I, MONICA L. BOND, declare and state as follows:

1. My name is Monica Bond. I am a professional wildlife biologist with a decade of experience researching California spotted owls (*Strix occidentalis occidentalis*). Specifically, I worked for 3 years as a research biologist on a California spotted owl demography study in the Eldorado and Tahoe National Forests, from 1999 until 2001. During that time, I was also the lead author on a paper investigating short-term post-fire survival, site fidelity, mate fidelity, and reproductive success of northern, California, and Mexican spotted owls. More recently, in 2006-2007, I was co-principal investigator on a 2-year project quantifying post-fire habitat use by California spotted owls in the McNally fire area on the Sequoia National Forest and Giant Sequoia National Monument. I am familiar with the scientific literature regarding effects of forest fire on the spotted owl throughout its range. Since 2001, I have been visiting sites and providing comments on the impacts of numerous timber harvest projects on California spotted owls in both the Sierra Nevada and southern California.

2. I am writing to respond to some significant omissions in the analysis of impacts to the California spotted owl in the Draft Environmental Impact Statement (DEIS) for the Giant Sequoia National Monument (GSNM) management plan, and to inform the U.S. Forest Service about the serious harm that implementation of the Proposed Action, Alternative B, would likely cause to California spotted owls currently occupying the GSNM area.

3. Based upon the GSNM DEIS and Wildlife Biological Evaluation (BE), I have concluded that the Proposed Action would result in serious short- and long-term adverse impacts on the California spotted owl by: a) repeatedly thinning conifer forests across three-quarters of the GSNM, thereby degrading the quality of owl habitat; and b) allowing intensive post-fire salvage logging of nearly all burned forest habitat selected by the owls and used by the owls' small mammal prey.

4. First, the DEIS states that, under the Proposed Action, 247,507 acres, or about *three-quarters*, of the GSNM would be open to mechanical thinning, including removal of mature trees up to at least 20 inches in diameter (DEIS, p. 459). There are several significant problems with this, in terms of impacts to the California spotted owl, that the DEIS and Wildlife BE simply do not address. First, while the DEIS (p. 470, Fig. 41) shows the estimated acres of thinning projected to occur under each alternative in a given decade—about 5% per decade under the Proposed Action—nowhere do the DEIS or BE clarify whether this 5% per decade pertains only to areas thinned for the first time after implementation of the GSNM Management Plan, or whether it also includes re-thinning of areas that were already thinned under implementation of the GSNM Plan. This is important because, as discussed in Rhodes and Baker (2008), due to vegetative regrowth thinnings are only effective in reducing potential fire severity (assuming, for the sake of argument, that such thinning actually does reduce potential fire severity in the immediate timeframe) for at most 10-20 years, at which point they will have returned to the pre-thinned state and would need to be thinned again in order to maintain a reduced potential for higher-severity fire. Thus, as Rhodes and Baker (2008) discuss, unless wildland fire affects 100% of the area in question every 10-20 years, any thinned area would need to be re-thinned every 10-20 years over and over again for many decades, even centuries, in order to have even a 50% chance of actually reducing fire severity. The GSNM DEIS states that, over the past 40 years, only about 2% of the GSNM has been affected by fire per decade (DEIS, p. 181), and only about 10-12% of the GSNM is expected to be affected by fire per decade under future implementation of the GSNM Management Plan (DEIS, p. 469). Thus, when the DEIS states that 5% of the GSNM would be thinned per decade, either this only includes areas thinned for the first time, in which case it fails to divulge the far greater acreage of re-thinning per decade, or it includes both first-time thinning as well as re-thinning, in which case the great majority of the thinned areas, at any given time, would be ineffective in reducing potential severity of fire should a fire occur (Rhodes and Baker 2008). In the former case, the DEIS and BE fail to

divulge and analyze most of the impacts of thinning on the habitat quality of California spotted owls. As discussed in the Wildlife BE, suitable habitat for California spotted owls in unburned forests is comprised of dense, mature and old-growth forest with high canopy cover and high basal area of trees (see pp. 42-44 of the GSNM Wildlife BE, and cited studies). Alteration of mature-forest habitat as a result of timber harvest resulted in decreased colonization of territories and increased probability of breeding dispersal by California spotted owls in the central Sierra Nevada; i.e., owls chose not to remain in or colonize such territories after >20 hectares (over 49 acres) of mature conifer forest was degraded by logging (Seamans and Gutiérrez 2007). Repeated thinning, every 10-20 years, of an ever-increasing acreage in the GSNM would have profound, and highly adverse, impacts to the quality of California spotted owl habitat, and spotted owl populations, due to continued reduction and suppression of canopy cover and forest density (e.g., basal area). In the latter case, the great majority of the thinned areas, at any point in time, would be ineffective in reducing fire severity, which raises a serious question about whether such thinning operations are "clearly needed"—the standard under the GSNM Proclamation's language. Further, nowhere does the GSNM DEIS explain why mature trees up to 20 inches in diameter would need to be cut down and removed from the GSNM as commercial products in order to manage fire, or why fire is being treated as a significant threat to imperiled wildlife species, in light of the extremely low levels of current and projected future burning per decade. This is appears to be a case of destroying owl habitat in order to "save" it from an essentially non-existent threat.

5. Second, the DEIS and Wildlife BE inappropriately and inaccurately omit moderately and severely burned forest from the description of suitable habitat for California spotted owls. Numerous recent studies document the use of burned forests by northern, California, and Mexican spotted owls for nesting, roosting, and foraging (Bond et al. 2002, Jenness et al. 2004, Clark 2007, Bond et al. 2009). A likely reason for this is that higher-severity fire creates an abundance of habitat features (e.g., snags, large downed logs, patches of montane chaparral) that enhance the owls' small mammal prey base. A published study of Mexican spotted owls

reported birds continuing to occupy and breed in a burned landscape (Jenness et al. 2004) and my published research results on short-term occupancy and reproduction in burned forests by all three subspecies found that spotted owls successfully nest and reproduce in forests affected by forest fire with a mix of low, moderate, and high severity fire effects (Bond et al. 2002). Patches of moderate- and high-severity wildfire do not render habitat unsuitable for spotted owls, and in fact were preferentially selected by spotted owls for foraging in the southern Sierra Nevada – including in the GSNM – in my recent study (Bond et al. 2009). Moderate- and high-severity patches were also preferentially selected for foraging by spotted owls in Clark (2007). Moreover, both my recent study (Bond et al. 2009) and Clark (2007) studied spotted owls 4-5 years post-fire (i.e., much longer than the immediate post-fire period). In particular, our research in the southern Sierra Nevada concluded that our sample of owls in the McNally Fire preferentially foraged in high-severity patches near to the nest or core roost areas. Burned forests, including moderate and high-severity burns, are clearly important habitat for this Management Indicator Species. The GSNM DEIS and BE failed to accurately and completely describe suitable spotted owl habitat, or adequately analyze the impacts of proposed thinning and fuels treatments in light of this information. Since our research, in Bond et al. (2009), was conducted on Sequoia National Forest and in the GSNM with the full knowledge and cooperation of the Sequoia National Forest, the Forest Service is well aware of our findings, which makes the omission of our findings from the GSNM DEIS and BE hard to understand.

6. Third, Clark (2007) specifically noted (on p. 103 of that thesis) that, among his radio-tracked spotted owls, "areas that received clear-cut [post-fire] salvage were rarely used" and all salvage-logged areas (either clearcut or with leave trees) "tended to be used less frequently than available throughout individual home ranges." The radio-tracked northern spotted owls in Clark's study preferentially selected unlogged moderate and high severity areas, and avoided high severity areas that had been salvage logged (again, post-fire logging removes the large snags the owls use for perches, and greatly reduces or eliminates montane chaparral and large downed logs used by the owls' small mammal prey). This result, in combination with the fact

that there was very little salvage logging in our McNally Fire study area (Bond et al. 2009) in the southern Sierra Nevada (<3% of available owl habitat as defined by my radio-telemetry) where owls preferred foraging in the severely burned forest, is compelling evidence that post-fire salvage logging of severely burned forests in owl territories is likely to adversely impact owls. For this reason, in Bond et al. (2009), we recommended that the Forest Service avoid post-fire salvage logging at least within a 1.5-kilometer radius of spotted owl nest stands. However, the GSNM DEIS states that the standards and guidelines for Alternative B, the Proposed Action, would allow intensive post-fire salvage logging of 90% of areas experiencing high-severity wildland fire on the GSNM, with no prohibition on salvage logging in spotted owl territories (DEIS, Vol. 2, p. 180). Yet nowhere does the DEIS or the Wildlife BE provide any analysis of the adverse impacts of this policy on resident California spotted owls, creating a serious gap and inadequacy in the analysis.

7. In summary, the Proposed Action in the GSNM DEIS would result in serious adverse impacts to California spotted owls in the GSNM, both in terms of degradation and loss of suitable unburned habitat, and in terms of the extensive loss of suitable burned forest habitat. These major impacts are simply not addressed in the GSNM DEIS.

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Literature Cited

Bond, M.L., R.J. Gutiérrez, A.B. Franklin, W.S. LaHaye, C.A. May, and M.E. Seamans. 2002. Short-term effects of wildfires on spotted owl survival, site fidelity, mate fidelity, and reproductive success. *Wildlife Society Bulletin* 30:1022–1028.

Bond, M.L., M.E. Seamans, and R.J. Gutiérrez. 2004. Modeling nesting habitat selection of California spotted owls (*Strix occidentalis occidentalis*) in the central Sierra Nevada using standard forest inventory metrics. *Forest Science* 50:773-780.

Bond, M.L., D.E. Lee, R. B. Siegel, and J. P. Ward, Jr. 2009. Habitat use and selection by California spotted owls in a postfire landscape. *Journal of Wildlife Management* 73:1116-1124.

Clark, D. A. 2007. Demography and habitat selection of northern spotted owls in post-fire landscapes of southwestern Oregon. Master's Thesis, Oregon State University, Corvallis, Oregon.

Gutiérrez, R. J., J. Verner, K. S. McKelvey, B. R. Noon, G. N. Steger, D. R. Call, W. S. LaHaye, B. B. Gingham, and J. S. Senser. 1992. Habitat relations of the California spotted owl. Pages 79—99 in J. Verner, K, S. McKelvey, B. R. Noon, R. J. Gutiérrez, G. I Gould, Jr., and T. W. Beck, Technical Coordinators. The California spotted owl: a technical assessment of its current status. Gen Tech. Rep. PSW-GTR-133. Albany, CA. Pacific Southwest Research Station. Forest Service, U. S. Department of Agriculture.

Jenness, J. J., P. Beier, and J. L. Ganey. 2004. Associations between forest fire and Mexican spotted owls. *Forest Science* 50:765–772.

North, M. P., J. F. Franklin, A. B. Carey, E. D. Forsman, and T. Hamer. 1999. Forest stand structure of the northern spotted owl's foraging habitat. *Forest Science* 45:520—527.

Rhodes, J.J., and W.L. Baker. 2008. Fire probability, fuel treatment effectiveness and ecological tradeoffs in western U.S. public forests. *The Open Forest Science Journal* 1:1-7.

Seamans. M. E. and R. J. Gutiérrez. 2007. Habitat selection in a changing environment: The relationship between habitat alteration and spotted owl territory occupancy and breeding dispersal. Condor 109:566-576.

Verner, J., K. S. McKelvey, B. R. Noon, R. J. Gutiérrez, G. I. Gould, T. W. Beck, tech. cords. 1992. The California spotted owl: a technical assessment of its current status. General Technical Report PSW-GTR-133. Albany, CA, Pacific Southwest Research Station, Forest Service, USDA.