

ANNUAL REPORT 2017

Texas Conservation Plan for the Dunes Sagebrush Lizard

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ACRONYMS

BW	BIO-WEST
CDA	Change Detection Analysis
CCAA	Candidate Conservation Agreement with Assurances
CI.....	Certificate of Inclusion
CPA.....	Texas Comptroller of Public Accounts
CRA	Conservation Recovery Award
DSL	Dunes Sagebrush Lizard
EGESM.....	Division of Economic Growth and Endangered Species Management
FWS	U.S. Fish and Wildlife Service
HCP.....	Habitat Conservation Plan
HMU	Habitat Management Unit
HPF	Habitat Protection Fund
MC	Mitigation Credit
RRC.....	Railroad Commission of Texas
SDF	Surface Disturbance Fee
TAMU Research	Texas A&M AgriLife Research
TCP	Texas Conservation Plan
TXST.....	Texas State University – San Marcos
THCF	Texas Habitat Conservation Foundation
WTI.....	West Texas Intermediate

INTRODUCTION

Dunes Sagebrush Lizards (*Sceloporus arenicolus*) are relatively small terrestrial lizards with one of the smallest geographic ranges of any lizard in the U.S. They are considered habitat specialists and are found among the shinnery-oak (*Quercus havardii*) dominated, sandy dune complexes (Figure 1) of the Mescalero Sandsheet in southeastern New Mexico and Monahans dune complexes of Texas. Once considered a candidate for listing under the Endangered Species Act, it was determined in 2012 that voluntary conservation measures, including The Texas Conservation Plan (TCP) for the Dunes Sagebrush Lizard (DSL), provided protection such that listing was not warranted. The TCP was approved by the U.S. Fish and Wildlife Service (FWS) in February 2012 and implemented to provide for conservation of the DSL in West Texas. This plan is an agreement by the Texas Comptroller of Public Accounts (CPA) and FWS that provides for continued economic growth in the Permian Basin while providing protection for the DSL. The term of the TCP is 30 years from the FWS's approval. Private and public property owners (Participants) conducting activities in portions of DSL historic range may voluntarily choose to participate in the TCP by signing Certificates of Inclusion (CI) under the Candidate Conservation Agreement with Assurances (CCAA). Participants in the CCAA will be provided regulatory assurances (50 CFR §) if the CCAA is being properly implemented (50 CFR §§ 17.22(d)(5) and 17.32(d)(5)).

Required by the TCP as a regular update to stakeholders, Participants, and the general public, this Annual Report describes the TCP program activities for 2017 (year 6 of the TCP). Reporting requirements are described in TCP § 8.2.3.



Figure 1. Dunes Sagebrush Lizard Habitat in Texas

SECTION 1.0 TCP IMPLEMENTATION

1.1 ADMINISTRATION

The Texas Comptroller of Public Accounts (CPA) holds Permit No. TE55322A-0 in accordance with the Candidate Conservation Agreement with Assurances (CCAA) portion of the Texas Conservation Plan (TCP) for the Dunes Sagebrush Lizard (DSL) and associated section 10(a)(1)(A) enhancement of survival permit and section 10(a)(1)(B) incidental take authorization. BIO-WEST (BW) was contracted in 2016 to fulfill TCP program responsibilities including administration, day-to-day implementation, and TCP program management until such time as CPA can develop a long-term management strategy for the TCP. Texas State University – San Marcos (TXST) entered into a contract in November 2016 with CPA to expand research capacity under the TCP. In consultation with CPA and the Science Committee, TXST will formulate a long-term monitoring protocol to assess DSL population status and net benefit analysis. This protocol will be based upon a habitat suitability and connectivity model applicable to the geographic distribution of the DSL in Texas (Appendix A).

In February 2017, the Houston Chronicle published an article citing that Hi-Crush, a frac-sand mining company, intended to purchase 1,226 acres (ac) of sand reserves in West Texas (Houston’s Hi-Crush Partners buying Permian Basin Sand Co. [2017, February 24], Houston Chronicle from <https://fuelfix.com/blog/2017/02/24/houstons-hi-crush-partners-buying-permian-basin-sand-co/>). The purchase was determined to be situated within a Very High Likelihood of Occurrence HMU in north-central Winkler Co., commonly referred to as the Dunes of Kermit. The initial purchase of sand reserves within the Permit Area has spurred other frac-sand mining companies to capture a portion of the market share and expand their holdings into the Permian Basin as well. According to the Wall Street Journal, by October 2017 “around 16 mining companies” (It’s Lizard vs. Oil Magnate in the Latest Fight Over Fracking in Texas [2017, October 13], Wall Street Journal from <https://www.wsj.com/articles/miners-tiptoe-around-lizard-in-latest-fracking-dust-up-1507905320>) had purchased or leased interests in West Texas.

By December 2017, CPA had identified 17 potential sand mining companies with proposed operations in the Permit Area that encompassed over 20,000 ac of potential development with approximately 7,400 ac situated within Very High Likelihood of Occurrence habitat. Through the use of Change Detection Analysis (CDA), CPA determined that by the end of December 2017, frac-sand operations had disturbed approximately 1070 ac of DSL habitat. Discussions between CPA, sand mining operations, and oil and gas stakeholders, has been productive in some respects, culminating in the enrollment of eight sand mining companies (*see* Participation and Certificates of Inclusion) and thus allowing for a degree of avoidance measures and conservation measures to be implemented.

1.1.1. Accounting

Participant contributions fund the implementation of the TCP. Funds are held in the Habitat Protection Fund (HPF; TGC § 403.452(a) (4)) and are deposited into the appropriate account

(i.e., Administration, Mitigation, or Recovery) based on contribution type to satisfy CI requirements.

Monthly account reconciliations of HPF balances and transactions were completed to ensure for proper accounting of TCP costs. Below is a summary of revenues and expenditures that occurred in 2017 (Table 1):

Table 1. Program Revenues and Expenditures for 2017.

Revenues		Expenditures	
Participant Enrollment Fees	\$1,169,383.27	Administration	-\$618,811.41
Surface Disturbance Fees	\$0.00	Research	-\$136,136.25
Recovery Award Purchases	\$0.00	Recovery Projects	\$0.00
Accrued Interest	\$7,661.30	TTSTC Management	-\$3,634.25
Total	\$1,177,044.47		-\$758,581.91

1.2 ENROLLMENT

The TCP presents the extent of potential DSL habitat based upon survey results, historical and current specimen records, expert opinion, and habitat characteristics and identifying the portions of the Permit Area that are covered under the CCAA (Figure 2). Each polygon in Figure 2 is categorized by color; red representing Very Low Likelihood of Occurrence to dark green representing Very High Likelihood of Occurrence. For reporting and confidentiality purposes the polygons are sequentially numbered and described as Habitat Management Units (HMUs).

1.2.1 Confidentiality

Participant and species location information is confidential (TGC § 403.454) and retained by CPA. Information pertaining to current and future Participants will not be disclosed to any person including a state or federal agency, related to the specific location, species identification, or quantity of any animal for which a plan is under consideration, development, or is already established. Full or partial information may be disclosed to the person who provided the information if the person consents in writing. To maintain confidentiality of data obtained under the TCP, enrollment information is provided in acreage and further described in subdivided HMUs.

1.2.2 Participation and Certificates of Inclusion (CI)

A CI is an agreement between CPA and Participant(s) prescribing conservation measures that the Participant agrees to implement in exchange for assurances and incidental take authority, should the species be listed, for Covered Activities explicitly stated in a CI. Assurances are not extended to activities that are not specified in a CI. The conservation measures in the CI are designed to avoid or minimize impacts to the DSL and DSL habitat, or to offset impacts with enhancement

activities to benefit the DSL. The TCP enumerates three broad categories of Covered Activities that include, but are not limited to, oil and gas operations, agriculture, and general activities (TCP § 6.1).

Under two of the CIs, referred to as “Alternative CIs,” the requirement of enhancement activities to offset surface disturbances is limited to activities occurring between 30 and 200 meters (656 ft.) of occupied habitat, habitat that is unoccupied but contains structurally suitable habitat, or dispersal habitat, rather than being bounded by the HMU polygons and a 30-meter buffer around

the polygons (the definition of DSL habitat in the TCP). The Alternative CIs also prohibit surface disturbances in areas constituting DSL habitat. The disparity in the different CI habitat definitions results in portions of the permit area being enrolled by participants that include areas outside of the polygons in Figure 1-2 of the TCP.

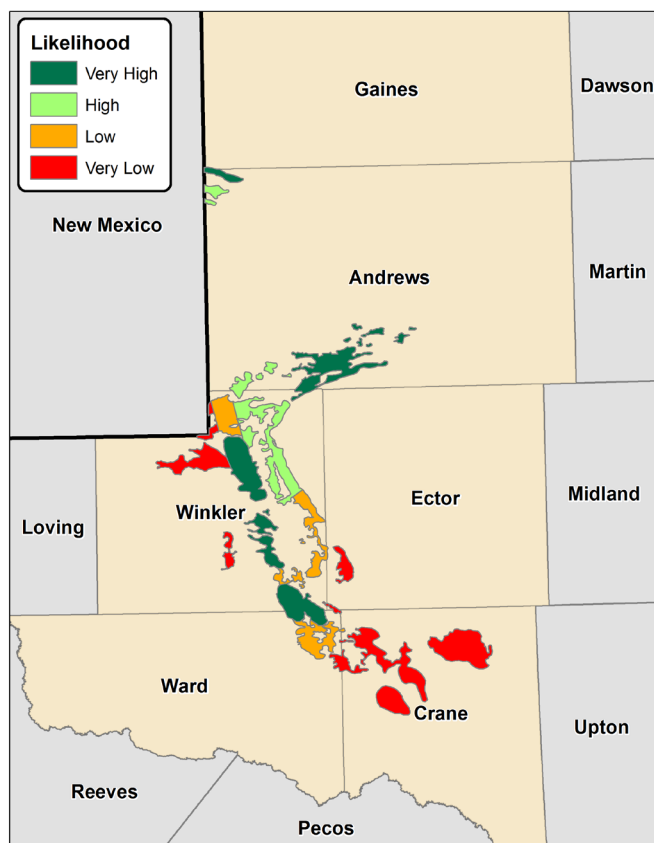


Figure 2. Texas Conservation Plan Permit Area/Likelihood of Occurrence map. Figure reproduced from Figure 1-2 of the TCP.

The sudden escalation of sand mining interests within the Permit Area has presented challenges to the TCP, primarily that the TCP does not specifically consider coverage of surface mining activities in DSL habitat (TCP §6.1). Thus, regulatory protections cannot be extended under the CCAA for surface mining activities in DSL habitat as defined by the TCP. Of the 17 identified

surface mining interests that are either currently operating or plan to operate by the first quarter of 2018, eight separate operations were willing to agree to avoid surface mining in DSL habitat and follow appropriate avoidance, minimization, and enhancement measures for other activities as prescribed in the TCP. Enrollment of these Participants in the CCAA resulted in the establishment of the first Conservation Areas under the TCP, placing 5,844.60 ac of DSL habitat, 1,551.80 ac of 200-meter buffer, and 23.00 ac of non-habitat under conservation protection.

Enrollment of new Participants increased by 10 in 2017. In February 2017, a Participant submitted the necessary documentation to voluntarily terminate its CI and relinquish the benefits of Covered Activities under the CCAA as well as any future incidental take. Final enrollment is 24 Participants.

1.2.3 Enrolled Acreage

Gross Acreage Enrolled represents the combined totality of surface acre enrollment by all Participants. With the inclusion of 10 new Participants and the termination of one Participant's CI, the net change in enrollment for all Participants was 60,187.27 ac (Table 2) of which 38,370.96 ac were enrolled by sand mine Participants.

Table 2. Changes in Enrolled Acreage by Habitat Class.

Likelihood of Occurrence Classification	Change in Enrolled Acreage by Habitat Classification
Very High	10,955.55
High	1,706.70
Low	8,209.56
Very Low	10,584.13
Buffer	2,796.92
Nonhabitat	25,934.41
Gross Acreage Enrolled	60,187.27

Including new enrollment in 2017, current Gross Acreage Enrolled is 297,003.06 ac, situated both inside and outside of the HMU polygons. Table 3 presents an itemization of enrollment for each HMU differentiated by DSL Likelihood of Occurrence category. Of the 297,003.06 Gross Acreage Enrolled, 140,150.11 ac occur within the HMUs and 9,704.41 ac of the Gross Acreage is enrolled by sand mine Participants. An additional 21,884.93 ac occurs within a 200-meter buffer surrounding the HMUs.

Due to the vertical stratification of mineral rights in Texas, in some instances multiple Participants possess surface rights to the same area for accessing discrete geological strata and therefore enrollment of multiple participants may overlap. A more accurate description of enrollment (Corrected Enrollment) in HMU's that excludes redundant overlap by multiple Participants (double counting) is provided by correcting for 97,733.70 ac of enrollment covering

an area of 48,083.80 ac of mapped DSL habitat (Table 3). Thus, the corrected acreage enrolled includes 115,167.31 ac or 58 percent of DSL Habitat.

Table 3. Enrolled Acreage by HMU.

Dune Complex Habitat Management Unit and Likelihood of Occurrence	Acres Enrolled in Habitat Management Unit	Overlapping Enrolment	Corrected Enrollment (Percent Enrollment)
Very High	44,621.08	11,009.87	33,611.21 (52%)
Management Unit # 2	21,022.32	7,728.04	13,294.28
Management Unit # 7	7,685.86	312.79	7,373.08
Management Unit # 10	2,161.38	0.00	2,161.38
Management Unit # 16	13,751.52	2,969.05	10,782.47
High	18,933.73	685.78	18,247.95 (57%)
Management Unit # 1	14,835.93	684.52	14,151.42
Management Unit # 12	4,097.79	1.26	4,096.53
Low	24,708.90	7,903.55	16,805.35 (52%)
Management Unit # 8	4,144.75	0.00	4,144.75
Management Unit # 13	14,312.32	4,911.35	9,400.97
Management Unit # 14	6,251.83	2,992.20	3,259.63
Very Low	51,886.41	5,383.60	46,502.81 (68%)
Management Unit # 3	15,566.94	48.54	15,518.40
Management Unit # 4	17,234.17	4,182.96	13,051.20
Management Unit # 5	6,747.06	161.25	6,585.81
Management Unit # 6	410.15	199.12	211.03
Management Unit # 9	7,492.52	260.92	7,231.59
Management Unit # 11	1,840.84	0.00	1,840.84
Management Unit # 15	2,594.73	530.80	2,063.93
Total Enrolled Acreage in HMU	140,150.11	24,982.80	115,167.31 (58%)
Buffer	21,884.93		
Nonhabitat	106,608.96		
Gross Acreage Enrolled	297,003.06		

1.3 OUTREACH

Outreach to increase enrollment has been a goal of TCP implementation since its inception. While there was strong commitment expressed by many stakeholders to the TCP during its inception (prior to the decision not to list the DSL), during implementation of the program much of this interest appeared to wane once the decision was made not to list the DSL. Outreach efforts were more productive in 2017 than previous years for several reasons. The primary reason for increased enrollment was due to the proliferation of new sand mine operations within

the Permit Area. This had two effects on enrollment—an increase in interest by sand mine operators desiring to Participate in the TCP, and an increase in the number of oil and gas Participants, the latter owing to the threat of a listing petition by FWS due to extensive sand mining operations. Additionally, oil prices for West Texas Intermediate (WTI) increased and were relatively stable for 2017, compared to 2016 WTI prices (Figure 3). With WTI prices exceeding \$50/bbl for much of 2017, operators were able to expand production.



Figure 3. Average daily crude oil prices of West Texas Intermediate (WTI) from January 2005 to December 2017 (Federal Reserve Economic Data, 2017).

BIO-WEST continually seeks to enroll additional acreage and new Participants. Participants assisted with 2017 outreach efforts by arranging several face-to-face introductions with stake holders and by initiating dialogue with two surface owners on the behalf of BW. Further outreach opportunities were conducted by a Participant who sent formal letters to surface owners encouraging enrollment within the TCP. This contact allows BW to provide Non-participants with information regarding the DSL, the TCP, and the benefit that enrollment provides to both the DSL and participants. BIO-WEST continues to establish productive relationships and networks with Participants and Non-participants and expects that the trust built to-date will increase opportunities to educate operators and land owners about the DSL, DSL conservation, and the TCP.

1.4 COMPLIANCE AND OVERSIGHT

Compliance by Participants on enrolled acreage is contingent on Conservation Measures according to the respective agreements specific to each CI. When applicable, BW notifies Participants with issues of noncompliance and coordinates with the Participant to remedy the issue by utilizing available avoidance, minimization, and enhancement options. In cases of

noncompliance, appropriate documentation is collected, catalogued, and subsequently reported to CPA and FWS in a confidential manner.

This information is used to identify disturbances through a desktop CDA on a quarterly basis. Disturbances are identified, field verified (Figure 4), documented, and reported using these methods. Field-based monitoring is conducted twice a month with higher frequencies resulting from additional monitoring activities as needed. These activities include regular communication with the Participants, education, site visits, driving tours, record reviews and verification, and Participant self-reporting. Specific compliance and monitoring activities are detailed further below. Participants are required to annually report Covered Activities and Conservation Measures that have occurred under its respective CI to CPA on or before the anniversary date of their enrollment. This information, in conjunction with publicly available information is used to cross reference and verify the activities documented by BW throughout the year.

Monitoring activities incorporate publicly available information to investigate surface disturbances. Examples of utilized information include:

- Railroad Commission (RRC) of Texas records including W-1 drilling permits, W-2 completion reports, T-4 pipeline permits, proration reports and cross-checked to review drilling permits and well/pipeline information.
- GIS such as Google Earth Pro®, QGIS, and ESRI ArcMap® were used to digitize polygons of unknown disturbances to determine if they were located within an HMU or its associated 30-meter buffer.
- Publicly available aerial imagery including NAIP, LANDSAT, as well as privately produced imagery.

1.4.1 Field Observations

Field observations are related to investigations of compliance and monitoring of Participant activities. BIO-WEST conducted monthly site visits (driving tours), with additional quarterly field verification of CDA detections. Monthly site visits resulted in 522.4 miles of observation from roads in HMU's to identify potential disturbances by Participants. Other field and site visits included escorting the FWS for review of activities and visiting with Participants as needed.



Figure 4. Field Verification and Compliance. BIO-WEST personnel conducting field verification of compliance with conservation measures.

1.4.2 Change Detection Analysis (CDA)

To provide FWS with a means to evaluate compliance monitoring in a manner that maintains Participant confidentiality, a remote-sensing technique utilizing CDA is performed on a quarterly basis. Pan-sharpened Landsat 8 satellite imagery (15m) is compiled and compared to Landsat 8 imagery of the same area three months prior. Within GIS, a "difference layer" is created that represents temporal and spatial land use changes. This method successfully identifies new disturbances on the landscape such as new drill locations, pipeline construction, sand mines, facilities, or road construction and maintenance (Figure 5). Changes detected on Participant enrolled acreage identified by the CDA are cross referenced with Texas RRC records, administration records, and higher resolution imagery if available. The compiled results are subsequently field verified to determine the nature and extent of a possible surface disturbance and its relevance to enrollment and compliance with the terms of the CIs and the TCP. Annually, one quarterly CDA is performed using higher resolution RapidEye® imagery (5m). This is compared to RapidEye® imagery from the previous year (or additional historical maps as available). This process allows for a complete understanding of all disturbances in DSL habitat (Figure 2) during the prior year. In instances of Participant caused disturbances, measures are implemented to rectify the disturbance to the extent possible and to accurately document the disturbance.

In addition to conducting the CDA on a quarterly and annual basis, small-scale CDA were completed on a monthly basis as needed. The aim of the interim CDA is to provide CPA with satellite interpretation and field-verification, when feasible, of specific areas of interest in which access is prohibited by Non-participants. Implemented in August 2017 to determine the extent of new sand mining operations, a total of five interim CDA were completed.

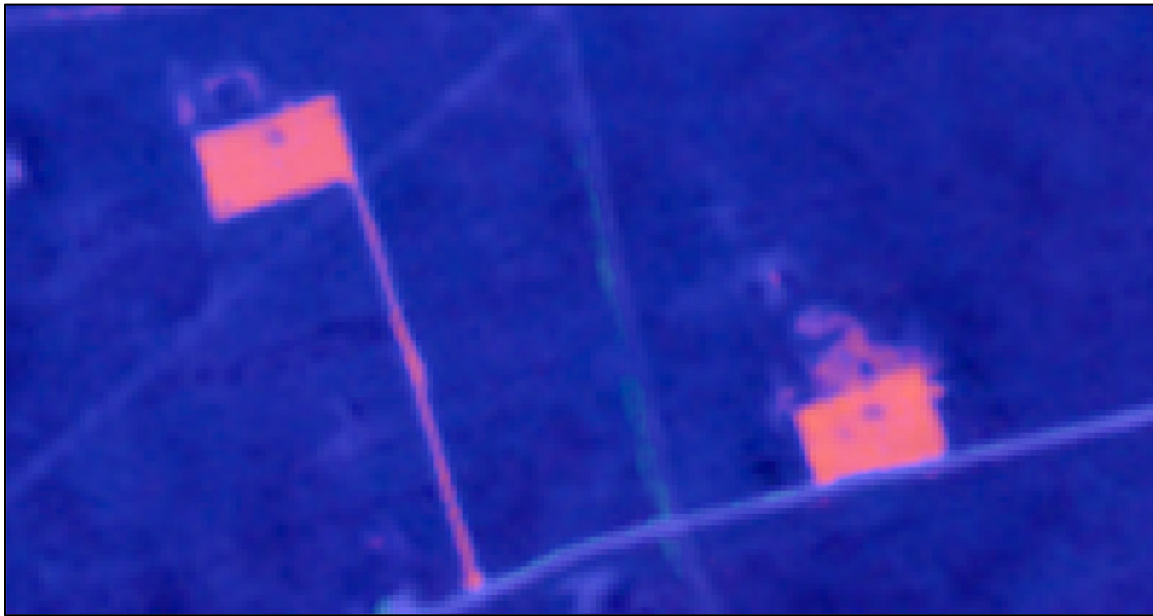


FIGURE 5. Change Detection Analysis Example. New construction identified using Change Detection Analysis (CDA). The intensity of brightly colored areas represent change over the time interval between the two sets of imagery used in the analysis.

1.4.3 Quantification of Disturbances

In addition to quarterly and yearly CDA efforts, a GIS based remote-sensing analysis was initiated in November 2016 and completed in July 2017. The objective was to accurately quantify the effects of the implementation of the TCP on loss of DSL habitat to oil and gas development and land use practices within the Permit Area. Similar to the methodology implemented for the CDA, the analysis utilized RapidEye® imagery (5m) of the Permit Area from April 2012–September 2016 to create annual difference layers. One-meter resolution imagery was used in conjunction with the difference layers to accurately digitize the area of each disturbance. The acreage of every disturbance polygon was calculated and summed together to obtain the total acreage that was disturbed within the HMU's, thus estimating habitat loss since implementation of the TCP.

The quantification of disturbances estimated that of the 197,604 ac of described habitat in the TCP, total loss of habitat was approximately 2,378.9 ac (1.2%). Of that habitat loss, approximately 314.9 ac (.15%) occurred as a result of Participant activities (Retrieved from <https://comptroller.texas.gov/programs/species-conomy/docs/disturbance-report.pdf>).

1.4.4 Level of habitat loss

FWS has determined “take” is not quantifiable and consequently habitat is used as a surrogate for the incidental take of DSL. Participant surface disturbances are reported on a monthly and annual basis to CPA and FWS.

Implementation of the TCP is intended to avoid incidental take from Covered Activities while maintaining economic growth. To meet these goals, the TCP permit allows for 2,173 ac of suitable DSL habitat to be lost in the permit area over the life of the TCP. The total surface disturbances by Participants through 2017 is 300.99 ac. In 2017, surface disturbances by participants impacted 6.24 ac of DSL habitat and buffer areas. A summary of this data is included in Table 4 below.

TABLE 4. Habitat Loss Including Frac-Sand Disturbances in Acres.

Likelihood of Occurrence	Maximum Allowable Habitat Loss Under the TCP	Participant Surface Disturbances on Enrolled Property To-Date	Non-Participant Surface Disturbances on Enrolled Property To-Date	Non-Participant Disturbances on Non-Enrolled Property To-Date	Non-Participant Frac-Sand Acreage Lost Through February 7, 2018	Total Habitat Loss
Very High	707	173.41	400.89	528.80	448.7	1,551.8
High	350	0.00	97.97	74.48	0	172.45
Low	358	52.11	78.84	204.10	358.1	693.15
Very Low	758	75.47	198.53	480.28	263.2	1,017.48
Total	2,173	300.99	776.23	1,287.66	1,070	3,434.88

Three instances of habitat loss occurred by a Participant operating under an Alternative CI in 2017:

In January 2017, a Participant provided notification of potential habitat loss that occurred within Very Low Likelihood of Occurrence habitat due to a lightning strike on a tank battery that resulted in an oil spill. Field visits were completed to delineate the extent of the spill and to collect photo documentation. The spill impacted 1.71 ac of previously modified habitat consisting of a well pad and caliche road. Under the Alternative CI definition of habitat, impacts were reported as occurring within the Likelihood of Occurrence polygon but not within occupied habitat, habitat that is unoccupied but contains structurally suitable habitat, or dispersal habitat. Cleanup and remediation of the spill location was initiated in December 2017 and subject to cleanup standards and procedures required by the RRC (TAC 16 § 3.91).

The two instances of habitat loss in 2017 were the result of two new drill locations within Very High Likelihood of Occurrence habitat and were spudded in December 2017. The Participant notified BW and submitted the requisite Surface Development Plans in May 2016 and subsequent field visits were conducted to delineate DSL habitat. To comply with the criteria

stipulated in the Alternative CI, one well location was relocated to beyond 30 meters of occupied habitat, habitat that is unoccupied but contains structurally suitable habitat, or dispersal habitat. Each well location disturbed approximately 2.23 ac and 2.30 ac and offset with 5.57 and 5.75 Mitigation Credits (MC), respectively. Source MC's were generated from a legacy spill site (*see* Section 1.5.2).

1.5 CONSERVATION MEASURES

This section covers activities that promote the conservation and recovery of DSL and suitable DSL habitat (TCP § 8.6) through avoidance and minimization of impacts to habitat through approved activities. Where avoidance and minimization are not possible, additional options to encourage recovery are available through the utilization of MC. Participants enrolled in the TCP will have assurances from the FWS, by enhancing survival of DSL and suitable DSL habitat, if the DSL gets listed. Coverage within the assurances include incidental take and modification of suitable habitat to return population levels and habitat conditions as agreed upon within a Participants' CI and specified under the TCP and CCAA. The purpose of adhering to conservation measures by Participants under the TCP is to promote the continued conservation of the DSL. If the DSL is subsequently listed, Participants are covered under an incidental take permit, Section 10(a)(1)(B) held by the Permit Holder.

1.5.1 Conservation Recovery Awards System (CRA System)

The Conservation Recovery Award System (CRA System), implemented by the TCP, uses MCs and Conservation Recovery Awards (RA) to offset incidental take and to promote recovery for the DSL. Authorized activities implemented on enrolled and non-enrolled properties to generate MC and CRA are used to offset incidental take or disturbances by Participants paying into the appropriate TCP account.

1.5.2 Mitigation Credits

Disturbances categorized as Covered Activities require mitigation (TCP § 2.1.5). Disturbances that require mitigation are off-set by the purchase of MCs or by conducting mitigation activities sufficient to offset the disturbance (TCP § 12.5.4). Surface Disturbance Fees used as payment for MCs are deposited into the Mitigation Account, which is designated to fund Mitigation Activities coordinated by the QTPC.

The TCP allows for the mitigation of loss of habitat through the establishment of Conservation Areas by newly enrolled Participants (TCP § 12.1). Conservation Areas are relatively large contiguous areas in which strict avoidance is required by the surface interest controlling party. The Conservation Areas would allow for the offset of DSL habitat loss, however; these areas are not tied to the generation of MCs. The first four Conservation areas since the implementation of the TCP were established by frac-sand interests operating outside of DSL habitat in 2017. These

Conservation Areas protect 5,844.60 ac of DSL habitat, 1,551.80 ac of 200-meter buffer, and 23.00 ac of unclassified habitat.

A Participant operating under an Alternative CI was approved the issuance of 27.95 MCs in May 2017 by FWS. The MCs were generated from the remediation of 11.18 ac of a legacy oil spill that consisted of shallow soil and ground water cleanup within Very High Likelihood of Occurrence habitat.

1.5.3 Recovery Awards

Although the DSL is not listed, the TCP has established Recovery Activities (TCP § 8.8) that may be conducted by Participants and Non-participants to generate CRAs to improve the value of potential habitat to the DSL and offset disturbances in cases where mitigation is required but no opportunity for mitigation exists.

From 2012 through early 2016, the Texas Habitat Conservation Foundation used CRAs generated through mesquite removal projects in lieu of available mitigation options. Moreover, Texas A&M AgriLife Research (TAMU) has questioned the effectiveness of mesquite removal as a conservation measure and tool for reducing the threats to the species. TAMU, “Dunes Sagebrush Lizard Final Report,” September 30, 2016.

At the present time, after consultation with the Science Committee, CPA has suspended the use of CRA System pending further review to determine whether the recovery crediting system is effective in design and implementation and the value of mesquite removal as a conservation tool for the DSL. As a result, disturbances will require offset through the use of MC instead of RA until a review is completed.

Recovery Activities implemented prior to the suspension are summarized below:

- 2,492.35 awards have been generated
- 249.24 awards are held in permanent trust
- 996.94 awards reserved pending effective mitigation strategy (TCP § 13.2.2)
- 819.72 awards are available for purchase
- 426.45 awards have been purchased

Contrary to what was contemplated in the TCP, Administrative Fees and funds paid to FWS for settlement of an alleged compliance issue were used to generate these credits.

SECTION 2.0 OVERALL EFFECTIVENESS OF THE TCP

2.1 TCP EFFECTIVENESS

The last two years have been a transition period for the TCP as the Texas Comptroller of Public Accounts (CPA) has endeavored to improve the implementation of the TCP. This effort began with a mandate from Comptroller Hegar to evaluate the effectiveness of the program and ensure it was functioning consistent with the TCP. The process resulted in the replacement of TAMU as the administrator of the program and the Texas Habitat Conservation Foundation as the entity

responsible for implementing the program. Through a competitive bidding process, the Foundation was replaced with BIO-West, Inc. The CPA assumed a greater oversight role.

In another initial change, Texas State University was retained to develop a habitat suitability model to enable the TCP to fulfill its obligation to demonstrate that the program was providing a net conservation benefit to the DSL and its habitat. Moreover, that model will enable CPA to replace the definition of DSL Habitat with a definition that is supported by a better understanding of the species distribution and the characteristics of habitat that is suitable for use by the DSL. In 2017, Texas States' plan for developing the model was reviewed by the Science Committee and is currently under review through an independent peer review process. The model should be complete in the early summer of 2018. After a second independent peer review, the model will be submitted to FWS for its consideration as part of a comprehensive upgrade of the TCP.

As discussed above, the amount of surface disturbance by the Participants (approximately 300 acres) is well below that allowed under the TCP (2,173 acres). The CDA analysis, however, reveals significant disturbances by non-participants including over 1000 acres by sand mining activities. While the TCP is only responsible for the surface disturbances of its participants, this observation emphasizes the need for increase enrollment in the TCP. Enrollment increased in 2017, but significant additional improvement is still needed to obtain the 71 percent enrollment of DSL Habitat on which FWS, in part, made its decision not to list the DSL.

The calculation of the percentage of habitat enrollment does not take into account that numerous mineral leases in DSL Habitat are severed from the surface estates. In some situations, different lessees can have rights to operate in the different strata beneath the same surface estate, each lessee with a right to use the surface. Thus, an enrolled mineral estate does not assure that the surface is receiving the protection intended by the TCP. CPA is evaluating the impacts of the stratification issue and the approaches used to deal with the problem in other CCAAs.

To date, the 300 acres of surface disturbances have been addressed through the removal and restoration of approximately 39 acres abandoned well pads and roads. The suspension of the CRA as well as the evaluation of mesquite removal discussed above, will undoubtedly improve the effectiveness of the TCP by restoring the emphasis on-the-ground enhancement of habitat as contemplated in the TCP.

Sand mining operations are largely unregulated. In 2017, an unexpected influx sand mining companies interested in developing in the Permian Basin occurred in the area of DSL Habitat. The TCP immediately began dialogues with these companies. Because sand mining is not expressly included as a Covered Activity, the TCP could not allow frac-sand companies to enroll in the TCP. Nonetheless, of the 17 companies seeking to develop in the Permit Area, the TCP, working with its oil and gas Participants, was able to obtain the agreement of eight companies not to conduct mining activities in DSL Habitat and, in some instances, to provide funding for conservation measures. These eight companies have been enrolled in the TCP. The TCP continues to work with the remaining sand-mining companies to keep them informed about the

importance of conducting their activities in a manner that will minimize the impacts of their operations on the DSL and its habitat

In 2017, Participants and Non-participants coordinated with BIO-WEST to relocate well locations to avoid disturbances to potential DSL habitat. BIO-WEST also reviews Participant submitted well locations to determine if proposed locations will have an impact on habitat or buffer. In 2017, 395 such locations proximal to the Permit Area were reviewed and catalogued, all of which were determined to be located outside of the HMUs and buffer.

Because of the extensive changes and improvements needed to ensure the effectiveness and durability of the TCP, CPA has begun the process of revising the TCP. The revision process is being aggressively conducted with the Participants and FWS. CPA believes that a revised plan will be completed for the Service's consideration in the late summer of 2018.