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## Dunes Sagebrush Lizard Considerations and West Texas Frac Sand Operations

### *FREQUENTLY ASKED QUESTIONS*

The Dunes Sagebrush Lizard (DSL) has been the topic of interest and discussion as industry participants have announced frac sand facility development in the Permian Basin. The DSL is not an endangered species nor a threatened species. From this document, you will learn:

- Hi-Crush does NOT have DSL or habitat on the land it will mine.
- The designation “very high” likelihood of DSL occurrence on the Hibbitts map does not establish actual existence of habitat or DSL on that site—Hi-Crush has neither.
- Any potential future listing will NOT impact Hi-Crush business or mining operations due to the absence of DSL habitat or activity on its land.
- The majority of DSL habitat is on federal land in New Mexico that is managed by federal agencies to conserve the species.

Hi-Crush has prepared the following information to offer further insight into key issues related to the DSL and measures taken by Hi-Crush to ensure operations at our Kermit, Texas, facility pose no threat to the species.

#### 1. What is the Dunes Sagebrush Lizard?

The DSL is a small, light brown lizard found in shinnery oak dune habitat, located across approximately 600,000 acres in southeastern New Mexico and west Texas. Most of the DSL range and available habitat occur in New Mexico. The DSL is a habitat specialist, and the connection between the DSL and the shinnery oak dune habitat system is very specific. The range of the species is closely linked to distribution of the shinnery oak dunes and the quality and quantity of available shinnery oak dune habitat.

#### 2. How has the DSL habitat been defined?

Shinnery oak dune “systems” that form the range of the DSL are a naturally heterogeneous mix of suitable habitat and unsuitable habitat for the species. Hi-Crush has no such systems on its site.

Habitat for the DSL requires the co-occurrence of suitable dune morphology (chains or complexes of steep dunes with moderate to large blowouts), suitable vegetation cover (shinnery oak on dune ridges and between dunes, with sparsely vegetated blowouts), and suitable soil texture (e.g., loose and moderately coarse sand). Because the DSL is a habitat specialist, the absence of ALL features described above generally renders an area unsuitable for regular use by the DSL. This is precisely the situation at the Hi-Crush facility in Kermit.

DSLs use sand dunes partially stabilized by shinnery oak that have unvegetated or sparsely vegetated “blowouts.” DSLs use these blowouts and the surrounding shinnery oak cover for temperature regulation, protection from predators, foraging, and dispersal. The character of the sand within blowouts is also an important small-scale aspect of suitable habitat, with DSLs occurring more often in moderately coarse sand.

However, shinnery oak dunes are a dynamic landform that shifts over time and may transition into shinnery oak flats and other landscape types, such as mesquite hummocks, grasslands, and tabosa flats. Therefore, DSL habitat at a larger spatial scale consists of interconnected dune blowouts contained in a dune complex and, at an even larger scale, chains of dune complexes across the shinnery oak dune system.

### 3. What is the Hibbitts map?

The Hibbitts map is an administrative tool to streamline implementation of the Texas Conservation Plan (TCP).

The TCP for the Dunes Sagebrush Lizard dated February 13, 2012, adopted a map of “DSL Habitat” developed by Dr. Toby Hibbitts of Texas A&M University. The Hibbitts map identifies broad areas of shinnery dunes habitat and classifies these areas with a relative assessment of likelihood of occupancy by the DSL.

However, the Hibbitts map is a coarse, landscape-scale interpretation of those portions of the DSL Texas range where dune complexes occur and the relative likelihood of finding occupied DSL habitat somewhere within those areas. The Hibbitts map was drawn from aerial imagery, considering (when available) notes about habitat contained in documented DSL occurrence records from the past 20 years. In fact, the TCP itself notes that the “Hibbitts map...needs additional survey and map refinement,” and “on-site surveys are needed to further the science and understanding/mapping of habitat.”

In short, the Hibbitts map does not offer an assessment of DSL habitat quality or habitat suitability at any scale, and only provides a landscape-level estimate of the likelihood for one or more DSL to occur somewhere within often very large areas of broadly defined dune systems.

### 4. Does the Hi-Crush Kermit facility lie on the Hibbitts map, and does that mean there is DSL habitat or lizards on the reserves?

Hi-Crush’s Kermit facility lies on land included in the Hibbitts map; however, there are no lizards or habitat on the land it intends to mine.

The Hi-Crush Kermit facility is located on 1,226 acres of land in Winkler County. Most of this acreage occurs within a Hibbitts map polygon delineating a 26-square-mile dune system classified as having a “very high probability of occupancy” by the DSL on the basis of DSL observations from shinnery oak dunes that occur nearly one mile away. This apparently suitable DSL habitat is separated from the Hi-Crush Kermit facility by paved roads, which are considered to be barriers to DSL movement. Even so, the operating Hi-Crush Kermit plant site is located almost entirely outside of this Hibbitts map polygon, in an area of mesquite flats that is not habitat for the DSL.

Although the majority of our acreage at the Kermit facility is included in areas on the Hibbitts map categorized as having very high likelihood of DSL occurrence, the Hibbitts map does not accurately characterize the habitat conditions on the site. While DSL are known to occur elsewhere within this Hibbitts map polygon, we can state definitively that the diligence we have conducted on our site establishes that the areas we are mining have no DSL habitat, nor any DSLs. The site we are mining contains mesquite flats, grassy sand dunes and unvegetated sand dunes that lack essential elements of suitable DSL habitat—namely, the presence of sand dunes anchored by shinnery oak that surround large, steep, unvegetated blowouts. Furthermore, the site is a former dune buggy park that has a more than 60-year-long history of recreational use and associated disturbance by dune buggy riders, campers, and picnickers.

We have conducted comprehensive due diligence on environmental matters, including endangered species assessments over our entire holdings in Kermit. As a part of this process, we engaged renowned experts on the subject of the DSL. These professionally certified wildlife biologists conducted extensive on-site habitat assessments and presence surveys, concluding that no DSL habitat exists in the areas where we plan to excavate sand and documenting no evidence of DSL activity.

## 5. What is the TCP?

The TCP is a voluntary conservation plan developed in conjunction with the Texas Comptroller's Office and many stakeholders, including Federal, State, and private partners representing interests in the natural resource, oil and gas, ranching, and agricultural industries. The TCP as an organization was formed to advise and assist stakeholders whose activity could potentially be injurious to the DSL or its habitat.

The TCP focuses on the avoidance of activities within lizard habitat that would degrade habitat, potential reclamation of lizard habitat to reduce fragmentation, and removal of mesquite that is encroaching into shinnery oak dunes. If avoidance of lizard habitat cannot be accomplished, the participants may adopt conservation measures that minimize habitat impacts, and as a last resort, mitigate for the loss of lizard habitat. On February 17, 2012, the TCP was signed, and as of May 2012, 71 percent (138,640 acres) of the habitat in Texas had been enrolled in this plan. As of August 2017, the Texas Comptroller's Office has estimated that fewer than 300 acres within the Hibbitts map polygons have been disturbed by participants in the plan and fewer than 2,400 acres have been disturbed by entities not participating in the plan.

## 6. Why has Hi-Crush not applied for Certificate of Inclusion (COI) like other sand companies?

Through its extensive due diligence, Hi-Crush has established that its activities pose no threat to the DSL or its habitat. As such, Hi-Crush currently does not foresee a need for membership in the TCP.

Some companies that are members of the TCP plan to mitigate their impact on the DSL by contributing substantial sums to mitigation efforts and/or setting aside large tracts of habitat to potentially offset a taking of the species. For those with habitat or activity that could impact the DSL, joining the plan could be viewed as an understandable allocation of their resources.

While Hi-Crush has considered the benefits and costs associated with a COI through the TCP, we believe our current involvement with the TCP Science Committee formed under the auspices of the Comptroller's Office in their efforts at furthering the science around DSL and its habitat is a far better use of our financial resources. Hi-Crush remains open to considering involvement in other potential future conservation efforts for the DSL. Such efforts could include, but are not limited to, an industry-specific Candidate Conservation Agreement with Assurances or Habitat Conservation Plan or contributing to research establishing best practices for creating DSL habitat during reclamation.

## 7. Will Hi-Crush change its mining practices to minimize impact to the DSL?

It is not necessary for Hi-Crush to alter its mining practices due to minimal impact overall, and no impact on the DSL or its habitat.

Hi-Crush mining operations involve the excavation of limited panels of mineable reserves (fewer than 30 acres per year) followed by infill and reclamation/restoration of the site. Through October 2017, Hi-Crush mining has occurred on fewer than five acres of the Kermit site's total of 1,226 acres, none of which is actual DSL habitat according to experts on the biology of the DSL.

## 8. What impact would there be to Hi-Crush operations at the Kermit facility if USFW lists the DSL as an endangered species?

A potential future DSL listing should have no effect on operations at the Kermit facility. The diligence efforts by Hi-Crush provide documentation of the actual conditions at the Kermit facility, demonstrating both the lack of suitable DSL habitat and presence of lizards.

If the DSL becomes listed, the Endangered Species Act would prohibit unauthorized "take" of the species, which could include instances of significant habitat modification or degradation where it actually kills or injures DSL by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. The Hibbitts map is not a delineation of actual DSL habitat at the site specific scale and it would not be used by USFW to establish if significant habitat modification rising to the level of take had occurred. Instead, such evaluations would be made on a case-by-case basis in light of the actual conditions at a site.

Whether the DSL is listed or not, Hi-Crush continues to take prudent and responsible steps toward protecting the DSL. This includes partnering with the TCP and members of the scientific community charged with protecting the DSL. While we will continue to pursue this strategy of engagement, the absence of any DSL activity on Hi-Crush's land should not impact any operations in the event of DSL listing.

#### 9. Can USFW approve an emergency listing of the DSL?

Yes, but an emergency listing is unwarranted based on the facts of this particular case.

USFW can, at its discretion, decide to publish a temporary "emergency regulation" to list a species that becomes effective immediately upon publication in the Federal Register for a period of no more than 240 days. During this 240-day period, USFW would conduct a status assessment and consider public comment and peer review before it publishes a final rule to either withdraw the emergency listing or formally complete the listing process.

Emergency listings are rare and generally granted only in the event of imminent danger of extinction of the species. With the large amount of habitat existing in New Mexico on federal lands and Texas under the monitoring of the TCP, imminent danger would appear difficult to demonstrate.

#### 10. What is the process followed by USFW for listing an endangered species?

The process for listing any species as endangered is lengthy, involves many steps and does not result in shut down or delay of commercial activity, either while the listing process is ongoing or if a species is eventually listed as endangered.

A new listing can be prompted by a formal petition received by USFW or by USFW itself. When someone submits a petition to list a species, USFW has 90 days to determine if the petition presents substantial information that listing might be warranted. If there is substantial information in the petition, USFW has 12 months to prepare a status assessment for the species and make one of three determinations: listing is not warranted, listing is warranted, or listing is warranted but further action is precluded by higher priorities. If USFW determines that listing is warranted, the agency publishes a proposed rule to list the species and solicits public comment and peer review of the proposed rule over a period of 12 months. USFW can also act on its own to publish a proposed listing rule, thereby skipping the initial 12 months of petition review. USFW then publishes a final rule announcing its decision either to list or not list the species, with its action subject to judicial review. If the final rule stands, then the listing becomes effective in 30 days from the announcement. Therefore, the normal listing process is lengthy, with timelines of a year or more before the listing becomes effective.

In practice, however, the listing process is often delayed and USFW takes several years to reach a final determination to list. For example, the DSL was a species subject to a "warranted but precluded" finding for decades before USFW published a proposed listing rule in 2010. USFW did not reach a final determination to not list the DSL until 2012. The existence of voluntary conservation plans for the DSL in New Mexico and Texas contributed to the USFW decision to not list the species in 2012.

The notice by the Center for Biological Diversity and Defenders of Wildlife is a new step in the listing process, whereby a petitioner is required to notify the relevant states at least 30 days in advance of filing a petition to list a species. It is unlikely that USFW would make a final determination to list the DSL, if such action is even warranted, until 2020.