



COUNTY ADMINISTRATOR'S OFFICE

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C.H. HUCKELBERRY
County Administrator

April 9, 2013

Jim Upchurch, Forest Supervisor
Coronado National Forest
300 W. Congress Street
Tucson, Arizona 85701

Re: Lack of Conservation Measures for the Coleman's Coralroot in the Biological Assessment for the Proposed Rosemont Mine

Dear Mr. Upchurch:

Attached please find a memorandum that was recently forwarded to the US Fish and Wildlife Service. Based on recent surveys, it appears that over 33 percent of the known Coleman's coralroot individuals will be impacted by the proposed Rosemont Mine. However, it appears that the biological assessment documents lack meaningful discussion of the impacts to or conservation measures for this species.

Sincerely,

A handwritten signature in black ink that reads "C. Huckelberry". The signature is written in a cursive style with a long, sweeping underline that extends to the right.

C.H. Huckelberry
County Administrator

CHH/dr

Attachment

c: Nicole Fyffe, Executive Assistant to the County Administrator
Julia Fonseca, Environmental Planning Manager, Conservation and Sustainability

Memorandum

To: Mike Martinez, U.S. Fish and Wildlife Service, Arizona Ecological Services Field Office, Phoenix, AZ

From: Julia Fonseca ^{JEF} and Brian Powell ^{BP}, Pima County Office of Sustainability and Conservation, Tucson, AZ

CC: Jim Upchurch, Coronado National Forest, Tucson, AZ
Jeanne Calhoun, U.S. Fish and Wildlife Service, Arizona Ecological Services Field Office, Tucson, AZ

Re: Lack of conservation measures for the Coleman's coralroot (*Hexalectris colemanii*) in the Biological Assessment for the Rosemont Mine.

Date: April 2, 2013

The evaluation of the Rosemont mining project is progressing from the perspective of compliance with the Endangered Species Act. But absent from the Biological Assessment documents (BA; SWCA Environmental Consultants 2012b, a; Coronado National Forest and SWCA Environmental Consultants 2013) has been a substantive discussion of impacts to—or conservation measures for—the Coleman's coralroot (*Hexalectris colemanii*). Though not currently listed under the ESA, the Coleman's coralroot was petitioned for federal listing in 2010 by the Center for Biological Diversity and was considered by the U.S. Fish and Wildlife Service (USFWS) as warranted for further analysis at that time. That analysis is still under consideration by the USFWS. We believe that the lack of attention to the species in the BA is an oversight and we recommend that conservation considerations be provided for this species during this important period of deliberations.

In 2012, Westland Resources Inc. undertook an ambitious survey of 181 canyons in 16 mountain ranges to determine the geographic extent of the Coleman's coralroot. The surveys increased the known distribution of the species; it is now confirmed to occur in 10 canyons in five mountain ranges in the Sky Island region of southeastern Arizona (WestLand Resources Inc. 2012b). Yet the total sum of known individuals is only 147, and of those, 51 occur within the footprint of the Rosemont Mine¹ (in Wasp and McCleary canyons; Figure 1).

¹ The Westland Resources Inc. report states: "In mid-April, 13 *H. colemanii* inflorescences were found in Upper McCleary Canyon ... In late-April, 48 *additional* (italics inserted here for emphasis) *H. colemanii* inflorescences were found. Based on this, it is very possible that there are more than the indicated 50 individuals in McCleary

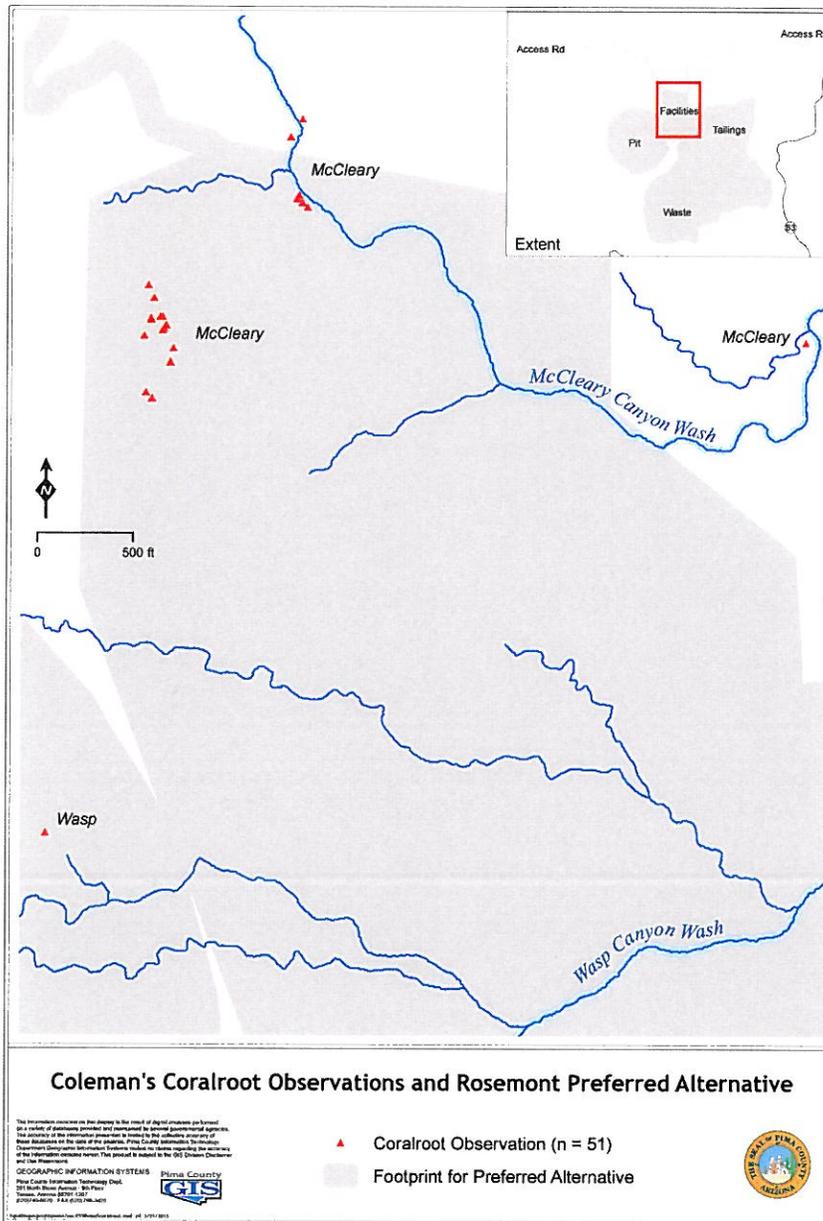


Figure 1. Known locations of Coleman’s coralroot in relationship to the proposed Rosemont mine. Mine footprint from the draft Environmental Impact Statement (Barrel alternative; as provided to Pima County through a records request). Locations of Coleman’s coralroot are from Appendix C of Westland Resources Inc. (2012b); the multiple “McCleary” labels are from that report. Note the location of the one individual in McCleary Canyon far to the east of the other individuals; that individual map have an incorrect location, because it does not appear on maps in Westland Resources Inc. (2012b).

Canyon. Also, the location information for one individual in McCleary Canyon is either incorrectly in Appendix C of Westland Resources Inc. (2012b) or was not mapped correctly. Based on the published UTM location, that individual falls outside of the footprint of the mine, yet in Westland report it not mapped as such.

The McCleary Canyon Coleman's coralroot population is the largest of any other known population for this species; it makes up >33% of all known individuals. As such, the impact of the mine on the species will be significant and thereby warrants a both a detailed analysis with regards to avoidance and minimization of mine impacts and a mitigation plan that will ensure the long-term viability of this critical population. Despite the need to develop an avoidance, minimization, and mitigation plan, the only mention is on the species in the BA is to say that "there are plans to mitigate effects of the action on this species, and these measures will be reported elsewhere." We would like additional information on the approach being contemplated and that we would like to be provided with an opportunity to comment on any proposed conservation measures prior to finalizing the BA and/or the Environmental Impact Statement. Other experts should also be brought into this consultation process due to the natural history of the species and fact that transplantation of individuals does not appear to be a viable option². One possible minimization tool may be to move some of the processing facilities, but given the species' close association with the current facilities plan (and the likelihood that there is little chance of moving the facilities a safe distance from the population), fugitive dust will almost certainly impact the coralroot's host plants by way of toxicity and lower rates of photosynthesis.

Deliberations regarding impacts and mitigation must take into account the fact that one of the key deficiencies of the Draft Environment Impact Statement (DEIS) for the Rosemont mine is that the stormwater management needs for the mine(s) are poorly described and evaluated (see Pima County 2012). Stormwater control features may indirectly affect hydrologic processes that support habitat functions critical for the Coleman's coralroot. Based on what we know of these species, it appears to prefer moist microsites, which may be impacted by the proposed changes in hydrology to McCleary Canyon (Figure 2).

Particular attention should be given to the location and type of stormwater management structures and processes of the mine and how those would affect the moist, riparian canyon habitat where the coralroot is found. For instance, AMEC (2009) proposes a series of detention basins and diversion channels that would affect McCleary Wash (Figure 2). This study predates the Draft Environmental Impact Statement (U. S. Forest Service 2011). The most recent stormwater plan (Tetra Tech 2012) includes: 1) a permanent diversion channel would divert hillslope runoff from tributaries to McCleary

² The *Hexalectris* orchids have no leaves and instead live in a mycotrophic relationship with fungi in their coral-like roots. These fungi, in turn, send out mycelia throughout the soil and infect the roots of other plants, forming a network of nutrients funneled from one plant to another in a complex "nutrient highway" beneath the forest floor. Because of this delicate relationship, it is believe that coralroots will die if transplanted.

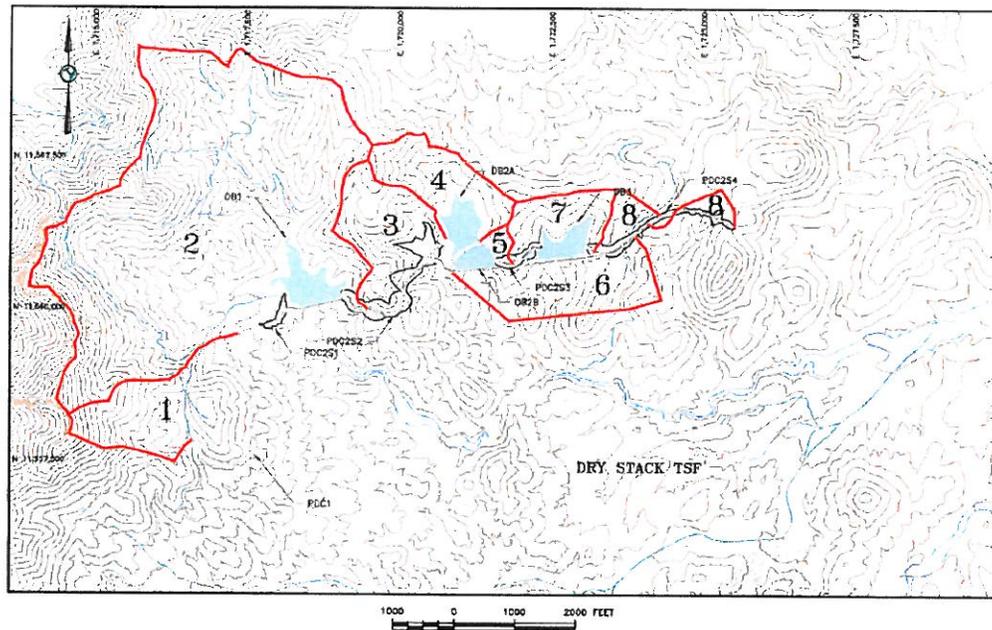


Figure 2. Modifications to McCleary watershed included diversions and dams. Source: AMEC (2009).

Wash, 2) a primary access road crossing the wash, and 3) the placement of the plant site and a portion of the tailings pile on part of the watershed. Would the wash crossing be accomplished with a clear span bridge? The site water management plan makes no statements about the degree to which the wash will be encroached and the BA should draw conclusions as to the direct and indirect effects of all of these features on the habitat of this species.

The need to provide conservation measures for the Coleman's coralroot is heightened by the lack of significant mitigation measures to date for the oak forests and woodland on which the Coleman's coralroot appears to be most associated. Pima County has repeatedly pointed out this omission to the Coronado National Forest (Pima County 2012). In the context of the need to provide conservation measures for the Coleman's coralroot, it seems that a broader discussion of its habitat elements also warrant attention in the BA. This is particularly important given that the coralroot populations in other oak woodland canyons of the region and within the Coronado National Forest that may be impacted by other mining actions (Figure 3). For example, populations of the Coleman's coralroot outside of the Rosemont area can be found in close approximation to active mining claims in the Santa Rita and Dragoon mountains.

In addition to the survey work that Westland Resources Inc. undertook in 2012 to better understand the distribution of the Coleman's coralroot, they also undertook an analysis of various environmental features associated with the 147 Coleman's coralroot individuals that they found (WestLand Resources Inc. 2012a). Though we sincerely commend the level of effort expended to better understand the habitat (and distribution) of the species, the work failed to meet current standards of statistical

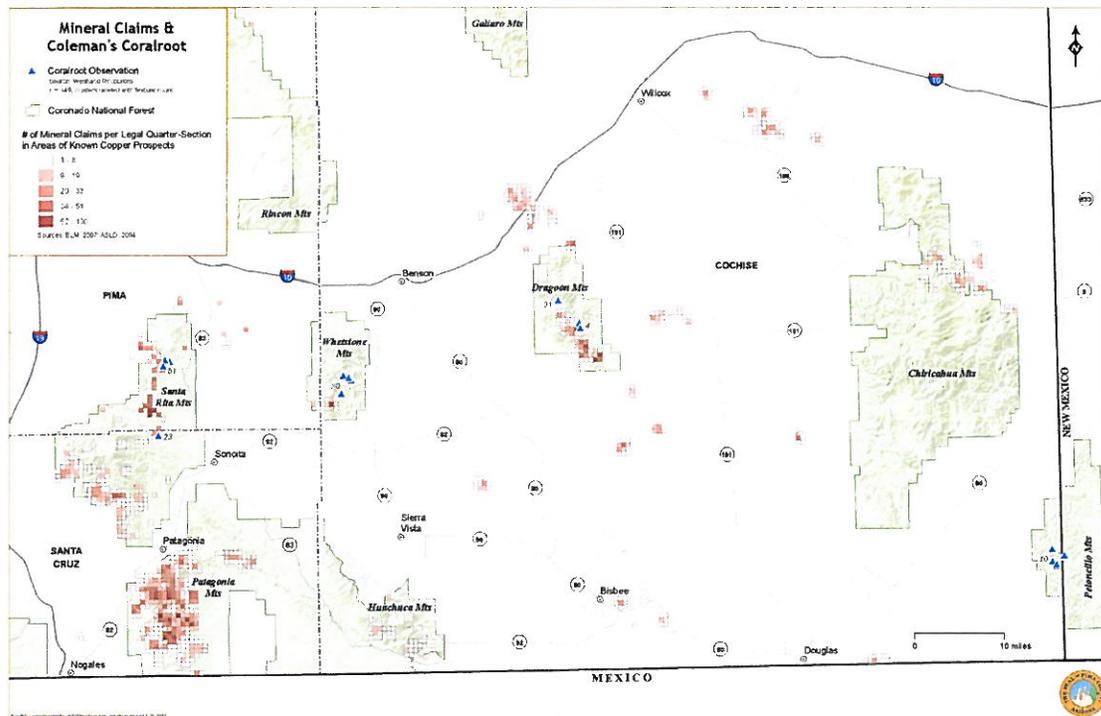


Figure 3. Coleman's coralroot populations (from WestLand Resources Inc. 2012b) in relation to active mineral claims in southeastern Arizona.

analysis. It is beyond the scope of this memo to point out all of the issues, but key here is that Westland simply reported means and distributions of the environmental features they measured without use of the appropriate statistical analyses of the data. Methods such as multiple linear regression and multivariate techniques such as Principal Components Analyses are now standard and accepted methods for understanding the relationship between species the environmental features associated with their presence (or absence) (see for example Scott et. al. 2002). Based on samples of their past work (e.g., WestLand Resources Inc 2010), Westland has the expertise and knowledge of appropriate statistical methods to undertake such an analyses.

We encourage taking this next step and not because it will be an academic exercise. Instead, results of such analysis can lead to the identification of potentially suitable sites for conservation or restoration work for this species. For example, this work could lead to the identification of potentially suitable mitigation lands, canyons to carry out additional surveys, or areas to attempt translocation experiments.

References

- AMEC. 2009. Dry stack tailings storage facility. Stormwater report prepared for Rosemont Project, Rosemont Copper Company, Tucson, AZ.
- Coronado National Forest and SWCA Environmental Consultants. 2013. Supplement to the Biological Assessment. Proposed Rosemont Copper Mine, Santa Rita

- Mountains, Pima County, Arizona, Nogales Ranger District. Submitted to the U.S. Fish and Wildlife Service, Tucson and Albuquerque offices.
- Pima County. 2012. Comments on the draft Environmental Impact Statement for the Rosemont Mine. Comments provided to Jim Upchurch, Forest Supervisor, Coronado National Forest, Tucson, AZ.
- Scott, J. M., P. J. Hegland, M. L. Morrison, J. B. Haufler, M. G. Raphael, W. A. Wall, and F. B. Samson. 2002. Predicting species occurrence: issues of accuracy and scale. Island Press, Washington, DC.
- SWCA Environmental Consultants. 2012a. Biological Assessment. Proposed Rosemont Copper Mine, Santa Rita Mountains, Pima County, Arizona, Nogales Ranger District. Submitted to the U.S. Fish and Wildlife Service, Tucson Office. Report prepared for the Coronado National Forest, Tucson, AZ.
- SWCA Environmental Consultants. 2012b. Supplement to the Biological Assessment. Proposed Rosemont Copper Mine, Santa Rita Mountains, Pima County, Arizona, Nogales Ranger District. Submitted to the U.S. Fish and Wildlife Service, Tucson Office. Report prepared for the Coronado National Forest, Tucson, AZ.
- Tetra Tech. 2012. Preliminary site water plan for the Barrel Alternative. Report to Rosemont Copper Company, Tucson, AZ.
- U. S. Forest Service. 2011. Draft Environmental Impact Statement for the Rosemont Copper project: A proposed mining operation, Coronado National Forest, Pima County, Arizona. U.S. Department of Agriculture, Forest Service, Southwestern Region. Document number MB-R3-05-3.
- WestLand Resources Inc. 2010. Talus snails (*Sonorella*, HELMINTHOGLPTIDAE) and talus slopes of the north ridge of the Santa Rita Mountains, Pima County, Arizona. Report prepared for the Rosemont Copper Company, Tucson, AZ.
- WestLand Resources Inc. 2012a. Habitat characteristics of two *Hexalectris* species in southern Arizona. Report to the Rosemont Copper Company, Tucson, AZ.
- WestLand Resources Inc. 2012b. Survey for *Hexalectris colemnaii* and *Hexalectris arizonica* across southeastern Arizona- 2012. Report to the Rosemont Copper Company, Tucson, AZ.