Wild Nature Institute

CENTER *for* BIOLOGICAL DIVERSITY

THE JOHN MUIR PROJECT *of* EARTH ISLAND INSTITUTE

August 21, 2014

Susan Skalski, Supervisor
Stanislaus National Forest

Sent via email to: comments-pacificsouthwest-stanislaus@fs.fed.us

Re: Rim Fire Recovery Project

Dear Supervisor Skalski:

We, the Wild Nature Institute, the John Muir Project of Earth Island Institute, and the Center for Biological Diversity, offer the following additional comments on the Draft Environmental Impact Statement (DEIS) for the proposed "Rim Fire Recovery" Project (Project). These comments are based on the Forest Service's 2014 California spotted owl survey data for the Rim fire area that became publicly available very recently.

There are several key reasons why the following comments and analysis should alter the approach being taken in the DEIS; most importantly, post-fire logging should not occur in spotted owl home ranges at least within 1.5 km of owl core-use sites. The reasons are as follows, and are explained in greater detail below:

1. The California spotted owl is classified as a Forest Service "sensitive species"[1] and is currently in serious decline on National Forest Service lands; it is therefore imperative to protect this species and its habitat, which includes severely burned forest.

2. An analysis of the recently released survey forms shows that 33 spotted owl pairs, and 6 spotted owl singles, were detected by the Forest Service during the Spring and Summer of 2014 within the Rim Fire area, demonstrating that the Rim Fire area is extensively occupied by spotted owls;

3. The available science (Bond et al. 2009) regarding California spotted owl use of burned forest landscapes shows that the owls not only use unlogged burned forest

[1] Defined as "Those plant and animal species identified by a Regional Forester for which population viability is a concern . . . ."

within 1.5 km of their nests/roosts, they preferentially select it. This is why Bond et al. 2009 states that post-fire logging should not occur within 1.5 km of owl core-use sites. *See also Conservation Cong. v. United States Forest Serv.*, No. CIV. S-13-0832 LKK/DAD, 2013 U.S. Dist. LEXIS 127671, *20 (E.D. Cal. Sept. 6, 2013) ("Bond, in the cited papers, specifically recommended that 'post-fire logging be avoided within 1.5 kilometers (at least) of Spotted Owl nest sites.' . . . Also, [the Forest Service] identifies no literature that indicates that it would be appropriate to log within 1.5 km from the nest site.")

4. Many of the forests that the spotted owls would use in the Rim Fire area are being targeted by the Rim Fire Project for intensive logging activities; specifically, Protected Activity Centers (PACs), Home Range Core Areas (HRCAs), as well as burned forest within 1.5 km of owl core-use sites, are heavily impacted by the proposed logging. Because is it known that spotted owls rely on much more than Protected Activity Centers (PACs) for their life needs (nesting, roosting and foraging), it is necessary to protect, not log, owl habitat in PACs, HRCAs, and within 1.5 km of owl core-use sites.

Furthermore, 40 C.F.R. section 1502.9(c)(1) states that agencies must prepare a supplemental EIS (SEIS) when "[t]here are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts." Here, the survey results for the California spotted owl are clearly such information because they demonstrate widespread and exceptional owl presence in the Rim Fire area that has not yet been properly addressed in relationship to the proposed logging. Consequently, an SEIS as to the California spotted owl should be conducted if logging in owl home ranges is still part of the Project.

Similarly, to comply with NEPA, agencies are required to take a "hard look" at the environmental impacts of any project. Here, the DEIS did not, and could not, adequately examine the Project's impacts as to the California spotted owl because the data at issue here was not available. For example, the Rim Fire DEIS must examine and analyze the impacts of logging within 1.5 km of owl nests/roosts/best available use sites,[2] per this new survey data.

California Spotted Owl Conservation Status

For over 20 years, the California spotted owl (*Strix occidentalis occidenatlis*) has been a species of concern throughout its range due to its association with mature and older forests. Past efforts to list the California spotted owl as a threatened or endangered species under the federal and state Endangered Species Acts were rejected, in part, due to (1) scientifically unfounded assumptions that logging to reduce forest fire would contribute to the owl's conservation, and (2) some

[2] Nests or roosts have not been identified for all the owls currently occupying the Rim Fire area and therefore in some instances it will be necessary to rely on the best available data points in order to analyze project impacts.

uncertainty as to whether populations were currently declining. The California subspecies has therefore never received the benefits of ESA protections as does its Mexican and northern cousins.

Population Status—Previous studies strongly suggested population declines, but statistical power was too low to provide solid evidence. More recent scientific studies using additional data and robust statistical methodology have very clearly demonstrated that California spotted owl populations are declining throughout the range of the subspecies. The science also shows that those declines are associated with areas characterized by past and ongoing extensive mechanical thinning and post-fire logging. Current regulatory mechanisms on both public and private lands have permitted harmful forest management practices and have proven inadequate to stabilize or reverse the population declines. Habitat degradation from logging also exacerbates the growing threat to California spotted owls from invasive barred owls. The data therefore indicate that the California spotted owl is imperiled throughout most of its range, and logging programs such as the Rim Fire Recovery Project are an example of why local populations are threatened with extirpation and the entire subspecies may be on a trajectory towards range-wide extinction.

Population growth rate, or "lambda," is a metric used to assess population trend. Although the vast majority of point estimates of California spotted owl population growth rates (lambda) from the early 1990s on forests subjected to logging were below 1.0 (with 1.0 representing a stable population), the 95% confidence intervals for the estimates of rate of population change overlapped 1.0. This suggests that population declines occurred but the sample sizes were too low or there was high variance in the data. This slight statistical uncertainty inherent in these studies was in part used to reject listing the subspecies in 2006. However, recent published research from three long-term demographic studies in the Sierra Nevada show that on managed national forest lands, owl populations are significantly declining, whereas in unmanaged forests of the Sequoia/Kings Canyon national parks the owl population is stable. Conner et al. (2013) documented clear declines in the Lassen and Sierra national forest demography study areas over a nearly two-decade period, while the evidence did not indicate a decline in the most protected population in the Sequoia and Kings Canyon national parks. Meanwhile, Tempel and Gutiérrez (2013) reported a significant decline in California spotted owl territory occupancy in the Eldorado Study Area of the Eldorado and Tahoe national forests, and concluded that populations are, and have been, declining on this study area. None of these demography study areas experienced significant levels of fire during the study periods, thus fire could not be implicated as a factor in the population declines.

Habitat Use and Selection, and Effects of Disturbance—The California spotted owl uses or selects, for nesting and roosting, conifer and mixed conifer-hardwood forested habitats that have structural components of old forests, including large trees >61 cm diameter at breast height (Call et al. 1992, Gutiérrez et al. 1992, Moen and Gutiérrez 1997, Bond et al. 2004, Blakesley et al. 2005, Seamans 2005); multi-layered canopy/complex structure (Gutiérrez et al. 1992, Moen and

Gutiérrez 1997); high canopy cover (> 40 percent and mostly > 70 percent; Bias and Gutiérrez 1992, Gutiérrez et al. 1992, Moen and Gutiérrez 1997, Bond et al. 2004, Blakesley et al. 2005, Seamans 2005); abundant snags (Bias and Gutiérrez 1992, Gutiérrez et al. 1992, Bond et al. 2004); and downed logs (Gutiérrez et al. 1992). Logging older forest is a threat to California spotted owl occupancy. For example, in a long-term demography study of color-banded California spotted owls in the central Sierra Nevada, Seamans and Gutiérrez (2007) found that the probability of territory colonization decreased significantly with as little as 20 hectares of logging, and territory occupancy was significantly decreased with as little as 20 hectares of logging. Further, the probability of breeding dispersal away from a territory was related to the area of mature conifer forest in a territory and increased when ≥20 hectares of this habitat was altered by logging.

Fire has long been hypothesized to be a threat to spotted owls, but recent scientific studies show that owls persist in landscapes burned by all fire intensities (Lee et al. 2012, 2013). These studies found no significant difference in occupancy rates between owl breeding sites in burned and unburned forests. Further, another study found California spotted owls selected highly burned forests within 1.5 km of core areas for foraging 4 years post-fire (Bond et al. 2009), demonstrating that high-intensity fire can provide foraging benefits. These results are not surprising given that fires of all severities are a natural part of forest dynamics in the Sierra Nevada.

Spotted Owl Occupancy Rates in the Rim Fire

In 2013, the Rim Fire burned a large area of the Stanislaus National Forest adjacent to Yosemite National Park. We reviewed the field forms for California spotted owl surveys conducted in the Rim Fire area by Forest Service surveyors from March through August 2014. We examined field forms for 45 of the 46 spotted owl PACs (data were not made available for one of the 46), and determined the occupancy status for all of these PACs based on the 1995 USDA Forest Service Pacific Southwest Region Revised Spotted Owl Survey Protocol. The occupancy status consists of four categories: Pair, Resident Single, Status unknown (single owl), or Verified unoccupied (based on ≥6 visits for a single-season survey).

The Rim Fire is currently supporting California spotted owls at an astoundingly high rate of occupancy. The survey results show that owl pairs were detected at 32 of the historical PACs. Two pairs were detected during surveys at one site, PAC TUO040; it appears the surveyors divided this PAC into two sites: Mather and Middle Fork Tuolumne. Thus, the number of sites with survey data now equals 46 [total sites = 47 but no survey data were provided for PAC TUO201 (Buchanan)]. Single owls were detected at 6 PACs. Overall, owls were detected at a total of 39 out of 46 sites: 33 pairs and 6 singles.

Owls were not detected at 6 PACs, but only three of the sites—TU029 (Granite Creek), TUO030 (Wilson Meadow), and TUO218 (Lower Skunk)—were surveyed to protocol; the 1995 survey protocol states 6 visits must be made to confirm non-occupancy. Two sites with no detections were surveyed only 4 times and one was surveyed only 3 times. A single male owl was heard at one PAC, TUO053 (Brushy Creek) but surveyors attributed this owl to a nearby PAC. This may be incorrect as the owls were not banded and as such there is no way to determine in which PAC the owl resides. However, if we consider TUO053 to have no detections, and if we accept a no-detection status even for the sites not surveyed to protocol, then owls were not detected at 7 PACs.

Naïve Occupancy—Assuming 7 sites are "unoccupied" (which again, may not be true), but including the addition of another site at PAC TUO040 so that 39 sites are "occupied," we calculate a naïve all-detections occupancy rate of 85% (39/46). Pairs of owls were detected at 33 of 46 sites, yielding a naïve pair occupancy rate of 33/46 = 72%. The naïve occupancy rate is simply the proportion of sites where the species was detected at least once.

Modeled Occupancy—Lee et al. (2012) utilized a large dataset of Forest Service spotted owl surveys that had been conducted using similar methodology to the Rim Fire surveys, to estimate occupancy rates in burned and unburned forests. The Lee et al. study sample contained 186 spotted owl sites (41 burned and 145 unburned) throughout the Sierra Nevada from 1997 to 2007 with up to 5 surveys in each year—the largest study that has ever been conducted comparing owl occupancy in burned and unburned landscapes. Estimated annual site-occupancy probabilities of spotted owl breeding-season sites (PACs) were 76% (± 5%) at unburned sites and 80% (± 4%) at burned sites. Numbers in parentheses are standard errors. This methodology uses probability of detection (based on repeated surveys at a given site in a given year) to estimate occupancy probabilities that are unbiased due to imperfect probability of detection during a given survey. For example, owls may be present at a site but not detected, and ability to detect owls may vary throughout the season on whether the site is occupied by a pair or a single owl. To compare occupancy rates from the Rim Fire with the previously reported annual estimated occupancy rates from Lee et al. 2012, we utilized the 2014 survey data from the Rim Fire to model single-season site occupancy while accounting for survey-specific variation in detectability.

<u>Methods</u>—We used Program Presence 3.0 to estimate survey-specific detection probabilities and occupancy from the survey history at each site in 45 Rim Fire spotted owl sites during breeding season 2014 (March-August). We excluded one owl pair from the "new" Mather split-off of PAC TUO040 (Middle Fork Tuolomne) due to the lack of complete survey data, and only included data from Middle Fork Tuolomne in the analysis. We modeled detection and occupancy by status (e.g., not occupied, single owl, pair). Detection (p) is the probability that an occupied site is correctly identified as such. We used p to determine the probability of occupancy (ψ) either by pairs or by any owl (single or pair). We used data from surveys conducted >72 hours apart to ensure independence, and included results from complete surveys only (i.e. when all or most call point stations were surveyed) and omitted aborted surveys. For surveys conducted <72 hours apart, we used the highest level of occupancy reported during that time. For each survey, we coded occupancy by state: 0=no detection, 1=single owl, 2=pair. When a single male was detected at a site during one survey and during a subsequent survey a

female was detected at that same site approximately <1/4 mile from the male's location (according to survey maps) or vice versa, we coded the second detection state as 2 (pair) following the 1995 USDA Forest Service protocol. We modeled within-season survey-specific detection and occupancy as a constant (.) or a linear trend (T). We ranked models using Akaike's information criterion (AIC).

<u>Results</u>— Individual site occupancy for at least a single owl after accounting for detection probability was 92% (±7.3%). For pairs, the site occupancy was 87% (±9.3%). Detection (*p*) was 19.6% for singles (±12.2%), and 61% for pairs (±3.8%). Pairs were correctly identified in a site at 55% (±4.6%). Model-averaged estimates of occupancy as a function of the covariate describing percent of PAC burned at high severity showed a slight decrease in single owl occupancy as percent of PAC burned at high severity increased (Psi1 $\beta = -0.216 \pm 0.155$), but no decrease is evident for pair occupancy. Even at 100% PAC burn severity, however, site-occupancy probability for at least a single owl was approximately 89%.

The 92% estimated site occupancy seen in the Rim Fire is higher even than rates from previous published studies with directly comparable methods and results. Lee et al. (2012) estimated annual occupancy from 1997–2007 was 80% in burned forests, and 76% in forests without recent burn. Tempel and Gutiérrez (2013) estimated occupancy in 2010 in forests without significant recent fire as 67%. See Figure 1 below. These results indicate that the forests within the Rim Fire 1 year post-fire contain adequate amounts of suitable habitat for continued occupancy. Notably, several of the pair-occupied territories had predominantly high-severity fire effects.

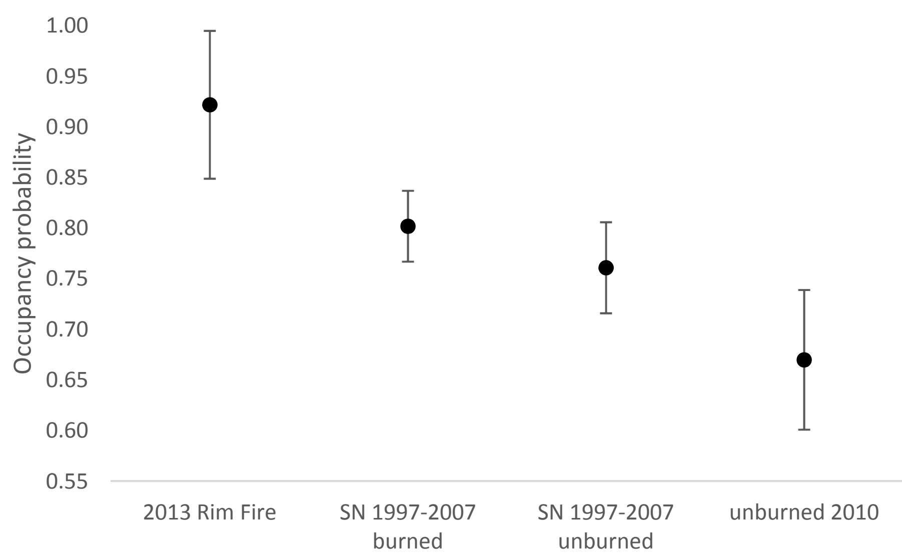

Figure 1. Site occupancy probability (±SE) of known California spotted owl sites in the Sierra Nevada that were burned in the 2013 Rim Fire (data from this study), burned between 1997 and 2007 (data from Lee et al. 2012), unburned sites between 1997–2007 (data from Lee et al. 2012), and unburned sites in El Dorado and Tahoe National Forests in 2010 (data from Temple and Gutiérrez 2013).

Burn Severity by PAC—The PAC with the most acres that burned at high severity (305.8 acres; Corral Creek TUO095, 100%) had a pair associated with it, and four other PACs where more than 70% of the PAC burned at high severity were also associated with pairs (TUO072 Femmons Meadow 76%, TUO145 Bear Creek 96%; TUO177 Ascension Mountain 72%; TUO257 Westside East 87%). Moreover, we used a lenient definition of "unoccupied" because one site actually had an owl detection and three sites were not surveyed to protocol, and some of those territories without detections may have been occupied. Thus, based upon the foregoing, the occurrence of even high levels of severe fire within a PAC (which surrounds the nest/core roost areas) does not necessarily render an area unoccupied, and often does not. Therefore the owls associated with these sites must be managed with the utmost of caution and protected from any logging disturbances within at least 1.5 km of the core (Bond et al. 2009).

Necessary Conservation Measures in the Rim Fire

Nesting, roosting, and foraging habitat within home ranges and core areas is important for spotted owl survival and reproduction. For example, Blakesley et al (2005) noted that although the composition of habitat in California spotted owl nest areas (203 hectares, or 500 acres) was a better predictor of site occupancy than the composition of habitat in a larger core area (814 hectares, or 2011 acres), relationships between habitat variables and apparent survival and reproductive output were similar at both spatial scales (and Blakesley was not examining an area that had been intensively salvage logged). Blakesley et al. (2005) stated in their management implications that "[o]ur results suggest that within owl core areas (814 ha), increases in the availability of habitat used by spotted owls for nesting, roosting and foraging will increase owl survival." Thus, protecting important foraging habitat in a 2000-acre area surrounding nests and roost sites is predicted to increase survival; conversely, reducing such habitat is likely to decrease survival.

Bond et al. (2009) is even more on point to the Rim Fire situation than Blakesley et al. 2005. Bond et al. 2009 examined an unsalvaged post-fire landscape, and found that 4 years post-fire a sample of radio-marked spotted owls in the McNally Fire preferentially selected burned forests, especially severely burned forests, for foraging within 1.5 km of the nest/core roost area. See Figure 2 below:

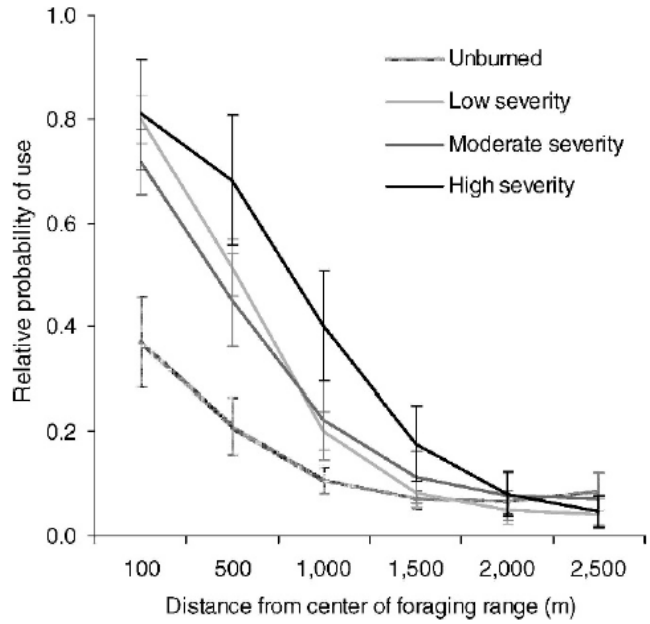

Figure 2. Mean resource selection probability functions (± SE) for 7 California spotted owls foraging at different distances from the center of the owls' breeding foraging range in forest burned at different severities (unburned, low, moderate and high) in the McNally Fire, Sequoia National Forest, California, USA, 2006. Probabilities generated from coefficients in top-ranked model.

Bond et al. 2009 makes plain that when a post-fire area is left unlogged, it can provide critical habitat for owl survival. Post-fire logging, on the other hand, has a harmful effect on California spotted owls because it eliminates or degrades habitat that would otherwise be used. For example, Lee et al. (2012) reported that mixed-severity fire, averaging 32% high-severity fire effects, did not reduce occupancy of California spotted owl sites in the Sierra Nevada, and even most territories with >50% high-severity fire remained occupied (at levels of occupancy comparable to unburned forests). This, however, was not the case in salvage-logged sites, as every site that was salvage logged lost occupancy, even though they were occupied after the fire but before the salvage logging (Lee et al. 2012). Specifically, post-fire logging occurred on eight of the 41 burned sites; seven of the eight sites were occupied immediately after the fire but none were occupied after post-fire logging. While Lee et al. 2012 notes that this particular "sample size was too small for this effect to be included as a covariate," the results nonetheless are best available data regarding post-fire logging and California spotted owls. Moreover, approximately one-third of the total number of PACs that lost occupancy after post-fire logging in the Moonlight Fire area did not experience logging within a roughly 500-acre buffer, but did experience logging within a 500-1000-acre, or 1000-1500-acre zone, farther out. And, post-fire salvage logging reduced occupancy of spotted owl sites in southern California (Lee et al. 2013). A study of northern spotted owls is also illustrative: Clark et al. (2013) found post-fire salvage logging in high-severity fire areas was a factor in territory extinction of northern spotted owls (*S. o. caurina*) in southwestern Oregon.

The Forest Service does not possess any studies demonstrating that salvage logging within 1.5 km of owl sites will not degrade or eliminate owl habitat. Nor does the Forest Service possess any studies demonstrating that prohibiting salvage logging within PACs, but allowing it within HRCAs and/or owl home ranges, is sufficient to protect owls. Rather, the best available science demonstrates that in order to ensure owl survival it is necessary to provide a buffer of at least 1.5 km around post-fire owl sites. Blakesley et al. (2005) and Williams et al, (2011) further support the protection of areas that extend well beyond owl PACs (e.g., Blakesley et al. 2005 speaks to 2000 acre areas [814 ha] and Williams et al. estimated California spotted owl home ranges in managed forests of the Eldorado study area averaged 1370 acres [555 hectares]).

Further, most home-range estimates and studies of foraging habitat selection are from the breeding season only. Some California spotted owls are known to expand their movements during the winter (Bond et al. 2010), which represents the most energetically costly and dangerous time for owl survival. Thus, the protection of potentially important foraging habitat should extend to habitat used during the overwinter season as well, although no studies have documented foraging habitat selection patterns during this time.

To provide adequate protections for this rare and declining raptor, it is necessary to provide a 1.5 km buffer for not only known nest/roost sites from 2014, but also for owls that do not yet have a known nest or roost site. For these owls, the best available 2014 information should be used and *greater* caution should be exercised in order to ensure meaningful protection. In other words, lack of a known nest or roost should not be used to limit protection for owls; rather, if anything, these owls should receive even greater buffers in order to protect where their core-use area (nest or roosts) might be. This applies to every PAC in the Rim Fire with three exceptions: Granite Creek, Wilson Meadow and Lower Skunk – these were verified to be unoccupied via protocol-level surveys. Nonetheless, of these currently unoccupied sites, 38% could be colonized each subsequent year post-fire as discussed in Lee et al. (2012, page 798), so applying a no-logging buffer around these unoccupied PACs would provide additional sites for future colonization and would augment spotted owl conservation in the Rim Fire area.

In sum, in light of the current science and the recent Rim fire area owl survey data – the population declines in managed forests, the lack of significant negative effects of fire on owl occupancy rates in the Sierra Nevada, the foraging benefits that high-severity fire areas near nests and roosts provide, and the high owl occupancy in the Rim Fire area – post-fire salvage logging within *at least* 1.5 km of spotted owl nesting and roosting areas, as well as the best available locations for owls when nest or roosts are unknown, must be avoided in order to meaningfully protect spotted owls. Moreover, even larger no-logging protection buffers should be considered (e.g., 2000 acres; Blakesley et al. 2005).

The Forest Service must also, before any logging in owl home ranges is authorized, prepare an

SEIS in light of the new data as it constitutes "significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts." This is especially so given that the California spotted owl is in decline and any management actions that would harm owls within the Rim Fire could precipitate the need to list this subspecies as threatened or endangered.

Finally, and importantly, no research should be conducted on spotted owls in the Rim Fire area if that research involves logging of spotted owl home ranges. In light of the current status of spotted owls in the Sierras, there is no sound justification for research that involves such significant logging, especially since data already exists that shows that owls use the habitat at issue. Rather, any owl research should focus on analyzing the owls' relationship to the burned forest areas they are currently occupying. Such research would provide useful insights without subjecting owls to serious harm and would prevent the wrongful subordination of wildlife to timber and logging interests.

Please do not hesitate to contact us with any questions.

Sincerely,

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