Rosemont Copper Mine

Objection Review

Objection # (s): 0010-BManderscheid; 0016-KPaul; 0017-MStock; 0018-JConnelly; 0019-ALannon; 0049-CDowning; 0058-NWall; 0084-SSSR; 0092-GFurnier; 0109-SWind; 0115-KChristian; 0118-KLowery;

Resource Area(s): Wildlife and Habitat – General (WLH-1)

Objection Issue:

- 0017-5: There are so many possible harmful effects of the mine that are dealt with to an uncertain or inadequate degree: 4. the obvious destruction of habitat, which can never be reclaimed adequately.
- 0115-4: Several species of flora and fauna – that are unique, imperiled, or endangered live in the area and the proposed mine would have a deleterious effect on ALL of them.
- 0118-2: I believe that the pipe line and pumps will hurt the wildlife and ecosystem of the forest due to the noise and access to maintain it.
- 0049-4: The impact on wildlife will be severe. Endangered species are not being adequately protected, as is all wildlife.
- 0016-6: Just consider the irreversible damage to wildlife habitat caused by these operations and its decimation of available water resources that are depended on by the local wildlife for survival today.
- 0010-6: Approximately 300,000 trees, mostly juniper and oak, will be cleared from public land in the Santa Ritas. The Forest Service has learned through the Freedom of Information Act that 23,261 cords of wood or roughly 66,000 tons, are on public land and slated for clearing. Mine opponents say the tree clearing would symbolize Rosemont's ecological damage, destroying habitat for many bird species in the area as well as no longer being present to offer the important function of carbon sequestration, erosion control, wildlife protection and food or even natural desert beauty.
- 0084-13: The FEIS does not include a discussion of the federal Clean Water Act or Department of Army regulations as influencing or guiding the analysis of biological resources.
- 0010-9: In December 2001 Pima County incorporated the Sonoran Desert Conservation Plan into its comprehensive land use plan by establishing the Conservation Lands System as the regional environmental vision. Davidson Canyon is identified as a biological core area and, along with Cienega Creek, an important riparian area. Connecting the Empire, Santa Rita and Rincon Mountain ranges, identified by ADG&F, BLM and Pima County, as a critical wildlife movement corridor -- Davidson Canyon, Cienega Creek and other riparian areas provide a natural habitat mosaic for the wide dispersal and migration of species such as the black bear, mountain lion, bobcat, coyotes, etc. We in Pima County,

who understand the need to preserve and protect our treasures, know the meaning of having this system interrupted in any way -- something Rosemont cannot provide and in their secretiveness, could not be believed if they did so.

- 0058-5: As these natural sources of water disappear, so will the wildlife that depends on them. And what of the impact on wildlife? We know a jaguar is living in the area of the proposed mine. Endangered plant species, migratory birds, and one species of bat would be negatively impacted by a huge mine.

Remedy Supplied by Objector (if any):

0115-4: Mine must be denied.

0084-13: Include a discussion of applicable portions of the CWA and 404(b)(1) Guidelines, and Department of Army regulations. It should also provide assessment of impacts to jurisdictional waters of the United States.

0092-2: Require a multi-billion dollar deposit in a USFS escrow account to cover potential environmental and economic damages to others and require the company guarantee the baseline flow and water quality in Ciénega Creek.

0109-3: Choose the no action alternative.

Law, Regulation and/or Policy: Endangered Species Act of 1973, as Amended; Forest Service Manual FSM 2670; Executive Order 13186; Council on Environmental Quality (CEQ) Regulations at 40 CFR 1500-1508

Review Team Member Response:

Under Section 7(a)(2) of the ESA, the Forest Service is required to consult with the U.S. Fish and Wildlife Service (USFWS) to insure that any action authorized by the agency is not likely to jeopardize the continued existence of any listed species or result in the destruction or adverse modification of designated critical habitat for such species. Section 7(c) requires the preparation of a biological assessment to facilitate compliance with section 7(a)(2). Section 7(b) of the ESA requires the USFWS to issue a Biological Opinion, and Section 7(b)(4) specifies that, with a finding of no jeopardy or no destruction or adverse modification of critical habitat, the USFWS shall specify the impact of incidental take on the species, specify the reasonable and prudent measures necessary to minimize such impact, and set forth the terms and conditions necessary to implement those measures.

The Forest Service provides for plant and animal diversity through the Sensitive Species Policy (FSM 2670), which requires preparation of a Biological Evaluation to analyze project effects to species on the Regional Forester's Sensitive Species list. This includes recommendations for removing, avoiding, or compensating for adverse effects (FSM 2672.42-6).

Executive Order 13186 requires federal agencies to evaluate the effects of agency action on migratory birds, with emphasis on species of concern, and to "identify where unintentional take reasonably attributable to agency action is having, or is likely to have, a measurable negative

effect on migratory bird populations…" In addition, in the Memorandum of Understanding between the USFWS and the Forest Service on Migratory Birds (08-MU-1113-2400-264) the Forest Service agreed to "consider approaches, to the extent practicable, for identifying and minimizing take that is incidental to otherwise lawful activities…" This includes "…minimizing or preventing the pollution or detrimental alteration of the environments utilized by migratory birds whenever practical by assessing information on environmental contaminants and other stressor relevant to migratory bird conservation."

In addition, the NEPA process requires that the Forest Service analyze and disclose effects to the environment. This includes wildlife, plant, and fish species covered by other statutes and regulations as well as consideration of issues raised by the public.

Response to objection issues 0017-5; 0115-4; 0118-2; 0049-4; 0016-6; 0010-6; 0084-13; 0010-9; and 0058-5

In fulfillment of ESA Section 7(a)(2) requirements, a Biological Assessment was prepared to analyze the effects to Federally listed species and their designated critical habitat [PR 017312]. In consultation with the USFWS, the information in the Biological Assessment was supplemented several times [PR 18908, PR 018955, PR 018956, and PR 018909]. The original biological assessment analyzed the effects of the potential water drawdown on listed species in the project area and associated with Cienega Creek, as well as the effects of the irreversible removal of vegetation at the mine site. These species include the jaguar and the lesser long-nosed bat, as mentioned in objection 0058-5. The USFWS issued a Biological Opinion [PR 047479; also PR 047511_7] determining that the project was not likely to jeopardize any of the listed species affected, nor would the project result in the destruction or adverse modification of designated critical habitat for any listed species.

As required under the Forest Service Sensitive Species policy, a Biological Evaluation was prepared [PR 046412] and later supplemented with new species information [PR 047330]. As required under FSM 2672.4, these documents analyzed the effects of the project on listed and sensitive species, including the effects of potential water drawdown and the effects of the irreversible removal of vegetation at the mine site.

The migratory bird report considered whether the effects of project would cause a population decline in priority migratory bird species population [PR 046410].

These analyses were summarized in the NEPA document [PR 047511_3, pp. 605-652; PR 047511_4, pp. 653-723], including an analysis of animal movement corridors by alternative, as raised by objection 0010-9. This includes a disclosure of the irreversible and irretrievable loss of wildlife habitat [PR 047511_4, pp. 1139-1140].

Recommended Remedy by Review Team Member (if any): The remedies suggested by the objectors are not warranted. No remedy is required.

Review Team Member: Ernest Taylor, WFRP

Rosemont Copper Mine

Objection Review

Objection # (s): 0107-TucsonAudubon; 0084-SSSR;

Resource Area(s): Wildlife and Habitat – Legal (WLH-3)

Objection Issue:

- 0107-3: The objector makes the case that the FEIS violates a variety of laws and regulations, including the Migratory Bird Treaty Act and NEPA. They raise the following issues: 1. No evidence is provided to support the conclusion that unintentional take of migratory birds would not contribute to a measurable decline in bird populations associated with the Santa Rita Mountains Important Bird Area (FEIS p. 698 cited). Impacts from the mine that would impact this important bird area were not considered. 2. The FEIS does not include waterfowl, migratory waterfowl or other associated birds that will be attracted to what will be "standing water" in its analysis. There is no consideration mitigation or protective measure that will prevent the migratory waterbirds and other species mentioned above from coming in contact with toxic standing water of the pit lake. The FEIS does not fully evaluate the "key risk factors" (Page 2, Migratory Bird Analysis SWCA (2013i)). 3. The analysis is incomplete in its analysis of the pit lake and its short and long term effects on bird species that will be attracted to the pit lake. The FEIS fails to review the adverse impacts to the specific migratory bird species listed by FWS regulations, a failure under NEPA to review the direct, indirect, and cumulative impacts to these designated species.
- 0084-11: The agency's failure to protect wildlife and comply with water quality standards in the pit lake violates numerous federal and state laws, regulations, and policies (Organic Act, 36 C.F.R. 228.8, Migratory Bird Treaty Act, 16 U.S.C. §§ 703-712, the Bald and Golden Eagle Protection Act, 16 U.S.C. §§ 668-668d, Executive Order 13186, NFMA, Endangered Species Act, Clean Water Act).
- 0084-17: Authorized take for the Chiricahua leopard frog is unjustified, and the mitigation offered is inadequate, not located within the affected watershed, and the incidental take permitted is not justified by the documented status of the species in the area. The effectiveness of this and other wildlife mitigation measures has not been shown, in violation of NEPA and the ESA, NFMA, and Organic Act.

Remedy Supplied by Objector (if any):

0107-3: Do not issue any Final ROD that would authorize approval of any PoO for any action alternative reviewed in the FEIS.

0084-11: The Draft ROD must be remanded with instructions to either approve the No-Action Alternative, or have the company resubmit a PoO that complies with all federal laws.

0084-17: Re-consult with USFWS on the status of the Chiricahua leopard frog, the authorized take permit should be reassessed, and the inadequate suggested mitigation should be greatly augmented with habitat that is within the affected watershed.

Law, Regulation and/or Policy: Endangered Species Act of 1973, as Amended; Forest Service Manual FSM 2670; Executive Order 13186; Council on Environmental Quality (CEQ) Regulations at 40 CFR 1500-1508

Review Team Member Response:

Under Section 7(a)(2) of the ESA, the Forest Service is required to consult with the U.S. Fish and Wildlife Service (USFWS) to insure that any action authorized by the agency is not likely to jeopardize the continued existence of any federally listed species or result in the destruction or adverse modification of designated critical habitat for such species. Section 7(c) requires the preparation of a biological assessment to facilitate compliance with section 7(a)(2). Section 7(b) of the ESA requires the USFWS to issue a Biological Opinion, and Section 7(b)(4) specifies that, with a finding of no jeopardy or no destruction or adverse modification of critical habitat, the USFWS shall specify the impact of incidental take on the species, specify the reasonable and prudent measures necessary to minimize such impact, and set forth the terms and conditions necessary to implement those measures.

Executive Order 13186 requires federal agencies to evaluate the effects of agency action on migratory birds, with emphasis on species of concern, and to "identify where unintentional take reasonably attributable to agency action is having, or is likely to have, a measurable negative effect on migratory bird populations…" In addition, in the Memorandum of Understanding between the USFWS and the Forest Service on Migratory Birds (08-MU-1113-2400-264), the Forest Service agreed to "consider approaches, to the extent practicable, for identifying and minimizing take that is incidental to otherwise lawful activities…" This includes "…minimizing or preventing the pollution or detrimental alteration of the environments utilized by migratory birds whenever practical by assessing information on environmental contaminants and other stressor relevant to migratory bird conservation."

In addition, the NEPA process requires that the Forest Service analyze and disclose effects to the environment. This includes wildlife, plant, and fish species covered by other statutes and regulations as well as consideration of issues raised by the public (40 CFR 1502.16).

<u>Response to objection issue 0107-3</u>

Disclosure of effects to priority migratory bird species, including the rationale for no population effect, is found in the Migratory Bird Analysis [PR 046410, pp. 47-51]. This information is summarized in the FEIS [PR 047511_4, pp. 697-699]. The analysis focuses on the effects to priority bird species likely to occur in the project area. Several species of waterbirds were excluded because they do not occur in the project area, or the project area is outside of the range

of the species [PR 046410, Table 2, pp. 4-11], not because they would not necessarily use the pit lake.

As disclosed in the FEIS [PR 047511_3, p. 291], the pit lake will form after mining is completed and groundwater pumping from the pit ceases. The pit lake will take centuries to reach its full size, but the lake is expected to be relatively large soon after closure [PR 047511_3, p. 387; PR 013794, Figure 8-16]. Potential for pit lake water quality issues are based on predictive models and vary depending on the scenario conducted [PR 047511_3, pp. 388-389]. The FEIS discloses potential pit lake contamination [PR 047511_3, pp. 388-390] and discusses the potential effects to wildlife in general [PR 047511_4, pp. 664-665] and under the applicable species effects [PR 047511_4, pp. 653-713]. These effects would include waterfowl and waterbirds. A mitigation specific to pit lake water quality monitoring is discussed in the FEIS [PR 047511_4, p. 714; PR 047511_6, pp. B-21 to B-22]. Monitoring may trigger additional mitigations to reduce effects of contaminants, though due to the uncertainty in contaminant levels what these measures might be is not known.

As noted in the FEIS [PR 047511_3, p. 390], the depth and isolation of the pit lake makes it fairly inaccessible to wildlife, though acute avian exposure to potential contaminants is a possibility. Pit lake water quality was disclosed as a possible source of unintentional take of migratory birds [PR 046410, pp. 47-48]. The FEIS discloses that birds, along with bats and invertebrates, are most likely to be affected by direct exposure to contaminants [PR 047511_4, p. 665]. Potential chronic contaminant exposure of wildlife to insects from the pit lake is of greater concern, and this is addressed in the documents cited above.

Response to objection issue 0084-11

As disclosed in the FEIS [PR 047511_3, p. 291], the pit lake will form after mining is completed and groundwater pumping from the pit ceases. Potential for pit lake water quality issues based on predictive models vary depending on the scenario conducted [PR 047511_3, pp. 388-389]. The FEIS discloses potential pit lake contamination [PR 047511_3, pp. 388-390] and discusses the potential effects to wildlife in general [PR 047511_4, pp. 664-665] and under the applicable species effects [PR 047511_4, pp. 653-713]. A mitigation specific to pit lake water quality monitoring is discussed in the FEIS [PR 047511_4, p. 714; PR 047511_6, pp. B-21 to B-22].

Water quality in the pit lake was discussed for relevant federally listed species [PR 017312, pp. 94-95; p. 107; cf. PR 018909, p. 30] and the USFWS considered effects of pit lake water quality in its no jeopardy opinion [PR 047479, pp. 216-217]. The Biological Evaluation considered the effects of pit lake water quality on relevant listed and sensitive species, including amphibians [PR 046412, p. 38], reptiles [PR 046412, p. 43], birds [PR 046412, p. 51-71; PR 047330], and mammals [PR 046412, p. 76-97]. The migratory bird report also considered the effects of pit lake water quality on priority bird species and Bald and Golden Eagles [PR 046410].

Response to objection issue 0084-17

The Chiricahua leopard frog is listed as Threatened under the ESA, and critical habitat has been designated for this species. As discussed above, Section 7(a)(2) of the ESA requires Federal

agencies to consult with the USFWS to ensure that activities do not jeopardize the continued existence of listed species, and that these activities do not result in the destruction or adverse modification of critical habitat. In fulfillment of this requirement, a Biological Assessment (BA) was submitted to the USFWS with supplemental information obtained during the consultation period [PR 017312, PR 18908, PR 18955, PR 18956, and PR 18909]. The USFWS issued a Biological Opinion [PR 047479; also PR 047511_7] determining that the project was not likely to jeopardize the Chiricahua leopard frog, nor would the project result in the destruction or adverse modification of designated critical habitat for this species.

Recommended Remedy by Review Team Member (if any): The remedies suggested by the objectors are not warranted. No remedy is required.

Review Team Member: Ernest Taylor, WFRP

Rosemont Copper Mine

Objection Review

Objection # (s): 0022-RMaki; 0036-Rosemont; 0080-CShinsky; 0084-SSSR; 0090-AZGFD;

Resource Area(s): Wildlife and Habitat – Mitigation (WLH-4)

Objection Issue:

- 0022-2: All of the models indicate that the pit water will be higher that water standards for several chemicals, but there are no mitigation to prevent birds and insects from ingesting that water. The danger to wildlife will still exist long after the fence sand barriers are gone.
- 0090-16: The FEIS does not adequately describe all reasonable and relevant mitigation measures for the take of wildlife (including migratory birds) due to mine pit lake toxicity.
- 0036-24: FS-BR-28 requires that Rosemont collect four (4) water quality samples per year from stock tanks and "new/enhanced waters" in potential Chiricahua leopard frog habitat. FS-BR-28 requires that the water samples be analyzed for any constituents with "applicable numeric Surface Water Quality Standards for wildlife." Pursuant to A .A .C. R18-11-102(B)(2}, Arizona SWQS do NOT apply to man-made surface impoundments . Therefore, there are no applicable numeric SWQS to compare analytical data to - for good reason, because cattle drink out of the stock ponds. Therefore, there is no possible way to maintain SWQSs for frogs in a drinking vessel shared with cattle. Rosemont objects to the Forest trying to set SWQS where none apply. If standards are being used for comparison purposes only then that should be noted. Finally, it should be noted that livestock grazing is considered to be compatible with leopard frog habitat. (Volume 5, Appendix B, page B-55, FS- BR-28 Monitoring of Water Quality in Stock Tanks)
- 0036-22: This item requires a complete inventory of the NFS lands prior to ground disturbance. Rosemont objects to this requirement as ALL lands are not suitable for the species listed. This requirement should be clarified to include survey of only those lands that contain suitable characteristics as is done in FS-BR-18. (Volume 5, Appendix B, FS-BR-02, page 28-29)
- 0080-3: The USFS fails to require proper mitigation that would be effective in reducing increased wildlife mortality and in reducing the potential of vehicular accidents due to increased wildlife on the roadway.
- 0084-20: The FEIS fails to adequately minimize impacts to and adequately mitigate for Coleman's coralroot. It is unacceptable that the core population and 37% of all known individuals of this extremely rare species will be directly and indirectly impacted and that impacts could very well lead to listing as an endangered species. The impacts of water

diversion and retention features, chemicals used in the mining process, and other factors have not been adequately analyzed, quantified, or mitigated.

- 0036-36: The agreement allows for modification if needed for permits, this should be reflected in the statement. Rosemont requests the language in Appendix B in the Rosemont voluntary mitigation elements track the language in the agreements made with Arizona Game and Fish. (Volume 5, Appendix B, RC-BR-02, pages 95-96)

Remedy Supplied by Objector (if any):

0084-114: Reject plan of operations.

0090-16: Amend the FEIS as specified in the objection.

0080-3: Require that Rosemont Copper install at least one wildlife bridge south of the project.

0084-20: The MPO and site plan must be re-configured to avoid all impacts to Coleman's coralroot present in the vicinity of the mine.

0084-18: The USFS must develop a robust mitigation, monitoring, and management plan for reducing road mortality of wildlife.

Law, Regulation and/or Policy: Endangered Species Act of 1973, as Amended; Forest Service Manual FSM 2670; Executive Order 13186; Council on Environmental Quality (CEQ) Regulations at 40 CFR 1500-1508

Review Team Member Response:

Under Section 7(a)(2) of the ESA, the Forest Service is required to consult with the U.S. Fish and Wildlife Service (USFWS) to insure that any action authorized by the agency is not likely to jeopardize the continued existence of any federally listed species or result in the destruction or adverse modification of designated critical habitat for such species. Section 7(c) requires the preparation of a biological assessment to facilitate compliance with section 7(a)(2). Section 7(b) of the ESA requires the USFWS to issue a Biological Opinion, and Section 7(b)(4) specifies that, with a finding of no jeopardy or no destruction or adverse modification of critical habitat, the USFWS shall specify the impact of incidental take on the species, specify the reasonable and prudent measures necessary to minimize such impact, and set forth the terms and conditions necessary to implement those measures.

The Forest Service provides for plant and animal diversity through the Sensitive Species Policy (FSM 2670), which requires preparation of a Biological Evaluation to analyze project effects to species on the Regional Forester's Sensitive Species list. This includes recommendations for removing, avoiding, or compensating for adverse effects (FSM 2672.42-6).

Executive Order 13186 requires federal agencies to evaluate the effects of agency action on migratory birds, with emphasis on species of concern, and to "identify where unintentional take reasonably attributable to agency action is having, or is likely to have, a measurable negative

effect on migratory bird populations…" In addition, in the Memorandum of Understanding between the USFWS and the Forest Service on Migratory Birds (08-MU-1113-2400-264), the Forest Service agreed to "consider approaches, to the extent practicable, for identifying and minimizing take that is incidental to otherwise lawful activities…" This includes "…minimizing or preventing the pollution or detrimental alteration of the environments utilized by migratory birds whenever practical by assessing information on environmental contaminants and other stressor relevant to migratory bird conservation."

In addition, the NEPA process requires that the Forest Service analyze and disclose effects to the environment. This includes wildlife, plant, and fish species covered by other statutes and regulations as well as consideration of issues raised by the public (40 CFR 1502.16).

Response to objection issues 0022-2 and 0090-16

As disclosed in the FEIS [PR 047511_3, p. 291], the pit lake will form after mining is completed and groundwater pumping from the pit ceases. Potential for pit lake water quality issues are based on predictive models and vary depending on the scenario conducted [PR 047511_3, pp. 388-389]. The FEIS discloses potential pit lake contamination [PR 047511_3, pp. 388-390] and discusses the potential effects to wildlife in general [PR 047511_4, pp. 664-665] and under the applicable species effects [PR 047511_4, pp. 653-713]. A mitigation specific to pit lake water quality monitoring is discussed in the FEIS [PR 047511_4, p. 714; PR 047511_6, pp. B-21 to B-22].

Water quality in the pit lake was discussed for relevant federally listed species [PR 017312, pp. 94-95; p. 107; cf. PR 018909, p. 30] and the USFWS considered effects of pit lake water quality in its no jeopardy opinion [PR 047479, pp. 216-217]. The Biological Evaluation considered the effects of pit lake water quality on relevant listed and sensitive species, including amphibians [PR 046412, p. 38], reptiles [PR 046412, p. 43], birds [PR 046412, p. 51-71; cf. PR 047330], and mammals [PR 046412, p. 76-97]. The migratory bird report also considered the effects of pit mine water quality on priority bird species [PR 046410].

Response to objection issue 0036-24

The mitigation in question [FS-BR-28; PR 047511_6, p. B-55] states that 4 water samples will be taken from stock tanks and new or enhanced waters, and such samples will be analyzed for constituents with applicable Arizona State Surface Water standards.

The only legal authority that would require such sampling would be as part of the Terms and Conditions in the Biological Opinion [PR 047479] to implement Reasonable and Prudent Measures for the Chiricahua leopard frog or aquatic organisms. There are no Terms and Conditions in the Biological Opinion requiring water monitoring in stock tanks or new and enhanced waters. Because there is no alleged violation of law, regulation, or policy this objection should be resolved through discussions with the Coronado National Forest.

Response to objection issue 0036-22

Mitigation measure FS-BR-02 [PR 047511_6, pp. B-28 to B-29] was put in place to mitigate effects to Coleman's coral-root, a sensitive plant. Effects to Coleman's coral-root were analyzed in the Biological Evaluation [PR 046412, pp. 21-24] and summarized in the FEIS [PR 47511-3, pp. 610-611; PR 47511-4, pp. 676-678]. The determination of effect was that the project would cause a trend towards future listing but would not cause a loss of viability.

As required under FSM 2672.42-6, the Forest Service is required to include recommendations for removing, avoiding, or compensating for adverse effects to listed and sensitive species. Requiring pre-project surveys as a mitigation measure is therefore appropriate under Forest Service policy. Whether surveys should include all Forest System land in the project area or can be targeted to a narrower subset of lands suitable for the Coleman's coral-root is a technical issue outside the scope of this review.

Response to objection issues 0080-3 and 0084-18

The Biological Evaluation [PR 046412, supplement at PR 047730] analyzed the impacts of the project, including roads, on listed and sensitive species. The results of this analysis are summarized in the FEIS [PR 047511_4, pp. 669-671]. For listed species, a Biological Assessment was prepared [PR 017213, supplemented by PR 018908 and 018909] in fulfillment of ESA Section 7(a)(2) requirements. The BA explicitly considered new access roads and traffic [PR 017213 p. 16]. The USFWS issued a no jeopardy opinion for the all species affected by the project [PR 047479].

The FEIS lists two mitigation measures specific to wildlife impacts from roads; FS-BR-19 [PR 047511_4, p. 719; PR 047511_6, p. B-46] and FS-BR-23 [PR 047511_4, p. 719; PR 047511_6, pp. B-50 to B-51]. These mitigation measures were taken into account in the effects analyses described above.

Response to objection issue 0084-20

Coleman's coral-root is a sensitive plant designated by the Regional Forester of the Southwest Region. In compliance with FSM 2672, the Forest Service prepared a Biological Evaluation (BE) that analyzed the effect of the project on Sensitive Species including Coleman's coral-root [PR 046412, pp. 21-24]. As discussed in the BE, one sub-population (Wasp Canyon) would be eliminated under all action alternatives; the Proposed Action would eliminate the McLeary Canyon sub-population; the Phased Tailings Alternative would eliminate part of the McLeary Canyon sub-population, and the remaining alternatives (Barrel, Barrel Trail, and Scholefield-McCleary) would not directly impact the McCleary Canyon sub-population. The Forest Service determined that the action alternatives would cause a trend towards future listing, but would not result in a loss of viability of the species due to the presence of sub-populations outside of the project area. As a result of impacts to Coleman's coral-root, pre-project surveys in the project area were included as a mitigation measure [FS-BR-02; PR 047511_6, pp. B-28 to B-29].

The direct and indirect effects in the BE were summarized in the FEIS [PR 47511-3, pp. 610-611; PR 47511-4, pp. 676-678]. As noted on page 677 of the FEIS, minimizing impacts to Coleman's coral-root was one of the considerations in selecting the Barrel Alternative [Draft ROD, PR 047504, p. 18].

Response to objection issue 0036-36

The discrepancy in language between RC-BR-02 and the agreement with Arizona Department of Game and Fish is an administrative issue. The language in RC-BR-02 should be reviewed for consistency with the agreement.

Recommended Remedy by Review Team Member (if any): The remedies suggested by the objectors are not warranted. No remedy is required.

Review Team Member: Ernest Taylor, WFRP

Rosemont Copper Mine

Objection Review

Objection # (s): 0021-CMartin; 0084-SSSR; 0099-KPhaler; 0100-TohonoOodhamNation; 0107-TucsonAudubon;

Resource Area(s): Wildlife and Habitat – Effects (WLH-5)

Objection Issue:

- 0107-4: Noise and light disturbance should be addressed as related to wildlife avoidance.
- 0107-2: The Forest Service failed to address this outstanding issue (large-scale forest projects that could have a negative impact on the Mexican Spotted Owl until USFWS can approve a new plan for protecting the bird) when evaluating impacts of the proposed Rosemont mine on the Mexican Spotted Owls in the Santa Rita Mountains. The Forest Service fails to include a plan to monitor the population trends of the Mexican Spotted Owl.
- 0021-1: The FEIS is incomplete in its analysis of the pit lake and its short and long term effects on bird species that will be attracted to the pit lake. Without having additional information, the current FEIS does not adequately "evaluate the effects of the agency action on migratory birds" and does not adequately evaluate the "key risk factors" (Page 2, Migratory Bird Analysis SWCA (201 3i)). The risk factors to wildlife, specifically bird species, need to be analyzed or addressed in FEIS. Based on the information in the FEIS, the pit lake will become one of the largest and deepest bodies of water in southern Arizona. The FEIS needs to include the review, study, analysis, discussion and consideration of the potential short term or long term environmental impacts and the effects of the "water quality exceedances" to waterfowl, migratory waterfowl or other associated birds that will be attracted to what will be "standing water". The Forest Service response above (response to the objector's comments on the DEIS) indicates that the pit lake is "modeled as exceeding some surface water quality standards" and there is discussion on Page 390 in the FEIS related to the pit lake that states that the water quality conditions could potentially cause acute and chronic exposure to wildlife. The FEIS needs to include the review, study, analysis, discussion and consideration of the methodology and methods for the short or long term mitigation to keep bird species such as, waterfowl, migratory waterfowl or other birds associated with "standing water" (that will be attracted to the pit lake), from consuming insects and/or from coming into contact with the pit lake water.
- 0084-16: The analysis is inadequate for the public and the USFS to analyze cumulative impacts to biological resources, including all listed, special status, sensitive, indicator, and otherwise protected species and their habitat. Two reasonably foreseeable actions were not analyzed - climate change (such as increased flooding, extreme weather events,

greater temperature variations, water shortages and activities needed to adapt to climate change) and potential new mines, including three Rosemont Copper identified sites.

- 0084-51: The FEIS provides inadequate analysis of impacts to biological corridors and critical habitat in the project area.
- 0099-9: There are necessarily going to be indirect effects on major mammal migration corridors, bird nesting and migration, and wildlife populations of all species in the Santa Rita uplands from 6000 days of blasting, which effects are unlikely to promote the wellbeing of any of the affected populations.
- 0100-9: The FEIS fails to address, in detail, preventive measures to decrease potential wildlife mortality due to exposure to untreated ponded water such as that in the pit lake. The failure to do so is in violation of the Migratory Bird Treaty Act.
- 0107-1: We did not see analyses of this broader array of (bird) species, especially the effects of the loss of 63 springs due in part to lowered water table as a result of groundwater pumping and the effects of that pumping on birds that depend upon such sites.
- 0084-15: Conducting surveys for only a small subset of special status and listed species is inadequate. The lack of an adequate baseline analysis fatally flaws the FEIS. This applies to all resources lacking an adequate analysis of current conditions. For wildlife, all 43 of the special status species listed on page 673 of the FEIS and the 10 affected species listed under the Endangered Species Act should have been surveyed prior to, and included in the publication of the FEIS, so the USFS and USFWS can adequately analyze and quantify impacts to these species.

Remedy Supplied by Objector (if any):

0107-1, 2, 4, 5: Do not issue any Final ROD that would authorize approval of any PoO for any action alternative reviewed in the FEIS.

0021-1: The FEIS should contain a detailed review, study, discussion and consideration of the potential short term or long term environmental impacts to bird species that could specifically be "animals that prey on the insects or come in contact with the water".

0084-16: Prepare a comprehensive cumulative impacts analysis that includes potential new mines, including those on the three Rosemont Copper identified sites, as well as climate change.

0084-51: Provide a more detailed analysis of potential impacts to wildlife from road mortality near the proposed mine. The agency also needs to outline more robust and effective mitigation measures for impacts to biological corridors generally.

0084-15: In addition to preparing an adequate baseline analysis for all affected resources, all 43 of the special status species listed on page 673 of the FEIS and the 10 affected species listed under the Endangered Species Act should be surveyed.

Law, Regulation and/or Policy:

Endangered Species Act of 1973, as Amended; Forest Service Manual FSM 2670; Executive Order 13186; Council on Environmental Quality (CEQ) Regulations at 40 CFR 1500-1508

Review Team Member Response:

Under Section 7(a)(2) of the ESA, the Forest Service is required to consult with the U.S. Fish and Wildlife Service (USFWS) to insure that any action authorized by the agency is not likely to jeopardize the continued existence of any listed species or result in the destruction or adverse modification of designated critical habitat for such species. Section 7(c) requires the preparation of a biological assessment to facilitate compliance with section 7(a)(2). Section 7(b) of the ESA requires the USFWS to issue a Biological Opinion, and Section 7(b)(4) specifies that, with a finding of no jeopardy or no destruction or adverse modification of critical habitat, the USFWS shall specify the impact of incidental take on the species, specify the reasonable and prudent measures necessary to minimize such impact, and set forth the terms and conditions necessary to implement those measures.

The Forest Service provides for plant and animal diversity through the Sensitive Species Policy (FSM 2670), which requires preparation of a Biological Evaluation to analyze project effects to species on the Regional Forester's Sensitive Species list. This includes recommendations for removing, avoiding, or compensating for adverse effects (FSM 2672.42-6).

Executive Order 13186 requires federal agencies to evaluate the effects of agency action on migratory birds, with emphasis on species of concern, and to "identify where unintentional take reasonably attributable to agency action is having, or is likely to have, a measurable negative effect on migratory bird populations…" In addition, in the Memorandum of Understanding between the USFWS and the Forest Service on Migratory Birds (08-MU-1113-2400-264) the Forest Service agreed to "consider approaches, to the extent practicable, for identifying and minimizing take that is incidental to otherwise lawful activities…" This includes "…minimizing or preventing the pollution or detrimental alteration of the environments utilized by migratory birds whenever practical by assessing information on environmental contaminants and other stressor relevant to migratory bird conservation."

In addition, the NEPA process requires that the Forest Service analyze and disclose the direct, indirect, and cumulative effects to the environment. This includes wildlife, plant, and fish species covered by other statutes and regulations as well as consideration of issues raised by the public.

<u>Response to objection issues 0107-4, 0021-1, 0084-51, 0099-9, 0100-9, and 0107-1:</u>

Disclosure of effects to priority migratory bird species, including the rationale for no population effect, is found in the Migratory Bird Analysis [PR 046410, pp. 47-51]. This information is summarized in the FEIS [PR 047511_4, pp. 697-699]. The analysis focuses on the effects to priority bird species likely to occur in the project area. Several species of waterbirds were excluded because the project area is outside of the range of the species [PR 046410, Table 2, pp. 4-11], not because they would not necessarily use the pit lake.

As disclosed in the FEIS [PR 047511_3, p. 291], the pit lake will form after mining is completed and groundwater pumping from the pit ceases. The pit lake will take centuries to reach its full size, but the lake is expected to be relatively large soon after closure [PR 047511_3, p. 387; PR 013794, Figure 8-16]. Potential for pit lake water quality issues are based on predictive models vary depending on the scenario conducted [PR 047511_3, pp. 388-389]. The FEIS discloses potential pit lake contamination [PR 047511_3, pp. 388-390] and discusses the potential effects to wildlife in general [PR 047511_4, pp. 664-665] and under the applicable species effects [PR 047511_4, pp. 653-713]. These effects would include waterfowl and waterbirds. A mitigation specific to pit lake water quality monitoring is discussed in the FEIS [PR 047511_4, p. 714; PR 047511_6, pp. B-21 to B-22]. Monitoring may trigger additional mitigations to reduce effects of contaminants, though due to the uncertainty in contaminant levels what these measures might be is not known.

As noted in the FEIS [PR 04711-3, p. 390], the depth and isolation of the pit lake makes it fairly inaccessible to wildlife, though acute avian exposure to potential contaminants is a possibility. Potential chronic contaminant exposure of wildlife to insects from the pit lake is of greater concern, and this is addressed in the documents cited above.

As required under the Forest Service Sensitive Species policy, a Biological Evaluation was prepared [PR 046412] and later supplemented with new species information [PR 047330]. As required under FSM 2672.4, these documents analyzed the effects of the project on listed and sensitive species, including the effects of potential water drawdown as raised by objection 0107-1. These analyses were summarized in the NEPA document [PR 047511_3, pp. 605-652; PR 047511_4, pp. 653-723], including an analysis of animal movement corridors [PR 047511_4, pp. 600-605] by alternative, as raised by objections 0084-51 and 0099-9; and a discussion of the effects of noise, dust, vibration, and lighting [PR 047511_4, pp. 654-659] as raised by objection 0099-9 and objection 0107-4.

Response to objection issue 0107-2:

The Mexican spotted owl is listed as Threatened under the ESA, and critical habitat has been designated for this species. As discussed above, Section 7(a)(2) of the ESA requires Federal agencies to consult with the USFWS to ensure that activities do not jeopardize the continued existence of listed species, and that these activities do not result in the destruction or adverse modification of critical habitat. In fulfillment of this requirement, a Biological Assessment (BA) was submitted to the USFWS with supplemental information obtained during the consultation period [[PR 017312, PR 18908, PR 18955, PR 18956, and PR 18909]. The BA determined that effects to the owl were not adverse and were insignificant and/or discountable [PR 017312, pp. 116-118]. The USFWS concurred with this determination [PR 047479 pp. 409-410]; also PR 047511_7] and that the project would have no effect on Mexican spotted owl critical habitat.

Response to objection issue 0084-16:

A list of projects considered to be cumulative to the proposed project are listed in the FEIS [PR 047511_3, pp. 140-143]. The projects which might cumulatively effect wildlife are discussed in the FEIS [PR 047511_4, pp. 711-712]. The effects of climate change on wildlife are discussed in the FEIS [PR 047511_4, p. 713].

Response to objection issue 0084-15:

The process of determining which special status species were present in the project area and warranted detailed analysis is provided in the Biologists' Report on the Affected Environment and Identification of Species for Disclosure of Effects [PR 046411, pp. 32-136] and summarized in the FEIS [PR 047511_3, pp. 573-579]. This process fulfills the requirements for listed and Southwest Region sensitive species in FSM 2672.4.

Recommended Remedy by Review Team Member (if any): The remedies suggested by the objectors are not warranted. No remedy required.

Review Team Member: Ernest Taylor

Rosemont Copper Mine

Objection Review

Objection # (s): 0036-Rosemont; 0084-SSSR

Resource Area(s): Wildlife and Habitat – Endangered Species Act (WLH-7)

Objection Issue:

- 0084-12: The elimination of perennial flow of the (Cienega) Creek which "supports native frog and fish populations, including threatened and endangered species," violates the agency's duties under the ESA, Organic Act/Part 228, NFMA and other laws requiring the protection of wildlife and fisheries and their habitat from mining operations.
- 0036-37: BO states that groundwater modeling will be completed on an annual basis. USFS Mitigation Measure FS-BR-27 (Periodic validation of groundwater model throughout life of mine) specifies modeling every five years. Rosemont requests that the discrepancy be resolved. (Volume 6, Appendix F, Biological Opinion, page 276, number 1.1, Terms and Condition-Gila Chub)
- 0036-27: BO states that groundwater level and water quality monitoring will be conducted using a "suite of 21 existing wells and one new well". USFS Mitigation Measure FS-GW-02 (Water quality monitoring beyond point-of-compliance wells) specifies only "15 existing wells and one new well". Mitigation Measure FS-GW-02 lists the specific wells that are to be monitored; the BO does not list specific wells. Discrepancy needs to be resolved. (Volume 6, App. F, Biological Opinion, page 57, Conservation Measures, H. Aquatic Species : Gila Chub, Gila Topminnow, Huachuca Water Umbel; Item #3)

Remedy Supplied by Objector (if any): None

Law, Regulation and/or Policy: Endangered Species Act of 1973, as Amended; Forest Service Manual FSM 2670; National Forest Management Act of 1976; Council on Environmental Quality (CEQ) Regulations at 40 CFR 1500-1508.

Review Team Member Response:

Under Section 7(a)(2) of the ESA, the Forest Service is required to consult with the U.S. Fish and Wildlife Service (USFWS) to insure that any action authorized by the agency is not likely to jeopardize the continued existence of any listed species or result in the destruction or adverse modification of designated critical habitat for such species. Section 7(c) requires the preparation of a biological assessment to facilitate compliance with section 7(a)(2).Section 7(b) of the ESA requires the USFWS to issue a Biological Opinion, and Section 7(b)(4) specifies that, with a finding of no jeopardy or no destruction or adverse modification of critical habitat, the USFWS

shall specify the impact of incidental take on the species, specify the reasonable and prudent measures necessary to minimize such impact, and set forth the terms and conditions necessary to implement those measures.

Under NFMA, the Forest Service is required to "provide for the diversity of plant and animal communities based on the suitability and capability of the specific land area in order to meet overall multiple-use objectives of a land management plan…" The Forest Service provides for plant and animal diversity through the Sensitive Species Policy (FSM 2670), which requires preparation of a Biological Evaluation to analyze project effects to species on the Regional Forester's Sensitive Species list. Project compliance with the land management plan is accomplished in project design.

In addition, the NEPA process requires that the Forest Service analyze and disclose effects to the environment. This includes wildlife, plant, and fish species covered by other statutes and regulations as well as consideration of issues raised by the public.

Response to objection issue 0084-12

In fulfillment of ESA Section 7(a)(2) requirements, a Biological Assessment was prepared to analyze the effects to Federally listed species and their designated critical habitat [PR 017312]. In consultation with the USFWS, the information in the Biological Assessment was supplemented several times [PR 18908, PR 18955, PR 18956, and PR 18909]. The original biological assessment analyzed the effects of the potential water drawdown on the Chiricahua leopard frog and its critical habitat, two fish species (Gila chub and its critical habitat; Gila topminnow), and two riparian obligate species (Huachuca water umbel and critical habitat, and Southwest willow flycatcher and critical habitat). The USFWS issued a Biological Opinion [PR 047479; also PR 047511_7] determining that the project was not likely to jeopardize any of the listed species affected, nor would the project result in the destruction or adverse modification of designated critical habitat for any listed species.

In fulfillment of the NFMA diversity requirement and FSM 2670, a Biological Evaluation was prepared [PR 046412] and later supplemented with new species information [PR 047330]. As required under FSM 2672.4, these documents analyzed the effects of the project on listed and sensitive species, including the effects of potential water drawdown. These analyses were summarized in the NEPA document [PR 047511_3, pp. 605-652; PR 047511_4, pp. 653-697], along with the determination of effect and the rationale for that determination.

In fulfillment of the NFMA provision to meet overall multiple-use objectives of the land management plan, the action alternatives in the FEIS were evaluated for consistency with the Coronado Forest Plan [PR 047511_2, pp. 114-120]. This evaluation found inconsistencies with the existing management direction of the Coronado Forest Plan and proposed site-specific amendments that would address these inconsistencies. Effects of the plan amendment on wildlife were analyzed in the FEIS [PR 047511_4, pp. 723-725]. The amendment would be part of the ROD.

Response to objection issue 0036-37

The FEIS [PR 047511_6, pp. B-53 to B-54] states that Rosemont will report water monitoring results annually, and every 5 years would use the data from monitoring to verify the groundwater model and revise predictions. This would occur from pre-mining to 5 years after mine closure, with continued monitoring at select locations as the Biological Opinion [PR 047479; also PR 047511_7] requires.

The Biological Opinion (BO) [PR 047479; also PR 047511_7; pp. 276-277, 296-297] uses groundwater levels as a surrogate for take for Gila chub and Gila topminnow. As per ESA Section 7(b)(4), the BO establishes Reasonable and Prudent Measures as well as Terms and Conditions for Gila chub and Gila topminnow. These Terms and Conditions state that, after monitoring site selection, the model shall be re-run to obtain groundwater drawdowns at each site, and that the "time interval shall be each year through closure of the mine, and thereafter, every 5 years" [PR 047479; Terms and Condition – Gila Chub 1.1, p. 276]. Monitoring will continue post-closure for a duration determined to be necessary by the USFWS and the Forest Service. In addition, monitoring of groundwater monitoring will be compared to the groundwater model and reported annually to the USFWS [PR 047479; Terms and Condition – Gila Chub 1.4, p. 277]. The limits in groundwater drawdown, and hence the limit on incidental take, is tied to the comparison of groundwater monitoring to model predictions. Failure to follow the terms and conditions of the BO would be a violation of the take provisions of the ESA.

There is a discrepancy between the proposed monitoring in the FEIS and Draft ROD [PR 047504, p. 37] and the required monitoring in the BO. In this case, the BO monitoring requirements must be followed over the FEIS monitoring requirements and the ROD should be revised accordingly.

Response to objection issue 0036-27

The Conservation Measure agreed to by the objector appears in the February 2, 2013 Supplemental Biological Assessment (SBA) [PR 018909, pp. 49-50] under "H. Aquatic Species: Gila Chub, Gila Topminnow, Huachuca Water Umbel." This conservation measure states that wells constructed under the Aquifer Protection Permit (APP) will be monitored for depth of groundwater and water quality as prescribed by the APP. The data from these wells will be provided to the Forest Service to compare groundwater elevation changes to modeled predictions.

The Conservation Measure in the Biological Opinion (BO) [PR 047479, p. 57] is identical to the measure in the SBA to providing the Forest Service with data from the wells. From there, the text of the BO specifies that "…21 existing wells and one new well within and beyond the footprint of the proposed mine will be monitored for **depth of groundwater**…" [emphasis added]. No mention is made of monitoring the 21 existing and one new well for water quality.

Mitigation Measure FS-BR-27 in the FEIS [PR 047511_6, pp. B-53 to B-54] gives a list of the 21 wells to be monitored, so this is clearly part of the existing monitoring proposed for the project. The additional text added by the USFWS produces no further monitoring burden on the

Forest Service or the proponent, though note that the Terms and Conditions require more frequent monitoring and modeling than what was proposed [see response to 0036-37, above).

Because this is a Conservation Measure that was used in issuing the Biological Opinion, it cannot be wholly ignored; however, there is also no violation of law, regulation, or policy involved in this objection issue. This issue should be resolved through discussions with the USFWS.

Recommended Remedy by Review Team Member (if any): The proposed monitoring in the Draft ROD [PR 047504, p. 37] should be revised to match the terms and conditions found in the BO [PR 047479; Terms and Conditions – Gila Chub, 1.1 and 1.4, p. 276-277].

Review Team Member: Ernest Taylor, WFRP