

SUMMARY
BIOLOGICAL OPINION ON THE EFFECTS TO THE
KUENZLER HEDGEHOG CACTUS (*Echinocereus fendleri* var. *kuenzleri*)
FROM THE PANAMA/PRUDE ALLOTMENT

Cons. # 22420-2006-F-0138

Date of Opinion: April 9, 2007

Action Agency: USDA Forest Service

Proposed Action: Issuance of a 10-year term grazing permit on the Panama/Prude Allotment (approximately 70,000 acres). The yearlong permit will authorize up to 870 head of livestock and 10 horses. A deferred rotation system will be used using an estimated 11 pastures in the summer range and 6 for the winter range. Pastures will be managed for levels of 40 percent utilization in key areas. Utilization levels in pastures with the cactus will be set at 40 percent. Existing structural range improvements would be maintained to effectively serve their intended purpose.

Listed Species: Kuenzler hedgehog cactus (*Echinocereus fendleri* var. *kuenzleri*)

Biological Opinion: It is the opinion of the Service that the issuance of a term grazing permit on the Panama/Prude Allotment is not likely to jeopardize the continued existence of the Kuenzler hedgehog cactus. No critical habitat has been designated for this species; therefore, none will be affected.

Reasonable and Prudent Alternatives: N/A

Incidental Take Statement: N/A

Reasonable and Prudent Measures: N/A

Conservation Recommendations:

- 1: The Forest Service should continue surveying all potential cacti habitat within the Panama/Prude Allotment during the cactus flowering season (typically mid-May to early June) and send the survey report to the Service annually. Survey data will provide population trend information and contribute to the overall knowledge of this species.
2. The Forest Service should exclude grazing from occupied cactus habitat that has high potential for trampling (e.g. close to existing waters, gathering areas, and/or cattle travel ways), or where forage use monitoring indicates a declining trend in habitat over several (3-5) years.
3. Any suspicious collection-related activity within the highway rights-of-way should be reported to the Service immediately.

4. The Forest Service should educate law enforcement officers who routinely patrol this area in identifying suspicious collection activity.
5. In order to protect cacti from collectors, the Forest Service should keep monitoring of populations inconspicuous.
6. Collaborate with the Service, New Mexico Department of Game and Fish, and others to implement needed research to determine if lagomorphs or rodent predation is a significant factor in species survival.



United States Department of the Interior

FISH AND WILDLIFE SERVICE
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April 9, 2007

Cons. # 22420-2006-F-0138

S.E. "Lou" Woltering, Forest Supervisor
Lincoln National Forest
1101 New York Avenue
Alamogordo, New Mexico 88310-6992

Dear Mr. Woltering:

This document transmits the U. S. Fish and Wildlife Service's (Service) biological opinion based on our review of the proposed U.S. Department of Agriculture, Lincoln National Forest (Forest Service) Panama/Prude Allotment and the issuance of a 10-year term grazing permit and their effects on the endangered Kuenzler's hedgehog cactus (cactus) (*Echinocereus fendleri* var. *kuenzleri*). You have determined that the proposed action "may affect, is likely to adversely affect" the cactus. We received your letter on May 5, 2006, requesting formal consultation in accordance with section 7 of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.).

The "Biological Assessment (BA) for the Panama/Prude Allotment, Lincoln National Forest, Guadalupe Ranger District, Otero and Chaves Counties, New Mexico," dated May 5, 2006, evaluates anticipated effects on the cactus and its habitat resulting from the proposed action. The proposed action is to issue a 10-year grazing permit for 870 head of livestock and 10 horses yearlong.

This Biological Opinion (BO) is based on information provided in the BA; *Framework for Streamlining Informal Consultation for Livestock Grazing, UDSA Forest Service, Southwestern Region* (Guidance Criteria) dated March 15, 2005; other information available to the Service, and telephone conversations with your staff. A complete administrative record of this consultation is on file in the Service's New Mexico Ecological Services Field Office.

Consultation History

Consultation began on May 5, 2006, when the Forest submitted their BA requesting formal consultation with the Service. The request for formal consultation was acknowledged by the Service in a letter dated July 26, 2006.

BIOLOGICAL OPINION

I. Description of the proposed action

Action Area

The action area for the proposed project includes all areas directly or indirectly affected by the Federal action. The action area for the proposed project is defined as the Panama/Prude Allotment.

Proposed Action

The Forest Service is proposing to authorize grazing within the Panama/Prude Allotment, approximately 70,000 acres (ac). The yearlong permit will authorize up to 870 head of cattle and 10 horses. A deferred rotation system will be used using an estimate of 11 pastures in the summer range and 6 for the winter range. Two herd complexes will rotate allowing 1-2 pastures to receive complete rest during each growing season. The remaining summer pastures will receive deferment for a period of the growing season while the cattle are rotated. Pastures will be managed for levels of 40 percent utilization in key areas. Utilization levels in pastures with the cactus will be set at 40 percent. Existing structural range improvements would be maintained to effectively serve their intended purpose (23 dirt stock tanks, 74.2 miles of interior fencing, 54.7 miles of pipeline, and 39 water storage tanks), and no other structure range improvements are proposed at this time.

A total of 58,000 ac is designated as full capacity, 2,400 ac as potential capacity, and 9,016 ac as no capacity due to steep slope. The allotment is currently being managed under level C and D (moderate) as described in the Lincoln National Forest Plan approved in 1986, with supplements approved in June of 1996. The Panama/Prude Allotment is characterized by a juniper-pinyon and desert scrub vegetation transition involving soil characteristic to both vegetation types. The goal of this management proposal is for range conditions to move toward or be maintained at the highest range condition throughout the allotment.

II. Status of the species (range-wide)

Species description, life history, and population dynamics

Horst Kuenzler collected the type specimen of the cactus in 1961. In 1976, the cactus was identified as *E. kuenzleri* (U.S. Fish and Wildlife Service 1985). Prior to 1976, the cactus was known as *E. pseudohempelii*, and was included in the 1975 plant notice of review (40 FR 27824) as *E. hempelii*. When *E. kuenzleri* was listed as endangered in 1979, many experts of the taxon believed it was a subspecies or variant of *E. fendleri*, and not a separate species. With Dr. Lyman Benson's 1982 publication, The Cacti of the United States and Canada, the name *E. fendleri* var. *kuenzleri* became accepted and was changed in the July 1984 list of Endangered and Threatened Wildlife and Plants (Benson 1982, U.S. Fish and Wildlife Service 1985).

The cactus is perennial and reproduction is sexual (Blue Earth Ecological Consultants, Inc. 2002). There is no evidence of reproduction by bulbils, tubers, stolons or rhizomes and the cactus does not appear to reproduce by vegetative fragmentation (Blue Earth Ecological Consultants, Inc. 2002). Pollination is primarily by bees, although butterflies and beetles may also pollinate flowers. Greenhouse studies at Mesa Gardens in Belen indicated the cactus is an obligate outcrosser and is incapable of self-fertilization.

The cactus may be single-stemmed or branched. The stems are solitary or in a cluster, more or less conical, about 6 inches (15 centimeters [cm]) tall and 4 inches (in) (10 cm) wide with 9 to 12 prominent ribs with tubercles from which spine clusters originate (U.S. Fish and Wildlife Service 1985). The spines are angular, bulbous, and fused at the base. Central spines are usually absent, while radial spines vary from two to six and are variable in size up to 1 in (2.5 cm) long (U.S. Fish and Wildlife Service 1985).

Budding occurs in April and flowering normally occurs from May 1 to 15. Warm years can initiate earlier flowering and cool springs may delay flowering until early June (Blue Earth Ecological Consultants, Inc. 2002). Flowers are large for the size of the plant, up to 4 in (10 cm) long (U.S. Fish and Wildlife Service 1985). Fruits form in August. Fruits are bright red when mature, ovoid to cylindrical, may be over 2 in (5 cm) long, and are spiny with miniature versions of the stem spines. Each plant may have three to six fruits, each fruit having an average of 1,050 seeds (Blue Earth Ecological Consultants, Inc. 2002). Seeds are black and pitted. Seed dispersal by rodents, wind and water occurs in September and October (Blue Earth Ecological Consultants, Inc. 2002). Seed viability is over 90 percent and seeds may survive in the soil for up to five years (Blue Earth Ecological Consultants, Inc. 2002).

Characteristics used to separate the cactus from the other cacti in its range are the contorted, white, chalky-textured spines and large, magenta flowers (U.S. Fish and Wildlife Service 1985). The cactus has a greater number of longer and more slender spines, typically less tubercled stems, and narrower fruits. A similar species, *E. triglochidiatus* is usually clustered and larger, no dark line on spines, fewer ribs (5-7), and red flowers. *E. occineus* var. *gurneyi* also has red flowers. Its stems are densely clustered; spines mostly terete (New Mexico Rare Plants 2005).

Typical cactus habitat is the lower fringes of the piñon-juniper woodland from about 5,200 feet (ft) to 6,600 ft (1,600 meters [m] to 2,200 m) elevation (Blue Earth Ecological Consultants, Inc. 2002). Occupied habitat consists of gentle slopes (15 to 60 percent) or benches with gravelly to rocky soils and southern, eastern, and western exposures (New Mexico Department of Game and Fish, Performance Report 1991; Blue Earth Ecological Consultants, Inc. 2002). Soils may be derived from limestone or intrusive rocks of the Sacramento or Capitan uplifts. The cactus also occurs on unconsolidated, gravel hills in the Fort Stanton area (Blue Earth Ecological Consultants, Inc. 2002). The cactus occurs in areas with about 180 frost-free days and average precipitation of about 16 in (41 cm).

Other common plants associated with the cactus include yerba (*Baccharis pternoides*), blue grama grass (*Bouteloua gracilis*), plains lovegrass (*Eragrostis intermedia*), buckwheat (*Eriogonum havardii*), goldman's silktassel (*Garrya ovata ssp. goldmanii*), false pennyroyal (*Hedeoma pulchella*), bladderpod (*Lesquerella valida*), pincushion cactus (*Mammillaria heyderi*), and sage (*Salvia earlei*) (U.S. Fish and Wildlife Service 1985).

Status and distribution

The cactus was proposed for listing as endangered on June 16, 1976, (41 FR 24523) and was Federally listed as endangered on October 26, 1979, with no critical habitat designated due to the threat of collection (44 FR 61924). The cactus is protected from removal or reduction to possession from any area under Federal jurisdiction (50 CFR 17.61 and 17.71). The cactus is also listed as endangered by the State of New Mexico (NMSA 1978 75-6-1). State law prohibits collection of the cactus without a permit from the Rare Plants Program of the New Mexico Energy, Minerals, and Natural Resources Department. A recovery plan for the cactus is in place (U.S. Fish and Wildlife Service 1985).

The type locality for the 1976 description of the cactus was near Elk, Otero County, New Mexico (U.S. Fish and Wildlife Service 1985). The recovery plan for the cactus identified two populations in the Rio Hondo and Rio Peñasco drainages in Chaves, Lincoln, and Otero Counties, New Mexico (U.S. Fish and Wildlife Service 1985). The range of the cactus was described as extremely limited in 1984, with known populations limited to near Elk and Mayhill, in east-central Otero County and the plains east of Elk in west-central Eddy County (New Mexico Native Plant Protection Advisory Committee 1984). The species account for the cactus developed in 1988 shows cluster populations in the Fort Stanton area along the south side of the Capitan Mountains and in the northern end of the Guadalupe Mountains in southeastern Otero County, in addition to the two previously described populations (U.S. Fish and Wildlife Service 1985; Blue Earth Ecological Consultants, Inc. 2002).

The cactus is now known to be more abundant and widespread than thought when the cactus was listed as endangered in 1979. DeBruin (1993) and Chauvin et al. (1998) documented 1,611 sightings of cacti on Federal lands on the east-slope of the Sacramento Mountains. Additional populations in highway rights-of-way have been found on the west slopes of the Sacramento Mountains near Carrizozo for an additional 98 cacti (Bleakly 2001, Knight 1999). Sivinski (1996) observed 68 cacti on the Lincoln National Forest in the Guadalupe Mountains and an additional 100 in 1999 (Sivinski 1999). The Guadalupe Mountains surveys of Bureau of Land Management (BLM) jurisdictions found 191 cacti (Ladyman et al. 1998, Chauvin et al. 2001). Subsequent surveys in 1998, 2001, and 2002 by Forest Service contractors found 594 previously undocumented cacti on BLM lands in the Fort Stanton area in 2003, another 231 cacti in 2004, and an additional 18 on BLM land in the Guadalupe Mountains (USDI-BLM 2003, 2004). In total, botanists have found at least 3,276 cacti during inventories of Federal lands.

Much of the Federal jurisdictions within the range of the cactus have been surveyed, usually within the most suitable habitats. Large areas of State, private and tribal lands contain suitable

habitats that have not been surveyed for the presence of this cactus (U.S. Fish and Wildlife Service 2004).

The total number of cactus is impossible to obtain because they are difficult to detect when not flowering, many habitats are inaccessible, and populations may fluctuate up and down over time (U.S. Fish and Wildlife Service 2004). However, it is reasonable to estimate several thousand cacti within the known range of this cactus (U.S. Fish and Wildlife Service 2004). In 2004, the Service estimated that researchers have observed approximately 3,300 individual cacti. Most field botanists feel this number should be doubled to 6,600 individual cacti. Since only about half the suitable habitat has been searched, that number could reasonably be doubled again to an estimated 13,200 individuals (U.S. Fish and Wildlife Service 2004).

Population trends have not been adequately assessed since all attempts at monitoring programs by State and Federal agencies have lasted only three to five consecutive years and monitored few individual plants (U.S. Fish and Wildlife Service 2004).

Early surveys on the Guadalupe District found cacti only on relatively flat sites. More recently, surveyors on the District have found plants growing on the side-slopes of the ridges. On the District plants are largely found on the Deama soil series on 0-30 percent slopes, which may be intermixed with the Tortugas soil series (USDA 1981). Survey areas have been determined using this information and was used in 1998 to begin defining the western boundary of suitable cactus habitat. The western outer edges of cacti occupied habitat continue to be survey in order to determine the outer limits of suitable habitat, and whether suitable habitat corresponds exclusively with Deama soils on this District. There have been a total of 514 plants observed and reported on the Guadalupe District, 245 individuals on the Smokey Bear District, and 30 on the Sacramento District for a total of 789 individuals on the Lincoln National Forest.

III. Environmental baseline

Regulations implementing the Act (50 CFR 402.02) define the environmental baseline as the past and present impacts of all Federal, State, or private actions and other human activities in the action area, the anticipated impacts of all proposed Federal actions in the action area that have undergone section 7 consultation, and the impacts of State and private actions that are contemporaneous with the consultation in progress. The environmental baseline defines the status of the species and its habitat in the action area to provide a platform from which to assess the effects of the action now under consultation.

Status of species within the action area

An estimate of 95 percent of field surveys on potential habitat for the cactus has been conducted on the Panama/Prude analysis area. Occupied or potential habitat for the cactus exists within the eastern portion of this allotment, comprising an estimated 14,000 ac of the 70,000 ac of the analysis area. Known occupied habitat comprises less than 1,800 ac (2.5 percent) of the 70,000 ac. Of 514 individuals on the Guadalupe District, 123 individuals are located on the Prude

section. No cacti have been observed on the Panama section. All 123 individuals are located in areas considered full capacity range. Blooms and buds were present during the blooming season surveys for 2005 on this and/or adjacent allotments, all appearing to be normal and healthy with a normal percentage in bloom (Fragua, 2005). Recent observations by Guadalupe District personnel indicate that consumption by wildlife, to date identified as lagomorphs, may also significantly affect population numbers. In 2004, the Forest Service found that the ecological condition of the range on the Panama/Prude allotment was fair to poor (Atkinson 2005).

Factors affecting species environment within the action area

At the present time, there are no significant mining or oil and gas production activities within the habitat of the cactus. Most of the known occupied habitats occur in relatively remote areas, which are unlikely to be converted to land uses other than open range for livestock grazing (U.S. Fish and Wildlife Service 2004).

The cactus is threatened mainly by livestock grazing and over-collection (U.S. Fish and Wildlife Service 1985). There is anecdotal evidence that livestock grazing may cause increased mortality of the cactus. A two-year study (1984-1985) by The Nature Conservancy found that during a year of cattle grazing with 65 percent forage utilization, cactus mortality outside a fenced enclosure was 12 percent while there was zero mortality inside the enclosure where no grazing had occurred (Bates 1985). The major cause of mortality to individuals is trampling by livestock. Livestock grazing also removes grass cover, which reduces the suitability of sites for seed germination and seedling establishment and exposes adult plants (U.S. Fish and Wildlife Service 1985, 2004). Concentrating livestock by placing salting or watering points can increase the likelihood of vegetation being trampled. No evidence of serious habitat modification from grazing was observed under prescribed grazing management in the Rawhide fire area (Sivinski 1996).

In 1985, the Service reported that collectors had reduced its numbers to the point of near extinction in the wild (U.S. Fish and Wildlife Service 1985). Illegal collection of the cactus from its natural habitats has not had a significant observable impact on the known populations during recent years (U.S. Fish and Wildlife Service 2004). Some illegal take has occurred and will likely continue, especially at the type locality and other well-known and easily accessible locations (U.S. Fish and Wildlife Service 2004). However, most populations are relatively remote and less likely to be impacted by casual collectors (U.S. Fish and Wildlife Service 2004). This plant is readily available from commercial growers, who probably satisfy much of the demand from cactus hobbyists (U.S. Fish and Wildlife Service 2004).

Highway construction and maintenance activities may threaten populations. However, some of the most dense populations are found within the protective confines of highway rights-of-way, where livestock grazing is excluded (Blue Earth Ecological Consultants, Inc. 2002).

Cactus habitat is predominantly arid grassland and pinon-juniper savanna. These cacti usually occur in grass-covered areas and are susceptible to fire. Prescribed fire has become a frequently

used land management tool on Federal lands throughout the range of the cactus. Sivinski (1999) studied the effects of a 1993 natural wildfire that burned within a cactus population in the Guadalupe Mountains on the Lincoln National Forest. Seven years after the fire, this population was found to have only one-third the numbers of cacti within the burned area as compared to a similar area of adjacent unburned habitat (U.S. Fish and Wildlife Service 2004). Fire mortality was apparently severe and regeneration of the burned population segment was slow. Therefore, frequent prescribed fires could have significant impacts on the cactus (U.S. Fish and Wildlife Service 2004).

IV. Effects of the action

Effects of the action refer to the direct and indirect effects of an action on the species or critical habitat, together with the effects of other activities that are interrelated and interdependent with that action that will be added to the environmental baseline. Indirect effects are those that are caused by the proposed action and are later in time, but are still reasonably certain to occur.

Any adverse impacts on this cactus by livestock are indirect with the exception of occasional damage due to trampling (U.S. Fish and Wildlife Service 1985). The Forest Service determined that trampling of cacti by cattle and horses may occur within occupied sites. The 870 head of livestock and 10 horses on the Prude section has the potential of trampling cacti. Trampling could lower the reproductive output or result in mortality of cacti. Monitoring will occur within key areas and in occupied habitat to ensure cactus use limits of 40 percent are not exceeded. Remedial actions such as livestock removal and use level reassessment may be prescribed in the event that declining conditions (soil, drought, cover, etc.) at the cactus sites are detected.

We also considered indirect effects and the effects of interdependent and interrelated actions of this project to the cactus. Indirect effects are those that are caused by, or result from, the proposed action, and are later in time, but are reasonably certain to occur. Implementation of the proposed project will result in indirect impacts to the cactus within the Panama/Prude Allotment from trampling and crushing grass cover adjacent to the cactus. Temperature appears to be a crucial element in the survival of cacti populations (New Mexico Department of Game and Fish, Performance Report 1991). The cacti at the Elk locale were marked by high levels of winterkill, indicating that this species is sensitive to extreme cold. It has not yet been determined if the sensitivity is to winter temperature or if it is most sensitive to late spring frost (New Mexico Department of Game and Fish, Performance Report 1991). Grass cover is also crucial to the survival of this species (New Mexico Department of Game and Fish, Performance Report 1991). A dense grass cover shields the plant from frost damage. The removal of grass cover around plants also reduces the suitability of sites for seed germination and seedling establishment. Moreover, reduced grass cover exposes adult plants to extreme temperatures as well as increased erosion that contribute to seedling mortality (U.S. Fish and Wildlife Service 1985). Removal and trampling of vegetation around individual cacti are expected to be short term in duration. Livestock salting and water developments will not occur within or overlap any occupied cactus sites. Although vegetation is expected to recover, this reduction in grass cover is considered an adverse effect. We anticipate that the proposed forage utilization guideline for 40 percent will

improve the overall range conditions on the allotment. When this occurs, adverse effects to the cactus will be reduced.

Interrelated actions are actions that are part of a larger action, and are dependent on the larger action for their justification. The use of access roads and vehicles in the project areas are considered interrelated with the implementation of the current project. Although the majority of vehicles will likely stay on roads and trails, effects of the project from interrelated actions have a low potential to result in cacti being harmed by trampling or crushing individual plants if vehicles are not using roads or trails.

V. Cumulative effects

Cumulative effects include the effects of future State, Tribal, local, or private actions that are reasonably certain to occur in the action area considered in this BO. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act.

The cactus may be adversely affected on State, private, and local lands by livestock grazing, road maintenance, dispersed recreation, wildlife habitat improvements, wildfire related actions and private land uses.

VI. Conclusion

After reviewing the current status of the cactus, the environmental baseline for the action area, the effects of the proposed livestock grazing, and the cumulative effects, it is the Service's biological opinion that the livestock grazing, as proposed, is not likely to jeopardize the continued existence of the cactus. No critical habitat has been designated for this species, therefore, none will be affected.

We reached this conclusion for the following reasons: 1) the relatively low level of anticipated take; 2) suitability and sustainability of cactus habitat will not be significantly altered by livestock grazing; 3) herbivory by livestock is not expected from cattle or horses; 4) salting and water developments will not occur within or overlap any occupied cactus sites; 5) monitoring will occur within key areas and in occupied habitat to ensure cactus use limits of 40 percent are not exceeded; and 6) impacts to herbaceous cover will be short term as current fair to poor range conditions improve.

INCIDENTAL TAKE STATEMENT

Section 9 of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit take of endangered and threatened species without special exemption. Sections 7(b)(4) and 7(o)(2) of the Act generally do not apply to listed plant species. However, limited protection of plants from take is provided to the extent that the Act prohibits the removal and reduction to possession of federally listed endangered plants. The Act also protects plants from malicious damage on areas

under Federal jurisdiction, or the destruction of endangered plants on non-Federal areas in violation of State law or regulation or in the course of any violation of a State criminal trespass law (19 NMAC 21.2).

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to use their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information. The recommendations provided here relate only to the proposed action and do not represent complete fulfillment of the agency's section 7(a)(1) responsibility for this species. We recommend the following conservation recommendations be implemented for the Panama/Prude Allotment:

- 1 The Forest Service should continue surveying all potential cacti habitat within the Panama/Prude Allotment during the cactus flowering season (typically mid-May to early June) and send the survey report to the Service annually. Survey data will provide population trend information and contribute to the overall knowledge of this species.
- 2 The Forest Service should exclude grazing from occupied cactus habitat that has high potential for trampling (e.g. close to existing waters, gathering areas, and/or cattle travel ways), or where forage use monitoring indicates a declining trend in habitat over several (3-5) years.
- 3 Any suspicious collection-related activity within the highway rights-of-way should be reported to the Service immediately.
- 4 The Forest Service should educate law enforcement officers who routinely patrol this area in identifying suspicious collection activity.
- 5 In order to protect cacti from collectors, the Forest Service should keep monitoring of populations inconspicuous.
- 6 Collaborate with the Service, New Mexico Department of Game and Fish, and others to implement needed research to determine if lagomorphs or rodent predation is a significant factor in species survival.

In order for the Service to be kept informed of actions minimizing or avoiding adverse effects or benefiting listed species or their habitats, the Service requests notification of the implementation of any conservation recommendations.

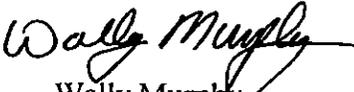
REINITIATION - CLOSING STATEMENT

This concludes formal consultation on the issuance of a 10-year term grazing permit on the Panama/Prude Allotment and its effects on the cactus.

As provided in 50 CFR 402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) new information reveals effects of agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this BO; (2) agency action is subsequently modified in a manner that causes an effect to listed species or critical habitat not considered in this BO; or (3) a new species is listed or critical habitat designated that may be affected by the action.

In future communication regarding this project, please refer to consultation #22420-2006-F-0138. Please contact Melissa Kreutzian at the letterhead address or at (505) 761-4728 if you have any questions.

Sincerely,


Wally Murphy
Field Supervisor

cc:

District Ranger, U.S. Department of Agriculture Forest Service, Lincoln National Forest,
Guadalupe Ranger District, Carlsbad, New Mexico
Director, New Mexico Department of Game and Fish, Santa Fe, New Mexico
Director, New Mexico Energy, Minerals, and Natural Resources Department, Forestry
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