327 acres of modeled habitat based on the Texas State University model (Hardy *et al.* 2018), which represents the Covered Area.

The Covered Area consists of shinnery oak sand dunes, shinnery oak shrublands, and shinnery oak hummocks that may be interspersed with honey mesquite hummocks (Degenhardt and Jones 1972; Fitzgerald *et al.* 1997; Fitzgerald *et al.* 2005; Fitzgerald *et al.* 2011; Johnson *et al.* 2016; Sena 1985; Walkup *et al.* 2018). The Covered Species nests, forages, and shelters in shinnery oak sand dunes and shinnery oak hummocks and may use shinnery oak shrublands for dispersing (Degenhardt and Jones 1972; Fitzgerald *et al.* 2005; Hill and Fitzgerald 2007; Ryberg and Fitzgerald 2015; Sena 1985; Walkup *et al.* 2018). These cover types are characteristic of semi-arid conditions in the Covered Area and are further

described in Section 3.4, Vegetation, below. The Covered Area has been mapped and categorized into classes of habitat suitability for the Covered Species as defined in Hardy *et al.* (2018) that serve as general approximations of areas that may be used by the Covered Species for breeding, feeding, sheltering, or dispersing.

The Covered Species is difficult to detect and patchily distributed within suitable habitat across its range (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). Estimates of population size and trends are lacking for most of the Covered Species' range. In Texas, it is estimated that 99 percent of the Covered Species' range is on private land with access restrictions to conduct population surveys, compared to New Mexico, where it is estimated that 76 percent of the Covered Species' range is on Federal or State owned or leased lands (Fitzgerald *et al.* 2011; Hardy *et al.* 2018; Johnson *et al.* 2016). Based on the current available scientific and commercial information on the correlation between the Covered Species' occupancy, population parameters, and suitable habitat (Ryberg *et al.* 2013, 2015; Snell *et al.* 1997; Walkup *et al.* 2017; Walkup *et al.* 2018; Walkup *et al.* 2019), the status of the Covered Species has largely been inferred from the status of potentially suitable habitat (Center for Biological Diversity and Defenders of Wildlife 2018; Forstner *et al.* 2018; New Mexico Department of Game and Fish 2018; 77 FR 36872).

Primary threats to the Covered Species have included habitat loss, modification, degradation, and fragmentation (New Mexico Department of Game and Fish 2018; 77 FR 36872) from energy development activities and agricultural and ranching activities. Secondary threats include predation, exposure to pollutants from oil and gas activities, and climate change (77 FR 36872). Energy development activities physically remove shinnery oak and sand dunes or degrade habitat. Removal of shinnery oak whether by mechanical or chemical measures may alter the shinnery oak vegetation community and geomorphology of the sand dunes that in turn affects local abundances of the Covered Species (Davis 2013; Peterson and Boyd 1998; Ryberg *et al.* 2015; Snell *et al.* 1997), it is anticipated that the impacts of sand mining further impact the geomorphology of the sand dunes and vegetative structure that stabilize dunes through the removal of substrate and creation of pits that will accumulate and disrupt the geomorphology of dune formation. Some studies indicate that relative abundance and relative occurrence of the Covered Species are lower in proximity to high densities (i.e., > 13 oil well pads/mi$^2$) of development (Johnson *et al.* 2016; Sias and Snell 1998). However, we note that since the publication of studies such as Sias and Snell (1998), which analyzed development associated with vertical wells, the oil and gas industry has made significant advances in technologies such as horizontal and directional drilling that allow for the drilling of multiple wells from a single pad and therefore has reduced the overall footprint of oil and gas developments for equivalent numbers of wells. Development of infrastructure, ancillary facilities, and access roads may fragment habitat based on studies indicating that roads may act as semi- permeable barriers to movement of the Covered Species (Hibbitts *et al.* 2013; Young *et al.* 2018). Heavy machinery associated with various development activities for seismic exploration, excavation, trenching, or construction, and off-highway vehicles (OHV) may kill the Covered Species if used in habitat where individuals or nests are present. Concerns of indirect threats to habitat from groundwater use by sand mining facilities were raised in a 2018 petition to list the Covered Species under the ESA (Center for Biological Diversity and Defenders of Wildlife 2018). Additional details on threats of the Covered Species may be found in the Service's withdrawal of the proposed rule to list the Covered Species (77 FR 36872) and the 2020 DSL CCAA.

Recent studies have delineated patterns of genetic differentiation of the DSL across its range (Chan *et al.* 2009; Chan *et al*. 2014, Chan *et al.* 2020). The summary of these studies, based on mitochondrial DNA, present a geographic distribution of 10 different phylogroups suggesting limited migration (Chan *et al*. 2020). These groups are composed of 7 Mescalaro Sands units, including Gaines County and northern

Andrews County in Texas, and 3 Monahans Sandhills groups[3]. These phylogroups reflect historical population differentiation based on reduced connectivity that first occurred thousands of years ago and are early divergences that have persisted to present day (Chan *et al*. 2020). This study also found that DSL colonized the northern Mescalero Sands over 34,000 years ago and then divergence between the Mescalero Sands and the Monahans Sandhills phylogroups occurred at least 16,000 years ago. As such, the authors note that the genetic data presented reflect historical, not contemporary, processes and patterns of genetic connectivity.
In Texas, Chan *et al*. (2020) found four phylogeographic groups: 1) Gaines County and northern Andrews County, which are part of the southern Mescalero Sands group; 2) southern Andrews County; 3) the northern two-thirds of Winkler County; and 4) southern Winkler and northern Ward counties. Because of the lack of DSL specimens, habitat in southern Ward County and all of Crane County did not get assigned to a group (see Figure 1 in Chan *et al.* 2020). Divergences detected amongst phylogroups indicate that extensive habitat may be necessary to support gene flow among and between the phylogroups, including dispersal corridors (Chan *et al*. 2020). Additionally, continued fragmentation increases the likelihood diversity within populations will decrease and evolutionary lineages may be lost (Chan *et al*. 2020).

## 3.3 Hydrology and Water Resources

Surface water is limited within the Covered Area, with lands containing very low drainage density and no named perennial creeks (Griffith *et al.* 2007). Precipitation is highly variable annually and the region is susceptible and adapted to drought conditions (Machenberg 1984; Muhs and Holliday 1995; Peterson and Boyd 1998). Precipitation is captured in seasonal intermittent pools and playas that provide water for wildlife and vegetation (Machenberg 1984; Peterson and Boyd 1998). Precipitation also recharges near-surface groundwater, which may act as a stabilizer of sand dunes directly or indirectly through growth of stabilizing vegetation (Machenberg 1984; Muhs and Holliday 1995). The semiarid climate of this region contributes to groundwater fluctuations, which result in rapid shifts in the natural landscape (Muhs and Holliday 1995).

Given the limited surface water available, groundwater from aquifers is the primary water source for all activities in the Covered Area. Three major and four minor aquifer systems underlie the Covered Area, consisting of the Edwards-Trinity (Plateau), Ogallala, and Pecos Valley major aquifers and the Capitan Reef Complex, Dockum, Edwards-Trinity (High Plains), and Rustler minor aquifers (Griffith *et al.* 2007). The Pecos Valley and Dockum Aquifers underlie most of the Covered Area and the Ogallala Aquifer underlies a minor northern portion of the Covered Area in Andrews and Gaines Counties (Figure 3.1 in Mace 2019); these three aquifers are, therefore, the focus of this analysis of hydrology and water resources. The Covered Area also contains perched aquifers described as localized areas where precipitation infiltrates through the sand dunes and sand sheets and collects in large volumes near the surface, above less permeable soil layers (Machenberg 1984). Rainwater (2020) calls into question the presence of perched aquifers based on core samples taken at several sand mine facilities and an inability by Mace (2019) to rediscover the areas of perched aquifers described by Machenberg (1984). Additionally, the depth and volume of the perched aquifer is determined by the shape and size of the semi-impermeable layer, and climate conditions which are highly variable in this region and thus provide a limited and unpredictable supply of water (Arthur *et al.* 2020). Ponded water from these perched aquifers may be ephemeral, evaporating with cessation of precipitation, and become enveloped by shifting sand dunes (Machenberg 1984). Because of the separation of groundwater between a perched

[3] The southern portion of mapped DSL habitat (southern Ward County and Crane County) is not assigned to a group because there is no genetic material.

aquifer and the underlying aquifer by the semi- impermeable layer, groundwater uses of the underlying aquifer will not affect groundwater in the perched aquifer (Mace 2019).

The Ogallala Aquifer underlies all of Gaines County, and portions of Andrews, Ector and Winkler counties. Most of the groundwater use in Gaines County is for irrigation. Groundwater from the Ogallala Aquifer is used to lesser extent in Andrews and Ector counties.

The Pecos Valley Aquifer is an unconfined aquifer (i.e., not confined by an overlying impermeable stratum but is in direct contact and subject to fluctuation of the water table), which underlies all of Ward County, and portions of Crane, Winkler, Andrews and Ector counties. Recharge of the aquifer is primarily through precipitation and irrigation return flow (Ashworth 1990). Most of the groundwater used in Crane and Ward counties is supplied by the Pecos Valley Aquifer and is primarily used for municipal purposes and for irrigation. In Ward County, declines in water levels in the Pecos Valley Aquifer have been attributed to increased use by municipal and industrial pumping whereas increases in water levels have been attributed to declines in irrigation. Water quality ranges from fresh to slightly saline and may be affected by runoff from surface waters, agricultural, oil field brines, and cross-formational flow from underlying saline aquifers induced by pumping.

The Dockum Aquifer is a minor aquifer underlying almost all of Andrews, Ector, and Winkler counties and portions of Crane, Gaines, and Ward counties. The Dockum Aquifer is a confined aquifer (i.e., contains impermeable strata above and below and recharge occurs wherever there is a connection to an unconfined aquifer or where permeability of the overlying stratum increases to allow water flow) that sits below the Pecos Valley Aquifer. The Dockum Aquifer is primarily recharged via precipitation where there is direct connection to the land surface or indirectly from precipitation through the infiltration into the soil (Bradley and Kalaswad 2003). Available groundwater data indicate the primary use of the aquifer is for municipal purposes in Winkler County. Water quality ranges from fresh to brine. In the Dockum Aquifer, total dissolved solids (TDS) concentrations increase with depth, indicating degraded waters in the deeper parts of the aquifer (Bradley and Kalaswad 2003). Naturally occurring minerals and other constituents, including radon, uranium, chloride, and fluoride, exceed acceptable drinking water standards throughout portions of the aquifer (Texas Water Development Board [TWDB] 2020a).

Perched aquifers may occur above the Ogallala, Pecos, and Dockum aquifers wherever there is a caliche layer that inhibits the percolation of groundwater into the deeper sediments. These shallow aquifers may provide a source of water for construction activities but activities involving groundwater pumping from wells would draw from deeper underlying aquifers. Groundwater in the Covered Area is also used by the energy development sectors including the oil and gas, sand mining, renewable energy and linear infrastructure construction and operation. Groundwater use data for the Pecos Valley Aquifer and Dockum Aquifer predate development of the sand mining industry and renewable energy sectors. Total water use in the Permian Basin ranges from 1,400 to 5,500 af/y for conventional oil and gas drilling practices and 8,000 af/y for unconventional drilling practices (e.g., fracking) (Mace 2019).

Oil and gas operators utilize regional groundwater from the Pecos Valley and Dockum Aquifers for conventional drilling and unconventional hydraulic fracturing of wells. Oil and gas development activities accounted for an estimated 3 percent of the total water use in the Permian Basin in 2014, which was estimated to increase regionally since then (Mace 2019). The range of estimated water use by oil and gas operations and the sand mining sectors fall within the reported water use by municipalities and for irrigation across the counties of the Covered Area (Mace 2019).

Sand mining facilities use water for mining, transport, sand processing, dust control, and on-site potable needs. Recycling is commonly practiced with water used to wash mined sand, resulting in a generally high efficiency process (Mace 2019, Rainwater 2020). One review of two sand mining operations used

empirical data of water consumption associated with sand mine operations and found that sand mining companies have water consumption rates ranging from 10.8 to 24.5 gallons per ton of sand, which is substantially less than the 60 to 250 gallons hypothesized by Mace (2019). Rainwater (2020) also found that sand mining companies recycle water used to process sand or otherwise return it to open puts for infiltration into the water table, practices which further limit consumptive use below the levels extrapolated by Mace (2019).

Mace (2019) estimated that sand mine extractions average 3.6 million tons of sand per year per mine. Using the range of water consumption rates from Rainwater (2020), the Service estimates sand mining operations could consume 43.9 to 88.2 million gallons of water per year per mine, which multiplied by 17 mines is 746 million to 1.5 billion gallons of water per year. Rainwater (2020) found that because rain percolates readily through sand dunes into the Pecos Valley Aquifer, annual recharge rates to the Pecos Valley aquifer exceed groundwater consumption rates from the aquifer at each of the sand mining sites reviewed. The number of wells at individual facilities ranges from 4 to 30, suggesting the aquifers in this area are not highly productive, which is supported by the thin saturated thickness of the Pecos Valley Aquifer and the low hydraulic conductivity of the Dockum Aquifer (Mace 2019).

As stated above, there are very few surface waters in the Covered Area, thus the hydrology of the ecosystem within the Covered Area is subject to highly variable annual precipitation and concomitant fluctuations groundwater (Machenberg 1984; Muhs and Holliday 1995; Peterson and Boyd 1998). The soils, landforms, and vegetation of the Covered Area are adapted to groundwater fluctuations (Machenberg 1984; Muhs and Holliday 1995; Peterson and Boyd 1998).

Fluctuations in groundwater levels are caused by a combination of climate, recharge and pumping for water supply, and other factors. Use of groundwater from multiple aquifers (e.g., perched aquifers, the confined Dockum Aquifer, and the unconfined Pecos Aquifer) would involve groundwater from perched and regional aquifers each subject to specific water-level fluctuations. Of the available long-term water well data of the Pecos Valley Aquifer in the Covered Area, Mace (2019) found slight declines to rises in water levels over the last 70 years. In other parts of the Pecos Valley Aquifer outside of the Covered Area there are regional increases and decreases (TWDB 2020b). Projected water-level trends from groundwater modeling are difficult to predict due to natural dynamics of the aquifers, aberrant dynamics associated with climate change, and various uses of groundwater. Consequently, water-levels of these aquifers are anticipated to fluctuate over the long-term with changes in the patterns of pumping, discharge and recharge (Anaya *et al.* 2016).

Water rights are held by the landowners and are regulated under the Texas Water Code. The Llano Estacado Underground Water Conservation District manages the use of the Ogallala Aquifer in Gaines County. There are no groundwater conservation districts that mange groundwater in the Pecos Valley or Dockum Aquifer within the Covered Area. Groundwater use in areas not managed by a conservation district are subject to the Rule of Capture, which allows land surface owners to pump the water beneath their property and from beneath other properties as long as there is no waste or the water is not withdrawn for malicious purposes (Houston & Texas Central Railway Co. 1904).

## 3.4 Soils

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). In the Covered Area, there are 40 unique soil map units, but the dominant soils in the Covered Area are sandy undulating or hummocky upland soils with deep to very deep sand layers and clay or loamy subsoils (Natural Resources Conservation Service [NRCS] 2020a). Key soil properties for the dominant soils in

the system include moderate to high permeability, well drained to excessively drained, negligible surface runoff and water erosion, and moderate to severe wind erosion hazard. Vegetation reduces the wind erosion hazard. Duneland areas contain active sand dunes and sand sheets are dynamic, constantly shifting in direction with the prevailing winds, and are easily eroded and reformed due to sand moved and trapped by wind and vegetation (Muhs and Holliday 1995, 2001; NRCS 2020a). Active sand dunes are generally devoid of vegetation and when present are located on the outer edges or low areas that may temporarily be ponded (NRCS 2020a). Changes in vegetation in dunelands due to drought, fire, precipitation or removal may result in increases or decreases in acreage of dunes, or these dunes may shift in location across the landscape over time (Muhs and Holliday 1995, 2001; Dzialak *et al.* 2013). Areas with dense vegetation have more gradual gently rolling landforms and are more stable (Muhs and Holliday 1995, 2001).

In general, soils within the Covered Area demonstrate very moderate to high wind erosion potential due to sand particle size, absence of vegetation, low organic matter content, and high calcium carbonate content. Conversely, water erosion potential is very low due to the low relief landscape, high water table, and well to excessively drained soils. The dominant soils in the Covered Area that permit growth of vegetation have historically supported rangeland activities and secondarily irrigated agriculture. Dunelands dominated by active sand dunes and sand sheets are not suitable for cultivation, and though they may be used as rangeland, these soils support limited growth of forage for livestock (NRCS 1999, 2020a). These soils are used for recreation and energy development activities (NRCS 1999, 2020a).

The literature on the dune geomorphology and dynamics of the Monahans Sandhills is largely focused on the formation and dynamics of the dune with respect to geologic time and has very little discussion of the contemporary dynamics relative to anthropogenic disturbance (Hall and Goble 2006; Muhs and Holliday 1995, 2001); but see Machenberg (1984). Thus the spatio-temporal extent of effects of anthropogenic disturbance and disruption of dune dynamics in active dunes and adjacent semi-stabilized shinnery oak dunes currently is not fully understood.

## 3.5 Vegetation

The Covered Area occurs in the High Plains and Trans-Pecos ecoregions (Texas Parks and Wildlife Department [TPWD] 2020b). According to TPWD's ecological land classification, the Covered Area contains as many as 16 different vegetation communities but 99.6 percent of the Covered Area consists of Sand Prairie, Sandhill Shinnery Duneland, Sandy Shinnery Shrubland, and Active Sand Dunes associated with the High Plains ecoregions (TPWD 2020a). The remaining portions of the Covered Area include various types of barrens, shrublands, grasslands/prairie, vegetated dunelands, depressional/riparian wetlands, row crops; and low and high intensity urban development (TPWD 2020c). Descriptions of the four dominant vegetation communities are provided below in Table 4.

**Table 4. TPWD Vegetation Communities in the Covered Area**

| Vegetation Community | Description | Vegetation Species Commonly Present |
|---|---|---|
| Sand Prairie | Grasslands that occupy deep sands to shallower sandy loam, and sandhills | Giant dropseed (*Sporobolus giganteus*), sand dropseed (*S. cryptandrus*), sand bluestem (*Andropogon hallii*), big bluestem (*A. gerardii*), little bluestem (*Schizachyrium scoparium*), thin paspalum (*Paspalum setaceum*), big sandreed (*Calamovilfa gigantea*), and common sandbur (*Cenchrus spinifex*); woody species including sand sage (*Artemisia filifolia*) and shinnery oak may be present |
| Sandhill Shinnery Duneland | Shrubland on deep sand or sandhill sites | Shinnery oak; other shrub species commonly encountered including sand sage and honey mesquite; plains yucca (*Yucca glauca*) is a common succulent; giant dropseed, sand dropseed, and Mediterranean lovegrass (*Eragrostis barrelieri*) are common grasses |
| Sandy Shinnery Shrubland | Areas with sandy soils close to deep sands | Shinnery oak, sand sage and honey mesquite; sand dropseed, little bluestem, annual buckwheat (*Eriogonum annuum*), fringed signalgrass (*Urochloa ciliatissima*), and Mediterranean lovegrass are common grasses |

| | | |
|---|---|---|
| Active Sand Dunes | Areas on deep sand and sandhills lacking significant vegetative cover | Scattered honey mesquite, sand sage, shinnery oak, sand dropseed, sand bluestem, Havard panicum (*Panicum havardii*), Mediterranean lovegrass, and other grasses |

Source: Elliott 2014

The Covered Area is heterogeneous and land cover classifications for broad areas depict the dominant land cover for an area and may inadvertently include other land covers that are less dominant. The ecological classification by TPWD maps the Covered Area according to land cover and abiotic features that may or may not be ecologically relevant or at a spatial scale relevant to individuals of the Covered Species. The Covered Species is a territorial habitat specialist of shinnery oak sand dunes with blowouts, or shinnery oak hummocks occasionally interspersed with honey mesquite, and makes localized movements between 65 to 100 feet within home ranges averaging 0.15 acres to 0.25 acres (Hill and Fitzgerald 2007; Ryberg *et al.* 2013; TAMU 2016; Young *et al.* 2018). Thus the Covered Species habitat may be further refined into ecologically relevant categories of land cover for the Covered Species based on the scientific literature and site-specific habitat assessments (Degenhardt and Jones 1972; Fitzgerald *et al.* 1997; Fitzgerald *et al.* 2011; Johnson *et al.* 2016; Sena 1985; Walkup *et al.* 2018). The Texas State University model (Hardy *et al.* 2018) provides the potential geographic range of what constitutes potential DSL Habitat for purposes of the 2020 DSL CCAA. The model contains four ranked categories of habitat suitability: Shinnery Oak Duneland (High Suitability), Shinnery Oak Honey Mesquite Duneland (Intermediate I Suitability), Shinnery Oak Shrubland (flats) (Intermediate II Suitability), and Shinnery Oak-Honey Mesquite Shrubland (Low Suitability). Figure 1 of the Covered Area shows the locations and spatial extents of each of these categories. Because the model approximates DSL Habitat over a large scale, multiple land cover types at finer local scales may be grouped together under one category.
This arid system is a drought adapted system and vegetation derives moisture from both precipitation and groundwater (Machenberg 1984; Peterson and Boyd 1998). Major historic threats to this system include overgrazing (Peterson and Boyd 1998) and water supply for ranching and agriculture (NRCS 1999), which may reduce vegetative cover and lead to an increase in wind erosion. ).

Though Mace (2019) suggests that recent industrial use of groundwater will lead to groundwater depletion over time that may affect vegetation, Rainwater (2020) indicates that groundwater use by the two sand mining operations visited and evaluated in that study has no permanent effect on the water table, including due to recycling and re-use of groundwater by sand mining operations, and natural recharge of the water table. Accordingly, Rainwater (2020) found that those two sand mining operations are not likely to have long term or permanent effects on surface vegetation due to water use or consumption. Rainwater (2020) also found that because rain percolates readily through sand dunes into the Pecos Valley Aquifer, annual recharge rates to the Pecos Valley aquifer exceed groundwater consumption rates from the aquifer at each of the additional sand mining sites reviewed.

## 3.6 Wildlife

The flat to rolling sandy uplands, dunes and desert grassland support a variety of wildlife adapted to arid ecoregions. Due to the lack of perennial and intermittent natural surface waters, the discussion below is limited to terrestrial fauna. The sand shinnery prairies, dunelands, and shrublands historically supported bison (Bison bison), pronghorn (*Antilocapra americana*), black-tailed prairie dogs (*Cynomys ludovicianus*), black-footed ferrets (*Mustela nigripes*), gray wolf (*Canis lupus*), and mountain lion (*Puma concolor*), but currently support mammals with broad ranges and distributions including bobcats (*Lynx rufus*), mule deer (*Odocoileus hemionus*), white-tailed deer (*O. virginianus*), coyote (*Canis latrans*), swift fox (*Vulpes velox*), collared peccary (*Pecari tajacu*), black-tailed jackrabbit (*Lepus californicus*), desert cottontail rabbit (*Sylvilagus audubonii*), porcupine (*Erethizon dorsatum*), badger (*Taxidea taxus*), striped skunk (*Mephitis mephitis*), ground squirrel (*Spermophilus spp.*), and other smaller rodent species (Griffiths *et al.* 2007; Peterson and Boyd 1998; Wiken *et al.* 2011).

The shinnery shrublands, and mid- and shortgrass prairie support a variety of game birds including scaled quail (*Callipepla squamata*), bobwhite quail (*Colinus virginianus*), mourning doves (*Zenaida macroura*), and lesser prairie-chickens (*Tympanuchus pallidicinctus*), though current known distribution of the lesser prairie-chicken is out of and north of the Covered Area (eBird 2020; Peterson and Boyd 1998). Commonly encountered migratory and resident songbirds, perching birds, and predatory birds include pyrrhuloxia (*Cardinalis sinuatus*), northern mockingbirds (*Mimus polyglottos*), oriole species (*Icterus spp.*), sparrows, western kingbirds (*Tyrannus verticalis*), scissor-tailed flycatcher (*Tyrannus forficatus*), greater roadrunners (*Geococcyx californianus*), ravens (*Corvus corax*), and lesser nighthawks (*Chordeiles acutipennis*). Common predatory birds include loggerhead shrike (*Lanius ludovicianus*), curve-billed thrasher (*Toxostoma curvirostre*), the American kestrel (*Falco sparverius*), ferruginous hawk (*Buteo regalis*), Swainsons hawk (*B. swainsoni*), red-tailed hawk (*B. jamaicensis*), northern harrier (*Circus hudsonius*), Harris's hawk (*Parabuteo unicinctus*), borrowing owl (*Athene cunicularia*), great horned owl (*Bubo virginianus*), barn owl (*Tyto alba*), turkey vulture (*Cathartes aura*), and black vulture (*Coragyps atratus*).

Several reptile and amphibian species may be found in the High Plains ecoregion but the Covered Species is part of an assemblage of the following most commonly encountered lizards: marbled whiptail (*Aspidoscelis marmorata*), common spotted whiptail (*A. gularis*), six-lined racerunner (*A. sexlineata*), side-blotched lizard (*Uta stansburiana*), prairie lizard (*Sceloporus consobrinus*), leopard lizard (*Gambelia wislizenii*), common lesser earless lizard (*Holbrookia maculata*), Texas horned lizard (*Phrynosoma cornutum*), roundtail horned lizard (*P. modestum*), and Great Plains skink (*Plestiodon obsoletus*) (Fitzgerald *et al.* 2011). There may be as many as 25 species of snakes in the High Plains sand shinnery vegetation communities, but commonly encountered species include the coachwhip (*Coluber flagellum*), bullsnake (*Pituophis catenifer*) , plains hog-nosed snake (*Heterodon nasicus*), gophersnake (*Pituophis catenifer*), western massasauga (*Sistrurus tergeminus*), prairie rattlesnake (*Crotalus viridis*), and night snake (*Hypsiglena torquata*) (Fitzgerald *et al.* 2011; Peterson and Boyd 1998). Ornate box turtles are also common (*Terrapene ornata*) and arid adapted amphibians including the red-spotted toad (*Anaxyrus punctatus*), Texas toad (*A. speciosus*), spadefoot toads (*Spea spp.*), and tiger salamanders (*Ambystoma tigrinum*) may be seen during precipitation events or near perennial water sources such as stock ponds and cattle tanks (Fitzgerald *et al.* 2011; Peterson and Boyd 1998; [SWCA N. Smolensky pers. obs.])

## 3.7 Listed, Proposed, and Candidate Species

A search on the Service's Information for Planning and Consultation online database (https://ecos.fws.gov/ipac/) and the TPWD Rare, Threatened, and Endangered Species of Texas online tool (https://tpwd.texas.gov/gis/rtest/) identified four federally listed species, one species identified as a candidate for Federal listing, and eight State-listed species within the Covered Area. These species and their current listing status, habitat, and occurrence within the Covered Area are provided in Table 5. The Service has determined that two of these species of fish and wildlife listed under the ESA may occur in the action area. Those species are the endangered northern Aplomado falcon (*Falco femoralis septentrionalis*) and threatened red knot (*Calidris canutus rufa*). These species will not be affected by implementing the CCAA and proposed permit because they are locally extirpated, do not share suitable habitat with DSL, or differ in habitat preferences with the DSL within the Permit Area. Therefore, no effects are expected.

State-listed species that are known or are likely to occur within the Covered Area include the Dune Umbrella-Sedge (*Cyperus onerosus*) and the Texas Horned Lizard (*Phrynosoma cornutum*) (Table 5). No federally listed species occur within the Covered Area. The habitats for the remaining species described in Table 5 are not present in the Covered Area, and therefore, these species are not likely to occur within the Covered Area.

## Table 5. Federal and State Threatened and Endangered Species

| Common Name *(Scientific Name)* | Federal Listing Status | State Listing Status | Description of Species Habitat | Occurrence within the Covered Area |
|---|---|---|---|---|
| **BIRDS** | | | | |
| American Peregrine Falcon *(Falco peregrinus anatum)* | Not listed | Threatened | Present year-round and breeds in west Texas on very tall cliffs in large nests (TPWD 2020d). | No occurrence within the Covered Area |
| Least Tern *(Sterna antillarum)* | Listed Endangered | - | Nests on sandbars, islands, salt flats, and bare or sparsely vegetated sand, shell, and gravel beaches associated with braided streams, rivers, and reservoirs (Campbell 2003; USFWS 2020). | No occurrence within the Covered Area |
| Northern Aplomado Falcon *(Falco femoralis septentrionalis)* | Listed Endangered | - | Only two known south Texas populations; permanent residents of South Texas and may be found nesting and foraging in coastal savannahs, coastal prairies, marshes, tidal flats, grassy plains, open woodlands, and desert grasslands (Brown *et al.* 2006). | No occurrence within the Covered Area |
| Piping Plover *(Charadrius melodus)* | Listed Threatened | - | Non-breeding resident; prefers bare or sparsely vegetated tidal areas periodically covered with water with limited human disturbance; may include algal flats, beaches, sand flats, and spoil islands (Service 2020). | No occurrence within the Covered Area |
| Red Knot *(Calidris canutus rufa)* | Listed Threatened | - | Coastal migrant; habitat includes large areas of exposed intertidal sediments (e.g., mudflats) associated with marine and estuarine areas on the shoreline of coasts and bays. | No occurrence within the Covered Area |
| White-faced Ibis *(Plegadis chihi)* | Not listed | Threatened | Large wading bird; occurs in well-drained freshwater marshes or irrigated crop fields. May also occur in brackish waters or saltwater; "currently confined to" in or near coastal areas (TPWD 2020d). | No occurrence within the Covered Area |
| **FISH** | | | | |
| Speckled Chub *(Macrhybopsis aestivalis)* | Not listed | Threatened | Known presence within the Rio Grande and Pecos Rivers. Requires flowing water over coarse sand or gravel substrates (TPWD 2020d). | No occurrence within the Covered Area |
| Pecos Pupfish *(Cyprinodon pecosensis)* | Not listed | Threatened | Occurs only within the upper basin of the Pecos River. Requires clear, vegetated spring waters (TPWD 2020d). | No occurrence within the Covered Area |
| **MAMMALS** | | | | |
| Black Bear *(Ursus americanus)* | Not listed | Threatened | May occur throughout Texas; requires large tracts of undisturbed forested areas. | No occurrence within the Covered Area |
| **MOLLUSKS** | | | | |
| Texas Hornshell *(Popenaias popeii)* | Endangered | Threatened | Found in freshwater streams and rivers with slow to moderate flow; usually stationary, it resides in rock crevices or shelves, however, many be swept up in riffles (TPWD 2020d; Randklev *et al.* 2017). | No occurrence within the Covered Area |
| **PLANTS** | | | | |
| Dune Umbrella-Sedge *(Cyperus onerosus)* | Not listed | Threatened | Gramanoid that occurs in wet and moist soils in swales and other depressions within stable sand dunes (TPWD 2020d). | May occur within the swales and depressions of sand dunes within the Covered Area |
| **REPTILES** | | | | |

| Common Name *(Scientific Name)* | Federal Listing Status | State Listing Status | Description of Species Habitat | Occurrence within the Covered Area |
|---|---|---|---|---|
| Texas Horned Lizard *(Phrynosoma cornutum)* | Not listed | Threatened | Occurs in prairie habitats with sparse vegetation such as grasses, cacti, and scattered scrub; and friable soils in which it can burrow when inactive (TPWD 2020d). | May occur within the Covered Area due to potential suitable friable soils and sparse vegetation structure |

## 3.8 Land Use and Ownership

The Covered Area, which encompasses approximately 287,327 acres of modeled potential DSL Habitat, includes portions of Andrews, Crane, Ector, Gaines, Ward, and Winkler counties (Figure 1). Lands within the Covered Area include approximately 102,610 acres of Permanent University Fund (PUF) Lands and 21,365 acres of State lands, with the remaining areas (approximately 163,352 acres) being privately owned. There is no Federal regulatory authority to implement a comprehensive land management program for the conservation benefit of the Covered Species on private property in West Texas.

Permanent University Fund lands within the Covered Area are university endowments established to support educational and health institutions across the University of Texas System and Texas A&M University System (University Lands 2020). Surface use agreements are administered by University Lands for a variety of activities including grazing, hunting, and recreational leases; pipeline, power line, and utility easements; business and commercial site leases; churches, schools, and municipal sites; roads, highways, and highway rest stops; groundwater sales and management; wind farms; and vineyards and wineries (University Lands 2020).

State managed lands within the Covered Area include approximately 17,567 acres of State Trust Lands managed by the Texas General Land Office and approximately 3,798 acres of State park lands managed by the TPWD. All of the State park lands within the Covered Area are associated with the Monahans Sandhills State Park, which is located in the Llano Estacado, also known as the "Staked Plains," region of West Texas in Ward and Winkler Counties. The park offers outdoor recreational activities, including hiking of the park's sand dunes, camping, and picnicking (TPWD 2020b).

Mineral estates are present in the Covered Area. In some cases, the ownership of the surface estate and mineral estate are severed (i.e., the surface owner has no rights to the underlying mineral estate that is owned by a different individual); these cases are referred to as "split estates." In Texas, owners or lessees of the mineral portion of a split estate have the right to access and use the amount of surface that is reasonably necessary to produce and remove minerals. As described in the 2020 DSL CCAA, there was a total of 291 wells on TCP-enrolled properties in the TCP permit area, which is the same as the Covered Area in the 2020 DSL CCAA, during the 2012 to 2017 period; 55 of these wells (or approximately 19 percent) were stratified.

In 2017, industrial sand mining operations began within the Covered Area. Companies buy or lease large sections of contiguous acreage for excavation and processing. Certain individual mining companies hold over 30,000 acres within the Covered Area, although the majority of mines are on parcels encompassing 2,000 to 15,000 acres.

Land uses within the Covered Area include energy development activities, such as wind and solar energy production sites, drilling of oil and gas wells, and development of associated infrastructure such as roads and power lines; recreation such as hunting, wildlife viewing, camping, and other recreational opportunities offered at the Monahans Sandhills State Park; livestock grazing; local government (road maintenance, etc.) and agricultural activities (mostly limited to Gaines County). The Covered Area is dominated by non-irrigated land that supports primarily livestock, including ranching, and poultry farms (National Agricultural Statistics Service 2017). Croplands are used for wheat in Andrews and Gaines

Counties and corn and sorghum in Gaines County. There are no or negligible harvested crops in other counties in the Covered Area.

There are no Federal lands, state wildlife management areas or other state conservation lands, agricultural land easements, Prime Farmland, or Unique Farmland within the Covered Area. As a result, these resources are not further discussed.

## 3.9 Cultural Resources

NEPA recognizes that a unique character of an environment includes its relation to "historic or cultural resources" and requires agency officials to consider the degree that an action might "adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the NRHP" (40 CFR 1508.27 (b)(3) and 40 CFR 1508.27 (b)(8)). However, under NEPA, no definition is provided for "cultural resources."

The National Register of Historic Places (NRHP), which was established under the NHPA (54 USC § 300101, *et seq.*), identifies historic properties (i.e., locations eligible for listing or listed on the NRHP) based on their relationship to significant historic events or individuals, important stylistic or engineering trends, or in their potential to provide information about the local, regional, or national past (36 CFR 60[a-d]). Historic properties are sites, buildings, objects, and structures and may include archaeological sites, historic structures, historic districts, landscapes, battlefields, or shipwrecks. Also included are Traditional Cultural Properties, which may be defined as locations which are eligible for inclusion in the NRHP due to their association with practices or beliefs of a modern community that are tied to a community's sense of history, place, or identity (Parker and King 1998). In addition to being significant in American history, architecture, archaeology, engineering, and culture, properties must maintain sufficient integrity to convey their significance; the National Park Service (NPS) has defined seven aspects of integrity, all or most of which must be present to convey the significance of the historic property (NPS 1997). These aspects include integrity of location, design, setting, materials, workmanship, feeling, and association. Different properties may display these aspects in unique ways.

Humans have occupied portions of West Texas, including the Covered Area, for at least 12,000 years leaving their mark on the landscape. Climatic conditions have varied widely during that period, such that areas that currently appear nearly uninhabitable may have been much more verdant in the past. The variation in climatic conditions have resulted in varying human adaptations to the environment, a pattern that is reflected in the physical record of human habitation of the region. Archaeological sites may include rock shelters, scatters of lithic materials, rock art sites, and the remains of massive earth and rock ovens. When the Spanish sporadically began to make contact with and influence Native American tribes in the region 450 years ago, the Covered Area was inhabited by a poorly documented group identified as the Jumanos. By the late 1700s, European encroachments in east and south Texas resulted in the displacement of other Native groups. Groups documented later in the region include the Lipan Apache and Comanche. Intensive European occupation of the area began in the mid-to-late nineteenth century, as Mexican, Texian, and Texan settlers and soldiers continued to push Native Americans from the region. The Covered Area formed a disputed area between the Republic of Texas/ United States and Mexico until the end of the Mexican American War in 1848. An economy largely based on cattle ranching was upended in the early twentieth century as oil and gas exploration transformed the West Texas landscape.

Portions of the Covered Area have been previously surveyed for cultural resources. According to the Texas Archeological Sites Atlas (TASA) and New Mexico Cultural Resources Inventory System (NMCRIS), restricted-access online databases, approximately 73 previously recorded cultural resources investigations have been conducted within the Covered Area or within 1 mile of the Covered Area (Texas Historical Commission [THC] 2020; New Mexico Historic Preservation Division [NMHPD] 2020).

While the level of investigation and intensity of research often varies between projects, approximately 2 percent (5,520 Acres) of the Covered Area has been surveyed at some level for cultural resources. Approximately 1.2 percent (4,530 acres) of the area within 1 mile of the Covered Area has been surveyed for cultural resources. Records on TASA are limited to projects conducted for NHPA Section 106 or Antiquities Code of Texas review and may not include all investigations within an area.

As a result of previous investigations, 69 archaeological sites have been identified in the Covered Area. An additional 145 archaeological sites have been identified within 1 mile of the Covered Area in both Texas and New Mexico. No historic structures or cemeteries have been recorded in the vicinity. In addition, no NRHP individual properties or districts have been recorded within, or within 1 mile of, the Covered Area.

# 4 ENVIRONMENTAL CONSEQUENCES

## 4.1 Overview

### *4.1.1 Impact Estimation Approach*

NEPA requires that agencies include a detailed statement of, among other things, the environmental impacts of the Proposed Action and a description of adverse environmental impacts that would not be avoided should the Proposed Action be implemented (42 USC 4332).

The 1978 NEPA regulations also indicate agencies should identify three types of impacts: direct, indirect, and cumulative (40 CFR 1508.8). To achieve this in an efficient manner, agencies aim to focus on impacts that are "reasonably foreseeable" and have a close causal relationship to the Proposed Action. On July 16, 2020, CEQ finalized new implementing NEPA regulations that become effective on September 14, 2020. The new regulations apply to all NEPA processes begun after the effective date of the new rules, but provide agencies with discretion to apply the new rules to ongoing NEPA processes. The NEPA process for this Proposed Action was initiated prior to the effective date of the new NEPA regulations with publication of the Notice of Intent in the Federal Register on July 16, 2020. This draft environmental assessment is intended to comply with the 1978 regulations and the Department of the Interior's existing NEPA regulations.

Based on applicable NEPA regulations, this NEPA analysis is limited to only those resources that would be impacted by the issuance of the Permit requested by the Applicant for activities covered in the 2020 DSL CCAA.

### *4.1.2 Impact Framework*

This EA analyzes the impacts of the Proposed Action and No Action Alternative using an analysis impact framework to indicate the degree of the effect. The purpose of establishing this impact framework is to provide a uniform method for assessing impacts with regard to their duration and intensity, which will be used with the context of the impact in determining significance (40 CFR 1508.27), for a variety of resources to provide a means of categorizing potential impacts for the public and agency decision-maker. Across all resources, context and intensity are analyzed relative to whether the change or disturbance is detectable, measurable or perceptible. Table 6 provides a summary of the thresholds of used in this EA.

## Table 6. Impact Indicator, Duration and Intensity by Resource

| Resource | Impact Indicator and Duration | Intensity of Impact |
|---|---|---|
| Covered Species | Indicator: Disturbance or change to DSL Habitat.<br>Short-term: Impacts would not be seen or be temporary and full recovery and benefits would occur within 5 to 10 years.<br><br>Long-term: Impacts would last, and full recovery and benefits would occur, later than 10 years. | Negligible: No change or disturbance within populations (local), across the species range in Texas (regional), or across the entire species range in Texas and New Mexico (national).<br>Minor: Change or disturbance is small, local and short-term.<br>Moderate: Impacts may result in substantial changes to population size, distribution, or genetics in a limited area, or may be a small impact distributed over a large portion of the range of the species and would occur either short term or long term.<br>Major: Change or disturbance is large, regional or national; change or disturbance would adversely affect the Covered Species throughout a significant proportion of its range; disturbance or change would be either short-term or long-term. |
| Hydrology and Water | Indicator: Change to water quantity or quality of aquifers<br>Short-term: Impacts would not be seen or be temporary and return to baseline conditions of water levels and trends; benefits would occur within 5 to 10 years.<br>Long-term: Impacts would last and water levels and trends would persist as a consequence and benefits would occur later than 10 years. | Negligible: No change on an Enrolled Property or within a perched aquifer (local) or within underlying aquifer(s) (regional).<br>Minor: Change would be small, local and short-term.<br>Moderate: Change or disturbance is large and local, or small and regional, and would occur either short term or long term.<br>Major: Change would be large, regional, and violate state regulations of groundwater use or public safety on drinking water supply; change would be either short-term or long-term. |
| Soils | Indicator: Change to soil erosion potential or productivity.<br>Short-term: Impacts would not be seen or be temporary and return to baseline conditions of erosion potential and productivity levels within 5 to 10 years.<br>Long-term: Impacts would last and persist as a consequence and benefits would occur later than 10 years last. | Negligible: No change within a sand dune complex or within another landform on an Enrolled Property (local), nor within landforms across the Covered Area (regional).<br>Minor: Change would be small, local and short-term.<br>Moderate: Disturbance may result in substantial modifications of soil in a limited area, or may be a small impact distributed over a large portion of a soil type and would occur either short term or long term. Major: Change would be substantial modification of soil erosion potential and adversely affecting productivity across the landform at a regional scale; change would be either short-term or long-term. |
| Vegetation | Indicator: Disturbance or change to vegetation community<br>Short-term: Impacts would not be seen or be temporary, and full reestablishment of plant community would occur within 1 to 5 years depending on the vegetation community.<br>Long-term: Impacts would last and persist as a consequence, full reestablishment of plant community would require more than 5 years; benefits would be observed for more than 5 years. | Negligible: No disturbance or change to vegetation community within a sand dune complex or within another landform on an Enrolled Property (local), nor within landforms across the Covered Area (regional).<br>Minor: Disturbance or change would be small, local and short-term.<br>Moderate: Disturbance may result in substantial modifications of vegetation in a limited area, or may be a small impact distributed over a large portion of a vegetation type and would occur either short term or long term.<br>Major: Disturbance or change would be substantial modification of existing vegetation community, regionally and either be short-term or long-term; change or disturbance would adversely affect any Federal or state listed plant species throughout a significant proportion of its range. |
| Wildlife | Indicator: Disturbance or change to wildlife habitat<br>Short-term: Impacts would not be seen or be temporary, and full reestablishment of wildlife habitats would occur within 1 to 5 years depending on the habitat.<br>Long-term: Impacts would last and persist as a consequence, full reestablishment of wildlife | Negligible: No disturbance or change within landform(s) on an Enrolled Property (local) nor within landforms across the Covered Area (regional).<br>Minor: Disturbance or change would be small, local and short-term.<br>Moderate: Disturbance may result in substantial modifications of habitat for wildlife in a limited area, or |

| Resource | Impact Indicator and Duration | Intensity of Impact |
|---|---|---|
| | habitat would require more than 5 years; benefits would be observed for more than 5 years. | may be a small impact distributed over a large portion of a habitat type and would occur over short or long term.<br>Major: Disturbance or change would be substantial modification of habitat for wildlife, regionally and either be short-term or long-term. |
| Listed, Proposed, and Candidate Species (not Covered in the CCAA) | Indicator: Loss, disturbance, or modification of suitable habitat; displacement, injury, or mortality of species<br>Short-term: Impacts would not be seen or be temporary, and full reestablishment of suitable habitat or recolonization would occur within 1 to 5 years depending on the habitat or species.<br>Long-term: Impacts would last and persist as a consequence, full reestablishment of suitable habitat or recolonization would require more than 5 years; benefits would be observed for more than 5 years. | Negligible: No loss, disturbance or modification of suitable habitat; no injury displacement, injury, or mortality of species would occur on an Enrolled Property (local), or across available suitable habitat throughout the range of species within the Covered Area (regional).<br>Minor: Loss, disturbance or modification of suitable habitat would be small, local and short-term; injury or mortality of species could be limited to one or a few individuals.<br>Moderate: Disturbance may result in substantial modifications of habitat for listed, proposed, or candidate species in a limited area, or may be a small impact distributed over a large portion of a habitat type and would occur over short or long term.<br><br>Major: Loss, disturbance or modification of suitable habitat would be substantial, occur regionally, and either be short- term or long-term; injury or mortality of species would result in long-lasting population-level impacts. |
| Land Use and Ownership | Indicator: Change or restriction to or conversion of land use<br>Short-term: Impacts would not be seen or be temporary and occur less than a period of less than one year.<br>Long-term: Impacts would last and persist as a consequence, and would occur over a period of more than one year. | Negligible: No change or restriction to land use within an Enrolled Property (local) or among landowners' properties within the Covered Area (regional).<br>Minor: Change or restriction to land use would be local and short-term.<br>Moderate: Disturbance may result in substantial modifications to land use in a limited area, or may be a small impact distributed over a large portion of land use types and would occur over short or long term.<br>Major: Change or restriction to land use would be substantial, regional and long term; landowners or users would be subjected to use restrictions or delays in obtaining permits or leases. |
| Cultural Resources | Indicator: Loss or destruction of the characteristics of a resource that make the resource eligible for the NRHP.<br>Short-term: Impacts would be temporary and reversible.<br>Long-term: Impacts would last, persist as a consequence, and would be irreversible. | Negligible: No detectable or measurable change to cultural resources or NRHP eligible places within the Covered Area.<br>Minor: Short-term or long-term impacts to one or more NRHP- listed or NRHP-eligible properties would occur, but the resource(s) would retain the characteristics that make them eligible for the NRHP.<br>Moderate: Disturbance may result in substantial modifications of NRHP-listed or NRHP-eligible properties in a limited area, or may be a small impact distributed over a larger area and would occur over short or long term.<br>Major: Long-term impacts to one or more NRHP-listed or NRHP-eligible properties resulting in a loss of the characteristics that made the properties eligible for the NRHP. |

### *4.1.3 Summary of Impacts*

As discussed above in Section 3.1.2 regarding resources not considered for detailed analysis, the otherwise lawful underlying industrial and commercial activities by potential participants in the 2020 DSL CCAA can proceed in the Covered Area without a Permit, and therefore the underlying activities are not "caused" by issuance of the Permit. These activities are occurring today and will continue to occur into the future without limitation, as legally allowable. Thus, these activities and their effects on the below analyzed resources are part of the environmental baseline and appropriately considered in the No

Action Alternative. The effects of the Proposed Action are expected to be beneficial conservation actions that would mitigate the impacts associated with legally allowable activities under the No Action Alternative.

Table 7 summarizes potential impacts on resources from implementation of Alternative A – Proposed Action and Alternative B – No Action Alternative, which are analyzed in detail in Sections 4.2 through 4.7.

**Table 7. Impact Summary**

| Resource | Alternative A – Proposed Action | Alternative B – No Action Alternative | Significance |
|---|---|---|---|
| Covered Species | Minor to moderate, short- to long-term impacts; minor to moderate, short- to long-term benefits; reasonably expected to provide a net conservation benefit | Moderate to major, short- to long-term impacts; minor, short- to long-term benefits | No significant impacts under Alternative A or B |
| Hydrology and Water | Negligible impacts and benefits | Negligible impacts and benefits | No significant impacts under Alternative A or B |
| Soils | Minor, short-term impacts; minor to moderate short- to long-term benefits | Minor to major, short- to long-term impacts; minor short- to long-term benefits | No significant impacts under Alternative A or B |
| Vegetation | Minor, short-term impacts; minor short- to long-term benefits | Minor to major, short- to long-term impacts; minor short- to long-term benefits | No significant impacts under Alternative A or B |
| Wildlife | Minor, short-term impacts; minor to moderate short- to long-term benefits | Minor to major, short- to long-term impacts; minor short- to long-term benefits | No significant impacts under Alternative A or B |
| Listed, Proposed, Candidate Species (not Covered in the CCAA) | No federally listed species present; negligible impacts; and for State listed species minor to moderate, short- to long-term impacts; minor short- to long-term benefits | No federally listed species present; negligible impacts; and for State listed species minor to major, short- to long-term impacts; minor short- to long-term benefits | No significant impacts under Alternative A or B |
| Land Use and Ownership | Short- to long-term minor to moderate impacts; minor to moderate short- to long-term benefits | Short- to long-term minor to moderate impacts; no benefits | No significant impacts under Alternative A or B |
| Cultural Resources | Negligible impacts and benefits | Negligible impacts and benefits | No significant impacts under Alternative A or B |

# 4.2 Covered Species

## *4.2.1 Alternative A – Proposed Action*

Under the Proposed Action, Participants engaged in Covered Activities would implement Conservation Measures (see Section 2.1.4 above) to reduce the impacts of the Covered Activities within the Covered Area. The Conservation Measures are designed to provide a net conservation benefit by reducing and eliminating threats to the Covered Species through avoiding and offsetting the amount of anticipated take of the Covered Species, which is represented by the acreage of disturbance or loss of DSL Habitat.

Under the Proposed Action, the Participants would avoid or minimize new disturbances including coordination between the 2020 DSL CCAA Administrator and non-Participants to maximize use of existing infrastructure, access roads, and rights-of-way (ROW) and minimize the footprint of development, traffic, and use of OHV consistent with the terms of the CCAA. The Participants engaging in Covered Activities associated with oil and gas, sand mining operations, renewable energy operations, and linear infrastructure would avoid new surface disturbance in areas categorized as High or Intermediate Suitability DSL Habitat under the Texas State University model (Hardy *et al.* 2018), subject to certain exceptions and requirements including disturbance limits, payment of Habitat Conservation

Fees, feasibility constraints, and specified thresholds of oil well pad densities. Participants conducting seismic activities would refrain from using heavy machinery in these areas. Participants conducting agriculture or ranching Covered Activities would also refrain from initiating new or increased levels of agricultural and ranching in areas categorized as High or Intermediate Suitability DSL Habitat. Sand mining Participants would implement an annual limit on new surface disturbance on their Enrolled Properties and avoid areas where site-specific surveys for the Covered Species indicate potential presence based on ground cover types or detection of individuals, unless that new surface disturbance can be offset as described in the 2020 DSL CCAA. The 2020 DSL CCAA Administrator would work with Participants and non- Participants in the Covered Area to limit disturbance to 34,940 acres of DSL Habitat, or approximately 12 percent of the Covered Area, over the 23-year CCAA and Permit term. Although avoidance is subject to certain exceptions, and there may still be loss, modification, and fragmentation of habitat, the disturbance limits and offsets are still anticipated to reduce threats to the Covered Species by minimizing the threat of habitat loss.

Prior to new disturbance of DSL Habitat, Participants would pay fees that would be used for Conservation Actions, including restoration and reclamation of disturbed areas, or would conserve lands similar to those subject to disturbance at a 1:1 acre ratio (*see* Chapter 8.4 of the 2020 DSL CCAA). Fees would be used to protect, restore, reclaim, and re-grade existing and newly disturbed areas. Participants conducting Covered Activities in the Covered Activities would also restore, reclaim and re-grade disturbed areas, as determined by participation requirements of the 2020 DSL CCAA. During restoration, reclamation and re-grading activities, the Covered Species may be inadvertently killed through use of heavy equipment during ground disturbing activities.

Prioritizing avoidance of High or Intermediate Suitability DSL Habitat throughout the Covered Area would temporarily and permanently benefit populations of the Covered Species by not curtailing movement and distribution of individuals present in those habitat areas (Hibbitts *et al.* 2013; Johnson *et al.* 2016; Sias and Snell 1998; Young *et al.* 2018). Fragmentation of habitat may be reduced through incentives and prioritization of Covered Activities outside of areas used by Covered Species and into areas of existing disturbance. These measures and other measures to exclude entry or allow escape of the Covered Species into or from areas of disturbance may also reduce potential loss of individuals or of nests that would be avoided as a result of the Conservation Measures. For reasons explained in the CCAA, there is no consideration specifically in the CCAA for reducing fragmentation or habitat loss to the point where meta-populations and the four phylogenetic groups in the covered area identified by Chan *et. al.* (2020) can be maintained. However, the CCAA includes a changed circumstances and adaptive management trigger in the event that loss of DSL Habitat is concentrated in a biologically significantly way at a biologically relevant geographic location, as provided at Section 16.1.1 of the CCAA. The general avoidance of High and Intermediate Suitability habitats may reduce these impacts.

While Chan *et al.* (2020) identify four genetically distinct groups in the Covered Area, as stated above (see Section 3.2 above), the geographic boundaries of the groups are putative. Currently, there is no publicly available data on DSL population size, population status, or numbers of genetically similar populations within each of the putative regions of the Monahans Sandhills. Accordingly, while it is premature to design conservation plans based on these putative boundaries, the Proposed Action includes conservation measures to identify and protect shinnery oak dune complexes that may be used by the DSL; protect, restore or reclaim (as appropriate) habitat connectivity and potential dispersal corridors in high priority areas of DSL Habitat (informed by current and emerging information on DSL populations in Texas as it becomes available); and reduce fragmentation, including adaptive management triggers in the event that new surface disturbance is concentrated in geographic areas that are biologically relevant.

Conservation Measures designed to conserve groundwater may indirectly benefit the Covered Species, since use of groundwater may negatively affect the vegetation or dune structure of DSL Habitat

(Machenberg 1984; Muhs and Holliday 1995, 2001; Peterson and Boyd 1998). If pumping of groundwater comes from the deeper aquifers, particularly the Dockum Aquifer, it is likely not to have an impact on vegetation, since that aquifer is particularly deep. This may also be the case for the unconfined Pecos Valley Aquifer, however if pumping comes from local perched aquifers a potential effect on vegetation may be seen, depending upon rate of pumping and groundwater recharge. Rainwater (2020) found that groundwater use by sand mining operations may be lower than previously perceived. Without additional information on groundwater use by all mines and what reduction targets, if any, the mining operators visited and studied in Rainwater (2020) will implement, it is unknown the extent that indirect benefits associated with groundwater conservation may have on the Covered Species.

Loss, modification, and fragmentation of habitat may occur under the Proposed Action; however, avoidance of priority habitat, disturbance limits, and offsets could temporarily and permanently reduce impacts to the Covered Species and minimize habitat loss. Implementation of the Conservation Measures, as feasible, may result in temporary and permanent protection, conservation, and restoration of DSL Habitat throughout the Covered Area and may result in an increase in likelihood of use by the Covered Species relative to the amount of participation in the 2020 DSL CCAA. As a result, the Proposed Action is likely to result in short- to long-term minor to moderate impacts from habitat loss. It is likely to have minor to moderate, short- to long-term benefits depending on the level of enrollment, consistency of avoidance, minimization and other conservation measures to protect habitat.

### *4.2.2 Alternative B – No Action Alternative*

Under the No Action Alternative, industry, local government and agricultural activities are anticipated to continue at current levels. The potential impacts to the Covered Species are anticipated to occur in the form of loss, modification, degradation, or fragmentation of DSL habitat. Surface disturbance within the Covered Area that may be located in DSL habitat would not be subject to conservation measures or commitments to avoid, minimize, or offset potential impacts to the Covered Species. In particular, there would be no required disturbance limits in areas of High and Intermediate Suitability DSL Habitat. As a result, there may be a loss of individuals or nests, or avoidance by individuals from areas where surface development activities are occurring in occupied habitat due to the use of heavy machinery and OHV, seismic activities, and other survey and exploration efforts associated with development. Conservation, protection, restoration, and reclamation may not occur or may occur at smaller scales relative to the Proposed Action. If disturbance overlaps with the TCP habitat definitions, then it would be subjected to impacts from participants under the authorized impacts within the habitat classifications in the TCP. There would be no well density thresholds or limits on sand mining impacts. Therefore, there would be less conservation of the meta-populations and the four phylogenetic groups in the Covered Area identified by Chan *et. al.* (2020), and the impacts on species genetic representation, resilience, and redundancy would be anticipated to be greater under this alterative. Conservation activities would be implemented at the discretion of the landowner or user at a project-specific scale for entities not enrolled in the TCP.

Under the No Action Alternative, industries and landowners would operate and manage lands as they currently do with no additional requirements or incentives to minimize their impacts on the DSL beyond those that currently exist or are voluntarily implemented. Any beneficial effects or reduction of negative impacts on the DSL that may result from the implementation of the 2020 DSL CCAA would not occur under this alternative. The No Action Alternative would likely result in short- to long-term moderate to major impacts associated with habitat loss and fragmentation and impacts on genetic representation. The No Action Alternative is likely to provide minor, short- to long-term benefits through the TCP and ongoing land management actions of property owners.

## 4.3 Hydrology and Water Resources

### *4.3.1 Alternative A – Proposed Action*

Under the Proposed Action, groundwater would be used for Covered Activities occurring in the Covered Area. Conservation Measures would be implemented to minimize groundwater use and provide site-specific data on water use through the development and implementation of water use and minimization plans. Each plan includes monitoring and annual performance reports that would be submitted by the Participants to the Administrator. Participants of the sand mining industry would also complete a TWDB water use survey containing information on groundwater drawn by aquifer. Other Conservation Measures associated with surface landscape management (as discussed in Section 4.4 and 4.5 below) would also indirectly reduce impacts from the Covered Activities related to groundwater flows, infiltration, and recharge.

Given the limitations of groundwater use data within and beyond the Covered Area, the impacts of these Conservation Measures on the groundwater supply cannot be quantitatively analyzed. While the development and implementation of site-specific water use and minimization plans would reduce groundwater usage in the Covered Area, these benefits, which would occur over the long-term, are not anticipated to be detectable or perceptible. Similarly, these benefits to dune-stabilizing vegetation are not anticipated to be detectible or perceptible. Therefore, the Proposed Action would result in negligible changes to groundwater resources within the Covered Area.

### *4.3.2 Alternative B – No Action Alternative*

Under the No Action Alternative, private, commercial and industrial activities, such as Covered Activities including construction, oil well pad development and drilling, sand mining, linear infrastructure construction, maintenance and operation, agriculture and ranching, and local government activities would continue within the Covered Area without the conservation benefits of the 2020 CCAA. Groundwater conservation for the Ogallala Aquifer would continue to be managed by the Llano Estacado Underground Water Conservation District; groundwater conservation for the Pecos Valley and Dockum Aquifers would continue to be implemented at the discretion of the landowner. Voluntary conservation measures would continue under the existing TCP (Service *et al.* 2011) to avoid and minimize impacts to surface disturbance would continue; however, there are no conservation measures in the TCP aimed at the reduction of water use or the protection or management of water resources. Therefore, the No Action Alternative would result in fewer voluntary conservation measures for groundwater resources barring any required reporting of water use to the state of Texas, and may lead to more groundwater use within the Covered Area compared to the Proposed Action Alternative.

## 4.4 Soils

### *4.4.1 Alternative A – Proposed Action*

The total maximum surface disturbance associated with the Covered Activities in the Covered Area is 34,940 acres. Surface disturbance during restoration, reclamation and re-grading would temporarily result in the disturbance of localized soils. Surface disturbance associated with the Covered Activities would be subject to Conservation Measures to reduce direct impacts to the soils and increase conservation of soils in the Covered Area. All Participants for all Covered Activities except the agriculture and ranching sectors would implement Conservation Measures to avoid new surface disturbance through coordination on use of existing infrastructure, access roads, and ROWs. Reduced development footprints are intended to reduce the amount of surface disturbance on Enrolled Properties. Implementing site specific plans to

maximize use of existing infrastructure, access roads and ROWs and minimize the footprint of development, traffic and use of OHV would reduce the direct adverse impacts on soils pertaining to their removal and disturbance. Conservation Measures would be implemented to restore ROWs, reclaim abandoned oil well pads and roads, and re-grade disturbed areas. These activities would minimize the loss and alteration of soils in the Covered Area. The reduction of surface disturbance would also reduce wind erosion and vegetation removal (by preserving sand dune stabilizing vegetation), thereby indirectly reducing the loss and alteration of soils (Machenberg 1984; Muhs and Holliday 1995, 2001; NRCS 2020).

Under the Proposed Action, all Participants would be required to avoid High and Intermediate Suitability Habitat of the Covered Species for all Covered Activities subject to a set of sector-specific exceptions, and shift their operations out of DSL Habitat to areas categorized as Low Suitability Habitat or to areas with existing development (e.g., where oil well pad densities are greater than 13 wells pads/mi$^2$). Dynamic dunelands, which are more susceptible to wind erosion from vegetation removal, are found in the High and Intermediate Suitability Habitat. By shifting activities away from dunelands to relatively flatter and more stable areas less susceptible to wind erosion (Machenberg 1984; Muhs and Holliday 1995, 2001; NRCS 2020), soil losses and alterations would be reduced.

Conservation Measures would be implemented for Covered Activities related to sand mining including limiting annual surface disturbance to 60 acres, total disturbance per mine on enrolled parcel to 1,380 acres, and total surface disturbance for the entire sector to 16,560 acres for the 23-year term of the proposed 2020 DSL CCAA. Caps on new surface disturbance would limit to new surface disturbance in the Covered Areas to less than 6% (16,560 acres) of DSL Habitat in the Covered Area (287,327 acres). All new surface disturbances would be subject to offsets either through payment of fees that would be used for Conservation Actions including restoration and reclamation of disturbed areas or through conservation of areas similar to those subject to disturbance at a 1:1 acre ratio. As discussed above (see Sections 4.2.1 and 4.3.1), Conservation Measures to reduce and manage use of groundwater for the sand mining industry would reduce the amount of water used and help maintenance of groundwater needed to stabilize sand deposits beneath the dunes and supply water for vegetation on the dunes, thereby indirectly reducing impacts to soils in these areas (Machenberg 1984; Muhs and Holliday 1995, 2001; Peterson and Boyd 1998). .

Soil loss and alteration from the Covered Activities would be reduced under the Proposed Action through avoidance and conservation of High and Intermediate Suitability Habitat containing dynamic dunelands and through reduced surface disturbance. In addition, a portion of the fees collected for participation in the proposed CCAA may be used to purchase conservation easements and other protections to preserve DSL habitat and its associated vegetation communities in large, continuous blocks for at least the life of the 2020 DSL CCAA, thereby reducing the areas of soil disturbance and the conservation of existing soils if utilized by the administrator. As a result, the Proposed Action is likely result in minor short- term impacts from disturbance of surface soil and removal of sand sediments ; and minor to moderate short- to long-term benefits to soils in the Covered Area through implementation of minimization measures, best management practices, and caps on annual surface disturbance by mine participants.

### *4.4.2 Alternative B – No Action Alternative*

Under the No Action Alternative, all Underlying Activities would continue engaging in surface disturbing activities, such as construction, oil well pad development and drilling, sand mining, linear infrastructure construction and operation, local government activities, and agriculture and ranching, within the Covered Area. Voluntary conservation measures would continue under the existing TCP (Service *et al.* 2011) to avoid and minimize impacts on soils. Participants enrolled in the TCP would limit surface disturbance of soils on up to 2,125 acres. These participants would implement voluntary conservation measures

including avoidance of soils suitable for the Covered Species, restoration, rehabilitation and erosion control measures to avoid, minimize, and mitigate the loss and degradation of soils (Service *et al.* 2011).

Activities conducted by non-participants in the TCP are anticipated to continue at current levels, and surface disturbance within the Covered Area would not be subject to additional conservation measures to minimize or avoid impacts to soils. As a result, likely more than 34,690 acres may be disturbed over the same 23-year period covered by the CCAA, resulting in the loss and alteration of soils from industrial and commercial activities including vegetation clearing, grading, use of heavy machinery, construction of facilities, excavation, mining, application of caliche or other materials onto the surface, and application of herbicide to vegetation. As described in Section 3.3 above, soils within the Covered Area demonstrate moderate to very high wind erosion potential. Surface disturbance under the No Action Alternative would result in the removal of vegetation that would indirectly subject soils to increased wind erosion, leading to the loss of soils, particularly the fine sandy particulates (Machenberg 1984; Muhs and Holliday 1995, 2001; NRCS 2020).

Industry sectors would not be subject to the implementation of conservation measures to avoid surface disturbance in areas categorized as High and Intermediate Suitability DSL Habitat contained in the 2020 DSL CCAA, other than that provided by the TCP. Specifically, under the current TCP, there would be no well density thresholds or limits on sand mining. Removal of vegetation in dunelands, which are more susceptible to wind erosion from vegetation removal, may result in increases or decreases in acreage of dunes, or these dunes may shift in location across the landscape over short-term and long-term timeframes (Machenberg 1984; Muhs and Holliday 1995, 2001; Dzialak *et al.* 2013). Similar impacts of alteration in geomorphology of the dunes, including those in areas extending beyond the activity area, may occur in the form of pile up of sand near structures or removal of sand during the removal or alteration of vegetation (Machenberg 1984). Winds carrying loose sand may harm adjacent vegetation via abrasion and sandblasting, thereby hindering plant recolonization in disturbed areas (Machenberg 1984). While these changes may occur under either Alternative, the potential for greater dune vegetation disturbance under this Alternative may result in increased erosion.

Under the No Action Alternative, impacts to soils would continue at current levels. Surface disturbance from participants enrolled in the TCP would continue but would be limited to up to 2,125 acres. Surface disturbance from non-participants of the TCP would continue to occur without conservation measures to avoid or minimize the loss or alteration of soils. As a result, the No Action Alternative would result in short- to long-term, minor to major landscape level change as described above and minor short- to long-term, localized benefits due to disturbance limits on TCP participants.

## 4.5 Vegetation

### *4.5.1 Alternative A – Proposed Action*

Surface disturbance under the Proposed Action would occur, resulting in the disturbance or removal of vegetation. Surface disturbance associated with the Covered Activities would be subject to Conservation Measures to reduce impacts to vegetation, such as limiting the amount of acres disturbed and encouraging smaller disturbance footprints. Under the Proposed Action, the entire area where surface disturbance would occur would be subject to Conservation Measures to reduce impacts to vegetation and augment conservation of vegetation in the Covered Area. All Participants except the agriculture and ranching sector and local governments would implement site specific plans to maximize use of existing infrastructure, access roads, and ROWs and minimize the footprint of development, traffic and use of OHV. Implementation of site-specific plans would reduce the direct adverse impacts on vegetation pertaining to their removal and disturbance. Conservation Measures would be implemented to restore and reclaim ROWs, reclaim abandoned oil well pads and roads, re-vegetate disturbed areas with native plants,

and re-grade disturbed areas. All surface disturbance associated with Covered Activities except the agriculture and ranching sector must be offset as described for soils (Section 4.3.1 above). These activities would reduce and minimize the disturbance, removal or modification of vegetation during restoration, reclamation and re-grading. Over the long-term, these activities would help reestablish vegetation throughout the Covered Area and would not change the overall viability of plant communities, but it is not clear whether full restoration is likely to occur.

Under the Proposed Action, all Participants would be required to avoid High and Intermediate Suitability Habitat of the Covered Species for all Covered Activities subject to a narrow set of sector-specific exceptions, and shift their operations out of DSL Habitat, to areas categorized as Low Suitability Habitat, or to areas with existing development. Honey mesquite is an invasive species (NRCS 2020b) found in Low Suitability Habitat. By shifting Covered Activities to Low Suitability areas that may contain honey mesquite, this invasive species would be removed as part of development activities. Minimizing disturbance in High and Intermediate Suitability habitat would reduce native vegetation removal, including vegetation that provides habitat for the Covered Species, such as the shinnery oak.

Conservation Measures are also aimed at reducing the spread of invasive plant species by avoiding non-native vegetation; using habitat appropriate native vegetation and best management practices, such as cleaning vehicles coming into the area to remove mud and seeds; and identifying and removing any invasive vegetation incidentally introduced during the Covered Activities. These proposed measures may reduce competition of available resources between native and invasive plant species (Machenberg 1984 Peterson and Boyd 1998). Aerial application of herbicides would be avoided to reduce risk of herbicide drift to non-target areas and thus measure and control of invasive plant species. These activities would reduce invasive plant species and would support native vegetation and vegetation communities, including those that provide habitat for the Covered Species.

Conservation Measures would be implemented for Covered Activities related to the sand mining including caps on annual surface disturbance and offsets of surface disturbance, as described in Section 4.3, Soils. Limits to surface disturbance would minimize or avoid the removal of vegetation. As discussed above (see Sections 4.2.1, 4.3.1, and 4.4.1), Conservation Measures to reduce and manage use of groundwater for the sand mining industry could reduce impacts on vegetation and vegetation communities, particularly if they reduce any pumping from perched aquifers.

Conservation Measures would minimize or avoid disturbance to or removal or modification of vegetation during surface disturbance, restoration, reclamation, and re-grading activities. Where surface disturbance would occur in the Covered Area, a portion of fees collected for participation in the proposed 2020 DSL CCAA could be used to purchase conservation easements and other protections to preserve DSL habitat and its associated vegetation communities in large, continuous blocks for at least the 23-year term of the 2020 DSL CCAA, thereby reducing the areas of surface disturbance and removal of vegetation. Conservation Measures would help minimize disturbance to vegetation and would help support the re-establishment of vegetation communities over the long-term. As a result, the Proposed Action would likely result in short-term , minor impacts (i.e., disturbance or change to vegetation communities) and minor short- and long-term benefits to vegetation in the Covered Area. Given these findings, the Proposed Action would not result in significant impacts to vegetation resources.

### *4.5.2 Alternative B – No Action Alternative*

Under the No Action Alternative, all Covered Activities would continue to engage in surface disturbing activities, such as construction, oil well pad development and drilling, sand mining, linear infrastructure construction, maintenance and operation, local government activities, and agriculture and ranching within the Covered Area. Voluntary conservation measures would continue under the existing TCP (Service *et*

*al.* 2011) to avoid and minimize impacts on vegetation. Participants enrolled in the TCP would limit surface disturbance of on up to 2,125 acres, thereby limiting disturbance or removal of vegetation. These participants would implement voluntary conservation measures including avoidance of areas suitable for the Covered Species, restoration, rehabilitation and erosion control measures to avoid, minimize, and mitigate the loss and degradation of vegetation (Service *et al.* 2011).

Activities conducted by non-participants in the TCP are anticipated to continue at current levels, and surface disturbance within the Covered Area would not be subject to additional conservation measures to minimize or avoid impacts to vegetation. As a result, more than 34,690 acres may be disturbed over the same 23-year period as the proposed duration of the CCAA, resulting in the disturbance or removal of vegetation from non-participant activities including vegetation clearing, grading, use of heavy machinery, construction of facilities, excavation, mining, application of caliche or other materials onto the surface, and application of herbicide to vegetation. As described in Section 4.3, the removal of vegetation would indirectly subject soils to increased wind erosion, leading to the loss of soils, particularly the fine sandy particulates (Machenberg 1984; Muhs and Holliday 1995, 2001; NRCS 2020).

As described in Section 3.4, vegetation within the Covered Area was historically threatened by overgrazing (Peterson and Boyd 1998). Under the No Action Alternative, participants of the TCP would implement conservation measures to minimize impacts to vegetation from grazing, brush management, fence, water facilities and windmill construction and maintenance (Service *et al.* 2011). However, non-participants in the TCP would not be subject to the implementation of conservation measures activities to reduce potential impacts to vegetation.

Under the No Action Alternative, conservation measures are discretionary, and impacts to vegetation from sectors not covered in the TCP or from non-participants not interested in enrolling in the TCP would continue at current levels. Surface disturbance from participants enrolled in the TCP would be limited (up to 2,125 acres). Participants in the TCP would implement voluntary conservation measures including avoidance and reestablishment of vegetation. However, surface disturbance from non-participants of the TCP would continue to occur without conservation measures to avoid or minimize the disturbance or removal of vegetation, and the overall viability of plant communities may be degraded. As a result, the No Action Alternative would likely result in short- to long-term, minor to major impacts and minor short- to long-term, localized benefits due to the limited take authorization for the TCP and conservation under other programs.

## 4.6 Wildlife

### *4.6.1 Alternative A – Proposed Action*

As part of the Proposed Action, the Conservation Measures (Section 2.1.4) would avoid or minimize surface disturbances within the Covered Area. Setting a limit on development activities within the Covered Area would minimize the loss of habitat present in the Covered Area by limiting and offsetting surface disturbance, thus benefitting the local wildlife that utilize habitat that overlaps DSL habitat.

By relocating or concentrating development activities outside of DSL habitat within the Covered Area and onto adjacent lands where wildlife may occupy suitable habitat, some habitats may be disturbed or changed, and some species may be displaced or avoid the area. Displacement of wildlife species individuals would potentially force the wildlife into competition with residents of adjacent habitat for available resources. This displacement could produce short-term changes in localized species composition (Adams and Geis 1981) or lead to reduced physical condition and health of affected individuals.

Habitat disturbance or changes would be reduced and minimized in the Covered Area under the Proposed Action, thereby preserving other species habitat in areas that overlap DSL habitat. However, activities in adjacent areas may lead to habitat disturbance or change, or displacement, avoidance, injury or mortality of wildlife species. It is anticipated that wildlife would avoid disturbed areas during construction or other noise-producing activities. Once activities have ceased, wildlife would return to the area, if habitat for these species still exists. As a result, the Proposed Action would result in short- term, minor impacts (i.e., disturbance or change to wildlife habitat) and minor to moderate short- to long-term benefits to wildlife. Given these findings, the Proposed Action would not result in significant impacts to general wildlife species, depending on the participation level and amount of impact avoidance and minimization implemented.

### *4.6.2 Alternative B – No Action Alternative*

Under the No Action Alternative, voluntary conservation measures would continue under the TCP (Service *et al.* 2011) and other conservation programs (such as NRCS) to avoid and minimize potential impacts to wildlife habitat. However, surface disturbance by non-participants in these programs within the Covered Area would not be subject to additional conservation measures to minimize or avoid impacts to wildlife habitat. Under the No Action Alternative, conservation measures outside those defined in the TCP are discretionary and impacts to vegetation from sectors not covered in the TCP or other conservation programs, or from non-participants not interested in enrolling in these programs would continue at current levels. Surface disturbance from participants enrolled in the TCP would be limited (up to 2,125 acres). However, surface disturbance from non-participants of the TCP would continue to occur without conservation measures to avoid or minimize the disturbance or removal of vegetation. As a result, the No Action Alternative would result in short- to long-term, minor to major impacts, and minor, short- to long-term, benefits due to the disturbance limits under the TCP and conservation under other programs.

## 4.7 Listed, Proposed, and Candidate Species Not Covered

### *4.7.1 Alternative A – Proposed Action*

No federally listed, proposed, or candidate species (other than the Covered Species) have the potential to be present in the Covered Area, and there is no designated or proposed critical habitat in the Covered Area. As a result, the Proposed Action would have no impact and no effect on these resources. Of the State-listed, proposed, and candidate species, the Texas State-listed Dune Umbrella Sedge and Texas Horned Lizard were identified to have potential presence within the Covered Area (see Chapter 3.6).

Conservation Measures implemented under the Proposed Action would avoid or minimize new development and surface disturbances within the Covered Area. By limiting new surface disturbances within the Covered Area, changes would be avoided or minimized to potential habitat for any Dune Umbrella Sedge plants or Texas Horned Lizards. Setting a cap on development activities within the Covered Area would encourage the preservation of open grassland habitats utilized by the Texas Horned Lizard and limit disturbances to blowouts within sand dunes used by the Dune Umbrella Sedge. However, by limiting surface disturbances within the Covered Area, and by moving development activities out of DSL habitat within the Covered Area, this may move activities into adjacent suitable habitat. Any potential impacts to habitats of State-listed, proposed, and candidate species would be minimized or avoided in compliance with Texas State law. As a result, the Proposed Action would have no impact on federally listed, proposed, or candidate species, and avoidance or limits to surface disturbance as part of Conservation Measures would provide minor short- to long-term benefits to other species by minimizing the threat of habitat loss. Given these findings, the Proposed Action would not result in significant impacts to non-covered, federally listed, proposed, or candidate species, or species protected under Texas State law.

### 4.7.2 Alternative B – No Action Alternative

No federally listed, proposed or candidate species (other than the Covered Species) have the potential to be present in the Covered Area, and there is no designated or proposed critical habitat in the Covered Area. Of the State-listed, proposed, and candidate species, the Texas State-listed Dune Umbrella Sedge and Texas Horned Lizard were identified to have potential presence within the Covered Area. Under the No Action Alternative, voluntary conservation measures would continue under the TCP (Service *et al.* 2011) to avoid and minimize potential impacts to listed, proposed or candidate species (other than the Covered Species) and State-listed species. However, surface disturbance by non-participants in the TCP within the Covered Area would not be subject to additional conservation measures to minimize or avoid impacts to the habitat of these species. Under the No Action Alternative, conservation measures outside those defined in the TCP are discretionary and impacts to habitat from sectors not covered in the TCP or from participants not interested in enrolling in the TCP would continue at current levels. Any potential impacts to habitats of State-listed, proposed, and candidate species would be minimized or avoided in compliance with Texas State law.

If a species in the Covered Area becomes federally listed under the ESA, non-Federal entities may seek individual ITPs for incidental take, which would include proposals for avoidance, minimization, and mitigation measures that may be implemented for listed species. However, these would be implemented on a project-by-project basis and only for areas of each project where a reasonable likelihood of take could not be avoided.

Because the No Action Alternative would have no impact and no effect on federally listed, proposed, or candidate species (other than the Covered Species), the No Action would have negligible impacts (i.e., loss, disturbance, or modification of suitable habitat; displacement, injury, or mortality of species) and negligible benefits on listed, proposed, or candidate species. However, the No Action would have minor to major impacts that would be short- to long-term to the State-listed species. Avoidance or limits to surface disturbance could provide minor short- to long-term benefits to the State-listed due to conservation under the TCP and other programs.

## 4.8 Land Use and Ownership

### 4.8.1 Alternative A – Proposed Action

Land ownership would not change as a result of the Proposed Action. Under the Proposed Action, development associated with certain Covered Activities would be restricted or precluded in areas of High and Intermediate Suitability DSL Habitat, subject to certain exceptions, as part of implemented Conservation Measures. Overall new surface disturbance by sand mining operations of DSL Habitat in the Covered Area would be limited to 60 acres annually per mine and would not exceed 1,380 acres per mine over the duration of Permit and 2020 DSL CCAA term. The use of existing developed areas and ROW for developing infrastructure would be encouraged, and the footprint for development would be minimized. Utilizing existing developed areas would also allow more efficiencies during development activities because less new area and infrastructure would need to be developed. As a result, some restrictions or changes to existing land uses would be temporary and localized. Any temporary restrictions or closures to land uses, including recreation opportunities, would be coordinated as appropriate with those landowners and applicable management agencies.

Where new development is necessary to accommodate permanent infrastructure, the Participants would comply with existing zoning regulations and applicable land use plans and avoid, to the extent possible, any permanent conversion of existing land uses. Where permanent conversion of existing land uses is necessary, the Proposed Action would comply with permit allowances and applicable land use policies or

regulations. Temporary and permanent changes to land use may result in delays for obtaining permits or leases due to additional agency involvement and expanded necessary approvals. Therefore, under the Proposed Action, impacts (i.e., change or restriction to or conversion of land use) on land use and ownership would be short- to long-term and minor to moderate.

Non-Participant mineral development on Enrolled Properties, or "stratification," could lead to the diminishment of benefits or improvements of Conservation Measures implemented under the 2020 DSL CCAA. However, as part of the 2020 DSL CCAA, non-Participants sharing access to the same surface estate as Participants would be encouraged to become Participants. For severed properties, surface and mineral estate owners would collaborate to develop approaches to development that avoid, minimize, or offset impacts from development. These approaches may include cooperation to minimize new disturbances through the use of an existing or shared right-of-way or developing surface use or mineral management plans. As a result, the implementation of Conservation Measures under the Proposed Action by the Applicant may contribute to the reduction in occurrence and intensity of stratification, thereby resulting in minor to moderate short- to long-term benefits related to land use. Given these findings, the Proposed Action would not result in significant impacts to land use and ownership.

### *4.8.2 Alternative B – No Action Alternative*

Land ownership frequently changes as a result of population and development growth and is expected to continue to change under the No Action Alternative. Under the No Action Alternative, developers would continue their operations without limitation for purposes of DSL conservation. Development associated with the Covered Activities would not be restricted or precluded by Conservation Measures under the 2020 DSL CCAA. Restrictions to development would occur through other regulatory mechanisms (e.g., permits) and developers may choose to pursue other voluntary conservation programs. The extent and duration of development on new surfaces may result in temporary or permanent and localized or widespread changes or restrictions to land use, depending on the activity. Permanent conversion of existing land uses under the No Action Alternative may occur but would be limited to the extent allowed by the responsible agency and in accordance with applicable land use policies or regulations. Temporary and permanent changes to land use may result in delays for obtaining permits or leases due to additional agency involvement and expanded necessary approvals. As a result, impacts on land use and ownership under the No Action Alternative would be short- to long-term and minor to moderate.

Under the No Action Alternative, there would not be the implementation of Conservation Measures that encourage or incentivize non-Participants to become Participants or to cooperate with Participants. As a result, stratification of lands within the Covered Area would continue, and there would be no cooperation between split estate surface and mineral owners or lessees to minimize new disturbances or develop approaches to development that avoid, minimize, or offset impacts from development on severed properties. The benefits provided under the Proposed Action related to addressing stratification issues would not be experienced under the No Action Alternative.

## 4.9 Cultural Resources

### *4.9.1 Alternative A – Proposed Action*

The Proposed Action would entail avoidance, minimization, and offset of disturbance of the Covered Area, and by extension, minimization of harm to Covered Species via the voluntary implementation of Conservation Measures (Section 2.1.4). The issuance of the Permit and approval of a CCAA constitutes an undertaking using the definition found in 36 CFR 800.16(y) of the implementing regulations of the NHPA. However, the undertaking is limited to the evaluation of the efficacy, legality, suitability of the CCAA and permitting of the incidental take of the Covered Species, should the species be listed in the

future. The underlying commercial, industrial and other sector activities, including oil and gas development and sand mining are not authorized by the Proposed Action and do not require a federal approval. Additionally, no historic structures or cemeteries have been recorded in the vicinity, and no NRHP individual properties or districts have been recorded within, or within 1 mile of, the Covered Area. Finally, the Covered Species is not eligible for listing in the NRHP, as it is not a site, building, structure, or object (54 USC 300308). Thus, the Proposed Action has no potential to affect historic properties. Given these findings, the Proposed Action will have negligible impacts (i.e., no detectable or measurable change to cultural resources or NRHP eligible places) and benefits on cultural resources.

### *4.9.2 Alternative B – No Action Alternative*

Under the No Action Alternative, the Service would not approve the Permit. Thus , under the No Action Alternative there would be no undertaking as defined under the NHPA and consequently have no effect on historic properties and negligible impacts and benefits on cultural resources.

## 4.10 Cumulative Impacts

This analysis also considers potential impacts on resources from the 2020 DSL CCAA, when combined with other past, present, and reasonably foreseeable actions in the Covered Area. Reasonably foreseeable actions include planned or funded future actions that are reasonably certain to occur or continue occurring over the requested 23-year Permit term. These include reasonably foreseeable projects that would result in cumulative impacts as defined under the 1978 NEPA regulations (40 CFR 1508.7) under which this evaluation is being conducted.

The primary past, present, and reasonably foreseeable actions in the Covered Area are the aforementioned Covered Activities (*see* Table 1). These actions, and their associated potential impacts, are anticipated to continue to occur over the next 23 years regardless of this 2020 DSL CCAA. Other reasonably foreseeable actions not associated with the Covered Activities were identified through review of existing and approved statewide strategic plans; local and regional land use plans; government websites and geographic information system (GIS) data; county-level transportation plans; county-level water management plans; and regional conservation management plans. These include implementation of goals, objectives, and guidance to support agriculture and overall future growth and development; construction and operation of transmission pipelines and oil and gas wells; construction, maintenance and operation of electric powerlines; upgrades to and expansions of existing roadway infrastructure; renewable energy development; and new and expanded water resource infrastructure to meet irrigation demands and address water shortages. These actions and projects are described in Table 8.

**Table 8. Reasonably Foreseeable Projects in the Covered Area**

| Topic/Focus Area | Project/Plan Name | Location | Description |
|---|---|---|---|
| Covered Species | *Texas Conservation Plan Conservation for the Dunes Sagebrush Lizard* (TCP) | All Covered Area Counties | Voluntary conservation program that incentivizes private landowner participation through avoidance of DSL Habitat and the funding and implementation of Conservation Measures. The existing TCP Covered Area overlaps with the Covered Area of the 2020 DSL CCAA and includes activities associated with oil and gas and agriculture and ranching but does not establish specific conservation measures for sand mining and renewable energy operations. |
| Agriculture | Texas Department of Agriculture Strategic Plan (2019–2023) | Statewide | Establishes goals, objectives, and performance measures to generate marketing opportunities for Texas agriculture and increase funding/assistance to rural communities and businesses. |
| Land Use/ Economic Development | Odessa Comprehensive Plan | Ector County | Provides guidance for future growth, development, land use, infrastructure, and services in Odessa. Identifies needed redevelopment areas, updated roadway standards and zoning ordinances. |

| Topic/Focus Area | Project/Plan Name | Location | Description |
|---|---|---|---|
| Land Use/ Economic Development | 2013 City of Andrews Comprehensive Plan | Andrews County | Estimates that residential land use would comprise the largest land use, with an estimated 1-3% annual population growth, as well as commercial uses due to oil and gas activities in the Permian Basin. |
| Pipelines, Oil and Gas | The Texas Railroad Commission Public GIS Viewer | All Covered Area Counties | Transmission pipelines and oil and gas wells are located extensively throughout Andrews, Crane, Ector, Gaines, Ward, and Winkler Counties. The U.S. Energy Information Administration (EIA, 2020) notes that Texas continues to lead the nation in crude oil and natural gas production and is among the top 10 coal producers. This trend, along with associated pipeline and well development, in anticipated to continue into the future. |
| Renewable Energy | U.S. Energy Information Administration's U.S. Energy Mapping System | All Covered Area Counties | The EIA's mapping database shows 350 megawatts solar and 189 megawatts of wind energy present across the Covered Area. The EIA (2020) also notes that Texas leads the nation in wind-powered electricity generation, and that western Texas has some of the greatest solar power potential in the nation. Due to decreasing costs and improved transmission access, this trend of increasing renewable energy development in anticipated to continue into the future. |
| Roads and Transportation | Texas Department of Transportation | All Covered Area Counties | As of 2020, the Texas Department of Transportation has identified the following projects as underway, scheduled, or planned for construction with the purposes of traffic signal installation or repair; roadway resurfacing, repair or widening; or bridge replacement.<br>• Projects currently underway or scheduled for construction in the near future: 2 in Andrews County, 10 in Crane County, 9 in Ector County, 1 in Gaines County, and 2 in Winkler County<br>• Projects with plans of development in the next 10 years: 16 in Andrews County, 7 in Crane County, 74 in Ector County, 14 in Gaines County, 18 in Ward County, and 12 in Winkler County<br>• Projects involving corridor surveys and/or planned development in 10+ years: 5 in Andrews County, 2 in Ward County, and 3 in Winkler County |
| Water Development | 2017 Texas State Water Plan | All Covered Area Counties | The Texas State Water Plan has identified the following projected water needs for 2020-2070 and recommended projects to address future water shortages.<br>• Andrews County: 40,417 acre-feet per year (af/y) predominantly attributed to irrigation demands; six projects including expansion of existing aquifer supplies, redirection of non-potable sources, and irrigation and mining conservation activities<br>• Crane County: No projected water needs; one mining conservation activity<br>• Ector County: 39,167 af/y predominantly attributed to increases in municipal use; seven projects including desalination and treatment of existing aquifer supplies, irrigation, steam electric power, and mining conservation activities, and expansion of well fields<br>• Gaines County: 273,146 af/y predominantly attributed to irrigation and power demands; nine projects including expansion of existing supplies, desalination and treatment of existing supplies, and agriculture conservation activities<br>• Ward County: 5,569 af/y predominantly attributed to irrigation demands; four projects including expansion of existing supplies, irrigation and mining conservation activities, and water auditing<br>• Winkler County: 421 af/y predominantly attributed to irrigation demands; four projects including expansion of existing supplies, irrigation and mining conservation activities, and water auditing |
| Water Development | 2015 Llano Estacado Underground Water Conservation District Management Plan | Gaines County | Predicts substantial decrease in annual water pumping from the years 2010 to 2060. For example, it is predicted that in 2020 Gaines County would pump approximately 240,110 af/y in the Ogallala Aquifer and 46,202 af/y from the Edwards-Trinity Aquifer, and by 2060 estimates decrease to an annual pumping rate of 71,544 af/y in the Ogallala and 12,904 af/y in the Edwards-Trinity. |

Most of the Covered Area is privately owned and rural and unlikely to be subject to urban development or urban sprawl from existing cities and towns (Figure 1). The road development projects listed in Table 8

would occur in and around cities and are not anticipated to result in reasonably foreseeable impacts to the Covered Species or on soils, vegetation communities, wildlife habitat within the Covered Area. Reasonably foreseeable water development projects would help address water supply shortages for irrigation, power demands and municipalities, and are intended to increase management and conservation of groundwater. Conservation of groundwater is anticipated to indirectly benefit the Covered Species over the long-term through water provision that would support vegetation and dune structures potentially inhabitable by the Covered Species.

Disturbance, loss, or removal of soils, vegetation, and wildlife habitat is an inevitable change from development activities. Many projects would also include restoration and reclamation activities for soils, vegetation, and wildlife habitat, in addition to the conservation of groundwater. Changes to habitat for listed, proposed, and candidate species or injury or mortality of these species would be subject to consultation with the Service, which would restrict any activity to a level that would avoid impacts to populations of listed, proposed, or candidate species. Changes to these resources would typically be limited to the area of disturbance or areas within the immediate vicinity. As a result, reasonably foreseeable projects could result in minor to moderate, short- to long-term impacts on soils, water, vegetation, wildlife, and listed, proposed, and candidate species, and short- to long-term, benefits to these resources.

During construction of these projects, land ownership may change, and restrictions or closures to existing land use would be implemented. Restrictions or closures to existing land uses associated with other reasonably foreseeable projects would be temporally and spatially limited to the extent possible; however, these restrictions or closures would still be anticipated. Depending on the size of the project, such as the construction of large-scale water supply and irrigation infrastructure, temporary restrictions or changes to land use may be widespread. Where new development is necessary to accommodate permanent infrastructure, other reasonably foreseeable projects would comply with existing zoning regulations and applicable land use plans and aim to minimize permanent conversions of land use to the extent possible. As a result, impacts on land use and ownership from other reasonably foreseeable projects would be short- to long-term and minor to moderate.

The implementation of reasonably foreseeable land use goals, objectives, and guidance would help manage and protect existing land uses. Depending on the needs of the community implementing new land use goals, objectives, or guidance, existing land uses may be aimed at conserving land uses, such as agricultural lands, or managing changes to land use necessary for supporting future growth and development. As a result, reasonably foreseeable projects would also provide short- to long-term benefits to land use.

Actions considered under the Proposed Action would result in a range of short- to long-term, negligible to moderate incremental impacts to Covered Species, hydrology and water resources, soils, vegetation, wildlife (general and special status), land use and ownership, and cultural resources beyond conditions described in the No Action Alternative. However, implementation of Conservation Measures in the Covered Area under the Proposed Action would also result in short- to long-term benefits to evaluated resources and offset adverse impacts associated with Covered Activities. Therefore, the Proposed Action, when combined with past, present, and reasonably foreseeable actions, would result in cumulative impacts similar to, but slightly reduced from, impacts described under the No Action alternative, due to the potential for the Proposed Action to provide additional short- to long-term benefits.

# 5 AGENCY CONSULTATION AND LIST OF PREPARERS

## 5.1 Agency Consultation

Agencies consulted during the preparation of this EA were as follows:

- U.S. Fish and Wildlife Service

## 5.2 List of Preparers

Table 9 provides a list of Service and consultant staff involved in the preparation and review of this EA.

**Table 9. List of Preparers**

| Agency or Entity | Name | Role |
|---|---|---|
| U.S. Fish and Wildlife Service (Service), Austin Ecological Services Field Office | Tanya Sommer | Reviewer |
| U.S. Fish and Wildlife Service (Service), Ecological Services Regional Office | Marty Tuegel | Reviewer |
| SWCA Environmental Consultants (SWCA) | Amanda Aurora | SWCA Project Manager |
| SWCA | Sue Wilmot | NEPA QA/QC |
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| SWCA | Liz Hitzfelder | GIS |
| SWCA | Lauri Logan | Technical Editor |

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# 7 APPENDIX A - PUBLIC COMMENTS AND AGENCY RESPONSES

**Table 10. General Responses to Comments**

| General Response Number | General Response Category | General Response |
|---|---|---|
| #1 | Policy | As described in the Service's 2016 policy governing CCAAs, one of the Service's goals is to encourage the public to voluntarily develop and implement conservation plans for declining species prior to them being listed under the ESA. The benefits of such conservation actions may contribute to not needing to list a species, to list a species as threatened instead of endangered, or to accelerate the species' recovery if it is listed. To participate in a CCAA, non-Federal property owners agree to implement on their land the CCAA's specific conservation measures that reduce or eliminate threats to the species that are covered under the agreement. An ESA section 10(a)(1)(A) enhancement-of-survival permit (EOS permit) provides a specific level of incidental take coverage should activities addressed in the CCAA result in take of the covered species if listed. As an incentive to voluntarily conserve unlisted species, property owners receive assurances that they will not be required to undertake any other conservation measures than those agreed to, even if new information indicates that additional or revised conservation measures are needed for the species, and they will not be subject to additional resource use or land-use restrictions. The criteria governing issuance of an EOS permit require the Service to find that implementation of the CCAA is reasonably expected to provide a net conservation benefit to the species as compared to the baseline status of the species without the CCAA. |
| #2 | Net Benefit | The biological goals and objectives of the 2020 DSL CCAA are intended to reduce or eliminate threats to the DSL from otherwise lawful land use activities and to create a net conservation benefit for this unlisted species that occurs, in Texas, virtually entirely on privately owned lands. Whether a CCAA is reasonably expected to provide a net conservation benefit is evaluated against the existing baseline conditions of the landscape wherein the effects of the otherwise lawful activities that present threats to the DSL and its habitat are ongoing and require no authorization from the Service. In this context, the Service has concluded that implementation of the 2020 DSL CCAA as proposed is reasonably expected to provide a net conservation benefit through a combination of avoidance, minimization, and mitigation measures performed or funded by Participants on Enrolled Properties and other privately owned lands in Texas, and the CCAA otherwise complies with the Service’s 2016 CCAA policy. |

| | | |
|---|---|---|
| #3 | Listing Out of Scope | A decision by the Service about whether the DSL should be listed as threatened or endangered is outside of the scope of the proposed action to approve the CCAA and to issue the related EOS permit. Any future decision by the Service regarding listing of the DSL will be made in accordance with all applicable regulations and policy and in consideration of the best scientific and commercial information available. |
| #4 | Adaptive Management | The 2020 DSL CCAA includes robust provisions for monitoring and adaptive management, changed circumstances, new research, and ongoing coordination with the Service, an Adaptive Management Committee and others to minimize the impacts of uncertainty. Changes to the CCAA and its related documents resulting from adaptive management or changed circumstances will be implemented through a process defined in the CCAA. |
| #5 | Old Record | The Service determined in 2012 that listing the DSL was not warranted on the basis that the threats to the species and its habitat had been reduced to the point that the species did not meet the statutory definition of an endangered or threatened species. The 2020 DSL CCAA is intended, in part, to address new threats to the species that arose since 2012. The Service has concluded that implementation of the 2020 DSL CCAA as proposed is reasonably expected to provide a net conservation benefit for CCAAs through a combination of avoidance, minimization, and mitigation measures performed or funded by Participants on Enrolled Properties and other privately owned lands in Texas. |
| #6 | Effectiveness | 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 also will be responsible for reviewing and evaluating the effectiveness of Conservation Program under the 2020 DSL CCAA, 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 (See, e.g., Sections 15.0 and 20.0). The Administrator is required to engage a qualified third-party auditor for the financial health and implementation of the CCAA every 5 years. In addition to participating on the Adaptive Management Committee, the Service will review the CCAA annual report, quarterly surface disturbance reports and audit reports every 5 years. |

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| #7 | Duration | The CCAA will be effective for a duration of 23 years. The duration of the CCAA approximates the planning horizons of other conservation plans approved by the Service in Texas. The 23-year duration of the permit (1) allows consistency in monitoring the take allocation provided under the CCAA across conservation programs, (2) promotes long-term, strategic conservation of DSL habitat, and (3) provides certainty necessary to incentivize participation by non-Federal property owners. Should the DSL be listed as threatened or endangered, the EOS permit will become effective and provides regulatory assurances to CCAA Participants as an incentive to engage in conservation actions for this unlisted species on private lands. The EOS permit shall remain in effect until the CCAA's expiration date or until surrender by the permittee, unless it is suspended or revoked by the Service, as provided in federal regulations. |
| #8 | Committees | The roles of the Administrator, the Adaptive Management Committee and Participant Committee are described in Chapter 2 of the 2020 DSL CCAA. The Administrator is the EOS Permittee and responsible for ensuring that the 2020 DSL CCAA is implemented as proposed and in accordance with the terms and conditions of the EOS permit. The Administrator ensures that the recommendations of the Adaptive Management Committee for achieving the biological goals and objectives remain consistent with the commitments made in the CCAA and the assurances provided by the EOS permit. The Participant Committee reviews administration of the CCAA and implementation issues that affect Participants. The Participant Committee may make recommendations to the Administrator, and, as appropriate, the Adaptive Management Committee. |
| #9 | Causation | The CCAA reduces threats and impacts to the DSL, an unlisted species, and its habitat from lawful industrial and commercial activities on private property that are the causes of habitat destruction and degradation. As explained in the EA, approval of the CCAA and issuance of an enhancement of survival permit does not cause habitat destruction because the activities are legal and unlisted species are not regulated under the Endangered Species Act. The conservation measures provided in the CCAA are designed to, among other things, minimize habitat fragmentation and degradation. The EA also explains how the CCAA will effectuate conservation of the DSL and its habitat, and provide a net conservation benefit for the DSL. |
| #10 | Hardy | The Texas State University (Hardy et al. (2018)) model and map approximates the extent of the DSL range and potential habitat in Texas. The CCAA uses the Texas State University map as the geographic extent of potential DSL habitat. The CCAA acknowledges the limitations of the Texas State University map and incudes an adaptive management process, where "the Adaptive Management Committee 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." |

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| #11 | Rainwater | The Service appreciates the additional information provided in Rainwater (2020). We have reviewed this new information and included it in our Environmental Assessment. |
| #12 | Easements | Conservation easements are one tool available to the Administrator for implementing mitigation under the 2020 DSL CCAA. Chapter 8.4 of the CCAA indicates that conservation easements may be used to conserve contiguous blocks of priority areas of High and Intermediate Suitability DSL Habitat. Additional guidance for the application of conservation easements is provided in the biological goals and objectives of the CCAA. The term of an easement and other conditions, such as allowed and restricted uses, will be determined on a case-by-case basis with landowners who volunteer to partner with the program to conserve this unlisted species. The Service supports the use of multiple conservation tools, including but not limited to conservation easements, conservation contracts and agreements and in-kind services. |
| #13 | Issuance Criteria | The issuance criteria for an enhancement of survival permit supported by a CCAA are provided in the Service regulations at 50 CFR 17.22(d)(2) and 17.32(d)(2). The Service has concluded that the CCAA meets the regulatory issuance criteria, including that implementation of the CCAA is reasonably expected to provide a net conservation benefit to the DSL by eliminating and reducing threats to the species and its habitat, the probable direct and indirect effects of any authorized take will not appreciably reduce the likelihood of survival and recovery of the DSL in the wild, and that Canyon Environmental has sufficient qualifications to hold an EOS permit. |
| #14 | EA Scope | The Service recognizes that the scope and analyses of resources discussed in the EA are limited to the conservation actions of the CCAA. The federal action is the approval of 2020 DSL CCAA and issuance of the Enhancement of Survival Permit that would provide a specific level of incidental take coverage should activities addressed in the CCAA result in take of the covered species if listed. The Service does authorize nor regulate lawful activities on private lands lacking any federal nexus or jurisdiction. Lawful activities occurring on private property, including oil and gas development and sand mining, are therefore part of the environmental baseline and analyzed under the No Action Alternative. |
| #15 | No Action | Under the No Action alternative evaluated in the EA, there would be no EOS permit issued and either no CCAA for the Service to act on or the CCAA as proposed would be denied. |

**Table 11. Specific issues provided by commenter and responses.**

| Agency / Entity | Comment on EA or CCAA | Comment (Excerpted, in Entirety, or Paraphrased) | Location of Changes Made in EA or CCAA | FWS Revision or response |
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| Private Citizen | CCAA & EA | "no permit to kill harass or injure the lizard shoudl be allowed on this site. the fact is the species will be wiped out. the permit applied for is just fake in that it never lasts in protection of the affected species. deny this permit appolication. we need federal authroization here to deny since texas has faulty inadequate environmetnal laws right now. nobody should be allowed to kill, injure or harass this species which deserves full endangered status protection in every aspect of their need for this land to live on. they pick the best land for themselves. keep the damn humans out. the humans come in and destroy everyting and tell us the animals can live anywherE BECAUSE THE HUMANS WANT THE LAND. THAT KIND OF FAKERY BY PROFITEERS IS ENTIRREL YNOT TRUE. THAT LAND IS ESSENTIAL FOR THE SPECIES BECAUSE THAT IS WHY THEY ARE THERE IN THE FIRST PLACE. DENY THIS PETITION." | None. | See General Responses #1 Policy, #2 Net Benefit, #3 Listing Out of Scope. |
| Private Citizen | CCAA | If federal biologists have determined that the primary threat to the Dunes Sagebrush Lizard is the loss of habitat caused by oil and gas development and sand mining, why would the FWS consider offering permits to landowners in the Permian Basin? Haven't there been enough species become endangered and extinct?<br>The only place this species is found is southeastern New Mexico (in only 655 square miles) and adjacent Texas. It needs shade of oak trees in order to bury itself in the cool, white sands to avoid predators and | None. | See General Responses #1 Policy, #2 Net Benefit, #3 Listing Out of Scope, #4 Adaptive Management. |

| Agency / Entity | Comment on EA or CCAA | Comment (Excerpted, in Entirety, or Paraphrased) | Location of Changes Made in EA or CCAA | FWS Revision or response |
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| | | to regulate it's body temperature. How can it still do this if oil and gas development and sand mining occur in its small habitat?<br>These lizards only live one to two years and the females only lay one to two clutches of eggs (with only 3-6 eggs per clutch). The disruption of their habitat and lives will quickly decimate this species.<br>This proposal, allowing development on 54 square miles and assuring landowners that they're not subject to federal restrictions, regardless of the lizards being listed or not, makes no sense. How can the lizards be protected if no one has to follow the rules to protect it? In addition, these discretionary permits would remain in effect for 23 years? These animals cannot outlast this short-sighted proposal, because habitat destruction is permanent. You can't allow the destruction and fragmentation of the lizard's habitat and later decide you need to protect it, while this species' numbers continue to diminish.<br>Where is the proof that private property owners and the Texas economy would be devasted without these permits?<br>Federal listing of the Dunes Sagebrush Lizard is necessary to prevent it's extinction. | | |
| Alamo Group of Lone Star Chapter of Sierra Club | CCAA | My name is Terry Burns, M.D., and I serve as Chair of the San Antonio (Alamo) Group of the Lone Star Chapter of the Sierra Club. I write to oppose the Candidate Conservation Agreement for the Dunes Sagebrush Lizard. I lived in Midland for 20 years, and am familiar with this species and the issues surrounding its protection. I was living there in 2012 when Fish and Wildlife Service withdrew the proposed rule to list the Dunes Sagebrush Lizard (Sceloporus arenicolus), | None. | See General Responses #3 Listing Out of Scope, #5 Old Record. |

| Agency / Entity | Comment on EA or CCAA | Comment (Excerpted, in Entirety, or Paraphrased) | Location of Changes Made in EA or CCAA | FWS Revision or response |
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| | | and aware of this decision. I remember some of now (soon to be former) Representative Conway's comments about this issue. The Service had determined that the listing of the Dunes Sagebrush Lizard (the Lizard) was warranted. The Service in 2012 specifically relied on the commitment to habitat preservation from the oil and gas industry to avoid the habitat altogether when deciding not to list the species. The listing was withdrawn primarily because the Service found that development would be placed outside the habitat of the Lizard. Now, the Service appears to approve development in lizard habitat, despite the fact that your own scientific findings in 2012 showed the unacceptable risks these activities impose. Habitat destruction is the primary threat to the Dunes Sagebrush Lizard. The Service has shown bad faith in deciding not to list the species and attempting to approve more habitat destruction. Clearly the 2012 decision has failed to protect the dunes sagebrush lizard and listing as an endangered species is required now. I urge you to accept the science, follow the proper regulatory guidelines, and list the species NOW. | | |
| Environmental Review, Inc | CCAA | We are not certain the CCAA satisfies the criteria referenced in the docket the Service analyzes when making the decision for approval. Specifically, it is not certain that the CCAA supports a net conservation benefit (criteria 2), does not contribute to a reduction in the survival and recovery of any species (criteria 3), and that the applicant has shown capability and commitment to implementing the CCAA terms (criteria 6). We support the Service's current alternative | Section 16.1 Changed or Unforeseen Circumstances Table 2 (CCAA). | See General Response #2 Net Benefit, #6 Effectiveness.<br>The issuance criteria for an enhancement of survival permit supported by a CCAA are provided in the FWS regulations at 50 CFR 17.22(d)(2) and 17.32(d)(2). After careful review, the Service has concluded that the CCAA meets the regulatory issuance criteria, including that implementation of the CCAA is |

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| | | in consideration of a no action plan, and note alternative considerations if the no action plan is not chosen.<br><br>Criteria 2 and 3: Net conservation benefit and non-contribution to the reduction of other species survival. This CCAA should not be legally binding for 23 years and this length of time does not support that the CCAA can satisfy these criteria. The species status can change in this time and this is many life cycles of the DSL amidst a changing climate and shifting energy needs. The agreement should be reconsidered every 5 years with the audited review and not be legally binding for 23 years. Can the binding length of these collective agreements be shortened if the no action plan is not chosen? Page references are from the Nov 2020 updated CCAA.<br><br>1. Page 11 "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." The nation's energy sources are shifting and a 23-year permit does not reflect realistic expectations regarding long term or short term planning around all the groups broadly covered in this CCAA. | | reasonably expected to provide a net conservation benefit to the DSL by eliminating and reducing threats to the species and its habitat, the probable direct and indirect effects of any authorized take will not appreciably reduce the likelihood of survival and recovery of the DSL in the wild, and that Canyon Environmental has sufficient qualifications to hold an EOS permit. The CCAA has been revised at Section 16.1 Table 2 to include five additional changed circumstances, including to address issuance criteria 3 and 6. |
| Environmental Review, Inc | CCAA | 2. Page 12 '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 | None. | See General Responses #4 Adaptive Management, #7 Duration. |

| Agency / Entity | Comment on EA or CCAA | Comment (Excerpted, in Entirety, or Paraphrased) | Location of Changes Made in EA or CCAA | FWS Revision or response |
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| | | 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…'<br><br>Twenty three years is too long of a commitment, regardless of listing, to this method, as it should be reassessed with time, regularly, with the improvement of data referenced in this document as expected by the fees and associated research. | | |
| Environmental Review, Inc | CCAA | Criteria 6: The applicant has shown capability and commitment to implementing the CCAA terms. The comments below highlight areas where the commitment or capability of the applicant to carry out the CCAA is not certain. (points 3, 4, 5, 6, 7, 8)<br><br>3. The administrator never has to follow the recommendations of the AMC?<br><br>'The Administrator must consider and respond in a timely manner to all issues and recommendations raised by the Adaptive Management Committee. No language in this CCAA will be construed as limiting the issues the Adaptive Management Committee may consider. The Adaptive Management Committee may develop a solution or set of recommendations for a particular issue.'<br><br>So the administrator has no obligation to follow the recommendations of the AMC? The obligation only stands to consider and respond as is stated. Per other pages later in | None. | See General Responses #8 Committees. |

| Agency / Entity | Comment on EA or CCAA | Comment (Excerpted, in Entirety, or Paraphrased) | Location of Changes Made in EA or CCAA | FWS Revision or response |
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| | | document ie p28 on map development, the management needs are ongoing and under refinement- is the administrator obligated to update plan according to the recommendations of the AMC? | | |
| Environmental Review, Inc | CCAA | 4. Page 16 'Engaging a qualified third-party auditor for the financial health and implementation of the CCAA every 5 years'<br><br>What is qualified and is there certainty the review accurately reflects the species impact? If AMC actions hold no weight, does this review? Can some criteria be satisfied by the contractor and can this review have the capacity to impact the CCAA actions towards their goals and/or suspension for participants? | None. | See General Response for #6 Effectiveness. This provision pertains to the fiscal responsibilities of the Administrator for implementing the CCAA, rather than the biological status of the species or the biological effectiveness of the CCAA. Financial auditing is a professional service supported by academic qualifications, training, and experience. The Service, in its oversight role, ensures that the terms and conditions of the CCAA and the EOS permit are satisfied. The Service may suspend or terminate the CCAA or suspend or revoke the EOS permit in accordance with 50 CFR §§ 17.22(d), 17.32(d), 13.27, and 13.28. |
| Environmental Review, Inc | CCAA | 5. Companies do not have to avoid High and Intermediate suitability if they can show in any way it is not economically feasible- are they ever required to participate? o See oil and gas Certificate of Inclusion in the Appendix B, page 120 | None. | See General Responses #2 Net Benefit. Avoidance of High and Intermediate Suitability areas of DSL Habitat is required unless the oil and gas Participant demonstrates that (i) The habitat designation assigned to the area in the Texas State University map of DSL Habitat in which the development is proposed to occur is incorrectly designated. That demonstration must be made following the approved Protocol options set out in Appendix A; or (ii) The mineral estate for which the development was planned cannot be accessed except through the High or Intermediate Suitability area, such as |

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| | | | | with horizontal or directional drilling. Documentation must be provided to the Administrator, who will consult with the Service. |
| Environmental Review, Inc | CCAA | 6. How is the Administrator chosen? This role carries much of the weight to ensure species is protected? Is the Admin accountable to the AMC o Page 10 Is there a qualification threshold for the Administrator and the non-profit that they sit within and how are they appointed? They hold the permit and are the driving factor here and the success of what is recommended is dependent on this position. Does the TCP have insight on who holds this position? o Page 12 'The Administrator must consider and respond in a timely manner to all issues and recommendations raised by the Adaptive Management Committee. No language in this CCAA will be construed as limiting the issues the Adaptive Management Committee may consider. The Adaptive Management Committee may develop a solution or set of recommendations for a particular issue.' ▪ So the administrator has no obligation to follow the recommendations of the AMC? The obligation only stands to consider and respond as is stated. Per other pages later in document i.e., p28 on map development, the management needs are ongoing and under refinement- is the administrator obligated to update plan according to the recommendations of the AMC? | None. | See General Responses #8 Committees. The Service has evaluated the qualifications of Canyon Environmental, LLC consistent with applicable regulations and determined it has shown capability for and commitment to implementing all of the terms of the CCAA and meets the issuance criterion of the CCAA. As provided in the CCAA, the Administrator can use both internal and third parties such as academics and consultants to assist in implementing the Plan. |
| Environmental Review, Inc | CCAA | 7. Why do Participants only have to pay for 3 years if this is a 23 year agreement? How does this support ongoing conservation efforts? o Page 121 Certificate of Inclusion section 3.0 | None. | Participants may be responsible for paying three types of fees: Enrollment, Habitat Conservation, and Implementation. All Participants, except those in the Agriculture and |

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| | | | | Ranching Sector, will be responsible for paying an Enrollment Fee for each of the first three years a Participant's CI is in effect. The Habitat Conservation Fee for New Surface Disturbance associated with oil and gas, linear infrastructure, renewable energy, local government and sand mining sectors will be calculated using scales set forth in Appendix D. The oil and gas, sand mining, linear infrastructure and renewable energy sectors will also pay the Implementation Fees, based on an annual assessment per company. The Administrator will use the fees collected to implement the CCAA. |
| Environmental Review, Inc | CCAA | 8. Can suspension of the CI and permit can only occur if a fee is not paid? Can other methods be included if the no action option is not chosen by the Service. o Page 123 Certificate of Inclusion section 5.1 | None. | As described in Chapter 11.0 of the 2020 DSL CCAA, an individual CI may be suspended or terminated for non-compliance with any of the agreed upon conservation measures and actions, including but not limited to the payment of fees. Under the No Action alternative described in the EA, there would be no CCAA for the Service to act on. |
| Private Citizen | CCAA | I am opposed to the issuing in the Permian Basin for oil and gas. This is the habitat of the rare dunes sagebrush lizard. The US should be moving away from oil and gas due to climate change. Enough already! You job should be to protect rare and threatened plant and animal species. Not to be an agent in their destruction. I vote NO! | None. | See General Responses #1 Policy. |
| Private Citizen | CCAA | I oppose the application for an enhancement of survival permit and draft candidate conservation agreement with assurances for | None. | See General Responses #1 Policy. The CCAA reduces threats and impacts to the DSL, an unlisted species, and its |

| Agency / Entity | Comment on EA or CCAA | Comment (Excerpted, in Entirety, or Paraphrased) | Location of Changes Made in EA or CCAA | FWS Revision or response |
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| | | Canyon Environmental, LLC, for the Dunes Sagebrush Lizard (DSL) (Sceloporus arenicolus) in Andrews, Gains, Crane, Ector, Ward, and Winkler Counties, Texas.<br><br>This proposal will allow and encourage further fragmentation of the DSL habitat including sand dunes and shinnery oak via more roads, pipelines, well pads, compressor stations, and other oil/gas facilities and infrastructure. In addition, the permits that are proposed are for long periods of times, up to 23 years, and will authorize incidental take when the DSL should be listed as endangered on the federal endangered species list and given the protection that it deserves. | | habitat from ongoing industrial and commercial activities on private property. These ongoing activities are not subject to federal regulatory authority. As explained in the EA, approval of the CCAA and issuance of an EOS permit does not cause habitat destruction. The conservation measures provided in the CCAA are designed to, among other things, address habitat fragmentation. The duration of the EOS permit must be sufficient to achieve a net conservation benefit, which a 23-year period accomplishes by (1) allowing consistency in the take allocation, (2) promoting long-term, strategic conservation of DSL habitat, and (3) providing certainty necessary to incentivize participation by non-Federal property owners. |
| Pioneer Natural Resources USA, Inc. | CCAA | Pioneer is a conservation-minded company and long-standing member of the Permian Basin Petroleum Association (PBPA). Pioneer, as well as other PBPA member companies, are participants in various voluntary conservation programs for the protection of species and their habitats that overlap with oil and gas operations in the Permian Basin. Pioneer has participated in the drafting of PBPA's comment letter on this matter and fully supports and endorses PBPA's formally submitted comments.<br><br>One critical overarching issue that Pioneer has identified as essential to the CCAA is "All Activities Enrollment and Post-Listing Enrollment." All-Activities Enrollment | None. | The flexibility of the All Activities Enrollment provision may be beneficial to both Participants and the DSL by incentivizing enrollment in the 2020 DSL CCAA. Enrollment will increase the net conservation benefit of the 2020 DSL CCAA by facilitating more conservation actions. |

| Agency / Entity | Comment on EA or CCAA | Comment (Excerpted, in Entirety, or Paraphrased) | Location of Changes Made in EA or CCAA | FWS Revision or response |
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| | | provides additional conservation benefit as oil and gas Participants commit to Conservation Measures on all of their activities across the DSL habitat, and the Participant is committing to conservation even on acreage for which it may have no current development plans, which can increase the level of conservation on this enrolled property and across the DSL habitat. This will be beneficial for operators and the DSL. If a Participant is not currently placing acreage into development, or if a Participant is to newly acquire interest in acres not under conservation, the DSL would continue to be protected as development progresses in the region. Further, Post-Listing Enrollment will allow conservation minded operators such as Pioneer to enroll acreage under the 2020 DSL CCAA should a potential listing be finalized at a future date. Flexibility of this type will allow industry Participants to consolidate acreage blocks to maximize the benefit of directional drilling capabilities and capacities, while minimizing and possibly distancing or altogether avoiding surface impacts in the DSL habitat on a case by case basis. | | |
| Pioneer Natural Resources USA, Inc. | CCAA | In addition, Pioneer views a viable and effective 2020 DSL CCAA which will work in practice, and is equitable for all potential participants in the responsibilities and obligations it sets forth, as critical to maintaining a balanced approach to ensuring the DSL's continued existence, while allowing the operation of various economic activities identified under the 2020 DSL CCAA. In particular, Pioneer appreciates the inclusion of sand mining activities, and | None. | Thank you for your comment. |

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| | | supports a program that will allow the Company's current and future sand suppliers to join conservation efforts and enroll under the 2020 DSL CCAA, so that these vital businesses can continue their operations while funding and pursuing conservation programs for the species. | | |
| Hi-Crush inc. | CCAA | Hi-Crush Inc. generally supports the 2020 DSL CCAA as published for a 23 year term as it provides an effective structure and process for Hi-Crush, other sand companies and other owners of private land in West Texas to remove and reduce threats to the DSL and its habitat related to their covered activities.<br><br>Hi-Crush recommends approval of the 2020 DSL CCAA and issuance of the requested Enhancement of Survival Permit (Permit) for a 23 year term. Hi-Crush also agrees with and incorporates by reference the comments and other materials submitted to the U.S. Fish and Wildlife Service (Service) by the Independent Sand Processors of Texas (ISPOT), of which Hi-Crush is a member.<br><br>This CCAA meets the Service's issuance criteria for the Permit because it provides a net conservation benefit to the DSL through the following:<br>Requires sand mining participants to implement conservation measures to protect the DSL and its habitat;<br>Guiding and providing funding for Conservation Actions for the DSL in order to improve the status of the species in West Texas.<br>Identifying High Priority Areas of DSL | None. | Thank you for your comment. |

| Agency / Entity | Comment on EA or CCAA | Comment (Excerpted, in Entirety, or Paraphrased) | Location of Changes Made in EA or CCAA | FWS Revision or response |
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| | | Habitat for conservation and incentivizes conservation and reducing habitat fragmentation through easements, contracts, cost-sharing and other tools, including reasonable avoidance measures.<br>Supporting surveys and research to increase scientific understanding of the DSL, DSL Habitat, and effectiveness of conservation efforts and other protections to conserve DSL Habitat. | | |
| Hi-Crush inc. | EA Page 15 - 16, Hydrology and Water Resources; EA Page 28, Covered Species Alternative A | In addition to our comments on the CCAA, Hi-Crush objects to the citations of the 2019 Mace Report in Section 3.3 "Hydrology and Water Resources" of the Service's draft Environmental Assessment (EA) for the 2020 DSL CCAA. In particular, the draft EA includes inaccurate statements when discussing the impacts of usage of groundwater by sand mining, and incorrect conclusions in the draft EA in Section 4.2.1 "Covered Species" related to asserted impacts from groundwater use on surface vegetation used by DSL. The Mace (2019) report has serious flaws, including its assumptions that dramatically overstate actual consumptive water use by sand mining, resulting in incorrect and misleading modeling results.<br>Hi-Crush hosted Dr. Ken Rainwater at its facilities in September 2020, where he took on-site well measurements, reviewed our water budget and other data and information. Hi-Crush draws almost all of its water from wells drilled into the Dockum aquifer, which is located hundreds of feet below the surface, and is of limited quality. Surface vegetation that the DSL uses for its habitat (e.g., shinnery oak) cannot and does not rely on | Sections 3.3 Hydrology and Water Resources, 3.5 Vegetation, 4.2.1 Covered Species Alternative A – Proposed Action (EA); Sections 7.1.4 Sand Mining (CCAA). | The Service has reviewed the information provided in Rainwater (2020) and incorporated the analysis into the EA and our review of the CCAA. |

| Agency / Entity | Comment on EA or CCAA | Comment (Excerpted, in Entirety, or Paraphrased) | Location of Changes Made in EA or CCAA | FWS Revision or response |
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| | | water from the Dockum aquifer. Hi-Crush's groundwater consumption from the Pecos Valley aquifer nearer to the surface is very limited, with a rate of 16 gallons per minute (gpm), substantially below the minimum groundwater recharge rate of 32 gpm across Hi-Crush's property acreage in West Texas. Thus, water use by Hi-Crush has no effect on the DSL or its habitat. This was confirmed by Dr. Ken Rainwater in his report entitled "Sand Mining Water Use in West Texas" (Rainwater 2020), attached to the ISPOT comments and incorporated herein by reference. We, therefore, caution strongly against relying on Mace (2019) in the EA and CCAA as it does not represent the best available scientific and commercial information. | | |
| Private Citizen | CCAA | I fail to see where the Dune Sagebrush Lizard is an endangered species: Geographic distribution: The geographic range of S. graciosus includes much of the western United States. It can be found throughout Utah, Nevada, southern Idaho, northern Arizona, northwestern New Mexico, Texas, and western Colorado. It is also widely distributed throughout areas of Wyoming, Oregon, California, and Washington. Isolated populations can be found in North Dakota and Nebraska. The sagebrush lizard has been found to live at elevations ranging from 500 to10,500 ft (150 to 3,200 m). Habitat: The Sagebrush Lizard is commonly observed in shrub lands, but is also found in a variety of other habitats including coniferous forests, and piñon-juniper woodlands. They will bask on logs and rocky outcrops. They spend most of their time on the ground; however, they | None. | See General Responses #3 Listing Out of Scope.<br>The Service also notes that the covered species of the 2020 DSL CCAA is the dunes sagebrush lizard (DSL, Sceloporus arenicolus), not the sagebrush lizard (S. graciosus). The documented range of the DSL is limited to southeastern New Mexico and west Texas. |

| Agency / Entity | Comment on EA or CCAA | Comment (Excerpted, in Entirety, or Paraphrased) | Location of Changes Made in EA or CCAA | FWS Revision or response |
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| | | have the capability to climb to escape predators. Oil and gas drilling platforms take up very little land area as opposed to solar and wind farms. In fact by providing shrubbery and access to water the lizards should increase in populations and probably snakes along with them. | | |
| Private Citizen | CCAA | Although I have several problems with this document I will boil it down to one major question.<br>How does allowing the destruction of habitat equate to a net conservation benefit for the Dunes Sagebrush Lizard?<br>All of the maps agree for the most part on what is considered high or very high likelihood of occurrence. For example, both the large Kermit Dunes area and the Monahans Dunes area are considered the best habitat category. Both of these areas are currently undergoing large scale disturbance from sand mining with at least 4 active sand mines on the Kermit dunes and the entire Monahans dunes under lease except for the State Park. Is it believed that the removal of sand (down to as much as 20 feet across 10s to 100s of acres) over large areas of DSL habitat will not have a long term effect of populations? Has there been a tested way to rebuild habitat that has shown DSL will recolonize?<br>Please consider these questions because no forms of mitigation have been shown to have a net conservation benefit for DSL so allowing for the destruction of habitat will be just an overall reduction in DSL habitat. | None. | See General Responses #2 Net Benefit. The CCAA reduces threats and impacts to the DSL, an unlisted species, and its habitat from ongoing industrial and commercial activities on private property. These ongoing activities are not subject to federal regulatory authority. The conservation measures provided in the CCAA are designed to, among other things, address habitat fragmentation. The 2020 CCAA would minimize threats to the DSL by placing annual and total caps on sand mining and provides additional conservation benefits. |
| Private Citizen | CCAA | Please quantify how the approval of this permit will conserve and benefit habitat for the Dunes Sagebrush Lizard. In addition, | None. | See General Responses #2 Net Benefit. Quantification of the net conservation benefit at a program scale is currently |

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| | | please quantify how this activity will benefit the Dunes Sagebrush Lizard from an ecological perspective. In other words, how will this permit be a net conservation benefit for the Dunes Sagebrush Lizard? | | not possible, since is it unknown exactly which operators will take part in the program, and which conservation measures and actions will be included in their individual CIs. |
| Sierra Club Lone Star Chapter | CCAA | The Sierra Club's Lone Star Chapter opposes the adoption of the Candidate Conservation Agreement that the United States Fish and Wildlife Service (the Service) now considers. This agreement now proposed 8 years after the Service withdrew the proposed listing of the Dunes Sagebrush Lizard blatantly contradicts the findings of that withdrawal. The Service also now is undergoing a 12-month review, which should ultimately end with listing the species. Entering into voluntary agreements at this point would occur solely to undercut the consequence of listing the species.<br>The Service had, at one time, determined that the listing of the Dunes Sagebrush Lizard (the Lizard) was warranted but precluded by higher priorities. The listing was withdrawn primarily because the Service found that development would be placed outside the habitat for the Lizard. Now, the Service appears to acknowledge that development will be placed in the habitat, lending specific credibility to the fact that habitat destruction is the primary threat to the Dunes Sagebrush Lizard. The Service has shown bad faith in deciding not to list the species followed by planning for the possible listing of the species.<br>If the Service truly wished to protect the continued existence of the species, the Service would list the Dunes Sagebrush Lizard rather than engage in inconsequential | None. | See General Responses #1 Policy, #5 Old Record, #3 Listing Out of Scope. |

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| | | agreements that serve only to placate industrial actors and undercut the Endangered Species Act. | | |
| Sierra Club Lone Star Chapter | CCAA | The Permit's term is up to 23 years, a completely inappropriate length. In the span of that 23 years, the Lizard could become extinct, endangered to a dangerously small population, or wholly extirpated from the State of Texas, and all the while the Service would have no remedy against the State of Texas nor the industry that jeopardizes the Lizard. Should the Lizard be extirpated from the area, the agreement ought to provide for affirmative restoration obligations of the landowners, as well as monetary compensation.<br>The 23 year period is also an extremely large amount of time from the perspective of climate-related danger and other natural disasters. The Service acknowledges that climate change and other disasters could have an effect on the population of the Lizard. Were a natural disaster to occur or some other detrimental event to New Mexico-based populations of the Lizard, the remaining area that is the subject of this Agreement would be insufficient to provide for the survival of the species. The Service must consider the population density and locations of the other Lizard populations prior to making any such agreement final. | None. | See General Responses #7 Duration, #4 Adaptive Management. |
| Sierra Club Lone Star Chapter | CCAA | The Service Erred in Withdrawing its Proposal to List in 2012<br><br>In 2012, U.S. Fish and Wildlife Service withdrew the proposed rule to list the Dunes Sagebrush Lizard (Sceloporus arenicolus). In the justification for withdrawal "[t]he Service | None. | See General Responses #5 Old Record. The Service also notes that its action to approve the 2020 DSL CCAA and issued the EOS permit does not involve authorizing or causing any of the underlying land use activities that affect the DSL. These activities are |

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| | | concludes that there is sufficient certainty that the commitment to place development outside of the dunes sagebrush lizard's shinnery oak dune habitat will be implemented and will be effective." This Summary of "Other Natural or Manmade Factors Affecting its Continued Existence" specifically points out that "there is conclusive evidence" of adverse impacts on lizard species. "If dunes sagebrush lizards are exposed to [oil and gas industry-related] pollution, we may expect physiological dysfunction, impaired foraging abilities, increased mortality, and population declines. For this reason, [the Service] believe[s] the exposure to pollutants from oil and gas production may be a factor affecting the survival of individuals and populations located around oil and gas development." One could argue that this Plan is evidence of that aforementioned "commitment" but one would be wrong to do so. The Service in 2012 specifically relied on the commitment to habitat preservation and commitment from oil and gas industry to avoid the habitat altogether when deciding not to list the species. Now, the Service hopes to double back and open those portions of the habitat to oil and gas development, despite the fact that their own scientific findings in 2012 would prevent them from doing so. | | part of the baseline condition and reviewed in the EA as part of the No Action alternative. |
| Sierra Club Lone Star Chapter | EA | The Service Failed to Perform a Complete NEPA Alternatives Analysis.<br>Listing the Species Should be An Alternative<br>U.S. Fish and Wildlife Service should analyze listing the species as an alternative. Rather than engage in this agreement, the Service could list the Dunes Sagebrush | None. | See General Responses #3 Listing Out of Scope.<br>The EA includes analysis of the No Action Alternative, which would involve denial of the EOS permit. As explained in the EA, the No Action Alternative presumes that current |

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| | | Lizard and take action to list the species and designate critical habitat to all of that habitat which is categorized as a "High or Intermediate Suitability Area." If this is not analyzed as a separate alternative, then it should be analyzed extensively under the no action alternative. Because there is an outstanding petition for listing and the Service is undergoing a 12-month review, it is at least equally as likely that the species is listed by the middle of 2021. The no action alternative must take into account the potential for listing and how that listing may play out. Were the species to be listed next year, the agreement at hand would be unnecessary as the listing of the species would be infinitely more protective of the species itself. Failing to consider this important factor under NEPA regulations is likely an abuse of discretion. | | industrial and commercial activity will continue. The pending petition to list the DSL is under review and is subject to a separate regulatory process. Accordingly, this suggested alternative is are not reasonable or technically and economically feasible. |
| Sierra Club Lone Star Chapter | EA | The Service notes that the Texas Comptroller of Public Accounts had at one point proposed an alternative with broader scope. This lends credibility to an alternative that has narrower scope than that which is proposed here. As the Service notes, "NEPA regulations (40 CFR 1502.14(c)) require consideration of reasonable alternatives, which must be practical and technically and economically feasible." The Service fails to identify any alternative which would be more protective of the environment and with narrower permitted activities than the proposal. The onus is on the service, pursuant to federal law, to provide alternatives and provide justification as to why they would not be practicable or reasonable. Examples of potential alternatives include excluding any | None. | The action before the Service is whether to approve the 2020 DSL CCAA and to issue the EOS permit. Alternate versions of a CCAA are not within the Service's scope of review and would not meet the purpose and need of the applicant. |

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| | | one of those activities from Table 1 in the Draft Environmental Assessment. Excluding specifically "Oil and gas development" or "Sand mining" would likely have a dramatic effect on protecting the Dunes Sagebrush Lizard.<br>Additionally, the alternatives analysis should at least consider the potential exclusion of high/intermediate suitability habitat altogether, without exception. This alternative is clearly the most protective of the species that would still allow for the agreement to take place on different terms. Failure to consider this important factor under NEPA regulations is likely an abuse of discretion. | | |
| Sierra Club Lone Star Chapter | CCAA | "The Service may issue the Permit if it finds that implementation of the CCAA is reasonably expected to provide a net conservation benefit to the species. (50 CFR 17.22(d)(2) (ii); 50 CFR 17.32(d)(2)(ii))"<br>Any implementation of the agreement as proposed right now would provide a net conservation harm to the species. The Dunes Sagebrush Lizard's primary threat in the State of Texas is development linked to Oil and Gas. The current agreement containing provisions that allow for development of any kind will only provide net harm.<br>Additionally, the agreement would permit destruction of habitat and result in further habitat loss. The Agreement provides that seismic activities in high or intermediate suitability habitat should be "limited to periods of lizard inactivity (October through March)" or "smaller" seismic equipment is being used. October-March is 1/2 of the calendar year, and even where the activity is | None. | See General Responses #2 Net Benefit. |

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| | | happening during a period of "inactivity" the seismic activity would have knowable impacts on any individual lizards in that area, as well as irreparable harm to the habitat itself. Protecting the habitat must be the very point of engaging in an agreement such as this one.<br>The agreement also provides for surface disturbance where "the mineral estate for which the development was planned cannot be accessed except through the High or Intermediate Suitability area." This is unsuitable for this agreement altogether. There should be no disturbance at all of habitat that is designated high or intermediate suitability area. | | |
| Private Citizen | CCAA | I support the position of the Lone Star Chapter, Sierra Club opposing the proposed CCAA regarding the Dunes Sagebrush Lizard.<br>The Lone Star Chapter feels, as do I, that the agreement is altogether insufficient to protect the Lizard, which clearly deserves listing as an endangered species due to continued habitat destruction.<br>Changes in Texas landscape are only part of the problem, although significant. | None. | See General Responses #1 Policy, #2 Net Benefit, #3 Listing Out of Scope. |
| Private Citizen | CCAA | Lone Star Chapter has stated, and I agree, that the 23-year period would lead to possible extirpation of the Lizard from Texas in that period of time.<br>Risk to the species from climate-change is also likely, and the Service would have limited recourse to protect the continued existence of the Lizard. No entity should be entitled to destruction or adverse modification of the habitat. | None. | See General Responses #7 Duration, #4 Adaptive Management. |

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| Private Citizen | EA | The Lone Star Chapter stated that the Service did not engage in a thorough alternatives analysis, to evaluate potential listing of the species. The Sierra Club urges, as do I, that the United States Fish and Wildlife Service halt adoption of the proposed agreement on the grounds that it is wholly insufficient to protect the species and the Environmental Assessment is incomplete for the purposes of analysis under the National Environmental Policy Act. | None. | See General Responses #3 Listing Out of Scope. |
| Private Citizen | CCAA | While reading the draft Candidate Conservation Agreement with Assurances (CCA) for the Dunes Sagebrush Lizard (DSL) in West Texas, I was encouraged. At the same time, I saw some areas of improvement that should be addressed before this is final. I am encouraged to read about the adaptive management strategies and the formation of a committee to drive the adaptive management process. This and all of the efforts in this CCA are based upon DSL data that may not be accurate. What are your confidence values or other metrics indicating that the DSL data and habitat boundaries are accurate? To what percent are they accurate? For a species with such a limited range, this is an important question. The CCA should start with a process up front to obtain better DSL demographics in West Texas as well as developing a better habitat model to delineate new boundaries. Did you consider weighting the potential take of habitat toward a timeframe after better models are available? It has been published how this unique habitat is an irreplaceable landform, so it stands to reason you would need the best data possible to drive your conservation metrics in the | Section 16.1 Changed or Unforeseen Circumstances Table 2 (CCAA). | See General Responses #9 Causation. The Service has an obligation to make decisions in consideration of the best scientific and commercial information available. Understanding that information may improve over time, the conservation measures, Appendix A protocols, and adaptive management process allow for refinements of habitat boundaries and data on DSL on enrolled parcels. Hardy et al. (2018) describe their evaluation and validation metrics for the habitat suitability map. The limit of authorized take has been estimated in terms of the maximum anticipated take for all covered activities anticipated during the CCAA term. Restoration efforts as described in Chapter 8 of the CCAA include previously proposed restoration measures for the DSL in New Mexico (see Candidate Conservation Agreement for the Lesser Prairie-Chicken (Tympanuchus pallidicinctus) and Sand Dune Lizard (Sceloporus arenicolus) in New Mexico) and an opportunity to evaluate and modify the |

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| | | CCA. If you disagree with this, please explain why. There are references to habitat restoration in several places in the CCA. This is a common theme in endangered species conservation; however, the habitat for the DSL is known to be a unique geologic landform. Please provide overwhelming evidence that habitat restoration is successful for the recolonization of the DSL. Of the various uses identified in the CCA, sand mining would be the more destructive because it involves removal of habitat in a manner analogous to clearcutting a forest. Since the DSL is only known to occur in the High and Very High habitat designations, why would you allow sand mining in either of these two habitat types? Since the habitat boundaries need work and restoration efforts to rebuild DSL habitat do not currently exist, have you considered only allowing sand mining to take place in habitat designations lower than very high? If not, please explain why. How does allowing sand mining to occur in high and very high habitat types add conservation value to the DSL? One of the assumptions being made for the possible success of this CCA is that the majority of landowners will enter into the CCA. Since the current 2012 Texas Conservation Plan has approximately 50% enrollment, what assurances do you have from users that they will join this CCA? What percent of enrollment do you anticipate by the end of the first year? There must be a threshold where the number of acres of take of habitat listed in the CCA. becomes more accurate as participation in the CCA increases. What is the percent enrollment that you are assuming | | restoration measures through the Adaptive Management Process. 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. Restoration is not the only conservation measure proposed in the CCAA. |

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| | | for the allowable take listed in the draft CCA? Why didn't you include a graded approach for the possible take of habitat based on the percent of participation in the CCA? Maintaining compliance with the numbers of acres provided in the CCA for habitat take will require a robust program built on a solid foundation. A CCA has the potential to be a win-win for species conservation and resource extraction and development, but until the deficiencies I've identified are properly addressed, it seems obvious to me that the species will lose in this agreement as it's currently written. Thanks for the opportunity to review these documents and provide commentary. I hope that the CCA can be improved. | | |
| Private Citizen | CCAA | Public lands are meant to preserve the diverse flora and fauna of this country. While often concessions are made for industry sake regarding the health and welfare of animal habitats, I fail to see this permit approval as an appropriate trade off. It appears that a majority of S. graciosus' habitat will be allowed to be preserved, all for the creation of new fossil fuel infrastructure, in a region already saturated with mining activities.<br><br>I do not support the approval of the permit, and ask instead our leaders to allow more time for study, and mitigation of damage, of the habitat of this endangered species. | None. | See General Responses #1 Policy. The lands occupied by the DSL in Texas are privately owned. The Service also notes that the covered species of the 2020 DSL CCAA is the dunes sagebrush lizard (DSL, *Sceloporus arenicolus*), not the sagebrush lizard (*S. graciosus*). |
| Private Citizen | CCAA | Please be advised that I have reviewed the revised Draft Candidate Conservation Agreement with Assurance for the Dunes Sagebrush Lizard ("CCAA"), with Texas ranchers in the so styled High and Intermediate I Suitability areas of Dunes | None. | Enrollment in the 2020 DSL CCAA is voluntary and the participation of landowners in conservation actions sponsored by the CCAA is also voluntary. The Service agrees that partnerships with ranchers and |

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| | | Sagebrush Lizard ("DSL") habitat. We previously wrote to you on August 17th, 2020, regarding our concerns about the CCAA's lack of consideration for the rancher's whose land and livelihood could be greatly affected by the CCAA. Since our letter, we have been contacted once regarding the CCAA, where the program was explained at a high level. To be clear, there has still not been substantial input from the ranchers and landowners whose property makes up "nearly all of the DSL range." CCAA at 23. Again we ask, how do you expect this program to work if the ranchers, whose participation will be necessary for the survival of the program, were not included in the planning and implementation of the CCAA? You are asking private landowners to give up rights, income and livelihood to their property without any attempt to listen to their concerns. Surely your program will not succeed without ranchers, and frankly the ranchers are not interested in signing up for another fly by night program designed to make the Permian Basin industrial machine feel good about themselves and their conservation effort. If you want to protect the DSL, you should first consider whether you are protecting the rancher, the last people in the Permian Basin who care about land conservation. | | landowners is essential to the success of the CCAA. Part of the function of the Administrator is to work with landowners to create such partnerships. However, no landowner will be compelled to give up any rights by the approval and implementation of the 2020 DSL CCAA. |
| Private Citizen | CCAA | These comments are in addition to the official comments submitted by Alex R. Ortiz, JD for the Lone Star Chapter of the Sierra Club. I agree with those comment.<br><br>Recognizing that biodiversity is valuable to society, and that extinction is forever, the | None. | See General Responses #1 Policy, #10 Hardy, #3 Listing Out of Scope, #9 Causation, #4 Adaptive Management. The Service finds that implementation of the 2020 DSL CCAA as proposed is reasonably expected to provide a net conservation benefit through a |

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| | | goal of the Endangered Species Act (ESA) has always been to prevent the extinction of species. This goal was to be achieved through the designation as "Endangered" the species in question "solely on the basis of the best scientific and commercial data available." After many false steps, the US Fish and Wildlife Service (the Service) is currently in the process of doing this for the dune sagebrush lizard (the lizard), with the likely result that the lizard will be so designated. My first question is: With that evaluation in process, what is the reason for this CCAA? How does this CCAA help protect the lizard?<br><br>In Texas, there is 96,000 acres of suitable habitat - that number is what the best science by non-profit researchers says (there are other estimates, but they include land where no lizards exist, which makes them highly questionable). For the survival of this species, that is very little habitat. A finding of "Endangered" by the Service, in the process that is now moving forward, would prevent the further destruction of critical lizard habitat. The proposed CCAA would allow the outright destruction of at least 12% of this habitat (11,500 acres). Because the habitat the lizard needs is formed by the geological features of sand dunes, and because this sand is a geological artifact that is no longer being replenished by nature, such industrial exploitation cannot be mitigated. This type of development will further endanger the survival of the lizard, an animal that, BEFORE this proposed CCAA, was already being considered a candidate for listing. | | combination of avoidance, minimization, and mitigation measures performed or funded by Participants on Enrolled Properties and other privately owned lands in Texas. The CCAA is reasonably expected to reduce threats and impacts to the DSL, an unlisted species, and its habitat from ongoing industrial and commercial activities on private property. Conservation of high priority areas, reclamation and restoration of disturbed areas are some of the conservation actions contemplated by the CCAA. |

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| | | Climate change is currently threatening ecosystems with major change at an only partially quantified, but increasingly rapid, rate. So how does it make any sense (scientific or otherwise) to delay the protection of this lizard for 23 years for something as ephemeral and inequitable as private profit? Biologically and ethically, it makes no sense.<br><br>Why does this proposal contain no alternative with which to compare projected results? Why does this proposal contain no metrics, and no enforceable outcomes? Why does this proposal not REQUIRE developers to be a part of it, instead of allowing them to opt out, as profit demands? This is like signing a binding contract that the other guy doesn't have to honor. Despite all the verbiage, such a lopsided deal will be good for the developer, but not for the dune sagebrush lizard, or for those of us who believe biodiversity is valuable. | | |
| Private Citizen | CCAA | This CCAA will result in humans exploiting the land in a way that will destroy critical lizard habitat for profit. In Texas, there is 96,000 acres of suitable habitat - that number is what the best science by non-profit researchers says (there are other estimates, but they include land where no lizards exist, which makes them highly questionable). For the survival of this species, that is very little habitat. A finding of "Endangered" by the Service, in the process that is now moving forward, would prevent the further destruction of critical lizard habitat. The proposed CCAA would allow the outright destruction of at least 12% of this | None. | See General Responses #1 Policy, #9 Causation. |

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| | | habitat (11,500 acres). Because the habitat the lizard needs is formed by the geological features of sand dunes, and because this sand is a geological artifact that is no longer being replenished by nature, such industrial exploitation cannot be mitigated. This type of development will further endanger the survival of the lizard, an animal that, BEFORE this proposed CCAA, was already being considered a candidate for listing. | | |
| Private Citizen | CCAA | Science suggests that we are at the beginning of a new geological epoch - the Anthropocene - because humans are now affecting in major ways the environment on a global scale. This is associated with the onset of the sixth great mass extinction event on the planet earth, happening right now. As a part of that, climate change is currently threatening ecosystems with major change at an only partially quantified, but increasingly rapid, rate. So how does it make any sense (scientific or otherwise) to delay the protection of this lizard for 23 years for something as ephemeral and inequitable as private profit? Biologically and ethically, it makes no sense. | None. | See General Responses #3 Listing Out of Scope. |
| Private Citizen | CCAA | Why does this proposal contain no alternative with which to compare projected results? Why does this proposal contain no metrics, and no enforceable outcomes? Why does this proposal not REQUIRE developers to be a part of it, instead of allowing them to opt out, as profit demands? This is like signing a binding contract that the other guy doesn't have to honor. Despite all the verbiage, such a lopsided deal will be good for the developer, but not for the dune sagebrush | None. | See General Responses #1 Policy, #2 Net Benefit, #4 Adaptive Management. The Services evaluated a range of reasonable alternatives to approving the 2020 DSL CCAA, including detailed review of the No Action alternative. |

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| | | lizard, or for those of us who believe biodiversity is valuable.<br>It's time to stop beating around the bush. We have enough good information about this species to know that more information won't prevent the need for its protection. This CCAA, like the one before it, will not prevent the further reduction in lizard numbers. This is just another desperate attempt to put profit in front of species protection, which is the exact opposite of what you, and the law, are required to do.<br>The philosopher Marshall McLuhan once said: "There are no passengers on spaceship earth. We are all crew." There is no better place to finally start accepting this fundamental fact than by rejecting this CCAA and letting the ESA do what it is supposed to do - prevent the dune sagebrush lizard from disappearing from Texas forever. | | |
| Atlas Sand | CCAA | Atlas Sand is the largest sand acreage holder and one of the largest sand producers in the Permian Basin which operates two facilities; one near Kermit, and the other near Monahans, Texas. In total, Atlas Sand controls approximately 37,000 acres of land in the proposed CCAA covered area. Atlas Sand is a leader in industry best practices and environmental stewardship.<br>We strongly support voluntary conservation of the DSL and DSL habitat, and this CCAA specifically. Allowing more companies and stakeholders the opportunity to participate in conservation will be beneficial to the preservation of the species.<br>The proposed 23 year DSL CCAA provides an effective structure and process for Atlas Sand, other sand companies and other owners | None. | The Service determined that the 2020 DSL CCAA is consistent with policy concerning Candidate Conservation Agreements, provides a net conservation benefit compared to the No Action alternative, and creates incentives for voluntary conservation of an unlisted species on private lands. |

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| | | of private land to remove and reduce threats to the DSL and its habitat from covered activities.<br>Importantly, the proposed CCAA will also improve substantially the state of the existing science related to the DSL. The opportunity for holders of non-Federal property to contribute to the mapping and modeling of DSL habitat in an open and transparent way, as provided for in this proposed CCAA, is critically needed. | | |
| Atlas Sand | EA | Water use by sand mining companies is also an area where there is substantial misunderstanding that must be clarified in the draft environmental assessment. In 2019, a report was developed for the Texas Comptroller seeking to estimate water use by sand mining companies and the potential effects on groundwater resources in the area. This<br>report, Mace (2019), contains significant errors, including its use of speculative and incorrect assumptions about water use, rather than reliance on site-specific field data. Moreover Mace (2019) completely fails to consider groundwater recharge in the region. These errors caused the Mace (2019) report to dramatically overstate consumptive water use by sand mining, resulting in incorrect and misleading modeling results that are inconsistent with available science.<br>As part of our stewardship program, Atlas Sand already recycles approximately 99 percent of water used during the sand mining process at its Kermit and Monahans facilities. In September 2020, Atlas Sand participated in a study conducted by Dr. Ken Rainwater, an expert in hydrology and groundwater | Sections 3.3 Hydrology and Water Resources, 3.5 Vegetation, 4.2.1 Covered Species Alternative A – Proposed Action (EA); Sections 7.1.4 Sand Mining (CCAA). | See General Responses #11 Rainwater. We have incorporated its analysis and findings into the EA and our review of the CCAA. |

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| | | management, and a professor at Texas Tech University. Dr. Rainwater visited both of Atlas Sand's plant sites at Kermit and Monahans, where he conducted site-specific water well measurements. He was also given access to and reviewed our water budgets, well logs, geologic core and other data for his study, entitled "Sand Mining Water Use in West Texas" (Rainwater 2020). The Rainwater report, is attached to the Industrial Sand Producers of Texas' (!SPOT) comment letter. Both the ISPOT comments and Rainwater (2020) report are incorporated by reference herein.<br>Dr. Rainwater confirmed what we already knew - that Atlas Sand consumes minimal amounts of water for sand production. Water is readily available at the Atlas Sand sites. Our water is drawn primarily from the Pecos Valley Aquifer, a large regional aquifer in West Texas with a saturated thickness from which water can be drawn of approximately 100 feet in the area of our plant sites. Rainwater (2020) found very limited groundwater consumption rates of 54 and 47 gallons per minute (gpm) from the Pecos Valley Aquifer at Atlas Sand's two plants, far below the minimum groundwater recharge rate of 967 gpm across Atlas Sand's property acreage. Atlas Sand is the largest sand acreage holder and one of the largest sand producers in the region, but uses (including accounting for evaporation) only approximately 80 acre-feet per year per facility. This is substantially less than the assumption in Mace (2019) that sand mining companies consumptively use "10,000 and 40,000 acre-feet per year of water," a | | |

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| | | statement that the draft EA should not rely on. Rainwater (2020) clearly demonstrates that water use by Atlas Sand will not cause permanent declines in the water table, or impact the DSL or its habitat. The final environmental assessment should recognize the errors in Mace (2019), incorporate Rainwater (2020), and clearly state that water use by companies such as Atlas Sand will not affect the DSL or its habitat. | | |
| Texas A&M University | CCAA | I have conducted research on the dunes sagebrush lizard with my students and colleagues since 1994. Our research on this species is ongoing and spans topics ranging from population genetics, systematics, population and community ecology, habitat use and habitat requirements, geographic range, distribution and occupancy, conservation recommendations, and landscape ecology. We have published peer-reviewed literature on all these topics some of which was cited in preparation of the draft CCAA. In general I note the authors of the draft CCAA seem to be cherry-picking what suits their agenda from various reports and publications without recognizing the overarching, conclusive knowledge of the species and its habitat. Below I raise specific questions about the draft CCAA that I believe merit consideration and should be answered fully based on peer-reviewed literature on the species. | None. | The CCAA incorporates the body of publicly available peer-reviewed literature on the DSL and acknowledges both well-supported findings and scientific uncertainty where it exists. |
| Texas A&M University | CCAA | 1. How are the conservation easements mentioned in the draft CCAA going to be implemented and made permanent? The proposed plan talks about promoting conservation easements, permanent and temporary in duration. But it fails to describe | None. | See General Responses #6 Easements. |

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| | | the terms of these agreements for preserving contiguous expanses of shinnery oak dune landscapes, how these will come about, where they will be located, and how any conservation easements will be legally binding in perpetuity. | | |
| Texas A&M University | CCAA | 2. Why is this CCAA using the Hardy et al. Texas State University map of so-called "suitable habitat" when the authors of this draft CCAA acknowledge the map is flawed? The map and model includes large areas that are not even habitat for the species. | None. | See General Responses #10 Hardy. |
| Texas A&M University | CCAA | 3. Why do the authors of this draft CCAA question the knowledge of the geographic range and distribution of the species in Texas, when it has been very well documented (e.g., Walkup et al. 2018)? Background for this question: The proposed CCAA misinterprets what is known about the distribution of the dunes sagebrush lizard in Texas. The distribution is very well known based on reports and peer-reviewed publications. Many surveys have been done outside the declared range of the species and it has never been found. All research points to the conclusion that the range and distribution of the species is well documented and there is zero chance that it will be found in any area that would change perspectives on where the species can be found in Texas. The Hardy et al. map overestimates the amount of habitat for the dunes sagebrush lizard. It is not built on the known distribution of the species; it only uses remote sensing data to examine vegetation classes and some landscape features and make guesses about the species' habitat. This map and accompanying reports state that areas called Intermediate and Low | None. | The covered area of the CCAA relies on the Hardy et al. (2018) model of the location and distribution of potential habitat for the DSL because it is the more recent available model of potential DSL Habitat in Texas. The Walkup, et al. (2018) study is referenced in the CCAA at pages 21-26, but the applicant chose to use the Hardy et al. (2018) model. Service analysis of the model has resulted in refinement of the Hardy et al. (2018), but the applicant has chosen to stick with the original model at this time. We acknowledge much remains unknown regarding the dispersal behavior of the DSL across areas of unsuitable or low suitability habitat. Through time, the adaptive management process, surveys, and more research will continue to result in refinements and improvements to our understanding of the DSL habitat needs. |

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| | | are suitable habitat, meaning the species could live there. There is zero evidence to support this claim and the species has never been detected anywhere in these suitability classes. Based on hundreds of surveys, it is very unlikely that it ever will be found to occur in these areas. References to the map produced by the team from Texas A&M and reported in Ryberg et al. 2016 are superfluous. The major point in the report regarding that habitat suitability analysis is that the 2016 map produced by modeling with remote sensing data over estimates habitat, as does the Hardy et al. map, and is not as accurate as the Hibbitts Map. The Hibbitts Map, reported in Fitzgerald et al.2011 has proven very reliable. The DSL has only been found in the areas denoted as Very High and High likelihood of occurrence, totaling ~96,000 acres. It has never been found in the Low or Very Low likelihood of occurrence areas despite standardized surveys in these areas. The reliability of the Hibbitts map is corroborated in peer-reviewed literature, in particular Walkup et al.2018, Herpetological Conservation and Biology. No other mapping exercise has been subjected to anonymous peer review in the scientific literature. | | |
| Texas A&M University | CCAA | 4. What is the basis for presuming, or believing, that habitat destruction (called surface disturbance) can be mitigated through land management activities? The plan states reclamation and restoration of habitat for the dunes sagebrush lizard is something that can actually be accomplished. There is zero basis for this claim. Background: The geologic formation, or land form, on which the dunes | None. | See General Responses #4 Adaptive Management.<br>The Service anticipates that implementation of the 2020 DSL CCAA as proposed is reasonably expected to provide a net conservation benefit through a combination of avoidance, minimization, and mitigation measures performed or |

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| | | sagebrush lizard depends, is irreplaceable. It is an emergent property of the interactions between moving sand, vegetation (shinnery oak), and wind. The species lives in association with the landform. The land form is irreplaceable, and will not re-emerge over time through ecological succession. When disturbed, the landscape changes irreversibly. This is shown in peer-reviewed publications (Leavitt and Fitzgerald 2013 Ecosphere, Ryberg et al. 2016 Conservation Biology). Promoting habitat mitigation is based on a false belief that habitat restoration is possible and feasible at a scale that matters to the conservation of the species. The plan calls for studies on growing shinnery oak. Being able to grow shinnery oak has nothing to do with restoring or creating the dune -blowout landform on which the species depends. | | funded by Participants on Enrolled Properties and other privately owned lands in Texas. Reclamation and restoration of disturbed areas is but one of many conservation actions contemplated by the CCAA, including re-grading areas of mining disturbance consistent with any applicable contractual requirements on private property. The Service has reviewed the studies cited by the commenter. The Service concurs that interactions of sand, wind and vegetation create and maintain the sand dune landforms. Leavitt and Fitzgerald (2013) entailed a comparative study of lizard species and exploration of how the landscape configuration can shape the community of lizard species. The Service is unaware of Ryberg et al. (2016) in Conservation Biology and assumes the commenter is referring to Ryberg et al. (2015) in Conservation Biology vol. 29(3). That study entailed a comparative study of DSL population demography and the influence of landform configuration on demography. Though the authors discuss observations of landform change resulting from herbicide application, this study also did not provide any in situ empirical data on restoration. Ryberg et al. (2015) refer to literature discussing dunes and other landform pattern, processes and stability associated with other regions. The literature cited therein support the proposition that vegetation and the site |

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| | | | | conditions are important components to landform. For this reason, the CCAA provides for reclamation and restoration of DSL Habitat, including recommendations for DSL Habitat restoration opportunities as part of the adaptive management process. See Section 10 of the 2020 DSL CCAA. |
| Texas A&M University | CCAA | 5. Why does this CCAA allow for habitat destruction (called "surface disturbance") in areas with historical and recently documented localities for the species? | None. | See General Responses #1 Policy, #9 Causation. |
| Texas A&M University | CCAA | 6.Why does this CCAA allow 34,940 acres to be destroyed (called "surface disturbance") and why should the USFWS believe this estimate is reliable? | None. | The anticipated incidental take is estimated based on the maximum amount of disturbance of potential DSL habitat as a surrogate for take that may occur from covered activities and from non-participants engaging in similar activities for the duration of the CCAA. This assessment is based on the best available information pertaining to the covered activities and is reasonable to use for planning purposes. |
| Texas A&M University | CCAA | 7. Does this proposal count the 12% of habitat taken from the sum of all areas considered habitat on the map they are using (Hardy et al. Texas State U map?) That map includes a lot of land as "suitable" that probably is not even habitat. As mentioned, the model and resulting map are flawed by calling areas Intermediate 2 and Low as "suitable habitat" for the lizard; however, there are no localities anywhere in those entire layers. Some of the habitat destruction (called surface disturbance) will occur in areas considered to the best and most important habitat, namely the Kermit Dune | Section 16.1 Changed or Unforeseen Circumstances Table 2 (CCAA). | The covered area of the 2020 DSL CCAA is based on the Hardy et al. (2018) model of potentially suitable DSL habitat and the total authorized take within the covered area of the CCAA is anticipated to be 34,940 acres which is 12% of all of the covered area (i.e., modeled DSL Habitat). The conservation measures and adaptive management process allow for revisions to the CCAA as new science becomes available. The biological goals and objectives of the 2020 DSL CCAA are intended to reduce threats to the DSL from otherwise lawful land |

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| | | and Monahans Dune. The dunes sagebrush lizard occupies these areas. | | use activities of concern to the commenter and is reasonably expected to provide a net conservation benefit for this unlisted species that occurs, in Texas, on nearly entirely privately owned lands. |
| Texas A&M University | CCAA - page 55 | 8. Why does the plan allow for exceptions to rules on habitat disturbance in High and Intermediate areas as outlined in the criteria on page 55? Application of these criteria on page 55 means paid consultants can declare absence of the species within larger scale areas of occupied habitat and exceptions can be granted. Declaring that a small area of a dune land can be destroyed because small-scale delineations determine species' absence or use misguided measures of the species habitat will lead to fragmentation and loss of populations. The criteria also allow habitat fragmentation and destruction based on one's justification for accessibility. | Section 16.1 Changed or Unforeseen Circumstances Table 2 (CCAA). | See General Responses #1 Policy, #2 Net Benefit.<br>The 2020 DSL CCAA provides for flexibility in the application of the Hardy et al. (2018) model of DSL Habitat to account for uncertainty in the model output and consideration of site-specific information. Both the Hardy et al. (2018) model and the site-specific information are important considerations for Participants and the Administrator when identifying appropriate site-specific conservation actions for an enrolled property. |
| Texas A&M University | CCAA | 9. Why is any destruction of habitat to be allowed in the Monahans Dune and Kermit Dune? | Section 16.1 Changed or Unforeseen Circumstances Table 2 (CCAA). | See General Responses #1 Policy, #2 Net Benefit, #9 Causation. |
| Texas A&M University | CCAA | 10. What is the point of comparing amounts of habitat destruction (called "surface disturbance") to numbers in the defunct 2019 Comptroller proposal? How does that justify anything? | None. | The comparative information is provided for context on how proposed and currently implemented voluntary conservation plans would contribute to the acreage and percentages of surface disturbance in the Covered Area/DSL Habitat. Overall disturbance under the CCAA is anticipated to be reduced in comparison to this earlier proposal, which was withdrawn by the Comptroller, even when corrected for math errors. |
| Texas A&M University | CCAA | 11. Why are research topics supported that are unlikely to have direct effects on the | None. | The research topics suggested in the 2020 DSL CCAA have practical |

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| | | conservation of the species? The examples of research promoted in the plan will not result in conservation of the dunes sagebrush lizard. 1)The research on roads will not result in any conservation interventions that increase occupancy or population size of the species. It is not feasible that making road crossings structures, even if they could be developed, would allow movements of the lizards at a scale that matters. 2) The research on well pad density will only re-confirm what is already well known- the species populations are disrupted and disappear in fragmented areas, and fragmentation leads to habitat degradation. The result is the disappearance of the species from fragmented areas. More research on this will only confirm what we know, it will not result indirect conservation benefit. 3)Research on growing shinnery oak will not improve prospects for the conservation of the species in any way. The species depends on bumpy dune topography that is irreplaceable. So what if shinnery oak can be grown? It is weedy in many areas. 4) Research on translocation must address the long-term fate of places where the species may be introduced. (See the Parker et al. 2019 report on translocation.) | | application to the ongoing management and conservation of the DSL and will help inform the adaptive management process. |
| Texas A&M University | CCAA | 12. Translocation is possible, but what is the intention of translocation? Is the goal of translocation to allow destruction of irreplaceable habitat? | None. | Translocation may be a possible conservation action, among many included in the 2020 DSL CCAA, that can help improve the status of the DSL and contribute to the net conservation benefit of the CCAA. |
| Texas A&M University | CCAA | 13. Why is it presumed that entities will enroll in this plan and stay enrolled? Why would this plan cover 100% of the species' habitat in Texas? | Section 16.1 Changed or Unforeseen Circumstances Table 2 (CCAA). | The 2020 DSL CCAA provides an opportunity for all industry sectors to implement specific conservation measures to reduce threats to the DSL |

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| | | | | on their private lands in exchange for regulatory assurances from the Service that additional restrictions will not be required should the DSL become listed as "threatened" or "endangered" in the future (81 Fed. Reg. 95,171). The biological goals of the CCAA are to reduce threats to this unlisted species and create a net conservation benefit through the implementation of conservation measures on enrolled parcels throughout the DSL range in Texas. The scope of the CCAA provides more opportunities for conservation actions to occur. The CCAA has been revised at Section 16.1 Table 2 to include a changed circumstances addressing enrollment. |
| Texas A&M University | CCAA | 14. What is the predicted fate of the species and its habitat in areas that will not be enrolled in this CCAA, if it is approved? Background: The TCP did not cover more than 50% of the species' habitat in Texas and did not even cover all the habitat in the High and Very High areas, which contain the known distribution of the species. | None. | See General Responses #2 Net Benefit. Enrollment in the 2020 DSL CCAA is voluntary and the participation of landowners in conservation actions sponsored by the CCAA is also voluntary. The CCAA offers landowners and potential Participants incentives to voluntarily conserve the DSL. |
| Texas A&M University | CCAA | 15. Why is the fee structure in Appendix D considered important for conservation, when it appears these fees merely allow destruction of the irreplaceable landforms for cash payment? | None. | See General Responses #1 Policy, #9 Causation.<br>As part of the CCAA, landowners voluntarily agree to pay fees for the Administrator to use for DSL conservation. The fee scales are designed to incentivize avoidance of DSL habitat. The fee structure in Appendix D is the funding mechanism needed to implement the CCAA, including the conservation measures of |

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| | | | | habitat restoration, purchase of conservation easements, and research on conservation of the DSL implemented through the CCAA. |
| Texas A&M University | CCAA | 16. Why does the proposed CCAA call for research into survey methodology, when the distribution and occupancy of the species are well known and existing survey methodology is tested and functional? Supporting this as a conservation strategy is misguided and will not help the species. As mentioned, all research points to the conclusion that the range of the species will not change. Claims that the species is difficult to find, cryptic, etc. are unfounded. | None. | Survey methods are relevant to the implementation of the CCAA since site-specific information can be helpful for informing decisions about the application of avoidance measures and conservation actions, as well as providing useful information to inform the model. All survey methods come with limitations and benefits that should be considered in the context of the specific questions being asked and for interpreting and applying the data collected. |
| Texas A&M University | CCAA | 17. Please address this comment: Most of the so-called conservation measures in Appendix C are about land stewardship and will not change the prospects for conservation of the species and its habitat (e.g., feral hogs, survey methods, growing shinnery oak, road-crossing studies, "reclamation of habitat", dust control, OHV activity, and many more). Why are these activities considered meaningful to the conservation of the species at any scale that matters? | None. | See General Responses #2 Net Benefit. 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 |

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| | | | | aspect of the Conservation Program based on new science. See Sections 15.0 and 20.0. |
| Industrial Sand Producers of Texas (ISPOT) | CCAA | The 2020 DSL CCAA will provide a demonstrable net conservation benefit to the DSL relative to the status quo, which in West Texas is characterized by the absence of Federal land management and regulatory authority for the conservation of wildlife on private property. Moreover, the voluntary conservation program administered under the 2020 DSL CCAA is the most viable and effective means to both conserve the DSL and its habitat and avoid the imposition of Federal regulation through a potential listing of the DSL under the Endangered Species Act (ESA). Accordingly, we expect significant interest from the sand mining industry in the 2020 DSL CCAA, including by companies with substantial holdings of property within modeled DSL habitat. The 2020 DSL CCAA, therefore, represents a major opportunity for voluntary and effective DSL conservation that otherwise does not currently exist in West Texas. | None. | The Service agrees that the 2020 DSL CCAA is consistent with its 2016 policy concerning candidate conservation agreements, provides a net conservation benefit when compared against the environmental baseline described in the No Action alternative, and creates incentives for voluntary conservation of an unlisted species on private lands. The Service also agrees that implementation of the CCAA will improve over time the body of best available science for this species and its management. |
| Industrial Sand Producers of Texas (ISPOT) | CCAA | Because the impacts from all of the underlying activities covered by the 2020 DSL CCAA including oil and gas development, sand mining, renewable energy development, linear infrastructure construction and maintenance, local government activities, and agriculture and ranching - are already occurring, will continue to occur, and are not subject to federal land management or regulatory authorities for conservation of DSL or its habitat, these underlying activities are | None. | See General Responses #1 Policy, #13 Issuance Criteria. |

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| | | properly considered as part of the baseline for determining whether the 2020 DSL CCAA provides a "net conservation benefit" to the DSL. Accordingly, implementation of the many conservation measures and actions detailed in the 2020 DSL CCAA, including but not limited to firm caps on habitat disturbance from sand mining, is reasonably likely to result in a significant net conservation benefit to the conservation of the species over existing conditions.<br>**A. The Permit Issuance Criteria**: Below, we discuss the reasons the 2020 DSL CCAA satisfies each of the criteria for issuance of the Permit. The net conservation benefit is discussed in more detail in the following section.<br>1. The take will be incidental to an otherwise lawful activity and will be in accordance with the terms of the CCAA. Section 6 of the 2020 DSL CCAA discusses in detail the activities covered by the CCAA from each of the following sectors - oil and gas development, sand mining, renewable energy operations, linear infrastructure construction and operation, local government activities, agriculture and ranching, and general construction activities. All of these sectors are conducting ongoing lawful activities. If the DSL is listed as "threatened" or "endangered" in the future, enrolled participants in the 2020 DSL CCAA would be authorized under the Permit to "take" the covered species incidental to the lawful activities covered by the CCAA and conservation measures implemented under the CCAA, consistent with the Permit and the participant's certificate of inclusion (CI). No | | |

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| | | directed "take" would be authorized.<br>2. The implementation of the terms of the CCAA is reasonably expected to provide a net conservation benefit to the affected covered species by contributing to the conservation of the species included in the permit, and the CCAA otherwise complies with the CCAA policy. The net conservation benefit issuance criteria, as well as the reasonable expectation that implementation of the 2020 DSL CCAA will provide a net conservation benefit to the DSL, is discussed in detail in the following section of these comments.<br>3. The probable direct and indirect effects of any authorized take will not appreciably reduce the likelihood of the survival and recovery in the wild of any species. The 2020 DSL CCAA is a conservation plan designed to provide a net conservation benefit to the DSL and its habitat by reducing and eliminating threats to the species, including through a comprehensive suite of actions to avoid, minimize and mitigate impacts. These changes in land use practices, and the associated collection of biological information to further conservation efforts, are beneficial to the species and will not appreciably reduce the likelihood of survival and recovery of the DSL, or otherwise jeopardize the species. As discussed in detail below, overall incidental "take" of habitat that would be authorized over the entire requested 23-year term of the Permit has an upper limit of 34,940 acres (about 12% of modeled potential habitat in West Texas, and about 5% of modeled habitat across the species range in Texas and New Mexico) | | |

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| | | from all covered activities and upper limit take allocations for each sector. Ultimately, the direct and indirect effects of issuing the Permit are to implement conservation measures and actions consistent with the 2020 DSL CCAA that would avoid, minimize and reduce threats to the DSL and its habitat from ongoing industrial and economic activities that are occurring in the status quo environmental baseline. The 2020 DSL CCAA includes robust tracking, reporting, and adaptive management requirements to ensure that throughout the 23-year duration of the Permit, implementation of the 2020 DSL CCAA does not appreciably reduce the likelihood of the DSL's survival and recovery in the wild.<br>4. Implementation of the terms of the CCAA is consistent with applicable Federal, State, and Tribal laws and regulations. The terms of the CCAA are consistent with any applicable laws and regulations, including Section IO(a)(l)(A) of the ESA and the Service ' s implementing regulations. The proposed 2020 DSL CCAA was prepared in consultation with the FWS. As reflected in the draft EA, FWS notified 28 Federally recognized Tribes with potential interests in the Covered Area of the Pe1mit application and proposed 2020 DSL CCAA, consistent with the requirements of Section 106 of the National Historic Preservation Act (NHPA).<br>5. Implementation of the terms of the CCAA will not be in conflict with any ongoing conservation programs for species covered by the permit. As discussed above and in the draft EA, the 2020 DSL CCAA is a voluntary program for the conservation of the DSL, the | | |

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| | | performance of which is not dependent on other DSL conservation. activities that may be underway, such as the Texas Conservation Plan for the Dunes Sagebrush Lizard (TCP) (Service et al.) and the New Mexico DSL conservation programs, or programs sponsored by the Department of Agriculture's NRCS.<br>6. The Applicant has shown capability for and commitment to implementing all of the terms of the CCAA. The Applicant, Canyon Environmental, LLC, is fully qualified to hold this permit. Additionally, the Applicant is expected to organize the Administrator of the 2020 DSL CCAA as a non-profit entity with oversight from a board of directors. The Administrator has the authority to use both internal and third party resources (e.g., consultants, academics, etc.) to enroll participants, administer the 2020 DSL CCAA, and engage stakeholders. The 2020 DSL CCAA requires participants to pay implementation fees, which are calculated to fully cover the costs associated with administering the program. The 2020 DSL CCAA requires participants to pay enrollment fees and habitat conservation fees, which are designed to incentivize conservation and fund conservation measures and actions for the net conservation benefit of the DSL. Together, these fees are expected to fund the deployment of substantial conservation activity on the landscape, as well as support monitoring, adaptive management, and the development of scientific information relevant to the species. | | |

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| Industrial Sand Producers of Texas (ISPOT) | CCAA | **B. Relative to the Environmental Baseline, the 2020 DSL CCAA is Reasonably Expected to Provide a Net Conservation Benefit to the DSL**: The 2020 DSL CCAA is reasonably expected to improve the status of the DSL by removing or minimizing threats, consistent with the 2016 Policy. We note at the outset, however, that the term "net conservation benefit" is not defined or used in the ESA or defined in the Service's implementing regulations. This term appeared first in agency guidance and regulations concerning Safe Harbor Agreements (SHA) in 1999, and then with respect to CCAAs, first appeared in agency guidance promulgated in December 2016. It is notable that the FWS has recently taken additional public comment on the 2016 Policy due to continued public concern and lack of clarity. Under the 2016 Policy, the Service must determine that the benefits of the conservation measures to be implemented by a property owner under a CCAA "are reasonably expected to improve the status of and result in a net conservation benefit" to the covered species. The 2016 Policy states that "the cumulative benefits of the CCAA's specific conservation measures designed to improve the status of a covered species by removing or minimizing threats so that populations are stabilized, the number of individuals is increased, or habitat is improved." The 2020 DSL CCAA will meet at least one, if not all, of these goals resulting in improving the status of the DSL. In the 2016 Policy, the Service clarified that it would "not require or expect property owners to address unknown or speculative threats for | None. | See General Responses #2 Net Benefit. |

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| | | [the Service] to approve [proposed] conservation agreements," which are voluntary undertakings; "rather, property owners need to address future threats that are reasonably certain to occur, based on local conditions and the best available scientific information." The 2016 Policy preamble explains that "CCAAs that are designed to 'stabilize populations' could also be approved because, in order to stabilize a population, any threats to the covered species would need to be addressed by conservation measures included in the CCAA." Moreover, "[ w]hile net conservation benefits must contribute, directly or indirectly, to the conservation of the covered species," the Service "purposely did not specify a level of increase that would be required." Rather, the Service "defined a net conservation benefit in terms of addressing key threats on the enrolled property... " Accordingly, the 2016 Policy is clear that a CCAA, such as the 2020 DSL CCAA, can satisfy the "net conservation benefit" issuance criteria by reducing and eliminating threats on enrolled property, which in turn contributes to the stabilization of populations and improvement of habitat relative to the baseline conditions of unmitigated threats on private property.<br><br>1. Environmental Baseline is the Status Quo- i.e., Ongoing Threats From Underlying Activities and No Additional Conservation. The environmental baseline, relative to which the Service determines whether the 2020 DSL CCAA is reasonably likely to provide a net conservation benefit, is the current circumstance of ongoing industrial activity | | |

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| | | and development on private property that is not subject to Federal land management or regulation for the conservation of the DSL. However, the 2016 Policy and FWS regulations are silent with respect to defining the environmental baseline. Therefore, review of analogous approaches, particularly with respect to continued pre-existing activities, are instructive. The ESA Section 7 regulations include a requirement to review the effects of a proposed nondiscretionary action against the "environmental baseline." Here, the current environmental and regulatory baseline for the DSL in Texas - an unlisted species located on private property- is continuation of the status quo, i.e., very limited regulation of private activities on private property, and no requirement or sustained commitment for DSL conservation over the proposed 23-year term of the CCAA. | | |
| Industrial Sand Producers of Texas (ISPOT) | CCAA | **3. Incidental Take and Duration of the Permit**<br>As discussed above, the "take" estimates provided in the 2020 DSL CCAA represent maximum potential disturbance over the 23-year period requested by the Permit, inclusive of all disturbance by participants and non-participants alike. The estimate does not represent the actual amount of take that is expected to be authorized for participants in the plan. Accordingly, the take estimates represent a metric to ensure that the performance of the 2020 DSL CCAA - in the context of activity across the covered area - is effective in ensuring that new surface disturbance in DSL habitat does not exceed an acceptable level, including for purposes of evaluating adaptive management triggers. For | None. | See General Responses #7 Duration. The issuance criteria for an enhancement of survival permit supported by a CCAA are provided in the FWS regulations at 50 CFR 17.22(d)(2) and 17.32(d)(2). After careful review, the Service has concluded that the CCAA meets the regulatory issuance criteria, including that implementation of the CCAA is reasonably expected to provide a net conservation benefit to the DSL by eliminating and reducing threats to the species and its habitat, the probable direct and indirect effects of any authorized take will not appreciably reduce the likelihood of survival and recovery of the DSL in the wild, and |

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| | | this reason, the Administrator of the 2020 DSL CCAA is responsible for closely monitoring and accounting for actual !alee by plan participants on enrolled property, to ensure compliance with disturbance caps and other conservation measures as well as to evaluate the performance of conservation under the plan on a real-time basis throughout the duration of the Permit. Because the maximum take estimates provided under the 2020 DSL CCAA encompass all new surface disturbance within the Texas State map, including by participants in the TCP, it is important that the duration of the 2020 DSL CCAA coincides with that of the transferred TCP. The requested 23-year period for the permit is necessary to (1) allow for consistency in allocation of take among the 2020 DSL CCAA and the TCP; (2) achieve a net conservation benefit and promote long-term, strategic conservation planning and implementation of conservation measures, including the protection of high priority areas of DSL habitat; and (3) provide participants with the regulatory certainty necessary to incentivize participation in the conservation plan, including the payment of substantial enrollment, implementation and habitat conservation fees that fund program implementation and the deployment of conservation resources to the landscape for the benefit of the DSL. | | that Canyon Environmental has sufficient qualifications to hold an EOS permit. |
| Industrial Sand Producers of Texas (ISPOT) | EA | While the Service articulated and applied the causation requirement under NEPA correctly in identifying resources that did not require detailed analysis, at several points, the Service departed from this appropriate | Sections 4.2.1 Covered Species Alternative A - Proposed Action, 4.4.1 Soils Alternative A - Proposed Action, 4.5.1 Vegetat | See General Responses #14 EA Scope. The Service has revised the EA analysis to reflect this. Effects and consequences of underlying activities |

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| | | analytical framework when describing the environmental consequences of the proposed Federal action relative to certain resources, including the covered species, soil, and vegetation. With respect to each of those resources, certain impacts from underlying industrial and economic activities (which are not caused by the proposed Federal action) were inappropriately evaluated under Alternative A - proposed action, rather than more appropriately as part of the environmental baseline under Alternative B - No Action. As a result, the draft EA overstates the intensity of impacts from the proposed Federal action. The specific flaws in the Service's NEPA analysis with respect to each of those resources are discussed below. A. Under NEPA, the Impacts of Underlying Activities, Including Sand Mining, Are Properly Evaluated as Part of the No Action Alternative. In Public Citizen, the United States Supreme Court held that "NEPA requires 'a reasonably close causal relationship' between the environmental effect" and the proposed Federal action, akin to proximate cause.65 Thus, if an environmental effect is not caused by the proposed federal action, it should not be analyzed as a consequence of the federal action under NEPA, because "if it is true that [ federal agencies] do not have the ability to control what development occurs on private land, i.e. through regulations or stipulations, then it would seem that [the agencies] would be powerless to act on any information in [the NEPA analysis] about private indirect effects. "Here, the Service has no regulatory authority over the underlying industrial and economic | Alternative A - Proposed Action (EA). | are no longer part of the resource analysis. |

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| | | activities of the potential participants in the 2020 DSL CCAA on private lands in West Texas. These activities are occurring today and will continue to occur into the future, and they require no federal approvals. Thus, these activities and their effects on resources analyzed in the draft EA are part of the environmental baseline and appropriately considered in the No Action alternative. Moreover, as the Service explained in Section 3 .1.2 of the draft EA, all of these activities can proceed in the area covered by the 2020 DSL CCAA without a Permit, and therefore the underlying activities are not "caused" by issuance of the Permit under Public Citizen. Accordingly, consequences of the underlying industrial and economic activities of potential participants - including sand mining participants- are properly consider as part of the No Action alternative. The effects of the proposed action, in short, are environmentally beneficial conservation actions that serve to reduce and eliminate threats to the DSL posed by the underlying industrial and economic activities. That is the very purpose of the voluntary conservation program described in the 2020 DSL CCAA, and the reason, as discussed above, that the plan can reasonably be expected to provide a net conservation benefit to the DSL.<br>For the covered species, soil, and vegetation resources analyzed in the draft EA, the draft EA includes analytical flaws involving confusion of the effects caused by the proposed action and those that exist in the environmental baseline (and therefore are part of the No Action alternative), as well as errors in the presentation of the best available | | |

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| | | scientific and commercial information relative to each of those resources. The result is that the draft EA overstates the intensity of impacts on each of those resources that may be caused by the proposed action. The flaws in the draft EA' s analysis of each of these resources are discussed below. | | |
| Industrial Sand Producers of Texas (ISPOT) | EA | For the covered species, soil, and vegetation resources analyzed in the draft EA, the draft EA includes analytical flaws involving confusion of the effects caused by the proposed action and<br>those that exist in the environmental baseline (and therefore are part of the No Action alternative), as well as errors in the presentation of the best available scientific and commercial information relative to each of those resources. The result is that the draft EA overstates the intensity of impacts on each of those resources that may be caused by the proposed action. The flaws in the draft EA' s analysis of each of these resources are discussed below. | Sections 4.2.1 Covered Species Alternative A - Proposed Action, 4.4.1 Soils Alternative A - Proposed Action, 4.5.1 Vegetat Alternative A - Proposed Action (EA). | See General Responses #14 EA Scope. The Service has revised the EA analysis to reflect this. Effects and consequences of underlying activities are no longer part of the resource analysis. |
| Industrial Sand Producers of Texas (ISPOT) | EA Section 3.2 and 4.2 | In Sections 3.2 and 4.2 of the draft EA regarding the "Covered Species," the Service describes the genetic diversity of DSL in Texas as consisting of four genetically distinct units,<br>even though the Service acknowledged that one of these four units has not been sampled but still considers it distinct from the other three units: "These groups are composed of 7 Mescalaro [sic] Sands units, including Gaines County and northern Andrews County in Texas, and Monahans Sandhills groups (footnote: The southern portion of mapped DSL habitat<br>(southern Ward County and Crane County) is | Sections 3.2 Covered Species, 4.2.1 Covered Species Alternative A - Proposed Action, 4.2.2 Covered Species Alternative B - No Action Alternative (EA) | See General Responses #14 EA Scope. The EA has been modified to more fully reflect the best available science related to DSL genetic diversity, including Chan et al. (2020). The Service also acknowledges that potential impacts to genetic diversity of the DSL related to habitat fragmentation is part of the environmental baseline and that the proposed action would provide a net conservation benefit relative to the No Action Alternative. |

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| | | not assigned to a group because there is no genetic material.)"<br>In Texas, Chan et al. (2020) found four phylogeographic groups: 1) Gaines County and northern Andrews County, which are part of the southern Mescalero Sands group; 2) southern Andrews County; 3) the northern two thirds of Winkler County; and 4) southern Winkler and northern Ward counties."<br>While it may be important to recognize and conserve genetic diversity where it is documented, the Service's presumptions that underlying activities by potential participants in the 2020 DSL CCAA will be so extensive as to result in disruption of DSL resiliency, redundancy and genetic diversity cannot be supported with the available information on DSL populations in Texas. There is no publicly available data on the population size, population status, or numbers of genetically similar populations within each of the putative regions of the Monahans Sandhills. The putative geographic breaks of the identified genetically distinct populations of DSL in Texas are inconclusive, evidenced by the lack of genetic diversity grouping patterns by geography and<br>landscape (Chan et al. 2020, p. 9 - 11 ):<br>"Populations in the Monahans Sandhills are genetically distinct from all other S. arenicolus populations, but do not form a single haplotype group. There is high sequence divergence among haplotypes from the Monahans Sandhills despite occurring in a relatively restricted geographic area and they are distantly related to Mescalero Sands haplotypes. The EA and EC areas each have | | |

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| | | unique haplotypes without a single, most common haplotype. The EB haplo-types fall out into two main groups, one that is equally distant to northern and southern Mescalero Sands haplotypes and one that is distantly related to all other recovered haplotypes (Fig 2)." "Monahans Sandhills populations were paraphyletic with respect to Mescalero Sands populations with the southern-most Monahans Sandhills individuals forming a weakly supported clade (PP = 0.866) sister to all other S. arenicolus." "We do not recover very much genetic resolution for individuals south of the skinny zone in the Southern Mescalero Sands or the northern or central Monahans Sandhills. There is not strong support (PP = 0.910) for a clade including individuals from regions D and EA. Notably, individuals from Monahans Sandhills are paraphyletic and their relationships largely unresolved. While most individuals from the Monahans Sandhills regions cluster with other individuals from the same region, as expected from the haplotype network, there are a few individuals that fall out with individuals from different regions. For instance, both DED075 and TJH2880 were collected from within the EB region, north and south of other EB individuals that form a clade. These two individuals fall outside the EB clade and potentially cluster with individuals from EC, though support for these clades is weak (Fig 3)."<br>Though Chan et al. (2020) note that their findings "highlight regions to be considered as genetically distinctive conservation units ... " (p. 16), they also note the limitation of | | |

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| | | their data: "There is most certainly restricted gene flow and genetically independent populations within each phylogeographic regions[ sic] that is not detectable in our dataset because of limitations to the temporal and spatial resolution of mitochondrial DNA sequences and microsatellite markers at fine scales." (p. 16). This indicates that geographic boundaries of genetically distinct populations particularly in Texas (i.e., EA, EC, and EB) are putative. As a result, caution is warranted in prematurely assuming there are four distinct genetic units with boundaries as defined by the Service's analysis units. Prematurely structuring a conservation plan based on putative boundaries, as the Service seems to be suggesting, also may be counterproductive to efforts to conserve genetic diversity. Chan et al. (2020) presents information on the genetic diversity of the DSL shaped by historical processes, not current patterns of dispersal, migration and population connectivity (p. 16): "It is important to emphasize that the genetic data we present here reflect historical, not contemporary, processes and patterns of genetic connectivity." (Emphasis added). Because information on the dispersal ecology, the distribution of populations in Texas and the processes of divergence of DSL populations with and without gene flow (Pinho and Hey 2010) is limited, the connectivity or lack thereof between populations of DSL is unknown. Therefore, it is currently prudent and consistent with the best available science (including Chan et al. (2020)) for the 2020 DSL CCAA to be structured as is and not segmented by the | | |

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| | | Service's newly created analysis units, and for participants to utilize the conservation actions and adaptive management processes to garner valuable data on the DSL and identify high priority areas for conservation. | | |
| Industrial Sand Producers of Texas (ISPOT) | EA Section 4.2 | Additionally, in Section 4.2 of the draft EA, the Service erroneously states that because the CCAA supposedly does not specifically reduce fragmentation to the point of maintaining the "meta-populations and the four phylogenic groups" and exceptions to avoidance of high and intermediate suitability habitats "reduces the effectiveness of these conservation measures in maintaining genetic representation, resilience and redundancy," the proposed action is "likely to result in moderate to major impacts from habitat loss, fragmentation, and impacts on genetic representation."<br>First, this statement improperly characterizes activities causing fragmentation and habitat loss as consequences caused by the proposed action. Under Public Citizen and as recognized by the Service earlier in the draft EA, the underlying industrial activities causing these impacts are properly considered in the environmental baseline and are part of tl1e No Action alternative. They are not caused in any sense by the proposed action, which involves implementation of a voluntary conservation program to mitigate and eliminate those very effects with which the Service is concerned. Second, as discussed above, the Service's assertions that the 2020 DSL CCAA should be designed to specifically conserve these phylogenic groups is unsupported by the best available science, including Chan et al. (2020). Moreover, the | Sections 3.2 Covered Species, 4.2.1 Covered Species Alternative A - Proposed Action, 4.2.2 Covered Species Alternative B - No Action Alternative (EA) | See General Responses #14 EA Scope. The EA has been modified to more fully reflect the best available science related to DSL genetic diversity, including Chan et al. (2020). The Service also acknowledges that potential impacts to genetic diversity of the DSL related to habitat fragmentation is part of the environmental baseline and that the proposed action would provide a net conservation benefit relative to the No Action Alternative. |

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| | | Service presents no scientific support or evidence whatsoever to substantiate its conclusion that fragmentation resulting from activities conducted during the requested 23-year Permit would affect gene flow among DSL phylogenic groups, which most likely occurs on a time scale of hundreds or thousands of years. | | |
| Industrial Sand Producers of Texas (ISPOT) | EA Section 4.4.1 | In Section 4.4.1 of the draft EA, FWS asserts that "the proposed action is likely to result in short to long-term, minor to major impacts from disturbance of surface soil and removal of sand sediments in the dunes by disturbing the dynamics of the dunes geomorphology; and minor short-term benefits to soils in the Covered Area will occur through implementation of minimization measures and caps on annual surface disturbance by mine participants."71 The Service's conclusions regarding the impact on surface soil and dunes geomorphology are not substantiated by any of the studies cited in the draft EA. The best available scientific information indicates otherwise.<br>The literature characterizes the Monahans Sandhills differently from the Service's characterization in the draft EA and generally as containing a mix of active and stabilized sand<br>dunes: “Muhs and Holliday (1995) pointed out that dunes on the Southern High Plains may be near the critical climatic limits of stability, because the northern dune fields (Muleshoe, Mescalero, and Lea-Yoakum) are largely stable, whereas ~300 km2 of the southernmost dune field (Monahans) is active.” (Muhs and Holliday 2001 p.75).<br>“Fully active dunes are found in many parts | Section 4.4.1 Soils Alternative A - Proposed Action. | See General Responses #14 EA Scope. The Service has revised the EA analysis to reflect this. Effects and consequences of underlying activities are no longer part of the resource analysis. |

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| | | of the Monahans dune field, and include both barchanoid ridges as long as 1000 m and parabolic dunes (Fig. 7). The western portion of the Monahans dune field has stable or partially active parabolic dunes and sand sheets." (Muhs and Holliday 2001 p.78). "Approximately 45 percent of the park [Monahans Sandhills State Park] (1,750 acres or 708 hectares) consists of active dunes." (Machenberg 1984 p. 21). Wait (1969) provides a map showing the heterogeneity of the Monahans Sandhills and that large portions of active dunes are present both in the Kermit Sandhills and the Monahans Sandhills. Wait (1969), Machenberg (1984), Muhs and Holliday (2001), and aerial imagery on Google Earth have consistently shown that some portions of the Monahans Sandhills with active dunes remain sparsely vegetated over long timeframes. Machenberg (1984) notes on pages 6 and 21: "Large areas of active dunes have remained unstable because of the influence of local topography, water-table fluctuations, and former land use practices, such as grazing, which prevented the establishment of stabilizing plant growth." "The active dunes in the park are totally or predominantly unvegetated (fig. 22) and shift in response to seasonal winds." The Service is concerned that activities occurring in active sand dunes will disrupt the resiliency of dunes complexes to support the DSL. The literature shows that DSL occurrence has been consistently associated with shinnery oak sand dunes and blowouts, | | |

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| | | and not open dunes (Axtell 1988; 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). Chan et al. (2020, p. 16) state: "Recent and extensive ecological research[] make clear that S. arenicolus requires contiguous shinnery oak-sand dune complexes for population persistence and that individuals do not disperse across areas that are not shinnery oak-sand dune." Thus a conservation plan that shifts activities away from shinnery oak sand dunes toward active dunes lacking shinnery oak would conserve the resiliency of shinnery oak dunes that could support the DSL. The literature on the dune geomorphology and dynamics of the Monahans Sandhills is largely focused on the formation and dynamics of the dune with respect to geologic time and has very little discussion of the contemporary dynamics relative to anthropogenic disturbance (Hall and Goble 2006; Muhs and Holliday 1995, 2001); but see Machenberg (1984). Thus the spatiotemporal extent of effects of anthropogenic disturbance and disruption of dune dynamics in active dunes and adjacent semi-stabilized shinnery oak dunes is unknown. Future efforts can address these questions using available remote sensing data to conduct a change detection analyses. Thus, the scope of available literature merits careful review and attention regarding how it is used to evaluate the 2020 DSL CCAA. Though Chan et al. (2020) demonstrate that the DSL has patterns of historic genetic diversity that can be partitioned at multiple spatial scales, | | |

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| | | managing for genetic diversity at unresolved and too fine of spatial scales may be counterproductive to conserving diversity at the level essential for the conservation of the species. The available science demonstrates that the Monahans Sandhills is a heterogeneous system and does not exclusively comprise of shinnery oak sand dune complexes. Therefore, conservation measures that avoid, minimize and offset disturbance in shinnery oak dune complexes is consistent with the literature descriptions of the DSL' s needs for conservation. Finally, the Service's statement that "short to long-term, minor to major impacts" to surface soil and sand sediments in dunes will result from "disturbing the dynamics of the dunes morphology" under the proposed action is improper because those impacts from sand mining (if any could even be expected to occur) are not caused by the proposed action. Under Public Citizen and as recognized by the Service earlier in the draft EA, the underlying industrial activities causing these impacts are properly considered in the environmental baseline and are part of the No Action alternative. They are not caused in any sense by the proposed action, which involves implementation of a conservation program to mitigate and eliminate those very effects on soil resources with which the Service is concerned. | | |
| Industrial Sand Producers of Texas (ISPOT) | EA Section 4.5 | The draft EA erroneously states that "the pumping of subsurface ground water from sand mines is likely to result in impacts to surrounding vegetation, especially when exasperated [sic] by drought conditions. " The draft EA also states that conservation | Sections 3.3 Hydrology and Water Resources, 3.5 Vegetation, 4.2.1 Covered Species Alternative A – Proposed Action (EA); | See General Responses #12 Rainwater. We have incorporated its analysis and findings into the EA and our review of the CCAA. |

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| | | measures to "reduce and manage use of groundwater for the sand mining industry" would "reduce impacts on vegetation communities from the removal of water from pits in the sand mine, which is the groundwater in perched aquifers and subsurface water supply for vegetation in the Covered Area." Although not cited by the Service, these statements appear to be based on Mace (2019). Mace (2019), however, is based on flawed assumptions and significantly overstates groundwater use. The attached study by Dr. Ken Rainwater (Rainwater (2020)) demonstrates, based on site-specific empirical data, that groundwater use by sand mining companies will have no permanent effect on the water table, and therefore likely no long term or permanent effect on the surface vegetation that may constitute DSL habitat. The final EA must be revised to incorporate the new Rainwater (2020) study, and specifically to correct the erroneous conclusion that use of "ground water from sand mines is likely to result in impacts to surrounding vegetation." We strongly caution against reliance on Mace (2019), which relied on erroneous assumptions and guesswork for its conclusions due to lack of access to sand mining properties and thus significantly overestimated water use and associated impacts by the sand mining companies. In fact, Mace (2019) flatly admitted that "[t]his study suffered from a lack of site-specific information on water use and produced sand tonnage." Mace (2019) at 2-3. Additionally, Mace (2019) failed to consider recharge to the aquifer, which more than offsets the | Sections 7.1.4 Sand Mining (CCAA). | |

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| | | minimal consumptive use of groundwater required by sand mining. Rainwater (2020) explains the relationship between the West Texas sand mining companies' water use and regional hydrology. Dr. Rainwater is a hydrologist, an environmental consultant, and a Professor of Civil, Environmental & Construction Engineering at Texas Tech University with expertise in groundwater and watershed management.<br>Rainwater (2020) evaluated water use and groundwater conditions near sand mining plants in Ward and Winkler Counties in West Texas, the same area of sand mining evaluated by Mace (2019). In contrast to Mace (2019), Rainwater (2020), used site-specific empirical field measurements and actual hydrological testing to determine groundwater presence and reviewed actual water use, water budgets, and sand production data at currently operating sand mining plants near Kermit, Texas, and Monahans, Texas.<br>Dr. Rainwater conducted field measurements in September 2020 at each of these sites to determine depth to water in groundwater wells and also reviewed both well logs and geologic core information to describe actual groundwater conditions. Wells at the companies' properties have been drilled in both the unconfined Pecos Valley Aquifer (PVA), with depths to water generally less than 30 feet, and the confined Dockum Aquifer, which is located over 500 feet below the bottom of the PVA and separated from the PVA by an impermeable layer. Water withdrawals from the Dockum Aquifer will not affect surface vegetation both because its | | |

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| | | water is not accessible to supporting vegetation, and because of its confined nature (e.g., it is isolated from and will not affect the PV A hydrologically). Rainwater (2020) at 8. Rainwater (2020) also concluded that water use from the PV A by the sand mining companies is not expected to affect surface vegetation for several reasons. First, the data indicate that the PVA is unconfined and has a saturated, water-bearing thickness of about 100 feet in the area of the sand mines. Both groundwater and rainwater recharge can therefore move relatively freely throughout the entire aquifer, and water is readily available. Mace (2019) suggested that there are limited "perched" aquifers below the sand mining properties that could be impacted from water use or removing contributing dunes. Mace (2019) at 14, 78-79. The Service incorrectly assumes, presumably based on Mace (2019), that these purported changes in groundwater levels would adversely affect DSL habitat. Actual field measurements by Rainwater (2020), however, demonstrate that these concerns are unfounded, and no perched aquifer exists under the sand mining properties. Rainwater (2020) at 13-16.<br>Second, Rainwater (2020) found that water consumption by sand mining companies was lower than previously assumed. Mace (2019) assumed incorrectly that the sand plant operators are continually operating their wells at full capacity to supply water to the plants. As Rainwater (2020) explains, this assumption is erroneous, because reasonable business practices require some excess capacity and wells will not (and | | |

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| | | indeed are not) operating at full capacity at all times. Rainwater (2020) used actual water consumption empirical data and found that the sand mining companies have water consumption rates ranging from 10.8 to 24.5 gallons per ton of sand, substantially below the 60 to 250 gallons per ton hypothesis set forth by Mace (2019). Moreover, many companies recycle water used to process the sand or otherwise return it to open pits for infiltration, thus limiting consumptive use far below the levels suggested by Mace (2019). Indeed, some facilities recycle or otherwise return to the aquifer approximately 99% of the water used. Third, the effects of groundwater recharge must be considered in assessing sand mining water consumption from the PV A - an issue that Mace (2019) utterly failed to address. Rain percolates readily through the sand dunes and into the PV A, and annual recharge rates to the PV A exceed the groundwater consumption rates from the PV A on each of the sand mining properties reviewed. Rainwater (2020) at 24. For example, Rainwater (2020) found that the Atlas Sand's average groundwater consumption rates from the PVA were 54 and 47 gallons per minute (gpm) at two different plants, and those values are far below the minimum groundwater recharge rate of 967 gpm across Atlas Sand's property. Rainwater (2020) likewise found that the Hi-Crush average groundwater consumption rate from the PVA was 16 gpm, and that value is substantially below the minimum groundwater recharge rate of 32 gpm across Hi-Crush's much smaller | | |

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| | | property. Therefore, groundwater recharge on the sand mining properties is more than adequate to offset groundwater use by the companies. Rainwater (2020) thus concluded that the current rate of groundwater consumption by these companies will not impact the water table level (depth to water) or associated groundcover habitat for the DSL.<br>Because Mace (2019) significantly overestimated groundwater consumption by sand mines and failed to consider the groundwater recharge of the PV A, the modeling contained in the report is also fundamentally flawed. Mace (2019) used the incorrect range of consumption values (e.g., 60 to 250 gallons/ton of sand) to suggest that sand facilities "may be pumping between l 0,000 and 40,000 acre-feet per year of water," an implausible statement that the EA relies on in its analysis. Mace (2019) at 16. Dr. Rainwater's water consumption rates ranging from 10.8 to 24.5 gallons per ton of sand yield a far different ( and more accurate) picture. Converted to acre-feet per year, these rates are considerably less than that suggested by Mace (2019), with the largest acreage holdings and sand production in the basin using only approximately 80 acre-feet per year per facility, and other operations far less. Nonetheless, lacking site-specific water use and hydraulic properties, Mace (2019) then conducted modeling under two hypothetical scenarios, but the results, which rely on faulty inputs, suggest extraordinarily unrealistic groundwater declines from sand mine groundwater use in both the PVA and the Dockum. Mace (2019) at 2-3. These | | |

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| | | flaws render the conclusions in Mace (2019) fundamentally unsound. Any reliance on Mace (2019) for these propositions in the EA is similarly flawed. It should also be noted that the draft CCAA already addresses the primary recommendation of Mace (2019) and apparent concern from the Service-namely, to "expand[] water-level monitoring in the sand mining region". The draft CCAA requires sand mining enrollees to adopt water minimization plans, monitor water use, and report on progress toward usage reduction goals. The EA should be revised to acknowledge that water use by sand mining companies will not permanently affect groundwater levels or DSL habitat.<br>Finally, as with the covered species and soil resources, the draft EA improperly states that the proposed action will "likely result in short and long-term, minor to moderate impacts from soil impact on sediment and loss of shinnery oak from clearing."75 Again, the underlying activities resulting in loss of shinnery oak are not caused by the proposed action under Public Citizen. Those underlying industrial and economic activities are properly considered in the environmental baseline and the No Action alternative, and the 2020 DSL CCAA is a voluntary conservation program designed to reduce and eliminate those threats to vegetation resources that the DSL uses as habitat. | | |
| Defenders of Wildlife | EA | We oppose approval of the proposed CCAA and an associated EOS permit, as the proposed CCAA will not enhance the survival of the species as required by the ESA and should therefore not proceed. | None. | Comments noted. See General Responses for #5 Old Record and #3 Listing Out of Scope.<br>The TCP was transferred by the Service to a new permittee, the American Conservation Foundation, effective as |

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| | | The dunes sagebrush lizard (Sceloporus arenicolus, hereafter "DSL") is a narrow-ranging habitat specialist that lives in irreplaceable shinnery oak sand dune habitat in parts of southeastern New Mexico and West Texas. The DSL's existence is threatened by numerous factors, especially present and future habitat modification and destruction. More than 40% of its historic shinnery oak habitat is lost, and the DSL is gone from as much as 86% of its previously occupied survey sites. See, e.g., Exh. A, May 8, 2018 DSL Listing Petition ("Petition"), p. 40. Much of this habitat modification and destruction has been driven by oil and gas exploration and extraction activities, and more recently by sand mining, in the Permian Basin. The commenter also describes implementation of the Texas Conservation Plan (TCP) and its perceived failures, the history of Service's consideration of whether to list the Dunes Sagebrush Lizard under the Endangered Species Act, and attaches a copy of the commenter's May 8, 2018 DSL Listing Petition, and a copy of correspondence from the Texas Comptroller to the Service dated November 8, 2018. | | of October 19, 2020. The TCP is a separate conservation plan for the DSL and outside the scope of the proposed federal action. |
| Defenders of Wildlife | EA | NEPA's goal is to ensure that the federal government takes a "hard look" at the environmental impacts of proposed actions and alternatives to those actions. Nat'l Audubon Soc' v. Dep't of the Navy, 422 F.3d 174, 184 (4th Cir. 2005). Where the proposal is a "major Federal action[] significantly affecting the quality of the human environment," agencies are required to do full environmental impact analyses that evaluate any adverse environmental effects | None. | The Service has determined that there are no significant impacts associated with the Proposed Action for the reasons stated in the Finding of No Significant Impact (FONSI) and an Environmental Impact Statement is not required. |

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| | | which cannot be avoided, alternatives to the proposed action, the relationship between local short-term use of the environment and the maintenance and enhancement of long-term productivity, and any irreversible and irretrievable commitments of resources which would be involved if the proposed action should be implemented. 42 U.S.C. § 4332(C). The implementing regulations published by CEQ define "significantly" in terms of "both context and intensity." Context refers to the affected environment—be it local, regional, national, or all three—in which the proposed action would occur; while intensity refers to the magnitude of the impact. CEQ has set forth ten factors to be considered in evaluating intensity. 40 C.F.R. § 1508.27.<br><br>The draft EA is deficient under NEPA. If the Service nonetheless moves forward with the NEPA analysis, a full Environmental Impact Statement ("EIS") is required because this is a "major Federal action[] significantly affecting the quality of the human environment," 42 U.S.C. § 4332(2)(C). | | |
| Defenders of Wildlife | EA | The draft EA fails to conduct a "hard look" review under NEPA, for several reasons: The draft EA improperly considers the baseline to be ongoing industrial activities, but the DSL will "almost certainly" be listed soon. At that point the existence of the proposed CCAA may easily lead to more destructive environmental impacts over the long term than if the proposed CCAA is denied, as participants are able to carry out covered activities with minimal restrictions and no concerns of liability for take under section 9 | None. | The US Supreme Court in Public Citizen held that NEPA requires a "reasonably close causal relationship" between the proposed federal action (in this case approval of the CCAA and issuance of the EOS permit) and the environmental effect to be analyzed. The Service disagrees that there is a causal relationship between the proposed federal action and ongoing industrial activities that do not require any federal action. Whether or not the DSL may be listed as threatened or |

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| | | of the ESA. Listing the DSL should be included in the No Action Alternative. | | endangered in the future is speculative. Accordingly, it would be inappropriate and contrary to NEPA to consider Section 9 protections for species listed under the ESA as part of the environmental baseline as reflected in the No Action Alternative. |
| Defenders of Wildlife | EA | The draft EA fails to account for how the Proposed Action may set precedent for future federal actions with significant adverse environmental impacts. If FWS uses the existence of this CCAA as a pretext for not listing the DSL, this may reinforce the practice of using CCAAs as a way to avoid listing under Section 4 of the ESA by creating nominal conservation plans that can be used as an excuse to refrain from listing species that are at risk of extinction. CCAAs should not be used to avoid listing without a proven track record or strong and verifiable indicators of likely success. Otherwise, the CCAA will simply facilitate further take and then insulate parties from liability in the event that the species is ultimately listed, resulting in a net conservation loss over time compared to never creating a CCAA in the first place. This kind of forward-thinking, holistic analysis is required by NEPA. | None. | The Service disagrees that incentivizing voluntary conservation by non-Federal landowners under the CCAA and EOS permit would be a pretext for avoiding a listing of the DSL under the ESA. As stated in the Service's 2016 policy regarding CCAAs, one of the Service's goals is to encourage the public to voluntarily develop and implement conservation plans for declining species prior to them being listed under the ESA. The benefits of such conservation actions may contribute to not needing to list a species, to list a species as threatened instead of endangered, or to accelerate the species' recovery if it is listed. |
| Defenders of Wildlife | EA | The draft EA fails to take into account the impact the CCAA may specifically have on the decision to list the DSL. The cumulative impacts of the listing decision and the proposed CCAA must be considered together. If the Service intends to consider the CCAA's existence as a factor in whether to list the DSL as a threatened or endangered species, which seems likely, then the cumulative impacts of the CCAA and the | None. | The US Supreme Court in *Public Citizen* held that NEPA requires a "reasonably close causal relationship" between the proposed federal action (in this case approval of the CCAA and issuance of the EOS permit) and the environmental effect to be analyzed. The Service disagrees that there is a causal relationship between the proposed federal action and ongoing |

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| | | listing decision should be considered together. And given the lack of effectiveness of the TCP, which the proposed CCAA purports to add onto, the overall impact of issuing an EOS permit and relying on the proposed CCAA would be catastrophic to the shinnery oak ecosystems and the DSL that inhabit them. The proposed EOS permit could significantly impact the rate and amount of oil and gas extraction in the area, and thus impact greenhouse gas emissions, toxic pollution, and landscape degradation and fragmentation, which will impact numerous plant and animal species – none of these are incorporated sufficiently into the draft EA. | | industrial activities that do not require any federal action. The Service disagrees that the proposed federal action is a major action with any significant impacts necessitating an EIS because the federal action involves issuance of an EOS permit and approval of a conservation plan to reduce and eliminate threats to provide a net conservation to the DSL and provides an environmental benefit relative to baseline conditions. The TCP is outside the scope of the proposed federal action. |
| Defenders of Wildlife | EA | The draft EA fails to assess the cumulative impacts of the proposed CCAA on local and global air quality and climate change, arising from increasing greenhouse gases and other air pollutants emitted by industrial activities. 40 C.F.R. § 1508.7. Allowing almost unrestricted extraction in the action area should (as is likely) the species be listed would likely increase the amount of greenhouse gas emissions and crowd out renewable energy sources on the market. It would also negatively impact local air quality as extraction and other industries protected by an EOS permit are able to exploit resources in the area without significant limit. | None. | The US Supreme Court in Public Citizen held that NEPA requires a "reasonably close causal relationship" between the proposed federal action (in this case approval of the CCAA and issuance of the EOS permit) and the environmental effect to be analyzed. The Service disagrees that there is a causal relationship between the proposed federal action and ongoing industrial activities that do not require any federal action. The Service disagrees that the proposed federal action is a major action with any significant impacts necessitating an EIS because the federal action involves issuance of an EOS permit and approval of a conservation plan to reduce and eliminate threats to provide a net conservation to the DSL and provides an environmental benefit relative to baseline conditions. |

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| Defenders of Wildlife | EA | The DSL has been waiting decades for federal protection. The most recent petition to list the imperiled lizard has languished at the FWS since it was submitted in 2018 in clear violation of the ESA's statutory deadlines. It took litigation from Defenders and our partners to prompt the Service into releasing a positive 90-day finding in July of this year. Accordingly, the FWS remains in violation of the ESA for failing to issue a 12-month finding and, if warranted, a proposal to list the species as threatened or endangered. Swift completion of the FWS's statutory listing duties is now required.<br><br>For this reason and for all of the reasons set forth above, Defenders believes that the Application should be denied because, as proposed, the Canyon Environmental-drafted CCAA is wholly inadequate to protect and conserve the DSL and should be rejected. Further consideration of this or any other CCAA should not delay immediate listing and protection of the DSL. | None. | Comments noted. See General Response for #3 Listing Out of Scope. |
| Texas Public Policy Foundation | EA | See comments on CCAA. | | |
| Sealy & Smith Foundation | EA | See comments on CCAA. | | |
| American Conservation Foundation | EA | No comments on the draft EA. | None. | |
| Texas Industry Project | EA | Benefits and Baseline Section 1.1 of the Draft EA should be revised to include the following text from the Draft CCAA that frames the benefits of the program in the context of a private land setting: "The proposed addition of text is: "A significant | Section 1.1 Introduction (EA) | The Service agrees with this addition. Modified text has been added to Section 1.1. |

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| | | benefit of this Draft CCAA is that it incentivizes avoidance and minimizes impacts to the DSL and its habitat on private lands, which are not otherwise subject to regulation or management for the conservation of an unlisted species under the ESA." | | |
| Texas Industry Project | EA | Benefits and Baseline Section 1.1 of the Draft EA should be revised to add the following text on the benefits of the proposed CCAA in the context of the current baseline, which includes an absence of federal regulatory authority to conserve the DSL: "The Conservation Strategy and Conservation Measures under the Draft 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 conserve and protect an unlisted species and its habitat on private property in West Texas." | Section 1.1 Introduction (EA) | The Service agrees with this addition. Modified text has been added to Section 1.1. |
| Texas Industry Project | EA | Proposed Action Neither the CCAA nor the EA can be used as a surrogate by the Service to extend federal regulation to private property, including surface, subsurface, and water rights. The EA analysis must focus on participants' conservation and mitigation pursuant to the CCAA, and the EA cannot expand its analysis to effects of private party activities on private land or those of non-participants. Section 1.1 of the Draft EA should be revised to expressly state that the proposed action does not entail federal agency permitting of ground-disturbing activities or other resource uses by non-participants. | Section 1.1 Introduction (EA) | The Service agrees that the Proposed Action does not entail federal permitting of underlying ground disturbing activities or other resource uses. The Proposed Action is the CCAA and issuance of an Enhancement of Survival permit that would become effective if the DSL is listed in the future. |

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| Texas Industry Project | EA | Proposed Action Section 4.2.1 of the Final EA should analyze the beneficial impacts from the proposed Draft CCAA and be revised to correct the Draft EA's improper and speculative characterization that increased negative impacts from development would allegedly stem from implementation of the Draft CCAA. Text in Section 4.2.1 relating to alleged short- to long-term moderate to major impacts from habitat loss, fragmentation, and impacts on the genetic representation of the DSL should be removed as speculative. | Section 4.2.1 Covered Species Alternative A - Proposed Action (EA) | Pursuant to NEPA, an EA must analyze both beneficial and potentially negative impacts. The Service has clarified the text of Section 4.2.1 of the Final EA to limit that analysis to the effects of approving the CCAA and issuing an enhancement of survival permit and has eliminated text incorrectly analyzing the underlying ongoing private activities. The Service therefore does not expect any potentially negative impacts to be major and has revised the EA accordingly. |
| Texas Industry Project | EA | Purpose and Need To properly frame the NEPA analysis being presented, the purpose and need statement in Section 1.1 of the Draft EA should be revised and clarified as suggested. The final EA should include text that plainly states: Purpose: The purpose of this voluntary, programmatic CCAA is to provide a framework for enrolled participants to conserve DSL and its habitat through implementation of conservation measures designed to reduce threats to the species and to maintain or improve habitat conditions. Need: The CCAA is needed to improve conservation of the DSL. This programmatic CCAA provides incentives for conservation of the DSL on non-federal lands by providing assurances that no additional conservation measures, or land, water, or resource use restrictions beyond those voluntarily agreed to by the non-federal participant will be required for the species, should it be listed in the future. | None. | Section 1.3 of the EA sufficiently and appropriately explains the purpose and need for the proposed federal action. |
| Texas Industry Project | EA | No Action Alternative FWS should revise the EA's text in Section 4.2.2 to clarify its meaning and to show that no impacts will | None. | The EA establishes the No Action Alternative as the baseline of ongoing, industrial activities that may cause |

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| | | occur to the species under the No Action Alternative. FWS lacks legal authority to regulate private property or authorize development of private property, and as such cannot include the impacts of ongoing private industrial activity within its impacts analysis for the No Action Alternative. The FWS should revise the text identified in the comment to clarify and explain its meaning based upon the absence of legal authority to regulate private property or authorize development of private property. The EA analysis should be confined to the beneficial impacts from the proposed agency action, i.e., authorization of a voluntary conservation program on private lands. | | impacts to the DSL. The Service must analyze the No Action Alternative under NEPA and does not need to authorize or permit those ongoing industrial and commercial activities for their impacts on the species to be relevant to the EA's No Action Alternative analysis. The text identified by the commenter affirms that ongoing industrial activity absent the CCAA will have impacts on the species. |
| Texas Industry Project | EA | Direct, Indirect, and Cumulative Benefits The Draft EA fails to analyze, as part of its cumulative impacts analysis, the direct, indirect, and cumulative benefits of the Draft CCAA. Draft EA at 40. The Council on Environmental Quality (CEQ) regulations do not limit the evaluation of cumulative impacts to negative impacts. | None. | The final EA discusses the cumulative benefits, in addition to the cumulative impacts, for the Proposed Action in Section 4.10, which explains that cumulative impacts include short- to long-term benefits to evaluated resources. |
| Texas Industry Project | EA | TCP Performance Data The EA should include the TCP performance data showing that the TCP is effectively conserving the DSL in Sections 2.2 and 4.2. Enrollment in the TCP has met or exceeded the threshold established in the FWS's 2010 proposal to list the DSL (throughout all DSL habitat). In addition, the TCP's available performance data to date demonstrates that TCP Participants have disturbed 1.99% of the total take authorized by the 2012 TCP Permit. | None. | Assessment of the TCP's performance outcomes is beyond the scope of this EA. The EA evaluates the impacts and conservation benefits of the CCAA on the DSL and its habitat. |
| Texas Industry Project | EA | Surface Spacing and Technological Advancements Surface Spacing and Technological Advancements The Draft | Section 3.2 Covered Species (EA) | The text of both the CCAA and the EA has been modified to reflect the increased prevalence of horizontal |

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| | | CCAA and Draft EA should be revised to reflect current oil and gas upstream surface use and development assumptions, based on current technological innovations, including horizontal drilling. | | drilling with multiple wells on a single well pad in the Permian Basin, based upon Energy Information Administration data, and to acknowledge that the Sias and Snell (1998) study and its assessment of habitat disturbance from oil and gas development was based upon vertical development techniques. |
| Texas Industry Project | EA | The Draft CCAA and Draft EA both rely on Sias and Snell (1998) and other studies which conclude that a well density of 13 well pads per square mile should be considered "degraded" DSL habitat. However, Sias and Snell (1998) and more recent studies that rely on it predated the current adoption of horizontal drilling and use of long laterals that reduces the surface disturbance associated with oil and gas development, including the number of well pads by using the same well pad for multiple wells. | Section 3.2 Covered Species (EA) | The text of both the CCAA and the EA has been modified to reflect the increased prevalence of horizontal drilling with multiple wells on a single well pad in the Permian Basin, based upon Energy Information Administration data, and to acknowledge that the Sias and Snell (1998) study and its assessment of habitat disturbance from oil and gas development was based upon vertical development techniques. |
| Texas Industry Project | EA | **Groundwater** The Draft CCAA and EA should remove references to groundwater minimization, surveys, and related requirements, because there is no peer-reviewed science to support the need for groundwater limitations for DSL conservation. | Sections 3.3 Hydrology and Water Resources (EA) | Groundwater use may be relevant to DSL habitat and is thus discussed contextually in the EA and CCAA. The CCAA proposes to further evaluate groundwater use to ensure that such use is not a threat to the DSL or its habitat. |
| Texas Industry Project | EA | Non-Materiality of Genetics There is no regulatory or scientific basis to assert in the Draft EA that genetic variation of the DSL would be lost over the 23-year proposed term of the CCAA. The potential loss of genetic variation within a species would occur over hundreds of years. FWS should remove statements from the draft EA that suggest that the CCAA does not fully address effects on species genetics arising from fragmentation. | Section 4.2.1 Covered Species Alternative A - Proposed Action (EA) | Pursuant to NEPA, the EA addresses reasonably foreseeable impacts associated with approving the CCAA and issuing the enhancement of survival permit. The CCAA will benefit the DSL by reducing habitat fragmentation and protecting dispersal corridors. |

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| | | In addition, the final EA should be revised to: (1) Acknowledge that any potential loss of genetic variation would occur over hundreds or thousands of years and would not occur during the term of the Draft CCAA; (2) Remove the statement that the Proposed Action is likely to result in impacts on the genetic representation; (3) Remove the statement that the No Action Alternative is likely to result in short- to long-term moderate to major impacts due to impacts on genetic representation. CCAA at 29. | | |
| Texas Industry Project | EA | Term of Permit – 23 years for Symmetry with TCP TIP supports the proposed 23-year term for the enhancement of survival permit as proposed in the draft CCAA to provide symmetry with the TCP and regulatory and business certainty. It will also ensure that one plan is not provided more favorable terms than another. | None. | As stated in the EA, the CCAA is a voluntary program for the conservation of the DSL, the performance of which is not dependent on other DSL habitat conservation measures that may be undertaken through other CCAAs like the TCP. The CCAA is not an integrated program with the TCP but rather a complementary, independent program. The Service acknowledges that the proposed take number of 15,424 acres constitutes a Texas range-wide take number for upstream oil and gas activities and that the total maximum take figure is a ceiling that is inclusive of all disturbance of DSL Habitat within the Covered Area by Participants and non-participants in the upstream oil and gas sector. Under the CCAA, the Permittee is required to track the cumulative enrolled acreage in all certificates of inclusion (CIs) entered into under the CCAA and the enhancement of survival permit. The actual incidental take authorized for an individual Participant and its enrolled |

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| | | | | property will be described in the Participant's CI, such that overall authorized take by Participants can be managed over time based on the performance of the plan, including for purposes of evaluating adaptive management triggers, changed circumstances, and unforeseen circumstances. The cumulative enrolled acreages and amount of take must be included by the Permittee in all reports to the Service to ensure appropriate coordination with activities conducted under the TCP. The EA has been modified to more clearly describe this process. |
| Texas Industry Project | EA | Integrated Take Assessment with TCP The Draft CCAA provides a Texas range-wide take number of 15,424 acres for upstream oil and gas activities, based on Texas oil and gas spacing rules. The EA and the EOS permit should expressly state that 15,424 acres for upstream oil and gas activities is authorized to be allocated on a going forward basis between the Draft CCAA, the TCP, and any other approved conservation plan applicable to oil and gas activities in DSL habitat in Texas. This approach will provide an equitable and flexible approach for administering a comprehensive take number, will ensure that one plan is not provided more favorable permit terms than another, and will provide the opportunity for the TCP to increase its take under its permit. The TCP administrator has initiated the adaptive management process to update the TCP in support of a forthcoming request to increase take. The CCAA should further state that the | None. | As stated in the EA, the CCAA is a voluntary program for the conservation of the DSL, the performance of which is not dependent on other DSL habitat conservation measures that may be undertaken through other CCAAs like the TCP. The CCAA is not an integrated program with the TCP but rather a complementary, independent program. The Service acknowledges that the proposed take number of 15,424 acres constitutes a Texas range-wide take number for upstream oil and gas activities and that the total maximum take figure is a ceiling that is inclusive of all disturbance of DSL Habitat within the Covered Area by Participants and non-participants in the upstream oil and gas sector. Under the CCAA, the Permittee is required to track the cumulative enrolled acreage in all certificates of inclusion (CIs) |

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| | | permittee will report take semi-annually to the FWS and each other to ensure proper accounting for upstream oil and gas activities. | | entered into under the CCAA and the enhancement of survival permit. The actual incidental take authorized for an individual Participant and its enrolled property will be described in the Participant's CI, such that overall authorized take by Participants can be managed over time based on the performance of the plan, including for purposes of evaluating adaptive management triggers, changed circumstances, and unforeseen circumstances. The cumulative enrolled acreages and amount of take must be included by the Permittee in all reports to the Service to ensure appropriate coordination with activities conducted under the TCP. |
| Permian Basin Petroleum Association | EA | An EA, with a Finding of No Significant Impacts (FONSI), is the appropriate environmental document to apply to the DSL CCAA as demonstrated by multiple factors. | Sections 3.2 Covered Species, 4.2.1 Covered Species Alternative A - Proposed Action (EA). | The Service agrees that an EA is the appropriate environmental document to review the DSL CCAA, and that there are no significant impacts on the quality of the human environment requiring an environmental impact statement. The No-Action alternative appropriately addresses the existing baseline condition of ongoing industrial and commercial activities on private property. The CCAA is a voluntary conservation plan designed to reduce threats to the DSL, as reflected in the analysis of the final environmental assessment. Based upon the analysis conducted in the environmental assessment and the Service's review of public comments, a finding of no significant impact is appropriate here. The EA has been modified to more |

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| | | | | fully reflect the best available science related to DSL genetic diversity, including Chan et al. (2020), and that no impacts to genetic diversity are anticipated or reasonably foreseeable over the short 23-year term of the CCAA. |
| Permian Basin Petroleum Association | EA | The CCAA is a voluntary conservation plan. There are no characteristics (i.e. "major impacts,") applicable under NEPA that will be triggered as a result of the approval of the CCAA, which would warrant the need for an Environmental Impact Statement (EIS). In addition, to the extent economic activities are occurring on the Texas landscape, they are assumed in the "no action" alternative that is embedded in the currently proposed EA analysis. | Sections 3.2 Covered Species, 4.2.1 Covered Species Alternative A - Proposed Action (EA). | The Service agrees that an EA is the appropriate environmental document to review the DSL CCAA, and that there are no significant impacts on the quality of the human environment requiring an environmental impact statement. The No-Action alternative appropriately addresses the existing baseline condition of ongoing industrial and commercial activities on private property. The CCAA is a voluntary conservation plan designed to reduce threats to the DSL, as reflected in the analysis of the final environmental assessment. Based upon the analysis conducted in the environmental assessment and the Service's review of public comments, a finding of no significant impact is appropriate here. The EA has been modified to more fully reflect the best available science related to DSL genetic diversity, including Chan et al. (2020), and that no impacts to genetic diversity are anticipated or reasonably foreseeable over the short 23-year term of the CCAA. |
| Permian Basin Petroleum Association | EA | Further, the EA for the DSL CCAA is consistent with, and similar to, other regional CCAAs in activities and structure. To that end, PBPA's view of DSL CCAA being | Sections 3.2 Covered Species, 4.2.1 Covered Species Alternative A - Proposed Action (EA). | The Service agrees that an EA is the appropriate environmental document to review the DSL CCAA, and that there are no significant impacts on the |

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| | | governed by an EA is based on the clear precedent demonstrated by the Service's previous review, approval, and issuance of EAs for the Lesser Prairie Chicken and DSL CCAA in New Mexico in 2008, DSL Texas Conservation Plan in 2011, the Lesser Prairie Chicken Range-wide Plan in 2014, and the 2017 Texas Hornshell Mussel CCAA – all of which PBPA and its member companies are participants. In all cases, an EA was prepared and a FONSI was issued. | | quality of the human environment requiring an environmental impact statement. The No-Action alternative appropriately addresses the existing baseline condition of ongoing industrial and commercial activities on private property. The CCAA is a voluntary conservation plan designed to reduce threats to the DSL, as reflected in the analysis of the final environmental assessment. Based upon the analysis conducted in the environmental assessment and the Service's review of public comments, a finding of no significant impact is appropriate here. The EA has been modified to more fully reflect the best available science related to DSL genetic diversity, including Chan et al. (2020), and that no impacts to genetic diversity are anticipated or reasonably foreseeable over the short 23-year term of the CCAA. |
| Permian Basin Petroleum Association | EA | PBPA finds it noteworthy and highly unusual that the EA does not identify a conclusion regarding the DSL CCAA. Typically, an EA concludes whether or not the Service can issue a "Finding of No Significant Impact" (FONSI) as a result of the federal action, in this case, approval of the proposed 2020 DSL CCAA and issuance of the Enhancement of Survival Permit. To be clear, this CCAA identifies all known threats to the species and reduces or mitigates these threats through voluntary and well-defined conservation measures. Therefore, we expect the EA to be the final public document and for it to reach a FONSI determination. | Sections 3.2 Covered Species, 4.2.1 Covered Species Alternative A - Proposed Action (EA). | The Service agrees that an EA is the appropriate environmental document to review the DSL CCAA, and that there are no significant impacts on the quality of the human environment requiring an environmental impact statement. The No-Action alternative appropriately addresses the existing baseline condition of ongoing industrial and commercial activities on private property. The CCAA is a voluntary conservation plan designed to reduce threats to the DSL, as reflected in the analysis of the final environmental assessment. Based upon the analysis |

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| | | | | conducted in the environmental assessment and the Service's review of public comments, a finding of no significant impact is appropriate here. The EA has been modified to more fully reflect the best available science related to DSL genetic diversity, including Chan et al. (2020). |
| Permian Basin Petroleum Association | EA | The PBPA believes that the EA does not fully recognize the conservation benefits the CCAA provides for the species. Section 8.1 Biological Goals and Objectives provides for development of a landscape-scale Conservation Strategy with input from the Adaptive Management Committee, including the FWS. Section 8.3 Conservation Measures details the conservation measures that will be implemented by Participants in the CCAA. Section 8.4 Conservation Actions identifies a diverse set of action options that can be utilized in the development of the Conservation Strategy referenced above. The action options address the threats and concerns to the DSL that have been identified in the proposed EA. The diversity of the Conservation Actions and Conservation Measures in the CCAA have specific consideration for the reduction of habitat fragmentation and habitat loss from anthropogenic disturbances (contemporary processes), and the potential to identify composition and configuration of habitat suitability and direct conservation to promote habitat and genetic connectivity. If anything, the EA understates the benefits of the CCAA. The PBPA recognizes the significance of the Chan et al (2020) study. However, it is important to note that Chan et al (2020) | Sections 3.2 Covered Species, 4.2.1 Covered Species Alternative A - Proposed Action (EA). | The Service agrees that an EA is the appropriate environmental document to review the DSL CCAA, and that there are no significant impacts on the quality of the human environment requiring an environmental impact statement. The No-Action alternative appropriately addresses the existing baseline condition of ongoing industrial and commercial activities on private property. The CCAA is a voluntary conservation plan designed to reduce threats to the DSL, as reflected in the analysis of the final environmental assessment. Based upon the analysis conducted in the environmental assessment and the Service's review of public comments, a finding of no significant impact is appropriate here. The EA has been modified to more fully reflect the best available science related to DSL genetic diversity, including Chan et al. (2020). |

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| | | indicates, "… that population structure is the result of longstanding habitat dynamics and restrictions to gene flow at multiple spatial scales, not just more recent anthropogenic change." The CCAA should be acknowledged as a commitment by multiple industry sectors to mitigate for anthropogenic disturbances. We assert that the exceptions to avoidance in High Suitability and Intermediate Suitability areas of DSL Habitat are limited and subject to approval. We do not agree with the claim in the EA that exceptions to avoidance will reduce the effectiveness of the CCAA. | | |
| Permian Basin Petroleum Association | EA | It is customary and consistent for an EA to include the full permit duration stipulated in the CCAA. We understand the EA to assess the environmental impacts for the anticipated 23-year duration of the permit, and not a shorter period. The proposed EA is currently silent on the permit length. | Section 2.1 Alternative A– Issuance of a Section 10(a)(1)(A) Permit for Activities Covered and Implementation of the 2020 DSL CCAA (Proposed Action) (EA). | The EA covers the anticipated 23-year duration of the permit in the CCAA, which is now reflected in the EA. |
| Permian Basin Petroleum Association | EA | Table 5 included in the proposed EA lists the Texas hornshell (Popenaias popeii) as Not Listed under the Federal Listing Status. This species was listed as an endangered species effective March 12, 2018. The EA should be updated to reflect the listed status of the Texas hornshell. | Table 5 (EA) | The Texas hornshell (Popenaias popeii) listing has been revised to "endangered." |
| Permian Basin Petroleum Association | EA | PBPA and its member companies have a proven track record - over more than a decade, across multiple agreements resulting in acres under conservation programs totaling a geographic equivalency larger than the state of Alaska – of working effectively with various partners in a collaborative effort to maintain working landscapes while benefitting a multitude of species. That is a record of which we are very proud. PBPA | None. | Comments noted. The Service appreciates the partnership with PBPA on multiple voluntary conservation efforts. |

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| | | member companies have proven themselves to be trustworthy stewards of the land. Therefore, as we turn to work on the DSL, we bring a commitment to continuing to build on that experience, enhance established relationships, and promote a results-oriented, environmentally-conscious approach to the need to balance conservation of species with responsible energy development. It is, therefore, in that context and with that understanding, we provide these comments. We do not make them indiscriminately. We were thoughtful, targeted, and practical. In many respects, we believe the critical areas that need to be addressed in the CCAA are minor, straightforward, and, in many respects, consistent with other CCAAs. They should be largely "win/win solutions." We hope and expect they will be taken in that spirit. | | |
| Permian Basin Petroleum Association | EA | We would close by noting that there are a number of provisions and requirements in the DSL CCAA and the EA which were not applied to previous CCAAs, which as noted, are functioning quite well. While we find these curious and unnecessary – certainly in PBPA's view the documents as presented do not appear to provide the legal and or regulatory rationale for them – we believe we have outlined why they are not applicable. In sum, consistent with the necessary changes proposed in this letter, PBPA and its member companies look forward to a long and successful partnership with other Participants, the Administrator, the Service, and others in the implementation of the 2020 DSL CCAA. | None. | |

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| Center for Biological Diversity | EA | The EA disregards the previous request that an environmental impact statement (EIS) should be conducted to examine effects on the shinnery oak dunes ecosystem as a whole including other species, on spring-dependent species and human society through depletion of aquifers, on air quality and associated effects on human and ecosystem health, and on climate effects and global warming. The EA is inadequate. | None. | The Service has determined to issue an EA and FONSI and that an EIS is not necessary. Moreover, these comments are outside the scope of the Proposed Action and the final EA. |
| Center for Biological Diversity | EA | Alternatives that should be examined are (a) mandatory protection of dunes sagebrush lizard habitat without the "many loopholes" incorporated into this CCAA and (b) disclosure to the Service and the public of full information on, and requiring Service and researcher access to, enrolled properties to be able to assess the effects of CCAA activities and take-permit issuance on the lizard and its habitat. | None. | The Service has considered a reasonable range of alternatives in the EA, e.g., the Proposed Action and the No-Action Alternatives. As explained in the EA, the No Action Alternative presumes that current industrial and commercial activity will continue. The Proposed Action Alternative evaluates the broad suite of conservation measures and actions proposed in the CCAA to reduce threats to the DSL. The CCAA is a voluntary conservation plan. The alternative requested by the commenter is not technically and economically feasible because it would inhibit ongoing commercial and industrial activity on private property, does not meet the purpose and need of the CCAA, and thus is not evaluated in the EA. The CCAA contains disclosure requirements except for certain business confidential information, and more stringent disclosure requirements would not be feasible for prospective Participants. |
| Center for Biological Diversity | EA | The imminent listed status of the lizard will change the baseline considerably. The EA is incorrect in positing that a listing would have | None. | As set forth in the CCAA, the baseline for activities includes all ongoing industrial activities. The baseline does |

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| | | no effect on habitat protection on private lands due to designation of critical habitat and the Section 7 requirements for federal agencies to avoid jeopardy, and the EA must consider conservation programs applicable once the DSL is listed as part of the baseline. | | not include, and there is no authority under NEPA to include hypothetical future actions in the No Action Alternative, such as a listing decision under the ESA as suggested by the commenter. |
| Center for Biological Diversity | EA | The Service should abort this NEPA process and not approve the CCAA. The Service should instead put all of its dunes sagebrush lizard resources into expediting issuance of a proposed rule to list the dunes sagebrush lizard as an endangered species and to designate its critical habitat, finalizing that listing and critical habitat designation, and then developing a recovery plan. | None. | The Service has issued the EA in accordance with NEPA after considering the direct, indirect and cumulative effects of approving the CCAA and issuing an enhancement of survival permit. The draft EA also acknowledges that a petition for listing has been filed and that the DSL is the subject of the ongoing species status assessment and 12-month review. |
| Center for Biological Diversity | EA | The No Action Alternative, and other references in the EA erroneously state that the Texas Conservation Plan for the DSL is still in effect – whereas it is not. | None. | The Texas Conservation Plan was transferred to a new permittee, the American Conservation Foundation, effective as of October 19, 2020. |
| Center for Biological Diversity | EA | The EA notes that issuance of the EOS permit must not appreciably reduce the likelihood of survival and recovery of any other species in the wild. Yet, issuance of this permit and CCAA will allow the continued and increasing water pumping from the Trinity-Edwards aquifer, which risks the survival of many species, and from perched aquifers. | Section 16.1 Changed or Unforeseen Circumstances Table 2 (CCAA). | The EA evaluates drawdown of groundwater resources in the region and finds no appreciable effect from approval of the CCAA and issuance of the enhancement of survival permit. The CCAA has been revised at Section 16.1 Table 2 to include a changed circumstance regarding detriment to the survival or recovery of the DSL. |
| Center for Biological Diversity | EA | Three studies are attached for consideration by the FWS: Chan et al (2020); Mace (2019); and Hutchins (2018). | None. | Comment noted. The Service is aware of and has considered these studies. |
| Defenders of Wildlife | CCAA | Defenders of Wildlife ("Defenders") is a 501(c)(3) non-profit organization dedicated to the protection of all native animals and plants in their natural communities. With more than 1.8 million members and activists, Defenders of Wildlife is a leading advocate | None. | Comment noted. |

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| | | for innovative solutions to safeguard our wildlife heritage for generations to come. | | |
| Defenders of Wildlife | CCAA | The application for the EOS permit and draft CCAA must be withdrawn as procedurally deficient because they fail to provide "the terms or substance of the proposed rule or a description of the subjects and issues involved" as required by the Administrative Procedure Act, 5 U.S.C. § 553(a)(3). FWS has failed to adequately identify who the applicant is, and has failed to explain who the stakeholders promoting it are and who will administer the agreement. | None. | The issuance criteria for an enhancement of survival permit supported by a CCAA are provided in the FWS regulations at 50 CFR 17.22(d)(2) and 17.32(d)(2), including the capability and commitment of the Applicant to hold the Permit. As provided in the November 20, 2020 Federal Register notice, the Service made the permit application package, including the draft CCAA and draft EA, as well as the issuance criteria for the requested permit, available for public review and comment. As reflected in the permit application and CCAA, the Applicant is Canyon Environmental, LLC. The Service has independently evaluated and determined that Canyon Environmental has sufficient qualifications to hold an EOS permit and administer the CCAA. |
| Defenders of Wildlife | CCAA | The proposed CCAA does not enhance the survival of the species under ESA Section 10(a)(1)(A) because the CCAA states that it offers a net conservation benefit only against the baseline of ongoing industrial impacts. However, this baseline is incorrect: the proposed CCAA should be evaluated instead against a baseline whereby the activities themselves are not carried out, and where the DSL has been listed and has Section 9 take protection. The proposed CCAA thus fails to provide enhancement of survival to the DSL or a net conservation benefit in accordance with the ESA and its implementing regulations. | None. | As stated in the Service's 2016 policy regarding CCAAs, one of the Service's goals is to encourage the public to voluntarily develop and implement conservation plans for declining species prior to them being listed under the ESA. The benefits of such conservation actions may contribute to not needing to list a species, to list a species as threatened instead of endangered, or to accelerate the species' recovery if it is listed. Accordingly, because the DSL is not listed and implementation of the CCAA may contribute to a need not to list the DSL as threatened or |

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| | | | | endangered, it is not appropriate and would be speculative to evaluate the CCAA relative to a baseline of Section 9 protections applicable to animal species listed under the ESA. As explained in the EA and CCAA, both the ESA and NEPA require that the ongoing underlying activities on private property, which do not require any authorization from the Service, be evaluated as part of the environmental baseline, not a hypothetical situation assuming these ongoing lawful activities on private property did not exist. Section 9 protections does not currently exist for the DSL, which is not listed, and therefore are not included in the baseline. |
| Defenders of Wildlife | CCAA | The CCAA is also unlawful under ESA Section 10(d). The Service can only issue an Enhancement of Survival permit if it finds: (1) such exceptions [to take of the species] were applied for in good faith, (2) if granted and exercised will not operate to the disadvantage of such endangered species, and (3) will be consistent with the purposes and policy set forth in section 2 of the ESA. The proposed CCAA operates to the disadvantage of the DSL species because it allows take going forward at weaker protections compared to a Section 9 protections baseline, and because it is not consistent with the ESA's purpose of conserving protected species. 16 U.S.C. § 1539(d). | None. | Using a baseline that assumes that the DSL is listed under the ESA to evaluate whether implementation of a CCAA is reasonably expected to provide a net conservation benefit, when the species is currently not listed species, would be inappropriate. The provisions of ESA Section 10(d) do not change this analysis. |
| Defenders of Wildlife | CCAA | The CCAA does not account for the fact that increased habitat fragmentation and loss will be a large threat to the genetic health to the DSL, restricting the gene flow among and | Sections 3.2 Covered Species, 4.2.1 Covered Species Alternative A - Proposed Action (EA); | The EA discusses the best available science regarding DSL genetic diversity and the importance of maintaining and protecting potential |

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| | | between the identified phylogeographic groups. The genetic divergences detected between these groups supports the notion that extensive habitat and access to dispersal corridors is necessary to support healthy gene flow among and between groups. | Sections 4.0 Covered Species, 16.1 Changed or Unforeseen Circumstances Table 2 (CCAA). | dispersal corridors. As explained in the EA, approval of the CCAA and issuance of an enhancement of survival permit does not cause habitat destruction. The conservation measures provided in the CCAA are designed to, among other things, reduce habitat fragmentation. The final CCAA has been revised to include consideration of Chan et al. (2020) in Section 4.0, and also includes a new Changed Circumstance and adaptive management trigger if new surface disturbance is concentrated in particular biologically relevant geographic locations and substantially contributing to habitat fragmentation in Section 16. Section 16.1 Table 2 (CCAA) includes a changed circumstance regarding concentration of disturbance and fragmentation. |
| Defenders of Wildlife | CCAA | The proposed CCAA allows participants to apply for a Certificate of Inclusion even after the listing decision is published, as long as the application is finished before the "effective date" of listing (pp. 74-75). | None. | The listing determination does not become legally effective until the effective date. As stated in the CCAA, all applications for participation in the 2020 DSL CCAA must be filed with the Administrator prior to the effective date of a DSL listing. |
| Defenders of Wildlife | CCAA | The CCAA lacks definitive provisions to protect the DSL. Many of the conservation measures in the proposed CCAA are diluted by discretionary or qualifying language; the proposed CCAA is replete with conservation measures that are qualified with terms like "as practicable," "if operationally feasible," and "where practicable." E.g., Proposed CCAA, pp. 55-57. Even conservation measures that appear to offer binding | Sections 15.0 Adaptive Management, 16.0 Assurances Provided, 20.0 Monitoring and Reporting (CCAA). | The CCAA, which is a voluntary agreement providing for conservation measures to reduce threats from ongoing otherwise lawful activities on private property, appropriately provides for feasibility in implementation. All Participants are subject to the enforcement provisions for non-compliance provided in Section 11.0 of the CCAA. Additionally, Sections |

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| | | restrictions on participant activities offer ways to circumvent those restrictions. In particular, the CCAA does not allow the administrator to stop activities that damage habitat, only to request additional information.<br><br>Also concerning is the fact that though participants under the proposed CCAA are required to provide annual estimates of how many surface disturbances in DSL habitat they think they will cause, that need only be based on "planned development" and the participant's "actual surface disturbances may differ from the estimate provided" (proposed CCAA, p. 76). Participants therefore have wide discretion to carry out activities that could thwart the goals of the proposed CCAA through its own terms and still receive the protection of the EOS permit to continue to carry out those activities even should the DSL be listed. | | 15.0, 19.0 and 20.0 provide for monitoring, reporting and evaluation of the amount, rate and location of new surface disturbance by Participants, including the results of Change Detection Analysis. Section 20.0 of the CCAA has been revised to further enhance the evaluative process, and a new Changed Circumstance and adaptive management trigger has been added if new surface disturbance is concentrated in particular biologically relevant geographic locations and substantially contributing to habitat fragmentation in Section 16. |
| Defenders of Wildlife | CCAA | The CCAA contains a vague provision allowing in-kind services in lieu of a habitat conservation fee, which can permit circumvention of the agreement. | None. | Section 8.4 of the CCAA provides that a participant may provide in-kind services in lieu of conservation fees only with the prior approval of the Administrator to ensure consistency with the plan's conservation strategy and that the Administrator must track the costs of any such in-kind services to ensure conservation value relative to the in-lieu fees. |
| Defenders of Wildlife | CCAA | The proposed CCAA lacks necessary transparency. It allows participants to submit confidential information by designation that may not be shared with FWS. FWS has previously commented that it requires substantial monitoring and assessment data to | None. | Section 14.0 requires that Participants provide the Administrator with a description of new surface disturbance prior to commencing that action that includes survey plats, GIS files, Google Earth KML, or other appropriate |

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| | | assess effectiveness of conservation. See Brief of Defenders of Wildlife et al, Case No. 14-5284 (D.C. Cir. March 20, 2015) (quoting Marty Tuegel, USFWS, AR1908) (emphasis added). | | documentation of proposed surface-disturbing activities within the Covered Area. Section 20.0 also requires the annual reports prepared by the Administrator to include the results of monitoring, including surveys and studies over the prior year. Survey protocols to assist in the development of additional scientific and site-specific information to be used to implement the CCAA and adaptive management are provided in Appendix A. Under Section 8.3.2, upon application for enrollment under the 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.<br><br>The CCAA has adopted the Hardy (Texas State University) map in the CCAA as the potential geographic extent of DSL habitat, which as noted in the EA and CCAA is subject to ongoing scientific review and revision. EA Section 2.1.2, CCAA Section 16.1.1.<br><br>Certificates of Inclusion will require, among other things, the Participants to provide the Administrator access to enrolled properties and to conduct compliance monitoring. In addition, the Certificate of Inclusion will provide the Administrator access to implement Conservation Actions and conduct research, including surveys. See |

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| | | | | CCAA at 6. See also for example, Oil and Gas Certificate of Inclusion at Section 6 (Property Access) (The Participant agrees to provide access to Enrolled Property to the Administrator to conduct compliance monitoring, 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). The provision cited by the commenter at page 68 is intended to apply to Administrator implementation of Conservation Actions, which can occur on non-enrolled property. |
| Defenders of Wildlife | CCAA | The proposal does not require effectiveness monitoring of impacts on the species, but rather only monitoring regarding compliance with terms, and participants are not even required to conduct surveys at or before enrolling; the CCAA relies on an unfinished Texas State University map to identify DSL habitat, and that serves as the "baseline."<br><br>Furthermore, participants are given the ability to carry out their own surveys to "verify" or reclassify DSL habitat on their parcels, and wide discretion in how they do that (proposed CCAA, pp. 106-107). And participants are required neither to report observed take as the TCP required (proposed CCAA, p. 90) nor capture and translocate live DSL on areas to be disturbed. While the proposed CCAA does require participants to provide the Administrator access, it is limited to "reasonable access, with prior notification and consent," (proposed CCAA, p. 72), to | None. | Section 14.0 requires that Participants provide the Administrator with a description of new surface disturbance prior to commencing that action that includes survey plats, GIS files, Google Earth KML, or other appropriate documentation of proposed surface-disturbing activities within the Covered Area. Section 20.0 also requires the annual reports prepared by the Administrator to include the results of monitoring, including surveys and studies over the prior year. Survey protocols to assist in the development of additional scientific and site-specific information to be used to implement the CCAA and adaptive management are provided in Appendix A. Under Section 8.3.2, upon application for enrollment under the CCAA, a sand mine operator must submit a site-specific Habitat Assessment for the |

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| | | survey, monitor or study the DSL and/or conduct compliance monitoring on Enrolled Properties. Further, in some cases the proposed CCAA appears to require the Administrator to pay participants for that access (proposed CCAA, p. 68), possibly arbitrarily limiting how much monitoring the Administrator will be able to afford.<br><br>Transparency problems and the removal of Service oversight is exacerbated by provision sin the proposed CCAA that give the Administrator sole discretion to adjudicate disputes among participants and for example allows the Administrator to handle involuntary termination without FWS being involved. | | portion of the Enrolled Property that will be mined in the upcoming year, as described in Appendix A.<br><br>The CCAA has adopted the Hardy (Texas State University) map in the CCAA as the potential geographic extent of DSL habitat, which as noted in the EA and CCAA is subject to ongoing scientific review and revision. EA Section 2.1.2, CCAA Section 16.1.1.<br><br>Certificates of Inclusion will require, among other things, the Participants to provide the Administrator access to enrolled properties and to conduct compliance monitoring. In addition, the Certificate of Inclusion will provide the Administrator access to implement Conservation Actions and conduct research, including surveys. See CCAA at 6. See also for example, Oil and Gas Certificate of Inclusion at Section 6 (Property Access) (The Participant agrees to provide access to Enrolled Property to the Administrator to conduct compliance monitoring, 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). The provision cited by the commenter at page 68 is intended to apply to Administrator implementation of Conservation Actions, which can occur on non-enrolled property. |

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| Defenders of Wildlife | CCAA | Transparency problems and the removal of Service oversight is exacerbated by provision sin the proposed CCAA that give the Administrator sole discretion to adjudicate disputes among participants and for example allows the Administrator to handle involuntary termination without FWS being involved. As one example of how lack of transparency thwarted the goal of the TCP, Defenders used satellite images in 2013 to reveal unreported and unauthorized habitat disturbance under the TCP (Defenders 2013). | None. | See General Response #6 Effectiveness. |
| Defenders of Wildlife | CCAA | The proposed CCAA erroneously relies on compensatory mitigation that has little to no benefit given that "these landforms are irreplaceable . . . Additionally, complex feedbacks between wind, sand, and Shinnery oak maintain this landform, indicating restoration through land management practices is unlikely, citing Ryberg et al (2015). | None. | See General Response #4 Adaptive Management.<br>The Service anticipates that implementation of the 2020 DSL CCAA as proposed is reasonably expected to provide a net conservation benefit through a combination of avoidance, minimization, and mitigation measures performed or funded by Participants on Enrolled Properties and other privately owned lands in Texas. Reclamation and restoration of disturbed areas is but one of many conservation actions contemplated by the CCAA, including re-grading areas of mining disturbance consistent with any applicable contractual requirements on private property. The Service has reviewed the studies cited by the commenter. The Service concurs that interactions of sand, wind and vegetation create and maintain the sand dune landforms. Ryberg et al. (2015) entailed a comparative study of DSL population demography and the influence of |

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| | | | | landform configuration on demography. Though the authors discuss observations of landform change resulting from herbicide application, this study also did not provide any in situ empirical data on restoration. Ryberg et al. (2015) refer to literature discussing dunes and other landform pattern, processes and stability associated with other regions. The literature cited therein support the proposition that vegetation and the site conditions are important components to landform. For this reason, the CCAA provides for reclamation and restoration of DSL Habitat, including recommendations for DSL Habitat restoration opportunities as part of the adaptive management process. See Section 10 of the 2020 DSL CCAA. |
| Defenders of Wildlife | CCAA | The proposed CCAA does not sufficiently address stratification. The CCAA relies exclusively on a provision requiring coordination between the administrator and non-participants to reduce the impacts of stratified development activities on DSL habitat. | Sections 8.1 Existing Condition, 13.5 Enrollment of Property with Stratified Mineral Interests (CCAA). | The CCAA recognizes that stratification data show some disturbance by non-participants with stratified interests has occurred under the TCP. For exactly that reason, and in recognition of the legal framework governing split estates in Texas, the CCAA includes a conservation strategy and conservation measures that specifically attempt to address the issue of stratification in relation to oil and gas activities, governance on the enrollment of property with stratified interests, evaluating change detection analysis to monitor disturbance, take limitations for oil and gas Participants, changed circumstances requirements specific to stratification, and surface |

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| | | | | and mineral management plans. In response to comments and in order to provide more certainty, the CCAA has been strengthened to provide that where mineral rights differ for a property, each Participant is responsible for the full amount of Enrollment Fees. See revisions to Section 8.1 and 13.5. |
| Defenders of Wildlife | CCAA | The proposed CCAA does not sufficiently address sand mining, because its impacts on the DSL are too substantial under the proposed CCAA. Sand mining has disturbed thousands of cres, and as operations ramp pu production can potentially destroy tens of thousands of additional acres of DSL habitat. The CCAA anticipates a maximum of 60 acres of sand mining take per year for each of 12 companies, resulting in disturbance to 16,560 acres of DSL habitat, which is almost as many acres (64 per year) as anticipated by the Texas Comptroller in 2019. | None. | Unlike the TCP, the CCAA includes a specific conservation strategy and conservation measures designed to address threats associated with sand mining. The CCAA is designed to incentivize the voluntary participation of sand mining operations on private property in these conservation measures for the net conservation benefit of the DSL. These conservation measures include annual caps on disturbance of DSL Habitat and incentives to reduce, eliminate and offset disturbance through escalating habitat conservation fees, and a suite of best practices to be implemented by Participants. As discussed in the CCAA, these conservation measures are reasonably expected to provide a net conservation benefit to the DSL relative to the to the CPA's 2019 proposed CCAA, although that comparison is not appropriate for determining net conservation benefit. |
| Defenders of Wildlife | CCAA | The proposed CCAA impermissibly relies on a non-existent TCP and associated EOS permit. The TCP was terminated and the associated EOS permit surrendered when the CPA sent written notice to the FWS regional | None. | The CCAA is not dependent on the TCP and ongoing conservation activities under that plan. As stated in the EA: "The 2020 DSL CCAA is a voluntary program for the conservation |

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| | | office that approved the TCP and issued the associated EOS permit on November 8, 2018. Pursuant to 50 CFR §13.26, a "permit shall be deemed void and cancelled upon receipt by its issuing office," and the EOS permit is thus invalid. Moreover, the absence of the TCP, there is no evidence that Canyon Environmental has the expertise or resources to manage the CCAA's technical process. | | of the DSL, the performance of which is not dependent on other DSL habitat conservation measures that may be undertaken through other CCAAs." The TCP was transferred to the American Conservation Foundation, effective October 19, 2020. Through implementation, the CCAA is designed to complement conservation activities under other conservation programs, including the TCP and other programs, for the benefit of the DSL. The Service has evaluated the qualifications of Canyon Environmental and concluded that it has sufficient qualifications to hold an EOS permit. |
| University of Texas School of Law | CCAA | The proposed CCAA does not meet issuance criteria under the ESA for the following reasons: | None. | After careful review, the Service has concluded that the CCAA meets the regulatory issuance criteria, including that implementation of the CCAA is reasonably expected to provide a net conservation benefit to the DSL. |
| University of Texas School of Law | CCAA | The 2020 CCAA states that it will be implemented as a complement to the Texas Conservation Plan (TCP). 2020 CCAA at 4. The TCP is no longer legally in effect. If FWS intends to approve two different conservation programs for the DSL, it must provide the public notice of and information about both programs, not just the 2020 CCAA, and it must explain how the programs complement each other, including the amount of take that will be allowed under the TCP. Moreover, the EA must include a full analysis of the environmental impacts of both programs. | None. | The TCP is not within the scope of the proposed federal action but is considered as a reasonably foreseeable cumulative project in the Covered Area. EA Section 4.9. As stated in the EA, the CCAA is a voluntary program for the conservation of the DSL, the performance of which is not dependent on other DSL habitat conservation measures that may be undertaken through other CCAAs like the TCP. The TCP was transferred to the American Conservation Foundation, effective October 19, 2020. Through implementation, the CCAA is designed to complement conservation activities |

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| | | | | under other conservation programs, including the TCP and other programs, for the benefit of the DSL. |
| University of Texas School of Law | CCAA | Take Analysis. The CCAA's take analysis is fundamentally flawed because it estimates total take by assuming that each of the sand mining properties cannot have more than 1 mine. But there is no restriction on that in the CCAA, and the Conservation Measures allow for "New Surface Disturbance to 60 acres annually for each mine on an Enrolled Property, not to exceed 1,380 acres over the duration of the CCAA." CCAA p. 59. As such, the CCAA allows one Enrolled Property to include multiple mines, and therefore total take can easily exceed the CCAA's stated total anticipated take of 16,560 acres. So, hypothetically, if a company owned, leased, or operated as part of a joint venture a 29,000-acre property that it enrolled and has one mine for each 2,000 acres, it could excavate 870 acres annually from that Enrolled Property or 20,010 acres over the life of the CCAA-alone well above the total 16,560 of estimated take for all 12 companies. The same game can be played if the company created 29 joint ventures each with a 2000-acre parcel from that 29,000 acres. | None. | This comment is incorrect. The 60-acre annual cap on new surface disturbance by participating sand mining operations, and the total cap on sand mining activity over the life of the permit prevent the hypothetical scenarios presented in the comment letter from occurring. The 60-acre annual cap applies to each sand mining facility on an enrolled property (e.g., a mine, including the plant, drying and other production facilities), even if more than one area on an enrolled property is being excavated. |
| University of Texas School of Law | CCAA | Net Conservation Benefit. The applicant has not established that the CCAA will have a net conservation benefit by stabilizing populations or increasing habitat. The DSL 2020 CCAA makes the empty assertion that this requirement will be met by "reducing or eliminating threats on enrolled property and resulting in a net conservation benefit to DSL and its habitat." It does not specify the | None. | The CCAA is reasonably expected to provide a net conservation benefit to the DSL relative to the environmental baseline of ongoing industrial and commercial activity already impacting DSL habitat. The term "Net Conservation Benefit" means "the cumulative benefits of the CCAA's specific conservation measures |

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| | | measures that will be used to achieve this goal or explain how it will result in stabilizing populations, increasing the number of individuals, or improving habitat; i.e., there are not clear standards of performance to determine conservation success or failure. Further it does not demonstrate how those standards will be measured to demonstrate compliance. The CCAA asserts without evidence that conservation goals are expected to be achieved by "mitigating the impacts of historic and New Surface Disturbances by reclaiming and restoring such areas in DSL Habitat." Sand mining participants in particular are not required to restore, reclaim or return disturbed habitat to grade leaving deep pits or otherwise using reclamation materials not suitable as habitat for DSL. The 2020 CCAA contains no specific plan for restoring shinnery oak, an essential component of DSL habitat and it is unknown whether shinnery oak can be established or reestablished in the Covered Area. Research, which is a valuable part of a CCAA is not a conservation measure. Fragmentation and barriers to dispersal corridors are not sufficiently addressed by the CCAA. | | designed to improve the status of a covered species by removing or minimizing threats so that populations are stabilized, the number of individuals increased, or habitat improved." 81 Fed. Reg. 95,164, 95,165 (December 27, 2016) (emphasis added). The Conservation Measures applicable to sand mining activities are not limited to the example provided by the commenter. Conservation measures include, but are not limited to, minimizing fragmentation to the extent practicable , identification of high priority habitat for conservation to reduce fragmentation, disturbance caps to limit annual new disturbance, surveys for DSL prior to mining, regrading areas of mining disturbance consistent with any applicable contractual requirements on private property, graduated conservation fees to incentivize avoidance of habitat and to fund conservation and restoration activities. See, e.g., Section 8.0 (Conservation Strategy), Section 13 (fees), Appendix A and Appendix D. Additionally, the CCAA addresses habitat fragmentation and allows the Administrator to direct funds obtained from fees toward habitat protection, restoration and reclamation, including specifically "restoration or reclamation, as appropriate, of habitat connectivity and dispersal corridors in High Priority Areas" and "studying the efficacy of implementing the introduction or reintroduction of shinnery oak in |

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| | | | | priority areas and implementing the technique if it is effective and feasible." See Section 8.4 (Conservation Actions). |
| University of Texas School of Law | CCAA | The CCAA does not include any mechanisms for measuring benefits. The 2020 CCAA fails to identify how the conservation benefits will be measured over time to demonstrate stabilization of the population, increases in the populations of DSL, or restoration of its habitat. In no place does the CCAA explain how it intends to mitigate the impacts of the highly invasive sand mining to "improve the status of the species." 81 Fed. Reg. at 95,170. Absent complete reclamation and restoration, the changes from sand mining leave a permanent scar on DSL habitat. This is yet another reason the CCAA does not meet the "net conservation benefit" approval standard. | None. | 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. See Sections 15.0 and 20.0 of the 2020 DSL CCAA. |
| University of Texas School of Law | CCAA | Avoidance and Minimization. The 2020 CCAA does not presumptively require sand mining operations to avoid or minimize mining in High and Intermediate suitable habitat. Because of the permanence of the disruption to this habitat and its importance to the DSL, the Comptroller's 2019 CCAA limited mining activities to low suitability habitat. The 2020 CCAA only provides an exceptionally low barrier to mining activities in High and Intermediate suitability habitat. | None. | This comment fails to acknowledge that sand mining activities in what is characterized by the Texas State map as High and Intermediate Suitability habitat is currently ongoing on private property with no limitations. The Comptrollers 2019 CCAA also failed to address this issue. The 2020 CCAA would remove and minimize threats to the DSL by placing annual and total caps on sand mining and provide |

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| | | Excavation of areas of High and Intermediate suitable habitat is allowed under the 2020 CCAA if a Presence/ Absence survey is conducted for DSL in the survey season as provided in Appendix A and the surface disturbance is offset. A single presence/absence visual encounter survey using Option 1 set forth in Appendix A is not sufficient to ensure that the habitat is not occupied or used by DSL in High and Intermediate suitability DSL habitats. The survey methodology for areas identified as High or Intermediate habitat suitability should be limited to Option 2 protocols. And at a minimum pit traps should be used in addition to visual surveys. | | additional conservation benefits when compared to current conditions. This comment also misconstrues the purpose of the presence / absence and habitat assessment protocols provided in Appendix A. The CCAA provides for avoidance of high and intermediate suitability habitat subject to certain exceptions, including the payment of habitat conservation fees consistent with Appendix D. The surveys are designed, among other things, to provide site specific information about potential habitat and ground covers and to inform the calculation of conservation fees accruing due to the disturbance of potential DSL habitat. |
| University of Texas School of Law | CCAA | Additionally, DSL habitat disturbance fees are too low given the profitability of sand mining, and mitigation of disturbance using a 1 acre to 1 acre ratio is lower than recent mitigation standards of 2 acres (mitigated) to every 1 acre (disturbed). For example, the required offset depends on the type of habitat but ranges from $3,000/acre for Intermediate suitability habitat to $5,000/acre of disturbance of High suitability habitat, a nominal amount. There is no evidence in the CCAA that the mitigation fees are adequate to achieve their conservation goals, including due to increased land prices. | None. | Conservation fees have been set by the Applicant in order to incentivize avoidance of higher quality DSL habitat and to fund conservation measures and offset impacts. Appendix D Habitat Conservation fees range from $5,000/acre to $500/acre for sand mining depending upon land cover type, a 10-fold difference designed to incentivize operators to avoid ground cover types that the DSL uses for habitat, such as shinnery oak. Additional fees apply as set forth in Appendix D. Fees may be adjusted over time based on participation levels and performance of the plan relative to the stated conservation goals. The CCAA authorizes the Administrator to use a variety of conservation tools, including conservation easements, conservation contracts and other |

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| | | | | agreements, and in-kind contributions (including of land to be placed in long-term conservation) to maximize conservation benefit to the DSL and its habitat on private property. |
| University of Texas School of Law | CCAA | Documentation of Past Excavations. Each sand mining operation participant should document the amount of excavation that has occurred on each of the Enrolled Properties for each year or partial year, prior to submission of the CCAA. Each mining operation should also include the number of mines in operation on each property to be enrolled, and the type of habitat for the property using the Hardy model of habitat suitability for the DSL. | None. | There is no requirement in FWS regulations that potential Participants in a CCAA document pre-enrollment lawful activities conducted on non-Federal property. Among the conservation measures provided under the CCAA are restoration activities to improve degraded habitat impacted by historical industrial and commercial activity. |
| University of Texas School of Law | CCAA | Projected Enrollment. The proposed CCAA needs to estimate the amount of enrollment it anticipates for each of the sectors to ensure that adequate funding will be available to fully mitigate the impacts of the operations and to determine whether a net conservation benefit can be achieved. The proposed CCAA needs to estimate the amount of enrollment it anticipates for each of the sectors to ensure that adequate funding will be available to fully mitigate the impacts of the operations and to determine whether a net conservation benefit can be achieved. | Section 16.1 Changed or Unforeseen Circumstances Table 2 (CCAA). | The CCAA provides for enrollment fees, implementation fees, and habitat conservation fees. Implementation fee levels have been set based on the revue necessary to cover the costs of administering the program. Enrollment and habitat conservation fees levels have been established based on reasonable assumptions about participation and disturbance levels in order to generate the deployment of conservation activities to contribute to the net conservation benefit of the DSL relative to the environmental baseline of ongoing industrial and commercial activities and no conservation actions under the CCAA. All fees may be adjusted over time based on enrollment and performance of the plan. The CCAA has been revised to include a changed circumstance relative to inadequate funding. The CCAA has |

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| | | | | been revised at Section 16.1 Table 2 to include a changed circumstance related to enrollment. |
| University of Texas School of Law | CCAA | The CI contracts for enrollees are weak and unenforceable because there are no meaningful penalties for enrollees who break the contract and abandon the program. Thus the conservation value of an executed CI is very limited and cannot guarantee conservation outcomes. | None. | Section 11 of the CCAA specifically establishes measures available to the Administrator for participant non-compliance with the CCAA or terms of CIs, up to and including suspension and termination, and reporting on instances of non-compliance. As set forth in Section 12.0, Enrollment Fees and Habitat Conservation Fees are non-refundable. |
| University of Texas School of Law | CCAA | The proposed CCAA perpetuates an in-lieu fee (ILF) platform that has repeatedly failed to effectively address conservation liabilities and achieve measurable conservation goals. The ILF program requires payment of fees and transfer of legal liability from participants to third-parties (e.g., administrator), but other programs relying on ILFs have been underfunded because mitigation project design is not evaluated at the time the habitat impacts occur. The CCAA should drop the ILF approach and instead adopt an "advance-mitigation" strategy requiring mitigation projects to be designed and funded prior to impacts occurring. | None. | Section 8.4 of the CCAA provides that a participant may provide in-kind services in lieu of conservation fees with the prior approval of the Administrator to ensure consistency with the Plan's conservation strategy and that the Administrator must track the costs of any such in-kind services to ensure conservation value relative to the in lieu fees. Section 8.4 of the CCAA also specifically provides that Participants may conduct Conservation Actions in advance of surface disturbances, again with Administrator approval. The "advanced mitigation" approach suggested by the comment, however, is impracticable in light of the voluntary nature of conservation actions for the benefit of an unlisted species by non-Federal landowners with respect to otherwise lawful activities for which no federal authorization is required. The CCAA contains measures to ensure the success and effectiveness of its conservation |

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| | | | | programs. In particular, Section 8.2 establishes a host of measures to ensure effectiveness, and effectiveness must be addressed in the annual report. Section 20. "Advance-mitigation" evaluation of mitigation project design at the time a fee is assessed often could not definitively establish the nature of mitigation projects because those projects can change over time. The Administrator, however, is tasked with using fees for conservation purposes, and may voluntarily undertake assessment of mitigation opportunities in advance of—or concurrently with—habitat impacts as warranted, including through the use of Enrollment fees prior to habitat disturbance. |
| Texas Public Policy Foundation | CCAA | The Texas Public Policy Foundation is a non-profit, nonpartisan research organization founded in 1989 and dedicated to promoting liberty, personal responsibility, and free enterprise through academically-sound research and outreach. | None. | Comment noted. |
| Texas Public Policy Foundation | CCAA | The Foundation supports proactive, voluntary conservation strategies such as this CCAA, which incentivize private property owners to work together under a comprehensive strategy that will result in conservation actions and outcomes that are both beneficial to the species and avoid the need for unnecessary federal regulation. | None. | Comment noted. |
| Texas Public Policy Foundation | CCAA | The proposed CCAA consists of a sophisticated and flexible conservation strategy and program that will provide a net conservation benefit to the DSL and that can be embraced by landowners in West Texas. Upon enrollment, participants would commit | None. | Comment noted. |

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| | | to extensive sector-specific conservation measures and actions. | | |
| Texas Public Policy Foundation | CCAA | In West Texas, one-size fits all solutions, such as conservation easements in perpetuity, are not generally available, and cooperative programs with private landowners are more likely have the most conservation success. Clear incentives and reasonable conservation actions, such has the fees structure and disturbance limitations reflected in the CCAA, will work because private landowners have the flexibility to take conservation measures that make sense for them and their property. | None. | Comment noted. |
| Texas Public Policy Foundation | CCAA | Several mapping and modeling efforts for DSL habitat have occurred over the years, and more work needs to be done to understand what constitutes DSL habitat. The Texas State map broadly misclassifies areas of DSL habitat in Texas and is in significant need of refinement. This necessary, ongoing modeling work should be done through a transparent and scientifically sound process that is grounded in the literature. | None. | Comment noted. The CCAA has adopted the Hardy (Texas State University) map in the CCAA as the potential geographic extent of DSL habitat, which as noted in the EA and CCAA is subject to ongoing scientific review and revision. EA Section 2.1.2, CCAA Section 16.1.1. |
| Texas Public Policy Foundation | CCAA | The numerous voluntary conservation and mitigation actions contained in the CCAA reduce threats to the DSL on private property, which cannot be achieved otherwise through federal regulation and provides clear benefits to the DSL. The CCAA will achieve better conservation outcomes for the DSL, provide greater certainty and control for private property owners and local communities, and is a far better solution than listing the DSL and subjecting private property to unnecessary and burdensome federal regulation. | None. | Comment noted. The Service recognizes and agrees that the CCAA is reasonably expected to provide a net conservation benefit to the DSL by eliminating or reducing threats to the species and its habitat. Whether or not listing the DSL is warranted is outside the scope of the Proposed Action. |

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| Texas Public Policy Foundation | CCAA | The importance of the Permian Basin to American energy security and economic revival post-COVID cannot be overstated. Activities in the Permian, including oil and gas operations, sand mining, renewable energy projects, and ranching and agriculture, are critical and necessary ongoing enterprises. The Foundation strongly supports local and voluntary solutions, and this CCAA that conserves our biological resources, rather than employing federal regulation that only serves to limit private property rights without improving outcomes for the species. | None. | Comment noted. As reflected in the EA, issuance of the permit would neither generate nor adversely affect employment, income, or spending that would contribute to the economy. |
| Sealy & Smith Foundation | CCAA | The Sealy & Smith Foundation is a benefactor of the University of Texas Medical Branch (UTMB); working closely to meet the needs of UTMB in a wide variety of ways including providing funds to increase the quality of health care for people in the Galveston region. | None. | Comment noted. |
| Sealy & Smith Foundation | CCAA | The Foundation is one of the largest surface and mineral owners in the area covered by the proposed CCAA, with ownership interests of tens of thousands of acres. Our lessees include oil and gas companies, sand mining, ranchers, and about 3,500 acres contained within the Monahans Sandhills State Park. The Foundation is a strong supporter of conservation and stewardship of its lands, and therefore we support the proposed CCAA, as drafted. Voluntary conservation on private lands for the benefit of wildlife and habitat, such as this CCAA, should be encouraged by the agency. The CCAA should be approved by FWS. | None. | Comment noted. |
| American Conservation Foundation | CCAA | ACF serves as the permit holder for the Texas Conservation Plan for the Dunes Sagebrush Lizard (TCP). ACF states that the | None. | The Service acknowledges ACF's concerns regarding applying the best data and methodology currently |

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| | | four existing habitat models have limitations and challenges, and recommends undertaking an effort applying the best data and methodology currently available to develop a more objective, data driven and statistically rigorous common model and map that can be consistently used by the Service and all stakeholders as a basis for delineating the extent and quality of DSL habitat and changes to habitat (impacts, prioritizing conservation/mitigation actions, and any changes due to climate change) under all DSL permit scenarios. ACF states that the 13.64 wells/sq mile metric used to determine degraded habitat is based on an analysis conducted over 20 years ago and no longer represents best available science. ACF recommends that a two phase transparent and inclusive process, which includes the Service, academic institutions familiar with DSL data, academic institutions that are not familiar with DSL data, State Agencies and DSL permit holders, be constructed to produce an improved habitat model and map within 6-9 months. Adaptive management would be then used to refine the new map as additional information becomes available. It is anticipated that this second phase would be performed in 1 to 2 years. | | available. The proposed CCAA uses the Texas State University (Hardy et al 2018) map for the geographic extent of potential DSL habitat includes an adaptive management approach, where "the Adaptive Management Committee 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." CCAA at 6. The Service agrees that a common DSL habitat model and map, and the exercise described in the ACF letter would be beneficial to DSL conservation. |
| Texas Industry Project | CCAA | TIP consists of approximately 61 companies in the chemical, refining, oil and gas, electronics, forest products, terminal, electric utility, transportation, and national defense industries with operations in Texas. | None. | Comment noted. |
| Texas Industry Project | CCAA | TIP is supportive of FWS approving an additional voluntary conservation plan for the DSL in West Texas. It offers comments with a goal of improving the draft EA and draft | None. | Comment noted. |

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| | | CCAA to ensure it is viable, durable and defensible. | | |
| Texas Industry Project | EA | **Limitations on Addressing Stratification** The Draft EA needs to accurately explain and contextualize the legal complexities of stratification. The commenter presents the legal framework for split surface and mineral estates, and the doctrines of "reasonably necessity" and "reasonable accommodation", noting that the mineral estate is the dominant estate (e.g., superior to the rights of the surface owner) under Texas law. | None. | Comment noted. |
| Texas Industry Project | CCAA | **Limitations on Addressing Stratification** The Draft CCAA's requirement that oil and gas participants develop surface use plans to avoid, minimize, or offset impacts from oil and gas development is unlawful because no such agreement can bind non-participant mineral estate owners. This requirement fails to recognize the primacy of the mineral estate and should be removed from the Draft CCAA and Draft EA. E.g., Draft CCAA at 54. | None. | The CCAA's requirements are applicable only to Participants, and they include an obligation to attempt to work with stratified mineral interest owners to facilitate conservation benefits. However, those obligations do not bind non-participant mineral estate owners under the CCAA. |
| Texas Industry Project | CCAA | **Limitations on Addressing Stratification** The Draft CCAA should be revised to clarify that the TCP stratification information included therein applies to individual wells, not properties. Draft CCAA at 37. Also, the CCAA and EA should be revised to recognize and state that: (A) stratification has not historically been a significant issue and (B) stratification is not anticipated to be a significant issue in the future, due to technological advances and the prevalence of horizontal drilling in the proposed permit area. | None. | The CCAA recognizes that stratification data show some disturbance by non-participants with stratified interests has occurred under the TCP. For exactly that reason, and in recognition of the legal framework governing split estates in Texas, the CCAA encourages enrollees to work with non-participants with stratified interests. |
| Texas Industry Project | CCAA | **Surface Spacing and Technological Advancements** The Draft CCAA and Draft EA should be revised to reflect current oil | None. | The text of both the CCAA and the EA has been modified to emphasize the increased prevalence of horizontal |

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| | | and gas upstream surface use and development assumptions, based on current technological innovations, including horizontal drilling. | | drilling with multiple wells on a single well pad in the Permian Basin, based upon Energy Information Administration data, and to acknowledge that the Sias and Snell (1998) study and its assessment of habitat disturbance from oil and gas development was based upon vertical development techniques. |
| Texas Industry Project | CCAA | **Surface Spacing and Technological Advancements** The Draft CCAA and Draft EA both rely on Sias and Snell (1998) and other studies which conclude that a well density of 13 well pads per square mile should be considered "degraded" DSL habitat. However, Sias and Snell (1998) and more recent studies that rely on it predated the current adoption of horizontal drilling and use of long laterals that reduces the surface disturbance associated with oil and gas development, including the number of well pads by using the same well pad for multiple wells. | Section 3.2 Covered Species (EA) and Section 18.2.1 Oil and Gas (CCAA). | The text of both the CCAA and the EA has been modified to emphasize the increased prevalence of horizontal drilling with multiple wells on a single well pad in the Permian Basin, based upon Energy Information Administration data, and to acknowledge that the Sias and Snell (1998) study and its assessment of habitat disturbance from oil and gas development was based upon vertical development techniques. |
| Texas Industry Project | CCAA | **Surface Spacing and Technological Advancements** The Draft CCAA should remove the requirement for avoidance of well development in High and Intermediate habitat where the well density is equal to or greater than 4 well pads per square mile but less than 13 well pads per square mile. Draft CCAA at 49. | None. | The CCAA incorporates quantitative well density limits in order to establish avoidance protocols on the basis of published studies cited therein. Participants may pay a fee in appropriate cases to develop new wells in high-density areas, which can help to offset impacts of drilling. CCAA at 56. |
| Texas Industry Project | CCAA | **Groundwater** The Draft CCAA and EA should remove references to groundwater minimization, surveys, and related requirements, because there is no peer-reviewed science to support the need for groundwater limitations for DSL conservation. | None. | Groundwater use may be relevant to DSL habitat and is thus discussed contextually in the EA and CCAA. The CCAA proposes to further evaluate groundwater use to ensure that such use is not a threat to the DSL or its habitat. |

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| Texas Industry Project | CCAA | **Hardy Map Comment** FWS must consider the 2018 Walkup et al. study that analyzes DSL surveys and provides further context for the map used for the CCAA. The Hardy et al. (2018) model and corresponding map are overbroad and overstate the area where DSLs are likely to occur. Also, TIP agrees with the Draft CCAA's statements that the Hardy map "requires significant additional survey work and data collection to refine the model and distinguish the presence of potentially suitable habitat from other land covers." Draft CCAA at 29. TIP further supports the Draft CCAA's proposal to collaborate with the TCP administrator to refine the DSL habitat map. | None. | Comment noted. The Walkup, et al. (2018) study is referenced in the CCAA at 21-26. The CCAA includes a process to further refine the DSL habitat model. The proposed CCAA uses the Texas State University (Hardy et al. 2018) map for the geographic extent of potential DSL habitat and includes an adaptive management approach, where "the Adaptive Management Committee 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." CCAA at 6 (emphasis added). |
| Texas Industry Project | CCAA | **Viability of Permanent Conservation Easements** Covenants that restrict surface use after the severance of the mineral estate, such as a permanent conservation easement entered into by the surface owner, are not valid restrictions against the mineral owner/lessee. Courts have held that the mineral owner cannot be limited by restrictive covenants that were imposed by the surface owners after the minerals were severed. | None. | The Service acknowledges the legal limitations associated with conservation easements in a split estate context. The CCAA provides the Administrator with a suite of tools to provide conservation benefits to the DSL, including but not limited to Conservation Easements on enrolled lands. The CCAA expressly acknowledges that a Participant who is a surface estate owner may not be able to bind the associated mineral estate owner in Texas in the split-estate context, although reasonable accommodation must be given to surface owners. CCAA at 212. |
| Texas Industry Project | CCAA | **Viability of Permanent Conservation Easements** As a practical matter, private farmers and ranchers are often hesitant to enter into permanent conservation easement | None. | The Service acknowledges the legal limitations associated with conservation easements in a split estate context. The CCAA provides the |

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| | | agreements because they do not want to restrict or limit potential future revenue streams from their land, or limit the ability of their children or successors from being able to manage their lands to maximize economic return. There are also legal and tax barriers to implementation of permanent conservation easements in split-estate situations. The Draft CCAA should be revised to acknowledge the significant limitations of conservation easements in the split-estate context and to exclude split-estate lands from the conservation easement requirement. | | Administrator with a suite of tools to provide conservation benefits to the DSL, including but not limited to Conservation Easements on enrolled lands. The CCAA expressly acknowledges that a participant who is a surface estate owner may not be able to bind the associated mineral estate owner in Texas in the split-estate context, although reasonable accommodation must be given to surface owners. CCAA at 212. |
| Permian Basin Petroleum Association | CCAA | The PBPA is the largest regional oil and gas association in the United States. Since 1961, the PBPA has been the voice of the Permian Basin oil and gas industry. The PBPA's mission is to promote the safe and responsible development of our oil and gas resources while providing legislative, regulatory and educational support services for the petroleum industry. The PBPA membership includes the smallest exploration and services companies as well as some of the largest companies with world-wide operations. The Permian Basin is the largest inland oil and gas reservoir and the most prolific oil and gas producing region in the world. | None. | Comment noted. |
| Permian Basin Petroleum Association | CCAA | Many of PBPA's member companies are Participants in various voluntary conservation programs for the protection of various species and their habitat that overlap with oil and gas operations in the Permian Basin, including CCAAs for the DSL, Lesser Prairie Chicken, and the Texas Hornshell Mussel and the Pecos Watershed Conservation Initiative, covering hundreds of millions of acres. | None. | Comment noted. |

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| Permian Basin Petroleum Association | CCAA | Building on these efforts, the PBPA is committed to working with the Service and other relevant agencies and partners to conserve the DSL and prevent the need for a listing of this species under the Endangered Species Act (ESA or the Act). PBPA also applauds the efforts of the Service and others in developing this CCAA to enhance sustainability of a program designed to preclude the need for federal protection for the DSL through voluntary conservation efforts. | None. | Comment noted |
| Permian Basin Petroleum Association | CCAA | Context for the CCAA matters: The Permian Basin is the most prolific oil producing region in North America. Approximately 40% of United States oil production comes from the Permian Basin, more than all other major producing basins in the United States combined. In 2019, Permian Basin oil and gas producers directly contributed a record $9 billion to the Texas Treasury in the form of taxes and royalties, 67% of the state's total oil and gas revenue. | None. | Comment noted |
| Permian Basin Petroleum Association | CCAA | The CCAA is important and should be implemented with certain revisions. As reflected below, we insist that the Service incorporate revisions into the CCAA that will address three critical issues that we believe will increase participation and enhance the document's durability. Those issues are: 1) All Activities Enrollment and Post-Listing Enrollment Amendments for Oil and Gas Participants; 2) Fees; and, 3) Anticipated Level of Take. These issues can be addressed through reasonable revisions to the CCAA, but must be resolved prior to the finalization and approval of the CCAA. | None. | Comment noted |

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| Permian Basin Petroleum Association | CCAA | With these changes incorporated, we urge the Service to expeditiously complete their evaluation of the permit application, approve the CCAA, and issue of an enhancement of survival permit -- with a goal of precluding the need to list this species. These actions will allow the robust, safe, and essential oil and gas exploration to continue in the Permian while appropriate conservation measures for the DSL are established and maintained. | None. | Comment noted |
| Permian Basin Petroleum Association | CCAA | We have provided Attachment B, which is a summary sheet that: 1) includes the page number and specific section of the CCAA or Appendix; 2) which critical issue the revision is addressing; 3) the original language included in the CCAA, and; 4) the recommended revised language in redline format. | None. | Comment noted. The Service has reviewed Attachment B. Revisions to the CCAA have been incorporated, as appropriate, consistent with the discussion of issues herein. |
| Permian Basin Petroleum Association | CCAA | **1) All Activities Enrollment and Post-Listing Enrollment Amendments for Oil and Gas Participants** The oil and gas industry is dynamic, and mineral rights are subject to acquisition, trading, and divestiture. PBPA member companies frequently trade, divest, and/or acquire acreage and mineral interests to enhance their ability to optimize their development position. As such, an oil and gas Participant must be able to make business decisions that result in modifications to enrolled property. | None. | Comment noted. |
| Permian Basin Petroleum Association | CCAA | **1) All Activities Enrollment and Post-Listing Enrollment Amendments for Oil and Gas Participants** It is critical to PBPA and its members to have the option to enroll in either of two ways: 1) through the All Activities Enrollment process; or 2) through the Parcel-by-Parcel Enrollment process – | None. | The Service has considered the options for oil and gas Participants to enroll through (1) All Activities or (2) Parcel-by-Parcel enrollment regardless of acreage. The Service agrees that All Activities enrollment for the oil and gas sector is preferred and will maximize |

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| | | regardless of their acreage within the Covered Area. | | conservation benefits to the DSL. The Service has determined that the Parcel-by-Parcel Enrollment option would be appropriate only for oil and gas Participants with less than 500 acres in the Covered Area to ensure financial viability of the Plan. The Service notes that during implementation of the CCAAs fees may be adjusted, as appropriate, through the adaptive management process, consistent with Sections 2.0, 10.0, 15.0 and Appendix D |
| Permian Basin Petroleum Association | CCAA | **1) All Activities Enrollment and Post-Listing Enrollment Amendments for Oil and Gas Participants** An All Activities Enrollment option with provisions for post-listing enrollment amendments, irrespective of the number of acres enrolled, provides flexibility and will incentivize participation of oil and gas companies by enabling a company to enroll and fund conservation before a listing decision, thereby assuring that it will be able to modify its acreage position if a species is later listed and it acquires other mineral interests that it wishes to include in the CCAA. All Activities Enrollment with the provision for post-listing enrollment amendments should be encouraged even if the species becomes listed. An All Activities Enrollment option for the oil and gas industry with provisions for post-listing enrollment amendments is consistent with practices in other voluntary conservation programs for species within the Permian Basin. In particular, such an approach is consistent with the practices established under the current Texas Hornshell | None. | The Service has considered the options for oil and gas Participants to enroll through (1) All Activities or (2) Parcel-by-Parcel enrollment regardless of acreage. The Service agrees that All Activities enrollment for the oil and gas sector is preferred and will maximize conservation benefits to the DSL. The Parcel-by-Parcel Enrollment option would be appropriate for oil and gas Participants with less than 500 acres in the Covered Area to ensure financial viability of the Plan. The Service notes that during implementation of the CCAAs fees may be adjusted, as appropriate, through the adaptive management process, consistent with Sections 2.0, 10.0, 15.0 and Appendix D |

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| | | Mussel CCAA, of which PBPA member companies are participants. | | |
| Permian Basin Petroleum Association | CCAA | **A. Conservation Benefits of All Activities Enrollment** In addition to attracting and retaining broader oil and gas participation in the CCAA, the All Activities Enrollment provides additional conservation benefit as oil and gas Participants commit to Conservation Measures on all of their activities across the DSL habitat. | None. | Comment noted |
| Permian Basin Petroleum Association | CCAA | **A. Conservation Benefits of All Activities Enrollment** Conversely, an oil and gas Participant who chooses to enroll under the Parcel-by-Parcel Enrollment process is identifying the acreage upon which they commit to the Conservation Measures specifically, where development is, or is likely to occur. | None. | See response above regarding preference for All Activities enrollment for the oil and gas sector. |
| Permian Basin Petroleum Association | CCAA | **A. Conservation Benefits of All Activities Enrollment** In both cases, the oil and gas Participants are contributing towards conservation for the DSL; however, under All Activities Enrollment, the Participant is committing to Conservation Measures even on acreage for which it may have no current development plans, which can increase the level of conservation on enrolled property and across the DSL habitat. | None. | Comment noted. |
| Permian Basin Petroleum Association | CCAA | **B. All Activities Enrollment Addresses Stratification** In Texas, a split-estate is a common occurrence where the mineral estate is a distinct and separately owned property severed from the surface estate, creating diverse ownerships. When the ownership of the minerals differs, "stratification" – the potential for overlap of operations on the surface – may occur. All Activities Enrollment resolves some of the complexity | None. | Comment noted. |

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| | | of split estate, where the surface ownership is severed from the mineral interest ownership, and the occurrence of differing mineral interest. | | |
| Permian Basin Petroleum Association | CCAA | **B. All Activities Enrollment Addresses Stratification** Stratification may be erroneously characterized as discounting the conservation benefit, especially if the metric for conservation has been strictly defined by the number of acres enrolled. Oil and gas companies provide valuable conservation for a species and habitat through avoidance, minimization and compensation; however, due to conditional control of the surface acreage associated with mineral development, a company may not obligate a landowner's rights or control of the surface acreage beyond the oil and gas company's right to access. All Activities Enrollment addresses stratification because a Participant is responsible for their activities, associated fees, and conservation measures wherever their operations exist in the habitat – or, in some cases, where operations may not yet be occurring – thus minimizing impacts and benefitting the species regardless of the perception of overlapping operations. | None. | Comment noted. |
| Permian Basin Petroleum Association | CCAA | **B. All Activities Enrollment Addresses Stratification** PBPA asserts that when Enrollment Fees are assessed to each Participant instead of being shared or divided among Participants with stratified mineral interests, the CCAA will provide additional conservation benefit to the DSL. To reflect how oil and gas stratification is addressed through All Activities Enrollment, language in the CCAA that requires a Participant to develop additional conservation measures | None. | Comments noted. The Service has reviewed Attachment B. The Applicant made revisions, with the approval of the Service to the CCAA in consideration of the discussion of issues herein. |

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| | | with a stratified lessee should be removed, and revisions are proposed in Attachment B: | | |
| Permian Basin Petroleum Association | CCAA | **B. All Activities Enrollment Addresses Stratification** Section 8.1 Biological Goals and Objectives of the CCAA: Objective: Addressing stratification issues. PBPA suggests deletion of the following sentence at end of paragraph: "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." | Section 8.1 in the CCAA | Applicant made changes to the CCAA. The Service acknowledges the proposed revision will provide certainty with regard to the obligations of Participants on properties with stratified mineral interests. |
| Permian Basin Petroleum Association | CCAA | **B. All Activities Enrollment Addresses Stratification** 13.5 Enrollment of Property with Stratified Mineral Interests: PBPA suggests replacing the second paragraph with the following: "Where the mineral rights differ for a Property, each Participant is responsible for the full amount of Enrollment Fees for properties with a right of access to develop." | Section 13.5 in the CCAA | Comment noted. Applicant made changes to the CCAA. The Service acknowledges the proposed revision will provide certainty with regard to the obligations of Participants on properties with stratified mineral interests. |
| Permian Basin Petroleum Association | CCAA | **C. All Activities with Post-Listing Enrollment Amendments is Supported by the Programmatic "Take" Analysis** The level of take analyzed for oil and gas Participants is based on a programmatic or total take to be shared by oil and gas Participants in any approved permit. The anticipated level of take would not be increased by a modification of the enrolled acreage for any Participant already enrolled for all its activities in the Covered Area. | None. | Consistent with the Texas Hornshell Mussel CCAA discussed below and that a maximum overall take number is being evaluated as part of this application, the CCAA has been modified to provide additional flexibility for Participants that enroll under the All Activities Enrollment process. |
| Permian Basin Petroleum Association | CCAA | **C. All Activities with Post-Listing Enrollment Amendments is Supported by the Programmatic "Take" Analysis** All Activities enrollment provides a commitment | None. | Consistent with the Texas Hornshell Mussel CCAA discussed below and that a maximum overall take number is being evaluated as part of this |

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| | | of conservation measures across all of a Participant's activities wherever they occur in the habitat, providing a benefit to the species. Additionally, modifications due to trades and acquisitions further optimize development opportunities that result in overall reduction in disturbance and footprint – with no negative impact on the covered species. | | application, the CCAA has been modified to provide additional flexibility for Participants that enroll under the All Activities Enrollment process. |
| Permian Basin Petroleum Association | CCAA | **D. Linear Projects Require All Activities Enrollment** Linear Rights-of-Way acreage is normally acquired prior to a project but may be unknown at the time of enrollment. To address this situation, the CCAA provides language that upon All Activities Enrollment, a Linear Infrastructure Participant, "will identify the properties where it has obtained rights-of-way. Throughout the term of the agreement, those properties will be updated through an updated GIS shapefiles reflecting changes as part of the next annual update and each year thereafter to the Administrator." | None. | Comment noted |
| Permian Basin Petroleum Association | CCAA | **D. Linear Projects Require All Activities Enrollment** The above language indicates that at any time, including after any decision to list the DSL, a linear infrastructure Participant can update or modify their acreage to cover all of their activities. The PBPA supports the ability for linear infrastructure Participants to assess their activities annually and update their enrollment accordingly. | None. | Comment noted |
| Permian Basin Petroleum Association | CCAA | **E. Oil and Gas Participants Require Flexibility** For All Activities Enrollment to be widely accepted and mutually beneficial, it is critical that this enrollment option allow for a company to acquire and trade mineral interests in a post-list environment as long as the company enrolled all of its activities in | None. | Consistent with the Texas Hornshell Mussel CCAA discussed below, the CCAA has been modified to provide additional flexibility for Participants that enroll under the All Activities Enrollment process. |

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| | | the DSL habitat under the All Activities Enrollment process prior to the species being listed. The ability to modify acreage after a listing decision applies only to those oil and gas Participants that enroll under the All Activities Enrollment process, which, again, provides incentive for an oil and gas Participant to enroll through this enrollment option. On the contrary, a Participant that enrolls under the Parcel-by-Parcel Enrollment process may only add parcels to their enrolled property prior to any decision to list the DSL. | | |
| Permian Basin Petroleum Association | CCAA | **F. Post-listing Enrollment Amendments Are Supported** Enrollment amendments by oil and gas Participants that may occur post listing are administrative in nature, and they are supported by precedence and the CCAA Handbook. In October 2017, FWS approved an All Activities Enrollment option in the Texas Hornshell Mussel CCAA for oil and gas participants that allows post-listing amendments to enrolled property, citing Certificate of Inclusion for Oil and Gas Operators at Section I.C.1. The PBPA is not aware of any concerns or issues raised by the Service or others associated with post-listing enrollment updates consistent with the All Activities Enrollment. | None. | The Service has reviewed the Texas Hornshell Mussel CCAA language. The Texas Hornshell Mussel was listed as endangered by the Service, effective March 2018. The Service concurs that including similar provisions in the DSL CCAA may further incentivize voluntary participation in the oil and gas sector and maximize conservation benefits. |
| Permian Basin Petroleum Association | CCAA | **F. Post-listing Enrollment Amendments Are Supported** An all activities option that provides for post-listing amendments is not prohibited by the Act, its implementing regulations, or agency guidance, and is appropriate for plans with incidental take calculated across a species' entire range – as is the case with the CCAA. Because the CCAA includes a programmatic take | None. | The Service has reviewed the Texas Hornshell Mussel CCAA language. The Texas Hornshell Mussel was listed as endangered by the Service, effective March 2018. The Service concurs that including similar provisions in the DSL CCAA may further incentivize voluntary participation in the oil and |

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| | | calculation for the oil and gas sector across the entire range, All Activities Enrollment will not result in additional take of the covered species when a Participant makes a post listing amendment to its CI. | | gas sector and maximize conservation benefits. |
| Permian Basin Petroleum Association | CCAA | **2) Fees** The PBPA recognizes that financial sustainability is imperative to the success of the CCAA. It is critical that the fees encourage participation and be equitable for all potential participants at a level sufficient to ensure adequate conservation to avoid a listing. | Appendix D(CCAA). | Comment noted. The CCAA has been modified in Appendix D. |
| Permian Basin Petroleum Association | CCAA | **2) Fees** Appendix D states that Enrollment Fees will be used to fund Conservation Actions; however, it is not clear how and whether those Enrollment Fees will be allocated to the Participant that paid the fees. It is imperative that the CCAA include language that describes how Enrollment Fees will be managed by the Administrator. | Appendix D I. Enrollment Fees and II. Habitat Conservation Fees (CCAA). | The CCAA has been modified in Appendix D to clarify that each participant will contribute enrollment fees and habitat conservation fees to a Habitat Protection Fund account specific to each participant, consistent with Section 12.2, the CIs in Appendix B, and other conservation programs. |
| Permian Basin Petroleum Association | CCAA | **2) Fees** To that end, the PBPA requests that the language provided in Attachment A be used to replace that which is contained in the CCAA as Appendix D: Fee Structure. The new language (1) clarifies the parameters of enrollment, and (2) details that Enrollment Fees will be maintained in a Habitat Conservation Fund specific to the Participant. PBPA member companies participating in similar conservation agreements, such as successful programs administered by The Center of Excellence (CEHMM), are accustomed to enrollment fees applied to a habitat conservation fund. In other words, enrollment fees are used as a form of pre-payment for anticipated habitat conservation fees provided to the permit holder or administrator so that the permit | Appendix D I. Enrollment Fees and II. Habitat Conservation Fees (CCAA). | The CCAA has also been clarified to refer to these funds as "Habitat Conservation Fund" for consistency with other similar conservation agreements. The monies in each Participant's Habitat Conservation Fund may be used by the Administrator for conservation actions that benefit the species regardless of the proximity to or temporal nature of a new surface disturbance. |

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| | | holder/administrator can conduct conservation activities in advance of that Participant's new surface disturbances. This CCAA should take a similar approach. | | |
| Permian Basin Petroleum Association | CCAA | **2) Fees** The CCAA contains language that infers that the permit holder will maintain Enrollment Fees and/or pre-paid Habitat Conservation Fees in a habitat conservation fund. In fact, Section 12.2 of the CCAA refers to this fund as the "Participant's Habitat Protection Fund." Additionally, Appendix B includes a Certificate of Inclusion (CI) for each industry sector, and each CI includes the same terminology of a "Participant's Habitat Protection Fund." | None. | |
| Permian Basin Petroleum Association | CCAA | **2) Fees** To more accurately reflect the purpose of the fees included in each "Participant's Habitat Protection Fund", this fund should be renamed the "Participant's Habitat Conservation Fund," and all references to this fund in the CCAA should be changed to "Participant's Habitat Conservation Fund." There are nineteen (19) instances of the term "Participant's Habitat Protection Fund", and Attachment B includes details for all that must be changed. This naming convention will clarify the function of the fund. | None. | |
| Permian Basin Petroleum Association | CCAA | **2) Fees** Habitat Conservation Fees should be simplified to a single, habitat-based fee structure and the CCAA must explain how the Administrator will satisfy its fiduciary responsibilities and ensure that Enrollment Fees and Habitat Conservation Fees are properly be managed. There are important distinctions in compensation scales for DSL habitat: land cover categories versus habitat suitability categories. New surface | None. | The CCAA recognized the differences among various sectors and the Applicant believes the CCAA has established an equitable fee structure to accommodate different stakeholders and their respective size of operations. The Service notes that fees under the Plan will be reviewed at least annually, and may be adjusted as appropriate. See Section 2.0. |

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| | | development scales in the Draft CCAA differ both in reference to the habitat categories and associated fees dependent upon the industry sectors. As an example, the conservation fees for industry sectors are quite different for areas of better quality DSL habitat described as High Suitability or Dune I. Additionally, through advances in technology such as horizontal drilling and centralization of facilities, overall development footprints are greatly reduced. Therefore, generalization of pad or location size is no longer appropriate and has been deleted from the proposed Fee Structure. Operators may have multi-well locations, affording more opportunity for avoidance and minimization of New Surface Disturbance in DSL Habitat. The Habitat Conservation Fees also do not appear to consider the temporary nature of oil and gas and linear project New Surface Disturbance, or the fact that due to the dynamic influences of wind on sand, disturbances to topographical contour recover quickly. | | |
| Permian Basin Petroleum Association | CCAA | **2) Fees** The PBPA requests that the Habitat Conservation Fees for different habitat categories and industry sectors be based on both the nature of New Surface Disturbance to habitat as well as the habitat quality. PBPA has streamlined Appendix D: Fee Structure with revision as provided in Attachment A. The provided language (1) simplifies the fee structure; (2) establishes Habitat Conservation Fees that are consistent for all New Surface Disturbance in different habitat quality, regardless of industry sector; and (3) describes how Habitat Conservation Fees will be managed by the Administrator specific to a Participant's Habitat Conservation Fund. | None. | |

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| | | The new fee structure in Attachment A is consistent with previously discussed conservation agreements in this letter in which the PBPA member companies participate, including the New Mexico DSL and Lesser Prairie Chicken. | | |
| Permian Basin Petroleum Association | CCAA | **B.1 Alternatives/Additions to Easements as Conservation Tools** The CCAA as proposed depends heavily on conservation easements as the main mechanism for conservation under the Conservation Strategy. While an effective tool in certain circumstances, it is well known that the expense of acquiring and managing conservation easements is highly variable and costly, and that other, more diverse, means of conservation are critical components of such a strategy. The CCAA should clarify that habitat enhancement and restoration and reclamation of habitat can be accomplished through a suite of conservation activities. PBPA cites to Chan et al. (2020) to support its view. Conservation Actions identified in the CCAA that provide for habitat restoration are generally less cost intensive than acquiring conservation easements, and they can be additive to conservation measures being conducted by participants associated with development within DSL habitat. PBPA has identified various habitat restoration or enhancement methods, including prescribed grazing, mesquite treatment, reseeding and caliche removal, that are used in other conservation agreements in Texas that will be available under the CCAA – either through contracts with the Administrator, as in-kind services by Participants, or through other mutually agreed upon means and timing by the | Sections 1.1 Benefits of this 2020 DSL CCAA, 2.0 Governance, 6.7 Conservation, Research, and Monitoring, 8.0 Conservation Strategy, 10.0 Responsibilities of the Parties, 18.3.1 Conservation Strategy, Appendix C, and Appendix D (CCAA). | The CCAA includes a suite of conservation activities for each sector in Section 8.3 Conservation Measures, including restoration and reclamation of DSL Habitat. The Service agrees that conservation easements and other conservation tools, including but not limited to conservation agreements and contracts, as well as in-kind contributions and actions by Participants are valuable means to conserving species. Sections 1.1, 2.0, 6.7, 8.0, 10.0, 18.3.1 and Appendix C and D of the CCAA have been modified to make this point clearer. The Service agrees that a variety of conservation actions are important to conserve the contemporary demographic and evolutionary processes of DSL populations. |

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| | | Administrator, in addition to Habitat Conservation and Enrollment Fees. | | |
| Permian Basin Petroleum Association | CCAA | **B.2 Adjustments to Habitat Conservation and enrollment Fees to Ensure DSL Conservation** The PBPA recommends that the proposed CCAA be modified to reflect clearly that decisions related to fee adjustments include input from both the Participant Committee and the Adaptive Management Committee, which includes a representative from FWS. To that end, these revisions are included in Attachment B. | Section 2.1 Participant Committee and Appendix D (CCAA). | The CCAA has been revised to reflect this comment. |
| Permian Basin Petroleum Association | CCAA | **3) Anticipated Level of Take** Section 18.0 of the CCAA introduces the new terminology "biologically acceptable level," and the CCAA does not include sufficient details to determine upon which metric(s) this terminology will be measured. The terminology "biologically acceptable level" should be clarified for defensibility so compliance can be demonstrated. | None. | The Service acknowledges the concern to define "biologically acceptable level" and agrees with the proposed modifications to clarify the CCAA. |
| Permian Basin Petroleum Association | CCAA | **3) Anticipated Level of Take** PBPA proposes the addition of the following underlined language in Section 18.0: Rather, the take estimate represents an accounting of all New Disturbance in the Covered Area to ensure that performance under the 2020 DSL CCAA does not exceed a biologically acceptable level, which will be based on compliance with the 2020 DSL CCAA and the take levels as described in Section 18.3. Performance of the 2020 DSL CCAA will be deemed to meet a biologically acceptable level if (a) the take, as described in the 2020 DSL CCAA, Section 18.3, is not exceeded and (b) Participants are in material compliance with their CIs. Requirements for monitoring and reporting will be conducted | None. | The Service acknowledges the concern to define "biologically acceptable level" and agrees with the proposed modifications to clarify the CCAA. |

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| | | in accordance with the governance and provisions of the 2020 DSL CCAA. PBPA proposes a similar modification in Section 18.3 as well. | | |
| Permian Basin Petroleum Association | CCAA | **4) Additional Requested Edits** While Table A-1 in Appendix A includes descriptions of the predominant features of each land cover category, we request that each of the land cover categories have definitions included in the Glossary. | None. | The Service acknowledges that there are multiple land cover categories in the CCAA. However, the definitions are described in the Table A-1 in Appendix A and do not need to be defined in the Glossary. |
| Permian Basin Petroleum Association | CCAA | One instance of the term "Zone of Likely DSL Occurrence" is found in Sand Mining CI under General Measures. The PBPA requests deletion of this term as detailed in Attachment B. | None. | The CCAA has been modified to delete the one occurrence of the term "Zone of Likely DSL Occurrence" as suggested. |
| Permian Basin Petroleum Association | CCAA | Section 7.4.2 of the CCAA (Climate Change) cites much dated literature and includes statements that are speculative with no literature cited. Therefore, PBPA requests the revisions included in Attachment B be made prior to finalization of the CCAA. | None. | The literature cited in Section 7.4.2 of the CCAA represent the best available science to date on the impact of climate change on DSL habitat in the Covered Area. |
| Canyon Environmental | CCAA | **I. Qualifications of the Applicant to Administer the Permit** Canyon and Chris Jensen have had extensive permitting and regulatory experience in the mining and oil and gas sectors in Arizona, Utah, Nevada, California, Idaho, Wyoming, Colorado, Montana, Texas, and New Mexico. Mr. Jensen has been involved in conservation planning and management for: Uinta Basin hookless cactus, Utah prairie dog, yellow-billed cuckoo, June sucker, dune sagebrush lizard, lesser prairie chicken, greater sage grouse, burrowing owl, northern long-eared bat, pygmy rabbit, and other species. | None. | Comment noted. |
| Canyon Environmental | CCAA | **I. Qualifications of the Applicant to Administer the Permit** Under the proposed CCAA, Canyon as the Administrator will | None. | Comment noted |

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| | | have the authority to use both internal and third party resources (including, for example, consultants and academics) to enroll participants, assist in administering the plan, and engaging stakeholders. | | |
| Canyon Environmental | CCAA | **I. Qualifications of the Applicant to Administer the Permit** The proposed CCAA also requires participants to pay enrollment, implementation, and conservation fees that fully cover the costs of administering the program will deploying substantial funding and resources to on-the-ground conservation measures for the benefit of the DSL and DSL habitat, as well as advancing scientific research and information | None. | Comment noted |
| Canyon Environmental | CCAA | **II. Net Conservation Benefit of the CCAA** The 2020 DSL CCAA is designed to achieve a net conservation benefit to the DSL by reducing and eliminating threats to the DSL and its habitat from the activities covered by the CCAA. | None. | Comment noted. The Service agrees that the 2020 DSL CCAA is reasonably expected to improve the status of the DSL by minimizing threats, consistent with the 2016 CCAA Policy, and therefore, meets the issuance criterion of the CCAA. |
| Canyon Environmental | CCAA | **II. Net Conservation Benefit of the CCAA** Activities by participants will be governed by best management practices and subject to adaptive management if circumstances on the ground change (2020 DSL CCAA Section 8.3). | None. | Comment noted. |
| Canyon Environmental | CCAA | The 2020 DSL CCAA:<br>• provides a disturbance cap for activities and imposes limitations on activities in high priority DSL habitat.<br>• financial incentives are designed to dis-incentivize disturbance in high priority habitat and encourage development in areas that are already disturbed.<br>• encourages the use of existing infrastructure, shared access routes, and other | None. | Comments describing the contents of the CCAA are noted. |

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| | | limitations that are designed to reduce impacts to the habitat and to the species.<br>• provides opportunities and incentives to establish lasting conservation of high priority DSL habitat while also reducing fragmentation and conserving key habitats. These measures include the acquisition of conservation agreements and other similar protections for high quality DSL habitat.<br>• provides a mechanism to capture additional data regarding the habitat, range, and lifecycle of the DSLs, including through habitat assessments for enrolled properties, which would contribute to refinement of existing habitat modeling for the species.<br>• provides a process for further refinement of DSL habitat maps as new information becomes available to ensure that the best available commercial and scientific information is being used.<br>• provides robust funding mechanisms for DSL conservation and sustainable Plan administration (see Section 13.0 of the CCAA). | | |
| Canyon Environmental | CCAA | **Budgetary information** The Applicant has provided budgetary information to the Service that not only clearly demonstrates sustainable management over time, but also that the plan provides significant funding for conservation deployment on the landscape. Projected budgets under a conservatively low enrollment scenario (as part of sensitively analysis) are expected to generate more than $5 million in conservation deployable funds within the first six years of the plan. Under a moderate enrollment scenario, the Applicant's expects the deployment of conservation program service to be | None. | Comments noted. The Service agrees that Canyon Environmental has shown capability for and commitment to implementing all of the terms of the CCAA and meets the issuance criterion of the CCAA. |

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| | | approximately $12 million over the first six years of implementation. | | |
| Canyon Environmental | CCAA | **Budgetary information** These generated funds would be used to shore-up and protect critical habitat areas, increase habitat connectivity, and increase protections for the DSL across the plan area through conservation agreements with private land owners. Additional funds, beyond those identified for conservation deployment, are also set aside separately within the budget for research, modeling, and data collection that will aid in the adaptive management process going forward. | None. | Comments noted. The Service agrees that Canyon Environmental has shown capability for and commitment to implementing all of the terms of the CCAA and meets the issuance criterion of the CCAA. |
| Canyon Environmental | CCAA | **II. CCAA Governance** The participants are integral partners in conservation with the Administrator and the Participant Committee and Adaptive Management Committee structures are designed to provide a collaborative, on-going process of advancing beneficial conservation outcomes for the DSL. | None. | Comment noted. |
| Canyon Environmental | CCAA | **II. CCAA Governance** Reporting under the CCAA, which will be on at least an annual basis and provided to participants and the Service, will detail the status of Plan implementation including new surface disturbance and deployed conservation measures within the covered area. This information, in turn, will be used to drive implementation of the conservation strategy and the Adaptive Management process, as appropriate. These reports also will encompass a financial accounting of the fees and budgets, as well as a ledger for conservation actions that are conducted in any given year. This data will inform any potential budget adjustments and fees for the | None. | Comment noted. |

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| | | following year and will also provide transparency into the administration of the CCAA (2020 DSL CCAA Section 2.1). | | |
| Canyon Environmental | CCAA | **II. CCAA Governance** Given the voluntary nature of the Plan and the predominance of private land, the Plan contemplates a collaborative approach to planning to ensure that conservation outcomes are properly considered and identified well in advance, and does not unnecessarily inhibit or impede project development through a lengthy, overly prescriptive approval process. The Administrator is expected to work closely with participants to ensure that projects and any necessary off-sets are properly established to ensure continued conservation for the DSL. | None. | Comment noted. |
| Canyon Environmental | CCAA | **III. Take Estimates and Permit Length** In response to the Federal Register Notice language that "The permit could be issued for a shorter duration," and that "the permit could authorize incidental take of DSL associated with impacts to [sic] up to 34,690 acres of suitable DSL habitat within the Plan Area which the permit application estimates as approximately 12 percent of modeled DSL habitat within Texas," Canyon commented that the Service should approve the CCAA and issue the Permit for the requested 23 year term and for the "take" levels requested in the application. | None. | The duration of the permit must be sufficient to achieve a net conservation benefit. The Service agrees that a 23-year period meets the issuance criteria by (1) allowing consistency in the take allocation, (2) promoting long-term, strategic conservation of DSL habitat, and (3) providing certainty necessary to incentivize participation by non-Federal property owners. |
| Canyon Environmental | CCAA | **III. Take Estimates and Permit Length** Canyon explained that initially, the CCAA contemplated a longer time-frame (30 years) to achieve conservation outcomes for the species and account for potential impacts on the landscape. However, after careful consideration, it was adjusted to correspond | None. | Comment noted. |

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| | | to the TCP time-line. This adjustment would ensure that conservation between the CCAA and TCP could be coordinated and more easily managed and evaluated by the Service and each respective plan. | | |
| Canyon Environmental | CCAA | **III. Take Estimates and Permit Length** Furthermore, any decrease in the duration of the CCAA would directly undercut the attractiveness of this voluntary conservation plan and the willingness of potential enrollees to participate in it. | None. | Comment noted. |
| Canyon Environmental | CCAA | **III. Take Estimates and Permit Length** Private companies enroll in CCAAs to create regulatory certainty. The oil and gas, sand mining, alternative energy and linear projects sectors have long planning windows that include significant capital investments. In the event that the Service decides on a shorter duration, it would directly impact the number of companies and associated acres that would likely enroll in the Plan, thereby reducing the amount of conservation that would occur in DSL habitat. | None. | Comment noted. |
| Canyon Environmental | CCAA | **III. Take Estimates and Permit Length** The "take" allocation, as described in the plan incorporates a universal "take" number for oil and gas activities across the region, and an additional specific "cap" for sand mining activities. The "take" associated with oil and gas activity assumes the maximum extent of development that could occur on the landscape. That number was developed by using the legally allowed spacing (as allowable under Texas Law) to identify the potential for oil and gas development across the habitat. The "take" allocation is a maximum figure, and would be closely monitored consistent with the CCAA and the | None. | The Service acknowledges that the actual incidental take authorized for a Participant on its enrolled property (within the overall sector-specific maximums described in the CCAA) will be described in the Participant's CI, such that overall authorized take by Participants can be managed over time based on the performance of the CCAA, including for purposes of evaluating adaptive management triggers, changed circumstances, and unforeseen circumstances; and the CCAA requires the Administrator to track and report all disturbance of DSL |

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| | | Certificates of Inclusion (CI). The "take" allocation for sand mining was derived using existing industry data to identify trends over time and forecasting reasonable development into the future. This acreage number (16,560 acres over the life of the Permit) was developed specifically to impose a cap on the industry and limiting the acreage that could be mined in any given year, even though many mines are capable of (and have in the past) mining well above the annual cap. | | habitat by Participants on enrolled property on at least an annual basis, which will be used to evaluate whether any adaptive management measures should be triggered, which is a safeguard to ensure that the DSL is not jeopardized at any point during implementation of the 2020 DSL CCAA's conservation program, if the species is ultimately listed under the ESA. |
| Canyon Environmental | CCAA | **III. Take Estimates and Permit Length** Any decrease in the "take" allocation could result in a significant decrease in enrollment and put at risk the conservation of the DSL. It is also clear that the take allocation, including the caps on sand mining, provide a net conservation benefit to the DSL relative to the status quo, which provides no regulatory basis for affecting land use and development on private property in West Texas in the interests of DSL and habitat conservation. | None. | Comment noted. |
| Canyon Environmental | CCAA | **IV. Conservation Tools** The CCAA includes the following: conservation easements, conservation agreements, offsets, and cost-sharing actions with other conservation programs, such as programs funded by the Natural Resources Conservation Service in the Department of Agriculture. These tools are designed to maximize the conservation efforts and ensure that as many conservation partners as possible are encouraged to enroll in the plan and participate in DSL conservation. | None. | The Service recognizes that a flexible approach allowing use of all available tools to address threats to an unlisted species and its habitat is essential to deploying voluntary programs to conserve species on private property. The 2020 DSL CCAA is a conservation strategy that provides a suite of conservation measures and actions specifically designed to reduce or eliminate threats to an unlisted species in West Texas and thereby augments viable populations, in the absence of any existing regulatory means to address those threats. |

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| Canyon Environmental | CCAA | **IV. Conservation Tools** Conservation easements are either permanent or temporary and are legally binding agreements tied to specific acreages. These can be held in trust by individuals, corporations, mitigation bankers, etc. Due to the predominance of the mineral estate, conservation easements that can ensure that a future mineral interest owner does not exercise his or her right to develop, are difficult to acquire. While the Plan recognizes the challenges of acquiring these types of agreements, it is contemplated that they will be used to offset impacts, create connectivity areas, and conserve high quality habitat when available. | None. | Comment noted. |
| Canyon Environmental | CCAA | **IV. Conservation Tools** Conservation Agreements are similar to an easement in that certain actions for a particular parcel of land are contractually agreed to between the parties. However, the distinction is that the actual land is not deeded into an easement. The agreements may be more likely to encourage support and enrollment from land owners who are less likely to agree to an easement. The CCAA contemplates using these types of agreements to protect and conserve high quality habitat and connectivity areas, including when other easement options may not be available. | None. | Comment noted. |
| Canyon Environmental | CCAA | **IV. Conservation Tools** The CCAA also provides the opportunity for participants to offset new surface disturbance by agreeing to protect DSL habitat on enrolled property as part of the participants' agreement under a CI. | None. | Comment noted. |
| Canyon Environmental | CCAA | **IV. Conservation Tools** Cost-sharing agreements between the Administrator and individual land owners are contemplated as | None. | Comment noted. |

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| | | smaller project-by-project instances that may benefit individual land owners while also providing additional benefits to the DSL. | | |
| Center for Biological Diversity | CCAA | Comments submitted on behalf of CBD's 1.7 million members and supporters, including some who live near habitat for the dunes sagebrush lizard and others who visit that habitat. | None. | Comment noted. |
| Center for Biological Diversity | CCAA | This proposed CCAA would have dire effects on the DSL. The CCAA would green-light the destruction of much of the last remaining habitat for the lizard and would very much reduce the likelihood of both the survival and recovery of the lizard in the wild. | None. | The Service has carefully evaluated the issuance criteria in 50 CFR part 17 and has determined that the CCAA meets each of those regulatory criteria, including that implementation of the terms of the CCAA is reasonably expected to provide a net conservation benefit to the DSL, and that the "probable direct and indirect effects of any authorized take will not appreciably reduce the likelihood of survival and recovery in the wild of any species". Additional discussion can be found in the Service's Conference Opinion and Findings Document. |
| Center for Biological Diversity | CCAA | The Service's 1999 Candidate Conservation Agreement with Assurances policy does not support approval of the CCAA. The size of supposedly conserved areas are dwarfed by the size of areas that would be destroyed through authorization of this CCAA. The proposed CCAA assumes the destruction of far greater habitat than under the TCP, at 16,560 acres for sand mining, and 34,940 acres including other industries. Under the TCP, sand mining industries set aside only 944 acres. FWS's policy on CCAAs thus requires that the CCAA not be approved. | None. | Under the CCAA, the total estimated take of 34,940 acres is the maximum allowable take for all Participants and non-participants, but that maximum does not mean that such acreage actually will be disturbed; take will be identified in the Certificates of Inclusion (CIs) issued under the CCAA. While the CCAA and TCP are separate voluntary plans with different Administrators, the total estimated take is a maximum take number, and will be allocated across the CCAA, TCP and other conservation programs. As discussed in the EA, the CCAA reduces |

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| | | | | the maximum potential take of DSL habitat that is otherwise anticipated to occur in the absence of the CCAA. |
| Center for Biological Diversity | CCAA | FWS's PECE policy on evaluation of conservation efforts when making listing decisions states standards that this CCAA does not meet, and suggests that past performance of parties to an agreement can be evidence of conservation flaws with a new proposal. The failure of the TCP demonstrates that this similar CCAA is not sufficient. | None. | The PECE policy (68 Fed. Reg. 15106) cited by the commenter is used in the context of listing decisions, and is not relevant or appropriate in evaluating whether to approve the CCAA, which decision is guided by other regulations and policies. In any event, prior actions of other parties under the TCP do not bear on the conservation prospects of the CCAA. The proposed CCAA is an independent conservation program that includes different activities and provides different conservation measures than the TCP and does not rely on the existence of the TCP. |
| Center for Biological Diversity | CCAA | This CCAA does not have scientifically quantifiable parameters for conservation success, and critically, the loose quantification of projected habitat loss accounts only for habitat that would actually be disturbed but not fragmented habitat. The dangers of small, fragmented populations becoming extirpated one-by-one is completely ignored in the CCAA. | Section 16.1 Changed or Unforeseen Circumstances Table 2 (CCAA). | The CCAA contains clear, quantifiable limitations on take that help define parameters for conservation success under the agreement. For example, the total take for existing sand companies cannot exceed 16,560 acres, and no one participant may exceed 1,380 acres of take over the 23-year term, with additional limitations on an annual basis. Additionally, the draft CCAA includes requirements for addressing and reducing habitat fragmentation, including requirements to preserve High Priority habitat and dispersal corridors, among others. The CCAA has been revised at Section 16.1 Table to include a changed circumstance addressing concentration of disturbance and fragmentation. |

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| Center for Biological Diversity | CCAA | The CCAA does not effectively address the effects of global warming and drought, small population sizes, and habitat fragmentation. | Section 16.1 Changed or Unforeseen Circumstances Table 2 (CCAA). | The effects of global warming and drought on DSL habitat are not considered as part of the reasonably foreseeable cumulative impacts on the DSL. No scientific basis has been supplied to show their impacts. The CCAA has been revised at Section 16.1 Table to include a changed circumstance addressing concentration of disturbance and fragmentation. |
| Center for Biological Diversity | CCAA | The CCAA includes no discussion of how the threats to the DSL act cumulatively and would affect its survival, much less recovery. | Section 16.1 Changed or Unforeseen Circumstances Table 2 (CCAA). | Cumulative impacts are discussed in the EA in Section 4.10. The CCAA has been revised at Section 16.1 Table to include a changed circumstance addressing concentration of disturbance and fragmentation. The CCAA has been revised at Section 16.1 Table 2 to include a changed circumstance related to detrimental to the survival or recovery of the DSL. |
| Center for Biological Diversity | CCAA | The CCAA does not address the different and irreplaceable genetic contributions of lizards in the various different habitats shown by Chan et al., and the restricted gene flow between them. To admit (inaccurately) that only 12% of Texas lizard habitat will be destroyed through issuance of the permit is to ignore the irreplaceable groupings or populations of lizards in different areas. Habitat fragmentation over 23 years may lead to loss of these different populations that cannot be replaced. | None. | The draft CCAA includes requirements for addressing habitat fragmentation, including requirements to preserve High Priority habitat. The Service also acknowledges that lawful activities occurring on private property, including oil and gas development and sand mining, are part of the environmental baseline. The Service does not authorize nor regulate lawful activities on private lands lacking any federal nexus or jurisdiction. |