

**U.S. FISH AND WILDLIFE SERVICE
SPECIES ASSESSMENT AND LISTING PRIORITY ASSIGNMENT FORM**

SCIENTIFIC NAME:

Cicindela theatina

COMMON NAME:

Great Sand Dunes tiger beetle

LEAD REGION:

Region 6 (Mountain-Prairie Region)

DATE INFORMATION CURRENT AS OF:

April 2017

STATUS/ACTION

Species assessment - determined information on the threats does not support a proposal to list the species

Listed species petitioned for uplisting for which we have made a warranted-but-precluded finding for uplisting (this is part of the annual resubmitted petition finding)

Candidate that received funding for a proposed listing determination; assessment not updated

New candidate

Continuing candidate

Listing priority number change

Former LPN: ____

New LPN: ____

Candidate removal: Former LPN: ____

A – Taxon is more abundant or widespread than previously believed or not subject to the degree of threats sufficient to warrant issuance of a proposed listing or

continuance of candidate status.

U – Taxon not subject to the degree of threats sufficient to warrant issuance of a proposed listing or continuance of candidate status due, in part or totally, to conservation efforts that remove or reduce the threats to the species.

F – Range is no longer a U.S. territory.

I – Insufficient information exists on biological vulnerability and threats to support listing.

M – Taxon mistakenly included in past notice of review.

N – Taxon does not meet the Act’s definition of “species.”

X – Taxon believed to be extinct.

Date when the species first became a Candidate (as currently defined): n/a

Petition Information:

Non-petitioned

Petitioned; Date petition received: June 25, 2007

90-day substantial finding FR publication date: December 16, 2009 (74 FR 66866)

12-month warranted but precluded finding FR publication date: n/a

FOR PETITIONED CANDIDATE SPECIES:

a. Is listing warranted (if yes, see summary of threats below)? No.

b. To date, has publication of a proposal to list been precluded by other higher priority listing actions? n/a

c. Why is listing precluded? n/a

ANIMAL/PLANT GROUP AND FAMILY:

Insects, Cicindelidae (tiger beetles)

HISTORICAL STATES/TERRITORIES/COUNTRIES OF OCCURRENCE:

Colorado, U.S.A.

CURRENT STATES/COUNTIES/TERRITORIES/COUNTRIES OF OCCURRENCE:

Alamosa and Saguache Counties, Colorado, U.S.A.

LAND OWNERSHIP:

The range of the species includes approximately 12,770 acres (5,168 hectares) of habitat within

land managed by the National Park Service's (NPS) Great Sand Dunes National Park and Preserve (83 percent of total habitat) and the U.S. Fish and Wildlife Service's (Service) Baca National Wildlife Refuge (NWR) (0.9 percent of total habitat), and land owned by The Nature Conservancy's (TNC) Medano - Zapata Ranch (16 percent of total habitat). Outside of TNC land, the species is not known to occur on privately owned land.

LEAD REGION CONTACT:

Sarah Backsen, 303-236-4388, sarah_backsen@fws.gov

LEAD FIELD OFFICE CONTACT

Leslie Ellwood, Colorado Ecological Services Field Office, 303-236-4747, leslie_ellwood@fws.gov

BIOLOGICAL INFORMATION

Species Description

The Great Sand Dunes (GRSD) tiger beetle is a medium-sized tiger beetle, measuring 0.48 to 0.55 inches (1.2 to 1.4 centimeters) in length. The large wing cases (known as elytra) are predominantly white except for a thin brown marginal band that runs down the length of the center. Much of the body and legs are covered in white hairs. The dorsal coloration is teal green or green brown with copper reflections (Pineda 2002, p. 3).

Taxonomy

The GRSD tiger beetle is a member of the family Cicindelidae and the genus *Cicindela* (Pearson et al. 2006). The first documented observation of the species was made by Father Bernardo Rotger y Villalonga in 1942 (Rotger 1944). The GRSD tiger beetle occurs only in the Great Sand Dunes geological feature in southern Colorado, and is separated from its closest related species, the Coral Pink Sand Dunes tiger beetle (*C. albissima*) (CPSD tiger beetle) in southern Utah, by over 370 miles (595 kilometers) (USFWS 2013). The GRSD tiger beetle shares the typical characteristics of other members of the maritime group (a group of closely related species of sand dunes tiger beetles) (Freitag (1965, 1972). We accept the GRSD tiger beetle as a valid species and therefore a listable entity under the Endangered Species Act (Act).

Habitat/Life History

The GRSD tiger beetle occurs only in areas of suitable habitat within the Great Sand Dunes complex, which is present in the San Luis Valley, Colorado. Suitable habitat is considered to

include active dunes, which may include sandy blowouts and shifting sands, with a vegetative cover between 0.20 to 15.04 percent cover (Pineda 2002, p.51).

The San Luis Valley is an arid environment with an average annual precipitation of 7.1 inches recorded in Alamosa, Colorado, over a 56-year time period (WRCC 2005 *in* NPS 2007). Within the valley, the Great Sand Dunes area receives slightly more precipitation, averaging 10.5 inches annually (NPS 2007, p. 129).

The existence of the Great Sand Dunes is the result of a combination of dynamic geographic, geologic, and climatic factors that influence and sustain the dune formation. Three types of dune provinces, or areas, are present within the Great Sand Dunes complex, including the main sand dune mass, sand sheet dunes, and playa lakes dunes. These dunes provinces, and the processes that formed the dunes, are described in greater detail in the Service's Species Status Assessment (SSA) Report (Service 2017, p.8).

The life history of the GRSD tiger beetle is closely tied to the sand dunes for all stages of species' life cycle, including feeding, sheltering, and reproducing. The adult tiger beetles burrow into the dunes to escape temperature extremes (hot and cold) and to deposit eggs, and the larvae burrow into the dunes during each instar stage (i.e., phase between two periods of molting in the development of insects) and for pupation (a transformation phase from larvae to adults). The sparse vegetation on the dune surface provides habitat for prey species and mid-day shade for adult tiger beetles.

The entire lifespan of the GRSD tiger beetle, from egg to reproductive adult to the end of life, is estimated to be 2.5 to 3 years (Pineda 2002, p. 57), and involves a complex combination of time spent on the dune surface and within burrows in the dunes. GRSD tiger beetles are active only during the late spring and summer months (generally May through August/September) and hibernate during the fall and winter months. Adult tiger beetles are active predators, attacking and eating prey with their large and powerful mandibles (mouthparts). Tiger beetles fly or run rapidly over the sand surface to capture or scavenge for prey arthropods. The life cycle of the GRSD tiger beetle is described further in the SSA Report (Service 2017, p.13).

Soil moisture is likely the most important natural environmental factor affecting population dynamics of the species (Knisley and Juliano 1988, entire). Soil moisture within the dunes is a critical factor for the GRSD tiger beetle, affecting all stages of the life cycle, including egg hatching, larval survival, survival to maturity, and prey abundance.

Further information on the life history and habitat requirements of the GRSD tiger beetle can be found in the SSA Report (Service 2017, pp. 8-18).

Historical Range/Distribution

The best available information indicates that the size of the current range of the GRSD tiger beetle has not been significantly altered from its historical range (NatureServe 2015), although some small areas of habitat (i.e., less than 50 acres (20 hectares), or about 0.4% of the total estimated suitable habitat) appear to have been lost to agricultural development in the 1950s, as evidenced from aerial photographs (NatureServe 2015).

Current Range/Distribution

The GRSD tiger beetle is an endemic insect of the Great Sand Dunes, located in the San Luis Valley in Alamosa and Saguache counties, Colorado (Pineda and Kondratieff 2003, and others). The Great Sand Dunes occur within an area of 91 square miles (58,240 acres, 23,569 hectares), within which areas of suitable habitat (shifting sands and sparse vegetation) are present in three types of dune provinces, as described above (Pineda and Kondratieff 2003, p. 341). The current estimated area of suitable habitat is approximately 12,770 acres (5,168 hectares), which consists of a combination of areas of verified occupied habitat and areas of likely suitable habitat, based on sand and vegetation conditions. The largest amount of habitat is present on the sand sheet dunes, representing 74 percent of the total habitat. The next largest amount of habitat is present on the main dunes, representing 25 percent of the total habitat. The playa lake dunes provide a very small amount of the total habitat, representing only 0.67 percent of the total habitat. The current range and distribution of the GRSD tiger beetle are described further in the SSA Report (Service 2017, p. 8-13, Figures 1-3).

Population Estimates/Status

A population estimate for the GRSD tiger beetle was provided by NatureServe, a website providing data on imperiled species and ecosystems. This estimate is given as a range of 1,000 to 10,000 individuals, with the comment that the population size could be greater than 10,000 individuals (NatureServe 2015). We are not aware of any other population estimates that exist for the species. In the absence of occupancy data and population monitoring data, we are not able to evaluate population trends or develop a more precise population estimate, and therefore, we use habitat conditions as a proxy when evaluating the status of the species.

PREVIOUS FEDERAL ACTIONS

The Service was petitioned to list the GRSD tiger beetle by Forest Guardians (now WildEarth Guardians), as part of a multi-species petition in 2007. The petition requested that we evaluate all full species in our Southwest Region (where the GRSD tiger beetle was erroneously thought

to occur) ranked as G1 or G2 by the organization NatureServe, and list each species under the Act as either endangered or threatened with critical habitat. For the GRSD tiger beetle, the petition alleged that potential reductions in ground water in the San Luis Valley (leading to reduced stability of the dune system) and surface disturbances of the dunes, such as from visitor trampling and off-road driving, were threats to the species. In 2009, we published a 90-day finding, in which we concluded that the petition presented substantial information that listing may be warranted (74 FR 66866, December 16, 2009).

SUMMARY OF SPECIES STATUS ASSESSMENT

We completed an SSA Report for the GRSD tiger beetle (Service 2017, entire), which is available online at <http://www.regulations.gov>, Docket No. **FWS-R6-ES-2017-00XX**. The SSA Report provides the results of the comprehensive biological status review by the Service for the GRSD tiger beetle, and provides a thorough account of the species' overall viability and, therefore, risk of extinction (Service 2017, entire). The SSA Report for the GRSD tiger beetle is intended to provide the best available biological information to inform the 12-month finding and the decision on whether or not the species is warranted for listing under the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*). This decision involves the application of standards within the Act, its implementing regulations, and Service policies. The SSA Report contains the analysis on which this finding is based, and the following discussion is a summary of the results and conclusions from the SSA Report.

To evaluate the biological status of the GRSD tiger beetle, we assessed a range of conditions, both currently and into the future, to allow us to consider the species' resiliency, redundancy, and representation as proxies for evaluating overall viability. The life history of the GRSD tiger beetle is closely tied to the sand dunes for all stages of its life cycle, including breeding, feeding, and sheltering (Service 2017, p. 13). Three areas of sand dunes, referred to as provinces in the literature, are present at the Great Sand Dunes. These include the main dunes, sand sheet dunes, and playa lake dunes; these dunes vary in the manner in which they formed and are maintained, although ultimately, they all provide habitat for the GRSD tiger beetle (Service 2017, p. 8). The GRSD tiger beetle needs multiple self-sustaining sub-populations (redundancy) widely distributed (representation) and connected across its range to maintain its viability into the future and to avoid extinction (Service 2017, p. 22). A number of factors influence whether the GRSD tiger beetle will maintain large and stable sub-populations, which increases the resiliency of a population to stochastic events. These factors include (1) a relatively stable dune system (where sands may shift but underlying dunes remain in place over the long term) maintained by a complex combination of hydrologic and wind conditions, (2) relatively undisturbed dunes, (3) the presence of suitable vegetation cover on the dunes (0.2 to 15 percent cover), and (4) connectivity between the sub-populations (Service 2017, p. 19).

We have assessed the GRSD tiger beetle's levels of resiliency, redundancy, and representation currently and into the future by evaluating sub-populations, and what is negatively and positively affecting those sub-populations, within the three dune provinces present at the Great Sand Dunes complex. Maintaining sub-populations provides redundancy, and the species is currently distributed across most of the known geographic extent of its range, including all three dune areas, which we infer provides representation (Service 2017, p. 27). The most significant potential stressor to the GRSD tiger beetle would be the potential future loss of dune habitats that individuals need to complete their life cycle. Surface disturbances within areas of suitable habitat can result in loss of habitat and injury/mortality of individuals. Historical and current surface disturbances in areas of suitable habitat are estimated to be low, representing less than 5 percent of the suitable habitat (Service 2017, p. 29-32). One area of uncertainty in our analysis is the absence of occupancy monitoring data since 2000, although field observation data from 2000 to 2016 indicate a continued occupancy of the dunes by the GRSD tiger beetle (Service 2017, p. 28). As we consider the future viability of the species, we believe that maintaining a high number of self-sustaining sub-populations distributed across the known range of the species would be associated with a high level of overall viability of the species. Therefore, we believe that if suitable dune conditions continue to be maintained, coupled with low levels of surface disturbance on the dunes, we anticipate the GRSD tiger beetle would continue to persist into the future.

GRSD Tiger Beetle Future Scenarios

The viability of the GRSD tiger beetle depends on maintaining multiple self-sustaining sub-populations over time. Given our uncertainty regarding the future effects of climate change, as well as the potential for a minor level of ground disturbances within the dunes in the future, we have forecasted future conditions for the GRSD tiger beetle in terms of resiliency, redundancy, and representation under five plausible future scenarios for the years 2050 and 2100. Climate change models forecast warmer temperatures, but there is uncertainty regarding whether precipitation will increase or decrease, although the overall trend is expected to be increased aridity due to warming temperatures. Our scenarios account for the uncertainty regarding future precipitation by including both possible precipitation conditions. The scenarios that we evaluated are as follows (scenarios are discussed in greater detail in Service 2017, Chapter 4): Scenario 1 - continuation of the current land management conditions under a low emissions future climate change model; Scenario 2 - warmer and reduced precipitation; Scenario 3 - warmer and increased precipitation; Scenario 4 - reduced surface disturbances; and Scenario 5 - a more extreme scenario that includes warmer and much drier conditions combined with increased surface disturbances of tiger beetle habitat.

In summary, our evaluation of current conditions indicates that the GRSD tiger beetle population is currently experiencing relatively stable dunes and minimal surface disturbances due to land management under the National Park system, TNC, and the Service's National Wildlife Refuge Program. Relative stability of the dune system is maintained by the existing hydrologic and wind conditions within the San Luis Valley. Hydrologic conditions in this area are further protected by the Great Sand Dunes Act of 2000 that maintains the surface and ground water rights at the Park. Our evaluation of future conditions indicates that under all five different plausible scenarios that we evaluated, we expect the sub-populations of GRSD tiger beetle to continue to occupy at least the two largest, if not all three, of the dune areas. We anticipate that the future persistence of the GRSD tiger beetle will be provided by the continued maintenance of relatively undisturbed and relatively stable dune system at the Great Sand Dunes.

This analysis is described in greater detail in the SSA Report (Service 2017, entire).

DETERMINATION OF SPECIES STATUS

Section 4 of the Act (16 U.S.C. 1533), and its implementing regulations at 50 CFR part 424, set forth the procedures for determining whether a species is an endangered species or threatened species and should be included on the Federal Lists of Endangered and Threatened Wildlife and Plants (listed). The Act defines an endangered species as any species that is "in danger of extinction throughout all or a significant portion of its range" and a threatened species as any species "that is likely to become endangered throughout all or a significant portion of its range within the foreseeable future." The phrase "significant portion of its range" (SPR) is not defined by the Act, and, since the Service's policy interpreting the phrase was vacated by the court in *Center for Biological Diversity v. Jewel*, No. 14-cv-02506-RM (D. Ariz. Mar. 29, 2017), we currently do not have a binding interpretation that addresses: (1) The outcome of a determination that a species is either in danger of extinction or likely to become so in the foreseeable future throughout a significant portion of its range; or (2) what qualifies a portion of a range as "significant." We have examined the plain language of the Act and court decisions addressing the Service's application of the SPR phrase in various listing decisions, and for purposes of this finding we are applying the following interpretation for the phrase "significant portion of its range" and its context in determining whether or not a species is an endangered species or a threatened species.

Two district court decisions have evaluated whether the outcomes of the Service's determinations that a species is in danger of extinction or likely to become so in the foreseeable future in a significant portion of its range were reasonable. *Defenders of Wildlife v. Salazar*, 729 F. Supp. 2d 1207 (D. Mont. 2010) (appeal dismissed as moot because of

public law vacating the listing, 2012 U.S. App. LEXIS 26769 (9th Cir. Nov. 7, 2012)); *WildEarth Guardians v. Salazar*, No. 09-00574-PHX-FJM, 2010 U.S. Dist. LEXIS 105253 (D. Ariz. Sept. 30, 2010). Both courts found that, once the Service determines that a “species”—which can include a species, subspecies, or DPS under ESA Section 3(16)—meets the definition of an “endangered species” or a “threatened species,” the species must be listed in its entirety and the Act’s protections applied consistently to all members of that species (subject to modification of protections through rules under sections 4(d) and 10(j) of the Act). See *Defenders*, 729 F. Supp. 2d at 1222 (delisting the Northern Rocky Mountain DPS of gray wolf except in the Wyoming portion of its range (74 FR 15123 (Apr. 2, 2009)) was unreasonable because the ESA unambiguously prohibits listing or protecting part of a DPS); *WildEarth Guardians*, 2010 U.S. Dist. LEXIS 105253, at 15-16 (the Service’s finding that listing the Gunnison’s prairie dog in the “montane portion” of its range was warranted (73 FR 6660 (Feb. 5, 2008)) was unreasonable because the Service “cannot determine that anything other than a species, as defined by the ESA, is an endangered or threatened species”). The issue has not been addressed by a Federal Court of Appeals.

For the purposes of this finding, we interpret the phrase “significant portion of its range” (SPR) in the Act’s definitions of “endangered species” and “threatened species” to provide an independent basis for listing a species in its entirety; thus two situations (or factual bases) would qualify a species for listing: A species may be in danger of extinction or likely to become so in the foreseeable future throughout all of its range; or a species may be in danger of extinction or likely to become so throughout a significant portion of its range. If a species is in danger of extinction throughout an SPR, it, the species, is an “endangered species.” The same analysis applies to “threatened species.” Therefore, the consequence of finding that a species is in danger of extinction or likely to become so throughout a significant portion of its range is that the entire species will be listed as an endangered species or threatened species, respectively, and the Act’s protections will be applied to all individuals of the species wherever found.

Although there are potentially many ways to determine whether a portion of a species’ range is “significant,” we conclude, for the purposes of this finding, that the significance of the portion of the range should be determined based on its biological contribution to the conservation of the species. For this reason, we describe the threshold for “significant” in terms of an increase in the risk of extinction for the species. We conclude that such a biologically based definition of “significant” best conforms to the purposes of the Act, is consistent with judicial interpretations, and best ensures species’ conservation.

For the purposes of this finding, we determine if a portion’s biological contribution is so important that the portion qualifies as “significant” by asking whether, *without that portion*,

the species in the remainder of its range warrants listing. Conversely, we would not consider the portion of the range at issue to be “significant” if the species would not warrant listing even if the population in that portion of the range in question became extirpated (extinct locally).

We interpret the term “range” to be the general geographical area within which the species is currently found, including those areas used throughout all or part of the species’ life cycle, even if not used on a regular basis. We consider the “current” range of the species to be the range occupied by the species at the time the Service makes a determination under section 4 of the Act. The phrase “is in danger” in the definition of “endangered species” denotes a present-tense condition of being at risk of a current or future undesired event. Hence, to say a species “is in danger” in an area where it no longer exists—*i.e.*, in its historical range where it has been extirpated—is inconsistent with common usage. Thus, “range” must mean “current range,” not “historical range.” A corollary of this logic is that lost historical range cannot constitute a significant portion of a species’ range where a species is in danger of extinction or likely to become so within the foreseeable (*i.e.*, it cannot be currently in danger of extinction in a portion of its range where it is already extirpated). While we conclude that a species cannot be in danger of extinction in its lost historical range, taking into account the effects of loss of historical range on a species is an important component of determining a species’ current and future status.

In implementing these independent bases for listing a species, as discussed above, we list any species in its entirety either because it is in danger of extinction now or likely to become so in the foreseeable future throughout all of its range or because it is in danger of extinction or likely to become so in the foreseeable future throughout a significant portion of its range. With regard to the text of the Act, we note that Congress placed the “all” language before the SPR phrase in the definitions of “endangered species” and “threatened species.” This suggests that Congress intended that an analysis based on consideration of the entire range should receive primary focus. Thus, the first step in our assessment of the status of a species is to determine its status throughout all of its range. Depending on the status throughout all of its range, we will subsequently examine whether it is necessary to determine its status throughout a significant portion of its range.

Under section 4(a)(1) of the Act, we determine whether a species is an endangered species or threatened species because of any of the following: (A) The present or threatened destruction, modification, or curtailment of its habitat or range; (B) Overutilization for commercial, recreational, scientific, or educational purposes; (C) Disease or predation; (D) The inadequacy of existing regulatory mechanisms; or (E) Other natural or manmade factors affecting its continued existence. These five factors apply whether we are analyzing the species’ status throughout all of its range or throughout a significant portion of its range.

Until recently, the Service has presented its evaluation of information under the five listing factors in an outline format, discussing all of the information relevant to any given factor and providing a factor-specific conclusion before moving to the next factor. However, the Act does not require findings under each of the factors, only that we examine information related to each of the factors and make an overall determination as to the species' status (for example, endangered species, threatened species, or not warranted). Ongoing efforts to improve the efficiency and efficacy of the Service's implementation of the Act have led us to present this information in a different format that we find leads to greater clarity in our understanding of the science, its uncertainties, the interactions between and cumulative effects of different factors, and our application of our statutory framework to that science. Therefore, while the presentation of information in this document differs from past practice, it differs in format only. We have evaluated the same body of information that, in the past, we have discussed under an outline of the five listing factors. In this analysis, we are applying the same statutory framework in reaching our conclusions and ultimate determination of the status of the species under the Act.

Summary of Analysis

The biological information we reviewed and analyzed as the basis for our findings is documented in the SSA Report (Service 2017, entire), a summary of which is provided above. The projections for the future condition of the species are based on our expectations of the potential stressors affecting the species. The potential stressors we evaluated in detail in the SSA Report (Service 2017, entire) that fall under Factors A and E of Act section 4(a)(1) are surface disturbances (Factor A), stability of the dunes (Factor A), moisture content of the dunes (Factor A), temperature and precipitation rates (Factor A), wildfire (Factor A), and climate change (Factors A and E). There is no evidence to suggest overutilization of the GRSD tiger beetle for commercial, recreational, scientific, or educational purposes is occurring (Factor B), or that disease or predation are having population level impacts to the species (Factor C) (Service 2017, p.17).

Considerations under Factor D: Since we did not find any of the stressors evaluated above to be threats that are impacting the viability of the GRSD tiger beetle, an evaluation of the adequacy of regulatory mechanisms to address those threats would not be required. However, to provide background and context to our evaluation of the stressors mentioned above, here we describe regulatory mechanisms that are relevant to the species.

The fact that GRSD tiger beetle suitable habitat is located entirely within Great Sand Dunes National Park, TNC property, and the Baca National Wildlife Refuge provides land management

that minimizes impacts resulting from surface disturbances to the tiger beetle. The largest amount of habitat is present on the Great Sand Dunes National Park, containing 83 percent of the total habitat. TNC's Medano Ranch contains 15 percent of the total habitat, while TNC's Zapata Ranch and the Baca NWR each contain approximately only 1 percent of the total habitat. Existing regulatory mechanisms that are most relevant to the GRSD tiger beetle are discussed below.

The NPS Organic Act of 1916 54 U.S.C. 100101 (et seq.), as amended, states that the NPS "shall promote and regulate the use of the National Park System by means and measures that conform to the fundamental purpose of the System units, which purpose is to conserve the scenery, natural and historic objects, and wild life in the System units and to provide for the enjoyment of the scenery, natural and historic objects, and wild life in such manner and by such means as will leave them unimpaired for the enjoyment of future generations." Given that the majority of GRSD tiger beetle habitat (83 percent) is within the boundaries of Great Sand Dunes National Park, the NPS Organic Act is one Federal law of particular relevance to the species. Although the Great Sand Dunes National Park does not have a management plan specific to the GRSD tiger beetle, the habitats occupied by the species remain relatively pristine. Surface disturbances to the species' habitat within Great Sand Dunes National Park, which include unimproved roads and a designated play area, are minimized, representing only 1.4 percent of the habitat.

Furthermore, the majority of Great Sand Dunes National Park is managed for either designated wilderness (35,030 acres) or proposed wilderness (51,097 acres), collectively representing approximately 81 percent of the area of the Park. Within wilderness areas, new activities such as development, roads, and grazing, are prohibited by the Wilderness Act. The Wilderness Act of 1964 (16 U.S.C. 1131–1136, 78 Stat. 890) provides that areas designated by Congress as "wilderness areas" "shall be administered for the use and enjoyment of the American people in such manner as will leave them unimpaired for future use and enjoyment as wilderness" The Act also directed the Secretary of the Interior to review and make recommendations to the President about the suitability of particular lands for preservation as wilderness, with the final decision being made by Congress (16 U.S.C. 1132(c)). These lands are managed under the nonimpairment standard to ensure that they retain their wilderness character until Congress makes a decision. Pursuant to NPS policy, proposed wilderness lands are managed as wilderness (NPS Management Policy § 6.3 (2006)). The Wilderness Act establishes restrictions on land use activities that can be undertaken on a designated area. In particular, such lands are managed to preserve their wilderness character, and many activities that might otherwise be permitted are prohibited on lands designated as wilderness (e.g., commercial enterprise, roads, logging, mining, oil/gas exploration) (16 U.S.C. 1133(c)). The large area of wilderness and proposed wilderness within GRSD tiger beetle habitat provides a high level of protection from

potential disturbances, such as off-road vehicle (OHV) use, trails, and other sources of surface disturbance.

The National Park Service holds water rights for the Great Sand Dunes, including rights for domestic and operational uses, instream flows, and wildlife purposes and has federal reserved groundwater rights for domestic and operational uses (NPS 2007). There is a history of proposals to withdraw groundwater for export outside the San Luis Valley. However, the Great Sand Dune Act of 2000 protects water uses existing on November 22, 2000, and prohibits the federal reservation of water (NPS 2007). Specifically, the Great Sand Dune Act of 2000 directed the Secretary of Interior to obtain and exercise water rights required to fulfill the purposes of the park by maintaining groundwater levels under the park. The National Park Service filed a claim for an absolute in-place groundwater right for the Great Sand Dunes in 2008. In 2008, the Colorado Water Court in Alamosa granted a conditional groundwater right, provided that the NPS drill 10 monitoring wells on the south and west boundary of the park and collect water level data for 10 years to quantify the water level; this monitoring is ongoing. We have no information to predict what will happen following the 10 years of required monitoring, but there is no indication that NPS would lose the conditional water right they currently hold. Hydrologic processes are an important component in the maintenance of the dunes that comprise the GRSD tiger beetle's habitat, and the moisture levels within the dunes are important to the species' life cycle. Therefore, the Great Sand Dune Act of 2000 and the conditional groundwater right granted in 2008 by the Colorado Water Court provide protection to the water needed to maintain suitable habitat for the GRSD tiger beetle.

The National Wildlife Refuge System Administration Act of 1966 (Refuge Administration Act), as amended, consolidated the various categories of lands administered by the Secretary of the Interior through the Service into a single NWR System. The Refuge Administration Act establishes a unifying mission for the Refuge System, a process for determining compatible uses of refuges, and a requirement for preparing comprehensive conservation plans. It states first and foremost that the mission of the NWR System be focused singularly on wildlife conservation. The Refuge Administration Act identifies six priority wildlife-dependent recreation uses, clarified the Secretary's authority to accept donations of money for land acquisition and placed restrictions on the transfer, exchange or other disposal of lands within the Refuge System. Most importantly, the Refuge Administration Act reinforces and expands the "compatibility standard" of the Refuge Recreation Act. The Refuge Administration Act authorizes the Secretary, under such regulations as he may prescribe, to "permit the use of any area within the System for any purpose, including but not limited to hunting, fishing, public recreation and accommodations, and access whenever he determines that such uses are compatible with the major purposes for which such areas were established." While the Baca NWR contains approximately only 1 percent of the total habitat for the GRSD tiger beetle, its

management under the NWR System helps minimize surface disturbances. Currently there are no known surface disturbances in GRSD tiger beetle habitat on Baca NWR.

The purpose of the SSA was to characterize the current and future viability of the GRSD tiger beetle in the face of potential stressors. In the SSA Report, we described the viability of the GRSD tiger beetle in terms of redundancy, representation, and resiliency (Service 2017, entire). The overall results of the status assessment found that the best available information indicates that the GRSD tiger beetle currently has relatively large areas of suitable habitat across nearly its entire known historical range, and that habitat experiences small areas of surface disturbances, due in large part to the low-impact type of management provided by the National Park Service, TNC, and the National Wildlife Refuge Program (Service 2017, p. 35-36). The hydrological and wind processes that maintain the sand dunes continue to provide for a relatively stable dune system. We also find that this species currently has multiple resilient sub-populations that are spread out throughout the range of the species and that are present within each of the three dune areas that are known to be historically occupied by the species (Service 2017, p. 35-36). In our evaluation of future viability, we anticipate that the main dunes and sand sheet dunes will continue to be occupied by the GRSD tiger beetle under all five future scenarios that we evaluated (Service 2017, p. 49). Only in the playa lake dunes under Scenario 3 (warmer and wetter) in the year 2100 (Service 2017, p. 43-45), and Scenario 5 (much warmer and drier with greater areas of surface disturbances) in the year 2100 (Service 2017, p. 47-49), do we anticipate that conditions may put the species at a slightly increased risk of stochastic and catastrophic events, such that the playa lake dunes area may no longer be occupied by the GRSD tiger beetle.

Application of Analysis to Determinations

The SSA characterized GRSD tiger beetle viability in terms of five plausible future scenarios. This forms the basis for our determinations under the Act. Because of uncertainties regarding the future effects of climate change as well as uncertainties regarding potential future stressors to the species, our forecasts included five scenarios designed to capture the relevant uncertainties regarding precipitation trends as well as other factors that influence the GRSD tiger beetle. The fundamental question before the Service is whether the projections of extinction risk, described in the SSA Report in terms of the resiliency, redundancy, and representation of the species under a range of scenarios, indicate that the species warrants protection as an endangered or threatened species under the Act. Theoretically, if population condition declines and distribution shrinks, the species' extinction risk would increase as overall viability decreases.

In using the SSA framework to analyze the scientific information, as documented in the SSA Report, we assess not only individual effects on the species but also their potential cumulative

effects. Specifically, we incorporate cumulative effects into our analysis when we characterize the current and future conditions for each population, which we do both individually and cumulatively. Our conceptual model first described the ways in which anthropogenic and natural factors singly and collectively affect the habitat and/or demographics needed by individuals and populations (Service 2017, p. 21). We then assessed the current and future condition of each population, which incorporates the cumulative effects of these factors on each population (Service 2017, Chapters 3-4). The conceptual model captures the most current and plausible hypotheses about the ways in which factors singly and collectively affect habitat and/or demographics and populations/species. In addition, the conceptual model helps identify potential conservation actions by identifying important pathways those conservation actions could interrupt; quantifying the cumulative, synergistic and antagonistic relationships among these factors by identifying the effect on population size and growth rate; setting the stage for the ranking of each factor's relative influence on habitat and/or population demographics; and thereby help identify necessary conservation actions and their priority in application, respectively. Our current and future condition assessment is iterative because it assesses the effects of all the factors that may influence the species, both detrimental and beneficial. Because the SSA framework considers not just the presence of the factors but also the degree to which they collectively influence a species risk, our assessment integrates the cumulative effects of the factors, thereby replacing the standalone cumulative effects analysis.

As described in the determinations below, we first evaluated whether the GRSD tiger beetle is in danger of extinction throughout its range now (an endangered species). We then evaluated whether the species is likely to become in danger of extinction throughout its range in the foreseeable future (a threatened species). We finally considered whether the GRSD tiger beetle is an endangered or threatened species in a significant portion of its range (SPR).

Determination of Status Throughout All of its Range

Standard: In Danger of Extinction Throughout Range

Under the Act, an endangered species is any species that is “in danger of extinction throughout all or a significant portion of its range.” In this finding, we evaluate the best available scientific information about the species' current and predicted future levels of suitable habitat (as a proxy for abundance), distribution, and occupancy within the three dune provinces (these are described in the SSA Report in terms of resiliency, redundancy, and representation) to describe the viability of the species, and how it may change over time (using 5 plausible future scenarios). Ultimately, we compare our evaluation of the species' risk of extinction against the definition of an endangered species.

Evaluation and Finding: In Danger of Extinction Throughout Range

Our review found that overall, the GRSD tiger beetle currently has relatively large areas of suitable habitat across nearly its entire known historical range that experience small areas of surface disturbances, due in large part to the low-impact type of management provided by the National Park Service, TNC, and the Service's National Wildlife Refuge Program. The hydrological and wind processes that maintain the sand dunes continue to provide for a relatively stable dune system. We also find that this species has multiple resilient sub-populations that are spread out throughout the range of the species and that are present within each of the three dune areas.

Because this species occupies the majority of its historical range (i.e. very little habitat loss has occurred), with evidence of continued occupancy and very limited impact from stressors across all three dune provinces, we find that the species has a very low risk of extirpation due to stochastic or catastrophic events that could plausibly occur in the future, and that due to these conditions, the species retains adaptive capacity. Therefore, we conclude that the current risk of extinction is low, such that the GRSD tiger beetle is not in danger of extinction throughout all of its range.

Having found that the GRSD tiger beetle is not an endangered species throughout its range, we next evaluated whether the species is a threatened species throughout its range.

Standard: Likely to Become Endangered Throughout Range

Under the Act, a threatened species is any species that is "likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range." The foreseeable future refers to the extent to which the Secretary can reasonably rely on predictions about the future in making determinations about the future conservation status of the species (U.S. Department of Interior, Solicitor's Memorandum, M-37021, January 16, 2009). The key statutory difference between a threatened species and an endangered species is the timing of when a species may be in danger of extinction, either now (endangered species) or in the foreseeable future (threatened species).

Evaluation and Finding: Threatened Species Throughout Range

In considering the foreseeable future, we forecasted the status of the GRSD tiger beetle as measured by the continued occupancy and availability of suitable habitat (and described in the SSA Report in terms of resiliency, redundancy, and representation of the species) within the three dune provinces under five plausible future scenarios. For the purpose of the SSA and this

finding, we generally define viability as the ability of the species to sustain populations in a natural ecosystem beyond a biologically meaningful timeframe, in this case, approximately 2050 to 2100. We chose these years because they correspond to time periods that have been evaluated by the National Park Service, and are within the range of the available hydrological and climate change model forecasts by the National Park Service (see Service 2017, Appendix B). Additionally, because of the short generation time (3 years) of the GRSD tiger beetle (Pineda 2002, p. 57), the year 2050 (33 years from now) and the year 2100 (83 years from now) encompass approximately 10 and 30 generations, which is a relatively long time in which to observe effects to the species.

To assist us in evaluating the status of the species in the foreseeable future, we have evaluated the GRSD tiger beetle under five plausible future scenarios; these scenarios were designed to capture the relevant uncertainties regarding precipitation trends as well as other factors that influence the GRSD tiger beetle, such as temperature and surface disturbances. These were the primary stressors that we concluded could potentially have population level impacts to the species in the future. We used our best professional judgment to estimate the effects of each plausible scenario on GRSD tiger beetle occupancy within each dune type, and on the area of suitable habitat (as a proxy for population size). We then evaluated the viability of GRSD tiger beetle in the foreseeable future, described in terms of resiliency, redundancy, and representation.

Looking into the foreseeable future in 2050 and 2100, we anticipate that the main dunes and sand sheet dunes will continue to be occupied by the GRSD tiger beetle under all five scenarios. Only in the playa lake dunes under Scenario 3 (warmer and wetter) and Scenario 5 (much warmer and drier with greater areas of surface disturbances) in the year 2100 do we anticipate that conditions may put the species at an increased risk of stochastic and catastrophic events, such that the playa lake dunes area may no longer be occupied by the GRSD tiger beetle. However, even under these scenarios, the main dunes and sand sheet dunes (collectively representing 99 percent of the habitat) are expected to remain occupied.

Overall, viability is expected to remain high in 2050 under all plausible scenarios, and expected to remain high in 2100 under most scenarios, with only minimal potential impacts to occupancy and available habitat in one dune type (i.e., the playa lake dunes) under the worst case scenarios. Because we project continued occupancy and very limited impact from stressors across nearly all of the species suitable habitat under all future scenarios, we find that the species has a low future risk of extirpation due to stochastic or catastrophic events that could plausibly occur in the future, and that due to these conditions, the species is expected to retain most of its adaptive capacity. Therefore, we conclude that the risk of extinction in the foreseeable future is low, such that the GRSD tiger beetle is not likely to become an

endangered species within the foreseeable future throughout all of its range.

Thus, after assessing the best available information, we conclude that the GRSD tiger beetle is not in danger of extinction throughout all of its range nor is it likely to become so in the foreseeable future.

Determination of Status Throughout a Significant Portion of its Range

Determination of Status Throughout a Significant Portion of its Range

Consistent with our interpretation that there are two independent bases for listing species as described above, after examining the species' status throughout all of its range, we now examine whether it is necessary to determine its status throughout a significant portion of its range. We must give operational effect to both the "throughout all" of its range language and the SPR phrase in the definitions of "endangered species" and "threatened species." The Act, however, does not specify the relationship between the two bases for listing. As discussed above, to give operational effect to the "throughout all" language and that it is referenced first in the definition, consideration of the species' status throughout the entire range should receive primary focus and we should undertake that analysis first. In order to give operational effect to the SPR language, the Service should undertake an SPR analysis if the species is neither in danger of extinction nor likely to become so in the foreseeable future throughout all of its range, to determine if the species should nonetheless be listed because of its status in an SPR. Thus, we conclude that to give operational effect to both the "throughout all" language and the SPR phrase, the Service should conduct an SPR analysis if (and only if) a species does not warrant listing according to the "throughout all" language.

Because we determined that the GRSD tiger beetle is not in danger of extinction or likely to become so in the foreseeable future throughout all of its range, we will consider whether there are any significant portions of its range in which the GRSD tiger beetle is in danger of extinction or likely to become so.

Although there are potentially many ways to determine whether a portion of a species' range is "significant," we conclude, as noted above, for the purposes of this finding, that the significance of the portion of the range should be determined based on its biological contribution to the conservation of the species. For this reason, we describe the threshold for "significant" in terms of an increase in the risk of extinction for the species. We conclude that such a biologically based definition of "significant" best conforms to the purposes of the Act, is consistent with judicial interpretations, and best ensures species' conservation.

We evaluate biological significance based on the principles of conservation biology using the concepts of redundancy, resiliency, and representation because decreases in the redundancy, resiliency, and representation of a species lead to increases in the risk of extinction for the species. *Redundancy* (having multiple resilient populations considering genetic and environmental diversity) may be needed to provide a margin of safety for the species to withstand catastrophic events. *Resiliency* describes the characteristics of a species that allow it to recover from stochastic events or periodic disturbance. *Representation* (the range of variation found in a species) ensures that the species' ability to adapt to changing environments is conserved. Redundancy, resiliency, and representation are not independent of each other, and some characteristics of a species or area may contribute to all three. For example, distribution across a wide variety of habitats is an indicator of representation, but it may also indicate a broad geographic distribution contributing to redundancy (decreasing the chance that any one event affects the entire species), and the likelihood that some habitat types are less susceptible to certain threats, contributing to resiliency (the ability of the species to recover from disturbance). None of these concepts is intended to be mutually exclusive, and a portion of a species' range may be determined to be "significant" due to its contributions under any one of these concepts.

For the purposes of this finding, we determine if a portion's biological contribution qualifies as "significant" by asking whether, *without that portion*, the representation, redundancy, or resiliency of the species would be so impaired that the species would be in danger of extinction or likely to become so in the foreseeable future (*i.e.*, would be an "endangered species" or a "threatened species"). Conversely, we would not consider a portion to be "significant" if there is sufficient resiliency, redundancy, and representation elsewhere in the species' range that the species would not be in danger of extinction or likely to become so throughout its range even if the population in that portion of the range in question became extirpated.

We recognize that this definition of "significant" establishes a threshold that is relatively high. Given that the outcome of finding a species to be in danger of extinction or likely to become so in an SPR would be to list the species and apply protections of the Act to all individuals of the species wherever found, we concluded it is important to use a threshold for "significant" that is robust. It would not be meaningful or appropriate to establish a low threshold whereby a portion of the range can be considered "significant" even if only a negligible increase in extinction risk would result from its loss. Because nearly any portion of a species' range can be said to contribute some increment to a species' viability, use of such a low threshold would require us to impose restrictions and expend conservation resources disproportionately to conservation benefit: Listing would be rangewide, even if only a portion of the range with minor conservation importance to the species is imperiled. On the other hand, it would be inappropriate to establish a threshold for "significant" that is too high. This would be the case if

the standard were, for example, that a portion of the range can be considered “significant” only if threats in that portion result in the entire species’ being currently in danger of extinction or likely to become so. Such a high bar would not give the SPR phrase independent meaning, as the Ninth Circuit held in *Defenders of Wildlife v. Norton*, 258 F.3d 1136 (9th Cir. 2001).

The definition of “significant” used in this finding carefully balances these concerns. By setting a relatively high threshold, we minimize the degree to which restrictions would be imposed or resources expended that do not contribute substantially to species conservation. But we have not set the threshold so high that the phrase “throughout a significant portion of its range” loses independent meaning. Specifically, we have not set the threshold as high as it was under the interpretation presented by the Service in the *Defenders* litigation. Under that interpretation, the portion of the range would have to be so important that the species’ current level of imperilment in the portion results in the species currently being in danger of extinction or likely to become so throughout all of its range. Under the definition of “significant” used in this finding, the portion of the range need not rise to such an exceptionally high level of biological significance.

We are aware that the court in *Center for Biological Diversity v. Jewel* found that this definition of “significant” does not give sufficient independent meaning to the SPR phrase. However, that decision was based on two misunderstandings about the interpretation of “significant.” First, the court’s decision was based on its finding that, as with the interpretation that the court rejected in *Defenders*, the definition of “significant” does not allow for an independent basis for listing. However, this definition of “significant” is not the same as the definition applied in *Defenders*, which looked at the current status within the portion and asked what the current effect on the entire range of the species is. By contrast, this definition of “significant” looks at a future hypothetical loss of all members within the portion and evaluates the effect on the remainder of the species. The current status of the species in that portion is relevant *only* for determining the listing status if the portion has been determined to be significant. This definition of “significant” establishes a lower threshold than requiring that the species’ current status in that portion of its range is already causing the species to be in danger of extinction throughout all of its range or likely to become so in the foreseeable future. In other words, this definition of “significant” captures circumstances that would not be captured by the definition used in *Defenders*, or by analyzing whether a species is in danger of extinction or likely to become so throughout all of its range: a species that is *not* currently even likely to become an endangered species in the foreseeable future, but would be if a particular important portion of its range is completely lost, can nonetheless be listed now if the species in that portion is threatened or endangered (as opposed to only after the portion is in fact lost, as would be the case if the SPR language did not exist).

The second misunderstanding was the court's characterization of the listing determination for the African coelacanth as an indication of our difficulty applying this definition of "significant." However, in that listing determination, the conclusion was that the species was not in danger of extinction throughout all of its range or likely to become so in the foreseeable future but it did warrant listing because of its status in a significant portion of its range. The only reason for not listing the entire species was that the population in that portion of the range met the definition of a distinct population segment (DPS). Therefore, the agency listed the DPS instead of the entire species. The population in an SPR is not automatically a DPS so, contrary to the court's reasoning, the definition of "significant" can be applied and result in listing a species that would not otherwise be listed. We also note another instance in which this definition has resulted in a finding that an entity did was not in danger of extinction in the foreseeable future through all of its range, but was in a significant portion. In a proposed rule (82 FR 3694; January 12, 2017), NMFS found that the giant manta ray was not currently in danger of extinction or likely to become so in the foreseeable future throughout all of its range because the Atlantic populations were not experiencing the same risks as the Pacific populations. However, they did find that the Pacific populations constituted an SPR, because without that portion, the smaller and more sparsely distributed populations in the Atlantic would become vulnerable to demographic risks and would be likely to become in danger of extinction in the foreseeable future. Accordingly, the giant manta ray is proposed to be listed as a threatened species. In light of these two misunderstandings, we are currently seeking reconsideration of the district court's decision.

To undertake this analysis, we first identify any portions of the species' range that warrant further consideration. The range of a species can theoretically be divided into portions in an infinite number of ways. To identify only those portions that warrant further consideration, we determine whether there is substantial information indicating that there are any portions of the species' range: (1) that may be "significant," and (2) where the species may be in danger of extinction or likely to become so in the foreseeable future. We emphasize that answering these questions in the affirmative is not equivalent to a determination that the species should be listed—rather, it is a step in determining whether a more-detailed analysis of the issue is required.

A key part of identifying portions appropriate for further analysis is whether the threats are geographically concentrated. If a species is not in danger of extinction or likely to become so in the foreseeable future throughout all of its range and the threats to the species are essentially uniform throughout its range, then the species is not likely to be in danger of extinction or likely to become so in the foreseeable future in any portion of its range. Moreover, if any concentration of threats applies only to portions of the species' range that are not "significant," such portions will not warrant further consideration.

If we identify any portions (1) that may be significant and (2) where the species may be in danger of extinction or likely to become so in the foreseeable future, we conduct a more thorough analysis to determine whether both of these standards are indeed met. The identification of a geographic area that meets our definition of significant does not create a presumption, prejudgment, or other determination as to whether the species is in danger of extinction or likely to become so in the foreseeable future in that identified SPR. We must then analyze whether the species is in danger of extinction or likely to become so in the SPR. To make that determination, we use the same standards and methodology that we use to determine if a species is in danger of extinction or likely to become so in the foreseeable future throughout all of its range.

Depending on the biology of the species, its range, and the threats it faces, it might be more efficient for us to address the significance question first or the status question first. If we address significance first and determine that a portion of the range is not “significant,” we do not need to determine whether the species is in danger of extinction or likely to become so in the foreseeable future there; if we address the status of the species in portions of its range first and determine that the species is not in danger of extinction or likely to become so in a portion of its range, we do not need to determine if that portion is “significant.”

GRSD Tiger Beetle Determination of Significant Portion of its Range

Applying the process described above, to identify whether any portions warrant further consideration, we determine whether there is substantial information indicating that (1) particular portions may be significant and (2) the species may be in danger of extinction in those portions or likely to become so within the foreseeable future.

To identify portions where the species may be in danger of extinction or likely to become so in the foreseeable future, we consider whether the threats are geographically concentrated in any portion of the species’ range. The SSA Report did not identify any areas of the species’ range where stressors are currently having any population level negative impacts to the GRSD tiger beetle. In our analysis of future conditions, the SSA Report identified the playa lakes dunes as a geographic area of GRSD tiger beetle habitat that may be more vulnerable to impacts under certain future scenarios (Service 2017, p. 49). Under scenario 3 (warmer and wetter conditions) in 2100, we anticipated that increasing precipitation would be likely to increase saturation of the soils in the playa lakes area, potentially resulting in unsuitable burrow conditions and resulting in vegetation encroachment of smaller sized dunes, potentially leading to a reduced occupancy of these dunes, and a decrease in the population trend (Service 2017, p. 43-45),.

Under scenario 5 (a pessimistic scenario involving much warmer and drier conditions plus greater surface disturbance) in 2100, with the much drier conditions throughout the range of the species (with potential for lower soil moisture) and greater surface disturbances in the sand sheet and playa lakes dune areas, we anticipated that there would be a reduction in the number of sub-populations in the playa lake dunes area, resulting in a reduction in representation and redundancy (Service 2017, p. 47-49). Increased warmer and drier conditions could also create conditions that are more conducive to carrying a wildfire in the shrub and grassland areas near the playa lakes dunes if ignition, such as lightning strike, were to occur (Service 2017, p. 47-49). Under all other future scenarios, however, the playa lakes dunes are expected to remain occupied (Service 2017, p. 49). Nonetheless, given the apparent greater vulnerability to potential future stressors of GRSD tiger beetle habitat in the playa lakes dunes, this portion of the range warrants further consideration

We have identified a portion where the species may be in danger of extinction or likely to become so in the foreseeable future. We next consider whether the portion may be significant. We can accomplish this by considering the biological or conservation importance of the portion. The playa lake dunes provide a very small amount (86 acres) of the total GRSD tiger beetle habitat, representing only 0.67 percent of the total habitat. The playa lake dunes also had the smallest average dune size (7 acres) of the three dune types. If the GRSD tiger beetle habitat within the playa lake dunes were to hypothetically be lost, the species would lose a very small amount of representation and redundancy. However, the loss of this portion of the species' range would still leave sufficient resiliency, redundancy, and representation in the remainder of the species' range such that it would not be expected to increase the vulnerability to extinction of the entire species.

We have identified a portion where the species may be in danger of extinction or likely to become so in the foreseeable future. However, we have concluded that the portion is not significant. Therefore, no portion warrants further consideration to determine whether the species may be in danger of extinction or likely to become so in the foreseeable future in a significant portion of its range.

GRSD Tiger Beetle Determination of Status

We have carefully assessed the best scientific and commercial information available regarding the past, present, and future threats to the GRSD tiger beetle. Because the species is neither in danger of extinction now nor likely to become so in the foreseeable future throughout all or any significant portion of its range, the species does not meet the definition of an endangered species or threatened species.

We request that you submit any new information concerning the status of, or threats to, the GRSD tiger beetle to our Colorado Ecological Services Field Office (see LEAD FIELD OFFICE CONTACT) whenever it becomes available. If an emergency situation develops for the GRSD tiger beetle we will act to provide immediate protection.

For species that are being removed from candidate status:

Is the removal based in whole or in part on one or more individual conservation efforts that you determined met the standards in the Policy for Evaluation of Conservation Efforts When Making Listing Decisions (PECE)? No (not a current candidate species)

RECOMMENDED CONSERVATION MEASURES

None

DESCRIPTION OF MONITORING

Dunes with verified occupancy have not been monitored for the presence of the GRSD tiger beetle since 2000, although field observations from 2003 to 2016 by NPS researchers at 10 of the sites show continued occupation. Additionally, observations by NPS researchers found that sites that were previously occupied in 2000 continue to be occupied at the present (Bovin 2016, pers. comm.).

COORDINATION WITH STATES

Indicate which State(s) (within the range of the species) provided information or comments on the species or latest species assessment: Colorado

Indicate which State(s) did not provide any information or comments: none

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APPROVAL/CONCURRENCE: Lead Regions must obtain written concurrence from all other Regions within the range of the species before recommending changes, including elevations or removals from candidate status and listing priority changes; the Regional Director must approve all such recommendations. The Director must concur on all resubmitted 12-month petition findings, additions, or removal of species from candidate status, and listing priority changes.

Approve: Noreen E. Walsh 7/28/19
Regional Director, Mountain-Prairie Region Date

Concur: James W. Kurtz SEP 15 2017
Acting Director, U.S. Fish and Wildlife Service Date

Do not concur: _____
Director, U.S. Fish and Wildlife Service Date

Director's Remarks: