

# TECHNICAL NOTES

## BIOLOGY TECHNICAL NOTE NO. 53

### CRITERIA FOR BRUSH MANAGEMENT (314) in Lesser Prairie-Chicken and Dunes Sagebrush Lizard Habitat

#### Introduction

NRCS policy requires that when providing technical and financial assistance NRCS will recommend only conservation treatments that will avoid or minimize adverse effects, and to the extent practicable, provide long-term benefit to federal candidate species (General Manual 190 Part 410.22(E)(7)).

This technical note provides the criteria to ensure that the NRCS practice of Brush Management (314) will avoid or minimize any adverse effects to two Candidate Species for Federal listing: the lesser prairie chicken *Tympanuchus pallidicinctus* (LEPC), and dunes sagebrush lizard *Sceloporus arenicolus* (DSL).

#### Species Involved

The lesser prairie chicken is a species of prairie grouse native to the southern high plains of the U.S.; including the sandhill rangelands of eastern New Mexico. The dunes sagebrush lizard is native only to a small area of southeastern New Mexico and west Texas, with a habitat range that overlaps the lesser prairie chicken range, but only occurs in the sand dune complexes associated with shinnery oak (*Quercus havardii* Rydb.). Both species' habitat includes a component of brush: shinnery oak and/or sand sagebrush (*Artemisia filifolia* Torr.). See [Appendix 1 and 2](#) for more details on each species.

**Geographic Area Covered by Technical Note No. 53** encompasses private and state lands within the range that supports the dunes sagebrush lizard and lesser prairie chicken habitat. This includes portions of seven counties in New Mexico: Chaves, Curry, De Baca, Eddy, Lea, Roosevelt, and Quay counties. See the attached [Map](#).

#### Background

The U.S. Fish and Wildlife Service (Service) was petitioned to list the LEPC and the DSL as federally-threatened species under the authority of the Endangered Species Act (ESA). The Service found that the species warranted protection but was precluded from listing under the ESA by higher-priority species; currently the LPC is defined as a Candidate Species for Federal listing.

Concern over the status of the two species, NRCS has worked with other state and federal agencies, and non-government organizations to adopt a common goal to: *create a conservation strategy for the management of shinnery oak and sand sage grassland communities in southeastern and east-central New Mexico, adopting a range of specific actions to enhance and secure populations of LEPC/DSL, while protecting other economic values and traditional uses of the land.*

BRUSH MANAGEMENT CRITERIA  
**Where Treatment May Occur**

The criteria for brush management within the habitat range of the dunes sagebrush lizard and within the “Action Area” for the lesser prairie-chicken habitat, as shown on the attached [Map](#), are as follows:

Within the lesser prairie-chicken “Action Area”:

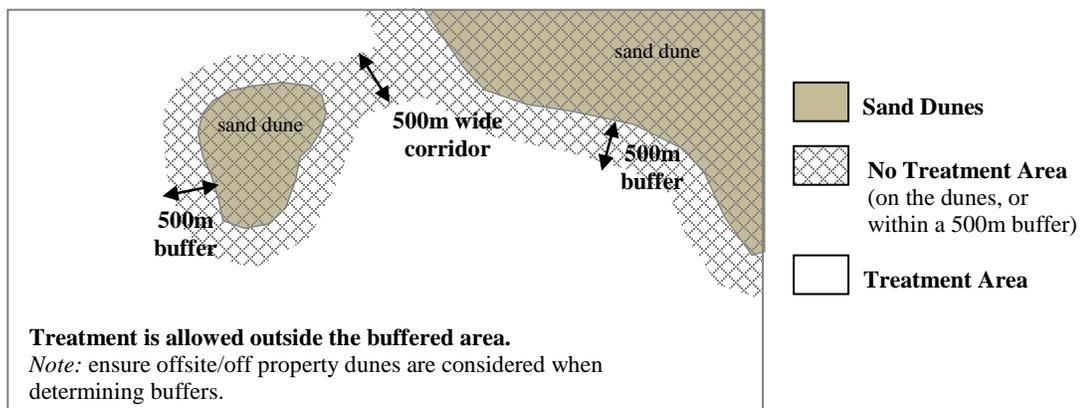
- I. **No treatment within 45 meters (150 feet) of Sand Hills ecological sites (i.e. dunes), within the LEPC habitat range.** See the NRCS Field Office Technical Guide, Section II for detailed description of sand hills ecological sites. <http://www.nm.nrcs.usda.gov/technical/fotg/section-2/esd.html>

In dunes sagebrush lizard habitat range:

- II. **No treatment within 500 meters (1,640 feet) of any sand dunes within DSL habitat.** These areas will be determined at a landscape scale rather than a dune-by-dune scale and will also delineate corridors for movement between dune complexes (see item II below).
- III. **Provide dispersal corridors between dunes within the dunes sagebrush lizard habitat.** Do not treat the flats between occupied dunes<sup>1]</sup> and dunes suitable to be occupied<sup>1]</sup> that are separated by less than 2,000 meters (1.25 miles); to create a corridor at least 500 meters (1,640 feet) wide. See the example provided below.

<sup>1]</sup> NRCS will assume all dunes within the DSL habitat range are “occupied/suitable to be occupied” by the DSL, *unless* written concurrence is provided by the New Mexico Dept. of Game & Fish or the U.S Fish & Wildlife Service. Maintain documentation in the customer’s case file.

An example of an allowed treatment area within the DSL range, where sand dunes are within 2,000 meters of each other:



*Please Note:* The habitat range of both species often overlaps, in which case, all criteria will apply. When requested, the NRCS State Biologist will assist with making these determinations.

BRUSH MANAGEMENT CRITERIA  
**Required Conservation Measures**

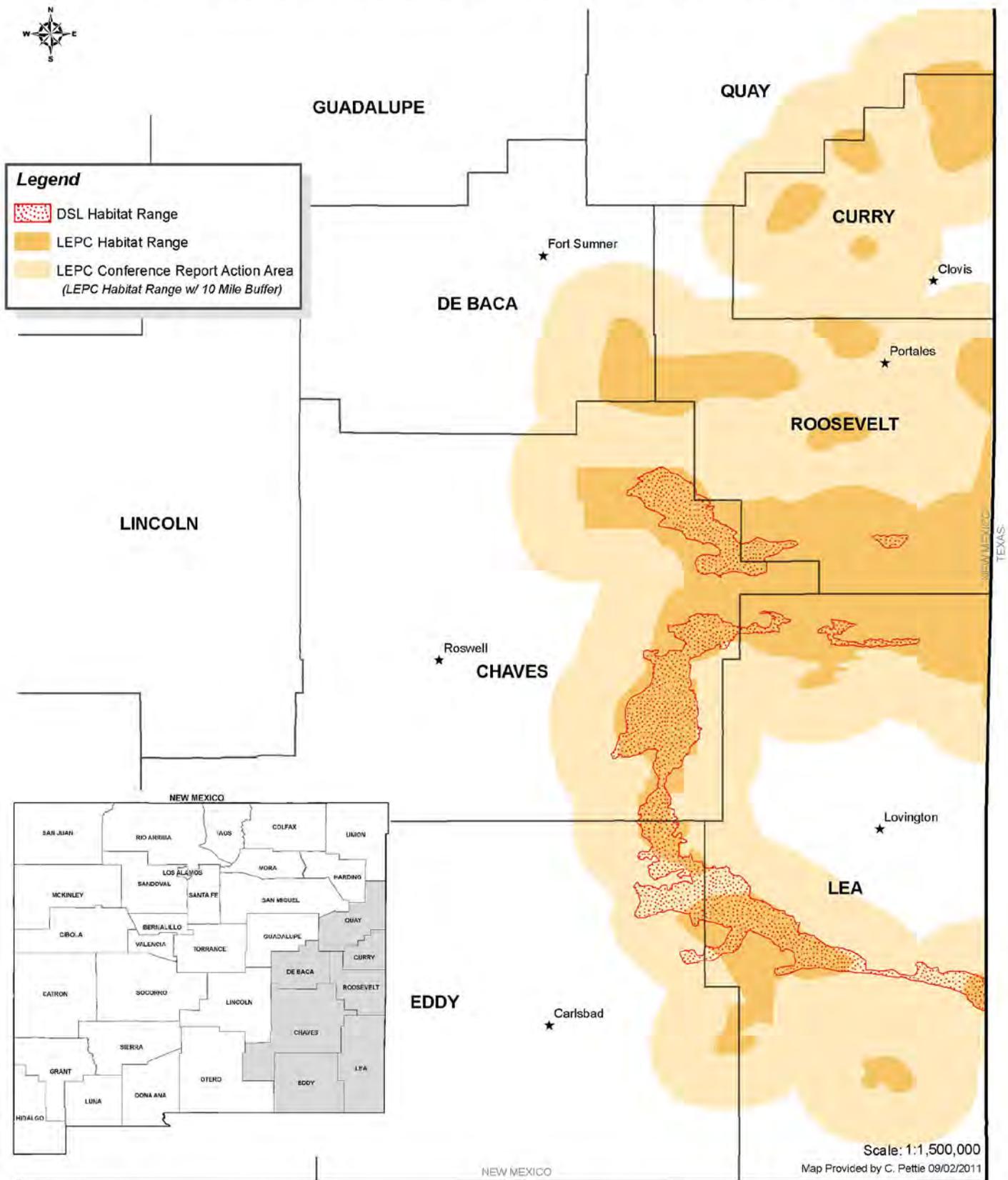
If it is determined that brush management is allowed within an area of the lesser prairie chicken or dunes sagebrush lizard areas (Tech Note 53, page 2), then the following criteria apply.

- All criteria provided in the NM Brush Management (314) standards and specifications apply: <http://www.nm.nrcs.usda.gov/technical/fotg/section-4/std-specs.html>

*In addition, the following criteria apply:*

- Timing Restrictions: Operations will avoid the critical periods of March 1<sup>st</sup> through July 15<sup>th</sup>; to avoid disturbances that have the potential to cause harm to wildlife species.
- Treatment Design will be in irregular shapes (mosaics), designed to blend into the natural landscape. Treatment will not be in large blocks or strips.
- Amount of Area Treated: Within the area allowed to be treated; no more than 50 percent of an individual management unit (pasture) will be treated during any two year period. This will reduce the impact on forb production; reduce the loss of winter forage resources for the LEPC, and minimize the risk and uncertainty to the species due to climatic factors.
- Limited Herbicide Application Rate: will be used for partial brush control, as identified in the 314-Brush Management standard and specification (see table 2). Full control is not authorized within LEPC or DSL habitat ranges.
  - Broadcast herbicide will be applied at the reduced rate of 0.50 lbs/ac of active ingredient of tebuthiuron. Higher rates (up to 0.75 lbs/ac) may be required on soils with greater amounts of clay. Soils with greater than 15% clay content starts to affect the efficacy of the treatment and it becomes economically infeasible when the clay content reaches 30% (K. McDaniel, personal communication, 2008). See [Table 1](#) for tebuthiuron application rate.
- Mechanical/Manual Means: Brush piles will be lopped-scattered, piled-and-burned, chipped or hauled off (i.e. not left in piles), and large brush (> five feet tall) will be felled unless other consideration necessitate leaving them.
- Access Control (472): will be used to rest or defer grazing for a minimum of one full growing season to ensure that the grass and forb community have an appropriate recovery period. A longer deferment period may be necessary to achieve the desired plant community conditions (i.e. drought or severely degraded range sites).
- Prescribed Grazing (528): A prescribed grazing plan will be applied, after the deferment period, that ensures: stocking rates are in balance with the forage supply; season of use is rotated through pastures to ensure plants have adequate reproduction opportunity; and that the plan is implemented to increase residual cover of perennial grasses and forbs. A mosaic of vegetation succession stages will be a goal of the grazing system.
  - ♦ A drafted plan, developed with and agreed to by the cooperator, will be completed prior to implementing brush management; to ensure treatment success and longevity.
  - ♦ The NRCS State Biologist will approve all grazing plans prior to implementation.

## Estimated Occupied Range of the Lesser Prairie-Chicken (LEPC) and Dunes Sagebrush Lizard (DSL)



**Data Sources:**

DSL Habitat Range. Laurencio, Laura R. and Lee A. Fitzgerald. 2010. Atlas of distribution and habitat of the dunes sagebrush lizard (*Sceloporus arenicolus*) in New Mexico. Texas Cooperative Wildlife Collection, Department of Wildlife and Fisheries Sciences, Texas A&M University, College Station, TX 77843-2258. ISBN# 978-0-615-40637-5.

LEPC Habitat Range. Lesser Prairie-Chicken Interstate Working Group. "To delineate the current range of Lesser Prairie-Chicken". The range boundaries include areas where LEPC area known to occur or have occurred in recent year, however, it is almost certain that not all occupied areas are known, so LEPCs likely occur in areas outside this range.

**Table 1 - Tebuthiuron Application Rates based on soil clay content.**

MLRA	Ecological Site	Dominant Soil	Average % Clay	Application Rate (in pounds of active ingredient/acre)
<b>42C Southern Desert</b>	Shallow Sandy	JEC Jerag	21 - 25	0.7#
		PS,SA,SE, SG, SM, SN, SNB, SR, US Simona	16 - 20	0.6#
	Sandy	45 Onite, Aa Anthony, JA Drake, MN, SN Wink, MO Mobeetie, VG Vinton	0 - 15	0.5#
		APA Alama, BBB Sotim, BE Berino, DsA Dona Ana, GHA, Ha, Hk Harkey, PBB, Pb Pajarito PoA Poquita, Ra Reakor, SMA, SNB, Sotim	16 - 20	0.6#
		BF, BPB, Bf Berino, So, Ts, Sotim	21 - 25	0.7#
	Deep Sand	34, 45 Bluepoint, 73 Aguena AE Anthony, BPB, PBB Bluepoint, Bf Pintura, KD, KE, KM Kermit, LS Likes Pb Pintura	0 - 15	0.5#
	Loamy Sand	ASB, PA, Pa, PaA, Pajarito, BP, KM Berino, LP Pajarito, PT, PU, PY Pyote, WK Wink	0 - 15	0.5#
BB,BE, BH, BeA, TO Berino, KD Palomas MF Maljamar PD Pajarito		16 - 20	0.6#	
<b>70B Pecos Valleys &amp; Plains</b>	Deep Sand	FRB Roswell, Rn Jalmar	0 - 15	0.5#
	Sandy Loam	107, 112, 12, 25, 37, IGE, IM, IN, Im, Is Ima, 110 Minneosa, 114 Montoya Variant, 64, 118 Berwolf, 27, LY, LX, Los Tanos, 67 Pojo, CF Canez, LC, LN, LaC, Ll, Lm: La Lande,	0 - 15	0.5#
		108, 102 Redona, 103, 106, La Lande, 109 Ima, 3 Arch, CA, Ce Canez, RHA, RM, Rk, SLA, TrC Redona, SE Sharvana	16 - 20	0.6#
		14 22, 50, 59, 60, , 31CMB Chispa, 16 Redona, 20, NW, Walkon, ARA Alama, BCB, BRB, RAA, RBA Ratliff, BE Berthoud, CL, Ch, Cn Canez variant, Qd, Qe: Quay, Rn Redona	21 - 25	0.7#
	Sandy Plains	108, 109 Armesa, 117, 16, 17, 50, 52, 61, 60 Berwolf, 49, 66 Pojo, BQB, CA, IaA, Im, IBB Ima, CB, Ca, Cc, Cd Canez, CMB, Malstrom, PYB, Pyote, RE, RF, Rd, Rg, Rh Redona, RPD Jalmar, SOA, SPA, Stromal	0 - 15	0.5#
		FMA, Fa, FaA, FM,Faskin, JRC, Jalmar	16 - 20	0.6#
		FRB, Fr, Faskin	26 - 30	0.75#
<b>77 High Plains</b>	Loamy Sand	Ag, Am, Arch, Be Brownfield	16 - 20	0.6#
		PrA Portales	21 - 25	0.7#
	Sandy Plains	GM, Go, Gomez, JaA, NJC, Jalmar SA, Sf, Sharvana	0 - 15	0.5#
		AB, AS, Aa, Ad, Ae, Af Amarillo, An, Ao, Av Arvana, BN, Bp, Br, Patricia, Cc Clovis, FSA, NFC Faskin	16 - 20	0.6#
		AU, Ak Amarillo, MW Mobeetie GF, GoB, Gs Gomez, SnC Spantara	0 - 15	0.5#
	Sandy	AnB, Amarillo, DUA Douro, KX, Ks, SD, Sh Sharvana	16 - 20	0.6#
		AL, Ab, Ac, Af, Ag Amarillo AW, Ap, Ar, As, At, Av Arvana, Cd, Ce Clovis, La, Lea, Mc Mansker, PG, Pa, Pe, Pf, Portales, Zf Zita	21-25	0.7#
		Ah, Amarillo, Bf Brownfield	26 - 30	0.75#



# U. S. Fish and Wildlife Service

## Lesser Prairie-Chicken (*Tympanuchus pallidicinctus*)



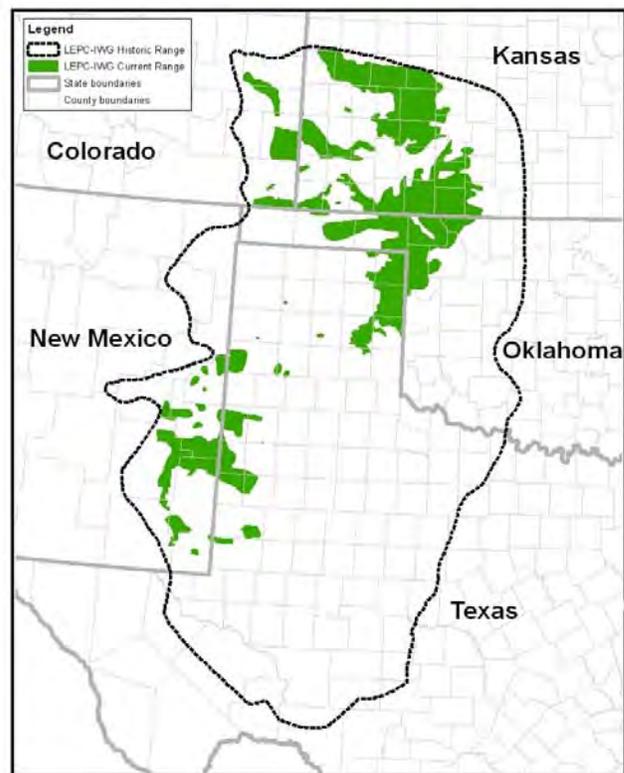
Male lesser prairie-chicken. Photo: Nancy Riley, USFWS

The lesser prairie-chicken (LEPC) is one of eleven species of grouse found in North America. Historically, it ranged across eastern New Mexico, southeastern Colorado, southwestern Kansas, western Oklahoma, and west Texas. The bird occupies sandhill habitats characterized by mixed-grass prairies, shinnery oak- sand bluestem and sand sage-bluestem plant communities. Since the nineteenth century, the LEPC and its habitats have declined about 90 percent, mainly from conversion of native prairie to agricultural uses, incompatible grazing management practices, habitat fragmentation from oil and gas development, and prolonged droughts. Because of the dramatic decline in LEPC numbers over the last fifty years, the U.S. Fish and Wildlife Service (Service) was petitioned to list the bird as a federally-threatened species under the authority of the Endangered Species Act (ESA). The Service found that the species warranted protection but was precluded from listing under the ESA by higher-priority species; currently the LPC is defined as a Candidate Species for Federal listing.

A Candidate Conservation Agreement/Candidate Conservation Agreement with Assurances for the LEPC and the sand dune lizard (SDL) in New Mexico was signed in December 2008. Non-Federal landowners and industry will be able to enroll properties and leases under these agreements and apply conservation measures to the property that will benefit the LEPC.

The primary LEPC habitat in eastern New Mexico is the sand shinnery oak-sand bluestem grassland, ranging from the Texas state line on the east to the Pecos River on the west. The area includes dry cropland and hayland, irrigated cropland and hayland, and native shrub-steppe rangeland.

LEPC habitat quality and quantity has been reduced by a variety of factors in New Mexico. The quality and quantity of sand-bluestem cover on rangelands in which to hide nests have been reduced to undesirable levels. Low-quality grass cover results in dangerously low success rates for nests. Native broad-leafed plants (e.g., shinnery oak, wild buckwheat) provide important insect and plant foods and thermal and overhead cover. Sparse stands of shinnery oak may reduce LEPC brood or winter survival. Dense stands of other shrubs, such as mesquite, reduce the quality of nesting and brood-rearing cover and may reduce nest success and brood survival.



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## Appendix 2



# U. S. Fish and Wildlife Service

## Dunes Sagebrush Lizard (Sand Dune Lizard)

*Sceloporus arenicolus*



Photo by Michael T. Hill

The Dunes Sagebrush Lizard, often called Sand Dune Lizard, is a rare species found only in the active and semi-stable shinnery oak dunes of southeastern New Mexico and adjacent Texas. In New Mexico the Dunes Sagebrush Lizard is found only in 655 square miles in Mescalero Sands. The species is a small light brown spiny lizard with only stripes on the body. Dunes sagebrush lizards are active between April and October in the large dunes and blowouts.

The Dunes Sagebrush Lizard is listed as Endangered by the New Mexico Department of Game and Fish, and has been a candidate species for listing under the Endangered Species Act by the US Fish and Wildlife Service since 2001.

Threats to the lizard include habitat removal, fragmentation and degradation as a result of oil and gas development and shinnery oak removal.

The Candidate Conservation Agreement and Candidate Conservation Agreement with Assurances may provide conservation for the lizard and its habitat in New Mexico. Landowners and industry will be able to enroll properties and leases under the program and apply conservation measures to the property that will benefit the species.