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Cons. # 2-22-00-F-473

Jose M. Martinez, Forest Supervisor
Lincoln National Forest
1101 New York Avenue
Alamogordo, New Mexico 88310-6992

Dear Mr. Martinez:

This responds to your September 14, 2004 letter amending your biological assessment (BA) dated May 12, 2003, for the proposed reauthorization of livestock grazing on the Sacramento Grazing Allotment, Sacramento Ranger District, Lincoln National Forest, USDA Forest Service (Forest Service), New Mexico. On February 4, 2004, the U.S. Fish and Wildlife Service (Service) issued a biological opinion on the effects of the project to the Mexican spotted owl (*Strix occidentalis lucida*) (MSO), Sacramento Mountains thistle (*Cirsium vinaceum*) (thistle), the Sacramento Mountains prickly poppy (*Argemone pleiacantha* ssp. *pinnatisecta)* (poppy) (February 4, 2004 BO) (see Enclosure). On August 31, 2004, the Service issued a final rule designating MSO critical habitat (69 FR 53182). For this reason, you submitted an amendment to the BA that evaluates the potential impacts of this project on MSO critical habitat, and requested reinitiation of formal consultation. In this reinitiation, we also update the status and relevant analyses for the poppy because monitoring this spring and summer documented a continued decline in the overall numbers of the species.

The Service has reviewed the February 4, 2004 BO for the project and its effects to the MSO and found that the project description, action area, status of the species, environmental baseline, effects of the proposed action on the species, incidental take statement, reasonable and prudent measures, terms and conditions, and reporting requirements remain unchanged. In this document, we have added an effects of the proposed action on MSO critical habitat section. We also reviewed the February 4, 2004 BO for the poppy. In our analysis below, we highlight and modify the relevant sections.

As noted in the February 4, 2004 BO, Therefore the proposed action is that the Forest Service will attempt to maintain the following range/forage standards on the Sacramento Allotment (i.e., the 10-year term grazing permit will be managed to ensure that the range conditions are not reduced below these minimum thresholds): 1) leaf length, which applies to palatable forage species and is a range management standard, is proposed to be a minimum of 4 in, although some species have a 6-in standard; 2) stubble height, which applies to both palatable and non-palatable

herbaceous ground cover and is a standard that relates to the Forest Plan Amendments and the subsequent development of the MSO grazing criteria, is proposed to be 4 in across the allotment; 3) forage utilization, which is the difference between the amount of forage produced and consumed during the growing season is proposed to be 35 and 40 percent for the summer and winter unit, respectively, and 70 percent within the livestock traps. Throughout this biological opinion we refer to these collectively as forage/range guidelines.

The current document does not rely on the regulatory definition of "destruction or adverse modification" of critical habitat at 50 CFR 402.02. Instead, we have relied upon the statute and the August 6, 2004, Ninth Circuit Court of Appeals decision in Gifford Pinchot Task Force v. U.S. Fish and Wildlife Service (CIV No. 03-35279) to complete the following analysis with respect to critical habitat. This consultation analyzes the effects of the action and its relationship to the function and conservation role of MSO critical habitat to determine whether the current proposal destroys or adversely modifies critical habitat.

In the Record of Decision, the Forest Service acknowledged that they agree with and will implement conservation recommendations from the February 4, 2004BO. Thus, we assume that these actions will be fully implemented as part of the Forest Service's proposed action. These measures represent actions proposed by the Forest Service that are evaluated below as part of our adverse modification analysis for the MSO and our jeopardy analysis for the poppy. They are intended to minimize or avoid adverse impacts associated with these species. Therefore, these actions are non-discretionary, and must be undertaken by the Forest Service because they are part of the proposed action. If they are not fully implemented, the Service should be contacted to determine if reinitiation of formal consultation is required (50 CFR 402.16). We assume that as part of the proposed action, documentation and reporting of the following will occur:

MSO

1. Emphasize and implement the restoration of lowland riparian habitats for the MSO.

2. Reduce possible effects of grazing on the MSO prey base by improving upland range conditions in pastures in and adjacent to protected and restricted habitat.

3. Work with other entities to develop and initiate studies to gain a comprehensive understanding of how ungulate grazing affects the MSO and its prey species.

Poppy

1. Cooperate with the City of Alamogordo and other entities to restore the hydrological processes required by the poppy and restoration of developed spring habitat throughout the Sacramento Allotment.

2. Work with other entities to initiate germination studies of poppy seeds and reintroduction program(s) into current and historically occupied sites.

The current document along with the February 4, 2004 BO constitute the Service's biological

opinion based on our review of the proposed action and its effects on the MSO and its designated critical habitat, the thistle, and the poppy in accordance with section 7 of the Endangered Species Act of 1973, as amended (Act).

STATUS OF THE SPECIES (range-wide)

Mexican spotted owl

a. Species/critical habitat description

On August 31, 2004, the Service issued a final rule designating MSO critical habitat on approximately 8.6 million acres (ac) in Arizona, Colorado, New Mexico, and Utah, on Federal lands (69 FR 53182). The primary constituent elements essential to the conservation of the MSO include those physical and biological features that support nesting, roosting, and foraging. These elements were determined from studies of MSO behavior and habitat use throughout the range of the MSO. Although the vegetative communities and structural attributes used by the MSO vary across the range of the subspecies, they consist primarily of mixed conifer forests or canyons. The mixed-conifer, pine-oak communities and canyon habitat appear to be the most frequently used community throughout most portions of the subspecies' range (Skaggs and Raitt 1988; Ganey and Balda 1989, 1994; Gutierrez and Rinkevich 1991, Service 1995). Although the structural characteristics of MSO habitat vary depending on uses of the habitat (e.g., nesting, roosting, foraging) and variations in the plant communities over the range of the subspecies, some general attributes are common to the subspecies' life-history requirements throughout its range.

Protected and restricted habitat are two of the three types of MSO habitat discussed in the Recovery Plan and these habitat types were used as the basis for defining critical habitat (69 FR 53182). Protected areas include known MSO sites (Protected Activity Centers (PACs)), areas in mixed-conifer and pine-oak types with greater than 40 percent slopes where timber harvest has not occurred in the past 20 years and administratively reserved lands, such as Wilderness Areas or Research Natural Areas. Restricted habitat includes mixed-conifer forest, pine-oak forest, and riparian areas outside of protected areas.

Canyon habitats used for nesting and roosting are typically characterized by cooler conditions found in steep, narrow canyons, often containing crevices, ledges, and/or caves. These canyons frequently contain small clumps or stringers of ponderosa pine, Douglas-fir, white fir, and/or pinyon-juniper. Deciduous riparian and upland tree species may also be present. Adjacent uplands are usually vegetated by a variety of plant associations including pinyon-juniper woodland, desert scrub vegetation, ponderosa pine-Gamble oak, ponderosa pine, or mixed-conifer. Because MSO habitat may also exhibit a combination of attributes, we designated primary constituent elements for both forested and canyon types.

Within forests, the following are considered primary constituent elements:

1. A range of tree species, including mixed conifer, pine-oak, and riparian forest types, composed of different tree sizes reflecting different ages of trees, 30 percent to 45 percent of which are large trees with a trunk diameter of 12 inches (0.3 meters) or more when measured at 4.5 feet (1.4 meters) from the ground;

2. A shade canopy created by the tree branches covering 40 percent or more of the ground; and

3. Large dead trees (snags) with a trunk diameter of at least 12 inches (0.3 meters) when measured at 4.5 feet (1.4 meters) from the ground.

The primary constituent elements related to maintenance of adequate prey species include:

1. High volumes of fallen trees and other woody debris;

2. A wide range of tree and plant species, including hardwoods; and

3. Adequate levels of residual plant cover to maintain fruits, seeds, and allow plant regeneration.

The primary constituent elements related to canyon habitat include one or more of the following:

1. presence of water (often providing cooler and often higher humidity than the surrounding areas);

2. clumps or stringers of mixed-conifer, pine-oak, pinyon-juniper, and/or riparian vegetation;

3. canyon wall containing crevices, ledges, or caves; and

4. high percent of ground litter and woody debris.

ENVIRONMENTAL BASELINE

Under section 7(a)(2) of the Act, when considering the effects of the action on federally listed species, we are required to take into consideration the environmental baseline. Regulations implementing the Act (50 FR 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 current status of the species and its habitat in the action area to provide a platform to assess the effects of the action now under consultation.

Status of the species within the action area

Mexican spotted owl

MSO critical habitat is limited to areas within the mapped boundaries that meet the definition of protected and restricted habitat as described by the MSO Recovery Plan and contains one or more primary constituent elements (USDI 1995;69 FR 53182). Within the project area, the vegetative communities and structural attributes used by the MSO consist primarily of mixed conifer forests.

Lands located within the mapped boundaries of the critical habitat designation that are not included in the designation and, are therefore excluded by definition, include: State and private lands, 157 wildland urban interface projects and the Penasco WUI project area that contain owls or habitat on Forest Service lands that are identified in the Wildland Urban Interface database located at http://www.fs.fed.us/r3/wui/ and addressed in the April 10, 2001, final biological opinion on the Forest Service's proposed wildland urban interface fuel treatments in New Mexico and Arizona and the September 27, 2002, final biological opinion on the Rio Penasco II Non-Programmatic Vegetation Management Project and Forest Plan Amendment (Rio Penasco II). Using this information, the Forest Service estimated that the Sacramento Allotment contains approximately 39,000 ac of MSO critical habitat within critical habitat unit BR-E-1b. Unit BR-E-1b is located in the Sacramento Mountains, Otero County, New Mexico. It contains primarily Forest Service lands of the Sacramento Ranger District, Lincoln National Forest. Habitat includes ponderosa pine, mixed-conifer, and spruce-fir forests and is patchy distributed throughout the higher mountain ranges. Based on the Forest Service estimate and related information described above, we estimate that less than 1 percent (i.e., 39,000 ÷ 8.6 million acres) of the designated critical habitat is within the project area.

Sacramento Mountains prickly poppy

One aspect of the environmental baseline that applies to the poppy is the on-going drought conditions. Five of the last 7 years have received less than the 62-year mean amounts of rainfall (Western Regional Climate Center 2003). As of August 2004, Otero County was continuing to experience drought conditions (NRCS 2004), which have led to extremely low soil moisture conditions and adversely affected the poppy. On September 28, 2004, the area was rated as experiencing moderate to severe drought conditions (USDA 2004). The 2004 summer monsoons provided little relief from the continued dry conditions, and forecasts predict the drought will continue (University of Arizona 2004, NRCS 2004).

Alamo and Caballero Canyons are completely within the Alamo Pasture of the Sacramento Allotment. Surveys conducted in June 2003 (545 poppies) and spring/summer 2004 (345 poppies), documented that the number of poppies within the action area is significantly lower than the highest population estimate of 955 plants in 1987. Additional information provided by

the Forest Service indicates that 60 poppies were found in Fresnal Canyon in 2003, 32 poppies were found in Dog Canyon in 2004, and no poppies were found in Salado Canyon in 2004. These data update Table 3 from the February 4, 2004 BO.

A fungal stem canker has been reported as the cause of 7 of 18 plants failing to set fruit and dying in Dog Canyon (Sivinski 1999). The stem fungus is also present on poppies within Alamo Canyon (Forest Service 2004, R. Sivinski, New Mexico Energy, Minerals, and Natural Resources Department, pers. comm., 2004). Samples of the stem fungus have been collected and sent to a plant pathologist for identification and, if possible, control. It is highly likely that drought and/or stem fungus have significantly affected the status of the poppy, which has continued to decline. The best available information indicates that the further population decline of poppies during 2004 was not likely caused by livestock grazing activities (i.e., the discretionary action of the Forest Service). This conclusion is further supported by population declines experienced in areas that remain ungrazed (e.g., Dog Canyon) and the fact that livestock were removed from Alamo Pasture in February 2004, to avoid impacts to germinating poppies and poppy seedlings. Additionally, the information we reviewed suggests that grazing on mature poppies is generally incidental (see discussion below). Although, the relationship between livestock use and poppy numbers remains unclear, we believe high forage utilization and/or stocking rates was not a benign effect on the poppy. The lack of consistent application of previous forage/range guidelines likely historically had an adverse effect on the status of the poppy. For example, high forage utilization and an overlap during the germination and growing season of the poppy increases the potential for livestock to graze and/or trample plants. We conclude that the years of cumulative impacts played a role in the current status of the poppy (e.g., reducing poppy numbers within Alamo Canyon).

Moving livestock out of Alamo Pasture by February 2004 avoided and minimized impacts to the poppy from herbivory and trampling. We understand that forage/range guidelines within the winter unit will not be met instantaneously, when the permit for the Sacramento Allotment is issued. Similar to our conclusions regarding MSO PACs in the February 4, 2004 BO, historical overutilization may preclude range restoration for decades, even with strict compliance with forage/range guidelines. For example, the Forest Service documented the following effects within the winter unit of Sacramento Allotment: 1) forage utilization levels averaged 70 percent since 1991; 2) no monitoring data was collected from key areas within the Alamo Pasture from 1993 through 2001; 3) extreme forage utilization and drought conditions during 2001 and 2002 resulted in significant reductions in forage production; 4) mature poppies are at their lowest numbers since records have been kept; and 5) the continued (i.e., yearly) overlap between livestock grazing and poppy germination and seedling growth has likely affected the ability of the species to recover during this period of low populations levels, low seed production, and drought (Forest Service 2003e).

For these reasons, the Forest Service acknowledged in the BA that damage could occur to poppies after February 1 in Alamo Pasture from grazing activity and associated trampling (Forest Service 2002, 2003, 2003g). Subsequently, the AOI for the 2003-2004 winter grazing season (i.e., November 2003 through May 14 2004) included a provision that livestock would be removed from the Alamo Pasture prior to February 1, 2004 (L. Barker, Forest Service, pers. comm., 2004). The Forest Service committed to removing livestock from the Alamo Pasture by

February 1 for two years to protect the poppy. The two years of the proposed February 1 exit date were planned to be 2004 and 2005. This was consistent with the Forest Service's proposed action currently under review, and limited adverse effects to the poppy by reducing the overlap and potential effects between livestock trampling and/or grazing and poppy germination and seedling growth that had likely historically affected the ability of the species to recover during periods of low population numbers.

It is our understanding that livestock were removed from the Alamo Pasture in February 2004. In formulating this biological opinion, we considered this conservation measure to be a beneficial action taken by the Forest Service and permittee (50 CFR 402.14(g)(8)), because it insures that the status of the poppy does not further decline from grazing activities and associated trampling. Thus, the first year of the two-year livestock removal from Alamo Pasture by February 1 has been achieved.

Poppy Conservation

The Act requires Federal agencies to use their authorities to conserve endangered species (Act, section 7(a)(1)). The current role of the Service in this stewardship is that of lead authority and protector of threatened and endangered species in the United States. This includes protection of the habitats upon which these species depend, as well as recovery of populations that have been diminished. The Recovery Plan for the poppy was signed in August 1994 (Service 1994). Recovery Criteria are described in the Recovery Plan as follows: 1) establish or maintain 10 reproducing populations of the poppy within 10 currently occupied canyons, 2) maintain populations documented through monitoring over at least a 10-year period, and 3) populations should be geographically distinct and represent the total geographic range and genetic variability of the species. Recently, a collaborative group was formed, to provide independent evaluations, technical assistance, and implement management actions that will assist in the conservation of the poppy. This group includes representatives from the Forest Service, the Service, and Otero County. This collaborative group will begin to study and implement many of the recommended actions identified in the final Recovery Plan (Service 1994).

These conservation actions are considered beneficial effects that are reasonably certain to occur in the foreseeable future in the action area. This year we also expect to convene a recovery working group and will seek funding from the National Fish and Wildlife Foundation to begin implementing recovery activities with the goal of improving the status of the poppy. For example, the New Mexico Energy, Minerals, and Natural Resources Department and the New Mexico Natural Heritage Program recently met with the Service and Forest Service to begin developing a captive propagation program for the poppy. Poppy seeds were collected during September 2004 to begin investigating captive propagation and restoration techniques. In addition to providing information on germination and seedling requirements, this investigation will also target reintroduction techniques to improve the status of the species.

Although we have a population estimate based upon ad hoc surveys (i.e., they are not based upon known statistical properties), we do not know how many poppies are in the wild. Consequently, it is difficult at this time to determine the exact number needed in captive propagation. However, to insure against a catastrophic event in which nearly all wild poppies would be lost, we believe

it is prudent that poppies and their seeds are kept in propagation facilities to maintain a sufficient amount of genetic variability for propagation/reintroduction efforts. These activities will be carefully managed to ensure the long-term viability of the species. We believe that, given the current status of the poppy, this is an appropriate strategy to assist in the recovery of the species. Consistent with Service policy (65 FR 183), captive propagation will be conducted in a manner that will, to the maximum extent possible, preserve the genetic and ecological distinctiveness of the poppy and minimize risks to existing wild populations. We consider captive propagation and storage of seeds necessary in response to drought and stem fungus. These and other actions will attempt to improve the environmental baseline of the poppy. However, it should be clearly understood that the primary objective of the Act is to maintain and recover wild populations of threatened and endangered species.

The Forest Service has implemented conservation measures to minimize impacts on the poppy. For example, they have implemented a 40 percent allowable forage utilization on the winter unit. Alamo Pasture will be monitored each December or January to determine whether an adjustment to the number of livestock, commensurate with the potential for livestock impacts on the poppy from herbivory and trampling is necessary. Forage utilization will also be monitored, and could entail leaf length measurements, clipping and weighing, utilization cages or other methods the Forest Service determines is appropriate. Adjustments could entail livestock removal, herd management (moving livestock within Alamo Pasture), or livestock reductions. We anticipate that the members of this collaborative group will meet with the Forest Service each January to independently review monitoring data and individually provide technical assistance for the Forest Service to consider. It is our understanding that the Forest Service will use the monitoring data and information discussed at this meeting to manage and protect poppy occurrences within the Sacramento Allotment consistent with this biological opinion, the Lincoln National Forest Plan, the EIS, and range management regulations (e.g., see 36 CFR 222).

In summary, the data we have on the poppy suggests that the population has dramatically decreased since 1987 (Forest Service 2003, 2004). This decrease likely occurred as a result of a variety of factors, including drought, stem fungus, and historic livestock impacts. We are hopeful that recent and future conservation actions will reverse this population decline, while acknowledging that the significant remaining threats of drought and stem fungus are "acts of nature," not discretionary actions related to livestock grazing.

Effects of the action

Mexican spotted owl critical habitat

Within the estimated 39,000 acres of critical habitat of the Sacramento Allotment, only a fraction of the area contains primary constituent elements with the potential to be affected. For example, we noted in the biological opinion that grazing generally does not occur within mixed conifer habitat because livestock generally remain within meadows or riparian areas. Meadows and riparian areas are only considered critical habitat when they fall within protected or restricted habitat and contain one or more primary constituent elements. Using this information, we conclude that the primary constituent elements for the MSO that are applicable to this project are related to the maintenance of adequate prey species.

Under the current proposed action, we conclude that livestock grazing only has the potential to affect MSO critical habitat when grazing occurs within protected or restricted habitat that contains the primary constituent element of "adequate levels of residual plant cover to maintain fruits, seeds, and allow plant regeneration." Throughout this biological opinion we refer to this primary constituent element (PCE) as MSO prey habitat. Similar to our findings in the final rule designating critical habitat for the MSO, we note that grazing usually does not occur within mixed conifer habitat because livestock generally remain within meadows or riparian areas (69 FR 53182). In fact, on the Lincoln National Forest, protected or restricted habitat, is generally composed of mixed conifer (Service 1995). Thus, the majority of potential effects related to livestock grazing within designated MSO critical habitat will be insignificant and discountable, because high volumes of fallen trees and other woody debris in addition to the other primary constituent elements in forested habitats will not be substantially affected. Additionally, the habitat-based guidelines and definitions of protected and restricted habitat of the MSO Recovery Plan were utilized for our critical habitat designation and the February 4, 2004 BO; consequently, much of our previous analyses and conclusions are relevant to the current adverse modification analysis. Therefore, our analyses and conclusions detailed below are similar with regards to effects on protected and restricted areas and the PCE MSO prey habitat.

The designation includes primary constituent elements related to canyon habitat, but this habitat type does not occur within the Sacramento Allotment or will be unaffected by livestock grazing activities. Therefore, we do not analyze the effects of livestock grazing activities on primary constituent elements within canyon habitat.

There are all or portions of 46 PACs within the Sacramento Allotment. Two are on the winter unit and the other 44 PACs are within the summer unit. Ten of these 44 PACs have little or no grazing due to steep slopes, access and very little meadow habitat within the PACs. In general, these 10 PACs and other protected habitats would receive light forage utilization because of high canopy closure, multistoried conditions, and high basal area of woody species that limit understory production; and because of the association these areas have with steep slopes and distance from large meadows. For these reasons, grazing within these PACs is considered insignificant and discountable with regard to designated MSO critical habitat. The remaining 34 PACs and associated critical habitat, which are subject to cattle grazing, have differing amounts of meadow habitat, ranging from 1 to 97 ac per PAC (total 805 ac of meadows within PACs). Using information in the BA, we find that critical habitat on the Sacramento Allotment that has the potential to be adversely affected by the proposed action consists of meadow habitat and riparian areas totaling approximately 1,665 ac. Meadows within PACs comprise about 805 out of these 1,665 ac.

In addition to the conservation measures identified above, the conservation measures identified in the February 4, 2004 BO will be fully implemented by the Forest Service as part of their proposed action. They are hereby incorporated by reference (Service 2004). These conservation measures represent actions proposed by the Forest Service that were evaluated below as part of our adverse modification analyses. These conservation measures will help minimize or avoid adverse impacts to the function and conservation role of MSO critical habitat. Conservation measures 1, 2, 3, 5, 6, 7, 10, 13, 14, 15, 17, and 18 from the February 4, 2004 BO and the three

measures identified above will promote management, restoration, and maintenance of riparian habitat. Consistent with the MSO Recovery Plan, we believe these measures have the potential to restore good conditions to degraded riparian communities (Service 1995). Proposed livestock management projects and conservation measures 4, 11, 12, and 13 also have the potential to expedite attaining and maintaining "good to excellent range conditions" (Service 1995). Without these conservation measures, the negative effects to the function and conservation role of MSO critical habitat likely would be greater.

MSOs typically hunt from perches in trees with dense foliage using a perch-and-wait strategy; therefore, cover must be present within their home range for them to successfully hunt and survive (Service 1995). Their diverse diet includes small mammals, birds, lizards, and insects. The primary MSO prey species are woodrats (*Neotoma* spp.), peromyscid mice (*Peromyscus* spp.), and microtine voles (*Microtus* spp.) (Service 1995; Young et al. 1997; Delaney et al. 1999; Seamans and Gutierrez 1999). Research indicates that woodrats are the most important prey species based on relative biomass (Young et al. 1997; Delaney et al. 1999; Grubb et al. 1999; Seamans and Gutierrez 1999). However, MSOs also utilize different groups of prey species on a seasonal basis. The density of annual plants and grasses, as well as shrubs, may be important to enhancing the MSO's prey base (Ward and Block 1995; Delaney et al. 1999; Ward 2001). Vegetation communities that provide a diversity of structural layers and plant species likely contribute to the availability of prey for MSOs (Willey 1993; Gutierrez and Rinkevich 1991). Therefore, conservation of the MSO should include consideration of the habitat needs of prey species, including structural and species diversity. In order to provide the conservation function, MSO habitat must provide sufficient prey base and cover from which to hunt in an appropriate configuration and proximity to nest and roost sites.

Recovery Plan and Forest Plan Amendments

The Service has reviewed the February 4, 2004 BO for this section and found that our analyses and conclusions apply equally to designated critical habitat. We expect that the Forest Service will manage the riparian communities for gradual improvement to the extent that riparian vegetation will be restored to good condition "as soon as possible." We recognize that adverse effects to MSO critical habitat will not be instantaneously ameliorated when the permit for the Sacramento Allotment is issued. Nevertheless, we find that the proposed action is consistent with the grazing guidelines identified in the Recovery Plan and the 1996 Forest Plan Amendments that added specific standards and guidelines for the MSO, grazing, and other management prescriptions (Forest Plan Amendments) (Forest Service 1995, 1996b), and will thus minimize adverse effects to the relevant PCE of designated MSO critical habitat. As noted in the February 4, 2004 BO, the Forest Service will monitor key areas and management action(s) will be taken if guidelines are not met. The implementation and enforcement of the 10-year term grazing permit, consistent with the proposed forage/range guidelines will provide adequate levels of the PCE MSO prey habitat. If these activities result in consistent attainment of forage/range guidelines, they may reduce the adverse effects to MSO prey habitat.

Grazing Criteria

Under the forage/range guidelines of the proposed action, we believe the Forest Service will generally meet the grazing criteria as they relate to designated MSO critical habitat (the exception will be within livestock traps). Therefore, we anticipate that the Forest Service will attempt to provide the forage/range guidelines that will limit adverse effects to MSO prey habitat. As noted in the February 4, 2004 BO, we expect that the current proposal will provide residual woody and herbaceous vegetation necessary for prey habitat. The recent Forest Service Record of Decision regarding this allotment identifies that the final allotment management plan (AMP) will be submitted to the Service within 3 months from the date this agency action is completed (i.e., after clearance of administrative appeals). The AMP will not differ significantly from the proposed action. Therefore, we conclude that the Forest Service will monitor key areas to determine compliance with forage/range guidelines, and take appropriate management action to achieve the guidelines. These activities will limit adverse impacts to MSO critical habitat.

Forage/range guidelines

We noted in the February 4, 2004 BO that the current range conditions are declining, and it is likely that some MSO PACs containing meadows that are within ½ mile of nest/roost areas may be in poor condition. These areas are considered critical habitat and include the PCE MSO prey habitat. The best scientific and commercial information (i.e., in the FEIS, the BA, and data collected from 1991 through August 2003) consistently indicate that the forage/range guidelines have not been maintained on the Sacramento Allotment. The Forest Service concluded in the FEIS and the BA that past range management is inconsistent with the Forest Plan standards and guidelines (Forest Service 2003a). We agree with this conclusion, and find that MSO critical habitat is currently being adversely affected in some PACs. It is unlikely that MSO prey habitat is being provided throughout all MSO PACs containing meadows that are known to be in poor condition. As a result, we remain concerned about the condition of meadows within the Sacramento Allotment, and the possible effects on the PCE MSO prey habitat. This is especially significant because the Forest Service states in their BA and FEIS, that their proposed action allows adverse effects to MSO prey cover if forage/range guidelines (e.g., 35 percent utilization) are exceeded during dry periods (Forest Service 2002, p. 63). Nevertheless, we believe the current proposal to establish forage/range guidelines is consistent with the Recovery Plan and Forest Plan Amendments, when the standards and guidelines are implemented and enforced in all protected and restricted MSO habitat. We acknowledge that attainment of the proposed forage/range guidelines may not be possible every year of the permit (e.g., see discussion below); however, over the span of 10 years, we anticipate that the forage/range guidelines will improve the overall range conditions and adverse effects to MSO critical habitat will be reduced.

We remain optimistic that the Forest Service will administer the Sacramento Allotment permit consistent with the Lincoln National Forest Plan. This would include maintaining the proposed herbaceous ground cover height and forage utilization, even during drought conditions. In order to reach this conclusion the Forest Service must adhere to following that were identified in the FEIS: 1) allowable use guidelines (i.e., forage/range guidelines) would require that cattle be moved when forage is not sufficient to protect riparian and aquatic systems; 2) during dry periods the allowable use guidelines (i.e., forage/range guidelines) must be followed or the effects from the proposed action would be identical to current conditions (e.g., overutilization of forage) and not adhere to the Lincoln National Forest Plan; 3) the variable stocking rate in the permit reflects

that during dry periods livestock numbers can be reduced when required to meet forage/range guidelines (Forest Service 2002); and 4) the Forest Service intends to manage and protect long-term range conditions consistent with their range management regulations (e.g., see 36 CFR 222). We expect that MSO prey habitat will be maintained and improved over the life of the 10-year permit, and that the Forest Service will strive to meet their forage/range guidelines. As provided in 40 CFR 402.16, reinitiation of formal consultation may be required if range conditions do not show improvement or if the Forest Service does not attempt to meet these forage/range guidelines as they are described in this consultation.

It is our expectation that range/forage guidelines will improve under the current proposed action, because they will be applied across the landscape and should result in management activities that will minimize adverse impacts to MSO critical habitat by maintaining and restoring good range conditions. We identified in the February 4, 2004 BO that information is available for the Hubble and Bluff Springs PACs that indicate forage/range guidelines are below the minimum forage/range guidelines. These data also indicate that MSO critical habitat within these PACs is currently being adversely affected. Consequently, we conclude that the amount of MSO prey habitat is currently reduced. As discussed in the February 4, 2004 BO, desired forage/range guidelines the Hubble and Bluff Springs PACs will not be met instantaneously when the permit for the Sacramento Allotment is issued. The current degraded conditions within these PACs, indicate that the range/forage guidelines may not be attained within the next few years and adverse effects to MSO critical habitat will continue. We find that failing to attain the forage/range guidelines will result in reduced quality of MSO prey habitat, and will result in adverse effects to MSO critical habitat within these PACs during the next few breeding seasons. Until the monitoring data indicate that the forage/range guidelines are met throughout the year, we conclude that adverse effects to the PCE MSO prey habitat will occur for the Hubble and Bluff Springs PACs. The PCE MSO prey habitat retains the ability to be functionally established when the forage/range guidelines are met within the Hubble and Bluff Springs PACs. We find that the effects to the function and conservation role of critical habitat relative to the Recovery Unit and the entire designation are not significant because the impacts occur in a very small area relative to the Recovery Unit and the overall critical habitat designation. Therefore, we conclude that the PCE MSO prey habitat will serve the intended conservation role for species with implementation of the proposed action.

Monitoring

It is our understanding that monitoring data will assess whether the following proposed forage/range guidelines are met: 1) the 4-in herbaceous ground cover height for MSO prey habitat; 2) the 35 percent forage utilization for the summer unit; and 3) the 40 percent forage utilization for the winter unit. We believe that when monitoring of forage/range guidelines occurs within a specific pasture within the Sacramento Allotment, this information could be used to manage appropriate livestock numbers or determine whether annual operating instructions or the term permit should be modified. This type of adaptive management process would ensure forage/range guidelines will be attained by describing the monitoring and potential management actions that would be utilized such as: 1) moving livestock to other areas of the pasture or to a new pasture; 2) removing or reducing the number of livestock; or 3) other appropriate measures. The proposed monitoring and related management thresholds will limit adverse effects to MSO

critical habitat, and should achieve compliance with the Recovery Plan, the MSO grazing criteria, the Lincoln National Forest Plan, and the Forest Plan Amendments.

Interdependent and Interrelated Actions

The Forest Service concludes that MSO prey habitat would not be provided within livestock traps, and that the proposed 70 percent forage utilization would adversely affect designated critical habitat within PACs that are contained within livestock traps. We agree with the conclusion, because the action is inconsistent with the Recovery Plan and the Forest Plan Amendments. For example, there are 25 ac of the Marcia PAC, 0.8 ac of the Rice PAC, and 2 ac of the Bluff PAC that are within the Peñasco livestock trap. Other livestock traps with minor proportions of PAC acreages on the Sacramento Allotment include the Benson, Wills, and Thousand Mile livestock traps. Although 70 percent forage utilization within PACs contained in livestock traps will adversely affect designated critical habitat, we do not expect the effects to appreciably alter the function and conservation role of MSO critical habitat because the surrounding critical habitat will remain intact and provide adequate levels of MSO prey habitat. Additionally, we recognize that the PAC areas within livestock traps are a minor proportion of each of the overall PACs.

The proposed livestock projects on the winter unit are not expected to affect MSO critical habitat because they are outside of protected and restricted habitat. Alternatively, a new 10-acre livestock trap is proposed to be constructed adjacent to the Masterson PAC on the summer unit. The Forest Service concludes that the construction of the livestock trap will increase both use and human activity within the 45-acre meadow, but this activity will not be within the Masterson PAC or designated critical habitat. We believe that construction activities will increase use and human activity, but these activities are not considered adverse since they are located outside of critical habitat. As noted above, the proposed forage utilization is considered inconsistent with the recommendations in the Recovery Plan and Forest Plan Amendments to maintain good to excellent grazing conditions. Nevertheless, we conclude that the indirect effects to adjacent critical habitat within the Masterson and Telephone PACs will be insignificant and discountable.

The Forest Service identified that a 10-acre livestock exclosure is proposed within the Telephone PAC to limit impacts on the Forest Service sensitive plant, *Lilium philadelphicum*. Construction of this exclosure is not expected to adversely impact critical habitat within the Telephone PAC. Similarly, the sunspot pipeline is proposed for reconstruction within the Moore PAC. This project along with other water improvements is expected to distribute grazing use. For these reasons, we do not anticipate adverse effects will occur to critical habitat within the Moore PAC.

Additional activities that concentrate cattle (trailing, gathering, and placement of waters, salt, and nutrient supplements) are proposed to be conducted within critical habitat (i.e., within some PACs). For example, salting is proposed to occur within the lower Wills and other PACs. Although the Forest Service determined that these impacts will be incidental, we believe they have the potential to concentrate livestock within PACs and/or riparian areas, both of which appear to be inconsistent with the Recovery Plan and Forest Plan Amendments. We believe that salt blocks placed within PACs or riparian areas concentrate livestock in the area is not conducive to attaining good to excellent range conditions within the key areas or to restore good

conditions to degraded riparian communities as soon as possible. For this reason, we expect that the PCE MSO prey habitat within these PACs will be adversely affected by these activities.

Sacramento Mountains prickly poppy

The Forest Service will also implement the additional two conservation measures identified above for the poppy. These conservation measures were evaluated as part of our jeopardy analysis for the species. Similar to the information under the Environmental Baseline section above, these conservation measures will attempt to improve the status of the poppy.

As it relates to the poppy, the proposed action will manage livestock on the winter unit of the Sacramento Allotment in light of current drought conditions, consistent with the Lincoln National Forest Plan and range management regulations. The Forest Service has observed low numbers of poppy seedlings since 2001, due in part to the persistence of drought conditions (Forest Service 2003a). The status of the poppy could increase or decrease annually, and is dependent on many variables in addition to the proposed action, including precipitation and other climactic conditions, the effect of the stem fungus, and possible genetics (e.g., inbreeding depression).

Alamo Pasture is proposed to be grazed from November 1 to January 31 during the first year of the permit. In the nine subsequent years of the permit, forage/range guidelines in Alamo Pasture will be monitored each December or January to determine whether an adjustment to the number of livestock is necessary to protect the poppy from herbivory or trampling. During drought conditions, the proposed action is unlikely to impact a significant portion of the poppy's population because the Forest Service will monitor forage utilization and adaptively manage range conditions. As noted in the February 4, 2004 BO, monitoring has demonstrated that livestock herbivory has occurred on mature poppies. Nevertheless, it is believed that much of the herbivory is incidental because the plant is known to be unpalatable from abundant rigid spines (Soreng 1982, Forest Service 1984, 1985). Moreover, when the poppy is in the rosette stage and a small number of leaves are affected, the poppies recover and vigorously bolt and flower. In future years, the success of seedling establishment and recruitment into the population will depend on management of livestock within the winter unit and adequate rainfall. Monitoring and subsequent livestock management adjustments will insure that adverse effects to the poppy from livestock are reduced or avoided. Therefore, we anticipate that when the Forest Service determines one of the forage/range guidelines will not be met, they will manage and protect long-term range conditions consistent with the Lincoln National Forest Plan and their range management regulations (e.g., see 36 CFR 222). Consequently, we do not expect excessive forage utilization will occur and herbivory is not expected to have long-term negative impacts to poppies. In fact, when the proposed forage/range utilization guidelines are met, impacts to mature poppies from herbivory will likely be insignificant.

The Forest Service has enacted measures to reduce impacts to the poppy including variable stocking rates based upon monitoring and removal of livestock from Alamo Pasture by February 1, 2005. The Service believes that these actions will provide conservation benefits to the poppy. Additionally, we assume that the Forest Service will continue to monitor the poppy throughout the 10-years of the permit. This monitoring will allow the Forest Service to adapt annually and

vary the grazing season and stocking rates to achieve the forage/range guidelines. For example, we expect that if the status of the poppy does not improve over the next year, livestock would continue to be removed from the Alamo Pasture by February 1 in order to limit potential grazing impacts on newly-emerged poppies and seedlings that have not yet established a tap root. Alternatively, if the status of the poppy improves (e.g., more poppies are located throughout its range), it is possible that livestock grazing will be permitted in Alamo Pasture beyond February 1 and possibly through the end of the winter grazing season in mid-May. Nevertheless, it is important to note that the status of the poppy will likely be the most important determinant in this decision. If this scenario is followed, we conclude that impacts to the poppy related to livestock will be minimal.

Trampling of individual poppies is unavoidable when livestock graze in occupied habitat (Forest Service 1994). The BA states that light trampling of mature plants is not likely to kill them, as they have a substantial underground root mass. Although trampling of fragile seedlings could easily cause the loss of individuals, we expect these impacts will be minimized by the removal of livestock from Alamo Pasture for the first year of the permit. The absence of livestock during late spring and summer will allow vulnerable seedlings and young plants that may be present to grow and develop root storage without damage. The Forest Service proposes to monitor livestock use on poppies in subsequent years, and adjust livestock numbers accordingly, to reduce or avoid adverse effects to the poppy.

The poppy has shown relatively wide fluctuations in the number of mature plants through the years. It has shown the ability, at least in years of normal or above normal rainfall, to maintain stable populations or recover. Nevertheless, if the current drought continues as predicted, it is highly unlikely that germination rates of poppy and/or seedling survival will increase during the 2004-2005 grazing season, and possibly beyond. We agree with the Forest Service that the poppy produces an abundance of seed, suggesting that the limiting life stage of the poppy is either germination or seedling establishment. Most likely, the relative rarity of this plant is caused by its frequent failure to become established after germination, due in large part to insufficient moisture. This is a vulnerable period when the young plant has insufficient roots to survive a prolonged dry spell. At a time of low population levels, low seed production, and drought conditions, the establishment of new plants is critical. Resting the Alamo Pasture from livestock use during the first year, and possibly subsequent years of the permit, may allow the poppy some ability to respond with increased recruitment of mature plants into the population.

Although the status of the poppy has further declined, we believe that this was not an effect related to livestock grazing or associated trampling. In 2004, the absence of livestock from the Alamo Pasture during February through May minimized the potential for trampling of vulnerable seedlings and young poppies. This removal of livestock during germination and the emergence of seedlings likely avoided impacts to poppy seedlings as they began to grow and/or develop their taproot. Similar to previous reports (Forest Service 1994, 1995) that found few livestock impacts from herbivory and trampling, it appears that the decline in mature poppies is likely related to the cumulative impacts of the on-going drought and possibly other factors (e.g., stem fungus, in-breeding, etc). Accordingly, it is imperative that the Forest Service conduct their proposed monitoring and adaptively manage the Alamo Pasture consistent with the proposed

action. We find this method of adaptive management will allow the Forest Service to limit adverse effects to the poppy.

Mexican spotted owl

After reviewing the current status of the MSO, the environmental baseline for the action area, the effects of the proposed Sacramento Allotment and the cumulative effects, it is our biological opinion that the project, as proposed, is not likely to destroy or adversely modify designated critical habitat within the Basin and Range East RU or rangewide. We also do not expect the effects of the proposed action to appreciably alter the function and intended conservation role of MSO critical habitat. We make this finding for the following reasons:

1. The proposed forage/range guidelines, monitoring and enforcement, development of an AMP, reduced stocking levels, and deferred-rotation strategy will allow overall range conditions to improve over the 10-years considered in this consultation. This will reduce the adverse effects to designated critical habitat.

2. We anticipate that when the Forest Service determines one of the forage/range guidelines will not be met, they will manage and protect long-term range conditions consistent with the Lincoln National Forest Plan and range management regulations (e.g., see 36 CFR 222).

3. We found that some of the proposed actions have the potential to cause adverse effects to small areas of designated critical habitat (e.g., within Hubble and Bluff Springs PACs). Nevertheless, it is anticipated that these impacts will be short-term (i.e., improvement will be shown over the 10-years in the permit) and will not affect the role of critical habitat unit BR-E-1b relative to the conservation of the MSO and to the overall critical habitat designation.

4. The PCE that will be affected by the proposed action is MSO prey habitat. Even with adverse effects occurring to this PCE in some areas of the allotment, we conclude that the surrounding PCEs of critical habitat will remain intact and, and essentially be unaffected (i.e., the effects will be insignificant and discountable) by livestock grazing.

Sacramento Mountains prickly poppy

After reviewing the current status of the poppy, the environmental baseline for the action area, the effects of proposed livestock grazing on the Sacramento Allotment and the cumulative effects, it is our biological opinion that the project, as proposed, is not likely to jeopardize the continued existence of the poppy. Critical habitat for this species has not been designated; thus none will be affected. We make this finding for the following reasons:

1. The proposed forage/range guidelines, monitoring and enforcement, development of an AMP, reduced stocking levels, and deferred-rotation strategy will allow overall range conditions to improve over the 10-years considered in this consultation.

2. The removal of livestock from the Alamo Pasture, where the majority of known poppies exist, by February 1 has and will continue to allow for germination and growth of seedlings without the threat of trampling or herbivory. Monitoring of livestock effects to poppies is expected to guide management such that negative impacts resulting from any documented trampling or herbivory of seedlings will be eliminated or minimized through management changes.

3. We anticipate that when the Forest Service determines that impacts are occurring to the poppy as the result of livestock grazing, they will manage and protect poppy occurrences consistent with the Lincoln National Forest Plan, the EIS, and range management regulations (e.g., see 36 CFR 222).

4. A collaborative working group composed of Forest Service, Service, Otero County, New Mexico Energy, Minerals, and Natural Resources Department, the New Mexico Natural Heritage Program, the permittee and possibly others will evaluate and implement recommended recovery actions identified in the final Recovery Plan (Service 1994). These activities will attempt to improve the environmental baseline of the poppy.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to utilize 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 necessarily represent complete fulfillment of the agency's section 7(a)(1) responsibility for these species. In order for us to be kept informed of actions that either minimize or avoid adverse effects or that benefit listed species and their habitats, we request notification of the implementation of the conservation recommendations. We recommend the following conservation recommendations be implemented:

Sacramento Mountains prickly poppy

1. The Forest should place utilization cages around select poppies in Alamo Pasture to further evaluate the effect of livestock use on the species. These cages should be constructed using hog panels or similarly sturdy materials to insure livestock do not enter the areas.

REINITIATION - CLOSING STATEMENT

This concludes formal consultation on the Sacramento Allotment. As provided in 50 CFR 402.16, re-initiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been maintained (or is authorized by law) and if (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the proposed action that may affect listed species or critical habitat in a manner or to an extent not

considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to listed species or critical habitat that was not considered in this opinion; or (4) a new species or critical habitat is designated that may be affected by the proposed action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take shall cease pending re-initiation.

In future communications regarding this project, please refer to consultation #2-22-00-F-473. If you have any questions or would like to discuss any part of this biological opinion, please contact Eric Hein of my staff at (505) 761-4735.

Sincerely,

Joy E. Nicholopoulos

Susan MacMullin
Field Supervisor

Enclosure

cc:
District Ranger, Sacramento Ranger District, Lincoln National Forest, Cloudcroft, New Mexico
Director, New Mexico Department of Game and Fish, Santa Fe, New Mexico
Director, New Mexico Energy, Minerals, and Natural Resources Department, Forestry Division, Santa Fe, New Mexico

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