Supplement to July 2017 Monthly Report for the Texas Conservation Plan for the Dunes Sagebrush Lizard (TCP) Submitted to the U.S. Fish and Wildlife Service: Non-TCP Participant Surface Disturbance Activities Affecting Dune Sagebrush Lizard Habitat and Buffer in Texas

August 10, 2017

In response to a marked increase in the demand for frac-sand, mining companies recently began purchasing or leasing large tracts of land in the Permian Basin in Texas for frac-sand mining operations. This activity is concentrated in Winkler County in the polygons designated as dune sagebrush lizard (DSL) habitat in Figure 1.2 of the Texas Conservation Plan (TCP). *See* attached map. Mining companies are focused on this area because it is located in close proximity to extensive oil and gas development, which represents the market for frac-sand. The sand mining industry anticipates lower costs by operating in this area due to the reduced transportation distances. In addition, the DSL habitat polygons overlay large Quaternary sand deposits of the depth and quality preferred by mining companies.

The frac-sand companies face limited permitting or legal impediments to constructing and operating sand mining in the Permian Basin in Texas. Texas does not require reclamation for excavation sites, which typically develop to a depth of 80 feet. Mining operators often return overburdened and lower quality sand to the excavation site; however, this "reclamation" sand typically only reduces the depth of the remaining hole by approximately 50 percent. In general, the construction of buildings, infrastructure, and equipment associated with sand mining operations typically involves the loss of approximately 70 acres of the surface per mining site.

Over the last four months, CPA identified 15 frac-sand companies that have begun or are seeking to operate in Winkler, Crane, Ward, and Ector counties. *See* Table 1. Over 20,000 acres of DSL Habitat and buffer are located within the

companies' proposed sites, including at least 7,400 acres of very high likelihood of occurrence habitat.[1] One should not infer from this number that all of the habitat will be mined during the term of the TCP. We have been told that, depending on a variety of factors, including market demand, that frac-sand operations such as contemplated here, could be expected to involve excavations of less than 100 acres annually.

Using Change Detection Analysis,[2] CPA determined that between early March and mid-July, five frac-sand companies have already disturbed more than 271 acres of DSL Habitat and buffer, apparently as part of the development of infrastructure for the mining sites.[3] Two of the disturbances were in very high likelihood of occurrence habitat, one in low likelihood of occurrence habitat, and two in very low likelihood of occurrence habitat. For perspective, Participants in the TCP have disturbed 296 acres in DSL habitat and buffer since the beginning of the TCP in 2012.

CPA has communicated with nine of the fifteen companies regarding the needs of the DSL and impact of the companies' planned activities on the TCP. CPA urged these companies to conduct their activities in a manner that avoids or significantly minimizes the impacts on DSL Habitat and buffer. In addition, the Texas Oil and Gas Association and the Permian Basin Petroleum Association have held meetings between oil company representatives and most of the potential frac-sand operators to express concern about the consequences to the

[1] We understand that Fairmount Santrol's site is located entirely in very high likelihood of occurrence habitat, but we do not know the size of the site. This information would increase the total amount of the sites in very high likelihood of occurrence habitat. Atlas Sand Company LLC has indicated a willingness to forgo any excavation in 1,400 acres of the property leased from GLO which would reduce the total amount of the very high likelihood of occurrence habitat in the sites.

[2] CPA provides the Service quarterly updates of the results of the Change Detection Analysis of surface disturbances in the Permit Area. CPA detected these surface changes in early July as part of its second quarter Change Detection Analysis. CPA updated the analysis on July 27, 2017, to look for additional surface disturbances related to frac-sand development. In the update, CPA did not identify any new sites with surface disturbances although two of the surface disturbances identified earlier were slightly larger.

[3] We understand that one company, Hi-Crush, has actually started excavating sand. We do not know how many acres Hi-Crush has excavated.

TCP if this development continues in DSL Habitat and buffer. These two organizations are urging the sand mining companies to work with CPA to avoid or minimize the impacts of their activities.

The frac-sand companies have been generally responsive to discussing the needs of the DSL and the consequences of their activities on the Service's "not warranted" determination for the DSL. As a result of these discussions, some of the companies have made changes to their project plans to accommodate the requirements of the TCP. Two such companies, Black Mountain and Vista Sand, originally proposed to operate in very high/high likelihood of occurrence habitat and low likelihood of occurrence habitat respectively. After discussions with CPA, the two companies subsequently changed their proposals. Now, neither company will excavate in DSL Habitat or buffer. In addition, both companies will acquire very high likelihood of occurrence habitat[4] and enroll that habitat in the TCP. This will result in the implementation of conservation measures on the properties to avoid surface disturbance in habitat or buffer. Further, they have agreed to contribute funding for mitigation and/or research within DSL Habitat.[5] In exchange, CPA has requested that the Service approve the inclusion of these two companies as Participants in the TCP.

Two other companies, Badger and Unimin, designed their operational project plans to avoid any disturbances in DSL Habitat and buffer.

However as of now, nine of the remaining 11 companies apparently still plan to operate in DSL habitat or buffer including in very high likelihood of occurrence areas. Of particular concern is the concentration of frac-sand development in the very high likelihood of occurrence habitat in the northern part of HMU 7. *See* Map 2. In this area, Hi-Crush LLC, Atlas Sand Company LLC, High Roller LLC,

[4] Black Mountain will place conservation requirements on 644 acres of very high likelihood of occupancy habitat; Vista Sand will place the requirements on 300 acres of very high likelihood of occurrence habitat. The conservation requirements will prohibit new surface disturbances on the property for the remaining term of the TCP (approximately 25 years).

[5] Black Mountain will contribute $100,000 towards these activities; Vista Sand will contribute $300,000.

and Fairmount Santrol have acquired properties that comprise almost all of the habitat in this area.[6]

While intending to proceed with operations in DSL habitat and buffer, most of the frac-sand companies have expressed a willingness to attempt to ameliorate the impacts of their activities on the DSL. High Roller, LLC, is considering the possibility of avoiding very high likelihood of occurrence habitat. They would begin excavations in non-habitat areas although ultimately its excavation would extend into low quality habitat. U.S. Silica originally proposed excavating up to 9,008 acres of very low likelihood of occurrence DSL Habitat but has now indicated it will limit its excavation in that habitat to approximately 2,600 acres.

Discussions between CPA and CSF Ranch are ongoing. CPA will begin discussions soon with Preferred Sands, Winkler Resources, and Smart Sand. We have contacted Fairmount Santrol and Alpine Silica and hope to have discussions with them in the near future. CPA is continuing efforts to make contact with SCF Partners.

In summary, frac-sand operations could significantly impact DSL Habitat, including habitat in or near areas where lizards have been found in recent surveys. Moreover, the destruction of that habitat has already begun. The CPA has no authority to stop the development of frac-sand operations of non-participants in the TCP. Nonetheless, CPA will continue to urge frac-sand companies to avoid and minimize any impacts to DSL Habitat and buffer. As it has previously, CPA will maintain regular contact with the Service to keep it updated on frac-sand activities that may impact the DSL or its habitat.

[6] The Hi-Crush site will occupy 1280 acres in the very high likelihood of occurrence area; Atlas Sand Company has 4006 acres under lease from the General Land Office and a fee interest in an adjacent 1841 acres; and High Roller has 300 acres in very high likelihood of Occurrence habitat. CPA does not now the acreage in this HMU under the control of Fairmount Santrol. It is our understanding that Hi-Crush began excavating sand on its site at the end of July. After discussions with Atlas and GLO, CPA determined that it would not consider including Atlas in the TCP because its operations was located entirely in a very high likelihood of occurrence area.

Robert L. Gulley
Director
Division of Economic Growth and
Endangered Species Management

Map 1

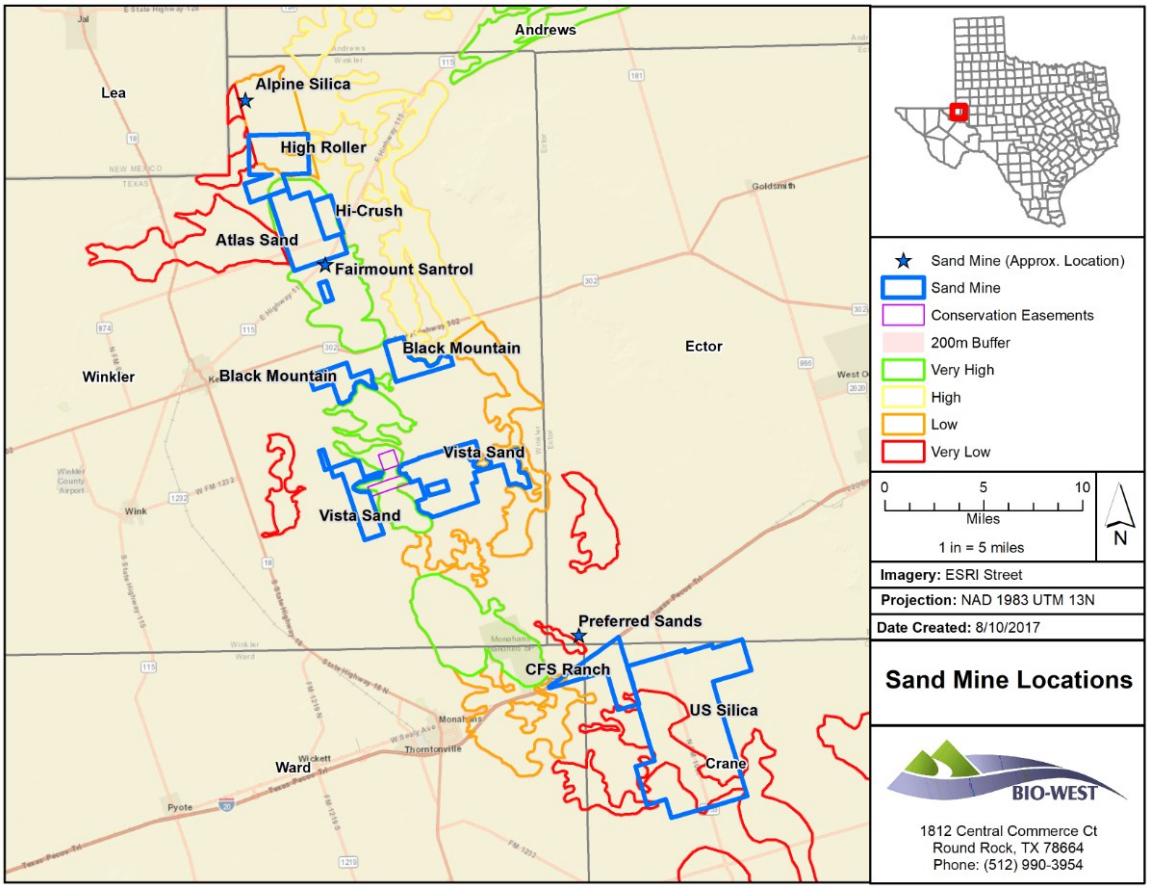
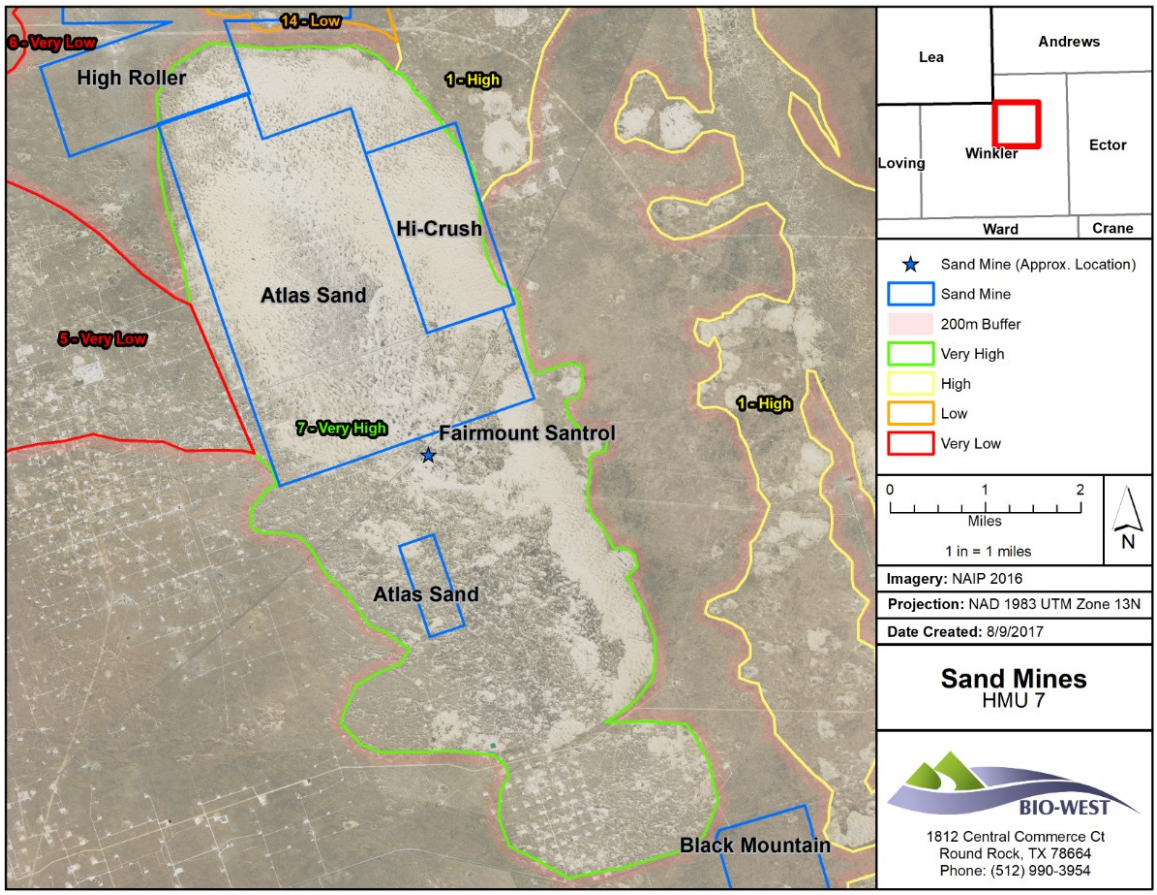

Andrews
Lea
Alpine Silica
High Roller
Hi-Crush
Atlas Sand
Fairmount Santrol
Black Mountain
Winkler
Black Mountain
Ector
Vista Sand
Vista Sand
Preferred Sands
CFS Ranch
US Silica
Crane
Ward
Sand Mine (Approx. Location)
Sand Mine
Conservation Easements
200m Buffer
Very High
High
Low
Very Low
0
5
10
Miles
1 in = 5 miles
N
Imagery: ESRI Street
Projection: NAD 1983 UTM 13N
Date Created: 8/10/2017
Sand Mine Locations
BIO-WEST
1812 Central Commerce Ct
Round Rock, TX 78664
Phone: (512) 990-3954

Table 1

SUMMARY OF POTENTIAL FRAC-SAND OPERATIONS		
COMPANY NAME	**COUNTY**	**HABITAT QUALITY WITHIN PROPERTY**
ATLAS SAND LLC	WINKLER	VERY HIGH
HI-CRUSH	WINKLER	VERY HIGH
BLACK MOUNTAIN	WINKLER	NONE
VISTA SAND	WINKLER	NONE
ALPINE SILICA LLC	WINKLER	LOW
HIGH ROLLER LLC	WINKLER	VERY HIGH / LOW
FAIRMOUNT SANTROL	WINKLER	VERY HIGH
WINKLER RESOURCES	WINKLER	?
BADGER	WINKLER	NONE
UNIMIN	WINKLER	NONE
SCF PARTNERS	?	?
CSF SAND	CRANE/WARD	VERY LOW
US SILICA	CRANE	VERY LOW
PREFERRED SANDS	ECTOR	LOW / VERY LOW
SMART SAND	?	?

Map 2.


14 - Low
6 - Very Low
High Roller
1 - High
Hi-Crush
Atlas Sand
5 - Very Low
7 - Very High
Fairmount Santrol
1 - High
Atlas Sand
Black Mountain
Lea
Andrews
Loving
Winkler
Ector
Ward
Crane
Sand Mine (Approx. Location)
Sand Mine
200m Buffer
Very High
High
Low
Very Low
0
1
2
Miles
1 in = 1 miles
N
Imagery: NAIP 2016
Projection: NAD 1983 UTM Zone 13N
Date Created: 8/9/2017
Sand Mines
HMU 7
BIO-WEST
1812 Central Commerce Ct
Round Rock, TX 78664
Phone: (512) 990-3954