

Mr. David J. (DJ) Ennis, P.G., Permit Lead
New Mexico Mining and Minerals Division
Mining Act Reclamation Program
1220 South Saint Francis Drive
Santa Fe, NM 87505

April 19, 2023

RE: Mexican Spotted Owl Survey Update - Fannie Road (Catron County C-040) Repair Workplan, Summa Silver Mogollon Project, Catron County, New Mexico, Permit No. CA27EM

Mr. Ennis,

This Mexican spotted owl (MSO) survey update is submitted for consideration regarding the Fannie Road Repair Workplan for the Summa Silver Mogollon Project occurring in Catron County, New Mexico. A letter from the New Mexico Mining and Minerals Division dated April 4, 2023, approved the commencement of the road repair work plan after the completion of two MSO surveys verifying that MSO pairs have not moved to another nest site or roost location that is less than 0.5 miles from the proposed road work.

Two complete MSO survey rounds have been conducted in the Summa Silver project area surrounding Mogollon, NM. Survey round one occurred March 6 – March 10, and survey round two occurred April 12 – April 16, 2023. The survey areas generally encompass Silver Creek, Mineral Creek from the rim, Bursum Road, the forest roads near Mogollon Cemetery, and adjacent drainages. Due to the delicate nature of disseminating sensitive species data, a detailed map presenting the survey area and MSO locations is included as a separate document for agency review.

The following material consists of MSO survey site summaries, conclusionary recommendations, and proposed mitigation measures:

2023 MSO Survey - Site Summaries

Silver Creek Roost 1

A single owl was observed on March 8 at Silver Creek Roost 1 during a daytime visit, with fresh whitewash, pellets, and a downy feather observed in the grotto where the nest from previous years is presumed to be located. On April 14, no owls were detected, but fresh whitewash, pellets, and a downy feather were observed. Silver Creek Roost 1 is situated approximately 0.52 miles from the southern boundary of the proposed roadwork near the Graveyard Gulch. While the presence of multiple owls at this site cannot be confirmed yet, it is expected that the pair remains in the area.



Silver Creek Roost 2

Despite two survey rounds and daytime visits (March 3 and April 13), no owls have been detected in Silver Creek Roost 2. One pellet was discovered during the initial daytime visit, but nighttime surveys from the rim have not resulted in any owl responses. Both surveys and daytime visits will continue at this site.

Mineral Creek

On April 15, during the second survey round, an owl response was detected from the south rim overlooking Mineral Creek. The response originated from the vicinity of the confluence of Mineral Creek and an unnamed canyon below FR716B. A follow-up daytime survey on April 16 revealed a visual detection of an owl hooting multiple times in the unnamed canyon, and a presumed roost was located, now designated as FR716B Roost. No whitewash or pellets were found during the follow-up survey, but potential nesting cliffs were identified for future examination. On April 18, another visual detection occurred in the canyon bottom in the vicinity of Cooney Mine Camp; however, this encounter was not associated with a nest site or roost.

The entire unnamed canyon, down to its confluence with Mineral Creek, has been searched for additional owls, roosts, and nests but has yet to be successful. At present, it is hypothesized that, during both detections, the owl(s) was defending its territory, and the nighttime responses in Mineral Creek may have been due to foraging, separate roosts, or echoes off the canyon walls. Further surveys are scheduled to commence this year, which will help clarify the situation at this roost. The FR716B Roost is situated approximately 0.51 miles from the northern boundary of the proposed roadwork near the cemetery.

Conclusionary Recommendations

The road repairs are projected to span two to three days, covering roughly 1.23 miles of roadway. The process will necessitate the use of a grader and backhoe to apply three to five loads of rock. These repairs aim to address rut damage and implement essential enhancements to maintain the road's optimal condition. This will ultimately serve the public interest and minimize future repair expenditures.

Silver Creek Roost 1 and FR716B Roost are both located marginally greater than 0.5 miles from the southern and northern extents of the proposed road work area. While the initial impression may suggest a reason for concern, it is unlikely that the proposed roadwork would significantly impact MSOs. This conclusion is based on (I.) the proposed action area being located greater than 0.5 miles from known MSO roosts, (II.) a significant body of evidence demonstrating that MSOs exhibit a high degree of tolerance with regard to anthropogenic disturbance, and (III.) implementation of mitigation measures would ensure no significant impacts.

Numerous scientific investigations have been conducted to examine MSO adaptability and tolerance in relation to human-induced disturbances. The accumulated body of evidence



demonstrates the owls' considerable resilience when confronted with various anthropogenic activities and noise levels:

Effects of Helicopter Noise on Mexican Spotted Owls:

The study investigated the response of nesting and non-nesting Mexican Spotted Owls to helicopter noise and chainsaw noise in the Lincoln National Forest in New Mexico. The researchers measured owls' flush frequency, flush distance, alert behavior, response duration, prey delivery rates, and nest attentiveness. The study found that owls were more disturbed by chainsaw noise than helicopter noise, and they did not flush when the noise level was below certain thresholds. The researchers recommended a 105-meter buffer zone for helicopter overflights to minimize owl flush response and potential effects on nesting activity (Delaney et al., 1999).

Fecal Corticosterone Levels in California Spotted Owls Exposed to Low-Intensity Chainsaw Sound:

This study evaluated the physiological stress response of nine nonbreeding wild male California Spotted Owls to low-intensity chainsaw sound. The researchers used fecal corticosterone levels to measure the owls' stress response. The results showed that chainsaw exposure did not result in a detectable increase in fecal corticosterone levels, suggesting that owls can tolerate low-intensity human sound in their environment without experiencing physiological stress (Tempel & Gutiérrez, 2003).

Flush Responses of Mexican Spotted Owls to Recreationists:

This research assessed factors influencing the flush responses, flush distances, distances of avoidance flights, and behavioral changes of MSO in response to a single hiker approaching their roosting sites. The study found that increased perch height reduced the likelihood of owls flushing, while previous flushes increased the likelihood of adults flushing on subsequent approaches. The researchers recommended 55-meter (0.034 miles) buffer zones around roosting sites to eliminate or reduce the behavioral responses of owls to hikers, with different levels of restriction depending on the desired level of protection (Swarthout & Steidl, 2001).

Responses of Mexican Spotted Owls to Low-flying Military Jet Aircraft:

This study investigated the effects of low-altitude, fixed-wing, jet aircraft overflight trials on the behavior of four adult and one juvenile MSO in Colorado. The researchers found that the owls exhibited minimal behavioral responses to the aircraft noise during the 25-second fly-by periods, and these responses did not exceed the behaviors observed during 10-minute pre-and post-flight observation periods. The study suggested that low-altitude jet aircraft overflights at the tested noise levels and altitudes do not significantly disturb MSOs (Forest Service - Rocky Mountain Research Station, 2002).

Considering the findings from the various studies examining the impact of human activities and noise on MSOs, it can be reasonably deduced that minor road repairs taking place more than 0.5 miles away from an owl roost would likely have no significant impact on the owls' behavior or welfare.

The road repairs in question involve a relatively brief work period (two to three days) and a limited number of noise-generating machines. As the studies demonstrate that owls exhibit a degree of tolerance for low-intensity human sounds and activities, such as helicopters and chainsaw noise, it seems improbable that road repairs would significantly disturb the owls at a



distance exceeding 0.5 miles. Nevertheless, it is crucial to exercise caution and closely monitor the owls' behavior and responses to road repairs to ensure their well-being is not adversely affected.

Proposed Mitigation Measures

In light of the research findings on MSO responses to anthropogenic disturbances, it is crucial to formulate appropriate mitigation measures that minimize the potential negative impacts of human activities on these sensitive species. The following mitigation strategies have been developed to ensure the owls' well-being and habitat preservation, while also considering the practical needs of human activities in their vicinity:

- *Pre-construction surveys*: Surveys will be conducted daily by a qualified biologist before roadwork begins to identify active migratory bird nests and to monitor MSO roosting sites.
- *Buffer delineations*: Buffer edges in proximity to the northern and southern work areas will be flagged to ensure that road repair activities do not encroach on sensitive habitats.
- *Worker education*: Road repair workers will be briefed about the presence of MSO in the area, and provided guidelines on how to minimize disturbances.
- *Limit work hours*: Per New Mexico Department of Game & Fish recommendations, road repair operations will be limited to one to two hours after sunrise until one to two hours before sunset.
- *Monitoring*: A qualified biologist will be on-site during road repair activities to monitor owl behavior in the area to detect any potential adverse effects and adjust mitigation measures accordingly.
- *Adaptive management*: If any negative impacts are observed, road repair activities and mitigation measures will be adjusted to reduce further disturbances.

In summary, a thorough examination of the proposed road repairs has been conducted, along with a review of relevant studies demonstrating MSO tolerance to anthropogenic disturbances. Based on this information and the suggested mitigation measures, it is believed that, if approved, the road repairs can proceed with minimal impact on the owls. Attention to this matter is appreciated, and our commitment to the protection of the species and their habitat remains. Should the road repairs be approved and any concerns arise during the execution, a reevaluation of the situation and implementation of any necessary actions to ensure the well-being of wildlife will be promptly undertaken.

Respectfully,

James Waddell
Ecologist - Wildlife Biologist
Everett Ecological



References Cited

- Delaney, D. K., Grubb, T. G., Beier, P., Pater, L. L., & Reiser, M. H. (1999). Effects of Helicopter Noise on Mexican Spotted Owls. *The Journal of Wildlife Management*, 63(1), 60. <https://doi.org/10.2307/3802487>
- Forest Service - Rocky Mountain Research Station, U. (2002). Responses of Mexican Spotted Owls to Low-flying Military Jet Aircraft. *Research Note RMRS-RN-12*.
- Swarthout, E. C. H., & Steidl, R. J. (2001). Flush Responses of Mexican Spotted Owls to Recreationists. *The Journal of Wildlife Management*.
- Tempel, D. J., & Gutiérrez, R. J. (2003). Fecal Corticosterone Levels in California Spotted Owls Exposed to Low-Intensity Chainsaw Sound. *Wildlife Society Bulletin*, 31(3), 698–702. <https://about.jstor.org/terms>