



CALIFORNIA AND PACIFIC OFFICE

*protecting and restoring natural ecosystems and imperiled species through
science, education, policy, and environmental law*

VIA ELECTRONIC MAIL, FACSIMILE, AND CERTIFIED MAIL

August 11, 2004

Southern California Forest Plan Revisions
USDA Forest Service Content Analysis Center
P.O. Box 22777
Salt Lake City, UT 84112
Fax: (801) 517-1015

**Re: Draft Environmental Impact Statement for Southern California National Forest
Land Management Plans Revision: Angeles, Cleveland, Los Padres, San Bernardino**

The Center for Biological Diversity (“the Center”) is a non-profit, public interest environmental organization dedicated to the protection of native species and their habitats through science, policy, and environmental law. The Center has over 10,000 members throughout California and the western United States, including in southern California. The Center submits the following comments on the Draft Environmental Impact Statement (“DEIS”) for the Southern California National Forests Land Management Plans Revision on behalf of our members, staff, and members of the public with an interest in protecting the native species and habitats of the Los Padres, Angeles, San Bernardino, and Cleveland national forests.

The following comments pertain to all four of the southern California national forest Land and Resource Management Plans (“LRMPs”). The DEIS is a large, cumbersome document, and is generally scattered and disorganized, rendering it extremely challenging to decipher. It is difficult to find information on a particular topic that should be easily found in one concise location. It was necessary to spend multiple days reading the entire document, cross-referencing tables with text and cross-referencing text with methodology in the Appendices, and perusing the website for individual species accounts. Often, necessary information is not forthcoming, and methodology is lacking in clarity. One can only imagine the difficulty presented to the layperson with limited time and expertise with environmental review documents. Such a cumbersome document violates the National Environmental Policy Act (“NEPA”) requirement to present information in a clear, concise, accessible format. 40 C.F.R. § 1502.1.

The DEIS is also rife with conflicting statements. On the one hand, many of the “Affected Environment” and “General Direct and Indirect Effects” sections of Chapter 3

Tucson • Phoenix • Silver City • Idyllwild • San Diego • Oakland

Monica Bond, Biologist
PO Box 493, Idyllwild CA 92549
TEL.: (909) 659-6053 x304 • FAX: (909) 659-2484
Email: mbond@biologicaldiversity.org • www.biologicaldiversity.org

(Affected Environment and Environmental Consequences) of the Draft EIS do an excellent job summing up the background issues affecting biological resources in the forests. These sections of the document generally recognized the myriad adverse impacts on ecosystem function, native vegetation, and wildlife of the national forests in southern California from human activities such as pollution, off-road vehicle (“ORV”) use, roads, domestic livestock grazing, fire suppression, mining, water diversions and dams, and other human developments and activities. Unfortunately, however, the preferred alternatives (4 and 2) chosen by the Forest Service do not incorporate many of the measures (including those recommended elsewhere in the document) that are desperately needed to protect vegetative communities and biological resources in our forests from these adverse impacts. The preferred alternatives will result in serious harm to special-status species that inhabit national forest lands. The preferred alternatives would allow an increase in damaging recreational activities such as ORVs that are known to impair the abilities of natural habitats to be fully functional and productive, and are lacking protections for several critical biological areas that support federally listed plants and animals. The preferred alternatives also result in poor viability outcomes for at least three listed animals. Should the preferred alternatives be adopted, the Forest Service would have made a decision that runs counter to the preponderance of scientific evidence before the agency regarding the negative impacts of the proposed action on ecological function and biological resources, including federally listed species. The decision would violate requirements of the Endangered Species Act (“ESA”) and the National Forest Management Act (“NFMA”) that the agency ensure the viability of all vertebrate species as well as the survival and recovery of listed species. The Center therefore concludes that the preferred alternatives fall short of legal and biological obligations of the ESA, 16 U.S.C. § 1531 *et seq.*, NFMA, 16 U.S.C. § 1600 *et seq.*, and NEPA, 42 U.S.C. § 4321 *et seq.*

The Center strongly supports the adoption of Alternative 6, with some modifications as described below. While this alternative provides the greatest benefit to the biological resources of southern California’s national forests, Alternative 6, as written, was overly simplistic with respect to the analyses of key vegetation management issues that were recommended in the Conservation Alternative presented to the Forest Service in April 2002 by 14 conservation organizations. In other cases, Alternative 6 completely misrepresented or misinterpreted parts of the Conservation Alternative, or promulgated unsubstantiated arguments in order to discredit the alternative. These inaccuracies resulted in several erroneous statements that Alternative 6 would harm at-risk species and some sensitive vegetative communities. NEPA stipulates that decision-makers must have adequate, unbiased information about the effects of the alternatives. If Alternative 6 is not adequately represented, decision-makers simply cannot make an objective decision without all the facts in front of them, in clear violation of NEPA regulations. 40 C.F.R. §1502.14.

Outlined below are general comments on the DEIS and proposed LRMPs as well as suggested modifications to Alternative 6 and to the design criteria, that would ensure protection of biological resources and fully functioning ecosystems, a diverse range of recreational opportunities, and appropriate fire management in the national forest lands of southern California. These suggestions would also ensure that the final LRMPs comply with governing statutes. The Center urges the Forest Service to modify Alternative 6 as per the suggestions

below, and re-analyze the direct and indirect effects and environmental consequences of this alternative on at-risk species, fire management, and recreational opportunities on the forests.

I. The Alternatives Analysis Violates the National Environmental Policy Act

Alternative 6 was ostensibly based on the Conservation Alternative submitted to the Forest Service as scoping comments in April 2002. However, the Center has identified several important parts of Alternative 6 that are inconsistent with the Conservation Alternative with respect to vegetation management, roads, and livestock grazing. These serious inconsistencies and inaccurate portrayals of the Conservation Alternative have resulted in an apparent effort on the part of the Forest Service to discredit Alternative 6, thus precluding decision makers from receiving objective, unbiased information. Below, we have outlined specific portions of the DEIS that represent disconnects between the Conservation Alternative and Alternative 6, as well as several unsubstantiated arguments against Alternative 6.

A. Vegetation Management Analysis

The Conservation Alternative presented recommendations for management in the various vegetative communities occurring on national forest lands based on careful review of the scientific literature and conversations with numerous experts. In general, the analysis of the environmental consequences of Alternative 6 on mixed conifer and yellow pine forests accurately represents the intentions of the Conservation Alternative. Unfortunately, however, the DEIS seriously misinterpreted suggestions from the Conservation Alternative regarding management of coastal sage scrub and bigcone Douglas-fir vegetative types. In particular, the Forest Service's analysis of fire management in Alternative 6 under the "Direct and Indirect Effects" of the various alternatives in Chapter 3 is totally inaccurate with respect to the Conservation Alternative's original wording.

Coastal Sage Scrub

The Conservation Alternative (at page 51) established as a desired condition "a fire-free interval of 25 years or more in coastal sage scrub to allow the vegetative community to reach structural maturity and remain there for an extended period of time." The Conservation Alternative stated that the objectives for coastal sage scrub were to "[m]anage for the historical understory of native forbs (i.e., wildflowers) and/or perennial grasses in coastal sage scrub habitats," and to "[m]onitor and encourage the post-fire re-establishment of native forbs and grasses in coastal sage scrub." Page 52 of the Conservation Alternative provides standards for management in coastal sage scrub types:

"The Forest Service shall conduct prescribed burning in degraded coastal sage scrub habitat in the late fall and winter to eradicate the introduced red brome and other invasive grass species. Burning shall occur in a mosaic pattern to maintain some vegetation for shrub-dependent species..., and shall be conducted in November and December, when annuals begin to germinate but before shrubs begin leafing out (i.e., the "flushing")

season...) and also to prevent disturbance to nesting birds during the breeding season (typically March through August). In the unburned patches, eradicate introduced plant species using hand-removal methods to prevent re-establishment into burned patches. Fall wildfires in coastal sage scrub shall be suppressed to the maximum extent practicable to prevent conversion to grasslands.”

Yet according to the DEIS, the environmental consequences of Alternative 6 is that “a shortened fire rotation interval in coastal sage scrub would likely result in the conversion of many areas of scrub to grasslands over time. For stands that do not convert to other types, there would likely be a dramatic and unacceptable reduction in species richness with the elimination of shrubs and subshrubs that cannot endure repeated burning.” DEIS at 3-48. Given that the Conservation Alternative established a fire-free interval of at least 25 years as a desired condition, suggested the use of fire only as a management tool in degraded coastal sage scrub where fire could help eradicate invasive species, and allowed for fire suppression to prevent conversion to grasslands, it is perplexing how the Forest Service could interpret the recommendations in the Conservation Alternative as resulting in a shortened fire rotation interval and type-conversion to grasslands. This is a completely inaccurate characterization of the Conservation Alternative, upon which Alternative 6 was supposedly based.

Bigcone Douglas-fir

Similar significant misinterpretations of the Conservation Alternative are evident in the DEIS’s stated environmental consequences of Alternative 6 with respect to bigcone Douglas-fir forest management. Desired conditions for bigcone Douglas-fir in the Conservation Alternative (at page 45) are that “[h]igh-intensity crown fires are minimized in the bigcone Douglas-fir community. Surrounding chaparral habitats experience numerous small (< 7,500 acres) wildfires during the summer, within the historical range of variability (75 to greater than 200 years), and thus the risk of large fall fires spreading into adjacent bigcone Douglas-fir is reduced. The low incidence of stand-replacement fires has led to the establishment of mixed-age groves...” These desired conditions are entirely in concert with those suggested in the DEIS.

The Conservation Alternative’s objectives for bigcone Douglas-fir (at page 46) state: “[t]he Forest Service shall aggressively conduct extensive-scale prescribed burning during the summer in chaparral habitats surrounding bigcone Douglas-fir forests to reduce risk of fall stand-replacement fires spreading into adjacent stands... Fire regimes shall be maintained at 75 to 200 or more years, to the maximum extent practicable.” The DEIS itself points out that “by prescribed burning highly flammable vegetation around bigcone-Douglas fir [*sic*] stands, both regeneration and adult survival will benefit, at least for another fire cycle,” and states that Alternatives 1 through 5 would treat 7,400 acres of bigcone Douglas-fir with prescribed burns and some thinning. The Conservation Alternative proposes these very same treatments, yet Alternative 6 was singled out among all the alternatives as being damaging to this vegetation type because “fires would burn through stands more often, perhaps too often for seedlings and saplings to reach a fire-tolerant size.” DEIS at 3-50. There is simply no basis to the DEIS’ claim about the effects of Alternative 6 on bigcone Douglas-fir.

A cynical interpretation might be that the Forest Service was attempting to discredit Alternative 6, but the Center will assume for the time being that these inaccuracies were unintentional and resulted from a misreading of the Conservation Alternative. We urge the Forest Service to correct these inaccuracies in the next draft of the EIS.

The Center generally supports the vegetation management goals from Alternative 6 with modifications to include the actual recommendations from the Conservation Alternative in coastal sage scrub and bigcone Douglas-fir forests. Additional changes to Alternative 6 (and the Conservation Alternative) would be with regards to backcountry management of Coulter pine and chaparral habitats.

Coulter Pine

The Conservation Alternative's desired conditions for Coulter pine forests (at page 45) are that "[l]ower-elevation montane forests are dynamic, thriving, and healthy, with fire intervals within the historical range of variability. Coulter pine communities experience patchy high-intensity crown fires at intervals of 40 to 100 years. Stands are open, with 40% to 60% canopy closure, with mature trees reaching at least 20 inches diameter at breast height... The wildland-urban interface is adequately protected from high-intensity fires, and Coulter pine stands in wildlands are permitted to burn without human suppression. Natural insect and disease outbreaks occur but are held in check by fires." In addition, the Conservation Alternative (at page 46) suggests the following objective: "[t]he Forest Service shall foster natural fire regimes in Coulter pine forest types. Fire return intervals of approximately 40 to 100 years shall be maintained to the maximum extent practicable." These objectives are entirely consistent with language in the DEIS (at 3-50) stating that the desired condition is to establish 35- to 100-year stand-replacing fire intervals. The Center stands by the scientific validity of these desired conditions and objectives with respect to closed-cone forest types.

However, some modifications of the Conservation Alternative and Alternative 6 in Coulter pine forests seem reasonable. The Center agrees that excessively frequent fires or fires that burn after a stand-replacing event in this habitat type could result in the loss of the aerial seed bank. Therefore, the Conservation Alternative's recommendation that fire suppression in Coulter pine forests shall be prohibited in wildland areas should be modified to state that suppression should be permitted in areas that have burned within the past 35 years, to protect the seed bank from too-frequent fire. Otherwise, the Center maintains support for prescribed burning as needed in the wildland-urban interface, as recommended in the Conservation Alternative.

Chaparral

The Conservation Alternative recommended several objectives and standards for chaparral management that the Center now acknowledges should be modified. The bulk of scientific evidence indicates that fuel reduction treatments, including prescribed burning, in shrublands, will not be effective in stopping large wildfires under extreme weather conditions. Research by the U.S. Geological Survey (Keeley et al. 2004 at page 4) concludes that "the

primary reason young fuels cannot act as a barrier to fire spread under these severe weather conditions is that if the high winds do not push the fire through the young age classes, they will spread the fire around them, or jump over them from fire brands that can spread up to a mile or more.”

That is not to say that there is no place for fuel treatments in shrublands on the national forests. The Conservation Alternative noted that a patchy mosaic of burned areas would benefit biological diversity by supporting various species dependent upon a range of seral stages. The Center continues to support this concept, given that postfire wildlife studies in chaparral have come to similar conclusions (see e.g., Quinn 1983 and Nichols and Menke 1984). Quinn (1983) determined that prescribed fire in chaparral produced a mix of herbaceous vegetation, subshrubs, and rapidly growing shrubs that will support a greater variety and abundance of wildlife than either unbroken chaparral or grassland, particularly if it is closely associated with other age classes of chaparral and other plant communities. Nichols and Menke (1984) noted that optimal shrubland wildlife habitat consists of a fire-induced mosaic of different age classes of brush interspersed with patches of grassland. In addition, USGS research (Keeley et al. at page 5) suggests that prescribed burning may have “some beneficial impacts on postfire events since younger fuels are associated with reduced fire severity, and this may affect both vegetation recovery and sediment losses,” although there is not yet enough evidence to make any definitive conclusions to this effect.

In general, however, there is no evidence that fire suppression has been able to exclude fire in chaparral habitats. Therefore, the fire regime has not been altered in this vegetative community and there is no unnatural accumulation of fuels. The standards in the Conservation Alternative (at page 52) that the Forest Service “shall conduct broadcast patch-mosaic prescribed burning during the late summer (August), during relatively calm, humid weather”...and that the Forest Service “shall conduct prescribed burns in 5,000 to 10,000 acres per year in the CNF, ANF, and SFNF, and at least 20,000 acres per year in the LPNF,” should be eliminated and replaced with standards to conduct prescribed burning in the wildland-urban interface only. Extensive prescribed burning in the backcountry is not necessary. The Conservation Alternative’s standard to prohibit fire suppression in chaparral habitats (at page 52) should likewise be modified, if it is demonstrated that wildfires are becoming so frequent in this vegetative community that type-conversion to grasslands is occurring.

In essence, prescribed burning is a potential management tool in chaparral habitat, but any prescribed burning should carefully consider efficacy and strategic placement (Keeley et al. 2004). Locating treatments in the wildland-urban interface will help reduce fire intensity and provide defensible space for fire suppression and is the appropriate priority for the Forest Service.

B. Roads Analysis

The Forest Service undermined Alternative 6 by stating that more than 67 percent of the road system in the four forests would be closed, mostly due to the closure of Maintenance Level 1 and 2 roads. DEIS at 2-11. The Forest Service then criticized the alternative for closing too

may roads and potentially impeding fire-fighting and fuel reduction efforts. This resulted in the elimination of Alternative 6 from any serious consideration by Forest Service staff and by a substantial segment of the public.

The DEIS does not divulge the fact that all backcountry designations – including backcountry non-motorized – would include administrative access, including access needed for fire suppression and fuel reduction efforts. Therefore, environmentally sustainable ML 1 and 2 roads could still be utilized for fire and fuels management. In fact, the Conservation Alternative (section 22.0, pages 329—332) laid out a comprehensive roads strategy that included the following elements:

Objectives:

Use the roads inventory, along with Watershed Management standards (section 1.0), a regional invasive species analysis, Wilderness and Wilderness additions data, and TES surveys (as described in other sections of the Alternative) as the basis for a region-wide Road Removal and Restoration (RRR) strategy, to identify specific roads and ORV trails for removal. The RRR strategy shall be finished within 3 years after the completion of the inventories, analyses, and strategies described above and shall include:

- Scientifically based region-wide and watershed-specific road density standards for wildlife and fisheries, with explicit standards for road-sensitive species where such information is known (e.g. <2 mi per mi² in mule deer and mountain lion habitat), and with road density reduction targets where species-specific information is not available
- Specific roads and ORV trails to be obliterated
- Adequate funding for obliteration and restoration of roads and ORV trails
- Feasible and timely deadlines for obliteration and restoration of roads and ORV trails, including an annual target for road obliteration within each Forest
- Protocol for re-vegetation, including use of native plant species only

The RRR strategy shall identify roads subject to removal as follows:

- Roads within and adjacent to aquatic areas, riparian zones, coastal sage scrub, and other sensitive, ecologically significant habitats
- Roads occurring within habitat for TES species and management indicator species that are sensitive to the direct and cumulative effects of roads
- Roads in watersheds that feed into habitat for TES species and management indicator species that are sensitive to the direct and cumulative effects of roads
- Roads with the potential to deliver high levels of sediment to streams
- Roads in watersheds with existing sedimentation or peakflow flooding problems
- Roads in watersheds with significant hydrologic problems, areas prone to mass failure, or other hazards
- Roads with stream crossings that cannot currently convey flow and sediment association with a 100-year flood event
- Roads bisecting adjacent roadless areas, regardless of their size
- Roads surrounding designated Wilderness Areas
- Roads identified as currently or potentially contributing to the invasion of exotic species
- Roads leading into high fire-risk areas (as identified in section 2.0, *Fire Management*)
- Roads in watersheds with already high road densities (>2 mi per mi²)

The roads inventory shall identify collector and arterial roads that will remain open that are causing high levels of stream damage. These roads should be prioritized for relocation to less damaging areas or redesigned to correct the problem as much as feasible. Relocation or redesign efforts shall be aggressively scheduled and implemented.

Standards:

The Forest Service shall complete a comprehensive, ground-based inventory of all roads and ORV trails in the 4 Forests within 2 years after the adoption of this plan. Include system and non-system roads with improved or unimproved surfaces, and routes wide enough to allow passage of a motorized vehicle, including an ORV.

The Forest Service shall determine road density at the watershed scale.

The Forest Service shall include identification of the following on all road segments:

- Maintenance condition on all roads, and maintenance needed to bring those segments into compliance with the Forest Service Manual
- Ability of all culverts and stream crossings to convey the 100-year flood and their effects on fish passage and sedimentation
- Extent of all road segments within unstable areas and/or erosive soils or terrain
- Roads within and adjacent to aquatic areas, riparian zones, and other sensitive, ecologically significant habitats
- Roads occurring within habitat for TES species and management indicator species that are sensitive to the direct and cumulative effects of roads
- Roads in watersheds that feed into habitat for TES species and management indicator species that are sensitive to the direct and cumulative effects of roads
- Roads with the potential to deliver high levels of sediment to streams (as identified in section 1.0, *Watershed Management*)
- Roads in watersheds with existing sedimentation or peakflow flooding problems
- Roads in watersheds with significant hydrologic problems, areas prone to mass failure, or other hazards
- Roads bisecting adjacent roadless areas, regardless of their size
- Roads surrounding designated Wilderness Areas
- Roads currently or potentially contributing to the invasion of exotic species
- Roads leading into high fire-risk areas
- Roads in watersheds with already high road densities (>2 mi per mi²)
- Non-system roads

Other than for scientifically justifiable restoration purposes, construction of new roads and landings shall be prohibited. Present roads will not be widened. If roads are resurfaced, that resurfacing will keep them at the same general class and maintenance level. No previously closed roads will be reopened. Exceptions shall be confined to circumstances where limited new road construction is needed to attain the goals outlined in section 1.0, *Watershed Management*, and section 2.0, *Fire Management*; or for the management of TES species; or to comply with other Roads standards. Any new road or landing construction must be scientifically defensible and subject to public scrutiny via NEPA and CEQA processes.

As stated, the Conservation Alternative provided for a comprehensive, scientifically based analysis of the road system on forest lands and a funded strategy for removal or relocation of problem roads, including “feasible and timely deadlines.” Without timelines, the public has

no assurance that the Forest Service would ever conduct such analyses. Note that the Road Restoration and Removal Strategy would “identify roads subject for removal” and prioritize them based on scientific criteria. This does not require the obliteration of all such roads, particularly if needed for scientifically justifiable restoration purposes such as fire and fuels management, watershed management, and management of at-risk species. Rather than conduct – or pledge to conduct – such a detailed analysis, the Forest Service simply stated that Alternative 6 would close mostly unclassified/unauthorized and Maintenance Level 1 and 2 roads within non-motorized land use zones, thereby impairing the ability of the Forest Service to fight fires and ultimately resulting in harm to at-risk species and vegetative communities. While the Center supports the closure of unauthorized roads, the Conservation Alternative did not require the broad closure of all ML 1 and 2 roads, if those roads were needed for watershed, fire, and at-risk species management goals. The DEIS clearly misrepresented the original intention of the Conservation Alternative to develop a comprehensive strategy to manage the roads system on national forest lands.

C. Domestic Livestock Grazing Analysis

The Center and others took great pains to carefully review the available scientific literature on the impacts of grazing on soils, hydrology, vegetation, and wildlife, and to present recommendations based on the current literature. While the Conservation Alternative does place significant restrictions on grazing to protect biological resources, to state that the intention was to completely eliminate the activity from national forest lands is a complete misrepresentation of the intent of the document. The Conservation Alternative made the following general recommendations (among many other specific recommendations):

- 1) Prohibit livestock grazing in riparian conservation areas, coastal sage scrub, desert scrub, areas near springs, seeps, vernal pools, and wet montane meadows, and valley-foothill oak woodlands where viability of the advanced regeneration cohort is found to be at risk from grazing. These habitat types are known to be adversely impacted by livestock grazing to the detriment of native species of plants and wildlife.
- 2) In oak habitats determined to be suitable for grazing: the grazing season shall be shortened to 2 months; a “split” grazing season shall be implemented (5-weeks in mid-to-late winter and 3 weeks in mid-spring); a rest rotation system shall be implemented; and adjust the overall grazing system based on information relevant to plant phenology requirements and plant palatability issues (page 40).
- 3) Dry meadows in late seral status with less than 10 percent bare soil and active erosion may be suitable for grazing: include bi-ennial resting periods; short seasons (10 days maximum); and limited stocking densities (page 347).
- 4) For areas determined to be suitable for grazing, include browse limits of at least 6-inch stubble height for herbaceous species, and 20 percent maximum annual utilization on new growth on highly palatable upland woody browse species.

Thus, domestic livestock grazing could potentially be suitable in grasslands, some valley-oak woodlands, and some dry meadows, where much of the grazing already occurs. The Center and other co-authors of the Conservation Alternative had no intention of completely eliminating grazing from national forest lands. In fact, the Conservation Alternative demands a far more detailed analysis of grazing opportunities on the forests that would include site visits to allotments by soil scientists, hydrologists, botanists, and wildlife biologists to determine suitability and refine allotment boundaries based on the management options that would best protect at-risk species. The Forest Service evaded its duty to conduct the thorough analyses recommended in the Conservation Alternative that would ensure the protection of biological resources and ecological function, and instead opted for the simplest approach. Unfortunately, this approach – Alternative 6 would do away with grazing altogether – serves to perpetuate the belief that this alternative is overly restrictive and unreasonable.

D. National Environmental Policy Act

The National Environmental Policy Act's ("NEPA") fundamental purposes are to guarantee that: (1) agencies take a "hard look" at the environmental consequences of their actions before these actions occur; and (2) agencies make the relevant information available to the public so that it may also play a role in both the decision-making process and the implementation of that decision. *See, e.g.* 40 C.F.R. § 1500.1. To assure transparency and thoroughness, agencies also must "to the fullest extent possible...[e]ncourage and facilitate public involvement" in decision-making. 40 C.F.R. §1500.2(d). The EIS must also "[r]igorously explore and objectively evaluate all reasonable alternatives" to a proposed action. 40 CFR § 1502.14(a) (emphasis added). Specifically, NEPA requires that the preparing agency "[r]igorously explore and objectively evaluate all reasonable alternatives, and for alternatives which were eliminated from detailed study, briefly discuss the reasons for their having been eliminated. . . [and d]evote substantial treatment to each alternative considered in detail including the proposed action so that reviewers may evaluate their comparative merits." 40 C.F.R. §1502.14.

In order to facilitate public involvement, the public must be given adequate information about each alternative and its environmental effects, to be able to provide input prior to the issuance of a Record of Decision. However, the lack of disclosure regarding methodology for many of the key analyses for the Draft EIS, as well as the promulgation of unsubstantiated arguments designed to discredit Alternative 6, precludes the public from fully participating in the process, and precludes decision-makers from making an objective decision without all the facts in front of them. In this case, the Forest Service fails to objectively evaluate all reasonable alternatives because the Forest Service was clearly grasping for reasons to discredit Alternative 6.

The Center urges the Forest Service to re-visit the Conservation Alternative's original recommendations, rewrite Alternative 6 with the above considerations and modifications of the Conservation Alternative, and re-analyze the effects of Alternative 6 with respect to the important issues raised in the preceding pages, in an unbiased and objective manner.

II. The Preferred Alternatives Violate the Endangered Species Act and the National Forest Management Act, and Adversely Impact Special-status Species in the Forests.

The DEIS admits that the preferred alternatives are the least protective of biological resources and species-at-risk, after Alternative 5. The preferred alternatives prioritize recreational and commercial uses of the forests over species and ecosystem protection, but propose to mitigate for subsequent damage by monitoring such activities and restoring habitat after damage has occurred. In fact, outdoor recreation and tourism development has been implicated in the endangerment of 148 federally listed species in the United States (excluding Hawaii and Puerto Rico), and is the fourth leading cause of species decline after urbanization, agriculture, and modification of water sources (Czech and Krausman 1997). Ranching has endangered 136 species, mineral and oil/gas exploration and extraction has endangered 134 species, logging has endangered 79 species, and road construction and maintenance has endangered 83 species (*Id.*). All of these activities are currently widespread on the forests. The effects of high-impact recreation, commodity extraction, and urban infrastructure development on our four forests are severe, and are contributing to the ongoing regional –and global – extinction crisis. The high species richness and diversity of these particular forests make the impacts all the more acute. The preferred alternatives allow for an increase in damaging activities. Viability outcomes are unacceptable for numerous special-status species due largely to increased ORV use, unsustainable livestock grazing, continued mining in sensitive habitats, and other serious impacts. Unfortunately, the preferred alternatives do little to guard against the decline of at-risk species on forest system lands. A large number of key Critical Biological Zone segments that are proposed in Alternatives 6 and 3 were excluded from the preferred alternatives, to the detriment of listed species such as the arroyo toad, mountain yellow-legged frog, Laguna Mountains skipper, and San Bernardino kangaroo rat as well as the mountain lion. These CBZs, along with Wilderness, Wild and Scenic River, and Research Natural Area designations that were excluded from the preferred plans, would assist the Forest Service in fulfilling its mandate to conserve special-status species on national forest lands.

Below, the Center has highlighted some of the proposals in the preferred alternatives that would result in unacceptable levels of harm to sensitive species and habitats.

A. The Preferred Alternatives Fail to Conserve At-risk Species

Congress passed the Endangered Species Act (“ESA”), 16 U.S.C. §§ 1531—44, in response to growing concern over the extinction of fish, wildlife, and plants. 16 U.S.C. § 1531(a)(1). Recognizing that “these species of fish, wildlife, and plants are of aesthetic, ecological, educational, historical, recreational, and scientific value to the Nation and its people,” *id.* § 1531(a)(3), Congress declared the purpose of the ESA is to “provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved, [and] to provide a program for the conservation of such endangered species and threatened species.” *Id.* § 1531(b). The Supreme Court has held that the ESA reflects “an explicit

congressional decision to afford first priority to the declared national policy of saving endangered species.” T.V.A. v. Hill, 437 U.S. 153, 185 (1978).

The ESA applies to species formally “listed” pursuant to Section 4 of the Act. 16 U.S.C. § 1533. Section 7 of the Act directs all federal agencies to “insure” that actions authorized, funded, or carried out by such agencies are “not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of [critical habitat] of such species.” Id. § 1536(a)(2). To “[j]eopardize the continued existence of means to engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species.” 50 C.F.R. § 402.02. For species with designated critical habitat, the Forest Service is also legally required to provide for the recovery of listed species, not just survival, when considering management impacts on critical habitat.

The preferred alternatives are admittedly the worst alternatives for protection of at-risk species, other than the least environmentally protective alternative (5). Only 12 of 56 animal species (21 percent) and 57 of 88 of plant species (65 percent) receive a viability outcome of “B” or higher, meaning that suitable habitat is well-distributed across forest system lands (Appendices-14). Federally and state-listed animal species that occur on the national forests and were determined to be at substantial risk from Forest Service activities (Table 377) include the Santa Ana sucker (federally threatened), unarmored 3-spine stickleback (federally endangered), southern and south-central steelhead trout (federally endangered/threatened), arroyo toad (federally endangered), California red-legged frog (federally threatened), mountain yellow-legged frog (federally endangered), California condor (federally endangered), California gnatcatcher (federally threatened), least Bell’s vireo (federally endangered), southwestern willow flycatcher (federally endangered), Laguna Mountains skipper (federally endangered), quino checkerspot butterfly (federally endangered), Peninsular bighorn sheep (federally endangered), San Bernardino kangaroo rat (federally endangered), and southern rubber boa (California threatened). According to Appendix B and Table 371, the viability of the San Bernardino kangaroo rat, the California red-legged frog, and the mountain yellow-legged frog are seriously at risk from the preferred alternatives. Given that the San Bernardino kangaroo rat and the mountain yellow-legged frog are endemic to southern California, inadequate management under the preferred alternatives could realistically lead to the extinction of these species.

The Forest Service proposes to mitigate for the damage inflicted upon sensitive species and habitats in their preferred alternatives by increasing agency presence and implementing additional use restrictions. However, this proposal raises red flags with respect to adequate funding, sustainability, and the efficacy of such an approach. In truth, the Forest Service has serious difficulty managing current levels of recreation, particularly with respect to off-road vehicle trespass (as described elsewhere in this letter). The most cost-effective and successful way to conserve at-risk species is to proactively designate compatible land uses in important habitat areas. Compatible land uses generally include Critical Biological Zones, Research Natural Areas, Wilderness Areas, and Wild and Scenic Rivers. Backcountry Non-motorized

zones also can help alleviate damage from motorized vehicles and will result in compatible, lower-impact uses.

Unfortunately, the preferred alternatives exclude several key Critical Biological Zones, Research Natural Areas, Wilderness Areas, and Wild and Scenic Rivers, that were proposed in Alternatives 3 and 6. For example, the San Bernardino LRMP points out that “Bautista Creek possesses the largest number of endangered and Forest sensitive wildlife species of any location on the Forest. The southwestern willow flycatcher occurs here, and critical habitat for the San Bernardino kangaroo rat and the arroyo toad is designated here and along and [*sic.*] the San Jacinto River. Bautista Creek also supports the only population on the Forest of the endangered slender horned spine-flower...” (SBNF Strategy-40). Yet remarkably, Bautista Creek was not designated as a CBZ. In fact, the DEIS provides no compelling reasons why any CBZs, RNAs, WAs, and WSAs are not included in the preferred alternatives, except to imply that these zones may conflict with future opportunities for ORV loop trails. DEIS at 3-206: “designation of a backcountry motorized land use zone in some alternatives was usually made to address specific connectivity issues associated with forest off-highway vehicle trail systems.” In fact, Monica Bond of the Center attended a meeting in Idyllwild sponsored by the Forest Service wherein the Recreational Officer discussed a potential ORV route that would cross Bautista Creek, despite the incredible biological importance of this riparian habitat. The promotion of destructive ORV use in areas of critical ecological importance flies in the face of sound science, legal mandates, and good forest management, and is not a valid reason to omit these zones from a protective status.

The Forest Service has a legal obligation to conserve special-status species on national forest system lands. Unfortunately, as a result of the increase in allowable damage to species and habitats under the preferred alternatives, the viability outcomes for species of concern are unacceptable, particularly for listed species such as the Laguna Mountains skipper, San Bernardino kangaroo rat, the Peninsular bighorn sheep, and the southern rubber boa in the San Jacinto Mountains, as well as the mountain lion (a proposed Management Indicator Species). The viability outcome for each of these species is lower than under Alternatives 3 and 6, and suggest that some subpopulations within the forest will be isolated from other subpopulations, and that suitable habitat is often patchy or at low abundance. The Forest Service has a legal mandate to ensure the viability of all vertebrate species on forest system lands, and to contribute to the recovery of federally and state listed species. If measures are available to improve viability outcomes, as evident by the higher viability outcomes under Alternatives 3 and 6, they must be undertaken. One of the primary techniques to improve the viability outcome for at-risk species is to proactively protect their habitat from damage and implement restoration measures to improve habitat via the Critical Biological land-use zone. The judicious use of CBZs will be the most effective way to protect and recover the many species on the forests hovering on the brink of extinction. Research Natural Areas, Wilderness Areas, and Wild and Scenic Rivers are also valuable tools for conservation of species at risk.

1. Federally and State-listed Animal Species

On a species-specific level, a number of important areas are excluded from consideration as CBZs under the preferred alternatives that would contribute to the protection of certain species. In addition, standards are not sufficient to prevent jeopardy of highly imperiled species, as required by the federal and state ESAs.

Arroyo Toad

The Recovery Plan for the Arroyo Southwestern Toad (USFWS 1999 at page 68) notes that the "in-stream and riparian habitats that support breeding of arroyo toads, as well as upland habitats that provide foraging and overwintering habitat, need to be managed to maintain and enhance existing population throughout the range of the arroyo toad in California." In addition, the recovery plan (*Id.* at page 69) states that "potential arroyo toad habitat should be surveyed to locate currently unknown arroyo toad populations. Appropriate management of newly found arroyo toad populations and habitat should be planned and implemented as soon as possible after discovery."

The viability outcome statement for the arroyo toad is the same for Alternatives 3, 6, and 4. However, Alternative 4 in the Angeles, Los Padres, and San Bernardino national forests and Alternative 2 in the Cleveland National Forest exclude nearly 4 times as many habitat areas from designation as Critical Biological than they include: 22 segments are not protected and only 6 segments are protected. DEIS Tables-365. Thus, only 27 percent of occupied arroyo toad habitat on the national forests would receive protection as a CBZ under the preferred alternatives, as opposed to 100 percent under Alternative 6 – yet both the preferred alternatives and alternative 6 have the same viability outcome for the species. The analysis that results in the arroyo toad receiving the same viability outcome as the outcome under the more protective alternatives is highly suspect, and the Center requests that the final EIS explain this discrepancy. Given that the species is distributed throughout all four forests on 12 of the 22 drainages in central and southern California that contain arroyo toad habitat, the Center believes that the Forest Service can and should maintain viable populations of this species by conserving all known populations and any unoccupied suitable habitat.

Standards for conservation of the arroyo toad are inadequate to conserve the species on forest system lands. Table 377 lists the standards that ostensibly address threats to the species. Standards S35, S40, S42, S43, S44, and S45, which require that hydroelectric projects, surface water developments, surface water diversions, and groundwater extractions do not adversely affect aquatic resources, is a good first step. However, other important standards are wholly inadequate.

Standard S13 provides for protection and management for the species only in critical biological land use zones. As described above, only 6 of 28 potential CBZ segments containing arroyo toads (21 percent) are designated as CBZs under the preferred alternatives. The Forest Service provides no explanation as to why the other 22 segments could not be designated.

Recreational restrictions are insufficient to conserve the species. Standard S18 states that steps will be taken to avoid or minimize negative impacts only at recreation sites that are

occupied, and specifies that the least restrictive measures will be taken. This caveat leaves unoccupied or un-surveyed areas of suitable habitat unprotected – these areas are vital to the recovery of the species. No mention is made of critical habitat that has been designated for the species. Grazing standards are similarly insufficient. Standard S39 outlines a five-step process to designate Riparian Conservation Areas, however grazing and other harmful activities are still allowed in RCAs. Standard S27 requires that no more than 20 percent of the current year's growth of riparian shrubs be utilized by domestic livestock, but no data are provided to support this standard with respect to conservation of the arroyo toad. Livestock grazing should be prohibited in key, occupied, and modeled habitat as well as designated critical habitat. For example, the 2000 proposed rule for the designation of critical habitat for the arroyo southwestern toad identified the Sisquoc and South Fork La Brea allotments are potentially affecting the species (USFWS 2000a).

Finally, standard S113 avoids new construction of roads and trails through key and occupied habitat for the arroyo toad, but does not provide for the removal of existing roads in these habitats that are harming the species. The USFWS (2000a) identified the following roads as a threat to arroyo toad populations on the Los Padres and Cleveland national forests: Camuesa Road and the access road to Ogilvy Ranch; the Dripping Springs access road; Corral Canyon and Boulder Oaks Campground roads; Buckman Springs Road; Miner's, Pine Creek, Noble Canyon, Horsethief, Skye Valley, and Las Bancas roads; a special use permit for a conference camp road; Indian Flats Road; Orosco Ridge Road; Hot Springs Canyon, San Juan South Tract and Ortega Trailhead roads; Maple Springs Road; and a volunteer fire station road special use permit and a private access road special use permit, both near Silverado and Wildomar roads. The LRMP should specify a timeline under which these roads will be analyzed for removal or re-routing. In addition, standard S113 specifically exempts haul roads associated with mining activities, which will result in adverse effects to the arroyo toad. The BLM California State Office recently recommended denial of the proposed mineral withdrawal of 44,575 acres on the San Bernardino National Forest to protect the arroyo toad and other listed species. It is entirely within the authority of the Forest Service to enact restrictions on mining activities to conserve listed species on forest system lands. The recent recommended denial of the mineral withdrawal proposal underscores the need for the Forest Service to adopt strict standards to conserve listed species, in order to comply with federal law. Haul roads and other harmful mining and prospecting activities should be eliminated in key, occupied, modeled, and federally designated critical habitat for the arroyo toad. In addition, existing or potential mining claims in any drainages with existing or historic populations of arroyo toads should be withdrawn. These areas include, but are not limited to placer mining on the Little Horsethief Creek on the San Bernardino National Forest and suction dredging in Piru Creek from Pyramid Lake upstream to Bear Gulch, and on the Sisquoc River (USFWS 2000a).

California Red-legged Frog

Historically, red-legged frogs were found throughout southern California in freshwater streams, marshes, and lakes. In southern California, it has been extirpated from nearly every historic locality (USFWS 2000b). At present, known populations occur in Branch Creek, La Brea, Santa Ynez, Sespe, Sisquoc, Piru Creek, Carmel River, Ventana, and Morro Creek

drainages in the Los Padres National Forest and in San Francisquito Canyon in the Angeles National Forest (USFWS 2000b and 2000c). Suitable breeding and dispersal habitat exists in several other drainages.

The DEIS Table 365 lists 18 CBZ segments as supporting California red-legged frogs, including San Francisquito Canyon and Upper Big Tujunga on the Angeles National Forest and Mono Creek Road Crossings, Middle Santa Ynez, Upper Sespe, and Upper Santa Ynez on the Los Padres National Forest. Amazingly, only three segments on the San Francisquito Canyon were adopted as CBZs in the preferred alternatives. Thus, the preferred alternatives protect only 17 percent of identified CBZ segments that could support California red-legged frogs, and leave 83 percent unprotected. The DEIS fails to provide any explanation as to why the 15 additionally proposed CBZs cannot be adopted.

Standards are also not sufficient to prevent jeopardy to the species. All the standards that supposedly address the arroyo toad also address the California red-legged frog; problems with these standards are described above in the arroyo toad section.

Mountain Yellow-legged Frog

The mountain yellow-legged frog is perhaps the most endangered amphibian in southern California. The most recent published numbers of mountain yellow-legged frogs in Southern California is estimated to be 79 adult frogs. 67 Fed. Reg. 44382 at 44384. The distinct population segment (“DPS”) has been extirpated from 99 percent of its historic range in southern California. *Id.* at 44383. The frog once occurred in 164 drainages in all four national forests, but is currently found in fewer than eight locations, all on the Angeles and San Bernardino National Forests. City Creek provides habitat for the only remaining population known to exist in the entire San Bernardino Mountain Range. Discovered in 1998, mountain yellow-legged frogs were only found above the Hwy 330/E. Fork City Creek Bridge until 2003 surveys when tadpoles and juveniles were found throughout the 1 ½-mile stretch below the bridge, extending down into main stem City Creek (USFS 2003). In the San Jacinto Mountains, surveys in 2000 and 2001 found one adult mountain yellow-legged frog in Fuller Mill Creek. Dark Canyon contained mountain yellow-legged frogs in 1998, and frogs were found in 1995 in Hall Canyon. Five of the 7 occurrences on the Angeles National Forest (upper Little Rock Creek, Big Rock Creek, Devil’s Canyon, and 4 upper tributaries of the San Gabriel River) are within designated Wilderness Areas.

The species viability analysis in Appendix B (at Appendices-21) states that “this frog is not widely distributed on National Forest System land, and where it is present it is mostly within designated wilderness, where little active management activity is occurring.” First, there are many populations that do not occur within Wilderness Areas and are therefore not protected. Second, the frog is not currently widely distributed, but historically occurred in drainages throughout the national forests, and the Forest Service must identify and protect areas suitable for the re-colonization of the species.

The determination of endangered status for the DPS states that “the few remaining occurrences of this species in southern California are now at risk of extinction. Any activity that results in disturbance to the species or which may harm eggs, tadpoles, or adult frogs could negatively affect the continued survival of this DPS.” 67 Fed. Reg. 44387. It is therefore extremely probable that any adverse impacts will jeopardize the continued existence of this highly imperiled amphibian. The preferred alternatives fail to sufficiently protect mountain yellow-legged frogs in numerous ways. Twelve CBZ segments were identified as containing mountain yellow-legged frogs and/or suitable habitat. Two of the segments at Dark Canyon/Fuller Mill on the San Bernardino National Forest and one segment at Little Rock Creek South on the Angeles National Forest were not adopted as CBZs in the preferred alternatives, leaving 25 percent, or one-fourth of all segments, unprotected. Standards are also not sufficient to prevent jeopardy to the species. All the standards that supposedly address the arroyo toad also address the mountain yellow-legged frog; problems with these standards are described above in the arroyo toad section.

The viability outcome for the mountain yellow-legged frog is a “D” in Table-371. This outcome indicates that the viability of the species is at serious risk from the preferred alternatives. The Forest Service has a legal duty to contribute to the recovery of the species; therefore, potentially suitable habitat as well as all currently occupied habitat should be conserved in CBZs to allow for the continued survival of the species and its re-colonization into drainages from which it has been extirpated. Intentionally omitting 25 percent, or one-fourth of all CBZ segments identified as occupied by the species, would leave open the possibility of allowing activities that would adversely impact the species, leading to further declines and possibly extinction. Therefore, the preferred alternatives clearly violate both NFMA and the ESA.

California Condor

The California condor is perhaps the most endangered bird in the U.S., with fewer than one hundred condors currently in the wild. At present, sufficient habitat occurs in the four southern California national forests to support viable populations of California condors – provided that density-independent mortality factors are controlled, including lead poisoning, collisions with man-made objects, and oil pollution (USFWS 1996). Unfortunately, the preferred alternatives do not address significant sources of mortality to the species. The agency is required to ensure the survival and recovery of the species; ignoring these sources of mortality is a violation of the ESA and will likely result in jeopardy.

Lead poisoning from scavenging bullet-killed carrion left by hunters is one of the primary threats to condors. Since 1997, five condors have died and 26 others have required emergency blood treatment after ingesting lead. The Conservation Alternative (at page 199) recommended that the Forest Service phase out lead bullets and shot and prohibit the use of lead bullets and shot on all forest system lands thereafter. The DEIS fails to consider the effects of lead poisoning of California condors on forest system lands.

Collisions with power lines are also a significant cause of condor mortality. The Conservation Alternative and the U.S. Fish and Wildlife Service (2001) both recommend that the Forest Service ensure that all power lines and associated facilities in the four forests are raptor-proof, existing towers have bird collisions avoidance devices on guy wires, and high-visibility or avoidance devices and raptor guards be placed on poles and other structures that could be used as perching sites. Standard S29 should require all power lines and communication sites to be raptor safe, not just new sites. It is unclear from the DEIS how existing power lines and communication sites will be made raptor-safe under the preferred alternatives.

Finally, oil and gas drilling has harmful effects on California condors (see detailed discussion in section D, below). No standards address this source of mortality despite the recognition that such activities have resulted in the death of condors. The Forest Service should exercise the discretionary “no lease” authority granted by the 1987 Federal Onshore Oil and Gas Leasing Reform Act, and declare no new areas as open for leasing in this LRMP revision. The Forest Service should also initiate a formal process provided by the Federal Land Policy and Management Act for the withdrawal of lands from leasing availability or for revocation or non-renewal of existing leases if they are found to be adversely impacting California condors.

Coastal California Gnatcatcher

The California gnatcatcher is an obligate resident of Diegan, Riversidian, and Venturan subassociations of coastal sage scrub (Atwood and Bontrager 2001). The Forest Service itself has stated that temporary or permanent conversion of coastal sage scrub to other vegetation types results in a loss of habitat for coastal California gnatcatchers (USFS 2003). Roads and associated nitrogen deposition, domestic livestock grazing, off-road vehicle use, and other impacts degrade coastal sage scrub habitat, often resulting in type-conversion to non-native Mediterranean grassland types that will not support viable populations of California gnatcatchers.

Critical habitat for the species is considered not suitable for grazing (Appendix J-3) and the only CBZs identified for the California gnatcatcher (along the San Diego River in the Cleveland National Forest) would be adopted under Alternative 2. These are promising first steps. However, the preferred alternatives do not provide sufficient protection for this federally threatened species. Table 377 includes only two paltry standards to address threats to the California gnatcatcher. Standard S115 avoids fuels treatments in coastal sage scrub within the range of the species except for fire clearance around structures and fuel breaks, and other standards provide for suppression of fires in this habitat type. Designated critical habitat in forest system lands also includes portions of the lower foothills of the eastern San Gabriel Mountains in the San Bernardino National Forest – the species was historically common in these areas and a possible population may still exist. This designated critical habitat should be included in a CBZ. The Forest Service should must also identify and protect additional areas suitable for the re-colonization of the species.

Standard S48 is designed to protect streamside areas and natural lakeshores from overgrazing. Given that the California gnatcatcher is primarily an upland species, this standard

provides insufficient protection for the species where it occurs outside a fifty-year high water line area for stream reaches.

Least Bell's Vireo and Southwestern Willow Flycatcher

Cattle grazing is one of the greatest threat to southwestern willow flycatchers and least Bell's vireo. Cattle eliminate riparian habitat directly by feeding on and trampling vegetation and, indirectly, by compacting soils, degrading streambanks, and altering watershed hydrology and channel morphology (Klebenow and Oakleaf 1984, Ohmart 1994, Reichenbacher 1984, Taylor and Littlefield 1986). These riparian obligates are also seriously threatened by brood parasitism from the brown-headed cowbird. Cowbirds lay their eggs in the nests of flycatchers and vireos, leading to nest abandonment, poor nestling survival, and overall lowered nest success rates. This can result in population declines and, if extensive, extirpation of individual populations (Harris 1991, Whitfield 1990, Whitfield 1993, Whitfield and Strong 1995). For example, the Center has reported that cowbird presence has been positively documented at 100 percent of all remaining flycatcher sites.

The dramatic increase in the cowbird's range is correlated to the onset of grazing, urbanization, and agriculture in the past century (Rothstein et al 1980). Grazing is particularly implicated in increasing cowbird numbers. Cattle – even in small numbers – increase food availability for cowbirds and make flycatchers and vireos more susceptible to parasitism by reducing shrub cover and fragmenting habitat (e.g., Airola 1986, Harris 1991, Mayfield 1977, Taylor 1988, Verner and Ritter 1983, Whitfield and Strong 1995). The link between cattle grazing and cowbird parasitism is summarized by Sferra et al. 1997:

"Use of adjacent land by cattle also has been shown to provide feeding sources that increase and concentrate the number of cowbirds in the area, resulting in an increase in brood parasitism. Cowbirds may travel 6.5 mi (10.5 km) to feed and as much as 12.4 mi (20 km) to breed from their roost sites at Ft. Hood, Texas. Also, cowbirds may fly up to 4.3 mi (7 km) between feeding and breeding areas."

The preferred alternatives completely fail to address the serious negative impacts of livestock grazing on these highly imperiled riparian species. For example, standards S27 and S48 provide for the utilization of up to 20 percent of the current year's growth of rooted riparian vegetation, yet no studies were cited or data provided to indicate that these utilization standards would adequately protect the species. Scientific studies have shown that cattle grazing increases cowbird densities, and these impacts are felt up to 6.5 miles away from grazing areas, yet little mention is made of any enforceable efforts to prevent the spread of cowbirds in the forests.

The DEIS also fails to address the fine-scale microhabitat requirements of these species. The final recovery plan for the southwestern willow flycatcher (at page 11) notes that the species selects microhabitat characteristics such as "dense vegetation in the patch interior, or an aggregate of dense patches interspersed with openings. In most cases this dense vegetation occurs within the first 3—4 m (10—13 ft) above ground. These dense patches are often interspersed with small openings, open water, or shorter/sparser vegetation, creating a mosaic

that is not uniformly dense. In almost all cases, slow-moving or still surface water and/or saturated soil is present at or near breeding sites during wet or non-drought years." The U.S. Fish and Wildlife Service (1998; 2001) documents that the least Bell's vireo occur in dense, willow-dominated riparian habitats with a canopy layer and lush, dense understory vegetation in the immediate vicinity of flowing water. The Forest Service (2003) has documented these microhabitat requirements as well. Yet, the standards provided in the DEIS require only a percentage of utilization of shrubs, without addressing the structural characteristics of the vegetation that are necessary for flycatcher and vireo breeding.

The preferred alternatives are also seriously deficient in that only two of four segments identified as southwestern willow flycatcher habitat (50 percent) are incorporated into CBZs (Table 365). The critical San Luis Rey River on the Cleveland National Forest (also habitat for the endangered least Bell's vireo) was excluded as a CBZ without any explanation. Furthermore, Bautista Creek on the San Bernardino National Forest has been confirmed as supporting southwestern willow flycatchers (SNF Strategy-40) yet no mention was made of the presence of the species in any of the proposed CBZ segments listed in Table 365. Literally none of the CBZ segments identified as containing least Bell's vireo habitat were included under the preferred alternatives. The lack of any serious effort to provide habitat protection for these listed species on forest system lands is in clear violation of the ESA.

The DEIS's treatment of the southwestern willow flycatcher and least Bell's vireo also fails to meet the requirements of NEPA. NEPA regulations mandate that "[a]gencies shall insure the professional integrity, including scientific integrity, of the discussions and analyses in environmental impact statements. They shall identify any methodologies used and shall make explicit reference by footnote to the scientific and other sources relied upon for conclusions in the statement. An agency may place discussion of methodology in an appendix." 40 C.F.R. § 1502.24. The DEIS provides absolutely no scientific data describing how the proposed grazing standards would adequately conserve these species.

The preferred alternatives should include standards that would:

- 1) Remove cattle from all riparian areas. Livestock grazing is limiting recovery of riparian habitat range-wide. Removal is the only way to restore riparian habitat.
- 2) Remove tamarisk and replant with natives. Mechanical removal of tamarisk is necessary in areas targeted for restoration, such as habitat adjacent to currently occupied flycatcher and vireo sites. Removal, however, should not occur in areas where flycatchers and vireos are currently nesting and where natives are absent or depauperate because nesting and perching sites could be eliminated with no immediate native replacement.
- 3). Eliminate feeding sources for cowbirds. Activities that provide feeding areas for cowbirds, such as grazing, should be prohibited in a 5-mile radius adjacent to current flycatcher and vireo populations or in areas targeted for restoration of populations and habitat.

- 4). Prohibit other activities that degrade riparian areas. This includes, among other activities, off-road vehicle use and sand mining.

Santa Ana Sucker

The Santa Ana sucker is just one of many southern Californian aquatic species threatened by the elimination or alteration of its stream habitats from water diversions and dams, roads, ORV use, mining, grazing, development, and pollution as well as introduced species such as predatory brown trout, green sunfish, and red shiner (USFWS 2001). Historically found in the Santa Ana, Los Angeles, San Gabriel, and Santa Clara river drainages, the species is now restricted to three isolated populations in lower Big Tujunga Creek, the East, West, and North Forks of the San Gabriel River, and the lower and middle portions of the Santa Ana River. *Id.*

Remarkably, the DEIS (Table 365) identifies ten CBZ segments along the San Gabriel River of the Angeles National Forest containing habitat for the Santa Ana sucker – and not one of those segments is adopted in the preferred alternatives. Accordingly, the species received a “D” rating for its viability outcome. Numerous remedial measures to maintain and restore habitat and connectivity between isolated populations were recommended by the U.S. Fish and Wildlife Service (2001) and re-iterated in the Conservation Alternative (at page 166). These measures would assist the Forest Service in complying with the ESA, and include:

- 1) The Forest Service shall implement slope stabilization projects along the East and Main Forks of the San Gabriel River to limit access to the stream and provide erosion and sediment control.
- 2) The Forest Service shall identify and evaluate existing stream crossing/fish passage problems and correct as needed. Areas to be corrected include Hardluck (LPNF) and San Francisquito Canyon and San Francisquito Canyon Motorway (ANF).
- 3) The Forest Service shall upgrade existing structures according to the priority and sensitivity of the fishery resources. Repair road stream crossings in riparian areas. Implement in all TES species habitat.
- 4) The Forest Service shall coordinate with California Department of Fish and Game on the application and enforcement of state suction dredge regulations on the San Gabriel River. Participate with the State to identify for the public those sections of streams that are open or closed to dredging.
- 5) The Forest Service shall discontinue suction dredging along East Fork, San Gabriel River both within and upstream of occupied habitat.

- 6) The Forest Service shall work with the ORV community in the San Gabriel River area to assess impacts of ORV use, particularly on the lower West Fork, with respect to the Santa Ana sucker.
- 7) The Forest Service shall work with the ORV community to implement actions to eliminate adverse impacts caused by ORV use, and if necessary identify an appropriate site to relocate the existing ORV areas.

The Forest Service has not adopted any of these measures as enforceable standards in their preferred alternatives. The blatant lack of commitment on the part of the agency to adopt these and other feasible measures to protect and recover this federally threatened fish is a violation of its obligations under the ESA.

Southern and South-central Steelhead Trout

The southern and south-central steelhead trout occur on the Los Padres National Forest. Watersheds on forest system lands that support the south-central ESU include Little Sur River, Big Sur River, Big Creek, Alter Creek San Carpoforo Creek, and Morro Creek. Watersheds on forest system lands that support the southern ESU include the Santa Ynez River, Gaviota Creek, Ventura River, Santa Clara River (including Sespe Creek), and Malibu Creek. Recent sightings have been reported in Topanga Creek and San Mateo Creek, as well as Jalama, Maria Ygnacio, Mission, and Carpenteria creeks in Santa Barbara.

The standards outlined in the design criteria are wholly inadequate to conserve this species. The U.S. Fish and Wildlife Service (2001) has stated that stream crossing and fish passage problems should be addressed and barriers to migration should be removed or modified. The Conservation Alternative (at page 78) suggested that the Forest Service use strategies identified in the National Marine Fisheries Service's "Guidelines for Salmonid Passage at Stream Crossings," including preferred crossings, designing new culverts and retrofitting or replacing existing culverts, post-construction evaluation, and long-term maintenance. The Center suggests that these actions be incorporated as standards.

Steelhead depend upon undisturbed riparian habitat for survival and reproduction. Conserving riparian habitat required specific protective measures, including appropriate buffers between a stream and any damaging land-use activities. The Riparian Conservation Area Five-step Screening Process to determine buffer widths (Appendix E-3) is arbitrary and not based on any cited scientific data. As pointed out by the Sierra Nevada Ecosystem Project (1996), the "likelihood of disturbance to a stream from land uses increases as a function of proximity to a stream, the steepness of surrounding hillsides, and the erodibility of soils. These relationships, as in many risk factors, are probably multiplicative, and therefore a doubling of the slope has more than twice the risk of disturbance to the stream (i.e., an exponential change)." Therefore, determining the width of a riparian buffer should incorporate vegetation type, slope, erodability of soil, and other factors. In addition, it is nearly impossible to determine what land-use activities would be allowed at what levels within RCAs because this information is not made available in one location in a clear, concise, easily understood format. Apparently, numerous

damaging activities would be allowed within RCAs, including livestock grazing, mining, water diversions, and even ORV use. The standards applicable within RCAs (Standards-7) would only ensure adequate instream flows. No mention is made of conserving or restoring vegetation structure, modifying barriers to improve fish passage, or removing non-native species.

Table 365 lists potential CBZs in the Los Padres, include middle and upper Santa Ynez River and upper Sespe Creek. Steelhead are known to occur in these areas, yet were not identified as a species occurring within these CBZs. Other streams on the forests that are known to support steelhead are not identified at all as CBZs. The Center urges the Forest Service to designate streams that support or could potentially support steelhead as critical biological areas. In addition, the Friends of the River identified several river segments that support, or could potentially support, steelhead populations that were excluded from designation as Wild and Scenic. These segments should be determined eligible.

The southern steelhead trout is an important flagship species, being extremely popular with anglers. Yet the viability outcome for this species in Table 371 is a “D,” despite the myriad riparian restoration options. Failure to adopt all feasible measures conserve this species is a violation of NFMA and the ESA.

Unarmored Three-spine Stickleback

The unarmored three-spine stickleback was once distributed throughout the Santa Clara, Los Angeles, and San Gabriel river systems in Los Angeles County, and the Santa Ana River system in Orange, Riverside, and San Bernardino counties. The species is currently restricted to the upper Santa Clara River drainage in Los Angeles and Ventura counties – and a remnant genetically distinct population of stickleback exists in Shay Creek, San Bernardino County (USFWS 2001).

The preferred alternatives capture most of the CBZ segments supporting the species, notably in San Francisquito Canyon in the Angeles National Forest and South Baldwin Lake and Sugarloaf Meadow in the San Bernardino National Forest. The Center supports the adoption of these segments as CBZs, but urges the Forest Service to adopt Soledad Canyon as well – particularly since this zone is included as proposed critical habitat for the species. A CBZ should be designated at the Santa Clara River beginning at a point 1.4 miles upstream in Soledad Canyon from the community of Lang, at the downstream end of the area called River’s End Park thence extending upstream approximately 8.5 miles to its confluence with Arrastre Canyon, at a point located about 0.6 mile southwest of Los Angeles County Rehabilitation Camp, thence upstream in Arrastre Canyon approximately 0.8 mile.

Laguna Mountains Skipper

The Laguna Mountain skipper was once found in montane meadows and forest clearings throughout the Laguna and Palomar mountains, but is now found only in Mendenhall and Laguna Meadows and at the Observatory Campground in the Cleveland National Forest (as well as a small population in Palomar Mountain State Park). Forest-specific design criteria for the

Cleveland includes a standard (CNF S1) that would “avoid activities resulting in direct trampling or erosion problems to Laguna Mountains skipper key and occupied habitat and adjacent areas,” (CNF Strategy-58). The Center commends the Cleveland National Forest for adopting this standard in its preferred alternative, and urges the agency to adopt the Observatory, Mendenhall, and Laguna Meadow CBZ segments in its final plan (Table 365). Research should also be conducted to evaluate the effects of domestic livestock grazing management practices on this federally endangered species, and eliminate all activities that are adversely impacting the species.

Quino Checkerspot Butterfly

The quino checkerspot butterfly, once one of the most abundant butterflies in southern California, has been eliminated from 90 percent of its former range. The U.S. Fish and Wildlife Service finalized a recovery plan for the quino in August, 2003. In that plan, the quino was assigned a “Recovery Priority” of “6C” which reflects “a high degree of threat, a low potential for recovery, and existing conflict with construction or other land development.” The recovery plan (USFWS 2003 at pages 71—72) also stated that the quino is critically endangered:

The best available information indicates the Quino checkerspot is highly endangered: it was at such low densities prior to listing that it was thought to possibly be extinct...The species is currently known from less than 25 percent of its former distribution; it is known to undergo large population fluctuations related to weather..., and most current populations are threatened by ongoing habitat degradation and development. Under current conditions the Quino checkerspot may go extinct in the foreseeable future. Therefore, further losses of landscape connectivity within recovery units will increase the extirpation probability of extant populations and adversely affect recovery of the Quino checkerspot butterfly. (Emphasis supplied).

Because of the metapopulation dynamic, the quino requires large, connected blocks of habitat in order to avoid extinction—“local habitats alone are generally not sufficient to ensure the long-term persistence of butterfly metapopulations,” (USFWS 2003 at page 23). It is not necessary to kill individual butterflies or even to destroy known occupied habitat in order to harm the species: “Activities resulting in habitat fragmentation, or host or nectar plant removal reduces habitat quality and increases the probability of quino checkerspot butterfly extinction,” (*Id.* at page 55). Moreover, such impacts can be just as detrimental to the species as destroying currently occupied habitat: “Land use changes that [restrict] dispersal between habitat patches and isolate local populations by compromising landscape connectivity can be just as detrimental to metapopulation survival as those that destroy or reduce the size of habitat patches.” 67 Fed. Reg. 18357.

The quino is in such serious trouble that the final recovery plan states that “[s]imply protecting occupied habitat from direct destruction by agricultural or urban development and grazing will not be sufficient to protect resident populations,” (USFWS 2003 at page 34; emphasis added). The U.S. Fish and Wildlife Service has repeatedly acknowledged that the preservation of remaining occupied and unoccupied habitat is necessary to prevent the extinction

of the quino (*Id.*, 67 Fed. Reg. 18357). The recovery plan (USFWS 2003 at page 71) states that "habitat areas that need protection consist of all areas occupied by the butterflies, including patches of larval host plants and sites used by adults during breeding, oviposition, nectaring, and dispersal" and (at page 31) "it remains crucial that as many habitat patches as possible (regardless of known occupancy) be conserved, restored, and managed, and that we attempt to maintain all populations that can be feasibly managed for resilience."

In 2002 Dr. Gordon Pratt found a quino colony in the San Jacinto Mountains at approximately 5,000 feet elevation on national forest property, just south of Thomas Mountain. This site should be adopted as a CBZ. The entomologist has also suggested that much of the higher elevations of the Santa Ana Mountains have not been looked at thoroughly, so it is possible that there are sites for the species there. In addition, the 1,650 acres of critical habitat designated on national forest lands near the community of Oak Grove on the Cleveland National Forest and in the Hixon Flat area of the San Bernardino National Forest should be included as CBZs. By adopting these pro-active measures to protect occupied and unoccupied critical habitat, the Forest Service will comply with its legal duty to protect and recover this highly imperiled species.

Peninsular Bighorn Sheep

Intensive urbanization of lower-elevation areas in the Santa Rosa and San Jacinto mountains has resulted in the extreme endangerment of the Peninsular bighorn sheep. The fate of this federally listed distinct population of bighorn is now dependent upon aggressive conservation measures on public lands. Even by the Forest Service's own qualitative viability methodology, this flagship species fares more poorly under the preferred alternatives than under alternatives 3 and 6. Thus, the Forest Service is clearly not adopting all feasible measures to conserve the species.

The Forest Service has taken some promising first steps. Standard S104 prohibits sheep and goat grazing within 9 miles of bighorn sheep habitat, and the Livestock Capability and Suitability Criteria designates bighorn sheep habitat as unsuitable for cattle grazing. Cattle grazing was found to negatively affect bighorn sheep populations through direct competition for forage and water, changes in vegetation after cattle grazing, and potential transmission of disease (see references in USFWS 2000d). Indeed, Table 377 indicates that grazing by cattle is a primary threat on NFS lands. Unfortunately, there have been numerous problems with trespass of cattle into bighorn sheep areas. The San Jacinto Ranger District has repeatedly responded to trespass into bighorn habitat from the Wellman Allotment. A standard should be adopted that requires grazing suspension or cancellation in whole or part of an allotment if repeated trespass is not resolved within one year of plan adoption.

At the very least, the Forest Service must implement all relevant portions of the Peninsular bighorn sheep recovery plan, and apply those standards to other populations of bighorn sheep elsewhere in the national forests, if applicable. Suggestions for additional standards include:

- 1) Require use constraints on roads and recreational trails to avoid conflicts with sensitive bighorn sheep habitat areas, such as lambing areas and water sources (USFWS 2000d, 2001). Some options are:
 - reroute trails in bighorn sheep habitat to non-sensitive areas whenever possible
 - close trails during lambing and summer water-stress season (January 1 through September 30) (USFWS 2001)
 - close roads in sensitive bighorn-sheep habitat
 - require dogs to be under restraint at all times within key bighorn-sheep habitat areas (i.e., developed recreation sites, wilderness areas, trails, etc) (USFWS 2001)
- 2) Conform with BLM specifications for livestock fences adjacent to bighorn-sheep habitat to prevent trespass into sheep habitat (USFWS 2001);
- 3) Establish a timeline for restoration of riparian-area seeps and springs, including systematic removal of tamarisk and fountain grass;

The Forest Service should explain how the viability outcome for Peninsular bighorn sheep was higher under Alternatives 3 and 6, and why the measures from those alternatives could not be adopted.

San Bernardino Kangaroo Rat

The San Bernardino kangaroo rat occurs along lower Lytle Creek, Cajon Wash, and Bautista Creek in the San Bernardino National Forest. A total of 1,875 acres of critical habitat occur in the San Bernardino and Angeles forests. Unfortunately, the preferred alternatives utterly fail to provide meaningful standards to conserve the San Bernardino kangaroo rat on forest system lands. Only three CBZ segments were identified for the species – Bautista Creek – and none were designated in the preferred alternatives. Additional habitat for the species in foothills the San Bernardino Mountains was not designated under any CBZs. As a result, the species receives a “D” viability outcome under the preferred alternatives, as opposed to a “C” under alternatives 3 and 6.

The Forest Service should adopt species-specific standards, including protection from ORV disturbance in suitable habitat in Lytle Creek and Bautista Creek. CBZs should be designated that encompass this habitat. In addition, the Forest Service should prohibit any new flood control or other structures that interrupt natural flood/scour/deposition process in occupied or suitable habitat.

Southern Rubber Boa

The southern rubber boa is a cryptic, semi-fossorial erycine snake that occurs in mixed conifer-oak forests. The species utilizes rock outcrops as hibernacula and surface objects, such as rocks, logs, and a well-developed litter layer, for cover and to maintain soil moisture.

Southern rubber boas are known from eight locations in the San Jacinto Mountains and from 35—40 known locations in the San Bernardino Mountains. Some scattered localities are found in Mount, Pinos, Mount Abel, and Alamo Mountain in the Los Padres National Forest. Logging operations can cause direct mortality as well as degrade and fragment habitat by removing key microhabitat elements.

The viability outcome is lower in the preferred alternatives than in alternatives 3 and 6, for the San Jacinto Mountains. The Center requests that the Forest Service explain why the Forest Service could not adopt the more protective standards in order to conserve the species. For example, the California Department of Fish and Game outlined “Southern Rubber Boa Avoidance Measures for Removal of Dead, Dying, and Diseased Trees.” The following guidelines from the Department of Fish and Game should be incorporated into the final plan as standards:

- 1) Heavy equipment shall be prohibited in streams, drainages, or riparian habitat, and trees should not be skidded across these features.
- 2) Any areas within 30 feet of downed logs, rocky outcrops, boulders, and brush piles shall be flagged and avoided. Trees shall not be felled across rocky outcrops or downed logs.
- 3) Treat brush via either cutting or mastication, and disposal of material should be completed through yarding and removal, chipping, or piling and burning. All slash to be removed or treated onsite must be treated at the time of project implementation to prevent colonization by southern rubber boas and other animals. If piles are burned, they shall be probed and disturbed prior to ignition. Some small, widely scattered brush piles can be retained to provide permanent habitat for small vertebrates.
- 4) Training shall be provided to crews regarding identification of sensitive species including but not limited to southern rubber boa, and it should be clearly understood that any disturbance to these species must be avoided. The appropriate agencies will be notified if any listed or sensitive plants or wildlife species are discovered, and individuals must not be picked up and moved without a permit.

Strangely, Table 377, which lists the standards meant to address threats, made no mention of standard SBNF S4, wherein an additional 3 hard downed logs per acre for a total of 9 downed logs per acre will be retained in southern rubber boa habitat. The Center supports this retention standard, but it should specify that 9 of the largest downed logs per acre will be retained.

2. Viability Outcomes and Methodology

The preferred alternatives do not comply with NFMA regulations which require that “[f]ish and wildlife habitat shall be managed to maintain viable populations of existing native and desired non-native vertebrate species.” 36 C.F.R § 219.19. NFMA regulations define a viable population as “one which has the estimated numbers and distribution of reproductive individuals to insure its continued existence is well distributed in the planning area. In order to insure that viable populations will be maintained, habitat must be provided to support, at least, a minimum number of reproductive individuals and that habitat must be well distributed so that those individuals can interact with others in the planning area.” *Id.* However, only 12 of 56 animal species (21 percent) and 57 of 88 of plant species (65 percent) receive a viability outcome of “B” or higher. An outcome of “C” or lower indicates that some or most subpopulations are isolated or at extremely low densities (Appendices-14). In fact, eight vertebrate species received a viability outcome of “D” or worse, guaranteeing limited opportunity for population interaction and potentially resulting in local or regional extirpation (Appendices-14). Alarming, these species include the federally endangered mountain yellow-legged frog, San Bernardino kangaroo rat, and unarmored three-spine stickleback, and the federally threatened Santa Ana sucker and southern steelhead trout, in clear violation of both NFMA and the ESA. In the case of the San Bernardino kangaroo rat, as well as the southern rubber boa, Peninsular bighorn sheep, Laguna Mountains skipper, and quino checkerspot butterfly, the preferred alternatives resulted in a lower viability outcome than alternatives 3 and 6. The Forest Service must explain what measures were different between the alternatives to result in the disparate viability outcomes, and why more protective measures were not adopted to ensure the highest viability outcome.

While Appendix B provides a lengthy discussion of the threats to special-status species, a closer look reveals that the viability methodology itself is weak and unsubstantiated. The Forest Service conducted an entirely qualitative analysis whereby an internal team of biologists and botanists subjectively ranked the expected likelihood of species persistence under each alternative based on the vaguest of information (Appendix B at Appendices-13 and 14). The DEIS (at Appendices 13) admits that “for most if not all of our species the data needed to conduct [a quantitative approach] is not available.” However, quantitative, data-based population viability analyses using demographic and habitat data have been conducted by scientists for several of the species that occur on the four forests, including the southwestern willow flycatcher (see recovery plan), California gnatcatcher (Akçakaya and Atwood 1997), and Bell’s sage sparrow (Akçakaya et al. 2004). Extensive research has been conducted by Bill La Haye over the past decade on California spotted owls in the San Bernardino Mountains, involving annual surveys and mark-recapture methods as well as vegetation sampling. This research has yielded good estimates of sex and age-specific survival, fecundity, and population growth rates as well as data on habitat selection at various spatial scales. It is entirely possible to conduct a rigorous, data-based population viability analysis for this species. Demographic and habitat data are also available for least Bell’s vireo, San Bernardino kangaroo rat, and others. One widely used tool for conducting viability analyses is the computer program RAMAS-GIS, which combines demographic data with digital habitat data to develop population viability models under different scenarios. This program was used to determine the viability of Bell’s sage sparrow under altered fire regimes (Akçakaya et al. 2004). Model inputs can include vital rates (survivorships and fecundities), sex structure and mating systems, dispersal rates, carrying capacities of populations (based on home range sizes) and spatial structure, demographic

stochasticity, habitat loss or increase, local and regional catastrophes. These parameters are known for several species on the forests, and are available from the scientific literature. Please contact Monica Bond from the Center for further information about RAMAS-GIS.

The Forest Service's subjective viability process in no way assures the public that the preferred alternatives would not reduce the populations of at-risk vertebrates below the viability threshold. There is simply no way to confirm this outcome based on the "analysis" conducted by the agency. The lack of a comprehensive, science-based process to determine viability only emphasizes the importance of selecting the alternative that minimizes adverse impacts on at-risk species. If data are available for an at-risk species to conduct more rigorous population viability analysis, such analyses must be undertaken. The Forest Service must conduct such analysis for all species occurring on the forests with sufficient data, but this is particularly critical for Management Indicator Species, which are specifically designated to determine if current or proposed management activities will adversely impact other fish and wildlife species with similar habitat requirements.

3. Overall Inadequacy of the Preferred Alternatives

Overall, the standards in the Design Criteria do not specify a timeline and funding source for the analysis of the closure of roads and trails and elimination of other existing impacts that are harming at-risk species and impairing ecosystem function. The standards do allow for a critical examination of the environmental effects of *new* roads, as well as the prohibition of *new* roads and trails and authorization of undesignated roads and trails through listed and proposed species habitat (although not habitat for sensitive species). However, the forests are full of illegally created non-system roads and trails that continue to be utilized, to the detriment of at-risk species. It is the legal obligation of the Forest Service to close unlawfully created roads and trails, analyze all system roads and trails, and provide a plan for the removal of those that pose a significant threat to the survival and recovery of federally listed species as well as other at-risk species. The Forest Service must not defer these decisions to a later, unspecified date because the public has no assurance that these analyses will ever be conducted.

A management plan that complies with governing environmental laws would adopt the most stringent standards recommended in Alternatives 6 and 3. In addition, the Forest Service should adopt all Critical Biological Zones, RNAs, and Wilderness Areas that were recommended in Alternatives 6 and 3. In addition, the following areas should be added as Critical Biological Zones:

- 1) All 227 acres of pebble plains habitat occurring on national forest system lands should be included as a CBZ or RNA to preserve this unique, biologically rich, endangered community.
- 2) All federally designated critical habitats for any listed species should be designated as part of a CBZ. This includes critical habitat for the arroyo toad, quino checkerspot butterfly, California gnatcatcher, California red-legged frog, least Bell's vireo, southwestern willow flycatcher, and any other applicable species. Recent court

rulings have determined that the Forest Service is legally obligated to protect the value of critical habitat to standards that would aid both survival and *recovery*.

- 3) All drainages capable of supporting southern and south-central steelhead trout, mountain yellow-legged frogs, and California red-legged frogs should be designated as a CBZ to provide for recovery of these species.

Wilderness and Wild and Scenic Rivers also provide important habitat protection for imperiled species and ecosystems and help protect the wild character of our forests. The Forest Service readily admits that wilderness does not pose a problem with respect to fire suppression. Yet, the Forest Service failed to recommend 80 percent of the eligible wilderness and wild and scenic rivers in its preferred alternatives. In its final forest plans, the Forest Service should recommend all of the wilderness and wild and scenic rivers listed in Alternative 6 for designation. In addition to those recommended in the preferred alternatives, the Forest Service should recommend the following wilderness areas in the final forest plan:

- 1) Ladd and Coldwater Canyons, Barker Valley, Eagle Peak, and Hauser additions in the Cleveland National Forest;
- 2) Condor Peak, Castaic, and Pleasant View on the Angeles National Forest;
- 3) Cahuilla Mountain, South Fork San Jacinto, and the SBNF section of the Sheep Mountain addition on the San Bernardino National Forest;
- 4) All of the Dick Smith and San Rafael wilderness additions, as well as the Chumash wilderness additions, Matilija wilderness additions, and Sespe wilderness additions.

The Center supports all Wild and Scenic River recommendations in the Friends of the River comment letter. As pointed out by FOR, the following segments are particularly important for the survival and recovery of numerous listed and sensitive species:

- 1) West Fork San Gabriel River: The DEIS identifies the West Fork San Gabriel River, even flows modified by Cogswell dam, as “prime habitat” for the threatened Santa Ana sucker. The DEIS notes that “[t]he lower segment of the West Fork San Gabriel River includes the best assemblage of native fish on the forest...” even with its modified flows. These same modified flows also support the lower segment’s outstanding recreational values as well, particularly its regionally rare high quality trout fishing opportunities. In fact, Alternatives 6 and 3 include this segment as a CBZ for the Santa Ana sucker. The Forest Service should consider this segment eligible for Wild and Scenic designation.
- 2) Arroyo Seco River: The DEIS (Appendices-71) identified 18.4 miles of the Arroyo Seco River as eligible for Wild and Scenic status, and stated (at Appendices-73) that “[t]he Arroyo Seco is the first major spawning tributary that south-central coast steelhead can access as they move up the Salinas drainage from the Pacific Ocean.”

As suggested by Friends of the River, tributaries identified by Titus (CDFG) as currently or historically supporting steelhead should also be determined eligible and recommended for designation to protect the steelhead value, including Tassajara Creek, Willow Creek (non-coastal), Santa Lucia Creek, and Lost Valley Creek and tributaries. In addition to its outstanding steelhead value, Tassajara Creek supports sensitive foothill yellow-legged frogs.

- 3) San Francisquito Creek: San Francisquito Creek should be recommended for designation to protect its outstanding wildlife values. The canyon was proposed as a CBZ under all but Alternatives 1 and 5.
- 4) Willow Creek: Willow Creek (coastal) did not appear to be the subject of an eligibility study, even though it was included in the Conservation Alternative. Friends of the River notes that Willow Creek (coastal) possesses outstanding fish, wildlife, botanical, and ecological values. Willow Creek should be determined eligible and recommended for designation
- 5) San Carpoforo Creek: San Carpoforo Creek was did not appear to be the subject of an eligibility study, even though it was included in the Conservation Alternative. San Carpoforo Creek possesses outstanding fish and wildlife values.
- 6) Carmel River and Miller Canyon: The Carmel River and Miller Canyon possesses outstanding wildlife, fish, and botanical values. The Carmel River and Miller Canyon should be determined eligible and recommended for designation down to the upper limit of the Los Padres reservoir.
- 7) Nacimiento River: The Nacimiento River possesses outstanding wildlife value (highly significant population of endangered arroyo toad). The Nacimiento River from its source on the Los Padres National Forest to the eastern boundary of Fort Hunter Liggett should be determined eligible and recommended for designation.
- 8) Matilija Creek: Matilija Creek possesses an outstanding fish value, with a landlocked steelhead population and 15 miles of suitable habitat essential for the re-establishment of the endangered Ventura River steelhead, once the Matilija dam is removed. All three segments of Matilija Creek should be determined eligible and recommended for designation.
- 9) Upper Sespe Creek: All three segments of upper Sespe Creek should be recommended for designation. Segment 1 of upper Sespe Creek possesses outstanding wildlife value.

Designating these and other stream and river segments as Wild and Scenic will preserve their habitat integrity and ecological function, an help conserve aquatic resources.

The DEIS readily admits that unauthorized use is more likely to increase in those alternatives that emphasize access, such as alternative 4. Designating areas as CBZs, RNAs, WAs, and WSRs will greatly assist the Forest Service both in its legal mandate to conserve at-risk species on national forest lands, and in its efforts to curtail unauthorized recreational uses within its jurisdiction. The omission of numerous CBZs, RNAs, WAs, and WSRs from the preferred alternatives would result in the appreciable reduction of the likelihood of survival and recovery of listed species and therefore violates the ESA. The 2001 Biological Opinion on the forest plan revision (USFWS 2001) identified specific areas on each forest that support federally listed species. All of these areas should be included as CBZs in the final plan, as well as critical habitat for federally listed species designated by the U. S. Fish and Wildlife Service, and other areas deemed important for at-risk species.

B. Proposed Increases in Off-road Vehicle Routes Will Significantly Harm Threatened, Endangered and Sensitive Species

Perhaps one of the most egregious aspects of the preferred alternatives is a proposed increase in ORV use throughout the national forest lands. DEIS at 3-80: “[Relative to Alternatives 6 and 3], Alternatives 2, 4, and 5 have more of the land base available for motorized forms of dispersed recreation in land use zone Back Country Management.” Numerous published studies have documented the deleterious effects of ORVs on arthropods, mammals, birds, amphibians, reptiles, and vegetation (Busack and Bury 1974, Hardy and Andrews 1976, Bury et al. 1977, Berry 1980, Bury and Luckenbach 1983, Luckenbach and Bury 1983, Schultz 1988, Brooks 1995, Stebbins 1995, Brooks 1999). The DEIS has acknowledged the severe environmental degradation caused by ORV use, yet proposes to mitigate these impacts by increased monitoring and post-hoc habitat restoration. Given budget uncertainties and the inability of the agency to properly manage existing ORV trails to prevent trespass, this proposal can only be viewed with a high degree of skepticism. For example, numerous illegal ORV trails have been documented off the main Route 28 on the Mt. Pinos Ranger District, from Half Moon campground to Sunset Campground, on the Los Padres National Forest. This ORV trail runs alongside Piru Creek, resulting in severe riparian disturbance. The trail crosses the stream in many places but some ORV users go right down it. This portion of Piru Creek is a wild trout stream, and landlocked steelhead trout were found near Sunset. Repeated ORV trespass occurs in the vicinity of Mojave Dam on Deep Creek in the San Bernardino National Forest, which the Forest Service has been unable to control for years. An area adjacent to 3W12 at its intersection with 3N34 has been denuded of vegetation by illegal OHV use. Activists have documented remains of an illegal campfire with many cigarette butts around it, as well as a large amount of trash; of particular note was a beer can in a Native American metate. Indeed, a study by a local Idyllwild resident found rampant ORV trespass along open routes in the San Jacinto Ranger District of the San Bernardino National Forest, which resulted in significant damage to vegetation.

A comprehensive search of the scientific literature revealed no studies that indicate that ORVs have positive effects on plant and wildlife populations. The negative impacts of ORVs that are easily seen with the naked eye include devegetation and soil erosion as well as gully formation on steeper slopes. The Forest Service’s mission is to “sustain the health, diversity, and

productivity of the nation's forests and grasslands" and maintains as a priority goal to "increase the area of forest and grassland watersheds in fully functional and productive condition." Scientists have long recognized ORV use as one of the greatest adverse impacts on the plants and animals of the national forests in southern California. The Forest Service must reduce the impact of ORVs by prohibiting such activities in streams and riparian zones, steep slopes where erosion and channelized surface runoff is occurring, and other areas where motorized activities are impairing the function of watersheds. Alternative 6 would address these adverse impacts and protect the biological resources of the forests by concentrating ORV use in certain areas and increasing enforcement to prevent trespass into sensitive areas.

Furthermore, the use of ORVs in an area tends to preclude other recreational uses of national forest lands such as hiking and birdwatching. In its comment letter, the Sierra Club notes that:

"Once a reviewer assembles disparate information presented in the plan documents and DEIS, it becomes clear that OHV is very a minor recreational activity relative to the number of visitors engaging in non-motorized uses. OHV use does not appear among the top five most popular activities on the forests. The most popular activities were relaxing, hanging out, escaping heat and noise; skiing and snowboarding; viewing wildlife; hiking or walking; and picnics and family gatherings (Table 425 and The National Survey of Recreation and the Environment (NSRE), 2000 - 2001, Appendices-200). By comparison, only 6% of the ANF's 3.5 million visits in 2001 were for off-highway vehicle travel, 16.5% of 0.8 million visitors on CNF, 7.6% of 1.5 million visits on LPNF (Table 316). No comparable data was available for the SBNF, though according to the table it was surveyed in fiscal year 2003. OHV use is projected to increase by 20% by 2020, about 1% a year (Table 317), based on regional population growth, while the DEIS also reports that non-motorized recreational activities are also expected to increase 15-20% on a much larger base of users. There is, by the way, no explanation for the inconsistency of using a range of 15-20% growth for non-motorized recreation growth and a flat 20% growth for motorized recreation growth."

The Forest Service is prioritizing the desires of a small minority of forest users at the expense of other recreational users, species viability, and ecosystem function.

Trespass by ORVs into closed areas is rampant on the forests; thus, an increase in trails will lead to greater areas impacted than simply the absolute miles of off-route trails. DEIS at 3-82. The DEIS justifies the Forest Service's effort to increase areas open to ORVs by suggesting that concentrating ORV use will lead to user dissatisfaction and therefore more trespass into unauthorized areas. This is a ludicrous argument without any data to back up the claim, and seems to be a desperate grasp for reasons to discredit Alternative 6. Trespass is already prevalent surrounding areas that are currently open to ORV use, as documented above, and in fact the DEIS itself acknowledges that unauthorized off-road vehicle use "is more likely to increase in those alternatives that emphasize access, such as alternatives 4 and 5. Simply put, opening more areas to ORV use as suggested in Alternative 4, especially the creation of loop trails, will facilitate significant additional trespass by providing more access into backcountry

areas. The Forest Service proposes to mitigate effects of increased ORV use by increasing Forest Service presence and by implementing additional use restrictions to maintain sustainable recreation. However, the DEIS does not explain why increasing Forest Service presence and restricting unauthorized uses would not be viable and effective options under Alternative 6 as well.

The DEIS uses this same argument against Alternative 6 with respect to recreational use in general. The DEIS posits that Alternative 6 may cause “a possible increase in detrimental effects on areas that will remain accessible, are currently popular and possibly are at their capacity to handle more use. There could be a shift in patterns of forest visitation, meaning that the peak periods for recreating, which are currently weekends and summer months, could be extended to weekdays and into the spring and fall. This shift could result in over-use of riparian conservation areas and effects on riparian-dependent resources and water quality.” DEIS at 143. However, Alternative 6 does not prohibit new recreational facilities in areas where impacts to special-status species and sensitive habitats will be minimal. In addition, the DEIS does not provide a compelling reason why Alternative 6 would not also incorporate the benefits of increased management to ensure sustainable recreation. For example, the DEIS at 3-92 suggests that Alternative 4 would include “environmental education and interpretation, hardening of recreation sites, increased Forest Service presence, and restriction of unauthorized uses” that would result in forest visitors developing “an increased understanding and appreciation of the local environment and an increased willingness to help maintain it.” Again, the Forest Service does not explain why these options would not also be available and effective under Alternative 6.

Alternative 6 provides for a diverse range of recreational opportunities and facilities while conserving special-status species, as mandated by law. An increase in public education about environmental protection, ecological function and values, and native plant and animal conservation, as currently proposed under Alternatives 4 and 2, should be implemented under Alternative 6, as well as an increase in monitoring of areas open to the public to reduce incidences of unauthorized use.

C. Proposed Levels of Domestic Livestock Grazing Will Continue to Jeopardize Special-status Species

The DEIS summarizes the many negative impacts of domestic livestock grazing on ecological function. Yet, the preferred alternatives continue to permit destructive livestock grazing in sensitive habitats, including riparian areas. It is well documented that grazing compacts soils and severely reduces infiltration rates, especially in riparian areas. These soil effects significantly increase the volume and duration of surface runoff and reduce the percolation of water into riparian soils and local riparian water tables (Kauffman et al. in prep). Grazing significantly increases peakflows and downstream flood damage throughout the grazed watersheds, as well as contributing to reduced low flows due to the loss of percolation. It is also well documented that grazing significantly elevates soil erosion (Rhodes et al. 1994, Belsky et al. 1999, Beschta et al. 2004). Loss of topsoil due to grazing significantly and permanently reduces the ability of watersheds to retain water within the soil profile. Soil compaction persists for 50—80 years, in the absence of continued impacts (USFS and USBLM 1997). In fact, soil properties *never*

recover if subjected to continued impacts, such as occur on roads or areas with ongoing grazing. Domestic livestock and other ranching activities have been linked to the endangerment of 136 federally listed species in the United States (excluding Hawaiian and Puerto Rican species) (Czech and Krausman 1997).

Scientific evidence indicates that cattle grazing has major direct, indirect, and cumulative impacts upon blue oak regeneration and stand viability. Borchert et al. (1993) pointed out that many of their study sites showed obvious effects of livestock grazing and/or high deer populations. Grazing had severely constrained blue oak sapling recruitment as well as regeneration of many other woody species. In many locations where grazing has been intense, blue oak saplings and juveniles of other woody species were limited to areas where grazing pressure was reduced, and the few saplings found in heavily grazed plots were usually confined to a small size class due to repeated browsing by livestock, which renders them vulnerable to browsing by small mammals. Swiecki et al. (1997) found that livestock grazing showed a clearly negative impact on sapling recruitment, and at locations which have not been grazed by livestock for a number of years, browsing effects were either not significant or showed a positive association with sapling recruitment.

For areas that are considered to be suitable for livestock grazing, management should focus on retaining adequate residual dry matter (or residual stubble heights) to maintain plant vigor and ecosystem function. Studies by Clary (e.g., 1995 and 1999) strongly recommend maintenance of at least a four-inch post-grazing residual plant stubble height minimum for sedge/rush communities. In fact, Clary (1999) documents that moderately positive riparian response features associated with the grazed study areas were strongly linked to post-grazing residual stubble heights of riparian plants that are even higher than four inches. A recent literature review by the National Riparian Service Team shares the same conclusion: "For the sedge/rush and associated species key areas . . . a stubble height of from 4 to 6 inches provides the best overall results in terms of sediment capture and retention." Therefore, the Conservation Alternative suggested a conservative residual stubble height of 6 inches for herbaceous species (Clary and Webster 1989, Clary 1995, 1999) and 20 percent maximum annual utilization on new growth on highly palatable upland woody browse species (Elmore and Kauffman 1994, Loft et al. 1987). These important studies were not considered in the DEIS.

The preferred alternatives suggest that grazing levels would decline slightly due to various reasons, including vacancy for a number of years due to lack of demand, lack of access, high impacts, recreation conflicts, urbanization, and costs to protect species and heritage resources. DEIS at 3-300. However, the preferred alternatives include inadequate standards to protect biological resources from livestock grazing where it would still occur. The design criteria (Standards-8, S48) would allow streamside areas to be grazed, and allow up to 20 percent alteration of the rooted vegetative and physical structure within the 50-year high water line area. However, no scientific data are cited (at least not in an accessible format) to demonstrate how these standards were developed and how these standards would ensure sustainable grazing in riparian areas. The preferred alternatives would also allow up to 50 percent ground cover to be removed. Removal of cover provides open space for the regeneration of highly competitive alien plants (Kimball and Schiffman 2003). Cattle grazing that removes so much cover allows non-

native plants and other strong competitors to proliferate at the expense of many native plants, particularly species with upright architecture (*Id.*). To address this concern, the Conservation Alternative (at page 347) suggested that grazing management include allowing minimum bare soil area of less than 3 percent.

Standard S27 ostensibly addresses threats of grazing to several listed and sensitive species, including southwestern willow flycatcher, least Bell's vireo, California red-legged frog, arroyo toad, steelhead, Laguna Mountains skipper, and bighorn sheep. In most cases, this was the only standard to address the impacts of grazing (with the exception of the Laguna Mountains skipper, bighorn sheep, and California gnatcatcher as well as in Critical Biological Zones). With the exception of one CNF-specific standard for the Laguna Mountains skipper, none of these standards addresses other grazing impacts, such as cowbird parasitism, trampling of individuals, water quality degradation, etc.

The protections for listed and sensitive species in the Livestock Capability and Suitability Criteria are wholly inadequate – supposedly “key wildlife habitat areas where suitable habitat cannot be sustained (e.g., threatened endangered, proposed, candidate, and sensitive species)” will be considered not suitable (Appendix J-4). How and when will it be determined that suitable habitat is not being sustained, and who will make the determination? What will happen if and when that determination is made? Will grazing be immediately eliminated or phased out over time? The DEIS must include more clear, concise and specific language, and include process for objective and transparent monitoring, remedial actions, and feasible and timely deadlines. The Conservation Alternative (at page 347—348) provided the following recommendations for monitoring methods and standards:

Allotments shall be monitored every year before, during, and after the grazing season. Allotment-specific monitoring plans shall be science-based, quantitative, conducted by the Forest Service, and include the following affected attributes and standards with which permittees must comply:

- Soils: soil surface aggregate stability and depth to common roots should be equivalent to undisturbed sites, and bare soil should cover less than 3% of each allotment
- Plant community demography: percent cover, proportion of native species, distribution of seral stages, and age classes should vary from undisturbed sites by no more than 10%; native indicator species that reflect ecosystem health should be used to compare condition of grazed site with undisturbed sites; non-native species that invade following disturbance should not occur; advanced regeneration cohort of oak species should not be declining as compared to undisturbed sites
- TES and rare species (those not adversely impacted by grazing): each individual species should meet standards for abundance, area covered by populations, recruitment, and vigor, and standards should provide for the recovery of these species
- Water quality: temperature, sediment, nutrient (N and P), and fecal coliform limits shall meet standards put forth by the Regional Water Quality Control Board Basin Management Plans
- Compliance with on- and off-dates, forage utilization, and stocking levels

Permittees shall be responsible for meeting annual domestic livestock management requirements as specified in the allotment management plan and annual operating instructions. The Forest Service shall be responsible for the collection and accuracy of all monitoring data and for meeting ecological standards.

The DEIS suggests that Alternative 6 would designate all grazing areas as unsuitable under the given suitability criteria. DEIS at 3-300. The Center and others conducted careful research of the available literature to develop grazing suitability criteria based on a conservative approach to protecting biological diversity and ecological function in the national forests. DEIS at 3-299 from the Conservation Alternative at page 345. It was not the intention of the Center and its coauthors to abolish domestic livestock grazing on the four national forests. In fact, according to the Conservation Alternative domestic livestock grazing could potentially be suitable in grasslands, some valley-oak woodlands, and some dry meadows, where much of the grazing already occurs – provided that these habitat types have not experienced serious damage due to livestock grazing. If areas are found to exhibit significant soil rilling, gullyng, stream incisement, bare soil and active erosion, and reduced viability of vegetation, among other forms of damage outlined in the Conservation Alternative, then it is appropriate from an ecological standpoint to remove grazing from those areas.

The Forest Service’s mission is to “sustain the health, diversity, and productivity of the nation’s forests and grasslands” and maintains as a priority goal to “increase the area of forest and grassland watersheds in fully functional and productive condition.” The livestock grazing standards from the Conservation Alternative would go a long way towards meeting this goal. The revised forest plans must implement alternative grazing systems that will minimize ongoing negative impacts from domestic livestock grazing.

D. Proposed Oil and Gas Drilling in the Los Padres National Forest Permitted in the Preferred Alternative Will Harm Special-status Species

Oil and gas development in the southern California national forests results in water, air, and noise pollution, fire hazards, destruction of recreational and scenic values, fracturing of wildlife habitat, and direct harm to sensitive plants and animals. The 2003 Los Padres National Forest Oil and Gas Leasing draft EIS acknowledges numerous harmful impacts. Pipelines powered by electric or gas-powered motors are used 24 hours a day to power pumps and to pressurize gas for transport, which release toxic gases into the air. Birds, including endangered California condors, have been killed through collisions with power lines, towers, and other tall structures at night or during inclement weather. Open drainage pools and petroleum spills can be lethal for animals through ingestion and physical contact. Birds coated with oil can no longer fly and other animals can get stuck in pools of oil and starve. In fact, the first California condor brooded and hatched in the wild in 18 years was discovered stained with oil in April 2002, raising concerns about the chick's long-term health and the effect on the \$35-million reintroduction program. Biologists observing the chick in Los Padres National Forest near Fillmore say the father apparently stuck its own head in a puddle of crude oil near a newly drilled oil well, then flew back to the nest where the oil got on the chick's white, downy feathers. The chick later died. Excess oil on a bird's feathers reduces its ability to regulate body heat, often causing death by hypothermia, and can also kill a bird after being absorbed through the skin.

The Los Padres National Forest is currently proposing to expand opportunities for oil and gas exploration on thousands of acres throughout the forest. If the current drilling expansion proposal is successful, 66 percent of the oak woodland within the Los Padres National Forest

could be adversely affected, and twenty federally listed threatened or endangered species would be at risk from the expanded oil and gas activities, including the California condor and San Joaquin kit fox.

The DEIS (Appendix I: Oil and Gas Potential at page 136) notes that the Reasonably Foreseeable Development Scenario and Land and Resource Management Plan revision “will not analyze oil and gas leasing for the LPNF but will incorporate by reference the environmental documents completed to support the leasing analysis for the LPNF. The Forest Supervisor’s leasing decision will be included as an amendment to the LPNF revised LMP.” However, the Forest Service’s own regulations implementing the Mineral Leasing Act state that leasing decisions for specific lands, such as those being made in the 2002 Los Padres EIS, are only to be made subject to verification that those decisions are “consistent with the Forest land and resource management plan, and if there is inconsistency with the Forest land and resource management plan, no authorization for leasing shall be given unless the plan is amended or revised.” 36 C.F.R. § 228.102(e)(1). Thus, rather than incorporate the leasing decision into the revised LRMP, the reverse is true: the standards in the LRMP should be incorporated into the leasing decision. The Center noted in our April 19, 2002 comments on the Draft EIS for proposed oil and gas leasing on the Los Padres National Forests that:

“the existing Forest Plan contains standards allowing the Forest Service to document oil and gas leases only ‘after considering the Guidelines for Recommending Action on Oil and Gas Leasing Applications (Appendix J of Forest Plan).’ (Los Padres draft EIS at 3-107). The DEIS is very clear in stating the Forest Service’s intent to completely disregard the current absence of up-to-date standards and guidelines, and in fact makes clear that it intends the proposed oil and gas leasing decision to drive the Forest Plan revision process, in order to pave the way for the preferred oil and gas leasing alternative. As noted above, it is improper for the Forest Service to summarily supercede this requirement solely for the purpose of eliminating obstacles to the proposed oil and gas leasing determinations.”

Only with the benefit of the revised and updated standards and guidelines being developed in this forest plan revision process can the Forest Service legitimately claim that proposed oil and gas leasing decisions are consistent with the LRMP’s management directives. Therefore, this revised LRMP should incorporate standards for oil and gas leasing that would be applicable to the decision document for the Los Padres leasing plan. However, a simple perusal of the design criteria and additional forest-specific standards indicates that the Forest Service has provided absolutely no standards for oil and gas leasing, exploration, and drilling. The Center urges the Forest Service to adopt the standards recommended in the Conservation Alternative (at page 351—355).

Oil and gas drilling activities in the national forests of southern California have numerous negative impacts on at-risk species, most notably the federally endangered California condor, and have damaged sensitive habitat types and water quality. These negative impacts are well documented. Furthermore, the amount of oil and gas present on the national forest system lands

is a minute amount with respect to nationwide or even statewide demand. For example, according to the Los Padres National Forest Frequently Asked Questions (at A-7), the oil and gas reserves of the entire Los Padres National Forest represent about “one percent of the oil and only 6/100 of one percent of the gas thought to underlie the Federal lands in the United States, including Alaska.” Given the extreme environmental impacts that are suffered for a meager amount of oil and gas, the Forest Service should exercise the discretionary “no lease” authority granted by the 1987 Federal Onshore Oil and Gas Leasing Reform Act, which mandates that the Forest Service identify those areas that will be “closed to leasing...through exercise of management direction,” and declare no new areas as open for leasing in this LRMP revision. There is also a formal process under the Federal Land Policy and Management Act for the withdrawal of lands from leasing availability or for revocation of an existing lease. The Forest Service should re-evaluate existing leases with respect to impacts on at-risk species, critical habitat, water quality and watershed integrity, and scenic and recreational values. Where impacts are found to be adverse, existing leases should not be renewed.

E. The Preferred Alternative Allows Mining in Carbonate Habitats That Will Jeopardize Federally Listed Plant and Animal Species

Mineral activities on the four national forests span the gamut from small-scale panning and suction dredging of gold deposits to large-scale excavation of large open pits and quarries for gravel and carbonate rocks such as limestone (DEIS at 3-285 and BLM 2003). There are currently three active gold mines on the Los Padres National Forest, five on the Angeles National Forest, four on the San Bernardino National Forest, and one on the Cleveland National Forest. DEIS at 3-285. These activities have resulted in significant adverse impacts to federally listed plants and animal species, including habitat loss and fragmentation, dust, and invasion of exotic species (BLM 2003). The USFWS (2001) recognized that all forms of mining activity in streams, from simple prospecting with a pan and shovel to the use of sluice boxes and suction dredges, can harm aquatic species.

Unless withdrawn from mineral entry, national forest lands are open to mineral claiming under the General Mining Law of 1872 and the Mineral Leasing Act. DEIS at 3-285. The Forest Service can propose areas to be withdrawn from mineral entry, but only the Department of the Interior (through the BLM) and Congress can withdraw national forest lands from locatable mineral entry, pursuant to mining laws. Unfortunately, therefore, mineral withdrawal cannot be considered a reliable mechanism for conservation. In October 2003, the San Bernardino National Forest prepared an Environmental Assessment for mineral withdrawal to protect threatened and endangered species from the adverse effects of mining. The habitat distributions for 12 threatened and endangered plants and the federally endangered arroyo toad were used to define an area of 44,760 acres of national forest system lands to be requested for withdrawal. The proposed action sought a 20-year withdrawal from mineral location and entry in those 44,760 acres. Previously, in April 2001, the San Bernardino National Forest had submitted an application to the BLM California State Office to withdraw 44,575 acres from mineral location and entry. On April 28, 2004, the BLM California State Office recommended denial of the proposed withdrawal of 44,575 acres to the Department of the Interior.

All habitats for imperiled species should be off-limits to mining activities and associated impacts. The BLM's recent recommendation for denial of mineral withdrawal in the San Bernardino National Forest demonstrates the tenuous situation regarding protection and recovery of the species impacted by mining on the forests. In addition, withdrawals do not guarantee that mining will not occur, because claims are subject to valid existing rights at the time of a withdrawal. DEIS at 3-285. Withdrawal as a mechanism for potential conservation is clearly not assured. However, the Center commends the San Bernardino National Forest for its recent efforts, and urges the forest to adopt all restrictions within its jurisdiction to protect biological resources from harmful effects of mining.

The Center urges the Forest Service to adopt the mining standards from the Conservation Alternative into the revised LRMP, and include occupied and modeled habitat for all listed species within a Critical Biological Zone designation that would protect these species from the harmful effects of mining. These standards are entirely within the authority of the Forest Service. In addition, the Forest Service should propose all areas of ecological concern for mineral withdrawal, including but not limited to the Critical Biological Zones, Research Natural Areas, Wilderness Areas, and Wild and Scenic Rivers recommended in Alternative 6 plus additional suggestions in this letter.

F. The Preferred Alternative's Proposed Transmission Lines Would Harm Special-status Species

The DEIS is apparently paving the way for a utility corridor through the Elsinore Mountain to San Mateo segment and the El Cajon Mountain segment at the Cleveland National Forest (DEIS at 3-284). As pointed out in the Sierra Club comments, the design of the Elsinore Place, and zoning therein, would accommodate a proposed transmission corridor discussed in the DEIS.

In December 2002, the California Energy Commission released a "Roadmap for PIER Research on Avian Collisions with Power Lines in California," (California Energy Commission. 2002). This report contains a comprehensive literature review on the effects of power lines on birds. Avian fatalities from collisions with power lines and utility structures are well documented in the scientific literature. Fatal impacts from these structures have been reported for almost 350 species. In some cases, the level of fatalities attributed to these collisions has actually contributed to declines in local and regional populations. Utility corridors also facilitate invasion of non-native species, and fragment habitat for low-vagility organisms. NEPA requires that the cumulative impacts of all reasonably foreseeable future scenarios be analyzed. 40 C.F.R. §1508.25 (a)(2) and (c). The zoning and place boundaries in the Forest Service's preferred alternatives are designed to accommodate a massive utility corridor, yet this DEIS did not conduct the necessary analysis of the impacts of such a project. The FEIS must contain a detailed, thorough analysis of this reasonably foreseeable scenario on biological resources and scenic and recreational values.

G. The Preferred Alternatives Fail to Identify an Adequate Suite of Management Indicator Species

Management Indicator Species (“MIS”) are species that serve as surrogates for other species with similar habitat requirements, whereby monitoring can determine if existing or proposed management activities will adversely impact other fish and wildlife species. The Center supports the designation of different forest types as MIS, but strongly urges the Forest Service to monitor populations of plants and animals using ground-based data and not only remote sensing or aerial photography. There can be significant error in the use of digital data. The only way to obtain accurate data about population trends is to conduct field surveys. The Forest Service must adopt a standard that specifies that MIS will be monitored using on-the-ground sampling methods.

The recent tree mortality event (the result of drought and high temperatures as well as fire suppression, pollution, and other human factors) has been a major focus of attention in southern California, and is a key component in the development of fuels reduction projects. The Forest Service has responded to the mortality event by proposing numerous landscape-level projects designed to thin and “restore” the forest to a natural state, including the removal of most of the dead trees in fuelbreaks, and many dead and live trees in backcountry areas. For examples of the numerous projects underway, see <http://www.fs.fed.us/r5/angeles/projects/> in the Angeles National Forest, and <http://www.fs.fed.us/r5/sanbernardino/projectsandplans/sopa/index.html> in the San Bernardino National Forest. The Forest Service decided not to choose a snag-dependent species because “recent mortality in conifer stands is producing a surplus of snag habitat,” (Appendices-22). This statement implies that the snags will remain on the landscape, which is clearly false. The extensive current and proposed harvesting operations throughout all four national forests provide an excellent opportunity to determine the effects of the mortality event and logging operations on demography and distribution of snag-dependent species. The Center urges the Forest Service to include a suitable woodpecker species as a MIS.

The Center also recommends the designation of a management indicator small mammal species. Small mammals are highly important prey items and are good indicators of ecosystem health. They are easily marked and monitored, and tend to yield sample sizes large enough to conduct rigorous population analyses. The Center suggests the dusky-footed woodrat (*Neotoma fuscipes*), a key prey species of the California spotted owl. Trapping for the woodrat will provide much-needed data on other small mammal species as well.

The Center has concerns with the effects of the preferred alternatives on one MIS in particular. The DEIS identifies mountain lion as a MIS (DEIS at 3-63) and states that the “greatest concern for the long-term health of mountain lion populations on the National Forest of Southern California is loss of landscape connectivity between ranges and large blocks of open space on private land.” The Forest Service acknowledges that viable populations of mountain lions can be maintained if the forests and other land management agencies in southern California work together to protect mule deer habitat and enhance deer populations, secure habitat corridors for lion movement between subpopulations; and designate sufficiently large, backcountry non-motorized areas where “human density and lion mortality are held to a minimum.” However, both mountain lion and mule deer are identified in Table 216 as having a “High Potential Risk of

Cumulative Effects”. It is simply preposterous to designate a MIS and then choose an alternative which results in a lower viability rating of the species than other feasible alternatives.

III. Design Criteria/Standards for the Southern California National Forests

Below are suggestions for refining the standards in Part 3: Design Criteria for the Southern California National Forests, as well as additional refinements of the Forest-level objectives and standards in Part 2.

A. Part 3: Design Criteria

1. Vegetation Management Standards

S121 – The Center agrees that community protection needs in the Wildland-Urban Interface defense zone should be prioritized above other land management protection needs. This standard should be amended to include specific language on implementation and ongoing management in fuel breaks along the WUI. For example, care must be taken after brush clearance to prevent the invasion of flashy fuels such as non-native weedy grasses that are easier to ignite and carry a fire than native chaparral. In chaparral zones between 30—100 feet away from a structure, the Forest Service should require heavy thinning of individual shrubs and maintenance of undisturbed soils rather than simply clearing native vegetation.

The Center also recommends that the following vegetation management standards be adopted in montane conifer forest types:

- 1) In areas within towns, around a vulnerable structure, and directly adjacent to roads, fell all dead trees that may threaten to fall on either a structure or routes of ingress and egress. Encourage and assist homeowners to fire-wise their houses (Cohen 2000).
- 2) In the zone extending about 100 meters from the edge of towns, powerlines, and other infrastructures, shaded fuel breaks should be created by removing dead trees of every size; treating surface and ladder fuels (shrubs and small live trees and slash); and limbing remaining trees up to 5 meters. The fuel break in this zone must be continually maintained to prevent invasion of exotic grasses and growth of understory vegetation.
- 3) In the zone extending from about 100 to 400 meters from the edge of towns, treat surface and ladder fuels; remove small dead trees and retain larger live trees; remove larger dead trees only if minimum fuel loads of 20 tons per acres is exceeded after removing smaller material (see Brown et al. 2003 at page 8); strive to meet dead and downed objectives from governing land management plans.

- 4) In the zone beyond about 400 meters from towns, it is most appropriate to focus management efforts on reducing surface and ladder fuels in select areas with excessively dense shrubs and small trees, where treatment may assist with necessary fire suppression efforts. Not all areas can or should be treated. Vegetation in this zone generally should be treated by manually reducing surface and ladder fuels followed by prescribed burning. Avoid road construction in this area, and use of heavy equipment should be avoided due to the resulting long-term compaction and erosion.

Within and directly adjacent to communities, within the 400-meter zone, large trees (≥ 12 inches diameter) that are not in immediate danger of falling onto a structure, powerline, or a road used for ingress and egress into the community should be retained to the greatest extent possible to maintain aesthetic and scenic values.

Scientific data are lacking regarding pre-European settlement tree densities in forested habitats in southern California. Only one study has been published that provides tree density data in the four forests. Minnich et al. (1995) documented that, trees of all species greater than 26 inches diameter, in all forest types, had declined significantly, and that the most significant increases in density have been trees under 13 inches diameter. Therefore, the Center insists that the Forest Service use scientific data to design its fuels and restoration treatments, and be as conservative as possible with preserving larger-diameter trees and snags. Large live trees and snags should not be cut outside the WUI. In addition, the commercial logging program should not be introduced into the southern California national forests.

2. Fish and Wildlife Standards

S14 – Specify the size of the hard snags and downed logs per acre. Retain at least 15 hard snags per acre, as many will fall over time. Minimum log size should be 12-inch diameter and 20 feet long, but specify that the largest logs shall be retained. Minimum hard snag size should be 12-inch diameter and 40 feet tall where available, but specify that the largest snags shall be retained, so long as they do not pose a falling threat to life and property (i.e., they occur 100 meters away from a structure or road).

S14a – Create a no-treatment buffer zone along riparian areas. This area would be along a major break in slope between the inner gorge and ridge crown, and at least 100 meters slope distance from the stream bank.

S16a – A limited operating period (LOP) of February 1 through August 15 for California spotted owls shall be maintained if a single owl or an owl pair are located in a territory, even if nesting is not taking place. Spotted owls are so imperiled in the southern California national forests that protections should be maintained even in the absence of nesting.

S16c – Within PACs and home range cores, retain 16 (rather than 4—8) of the largest snags available per acre. If the target is to maintain at least 4 snags per acre, perhaps four times that number should be retained because snags will fall over time (Raphael and White 1984). Specify

the size of the home range core area. In the Sierra Nevada, this is 1,000 acres of the best habitat surrounding the nest and roost sites.

S16d – Within PACs and home range cores, retain all live trees greater than 16 inches per acre rather than 24 inches per acre. The 16-inch trees will provide a recruitment source for large trees into the future, and these large trees do not pose a fire risk.

S104 – Include cattle grazing prohibitions within 9 miles of bighorn sheep habitat as well as prohibitions for sheep and goat grazing.

S113 – Allow no haul roads associated with mining activities to traverse through TEP species key and occupied habitats.

Fire Management Activities

S23 – Require forfeiture of vehicles that are trespassing onto temporary openings and fuelbreaks, as well as onto other closed parts of the forest.

Livestock Grazing Activities

S27 – For all grazing areas (not just TEPCS species habitats), require a browse limit of at least 6-inch stubble height for herbaceous species, and 20% maximum annual utilization on new growth on upland woody brose species (Loft et al. 1987, Clary and Webster 1989, Elmore and Kauffman 1994). Require bi-ennial resting periods, short seasons (10 days maximum), and limited stocking densities in dry meadows.

Include a prohibition on supplemental feeding, such as salt licks and alfalfa, as well as facilities such as corrals, pack stations, and feedlots. These livestock facilities attract and provide foraging habitat for cowbirds.

Include a standard that during the breeding season of the southwestern willow flycatcher and least Bell's vireo, allow no grazing within a minimum of 5 miles of occupied habitat.

On a site-specific level, trespass grazing on the Rattlesnake Allotment into the Broom Flat pebble plains complex is an ongoing concern, threatening numerous federally listed plant species. In addition, trespass grazing from the Wellman allotment into adjacent Peninsular ranges bighorn sheep habitat has continued to degrade the habitat for this federally endangered species. Include a standard that if trespass grazing cannot be resolved in these allotments within one year of the adoption of the revised LRMPs, these allotment permits should be revoked.

For additional comments on livestock grazing management, see comments on Appendix J below.

Lands and Special Uses Activities

S29 – This standard should be more specific. Require installation of anti-perching devices on all current microwave sites, installation of anti-perching devices on power line poles and raptor safe power lines in condor flyways, and require all new and reconstructed powerlines to be raptor-safe.

3. Soil, Water and Riparian Standards

S44 – Allow no new hydroelectric projects in the national forests.

Applicable within Livestock Grazing Areas

S100 – This standard should read: Permits will not be issued “or re-issued” for allotments that have insufficient grazing areas to sustain a livestock grazing operation.

S49 – Within grazing allotments or other designated grazing areas, a minimum of 70% perennial grass cover should be maintained, and a minimum bare soil area of <3%. Include browse limits of at least 6-inch stubble height for herbaceous species, and <20% for woody species.

4. Appendix J – Livestock Capability and Suitability Criteria

In STEP 1 of the two-step process to determine rangeland suitability, specify that land is capable where:

- 1) Slopes <20% (rather than 50% suggested in the current Design Criteria),
- 2) Ability to produce >200 lbs/acre of forage,
- 3) Accessible to livestock,
“and” (include this word)
- 4) Areas where livestock can be controlled or sustained within a designated area and management system.

In STEP 2 of the two-step process, specify that land is not capable for domestic livestock grazing in the following additional areas:

- 1) Areas with significant soil rilling, gullying, and stream incisement,
- 2) Areas with less than 30% perennial grass cover (rather than 50% as suggested in the Design Criteria),
- 3) Areas receiving less than 12 inches of rainfall annually,
- 4) Areas within 400 meters of a spring, seep, vernal pool, or wet montane meadow (rather than simply “areas with unique habitat”),
- 5) Areas that are seasonally saturated meadows with non-cohesive soils that lack deep-rooted woody vegetation,
- 6) Dry meadows with more than 10% bare soil and active erosion (rather than 50% maximum coverage as recommended in the Design Criteria),
- 7) Areas with exposed archaeological sites
- 8) Areas in oak types in which the viability of the advanced regeneration cohort is at risk from livestock grazing.

Number 6 should include all grazing areas where capable lands may not be suitable depending on the overall evaluation of potential effects and opportunities to mitigate adverse effects based on site-specific information or analysis, rather than simply “vacant” grazing areas.

B. Part 2: San Bernardino National Forest Strategy

SBNF S2 – This standard should read: Avoid ~~new~~ “all” ground-disturbing activities within key and occupied listed pebble plains plants habitat. In order to recover these listed species, new ground-disturbing activities should be prohibited and current ground-disturbing activities that are adversely impacting habitat should be eliminated.

SBNF S4 – Specify a size of downed logs per acre to be retained in southern rubber boa habitat. Minimum log size should be 12-inch diameter and 20 feet long, but specify that the largest logs shall be retained.

IV. Conclusion

Neither of the two preferred alternatives (2 and 4) adequately protects biological resources or complies with environmental laws such as the Endangered Species Act and the National Forest Management Act. In addition, the alternatives analysis in the DEIS fails to comply with the National Environmental Policy Act because it does not present the alternatives in an objective, unbiased, and concise manner. Alternative 4 in particular would pose significant and unacceptable threats to the continued existence of numerous federally and state-listed species.

The most ecologically sustainable and cost-effective way to protect the forests from harmful impacts is to *prevent* damaging activities in sensitive habitats – not to allow further degradation of endangered habitats and attempt after-the-fact restoration. Post-hoc restoration is extremely expensive, time consuming, and often ineffective. In addition, the Conservation Alternative stressed the need to re-visit many of the *existing* roads, trails, and other infrastructures to determine their impacts on at-risk species, with feasible and timely deadlines. Unfortunately the plans proposed by the Forest Service apply standards to new projects, but provide no process for evaluating existing impacts. This is a major flaw in the revised management plans that must be rectified in the final EIS.

Alternative 6, with modifications suggested in this comment letter and those submitted by California Native Plant Society, Sierra Club, Friends of the River, and Western Watersheds Project, provides the most biologically and legally defensible plan for the conservation of biological resources, while allowing for fire and fuels management and a broad range of recreational opportunities on the Cleveland, San Bernardino, Angeles, and Los Padres national forests. Alternative 6 will best protect the precious natural heritage of these critically important public lands.

Thank you for the opportunity to comment on the revised Land and Resource Management Plans for the southern California national forests. All documents cited or discussed herein are incorporated into the record. Please do not hesitate to contact me at (909) 659-6053 with any questions regarding these comments.

Sincerely,



Monica Bond, Staff Biologist
Center for Biological Diversity
Idyllwild, California
(909) 659-6053 x304
mbond@biologicaldiversity.org

Literature Cited

- Airola, D. A. 1986. Brown-headed cowbird parasitism and habitat disturbance in the Sierra Nevada. *Journal of wildlife management* 50(4): 571—575.
- Akçakaya, H. R., and J. L. Atwood. 1997. A habitat-based metapopulation model of the California Gnatcatcher. *Conservation Biology* 11(2): 422—434.
- Akçakaya, H. R., J. Franklin, A. D. Sypard, and J. R. Stephenson. 2004. Viability of Bell's sage sparrow under altered fire regimes: Integrating landscape, habitat, and metapopulation modeling approaches. Presentation at the Society for Conservation Biology 18th Annual Meeting, New York, NY.
- Atwood, J. L. and D. R. Bontrager. 2001. California Gnatcatcher: *Polioptila californica*. *The Birds of north America*, No. 574.
- Belsky, J., Matzke, A., and Uselman, S., 1999. Survey of livestock influences on stream and riparian ecosystems in the western US. *Journal of Soil and Water Conservation* 54: 419—431.
- Berry, K. H. 1980. A review of the effects of off-road vehicles on birds and other vertebrates. Pages 451–467 in: R. M. DeGraff (technical coordinator). *Management of Western Forests and Grasslands for Nongame Birds*. U.S. Department of Agriculture Forest Service, General Technical Report INT-86.
- Beschta, R., J. J. Rhodes, J. B. Kauffman, R. E. Gresswell, G. W. Minshall, J. R. Karr, D. A. Perry, F. R. Hauer, and C. A. Frissel 2004. Postfire management on forested public lands of the western United States. *Conservation Biology* 18(4):957—967.
- Borchert, M. N. D. Cunha, P. C. Krosse, and M. L. Lawrence. 1993. Blue oak plant communities of southern San Luis Obispo and northern Santa Barbara Counties, California. USDA Forest Service General Technical Report PSW-GTR 139.
- Brooks, M. L. 1995. Benefits of protective fencing to plant and rodent communities of the western Mojave desert, California. *Environmental Management* 19(1):65—74.

- Brooks, M. L. 1999. Effects of protective fencing on birds, lizards, and black-tailed hares in the western Mojave desert. *Environmental Management* 23(3):387—400.
- Brown, J. K., E. D. Reinhardt, and K. A. Kramer. 2003. Course woody debris: managing benefits and fire hazard in the recovering forest. Gen. Tech. Rep. RMRS-GTR-105. Ogden, UT: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 16 p.
- Bury, R. B. and R. A. Luckenbach. 1983. Vehicular recreation in arid land dunes: Biotic responses and management alternative. Pages 207—221 in R. H. Webb and H. G. Wilshire, editors. *Environmental Effects of Off-road Vehicles*. Springer-Verlag, New York, NY.
- Bury, R. B., R. A. Luckenbach, and S. D. Busack. 1977. Effects of off-road vehicles on vertebrates in the California desert. Report to the U.S. Fish and Wildlife Service
- Busack, S. D. and R. B. Bury. 1974. Some effects of off-road vehicles and sheep grazing on lizard populations in the Mojave desert. *Biological Conservation* 6(3):179—183.
- California Energy Commission. 2002. A Roadmap for PIER Research on Avian Collisions with Power Lines in California. Commission Staff Report. http://www.energy.ca.gov/reports/2002-12-24_500-02-071F.PDF
- Clary, W. P. 1995. Vegetation and Soil Responses to Grazing Simulation on Riparian Meadows. *Journal of Range Management* 48(1):18—25.
- Clary, W. P. 1999. Stream channel and vegetation responses to late spring cattle grazing. *Journal of Range Management* 52:218—227.
- Cohen, J. D. 2000. Preventing disaster: home ignitability in the wildland-urban interface. *Journal of Forestry* 98(3)15—21.
- Czech, B. and P. R. Krausman. 1997. Distribution and causation of species endangerment in the United States. *Science* 277:1116—1117.
- Hardy, A. R. and F. G. Andrews. 1976. A Final Report to the Office of Endangered Species on Contract 14-16-0008-966. Insect Taxonomy Laboratory, California Department of Food and Agriculture, Sacramento, CA.
- Kauffman, J.B., Thorpe, A.S., Brookshire, J. and Ellingson, L. *in preparation*. Effects of livestock exclusion on belowground ecosystem attributes of montane meadows : Implications for ecological restoration.
- Keeley, J. E., C. J. Fotheringham, and M. A. Moritz. 2004. Lessons from the October 2003 Wildfires in Southern California. Unpublished manuscript.
- Kimball, S. and P. M. Schiffman. 2003. Differing effects of cattle grazing on native and alien plants. *Conservation Biology* 17(6):1681—1693.
- Klebenow, D. A., and R. J. Oakleaf. 1984. Historical avifaunal changes in the riparian zone of the Truckee River, Nevada. California Riparian Systems Conference, Davis, California, 203—209.
- Luckenbach, R. A. and R. B. Bury. 1983. Effects of off-road vehicles on the biota of the Algodones Dunes, Imperial County, California. *Journal of Applied Ecology* 20:265—286.
- Mayfield, H. 1977. Brown-headed cowbird: agent of extermination? *American Birds*, 31(2).
- Minnich, R. A., M. G. Barbour, J. H. Burk, and R. F. Fernau. 1995. Sixty years of change in California conifer forests of the San Bernardino Mountains. *Conservation Biology* 9(4):902—914.

- Ohmart, R. D. 1994. The effects of human-induced changes on the avifauna of western riparian habitats. *Studies in Avian Biology* 15: 273—285.
- Nichols, R. and J. Menke. 1984. Effects of chaparral shrubland fire on terrestrial wildlife. Page 8 in J. J. DeVries, ed. *Shrublands in California: literature review and research needed for management*, University of California Water Resources Center.
- Quinn, R. D. 1983. Short-term effects of habitat management on small vertebrates in chaparral. *Cal-Neva Wildlife*.
- Raphael, M. and White. 1984. Use of snags by cavity nesting birds in the Sierra Nevada. *Wildlife Monographs* 86:1—66.
- Reichenbacher, F. W. 1984. Ecology and Evolution of Southwestern Riparian Plant Communities. *Desert Plants* 6(1):15—22.
- Rhodes, J.J., D. A. McCullough, and F.A. Espinosa Jr., 1994. A Coarse Screening Process for Evaluation of the Effects of Land Management Activities on Salmon Spawning and Rearing Habitat in ESA Consultations. CRITFC Technical Report 94-4.
- Rothstein, S. I., J. Verner, and E. Stevens. 1980. Range expansion and diurnal changes in dispersion of the brown-headed cowbird. *The Auk* 97:253—267.
- Schultz T. D. 1988. Destructive effects of off-road vehicles on tiger beetle habitat in central Arizona. *Cicindela* 20(2):25—29.
- Sferra, S. J., R. A. Meyer, and T. E. Corman. 1995. Arizona Partners in Flight 1994 Southwestern willow flycatcher survey. Final Technical Report 69, Nongame and endangered wildlife program, Arizona Game and Fish Department, Phoenix, AZ.
- Stebbins, R. C. 1995. Off-road vehicle impacts on desert plants and animals. Pages 467—480 in J. Latting and P. G. Rowlands, editors. *The California Desert: An Introduction to Natural Resources and Man's Impact*.
- Swiecki, T., E. Bernhardt, and C. Drake. 1997. Factors affecting blue oak sapling recruitment. Pages 157—167 in Pillsbury, Ed. *Proceedings of a symposium on oak woodlands: Ecology, management, and urban interface issues*. USDA Forest Service General Technical Report PSW-GTR-160.
- Taylor, D. M. 1986. Effects of cattle grazing on passerine birds nesting in riparian habitat. *Journal of Range Management* 39(3):254—258.
- Taylor, D. M., and C. D. Littlefield. 1986. Willow flycatcher and yellow warbler response to cattle grazing. *American Birds* 40(5):1169—1173.
- U. S. Bureau of Land Management (BLM). 2003. Mineral Potential Report for Withdrawal of Public Land: San Bernardino National Forest.
- U. S. Fish and Wildlife Service (USFWS). 1996. California condor recovery plan, third revision. Portland, OR.
- U. S. Fish and Wildlife Service (USFWS). 1998. Draft recovery plan for the least Bell's vireo. Portland, OR.
- U. S. Fish and Wildlife Service (USFWS). 1999. Arroyo southwestern road (*Bufo microscaphus californicus*) recovery plan. Portland, OR.

U. S. Fish and Wildlife Service (USFWS). 2000a. Endangered and threatened wildlife and plants; proposed designation of critical habitat for the arroyo southwestern toad; Proposed rule. Federal Register, Volume 65, Number 111.

U. S. Fish and Wildlife Service (USFWS). 2000b. Draft recovery plan for the California red-legged frog (*Rana aurora draytonii*); Proposed rule. Portland, OR.

U. S. Fish and Wildlife Service (USFWS). 2000c. Endangered and threatened wildlife and plants; proposed designation of critical habitat for the California red-legged frog (*Rana aurora draytonii*). Federal Register, Volume 65, Number 176.

U.S. Fish and Wildlife Service (USFWS). 2000d. Recovery plan for bighorn sheep in the Peninsular Ranges, California. Portland, OR.

U. S. Fish and Wildlife Service (USFWS). 2001. Biological and conference opinions on the continued implementation of Land and Resource Management Plans for the four southern California National Forests, as modified by new interim management direction and conservation measures (1-6-00-F-773.2). U. S. Department of the Interior, Fish and Wildlife Service, Carlsbad, CA.

U. S. Fish and Wildlife Service (USFWS). 2003. Recovery plan for the Quino checkerspot butterfly (*Euphydryas editha quino*). Portland, OR.

U. S. Forest Service (USFS). 2003. Resource and Biological Assessment for Threatened and Endangered Plants and Animals, Old and Grand Prix Fires.

U. S. Forest Service and U. S. Bureau of Land Management (USFS and USBLM). 1997. The Assessment of Ecosystem Components in the Interior Columbia Basin and Portions of the Klamath and Great Basins, Volumes I-IV. USDA Forest Service General Technical Report PNW-GTR-405.

Verner, J., and L. V. Ritter. 1983. Current Status of the brown-headed cowbird in the Sierra Nevada. *The Auk* 100:355—368.

Whitfield, M. J. 1990. Willow flycatcher reproductive response to brown-headed cowbird parasitism. Master's Thesis, California State University, Chico.

Whitfield, M. J. 1993. Brown-headed cowbird control program and monitoring for the Southwestern willow flycatcher. Report to California Fish and Game, Kern River Preserve, Weldon, CA.

Whitfield, M. J., and C. M. Strong. 1995. Brown-headed cowbird control program and monitoring for the Southwestern willow flycatcher. California Department of Fish and Game, Bird and Mammal Conservation Program Report 95-4, Kern River Research Center, Sacramento, California.

Wiley, Ron. Literature Review, Residual Herbaceous Stubble Height and the Maintenance / Restoration of Riparian/Aquatic Habitat Conditions, unpublished, undated, first distributed in 1998-99.