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36 C.F.R. 215 APPEALS
U.S. Certified Mail – Return Receipt Requested June 15, 2009

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APPEAL OF FOSSIL CREEK RANGE ALLOTMENT GRAZING AUTHORIZATION

"Vegetative conditions have declined at 60% of the permanent vegetation monitoring plots and a downward trend is indicated at 87% of the plots … Impacts from the drought period from 1998 to present, coupled with current management of livestock grazing, are believed to be the significant factors in the decline in vegetation conditions."

Fossil Creek Range Allotment Environmental Assessment, 13

"The current season of use is yearlong and the current permitted livestock numbers are 477 head of adult livestock and 6 horses. This permitted use equates to 5,796 Animal Unit Months."

Fossil Creek Range Allotment Environmental Assessment, 11

"Continuation of current management is not expected to improve soil condition, vegetative condition, or riparian and wildlife habitat conditions. As a result, a current management alternative would not meet the purpose and need of the project…"

Fossil Creek Range Allotment Environmental Assessment, 19

"The Red Rock Ranger District proposes to authorize year-long grazing on the Fossil Creek Allotment with a maximum of 5,800 Animal Unit Months which is the equivalent of 483 Animal Units for a 12 month period … Current conditions will not support this level of grazing."

Fossil Creek Range Allotment Environmental Assessment, 14-15

"Because actual use is consistently 10-15% higher than intended … the Reduced Alternative will provide a buffer needed due to underestimations of livestock utilization."

Fossil Creek Range Allotment Environmental Assessment, 112

"The Forest has written a Proposed Action that would be very difficult to violate, but which gives no assurance of good management. We understand the value of adaptive management and the need for flexibility, but this degree of latitude is an abrogation of responsible management."

Arizona Game and Fish Department comment on Fossil Creek EA

Dear Ms. Rasure,

Pursuant to 36 C.F.R. § 215, the Center for Biological Diversity ("Center") hereby appeals the Decision Notice and Finding of No Significant Impact ("DN/FONSI") for Grazing Authorization in the Fossil Creek Range Allotment ("Fossil Creek Allotment" or "FCA") in the Red Rock Ranger District of the Coconino National Forest. The legal notice of decision published in the *Arizona Daily Sun* on April 29, 2009, making this appeal timely per 36 C.F.R. § 215.15. Appellants provided the Forest Service with substantive comments regarding the draft environmental assessment for the FCA Allotment Management Plan and have standing to appeal per 36 C.F.R. § 215.13.

Forest Service authorization of livestock grazing at levels that the Fossil Creek Allotment cannot support hinge on poorly supported assumptions about vegetation and soil conditions that fail to meaningfully address scientific information showing that severe and prolonged drought driven by ongoing climate change is likely to impair range conditions for the foreseeable future (Seager et al. 1997). It further ignores foreseeable synergistic effects of livestock grazing and wildland fires, which will become larger and more frequent at a landscape scale as a result of climate change (Running 2006, Westerling et al. 2006). Cumulative disturbances over time will affect vegetation and soils in ways that the Forest Service completely fails to consider. Given agency admissions that the FCA cannot support the authorized grazing, and its failure to demonstrate that "initial" grazing levels will meet Forest Plan guidelines, we respectfully urge the Forest Service to withdraw the authorization and prepare an environmental impact statement

TITLE OF DECISION DOCUMENT: Decision Notice and Finding of No Significant Impact for Grazing Authorization in the Fossil Creek Range Allotment.

DATE DECISION PUBLISHED: April 29, 2009.

DESCRIPTION OF PROJECT: Livestock grazing of 5,800 AUM (483 AU yearlong) at a 30-40% forage utilization level and 30-50% intensity level, subject to seasonal timing and monitoring of rangeland condition. Maximum grazing of 3,600 AUM (300 AU) during an "initial period" of unspecified duration.
30-day grazing period in each pasture with possibility of repeat use per annum. 20% grazing utilization and intensity levels at three locations in riparian area of Fossil Creek.

LOCATION: The 42,000-acre FCA is located 5 to 15 miles southeast of Camp Verde, Arizona, on the Red Rock Ranger District of the Coconino National Forest, in Coconino, Gila, and Yavapai Counties. The legal description for the project area is all or portions of Sections 1-4 and 11-12, T11N, R6E; Sections 20-21, T11½ N, R7E; Sections 13-14, 22-27, 33-36, T12N, R6E; Sections 1, 13, 24-25, 36, T12N, R6½E; Sections 1-22, 28-31, T12N, R7E; Sections 6-7, T12N, R8E; Sections 34-35, T12½N, R6E; Sections 17-21, 23-29, 32-36, T13N, R6E; Sections 14-15, 19-36, T13N, R7E; and Sections 18-20, 29-32, T13N, R8E, Gila and Salt River Meridian.

DECIDING OFFICIAL: Heather Provencio, Red Rock District Ranger.

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APPELLANT'S INTEREST

The Center for Biological Diversity is a national, nonprofit organization with its main office in Tucson, Arizona. The Center's mission is to protect endangered species and wild places through science, policy, education, and environmental law. The Center has approximately 60,000 members, many of whom reside in Arizona. The Center's members and staff regularly use, and will continue to use the grasslands, woodlands, forest, and riparian habitats in the Fossil Creek Allotment for observation, research, aesthetic enjoyment, and other recreational, scientific, and educational activities. The Center's members and staff have and continue to research, study, observe, and seek protections for threatened, endangered, candidate, and sensitive species in the Verde River Watershed and its tributary watersheds including Fossil Creek. Indeed, the Center catalyzed federal listing of many imperiled species that will be affected by livestock grazing in the FCA. Its members and staff derive scientific, recreational, conservation, an aesthetic benefits from those species' existence and recovery in the wild. Forest Service violations of law in its grazing authorization may cause significant adverse impacts to Chiricahua leopard frog, razorback sucker, loach minnow, spikedace, Mexican spotted owl, Yuma clapper rail, southwestern willow flycatcher, and many other sensitive wildlife species associated with aquatic and terrestrial habitats, some of which have distinct ecological relationships with the threatened and endangered species described above. Forest Service violations of law have and will continue to cause decline of listed and sensitive species within the FCA and the degradation of habitat occupied by them, harming the Center's and its members' interests in imperiled wildlife and their habitats. Appellant demonstrated specific interest in the FCA from the inception of allotment management planning by providing the Forest Service with scoping comments, as well as timely and substantive comments responding to the draft environmental assessment. Appellants have a long history of interest and involvement with this proposed action, and may appeal under 36 C.F.R. § 215.13.

MOTION FOR STAY

An automatic stay of project implementation is in effect per 36 C.F.R. § 215.9. Appellant moves to stay implementation of all actions authorized by the DN/FONSI. Specific actions subject to this motion for stay include but are not limited to: permitting or introduction of livestock use in any portion of the FCA, trailing livestock through the FCA to or from adjacent range allotments, construction of three fenced water access lanes along Fossil Creek in the Boulder and Stehr Pastures. This motion for stay does not include removal of unneeded structural improvements, erosion control measures other than the fencing at Fossil Creek specified above, or other structural improvements needed to prevent livestock trespass onto the FCA from adjacent allotments. A stay of actions subject to this motion is needed to prevent irretrievable commitments of sensitive environmental resources, harm to Appellant's clearly articulated and amply documented interests, and unnecessary expenditure of taxpayers' money in implementing a project that violates federal law and policy. To proceed before a final disposition on the merits of this appeal would unnecessarily expose the government to liability should a Federal Court find fault with the DN/FONSI and/or its supporting analysis. In contrast, a stay will maintain the status quo. The Forest Service should stay the activities subject to this motion.

REQUEST FOR RELIEF

1. Withdraw the DN/FONSI authorizing livestock grazing in the Fossil Creek Allotment.

2. Respond to the significant issues described in the statement of reasons below by modifying the authorization as appropriate.

3. Prepare an environmental impact statement ("EIS") subject to 40 C.F.R. § 1502 *et seq*. to properly disclose environment impacts of component actions subject to the motion for stay in accordance with the National Environmental Policy Act ("NEPA").

REASONS

I. Significant Effects Require an Environmental Impact Statement.

(A) Cumulative Effects

A cumulative impact is "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions ... Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time." 40 C.F.R. § 1508.7. The cumulative impact of a proposed action is one intensity factor that determines whether the action is significant. *Id*. § 1508.27(b).

The Purpose and Need statement in the Environmental Assessment ("EA") evidences that "current" livestock management in the FCA has caused significant cumulative effects to vegetative conditions, soil conditions, and riparian and wildlife habitat. EA at 13 ("Vegetative conditions have declined at 60% of the permanent vegetation monitoring plots and a downward trend is indicated at 87% of the plots … Impacts from the drought period from 1998 to the present, coupled with current management of livestock grazing, are believed to be the significant factors in the decline in vegetation conditions"; "Soil conditions on the allotment have declined to where about 56% of the allotment is in impaired or unsatisfactory conditions"; "Grazing pressure and trampling have reduced the amounts of woody vegetation and other riparian plant species along several stream reaches and springs…"). Because the Forest Service attributes the significant adverse environmental impacts described above to "current management" of livestock grazing in the FCA, it dismisses consideration of an action alternative to continue current management. *Id*. at 19 ("Under current management, habitat conditions for wildlife and threatened/endangered species at several stock tanks or other riparian areas have declined"; "Continuation of current management is not expected to improve soil condition, vegetative condition, or riparian and wildlife habitat conditions. As a result, a current management alternative would not meet the purpose and need…"). The purpose and need for action in this case is to "improve" vegetation, soil, riparian, and wildlife habitat conditions. *Id*. at 13.

The EA amply documents the significance of adverse cumulative impacts that "current" livestock management in the FCA has wrought on the Fossil Creek watershed, its terrestrial and aquatic habitats, and wildlife associated with them. With the exception of drought-forced resting periods totaling approximately three years in this decade, livestock grazing in the FCA has been

ongoing for more than a century. Cattle numbers were "very high" at the turn of the 20th century and decreased to currently authorized numbers only in the past 20-30 years. *Id*. at 44. Approximately 93% of the Fossil Creek – Lower Verde 5th code watershed is currently subject to livestock grazing. *Id*. at 46. The FCA is by far the largest range allotment within the watershed, covering approximately 22% of its total acreage – only the adjacent Hackberry/Pivot Rock Allotment is close to as large as the FCA. *See id*. (Table 10).

Soil loss due to erosion caused by livestock grazing and other disturbances including dispersed recreation "is currently about 35% above a natural, non-disturbed condition averaging about 5.9 tons per hectare every year." *Id*. at 59; *also see id*. 118 (Table 28). The Forest Service admits that "an appreciable portion" of eroded soil is delivered into stream courses within the FCA. *Id*. at 118. "The combined effects of watershed soil erosion and road-related erosion have contributed to increase the amount of sediment entering Fossil Creek drainages … The effects of sedimentation were apparent during various field visits to Fossil Creek in 2007 … Sedimentation in stream systems is one of the most deleterious effects to aquatic biota and their habitat..." *Id*. at 119. Further, the agency acknowledges that "a 35% increase in sediment delivery to streams is likely detrimental to aquatic habitat…" *Id*. If only one-fourth (¼) of the grazing-caused soil losses documented in the Fossil Creek watershed were to actually reach streams, the sediment delivered would be 30 times greater by volume than what the Forest Service estimates the road network to deliver. *Id*. at 134. Moreover, if "inherently unstable" soils, which comprise about 40% of the FCA (16,872 acres – EA at 59-60 (Table 17)) were excluded from analysis of soil erosion, then current soil loss rates would be "closer to 50% over natural background soil loss rates." *Id*. at 134. "The greatest effect to aquatic biota is increased sedimentation, of all the cumulative effects critical to the aquatic biota and habitat, grazing and management of the allotment appears to be the most important factor in sediment production rates." *Id*.

Authorized grazing will cause continued soil erosion and sediment delivery to streams that will be <u>additive</u> to background levels discussed above. Under the alternative approved in the DN/FONSI,

> the following indirect effects would continue: sedimentation, altered hydrograph, and channel morphology changes … At a minimum, continued degradation of most of the watershed would be retarded and with a favorable climate, the watershed would see gradual improvement. The only exceptions to this would be the Stehr and Boulder pastures where continued grazing of the unsatisfactory soils would cause accelerated erosion and sediment delivery to Fossil Creek. This accelerated erosion, due to a continued loss in soil productivity would continue until the ground cover objective of 2/3 natural is reached.

Id. at 125. Note that the Stehr and Boulder pastures are where the DN/FONSI authorizes grazing in the Riparian Area (Management Area 12 – "MA-12") associated with Fossil Creek. The Forest Service admits that a favorable climate and effective implementation of its adaptive management strategy will not prevent significant adverse cumulative soil loss and sediment delivery to Fossil Creek on those two pastures. It gives no timeframe in which "the ground cover objective of 2/3 natural" might ever be reached. It likewise sets no temporal standard for adaptation of livestock management for that purpose on MA-12 lands. Therefore, we infer that adverse cumulative effects of soil loss on MA-12 and adjacent uplands, as well as sediment

delivery to Fossil Creek, are reasonably foreseeable for the duration of the grazing authorization. The EA fails to assess adverse effects over that timescale. An EIS is required.

(B) Threatened and Endangered Species

Authorized grazing will "adversely affect" endangered razorback sucker and threatened loach minnow and spikedace with direct, indirect, and cumulative increases of sediment delivery. See EA at 125-129; *also see* USDI (2009:23-28). "Until conditions improve sediment may cover and suffocate razorback sucker eggs deposited on stream substrates, in the unlikely event that razorbacks successfully spawn in Fossil Creek." EA at 128. "Both Action Alternatives may result in continued sedimentation into Fossil Creek that could potentially embed the substrates and reduce reproductive success" of loach minnow and spikedace. *Id*. at 129.

The grazing authorization also will "adversely affect" Chiricahua leopard frog ("CLF") with direct, direct, and cumulative impacts to soil, hydrologic flows, and water chemistry in occupied and suitable tanks and springs as well as on uplands where frogs may disperse in wet seasons. *See* EA at 90-91; *also see* USDI (2009:21-23). Even with fencing around tanks and springs, "livestock will still have access to portions of suitable and occupied frog sites." EA at 90. Moreover, certain levels of change to water quality in tanks and springs "could impact the existence of frog populations in a tank or preclude the water source form providing habitat for frogs." *Id*. at 91.

The existential threats to listed species created by livestock grazing documented above are potentially significant effects of the authorization.

The FCA also includes Protected Areas, Restricted Areas, and Critical Habitat of threatened Mexican spotted owl. *Id*. at 88. Critical Habitat overlaps Protected Areas and Restricted Areas described in the Recovery Plan (USDI 1995) because they contain "one or more of the primary constituent elements" of habitat considered "essential for the conservation" of Mexican spotted owl. *See* 69 F.R. 53185-86, 53189-90, 53192, 53212 and 53217 (Aug. 31, 2004). "Primary constituent elements" ("PCE") of Critical Habitat are "those physical and biological features … that are essential to conservation of the species and that may require special management considerations or protection." *Id*. at 53208. "All areas that are designated as critical habitat contain primary constituent elements and are considered essential for the conservation of the species." *Id*. at 53186; *see also id*. at 53189, 53190, 53192, 53212 and 53217. FWS identified PCE related to maintenance of adequate prey species in Mexican spotted owl Critical Habitat including: "adequate levels of residual plant cover to maintain fruits, seeds, and allow plant regeneration." *Id*. at 53211 and 53232; *see also* 50 C.F.R. § 17.95(b)(3)(iv). The proposed action will adversely affect PCE related to prey availability. In particular, it will diminish "levels of residual plant cover to maintain fruits, seeds, and […] plant regeneration." The Forest Service admits that authorized grazing in the FCA will cause trampling and vegetative removal "above the utilization objective" in some areas. EA at 88. It further admits that continued grazing in adjacent allotments will cumulatively impact forage availability to mammal populations important as spotted owl prey. *Id*. at 88-89. Indirect and cumulative effects of grazing may include "a shift from vole habitat … to deer mice habitat caused by removal of more vegetative cover [that] could negatively affect foraging MSOs." *Id*. at 89.

(C) Uncertainty

There is significant uncertainty regarding authorized grazing effects to endangered Yuma clapper rail and southwestern willow flycatcher. The existence of both species in the FCA is unknown because the Forest Service never surveyed for them, although suitable habitat exists for both species along Fossil Creek. *See* EA at 78 (Table 22) and 89-90. The EA acknowledges that grazing could directly affect rail habitat and flycatcher nests where cows have access to their habitat. *Id*. at 89-90. But the extent and intensity of potential direct, indirect and cumulative impacts resulting from the authorized activity is unknown.

(D) Controversy

The Forest Service acknowledges the findings of Belsky and others (1999) that landscape-scale cumulative effects of riparian habitat destruction are so significant that "riparian recovery is contingent on total rest from grazing." *Id*. at 116. The proposed action allows continued livestock access to Fossil Creek at two previously used locations in Stehr pasture and a new one in Boulder pasture. It does not restrict cattle access to other riparian zones, including streams, other than five locations (tanks, springs) that will be wedge fenced for the benefit of CLF. Any direct, indirect, or cumulative effects to riparian habitat from authorized grazing are potentially significant in light of credible opposing scientific opinion.

(E) Congressionally-Designated Areas

Nearly 3,400 acres of the FCA occur in the Fossil Springs and Mazatzal Wilderness Areas. *Id*. at 15, 145. The EA fails to indicate if any of the known "impaired" soils or "potential capacity" rangelands in the FCA exist within the Wilderness Areas. It states, "As there are no new improvements proposed in either wilderness, and grazing would continue largely similar to how is has in the past, the Proposed Action and Reduced Utilization and Grazing Intensity Alternatives will not have any direct or indirect or cumulative effects on Wilderness values." *Id*. at 145. The Forest Service arbitrarily dismisses effects to "Wilderness values," which it defines to include plant communities, soil, and wildlife populations and habitat (*id*. at 109-110), and contradicts its own analysis that continued grazing will directly and indirectly affect range, soil and watershed conditions. It states no reason why similar effects will not also occur in Wilderness Areas, which is a particularly egregious oversight given the obvious significance of Congressionally-protected areas.

Additionally, the extent of Fossil Creek within the FCA is a Congressionally-designated Wild & Scenic River with outstandingly remarkable values that include fish, wildlife, and riparian community. *Id*. at 146. As discussed above, authorized grazing in the FCA is likely to degrade all three of those remarkable values. The EA fails to discuss effects the Wild & Scenic River other than its eligibility for designation.

II. Arbitary Scale of Cumulative Effects Analysis Masks Significance.

The EA selectively applies different spatial scales of to its analysis of cumulative effects that will result from authorized grazing. Its analysis of cumulative effects to range resources (vegetation, grazing capacity) is limited to the FCA itself. *Id*. at 53, 55. This has an effect of masking cumulative effects to range resources that may result from grazing in the FCA combined with ongoing grazing in adjacent allotments in the same watershed. We have no idea what such effects may be at a broader spatial scale because the Forest Service does not consider them, even though the agency acknowledges the potential for cumulative effects to occur. *See id*. at 11, 46, 64, 67, 73, 111.

In contrast, the EA limits its analysis of cumulative effects to soil resources, water and riparian resources, and wildlife habitat to the scale of the Fossil Creek-Lower Verde 5th code watershed. *See id*. at 64-65, 73, 75, 108. Analysis at this scale masks cumulative effects to particular soil condition categories and map units, particular riparian habitats in the Stehr and Boulder pastures where the Forest Service admits that soil conditions are currently "unsatisfactory," and locations where CLF dispersal among upland aquatic habitats is likely to be harmed by livestock trampling and soil damage, for example. We do not know the site-specific cumulative effects of authorized grazing on those resources because the Forest Service does not analyze them.

Cumulative effects analysis, especially related to riparian habitat of threatened and endangered species, should be done at multiple spatial scales. See *Pacific Coast Federation of Fishermen's Association v. National Marine Fisheries Service*, 265 F.3d 1028 (9th Cir. 2001).

III. Failure to Follow Forest Plan Guidelines for Allowable Use

Forest-wide guidelines limit allowable use depending on range condition. Coconino Forest Plan at 66-1. They permit site-specific designation of forage utilization in consultation with the FWS. However, the Forest Service never relates its description of range condition in the FCA to the specific ratings used by the Forest Plan. It merely indicates that all indicators display a declining trend. EA at 13, 50. The EA also cites research relevant to management of "poor" range conditions in its discussion of effects to upland species of migratory birds. *Id*. at 112.

In consultation with US Fish and Wildlife Service, develop site-specific forage use levels. In the event that site-specific information is not available, average key species forage utilization in key forage monitoring areas by domestic livestock and wildlife should not exceed levels in the following table during the forage growing season.

Allowable Use Guide (Percent) By Range Condition And Management Strategy**

Range Condition †	Continuous Season-long	Defer 1 year in 2	Defer 1 year in 3	Defer 2 years in 2	Rest 1 year in 2	Rest 1 year in 3	Rest 2 years in 3	Rest Over 2 years in 3
Very Poor	0	10	5	15	15	10	20	25
Poor	10	20	15	20	20	15	30	35
Fair	20	25	20	30	30	25	40	45
Good	30	35	35	35	35	35	45	50
Excellent	30	35	35	35	35	35	45	50

Coconino Forest Plan at 66-1. Note that, "Allowable use for key forage species during the dormant season is not covered in the above table. These guidelines are to be applied in the absence of more specific guidelines currently established through site specific NEPA analysis for individual allotments." *Id*. at 66-2.

The closest the EA comes to describing range condition is to characterize range capacity as "full," "potential," or "no" capacity depending on soil conditions, and soils as "unsatisfactory," "inherently unstable," "impaired," or "satisfactory." *See id*. at 49, 60. Those ratings, which appear to be unique to the Fossil Creek EA, share some characteristics with Forest Plan ratings including indicators of grazing capacity and environmental effects. However, the EA provides no factual basis in its discussion of grazing capacity for the forage utilization levels authorized, nor does it demonstration through consultation with the that authorized forage utilization levels are better suited to the FCA than the Forest Plan guidelines. See id. at 49-51; USDI (2009). The EA similarly fails to relate existing or foreseeable range conditions in the FCA to its deferred rotation strategy or indicate how authorized grazing will comply with Forest Plan pasture rest guidelines.

IV. Failure to Follow Forest Plan Guidelines for Restricted Habitat

Forest-wide guidelines for Restricted Areas designated for protection of suitable nesting, roosting and foraging habitat for Mexican spotted owl require,

> Domestic Livestock Grazing: Implement forest plan forage utilization standards and guidelines to maintain owl prey availability, maintain potential for beneficial fire while inhibiting potential destructive fire, maintain and restore riparian ecosystems, and promote development of owl habitat. Strive to attain good to excellent range conditions.

Coconino Forest Plan at 65-5. The Forest Service admits that authorized grazing in the FCA will harm owl prey by reducing forage availability and potentially by causing vegetative type conversions that favor small mammals other than owl prey throughout the allotment. *See* EA at 88-89. It fails to explain how the authorized utilization level (up to 40% with up to 50% intensity in late spring and summer growth periods) will "maintain owl prey availability" within the FCA. It also does not address how reductions or elimination of owl prey availability that will cumulatively result from ongoing livestock grazing in adjacent allotments will meet the Forest Plan guideline. This is the primary problem with the EA's arbitrary limitation of the scope of cumulative effects analysis on range resources to the FCA proper.

Moreover, the Forest Service admits that authorized grazing will spread noxious and invasive weeds. *See* EA at 137-141. Livestock act as vectors for seed travel, disturb soil, and reduce the competitive and reproductive capacities of native species. Exotic weeds can displace native species, in part, because native grasses are not adapted to frequent and close grazing (Belsky and Blumenthal 1997). Even with mitigation measures and "best management practices," weed spread will occur, and it will further reduce forage availability for spotted owl prey species. The EA does not assess this potentially significant indirect and cumulative effect on spotted owl forage.

Cheatgrass (*Bromus tectorum*) exists in the FCA. EA at 139 (Table 31). The presence of cheatgrass has important long-term implications for native plant communities. Melgoza and others (1990) studied cheatgrass soil resource acquisition after fire and note its competitive success owing to its ability suppress the water uptake and productivity of native species for extended periods of time. They further note that cheatgrass dominance is enhanced by its high tolerance to grazing. Its annual life-form coupled with the abilities to germinate readily over a wide range of moisture and temperature conditions, to quickly establish an extensive root system, and to grow early in the spring contribute to its successful colonization (Melgoza et al. 1990). In addition, Melgoza and others (1990) show that cheatgrass successfully competes with the native species that survive fire, despite these plants being well-established adult individuals able to reach deeper levels in the soil. This competitive ability of cheatgrass contributes to its dominance when lands experience synergistic disturbances such as grazing and fire.

A substantial body of scientific literature identifies livestock grazing as a major factor in the alteration of historic fire regimes and a contributor to increased fire hazard (*e.g.,* Arnold 1950, Cooper 1960, Madany and West 1983, Mitchell and Freeman 1993, Rummell 1951, Savage and Swetnam 1990). In forest, which comprises the portion of the FCA where Restricted Areas are designated for Mexican spotted owl, livestock grazing removes the grasses that compete with tree seedlings for water and nutrients. This favors the establishment of deep rooted trees and allows them to dominate affected sites. Studies of ungrazed sites in several ponderosa pine dominated ecosystems found that in the absence of livestock grazing, and in the absence of fire, open ponderosa pine forests with a minimum of understory pine seedling establishment was documented (Madany and West 1983, Rummell 1951). Most tree species require bare soil for successful germination and, grazing that removes the grassy understory and creates bare disturbed soil conditions that favors tree establishment. This has led to excessive tree-stocking density in many locations (Belsky and Blumenthal 1997). Additionally, grazing removes fine fuels such as grasses that otherwise may help to carry the light intensity fires that once burned at regular intervals in the planning area. This has permitted young saplings and trees to become established and be recruited into the forest stand (Arnold 1950, Savage and Swetnam 1990). Moreover, by permitting a large number of small saplings to become established, competition for water among existing living trees is increased making trees more vulnerable to insects and other pathogens (Hessburg et al 1994). Under extreme drought such trees are actually more flammable than a dead tree since internal water content is often less than kiln-dried lumber. Flammable resins found in living, drought-stressed trees may explode into flames upon contact with fire. Further, by contributing to the spread and persistence of easily ignited weedy species like cheatgrass, livestock production has created far more acres of highly flammable plant communities (Belsky and Gelbard 2000, Billings 1990).

The EA is largely silent about potentially significant cumulative effects of cheatgrass spread resulting from livestock grazing. The Forest Service acknowledges that grazing and dispersed recreation can spread weeds, but fails to relate their occurrence to any particular site or infestation. It does not indicate the extent of the project area that would be affected by dispersed recreation combined with soil disturbance caused by authorized grazing or reasonably foreseeable wildland fire management. *See EA* at 140 ("Recreational activities in the project area … affect invasive species through vehicles, horses, and people spreading seeds and plant parts from existing populations. They can also introduce new populations…"); *also see id.* at 44-

45 ("There have been multiple small fires within the watershed boundary…"). Fire suppression operations can significantly contribute to spread of noxious, invasive, and exotic weeds (Backer et al. 2004), but the EA overlooks this important aspect of the issue.

Adherence to best management practices does not ensure that Forest Plan guidelines will be met or that significant environmental effects will be prevented. The EA needs to address specific methods that will be used and their effectiveness. Existing cheatgrass infestations within the FCA belie the Forest Service's contention that monitoring and mitigation are sufficient to prevent adverse effects. The EA fails to mention that, following inevitable wildland fires in the FCA, cattle may preferentially graze fire-stimulated herbaceous growth. The omission is important because livestock substantially reduce understory ground cover, especially perennial grasses (Arnold 1950, Rummell 1951). Animals select more palatable species, leaving less palatable ones to dominate (Belsky and Blumenthal 1997). These facts will contribute to cheatgrass dominance over time, and undermine maintenance of adequate forage for Mexican spotted owl prey species.

V. Failure to Take a Hard Look at Climate Effects to Range Condition

The Forest Service admits that climate is the principle limiting factor for range condition. Drought forced annual reductions of livestock grazing in the FCA from 2002-2006, and complete removal of livestock from the FCA during most of that period. *See* EA at 11-12 (Figure 3), 49-50. Existing conditions created by cumulative effects of drought and historic grazing preclude the FCA from sustaining the authorized levels of forage utilization and grazing intensity. *Id*. at 13-15, 22, 25. Increased precipitation and forage production are necessary for range conditions to improve and for authorized grazing to meet the purpose and need. *Id*. at 53-54, 57, 61-65, 129; DN/FONSI at 7.

The EA does not assess foreseeable effects of prolonged drought on range conditions due to ongoing climate change. Seager and others (2007) show broad consensus among climate models that the Southwestern Region will dry in the 21st century and that a transition to a more arid climate is already underway. The levels of aridity of the recent drought period that rendered the FCA unsuitable for livestock grazing "will become the new climatology of the American Southwest within a time frame of years to decades."

VI. Failure to Ensure Authorized Grazing Meets the Purpose and Need

Rather than assess forage utilization and grazing intensity in light of reasonably foreseeable climate trends that are likely to diminish forage production, the Forest Service seeks to revive the same grazing regime that pre-dated the current drought period relying on specious assumptions that weather will shift "toward a wetter cycle." There is no evidence in the record that this is a valid assumption. Furthermore, the "initially" reduced number of livestock head below the "maximum" authorized will graze at the same utilization and intensity levels.

> Livestock grazing effects to vegetation occur by reducing plant height and cover. These effects are primarily managed through forage utilization and grazing intensity; the actual numbers of livestock grazed is largely irrelevant. The reduction in plant height and cover, as a result of grazing, does recover with favorable climatic conditions.

EA at 53-54 [emphasis added]. Thus, the mitigation feature of reducing livestock head below the maximum for an indeterminate "initial" period is meaningless in terms of environmental impact or likelihood of meeting the purpose and need to "improve range conditions." The EA fails to distinguish how the "initial" number of livestock head grazing at the same utilization and intensity levels as the "maximum" authorized number will meet the purpose and need if: (1) "current management," which is the same as the maximum authorized, does not; and (2) if drought persists and weather does not shift "toward a wetter cycle."

The record does not even contain factual analysis why increasing livestock grazing from zero (the actual baseline) will meet the purpose and need given current range conditions. Studies cited by the EA to suggest that vegetation conditions and forage production will benefit from grazing do not factor long-term climate change to more arid conditions. *See* EA at 52-55, 58.

Under the No Action Alternative, "range condition and trend is expected to remain static or move upward… The ability for improvement in range condition and trend will be most affected by climatic conditions." EA at 52. "The indirect effect of accelerated erosion and sediment delivery to … stream courses caused from livestock grazing would be eliminated." *Id*. at 61. "Nonpoint source pollution would be reduced and water quality maintained or improved. Riparian conditions are expected to improve with the absence of livestock grazing." *Id*. at 71. "[T]he absence of livestock grazing can cause: [an] increase in the quality of wildlife food, cover and shelter; increased animal abundance and diversity of prey species; and increased reproductive success." *Id*. at 87-88.

Indeed, only the No Action Alternative meets those elements of the purpose and need related to range conditions. The Forest Service attempts to cast it otherwise by stating, "The Proposed Action Alternative meets the purpose and need of authorizing livestock grazing, whereas the No Action Alternative does not." DN/FONSI at 6. The statement is arbitrary and capricious because it contradicts the Environmental Assessment, which states,

> The No Action Alternative meets the purpose and need of maintaining and improving rangeland vegetation conditions because it eliminates livestock grazing impacts on forage species. The No Action Alternative also meets the purpose and need of maintaining and improving soil conditions, again by eliminating livestock grazing impacts. The No Action Alternative would also meet the need of improving riparian conditions along streams and springs because livestock would not be trampling the ground or consuming woody vegetation and other riparian plant species.

EA at 20; *also see id*. at 35 (Table 7).

VII. Failure to Consider a Range of Reasonable Alternatives.

The alternatives section is the "heart" of a NEPA analysis, allowing the agency to sharply define the issues and provide a clear basis for choice among options by the decisionmaker and the public. 40 C.F.R. § 1502.14. Agencies are therefore required to "[r]igorously explore and objectively evaluate all reasonable alternatives." *Id*. at § 1502.14(a); *see also* 42 U.S.C. § 4332(2)(E) (agencies required to "study, develop, and describe appropriate alternatives to

recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources"). Because the EA does not analyze maximum authorized grazing levels, it fails to accurately analyze or disclose the effects of management options at hand, thus foreclosing sharp and accurate definition of the issues and undermining the clear basis for choice among the options.

For example, a possible future scenario attending the FCA is that future agency budgets or priorities do not afford resources necessary to conduct the monitoring envisioned by the EA. Absent monitoring data, nothing in the EA would prevent movement to maximum authorized grazing levels or levels exceeding those analyzed in the environmental assessment. Northing therefore would prevent effects occurring outside the range of effects those analyzed and disclosed for lesser grazing levels in the EA. This is the substance of the concern stated by the Arizona Game and Fish Department ("AGFD") in its comments on the EA:

> The Proposed Action is so general that it has the potential to permit a range of management that can be detrimental to the watershed, wildlife habitat, range condition, and ultimately to the permittee. Normally we would include in a review letter some statement of the potential impacts to wildlife and their habitat. In this case we found that impossible to do because of the great range of possibilities included in the Proposed Action.
>
> This is best illustrated by describing what would be the worst-case scenario that could be authorized under the Proposed Action. Under the Proposed Action;
>
> - **483 livestock yearlong can be grazed on the allotment beginning as soon as a decision is signed.**
> - Any rotational management system can be used, meaning **every pasture can be used each year**.
> - Grazing Utilization will generally be 30 to 40 % but **can exceed the 30 to 40% standard with an unspecified frequency for an unspecified time**.
> - Grazing Intensity will generally be 40 to 50 % in spring and early summer and 30 to 40% the rest of the year **but can exceed the 40 to 50% standard with an unspecified frequency for an unspecified time**.
> - Pastures will generally be grazed for 30 days or less **but can be grazed for an unlimited time**,
> - All pastures will generally be used once a year, **but may be used twice a year**.
> - Water will be left in stock tanks, **but no idea of how much water must be left.**
>
> A worst-case scenario that would **not be outside the decision space given the Proposed Action,** is be 483 cattle yearlong, grazing every pasture twice every year for an unlimited amount of time, and using all but one cup of water from all the tanks.
>
> The Forest has written a Proposed Action that would be very difficult to violate, but which gives no assurance of good management. We understand the value of adaptive management and the need for flexibility, but this degree of latitude is an abrogation of responsible management.

[Emphasis original.] As the Center stated in comments on the draft EA, in order to comply with NEPA's alternatives requirements, the assessment should include at least one alternative that reflects maximum authorized grazing levels in the proposed action – without squishy assurances that monitoring and adaptive management will prevent significant impacts.

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VIII. Adaptive Management Direction Requires an Environmental Impact Statement.

The Fossil Creek EA and DN/FONSI violate NEPA because they implement and rely on "Chapter 90," a new administrative rule for livestock grazing in the Forest Service Handbook that itself did not undergo NEPA review. Prior to applying it at the project level, the Forest Service must first undertake an appropriate NEPA review of Chapter 90 in an EIS.

NEPA requires federal agencies to prepare an EIS for any major federal action which may significant impact the quality of the environment. 42 U.S.C. § 4332(2)(C). The agency may first prepare an EA to determine whether an EIS is required. 40 C.F.R. § 1501.4. The Forest Service's new Chapter 90 grazing rule makes significant changes to how livestock grazing and effected forestlands will be administered and managed with reliance on monitoring and adaptive management, yet the Forest Service failed to prepare either an EA or EIS for the it.

The rule calls for site-specific NEPA analyses of grazing allotments that may analyze one level of livestock grazing yet authorize a different, higher level of grazing (as is the case with the Fossil Creek EA). Though Chapter 90 relies heavily on monitoring and adaptive management to inform livestock management, the rule includes no requirements that monitoring actually occur or that changes to management rely on those data. Nor does it call for separate NEPA analyses to be conducted when changes in livestock grazing levels are made, or are made in excess of levels previously analyzed in NEPA for a given allotment. Indeed, the Fossil Creek EA defers consideration of such changes to Annual Operating Instructions. *See* AGFD comment letter. In effect, Chapter 90 authorizes a process of grazing management that circumvents procedural requirements of NEPA in decision making about livestock grazing.

For the foregoing reasons, the new rule's implementation could have disastrous effects for soils, watershed, wildlife, vegetation and threatened, endangered, and sensitive species on National Forest Lands. Chapter 90 therefore constitutes a major federal action and it must first undergo separate NEPA analysis prior to being implemented at the project level.

IX. Adaptive Management Direct Requires Endangered Species Act Consultation.

The Fossil Creek EA and DN/FONSI violate the Endangered Species Act because they implement and rely on Chapter 90, a new administrative rule for livestock grazing allotment planning that itself did not undergo ESA Section 7 consultation. Prior to being used at the project level, Chapter 90 must first undergo Endangered Species Act Section 7 consultation.

Section 7 of the ESA requires each federal agency, in consultation with the FWS, to insure that any action authorized, funded, or carried out by the agency is not likely to (1) jeopardize the continued existence of any threatened or endangered species or (2) result in the destruction or adverse modification of the critical habitat of such species. 16 U.S.C. §

1536(a)(2). "Action" is broadly defined to include actions that may directly or indirectly cause modifications to the land, water, or air; and actions that are intended to conserve listed species or their habitat. 50 C.F.R. § 402.02. The Forest Service's new Chapter 90 grazing rule makes significant changes to how livestock grazing and effected forestlands will be administered and managed.

As discussed above, Chapter 90 calls for site-specific NEPA analyses for grazing allotments that analyze one level of livestock grazing yet authorize a different, higher level of grazing (as is the case in the Fossil Creek EA). Indeed, the EA states,

> The Red Rock Ranger District proposes to authorize year-long grazing on the Fossil Creek Allotment with a maximum of 5,800 Animal Unit Months … for a 12 month period. This is the maximum number of AUMs that can be supported during times of favorable climate once the desired conditions for vegetation and soil have been reached. Current conditions will not support this level of grazing. Livestock numbers will be permitted and authorized at a lower level until such time as conditions improve.

EA at 14-15. Although Chapter 90 relies heavily on monitoring and adaptive management to inform livestock management, the rule includes no requirements that monitoring actually occur or that changes to management rely on those data. Nevertheless, the FWS relies heavily on Forest Service assurances that monitoring and adaptive management will occur in its finding that authorized grazing in the FCA will not jeopardize threatened and endangered species or adversely modify their Critical Habitat. In effect, under Chapter 90, the Forest Service circumvents procedural requirements of the ESA eschewing disclosure of effects that the maximum authorized grazing level may cause to listed species.

For these reasons, the rule's implementation could have disastrous direct and indirect effects for vegetation, soils, watershed, and wildlife including threatened and endangered species and their habitat on National Forest Lands. Chapter 90 may therefore constitute an "Action" pursuant to ESA. 50 C.F.R. § 402.02. Chapter 90 must also first undergo separate Section 7 consultation prior to being used at the project level, including in the Fossil Creek Allotment.

X. ESA Consultation Must Consider Effects of Maximum Authorized Grazing.

Section 7 of the ESA requires each federal agency, in consultation with the FWS, to insure that any action authorized, funded, or carried out by the agency is not likely to (1) jeopardize the continued existence of any threatened or endangered species or (2) result in the destruction or adverse modification of the critical habitat of such species. 16 U.S.C. § 1536(a)(2).

The Fossil Creek EA and Biological Assessment analyze the effects of one level of grazing while authorizing a separate, higher level of livestock grazing. The EA states,

> The Red Rock Ranger District proposes to authorize year-long grazing on the Fossil Creek Allotment with a maximum of 5,800 Animal Unit Months … for a 12 month period. This is the maximum number of AUMs that can be supported during times of favorable climate once the desired conditions for vegetation and soil have been reached.

> Current conditions will not support this level of grazing. Livestock numbers will be permitted and authorized at a lower level until such time as conditions improve.

EA at 14-15. The EA, the Biological Assessment submitted to the FWS for consultation, and the FWS Biological Opinion all rely on a combination of lower level livestock authorizations, monitoring, and adaptive management to justify conclusions that authorized grazing will not jeopardize listed species or adversely modify their Critical Habitat.

Significant uncertainty attends whether monitoring will be conducted (this is subject to budgetary uncertainty and changing agency priorities), whether findings will be conclusive, and whether agency capacity can actually accommodate adaptive management. Further, because changing authorization levels may occur throughout the life of the Allotment Management Plan, and those changes may not be subject to detailed public and environmental review under NEPA, maximum authorized grazing levels are a reasonably foreseeable result of the DN/FONSI.

Because maximum allowable authorizations are a reasonably foreseeable result of the proposed action, the effects of those levels should have been, or should be, analyzed in the Section 7 consultation. Insofar as ESA Section 7 consultation must rely on Forest Service analyses and data on such key factors as ground cover, forage production, and sedimentation rates relating to less-than maximum authorized, that consultation fails to demonstrate that the Fossil Creek Allotment project is not likely to (1) jeopardize the continued existence of any threatened or endangered species or (2) result in the destruction or adverse modification of the Critical Habitat of such species. 16 U.S.C. § 1536(a)(2).

CONCLUSION

In our view, the Fossil Creek Allotment EA and Grazing Authorization DN/FONSI engage in wishful thinking about future range conditions and ignore relevant science to support a return to unsustainable grazing levels. The analysis demonstrates that significant impacts will occur, and the FONSI is contrary to law. We encourage you to withdraw the authorization.

Sincerely,

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